Electronic Patent Application Fee Transmittal

Application Number:	
Filing Date:	
Title of Invention:	EFFICIENT AND SECURE COMMUNICATION USING WIRELESS SERVICE IDENTIFIERS
First Named Inventor/Applicant Name:	James A. Proctor, Jr.
Filer:	David J. Thibodeau/Elisabeth Smith
Attorney Docket Number:	111054-0001U7

Filed as Small Entity

Filing Fees for Track I Prioritized Examination - Nonprovisional Application under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
UTILITY FILING FEE (ELECTRONIC FILING)	4011	1	80	80
UTILITY SEARCH FEE	2111	1	350	350
UTILITY EXAMINATION FEE	2311	1	400	400
REQUEST FOR PRIORITIZED EXAMINATION	2817	1	2100	2100
Pages:				
Claims:				
CLAIMS IN EXCESS OF 20	2202	10	50	500
Miscellaneous-Filing:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
PUBL. FEE- EARLY, VOLUNTARY, OR NORMAL	1504	1	0	0
PROCESSING FEE, EXCEPT PROV. APPLS.	2830	1	70	70

Petition:	
Patent-Appeals-and-Interference:	
Post-Allowance-and-Post-Issuance:	
Extension-of-Time:	
Miscellaneous:	
Total in USD ($)	**3500**

PTO/SB/17 (10-20)
Approved for use through 12/31/2020. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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FEE TRANSMITTAL

Complete if known	
Application Number	
Filing Date	
First Named Inventor	James A. Proctor, Jr.
Examiner Name	
Art Unit	
Practitioner Docket No.	111054-0001U7

☒ Applicant asserts small entity status. See 37 CFR 1.27.

☐ Applicant certifies micro entity status. See 37 CFR 1.29. Form PTO/SB/15A or B or equivalent must either be enclosed or have been submitted previously.

TOTAL AMOUNT OF PAYMENT ($) 3500.00

METHOD OF PAYMENT (check all that apply)

☐ Check ☒ Credit Card ☐ Money Order ☐ None ☐ Other (please identify): _____

☒ Deposit Account Deposit Account Number: 504929 Deposit Account Name: _____

For the above-identified deposit account, the Director is hereby authorized to (check all that apply):

☐ Charge fee(s) indicated below ☐ Charge fee(s) indicated below, **except for the filing fee**

☒ Charge any additional fee(s) or underpayment of fee(s) under 37 CFR 1.16 and 1.17 ☒ Credit any overpayment of fee(s)

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

FEE CALCULATION

1. BASIC FILING, SEARCH, AND EXAMINATION FEES (U = undiscounted fee; S = small entity fee; M = micro entity fee)

	FILING FEES			SEARCH FEES			EXAMINATION FEES			
Application Type	**U ($)**	**S ($)**	**M ($)**	**U ($)**	**S ($)**	**M ($)**	**U ($)**	**S ($)**	**M ($)**	**Fees Paid ($)**
Utility	320	160*	80	700	350	175	800	400	200	830.00
Design	220	110	55	160	80	40	640	320	160	
Plant	220	110	55	440	220	110	660	330	165	
Reissue	320	160	80	700	350	175	2,320	1,160	580	
Provisional	300	150	75	0	0	0	0	0	0	

* The $160 small entity status filing fee for a utility application is further reduced to $80 for a small entity status applicant who files the application via EFS-Web.

2. EXCESS CLAIM FEES

Fee Description	**Undiscounted Fee ($)**	**Small Entity Fee ($)**	**Micro Entity Fee ($)**
Each claim over 20 (including Reissues)	100	50	25
Each independent claim over 3 (including Reissues)	480	240	120
Multiple dependent claims	860	430	215

Total Claims		**Extra Claims**	**Fee ($)**		**Fee Paid ($)**
30	-20 or HP =	10 x	50	=	500

HP = highest number of total claims paid for, if greater than 20.

Indep. Claims		**Extra Claims**	**Fee ($)**		**Fee Paid ($)**
2	-3 or HP =	_____ x	_____	=	_____

HP = highest number of independent claims paid for, if greater than 3.

Multiple Dependent Claims	
Fee ($)	**Fee Paid ($)**
_____	_____

3. APPLICATION SIZE FEE

If the specification and drawings exceed 100 sheets of paper (excluding electronically filed sequence or computer listings under 37 CFR 1.52(e)), the application size fee due is $420 ($210 for small entity) ($105 for micro entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

Total Sheets		**Extra Sheets**		**Number of each additional 50 or fraction thereof**	**Fee ($)**		**Fee Paid ($)**
_____	- 100 =	_____	/ 50 =	_____ (round **up** to a whole number)	x _____	=	_____

4. OTHER FEE(S) **Fees Paid ($)**

Non-English specification, $140 fee ($70 for small entity) ($35 for micro entity) _____

Non-electronic filing fee under 37 CFR 1.16(t) for a utility application, $400 fee ($200 small or micro entity) _____

Other (e.g., late filing surcharge): Request for Prioritized Examination 2100.00

SUBMITTED BY

Signature	/David J Thibodeau Jr Reg No 31671/	Registration No. (Attorney/Agent) 31671	Telephone 617-925-5520
Name (Print/Type)	David J. Thibodeau, Jr.		Date 2-July-2021

This collection of information is required by 37 CFR 1.136. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Doc Code: PA..
Document Description: Power of Attorney

PTO/AIA/82A (07-13)
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TRANSMITTAL FOR POWER OF ATTORNEY TO ONE OR MORE REGISTERED PRACTITIONERS

NOTE: This form is to be submitted with the Power of Attorney by Applicant form (PTO/AIA/82B) to identify the application to which the Power of Attorney is directed, in accordance with 37 CFR 1.5, unless the application number and filing date are identified in the Power of Attorney by Applicant form. If neither form PTO/AIA/82A nor form PTO/AIA82B identifies the application to which the Power of Attorney is directed, the Power of Attorney will not be recognized in the application.

Application Number	
Filing Date	
First Named Inventor	James A. Proctor, Jr.
Title	EFFICIENT AND SECURE COMMUNICATION USING WIRELESS SERVICE IDENTIFIERS
Art Unit	
Examiner Name	
Attorney Docket Number	111054-0001U7

SIGNATURE of Applicant or Patent Practitioner

Signature	/David J Thibodeau Jr Reg No 31671/	Date (Optional)	2-July-2021
Name	David J. Thibodeau, Jr.	Registration Number	31671
Title (if Applicant is a juristic entity)	Attorney for Applicant		
Applicant Name (if Applicant is a juristic entity)	Proxicom Wireless LLC		

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications. If more than one applicant, use multiple forms.

☐ *Total of _____ forms are submitted.

This collection of information is required by 37 CFR 1.131, 1.32, and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

PTO/SB/80 (11-08)
Approved for use through 11/30/2011. OMB 0651-0035
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

POWER OF ATTORNEY TO PROSECUTE APPLICATIONS BEFORE THE USPTO

I hereby revoke all previous powers of attorney given in the application identified in the attached statement under 37 CFR 3.73(b).

I hereby appoint:

☑ Practitioners associated with the Customer Number: 86012

OR

☐ Practitioner(s) named below (if more than ten patent practitioners are to be named, then a customer number must be used):

Name	Registration Number	Name	Registration Number

as attorney(s) or agent(s) to represent the undersigned before the United States Patent and Trademark Office (USPTO) in connection with any and all patent applications assigned only to the undersigned according to the USPTO assignment records or assignment documents attached to this form in accordance with 37 CFR 3.73(b).

Please change the correspondence address for the application identified in the attached statement under 37 CFR 3.73(b) to:

☑ The address associated with Customer Number: 86012

OR

☐ Firm or Individual Name	VLP Law Group LLP		
Address			
City		State	Zip
Country			
Telephone		Email	

Assignee Name and Address:

Proxicom Wireless LLC
1680 N. Riverside Drive
Indialantic, FL 32903

A copy of this form, together with a statement under 37 CFR 3.73(b) (Form PTO/SB/96 or equivalent) is required to be filed in each application in which this form is used. The statement under 37 CFR 3.73(b) may be completed by one of the practitioners appointed in this form if the appointed practitioner is authorized to act on behalf of the assignee, and must identify the application in which this Power of Attorney is to be filed.

SIGNATURE of Assignee of Record

The individual whose signature and title is supplied below is authorized to act on behalf of the assignee

Signature	James A. Proctor	Date	4/17/2017
Name	James A. Proctor	Telephone	321.252.8411
Title	Managing Director		

This collection of information is required by 37 CFR 1.31, 1.32 and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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Electronic Acknowledgement Receipt

EFS ID:	43163001
Application Number:	17366826
International Application Number:	
Confirmation Number:	8789
Title of Invention:	EFFICIENT AND SECURE COMMUNICATION USING WIRELESS SERVICE IDENTIFIERS
First Named Inventor/Applicant Name:	James A. Proctor, Jr.
Customer Number:	86012
Filer:	David J. Thibodeau/Elisabeth Smith
Filer Authorized By:	David J. Thibodeau
Attorney Docket Number:	111054-0001U7
Receipt Date:	02-JUL-2021
Filing Date:	
Time Stamp:	15:54:50
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	$3500
RAM confirmation Number	E202172F55442716
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Application Data Sheet	20210702_111054-0001U7_TPO_ADS.pdf	1256621 6f67e2d51a042f7d7628ea159207881b38db620b	no	9
Warnings:					
Information:					
2	TrackOne Request	20210702_111054-0001U7_TPO_Request_for_Prioritized_Exam.pdf	118000 43513b4a74eaf3b78093379b7e9462e6bbbfd6a4	no	1
Warnings:					
Information:					
3	Specification	20210702_111054-0001U7_TPO_specification.pdf	195123 26de872da4f18371e13a3d61507b810bfd27fd88	no	42
Warnings:					
Information:					
4	Drawings-other than black and white line drawings	20200312_111054-0001U7_TPO_Drawings.pdf	365710 0b9acec675e67550ffa7578be04958a094091f92	no	14
Warnings:					
Information:					
5	Power of Attorney	20210702_111054-0001U7_TPO_POA.pdf	397935 2f70f243bdab4e18bc97e3e4cb67cc331c665924	no	2
Warnings:					
Information:					
6	Oath or Declaration filed	20210702_111054-0001U7_TPO_Declaration_Proctor_III_EXECUTED.pdf	228198 6f51f8db21d379b034d211007d34a35ecb544bce	no	1
Warnings:					
Information:					

7	Oath or Declaration filed	20210702_111054-0001U7_TPO_Declaration_Proctor_Jr_EXECUTED.pdf	459266 0f9a4e6798273943272 8a35f59ce8110e6ca6164	no	1
Warnings:					
Information:					
8	Transmittal Letter	20210702_111054-0001U7_TPO_Fee_Transmittal.pdf	306373 5d354e4803d7a56cd5a627585b2e71f26feeed57	no	2
Warnings:					
Information:					
9	Fee Worksheet (SB06)	fee-info.pdf	41623 6d20d05151a87b0e85097f3effc89af264b9d34c	no	2
Warnings:					
Information:					
			Total Files Size (in bytes):	3368849	

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/AIA/14 (02-18)
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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	111054-0001U7
	Application Number	
Title of Invention	EFFICIENT AND SECURE COMMUNICATION USING WIRELESS SERVICE IDENTIFIERS	

The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76.
This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.

Secrecy Order 37 CFR 5.2:

☐ Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)

Inventor Information:

Inventor 1 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	James	A.	Proctor	Jr.

Residence Information (Select One) ● US Residency Non US Residency Active US Military Service

City	State/Province	Country of Residence
Indialantic	FL	US

Mailing Address of Inventor:

Address 1	1680 Riverside Drive
Address 2	
City	Indialantic
State/Province	FL
Postal Code	32903
Country	US

Inventor 2 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	James	Arthur	Proctor	III

Residence Information (Select One) ◉ US Residency Non US Residency Active US Military Service

City	State/Province	Country of Residence
Indialantic	FL	US

Mailing Address of Inventor:

Address 1	735 Oak Ridge Drive
Address 2	
City	Indialantic
State/Province	FL
Postal Code	32903
Country	US

All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the **Add** button. Add

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below.
For further information see 37 CFR 1.33(a).

PTO/AIA/14 (02-18)
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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	111054-0001U7
	Application Number	
Title of Invention	EFFICIENT AND SECURE COMMUNICATION USING WIRELESS SERVICE IDENTIFIERS	

☐ **An Address is being provided for the correspondence Information of this application.**

Customer Number	86012		
Email Address	PATENTS@VLPLAWGROUP.COM	Add Email	Remove Email

Application Information:

Title of the Invention	EFFICIENT AND SECURE COMMUNICATION USING WIRELESS SERVICE IDENTIFIERS		
Attorney Docket Number	111054-0001U7	**Small Entity Status Claimed**	☒
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	14	**Suggested Figure for Publication (if any)**	

Filing By Reference:

Only complete this section when filing an application by reference under 35 U.S.C. 111(c) and 37 CFR 1.57(a). Do not complete this section if application papers including a specification and any drawings are being filed. Any domestic benefit or foreign priority information must be provided in the appropriate section(s) below (i.e., "Domestic Benefit/National Stage Information" and "Foreign Priority Information").

For the purposes of a filing date under 37 CFR 1.53(b), the description and any drawings of the present application are replaced by this reference to the previously filed application, subject to conditions and requirements of 37 CFR 1.57(a).

Application number of the previously filed application	Filing date (YYYY-MM-DD)	Intellectual Property Authority or Country

Publication Information:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)

☐ **Request Not to Publish.** I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application **has not and will not** be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32).
Either enter Customer Number or complete the Representative Name section below. If both sections are completed the customer Number will be used for the Representative Information during processing.

Please Select One:	● Customer Number	US Patent Practitioner	○ Limited Recognition (37 CFR 11.9)
Customer Number	86012		

PTO/AIA/14 (02-18)
Approved for use through 11/30/2020. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	111054-0001U7
	Application Number	
Title of Invention	EFFICIENT AND SECURE COMMUNICATION USING WIRELESS SERVICE IDENTIFIERS	

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, 365(c), or 386(c) or indicate National Stage entry from a PCT application. Providing benefit claim information in the Application Data Sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.
When referring to the current application, please leave the "Application Number" field blank.

Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
	Continuation of	16817896	2020-03-13
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
16817896	Continuation of	15271410	2016-09-21
Prior Application Status	Abandoned		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15271410	Continuation of	14861563	2015-09-22
Prior Application Status	Patented		Remove

Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
14861563	Continuation of	14472477	2014-08-29	9161164	2015-10-13
Prior Application Status	Patented				Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
14472477	Continuation of	13775435	2013-02-25	8849698	2014-09-30
Prior Application Status	Patented				Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
13775435	Continuation of	13212723	2011-08-18	8385896	2013-02-26
Prior Application Status	Patented				Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
13212723	Continuation of	12364828	2009-02-03	8090359	2011-01-03
Prior Application Status	Expired				Remove

Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
12364828	Claims benefit of provisional	61095359	2008-09-09

PTO/AIA/14 (02-18)
Approved for use through 11/30/2020. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	111054-0001U7
	Application Number	
Title of Invention	EFFICIENT AND SECURE COMMUNICATION USING WIRELESS SERVICE IDENTIFIERS	

Prior Application Status	Expired		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
12364828	Claims benefit of provisional	61095001	2008-09-08
Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the **Add** button.			Add

Foreign Priority Information:

This section allows for the applicant to claim priority to a foreign application. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55. When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX)[i] the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(i)(1) and (2). Under the PDX program, applicant bears the ultimate responsibility for ensuring that a copy of the foreign application is received by the Office from the participating foreign intellectual property office, or a certified copy of the foreign priority application is filed, within the time period specified in 37 CFR 1.55(g)(1).

			Remove
Application Number	Country[i]	Filing Date (YYYY-MM-DD)	Access Code[i] (if applicable)
Additional Foreign Priority Data may be generated within this form by selecting the **Add** button.			Add

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

☐ This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.
NOTE: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.

PTO/AIA/14 (02-18)
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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	111054-0001U7
	Application Number	
Title of Invention	EFFICIENT AND SECURE COMMUNICATION USING WIRELESS SERVICE IDENTIFIERS	

Authorization or Opt-Out of Authorization to Permit Access:

When this Application Data Sheet is properly signed and filed with the application, applicant has provided written authority to permit a participating foreign intellectual property (IP) office access to the instant application-as-filed (see paragraph A in subsection 1 below) and the European Patent Office (EPO) access to any search results from the instant application (see paragraph B in subsection 1 below).

Should applicant choose not to provide an authorization identified in subsection 1 below, applicant **must opt-out** of the authorization by checking the corresponding box A or B or both in subsection 2 below.

NOTE: This section of the Application Data Sheet is **ONLY** reviewed and processed with the **INITIAL** filing of an application. After the initial filing of an application, an Application Data Sheet cannot be used to provide or rescind authorization for access by a foreign IP office(s). Instead, Form PTO/SB/39 or PTO/SB/69 must be used as appropriate.

1. Authorization to Permit Access by a Foreign Intellectual Property Office(s)

A. Priority Document Exchange (PDX) - Unless box A in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the State Intellectual Property Office of the People's Republic of China (SIPO), the World Intellectual Property Organization (WIPO), and any other foreign intellectual property office participating with the USPTO in a bilateral or multilateral priority document exchange agreement in which a foreign application claiming priority to the instant patent application is filed, access to: (1) the instant patent application-as-filed and its related bibliographic data, (2) any foreign or domestic application to which priority or benefit is claimed by the instant application and its related bibliographic data, and (3) the date of filing of this Authorization. See 37 CFR 1.14(h)(1).

B. Search Results from U.S. Application to EPO - Unless box B in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the EPO access to the bibliographic data and search results from the instant patent application when a European patent application claiming priority to the instant patent application is filed. See 37 CFR 1.14(h)(2).

The applicant is reminded that the EPO's Rule 141(1) EPC (European Patent Convention) requires applicants to submit a copy of search results from the instant application without delay in a European patent application that claims priority to the instant application.

2. Opt-Out of Authorizations to Permit Access by a Foreign Intellectual Property Office(s)

☐ A. Applicant **DOES NOT** authorize the USPTO to permit a participating foreign IP office access to the instant application-as-filed. If this box is checked, the USPTO will not be providing a participating foreign IP office with any documents and information identified in subsection 1A above.

☐ B. Applicant **DOES NOT** authorize the USPTO to transmit to the EPO any search results from the instant patent application. If this box is checked, the USPTO will not be providing the EPO with search results from the instant application.

NOTE: Once the application has published or is otherwise publicly available, the USPTO may provide access to the application in accordance with 37 CFR 1.14.

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	111054-0001U7
	Application Number	
Title of Invention	EFFICIENT AND SECURE COMMUNICATION USING WIRELESS SERVICE IDENTIFIERS	

Applicant Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

Applicant 1 Remove

If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section.

Clear

Assignee	Legal Representative under 35 U.S.C. 117	Joint Inventor
Person to whom the inventor is obligated to assign.	Person who shows sufficient proprietary interest	

If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:

Name of the Deceased or Legally Incapacitated Inventor:

If the Applicant is an Organization check here. ☒

Organization Name	Proxicom Wireless LLC		
Mailing Address Information For Applicant:			
Address 1	1580 N. Riverside Drive		
Address 2			
City	Indialantic	**State/Province**	FL
Country	US	Postal Code	32903
Phone Number		Fax Number	
Email Address			

Additional Applicant Data may be generated within this form by selecting the Add button. Add

Assignee Information including Non-Applicant Assignee Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	111054-0001U7
	Application Number	
Title of Invention	EFFICIENT AND SECURE COMMUNICATION USING WIRELESS SERVICE IDENTIFIERS	

Assignee 1

Complete this section if assignee information, including non-applicant assignee information, is desired to be included on the patent application publication. An assignee-applicant identified in the "Applicant Information" section will appear on the patent application publication as an applicant. For an assignee-applicant, complete this section only if identification as an assignee is also desired on the patent application publication.

Remove

If the Assignee or Non-Applicant Assignee is an Organization check here. ☐

Prefix	**Given Name**	Middle Name	**Family Name**	Suffix

Mailing Address Information For Assignee including Non-Applicant Assignee:

Address 1			
Address 2			
City		**State/Province**	
Country i		Postal Code	
Phone Number		Fax Number	
Email Address			

Additional Assignee or Non-Applicant Assignee Data may be generated within this form by selecting the Add button. Add

Signature:

Remove

NOTE: This Application Data Sheet must be signed in accordance with 37 CFR 1.33(b). **However, if this Application Data Sheet is submitted with the INITIAL filing of the application and either box A or B is not checked in subsection 2 of the "Authorization or Opt-Out of Authorization to Permit Access" section, then this form must also be signed in accordance with 37 CFR 1.14(c).**

This Application Data Sheet **must** be signed by a patent practitioner if one or more of the applicants is a **juristic entity** (e.g., corporation or association). If the applicant is two or more joint inventors, this form must be signed by a patent practitioner, **all** joint inventors who are the applicant, or one or more joint inventor-applicants who have been given power of attorney (e.g., see USPTO Form PTO/AIA/81) on behalf of **all** joint inventor-applicants.

See 37 CFR 1.4(d) for the manner of making signatures and certifications.

Signature	/David J Thibodeau Jr Reg No 31671/			Date (YYYY-MM-DD)	2021-07-02
First Name	David J.	Last Name	Thibodeau, Jr.	Registration Number	31671

Additional Signature may be generated within this form by selecting the Add button. Add

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	111054-0001U7
	Application Number	
Title of Invention	EFFICIENT AND SECURE COMMUNICATION USING WIRELESS SERVICE IDENTIFIERS	

This collection of information is required by 37 CFR 1.76. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1 The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3 A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent CooperationTreaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

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DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

Title of Invention	EFFICIENT AND SECURE COMMUNICATION USING WIRELESS SERVICE IDENTIFIERS

As the below named inventor, I hereby declare that:

This declaration is directed to:

- [■] The attached application, or
- [ ] United States application or PCT international application number _____

filed on _____.

The above-identified application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

WARNING:

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.

LEGAL NAME OF INVENTOR

Inventor: James A. Proctor, Jr. Date (Optional) :_____

Signature: _____

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 1 minute to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

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DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

Title of Invention	EFFICIENT AND SECURE COMMUNICATION USING WIRELESS SERVICE IDENTIFIERS

As the below named inventor, I hereby declare that:

This declaration is directed to:

- [■] The attached application, or
- [ ] United States application or PCT international application number _____

filed on _____.

The above-identified application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

WARNING:

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LEGAL NAME OF INVENTOR

Inventor: James Arthur Proctor, III Date (Optional) :_____

Signature: _____

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 1 minute to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Doc Code: TRACK1.REQ
Document Description: TrackOne Request

PTO/AIA/424 (04-14)

CERTIFICATION AND REQUEST FOR PRIORITIZED EXAMINATION UNDER 37 CFR 1.102(e) (Page 1 of 1)

First Named Inventor:	James A. Proctor, Jr.	Nonprovisional Application Number (if known):	
Title of Invention:	EFFICIENT AND SECURE COMMUNICATION USING WIRELESS SERVICE IDENTIFIERS		

APPLICANT HEREBY CERTIFIES THE FOLLOWING AND REQUESTS PRIORITIZED EXAMINATION FOR THE ABOVE-IDENTIFIED APPLICATION.

1. The processing fee set forth in 37 CFR 1.17(i)(1) and the prioritized examination fee set forth in 37 CFR 1.17(c) have been filed with the request. The publication fee requirement is met because that fee, set forth in 37 CFR 1.18(d), is currently $0. The basic filing fee, search fee, and examination fee are filed with the request or have been already been paid. I understand that any required excess claims fees or application size fee must be paid for the application.

2. I understand that the application may not contain, or be amended to contain, more than four independent claims, more than thirty total claims, or any multiple dependent claims, and that any request for an extension of time will cause an outstanding Track I request to be dismissed.

3. The applicable box is checked below:

I. ☑ Original Application (Track One) - Prioritized Examination under § 1.102(e)(1)

i. (a) The application is an original nonprovisional utility application filed under 35 U.S.C. 111(a). This certification and request is being filed with the utility application via EFS-Web.

---OR---

(b) The application is an original nonprovisional plant application filed under 35 U.S.C. 111(a). This certification and request is being filed with the plant application in paper.

ii. An executed inventor's oath or declaration under 37 CFR 1.63 or 37 CFR 1.64 for each inventor, **or** the application data sheet meeting the conditions specified in 37 CFR 1.53(f)(3)(i) is filed with the application.

II. ☐ Request for Continued Examination - Prioritized Examination under § 1.102(e)(2)

i. A request for continued examination has been filed with, or prior to, this form.
ii. If the application is a utility application, this certification and request is being filed via EFS-Web.
iii. The application is an original nonprovisional utility application filed under 35 U.S.C. 111(a), or is a national stage entry under 35 U.S.C. 371.
iv. This certification and request is being filed prior to the mailing of a first Office action responsive to the request for continued examination.
v. No prior request for continued examination has been granted prioritized examination status under 37 CFR 1.102(e)(2).

Signature /David J Thibodeau Jr Reg No 31671/	Date
Name (Print/Typed) David J. Thibodeau, Jr.	Practitioner Registration Number 31671

Note: *This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications. Submit multiple forms if more than one signature is required.**

☐ *Total of _____ forms are submitted.

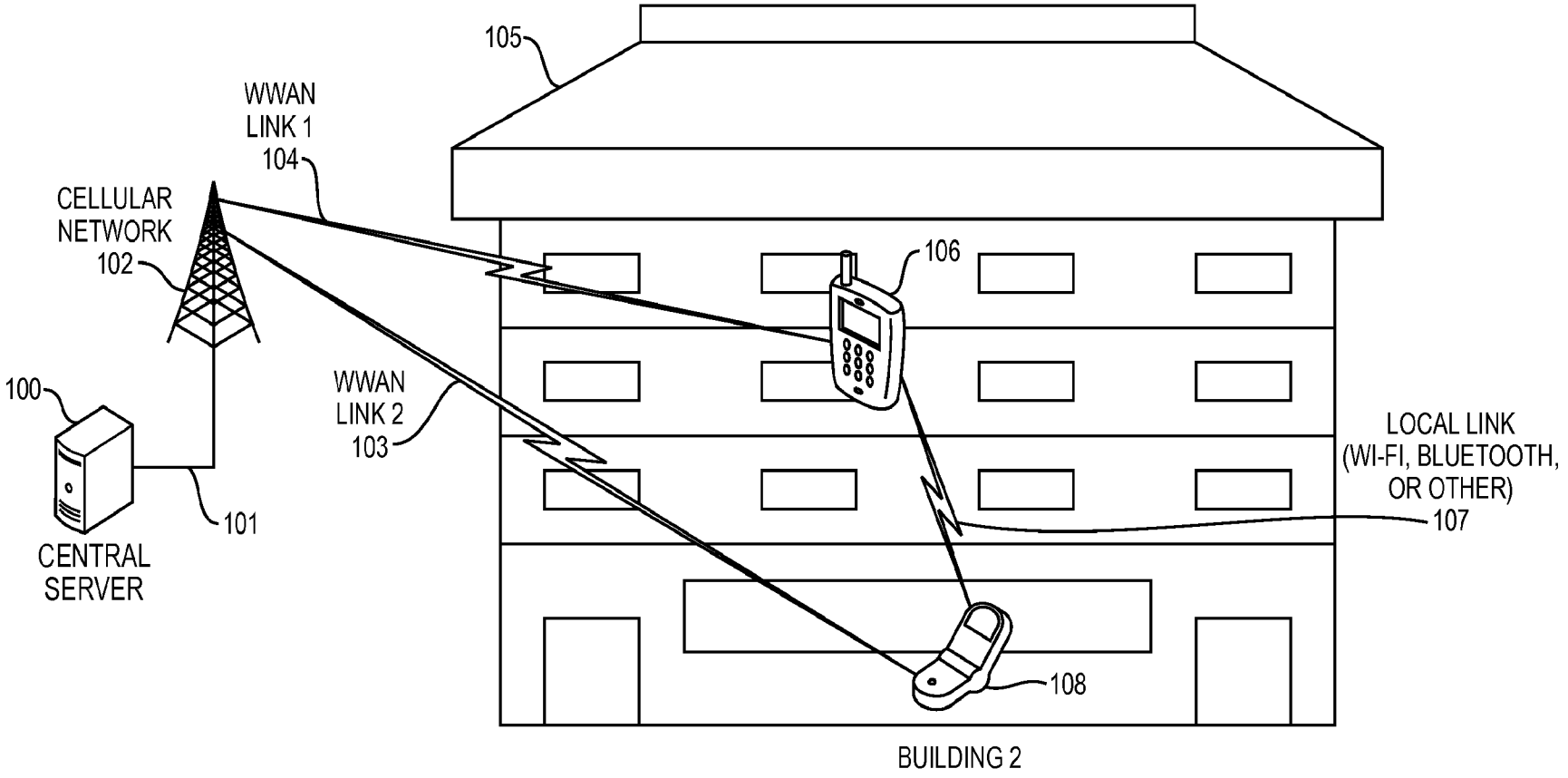


Figure 1

Petitioner Samsung Ex-1004, 0022

Figure 2

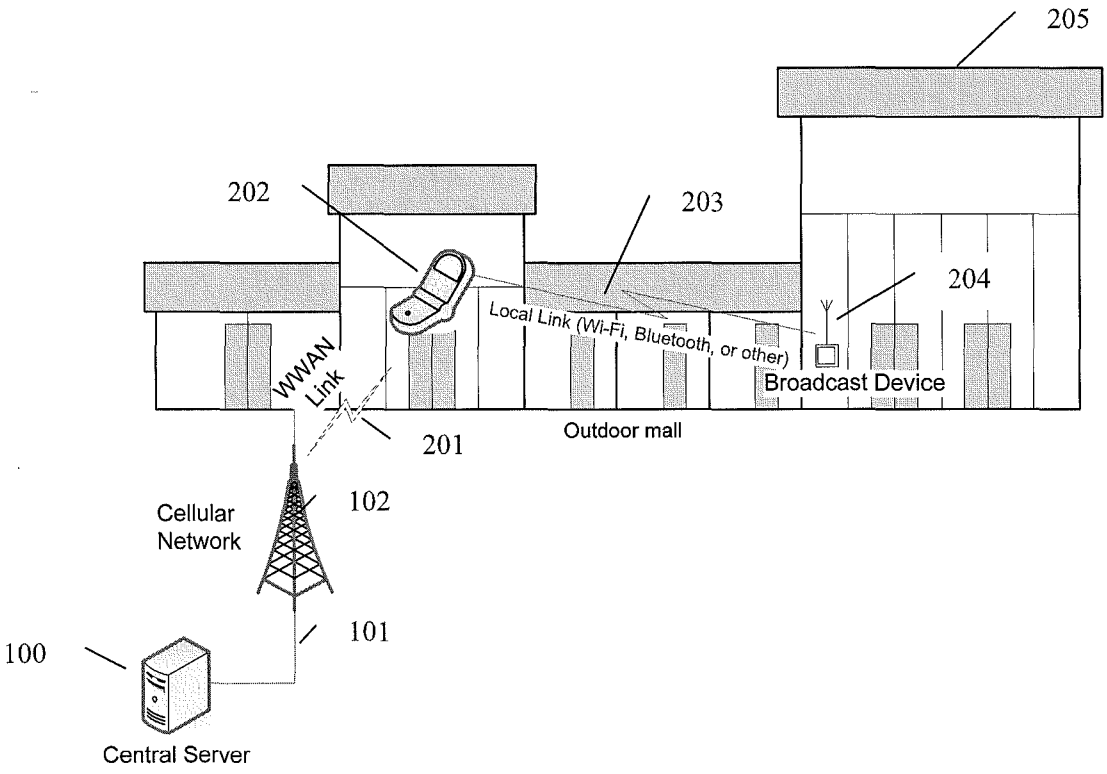
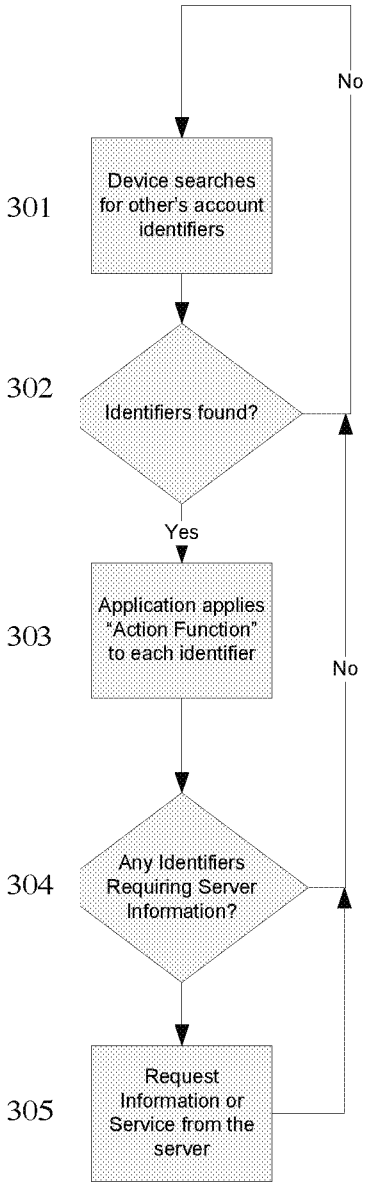

205
202
203
204
Local Link (Wi-Fi, Bluetooth, or other)
WWAN Link
Broadcast Device
201
Outdoor mall
Cellular Network
102
101
100
Central Server

Figure 3


No
301
Device searches for other's account identifiers
302
Identifiers found?
Yes
303
Application applies "Action Function" to each identifier
No
304
Any Identifiers Requiring Server Information?
305
Request Information or Service from the server

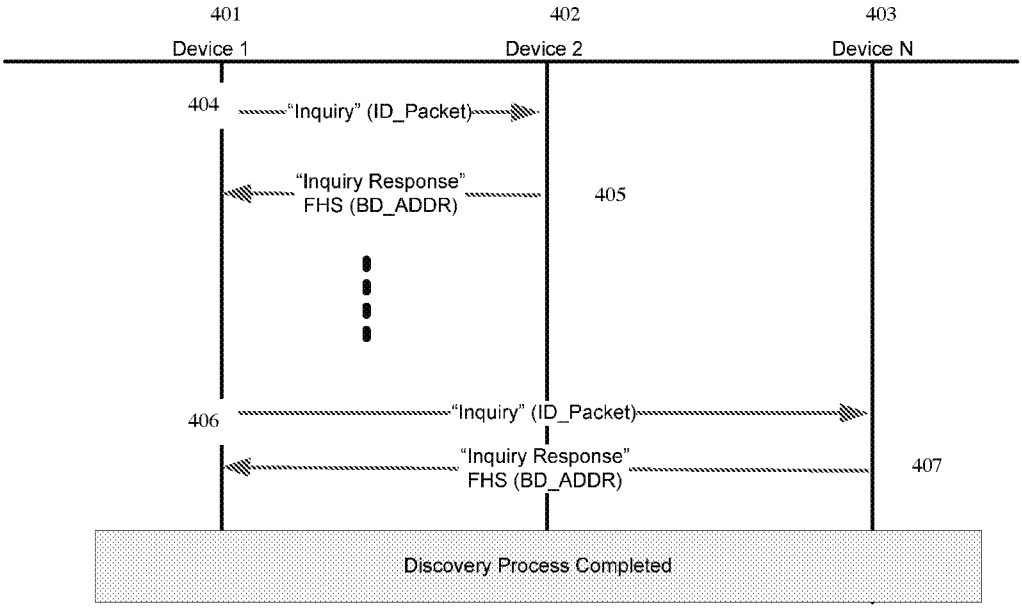


Figure 4 – 802.15.1-2002 (Bluetooth V1.2) Device Discovery

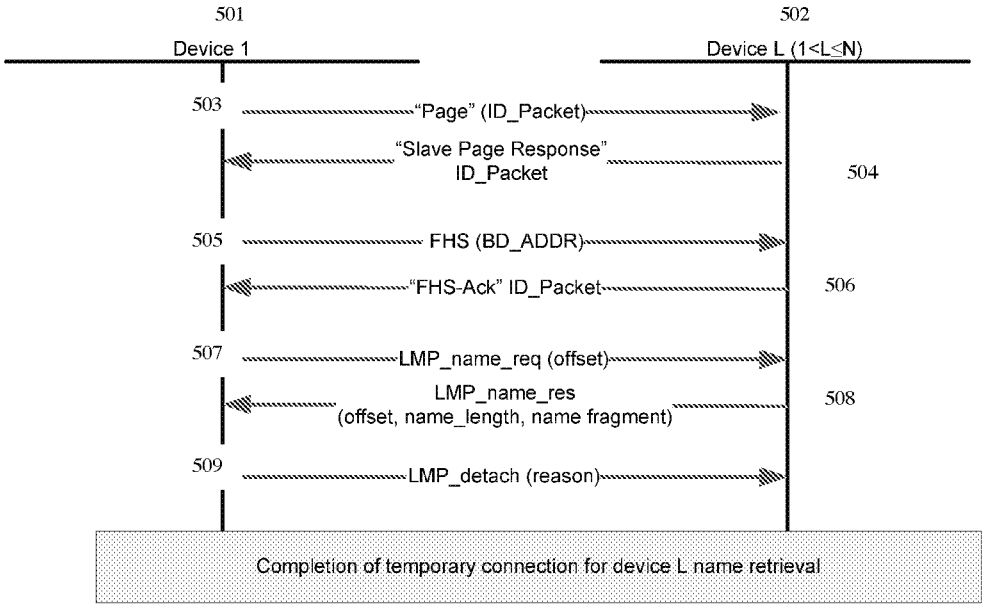


Figure 5 – 802.15.1-2002 (Bluetooth V1.2) Remote Name Request

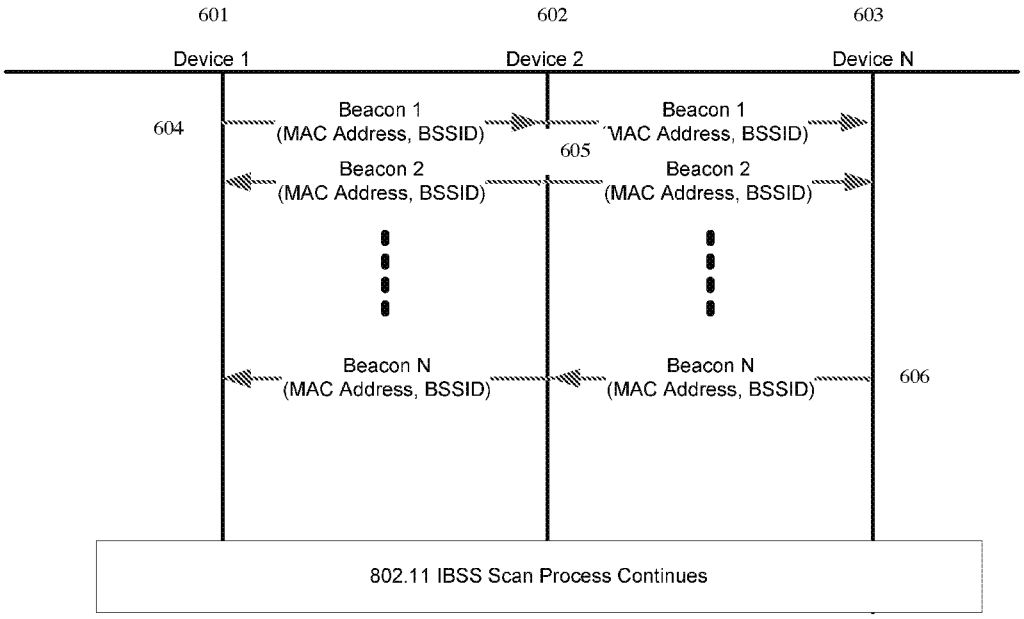


Figure 6 - 802.11 IBSS Beacon Process

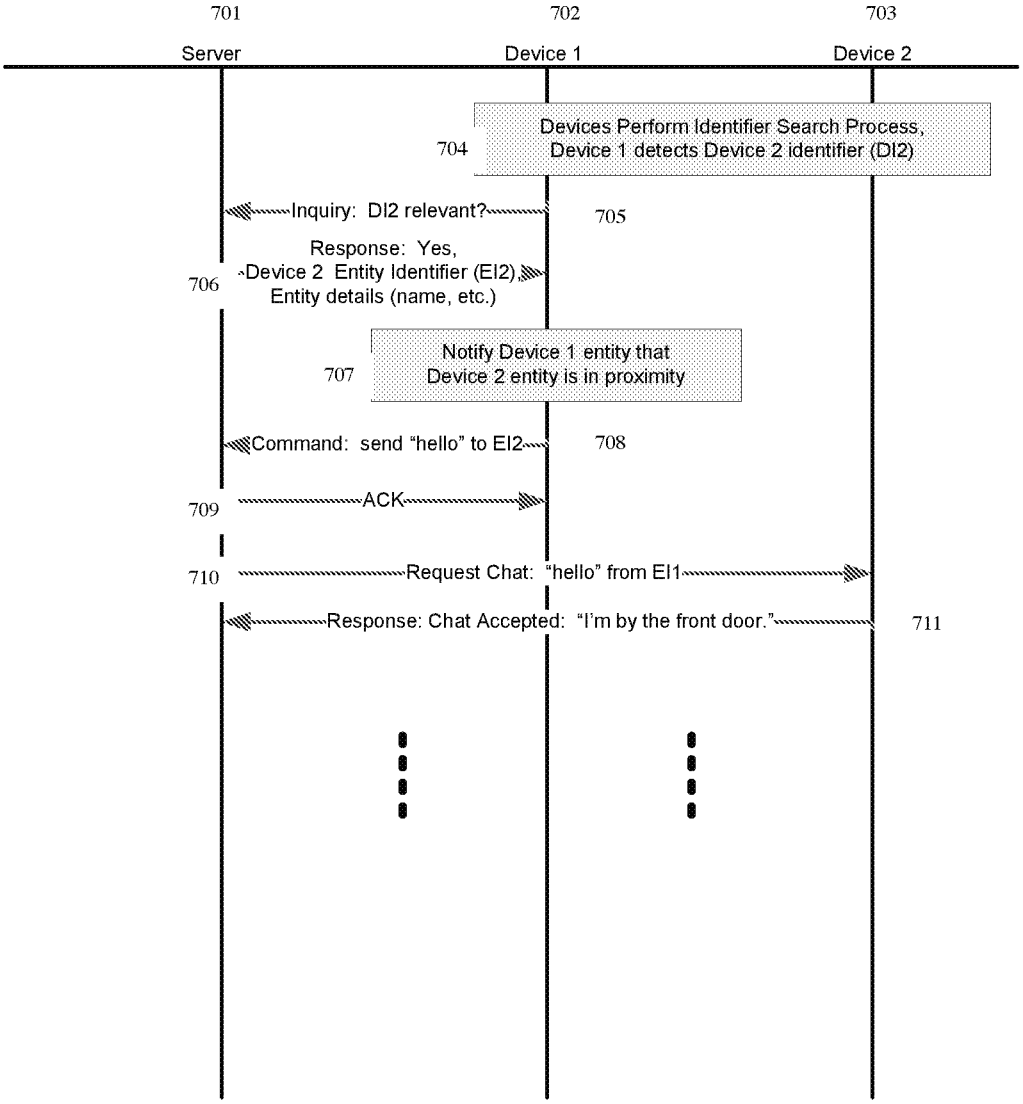


Figure 7 – Process of Detection and entering a Chat Session

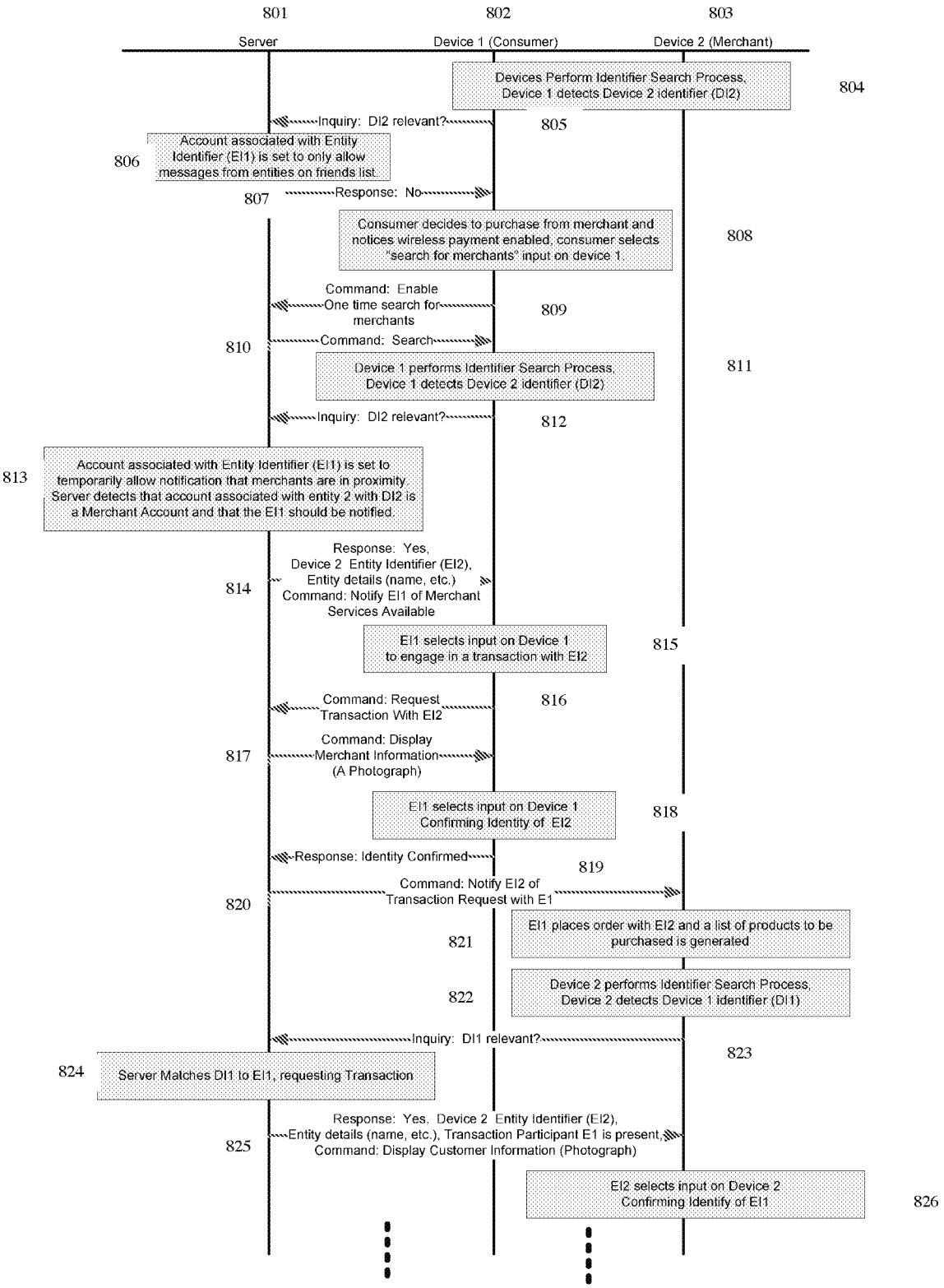
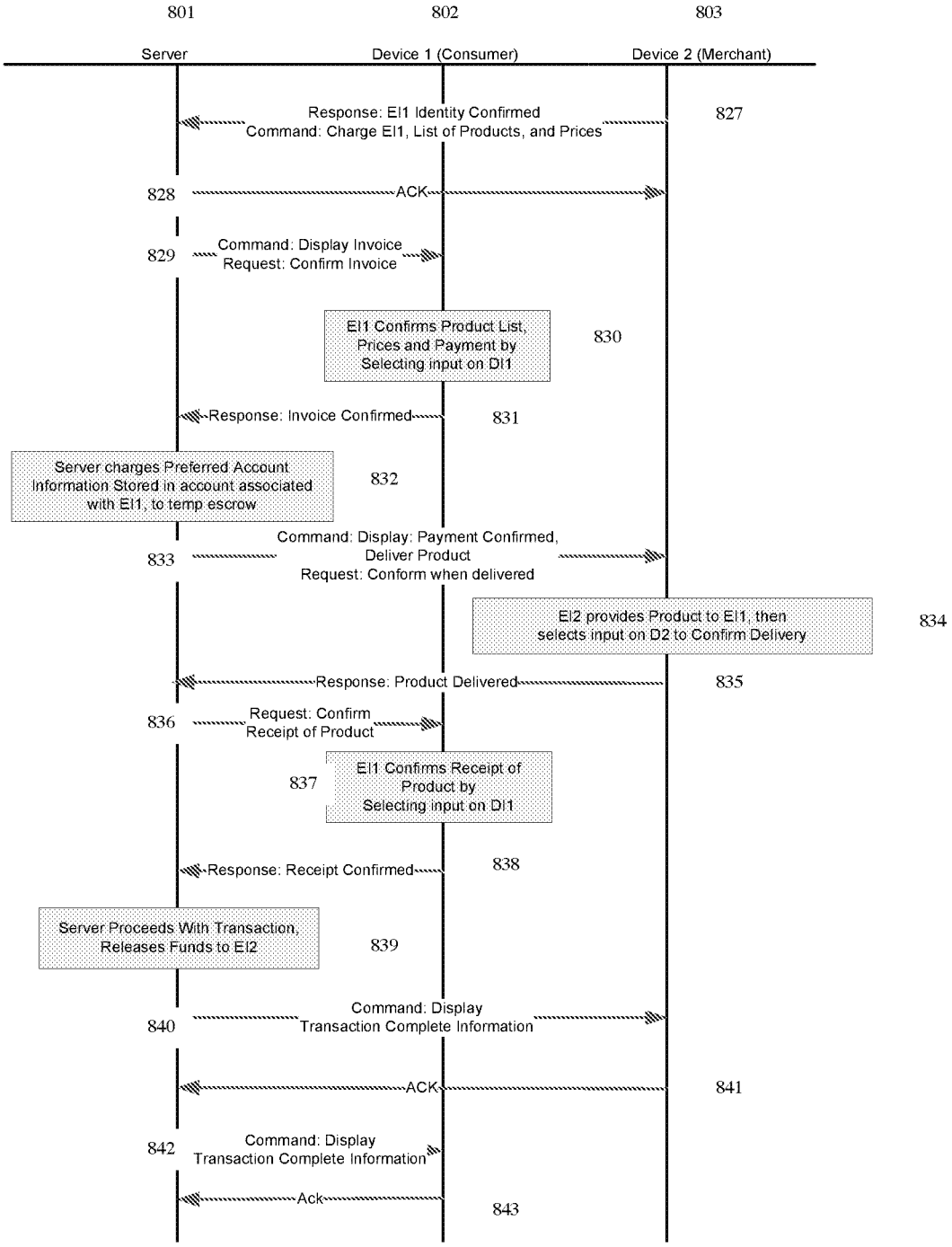


Figure 8A – E Commerce Process

Figure 8B – E Commerce Process Continued



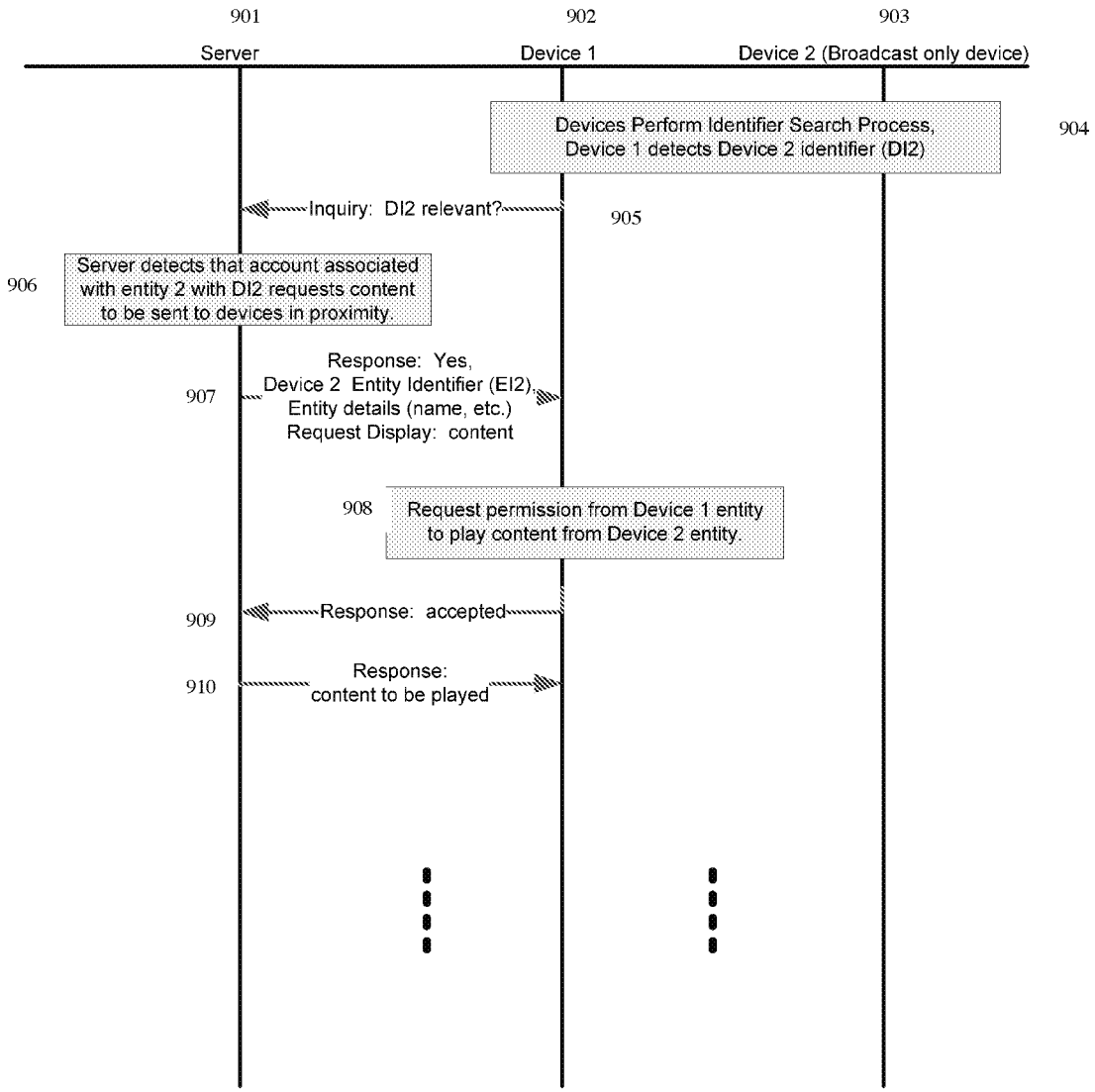


Figure 9 Broadcast and mobile device interaction

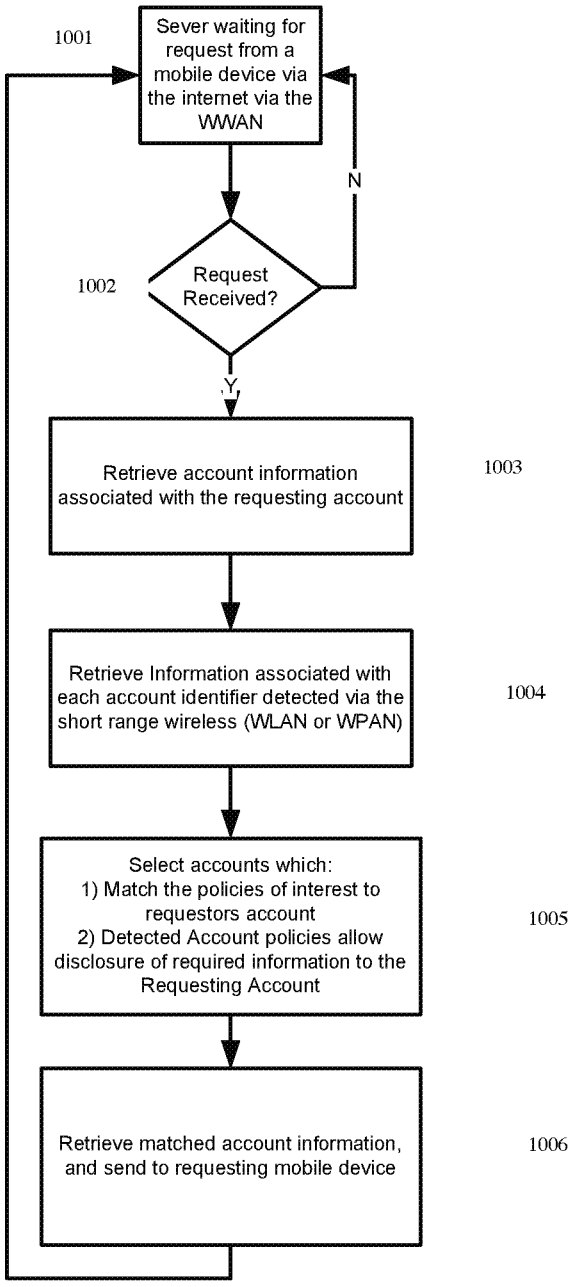


Figure 10 – Server Processing Example for Detected Device

Figure 11 – Example Individual Account Record associated with an Entity Stored in the Server

Record Index	Field	Field Information Group Disclosure Policy Assignments List
1	Account Number	[All, Explicit Approval, NONE, 1..N]
2	Identifier	
3	Identifier Type [Fixed MAC Address, Dynamic MAC Address, BSSID, Device Name]	
4	Number of Fields	
5	Field List	
6	Account User Name	NONE
7	Account Password	NONE
8	Entity Name	
9	Entity Address	
10	Entity Type [Individual, Merchant, Broadcast Entity]	
11	Billing Information	
12	Device Type	
13	Device IP Address	
14	Device SMS Phone Number	
15	Device Capabilities	
16	Entity AutoPlay Script 1	
17	Entity AutoPlay Script 2	
18	Detected AutoPlay Script 1	
19	Detected AutoPlay Script 2	
20	Entity Instant Message Address List	
21	Information Group Disclosure Policy 1 (IGDP#) [Characteristic 1 (C1), C2,.. CN, Friend List 1 (FL1), FL2, .. FLN, etc]	
22	Information Group Disclosure Policy 2	
23	Information Group Disclosure Policy 3	
24	Information Group Disclosure Policy 4	
25	Additional Personal Information Field 1 (APIF#) [Content Type/Content] (Picture, mp3, xml/AJAX, Text, Contact List, URL (MySpace, Facebook, Loopt), Login Credentials (MySpace, Facebook, Loopt, Itunes, etc.), Payment Information (Credit Card Information, PayPal Information, etc.), IM Credentials List (Username/Password))	
26	Additional Personal Information Field 2	
27	Additional Personal Information Field 3	
...		

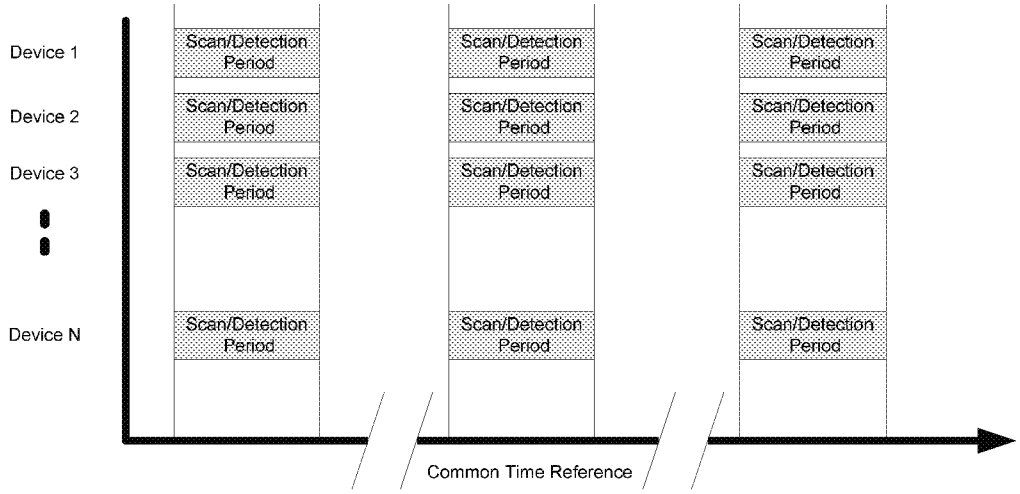


Figure 12 Use of common time reference for intermittent detection intervals

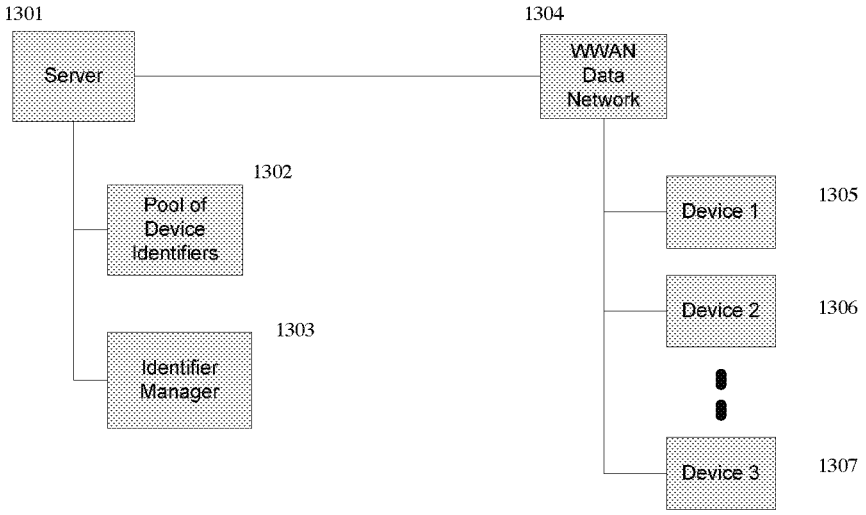


Figure 13 - Management of Device Identifiers by Identifier Manager in the Server

CLAIMS

1. A method comprising:

receiving, by a wireless device, using a short range wireless protocol, a first plurality of beacon transmissions associated with a wireless beacon service, each beacon transmission comprising three fields (a) a MAC address, (b) a unique identifier, wherein the unique identifier of each respective beacon transmission does not directly identify a location of a beacon transmitter, and (c) a beacon service identifier, wherein the beacon service identifier of each respective beacon transmission is a number;

receiving, by the wireless device using a second wireless protocol, stored information from one or more servers, relating to an entity or object associated with a first unique identifier;

selecting one or more of the unique identifiers from the first plurality of beacon transmissions, by filtering the beacon transmissions which include a beacon service identifier indicating that a particular received beacon transmission is associated with the wireless beacon service; and

taking first further action relating to the stored information, if the first unique identifier is present among the selected one or more unique identifiers.

2. The method of claim 1, wherein the receiving, by the wireless device, using a short range wireless protocol, of the first plurality of beacon transmissions occurs in a first time period, and

wherein the method further comprises, during a second time period:

receiving, by the wireless device, using a short range wireless protocol, a second plurality of beacon transmissions, each of the second plurality of beacon transmissions comprising three fields (a) a MAC address, (b) a unique identifier, wherein the unique identifier of each respective beacon transmission does not directly identify a location of a beacon transmitter, and (c) a beacon service identifier, wherein the beacon service identifier of each respective beacon transmission is a number;

selecting one or more of the unique identifiers from the second plurality of beacon transmissions, by filtering the beacon transmissions which include the same beacon service

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identifier indicating that a particular received beacon transmission is associated with the same wireless beacon service; and

taking second further action relating to the stored information, if a second unique identifier is present among the selected one or more unique identifiers, wherein the second unique identifier is associated with the same entity or object, and wherein the second unique identifier is not equal to the first unique identifier.

3. The method of claim 2 wherein the MAC address received in a beacon transmission including the second unique identifier is different from the MAC address received in a beacon transmission including the first unique identifier, but each such beacon transmission includes the same beacon service identifier.

4. The method of claim 3 wherein the second further action is based upon a function currently being performed on a device associated with the wireless beacon service.

5. The method of claim 4 wherein the function is related to
a current phone call,
music being played,
a video being played,
a multi-player game, or
a shared application.

6. The method of claim 2 wherein the first or the second further action is related to receiving advertising information for presentation to a user of the wireless device, based upon the first or the second unique identifiers, or information derived from the first of second unique identifiers.

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7. The method of claim 2 wherein the first further action includes retrieving content from a server based upon information derived from either the first unique identifier or the second unique identifier.

8. The method of claim 2, wherein the first or second further action includes sending a message to another device associated with an account related to the first and the second unique identifiers.

9. The method of claim 2 wherein following the performance of the first or second further action, a server associated with the an account for the user of the wireless device performs a step of sending a message to an email address associated with the account for the user relating to the entity or object associated with the first or second unique identifiers.

10. The method of claim 2 wherein the second further action includes preventing sending of the second unique identifier or information derived from the second unique identifier by the wireless device to one or more servers.

11. The method of claim 1 wherein the first further action comprises:

determining, based upon at least a portion of the stored information, that at least one beacon transmitter is associated with a predetermined location.

12. The method of claim 2 wherein the step of taking first further action further includes, by the wireless device,

sending of the first unique identifier or information derived from the first unique identifier to at least one of the one or more servers, and

receiving the stored information in response.

13. The method of claim 1 further comprising:

wherein the stored information is received by the wireless device from at least one of the one or more servers prior to the performing of the first further action.

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14. The method of claim 2 further comprising:

wherein the stored information is received by the wireless device from at least one of the one or more servers prior to the performing of the first further action.

15. The method of claim 1 further comprising:

wherein the stored information is used to determine if the first unique identifier is present among the first selected one or more unique identifiers.

16. The method of claim 2 wherein all beacon transmitter devices participating in the wireless beacon service have the same beacon service identifier for identifying the beacon transmitters as being enabled with the wireless beacon service.

17. The method of claim 2 wherein the second further action comprises:

determining, based upon at least a portion of the stored information, that the beacon transmitter is associated with a predetermined location.

18. The method of claim 2 wherein one or more of the steps performed by the wireless device are performed as a result of an application program executing on the wireless device utilizing a software interface.

19. The claim of 2 wherein the second further action is related to a product tied to a location.

20. The claim of 2 wherein the second further action is related to an advertisement tied to a location.

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21. The method of claim 1 wherein the first further action includes determining an address or location associated with the wireless device based at least in part upon the first unique identifier being associated with a pre-determined location, and wherein the wireless device is located indoors where a GPS signal may not be available.

22. The method of claim 2 wherein the second further action includes determining an address or location associated with the wireless device based at least in part upon the second unique identifier being associated with a pre-determined location, wherein the wireless device is located indoors where a GPS signal may not be available.

23. The method of claim 2 wherein the second further action includes steps to allow for a user associated with the wireless device to be provided access to an object or device associated with the wireless beacon service.

24. The method of claim 2 wherein the step of taking second further action additionally comprises:

controlling further communications between the wireless device and at least one device or server associated with an entity or object in proximity to the wireless device.

25. The method of claim 3 further comprising:

receiving, by the wireless device, timing notification information for coordination of active times for beacon transmissions.

26. The method of claim 25 wherein the receiving, by the wireless device of the timing notification information is not directly from the beacon transmitter.

27. The method of claim 2 wherein the stored information is used to determine if the second unique identifier is present among the second selected one or more unique identifiers.

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28. The method of claim 1 wherein the MAC address is a randomly generated 48 bit number matching a format of a Bluetooth BD_ADDR.

29. The method of claim 3 wherein the short range protocol is derived from Bluetooth.

30. A mobile wireless device comprising:

one or more radios for providing reception and transmission for each of a Bluetooth wireless protocol and a second wireless protocol;

one or more processors; and

one or more non-transitory memory devices coupled to the one or more processors, the one or more non-transitory memory devices storing a set of instructions that when executed by the one or more processors cause the one or more processors to perform operations including:

receiving from a beacon transmitter, using the Bluetooth wireless protocol, a first plurality of beacon transmissions during a first time period, each of the beacon transmissions including (a) a MAC address, (b) a unique identifier, wherein the first unique identifier does not directly identify a location of the beacon transmitter, and (c) a beacon service identifier, wherein the beacon service identifier is a number indicating that each beacon transmission is associated with a wireless beacon service;

receiving from one or more servers, using the second wireless protocol, stored information related to an entity or object associated with the first unique;

selecting one or more unique identifiers from the first plurality of beacon transmissions, by filtering the beacon transmissions which include the beacon service identifier indicating that a particular received beacon transmission is associated with the wireless beacon service;

taking first further action relating to the stored information, if the first unique identifier is present among the selected one or more unique identifiers; and

and the operations further including:

receiving, by the wireless device, using the Bluetooth wireless protocol wireless, during a second time period, a second plurality of beacon transmissions, each of the second plurality of beacon transmissions comprising three fields (a) a MAC address, (b) a unique identifier, wherein the unique identifier of each respective beacon transmission does not directly identify a location

of a beacon transmitter, and (c) a beacon service identifier, wherein the beacon service identifier of each respective beacon transmission is a number;

selecting one or more of the unique identifiers from the second plurality of beacon transmissions, by filtering the beacon transmissions which include the same beacon service identifier indicating that a particular received beacon transmission is associated with the same wireless beacon service;

taking second further action relating to the stored information, if a second unique identifier is present among the selected one or more unique identifiers, wherein the second unique identifier is associated with the same entity or object, and wherein the second unique identifier is not equal to the first unique identifier; and

wherein the MAC address received in a beacon transmission including the second unique identifier is different from the MAC address received in a beacon transmission including the first unique identifier, but each such beacon transmission includes the same beacon service identifier.

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ABSTRACT

[0209] Systems and methods are provided for reducing communications between servers and a mobile device and providing enhanced security and privacy to wireless beacon services. This can involve a broadcast device transmitting a beacon transmission using a short range wireless radio, such a Bluetooth or WiFi, and including a MAC address, a first unique identifier, and a beacon service identifier. The mobile device then selects one or more unique identifiers from received beacon transmissions, by filtering (that is, selecting) those beacon transmissions which include the beacon service identifier. The wireless device then takes further action, if the first unique identifier is present among the selected one or more unique identifiers, using stored information from the server. The stored information may be delivered to the wireless device in response to the wireless device sending the first unique identifier to a server, or the stored information may have been previously downloaded.

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EFFICIENT AND SECURE COMMUNICATION USING WIRELESS SERVICE IDENTIFIERS

BACKGROUND

[0001] This patent application relates to wireless communication, and more particularly to efficient and secure communication using wireless service identifiers, such as Bluetooth or WiFi beacon service identifiers.

[0002] Most mobile phones on the market today support at least two wireless standards; one for the cellular wireless wide area network connection (WWAN) and one for a wireless personal or local area network (WPAN, WLAN). The cellular connection or WWAN is utilized for voice and data and can adhere to many different standards such as CDMA (IS-2000), GSM, W-CDMA, 1xEV-DO, HSDPA, EDGE, GPRS, WiMax, etc. The WPAN or WLAN connection is typically for short range communications and is often used for wireless hands free devices, such as headsets, peripherals, or higher speed internet connections. The typical standards used for the sort range wireless communications include Bluetooth, Wi-Fi, and in some cases Ultra-Wide-Band (UWB).

[0003] In another approach to mobile networking some services have attempted to utilize short range wireless capabilities often available on phones such as IEEE802.11 (Wi-Fi) or Bluetooth to facilitate peer to peer communications. These are also referred to a MANETs or Mobile Ad-hoc Networks. These services typically consist of a software application operating on a mobile phone using peer to peer networks to facilitate communication between wireless devices. Examples of such existing applications include Mobile-Cheddar, Peer-2-Me, and Flobbi. Published US Patent application US 2008/0182591 A1 filed December 13, 2007 describes one such peer to peer approach.

[0004] One issue with these approaches is that all information to be exchanged must be stored locally on each of the peer devices as the communication occurs directly between the two devices and any policy for the delivery of locally stored content is difficult to enforce without the potential for fraud such as spoofing identities between the peers. Such fraud may lead to concerns of personal safety or privacy allowing the identity of an individual to be determined when it is not desired.

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SUMMARY

[0005] Preferred embodiments are generally concerned with facilitating the exchange of information between two entities associated with two wireless devices. In one embodiment, this can be accomplished by a first device using a first short range wireless capability to detect an identifier transmitted from a second device, ideally using existing short range radio communication standard capabilities such as Bluetooth (IEEE802.15.1-2002) or Wi-Fi (IEEE802.11). The detected identifier, being associated with the device, is also associated with an entity. Rather than directly exchanging application data flow between the two devices using the short range wireless capability, a second wireless capability then allows for one or more of the devices to communicate with a central server via the internet, and perform an exchange of application data flow. By using a central server to draw on stored information and content associated with the entity or entities, the server can manage the subsequent exchange of information between the entities and the devices. In a preferred embodiment, this exchange may be comprised of information stored on the server associated with a detected entity, and it may be comprised of information received from the detected device via the second wireless capability and facilitated by the server.

[0006] In addition, the server can also allow for a brokering service, ideally independent of the entities, to enable the application of policy based on the identity of the two entities for the disclosure of stored information associated with the entities, the flow in information between the devices and the entities, and the enablement of procedures such as security verification between the entities.

[0007] In one embodiment, a method is provided for reducing communications between one or more servers and a wireless device, as well as providing enhanced security and privacy to wireless beacon services.

[0008] The method involves transmitting, by at least one beacon transmitter using a short range wireless radio, a first beacon transmission in a first time period. The beacon, which may be a short range wireless protocol such a Bluetooth or WiFi service beacon, comprises a first MAC address, a first unique identifier, and a beacon service identifier.

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[0009] Using a second radio, the one or more servers also transmit stored information relating to an entity or object associated with the first unique identifier.

[0010] A first plurality of beacon transmissions are received by the wireless device during the first time period.

[0011] The wireless device then selects one or more unique identifiers from the first plurality of beacon transmissions, by filtering (that is, selecting) only those beacon transmissions which include the beacon service identifier.

[0012] The wireless device then takes further action, if the first unique identifier is present among the selected one or more unique identifiers, using the stored information, which includes at least the identity of the entity or object associated with the first unique identifier.

[0013] Other embodiments may transmit, by the same beacon transmitter using the short range wireless radio, a second beacon transmission in a second time period. The second beacon transmission also includes a second MAC Address, a second unique identifier, and the same beacon service identifier. In this embodiment, the wireless device also receives, using the short range wireless radio, a second plurality of beacon transmissions during the second time period, as well as second stored information relating to the entity or object associated with the second unique identifier, from the one or more servers using a second radio.

[0014] In those embodiments, a second set of one or more unique identifiers are selected from the second plurality of beacon transmissions, by filtering the second plurality of beacon transmissions which include the same beacon service identifier. Further action taken is taken related to the second stored information, if the second unique identifier is present among the selected second set of one or more unique identifiers.

[0015] In some embodiments, the further action may include preventing the sending of the first or second unique identifier by the first wireless device to the one or more servers.

[0016] In some embodiments, the MAC address is a randomly generated 48 bit number matching a format of a Bluetooth BD_ADDR.

[0017] In some embodiments, the further action may include determining that at least one beacon transmitter is a broadcast device having a predetermined location.

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BRIEF DESCRIPTION OF THE DRAWINGS

[0018] The foregoing will be apparent from the following more particular description of example embodiments, as illustrated in the accompanying drawings in which like reference characters refer to the same parts throughout the different views. The drawings are not necessarily to scale, emphasis instead being placed upon illustrating the embodiments.

[0019] Figure 1 is a block diagram of two mobile devices utilizing a preferred embodiment.

[0020] Figure 2 is a block diagram of a fixed broadcast device and a mobile device.

[0021] Figure 3 is a flow diagram of the operation of an application on the mobile devices.

[0022] Figure 4 is a message sequence chart showing the Bluetooth discovery process using in one embodiment.

[0023] Figure 5 is a message sequence chart showing the Bluetooth Remote Name Request Process.

[0024] Figure 6 is a message sequence chart showing the IBSS beacon process.

[0025] Figure 7 is a message sequence chart showing the interaction between the server and two devices performing a detection and entering a chat application.

[0026] Figure 8A is a message sequence chart showing an E-commerce example.

[0027] Figure 8B is a continued example message sequence chart showing an E-commerce example.

[0028] Figure 9 is a message sequence chart showing an example of a mobile device and a fixed broadcast device interaction.

[0029] Figure 10 is a flow diagram for the server processing associated with the detection process.

[0030] Figure 11 is an example individual account record stored in the server associated with an Entity.

[0031] Figure 12 illustrates a timing reference for intermittent active and dormant times.

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[0032] Figure 13 shows a diagram of functional blocks associated with management of dynamically assigned device identifiers.

DETAILED DESCRIPTION

[0033] A description of example embodiments follows.

[0034] The teachings of all patents, published applications and references cited herein are incorporated by reference in their entirety.

[0035] Figure 1 is a block diagram of two mobile devices utilizing a preferred embodiment.

[0036] Referring to Figure 1, a central server 100 is connected to devices 106 and 108 by an internet protocol (IP) based network, carried over a series of connections, at least one of which is a wireless connection. For example, the server 100 has a connection allowing IP based communications to a cellular network 102 using connection 101. The cellular network is connected to devices 106 and 108 by wide area wireless links 104 and 103 respectively, allowing for IP based communications between the devices (106 and 108) and the server 100.

[0037] Devices 106, 108 can be considered "client(s)" of the server 100. The clients 106, 108 and server 100 provide processing, storage, and input/output devices for executing wireless system protocols, interfaces, and application level programs according to several embodiments. Client devices 106, 108 can also be linked through various communications networks to other computing devices, including other client devices/processes and other server computer(s). Communications network(s) providing the connection 101 can typically be part of a remote access network, a global network (e.g., the Internet), a worldwide collection of computers, Local area or Wide area networks, and gateways that currently use respective protocols (TCP/IP, 3G Wireless, Bluetooth, etc.). Other electronic device/computer network architectures are suitable.

[0038] The internal structure of devices 106, 108 or server 100 includes one or more data processors (not shown in detail) that are well known in the art to include a system bus for data transfer among the other internal components of a computer system (e.g., processor, disk storage, memory, input/output ports, network ports, etc.). Attached to the bus are other input/output devices (e.g., keyboard, mouse, displays, printers, speakers, network interfaces, etc.). Network

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interfaces allow the computer to connect to various other devices attached to a network. Memory provides volatile storage for computer software instructions and data used to implement an embodiment (e.g., applications programs and the like). Disk storage can provide non-volatile storage for computer software instructions and data used to implement the embodiments.

[0039] One embodiment may include a computer program product including a computer readable medium (e.g., a removable storage medium such as one or more DVD-ROM's, CD-ROM's, diskettes, tapes, etc.) that provides at least a portion of the software instructions for the system. Computer program product can be installed by any suitable software installation procedure, as is well known in the art. In another embodiment, at least a portion of the software instructions may also be downloaded over a cable, communication and/or wireless connection. In other embodiments, the programs are a computer program propagated signal product 107 embodied on a propagated signal on a propagation medium (e.g., a radio wave, an infrared wave, a laser wave, a sound wave, or an electrical wave propagated over a global network such as the Internet, or other network(s)). Such carrier medium or signals provide at least a portion of the software instructions.

[0040] More particularly, a given device 106, 108 uses a short range wireless link 107 such as a Bluetooth (IEEE802.15.1) or Wi-Fi (IEEE802.11) link to detect the presence of other devices such as device 108, and uses the wide area wireless network connections 103, 104 such as IS-2000, WCDMA, GPRS, EDGE, LTE, Wi-Max (IEEE802.16), or the like to perform communications to central server 100, and to perform the actual substantive communications between the wireless devices 106 and 108. Device 108 typically uses the short range wireless link 107 and wide area wireless link 103 in a similar manner to locate and initiate communicate with device 106. One distinction relative to prior art is that the short range wireless 107 is only used for the detection process, or to advertise a device's presence. In this embodiment, specific information called "wireless identifier" or simply "identify" (described in more detail below) is passed between devices 106 and 108 over the short range link 107. By transmitting a wireless identifier using the short range Wi-Fi, Bluetooth or other short range wireless link 107 and receiving wireless identifiers from other devices, this short range wireless link 107 will allow for a proximity detection process.

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[0041] The support for IP based networking is standard for WWAN or 3G connections such as 1xEV-DO or HSPA, and as a result, communication between one device to another using the WWAN is currently supported in many devices with no modification. The use of simple detection of one or more identifiers requires significantly less resources in a phone than performing a complete peer to peer based communication network protocol, which accommodates dynamic configuration of nodes being added and dropped continuously. It is noted that the IP address on the WWAN interface is not location dependent in the present embodiment, but is addressing approaches are location dependent when true Peer to Peer topologies are used. The present embodiment has the advantage that communication between two devices may continue after the devices have left proximity of each other, but in the same manner as they had been communicating previously. As a result, a user who detects a short range transmission of an identifier, then begins a conversation or some other interaction with that device via the wireless wide area network may continue that conversation even in the case where the two devices move out of the proximity of the each other, and are no longer within the reception range of the short range wireless communication protocol. Further, since it is contemplated that the wireless identifiers transmitted on the short range wireless link from the devices would occasionally change, for security reasons, the present embodiment has the advantage that ongoing communications between mobile devices will not be interrupted despite a change in one of the device's identifier. In the case where the identifier is a MAC address of the short range wireless network adapter for one of the devices, it is not otherwise possible to change this address and easily maintain on going communications in a true peer to peer topology.

[0042] Referring to Figure 2, central server 100 is connected to the cellular network 101, and is able to communicate information to and from wireless device 202 using a wide area wireless link such as IS-2000, WCDMA, GPRS, EDGE, LTE, Wi-Max (IEEE802.16), or the like within structure 205. Device 204 does not have a wide area wireless or cellular link, but transmits identifying information using short range wireless link 203. Device 202 is capable of receiving the indentifying information and requesting information related to that device from server 100.

[0043] An example of an application using this infrastructure follows. The device 204 will simply broadcast an identifier, with no WWAN connection but may facilitate advertising or local information. For instance, an account associated with one or more identifiers may belong to a

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museum. As a museum patron walks to an exhibit, the patron's device 202 will receive an identifier sent from museum broadcast device 204 operated by the museum. The patron device 202 passes the identifier or museum device 204 to the central server 100, which in-turn recognizes it as being associated with that exhibit within that museum and passes relevant information back to the user's device 202. A distinguishing feature of this approach relative to prior art is that the patron device 202 in this example may move out of proximity of broadcast device 204, yet continue to view the content being provided by the server 100 related to the detected broadcast device 204. Content may include text, pictures, web pages, application software such as games, informative display applications, or other content such as audio or video to be offered to the user's device as well. Other examples might include electronic coupons (such as in a grocery store), menus or special offers in a restaurant.

[0044] Figure 3 is a block diagram with further detail of this operation. A device 106, 108, or 202 after performing a search (Fig 3, step 301) for identifiers on the WPAN or WLAN, will subsequently use the WWAN link to communicate with the central server 100. If the device does not find identifiers 302 it will either continue to search, or search at a later time 301. If identifiers are found in 302, the device may employ an action function 303, which would act as a filter that determines which of the detected identifiers should be passed to the server. This function may instead be omitted and all identifiers passed to the server 100. The idealized effect of the action function would be to reduce the number of requests to the server by not re-requesting recently requested identifiers which have already been passed to the server, for some period of time. In step 304, if no identifiers require server information, searching is continued in step 301.

[0045] Assuming there are identifiers which are new to the device, the device will pass along a list of currently detected identifiers and request 305 that the server return information related to any other local device. The server will return the information related to any identifier that meets certain policy requirements. For instance, information is returned which is 1) relevant to that device, and 2) that the device is authorized to receive.

[0046] As an example of the overall process, a detected identifier may be relevant to the receiving device if the user associated with the detected identifier is listed in a "friends list" for the owner of the receiving device. If the identifiers for the individuals within the friends list have

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been passed to the device, the action function 303 may make this determination. In the preferred embodiment, the server would determine the identity and the relevance of the detected identifiers, and the action function 303 would work to reduce frequency of re-requests to the server. Figure 7 describes an example of how to use this for messaging associated with the device and server interaction during the detection and identifier inquiry process, with a more detailed explanation to follow.

[0047] To enable server 100 to associate an identifier with an entity, each device or entity (such as the museum) associated with an identifier has an account on server 100 or a related server as is common in information technology. The account is associated with the entity and the device and the current identifier.

[0048] As used herein, an "entity" may be a legal entity, such as an individual person or a business.

[0049] An "object" is intended to include a physical thing, such as a product that is being offered for sale, and may include a tangible article or intangible such as an electronic music or video file or photograph.

[0050] There is various information associated with each account. An example data record for an account is shown in Figure 11. When the account is associated with an individual or (other entity), there may be personal information such as the individual's name, contact information, information regarding allowed communication, such as chat or IM, links to their other social networking services, and the like. When the account is associated with a broadcast device 204 the account may contain content to be displayed to the detecting device 202. By utilizing the central server 100, broadcast devices may be tied to a location or product thereby providing relevant information about the location such as in the museum tour example previously discussed. In this situation, the content delivered to device 202 may be informative information about an exhibit including pictures, text, audio, or video and the like. In the case of a broadcast device being in a supermarket and near a specific product, advertisement or discounts with electronic coupons my be stored in the account and provided to device 202.

[0051] There can also be policy based permissions associated with each account and applied to any information associated with that account. The stored policy permissions can be used to

determine what information and under which situations information may be disclosed to another device or user associated with another account. For example, the entity (person in this case) associated with device 202 may have set a policy in their account to not receive any unsolicited information from a broadcast device so as to not be disturbed. However, the person associated with 202 may see the broadcast device and a sign stating a discount is available, and provide input to their device to request any broadcast information on a one time exception basis. The messaging associated with an example mobile and broadcast device process will be described in more detail to follow associated with Figure 9.

[0052] As already mentioned above, in step 301 of Figure 3, each device performs a search function looking for identifiers sent from other devices utilizing a short range wireless capability. The following describes the process of devices detecting identifiers from other devices in more detail.

[0053] The identifiers themselves may be a hardware address such as the MAC address of the wireless device, or they may be another label such as the SSID for a IEEE802.11 device, or the device name for a Bluetooth device. Referring to Figure 4, in the case where a Bluetooth wireless personal area network device is utilized, a first device 401 transmits an inquiry (ID_Packet) message 404, and any proximal Bluetooth devices 402, 403 respond with messages identifying the MAC address, called BD_ADDR in IEEE802.15.1 of each device using a message referred to as an "Inquiry Response" FHS message 405 containing the BD_ADDR or Bluetooth device address of the detected device. In the Bluetooth standard all devices 402, 403 are required to respond in this manner assuming they are enabled to be discoverable. To enable this, an application on the mobile device ensures the Bluetooth device is set to discoverable mode. Device 1 (401) will attempt to locate Devices on different channels by scanning the channels and transmitting multiple Inquiry (ID_Packet) messages. Such an example is shown with inquiry exchange 406 and 407 to discover Device N (403).

[0054] In one embodiment the BD_ADDR or MAC address of the Bluetooth device can be used as the Identifier and no further Bluetooth interaction is required until the next scan process is performed.

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[0055] In another embodiment, the Bluetooth "Device Name" is used as the identifier. Figure 5 shows the process of a first device "Device 1" (501) determining another Bluetooth enabled device's (502) Bluetooth Device Name. Following the device discovery process completion from Figure 4, Device 1 501 sends a Page message 503 to another device (Device L 502). Message 504 is sent in response to create a temporary Asynchronous Connectionless Link (ACL) to be established between Device 1 501 and Device L 502, without an explicit connection request. Not having an explicit connection request indications the Entity associated with Device L would not have to provide explicit approval for a connection from their user input on the device, as would be the case if other services were requested from the device such as might be the case with a wireless headset or remotely connected GPS receiver to a phone. An ACL connection allows link management packets to be exchanged, and following interchanges of messages 505 and 506 to determine features of the devices, a temporary connection is established between the two devices. A name request message (507) is then sent by Device 1 to Device L, and Device L responds with at least one LMS_name_res message 508 containing the Bluetooth device name of Device L 502. If the name is longer than that allowed within the LMS_name_res message, additional messages follow to allow for the entire name to be delivered. Finally the connection is ended with message 509, LMP_detach.

[0056] The transmitted identifiers associated with any given device are only known to the central server and the device transmitting the identifiers. These identifiers may change from time to time, making a user's or a device's identity anonymous over time. The central server and any particular device must be coordinated such that the identifier and any device transmitting it, remains identifiable by the central server. This process is coordinated between the wireless device, and the central server utilizing the WWAN or cellular data link, carrying messaging between them and using an identifier manager 1303 to maintain a list of device identifiers 1302 in a central but secure location. This is shown in more detail in Figure 13.

[0057] Referring to Figure 6, an example of using on IEEE802.11 link as the short range wireless capability is discussed. Generally, Wi-Fi devices operation in a so-called infrastructure mode which utilizes a BSS or basic service set. One component of a infrastructure network based wireless LAN is the use of a central access point or AP. In a mobile network the use of a central AP is not practical, as only the AP transmits an identifier, which does not meet the requirements

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of the preferred embodiment. The second topology for Wi-Fi networks is the so-called Ad-Hoc mode of operations, referred to as an independent basic service set or IBSS. In an IBSS all devices participating or advertising their interest in participating in an ad-hoc network transmit identifiers called beacons. These beacons contain the MAC address of the transmitting network adapter, the basic service set identifier (BSSID), and ad-hoc network name or service set identity (SSID). The BSSID in a typical ad-hoc network is generated by the first station to enter the BSSID and is locally administered, typically a randomly generated 48 bit number matching the format of a MAC address. In an ad-hoc network, each device 601, 602, 603 participating or desiring to participate transmits a beacon. There are several embodiments related using the IBSS beacons and the identifiers. First the identifier may be used as the MAC address of the station device or network adapter, and one or both the BSSID and the SSID may be used to indicate these particular beacons are associated with a service. In other embodiments, one or more of the BSSID and the SSID may be used as the identifier. In any of the embodiments for delivery of the identifier in an IBSS beacon, it is possible to coordinate the change of those identifiers with the server 100. As the MAC address is always broadcast in any operation of a Bluetooth or Wi-FI link, the use of a MAC address as an identifier provides for an additional level of security for the device 601, 602, 603, when identifier is changed from time to time as devices may be detected and identities tracked using a constant MAC address. In the preferred embodiment, where the MAC address is used for the identifier, all the devices participating would likely have the same network name and SSID to aid in the identification of the device as being enabled, although not necessarily required. Examples using an 802.11 network in ad-hoc mode transmitting beacons are showed as messages 604, 605, and 606.

[0058] Chat Example between two mobile devices

[0059] Figure 7 shows an example of a message flow diagram for an embodiment where an individual is in a library for example, and a friend arrives. The individual is notified by their device receiving an identifier that their friend is present and they enter a chat session. Each person has a device (Figure 1, 106 and 108 respectively) that implements the preferred embodiments described above. The first individual associated with Device 1 (702) referred to as Entity 1 (EI1) performs a detection process as described in Figure 4, 5, and 6 previously (step 704) . The device identifier associated with Device 2 (703), DI2 is thereby detected. Device 1 (702) then transmits an inquiry

message 705 using the WWAN (cellular data link such as GPRS, EDGE, 1xEV-DO, IS-2000, Wi-Max, LTE, or the like) to the server 701 inquiring if information related to the account and entity associated with DI2 is relevant, and available to the entity EI1 associated with Device 1 (702). The server 701 retrieves the account information related to EI1 and determines that EI2 is listed in a friends list in the account associated with EI1 and that EI1 should be notified when EI2 is detected. Next the server retrieves the account information associated with EI2 and determines that EI1 is on a list of entities which are allowed to be notified of EI2 being present and personal information such a the name of the individual, their phone number and the like. The server having determined that EI1 wants to be notified and is allowed to be notified responds in Step 706 to Device 1 (702) with a message indicating the DI2 is relevant to EI1 and including information such as Entity Identifier EI2 and associated details. A user application on Device 1 (702) notifies the user that the entity associated with Device 2 is in proximity in step 707. The user of Device 1 provides input to the device directing it to request a chat session with the entity associated with Device 2 (703), and a message 708 is sent the server 701 commanding "send 'Hello' to EI2". The server acknowledges reception of the message with a "ACK" message 709, in return. Next server 701 sends "Request Chat: 'Hello' from EI1" to Device 2 703. The user of Device 2 accepts the chat and returns a message "I'm by the front door" with message 711, sending it to the server to be relayed to device 1 (702).

[0060] E-commerce between two mobile devices

[0061] Figures 8A and 8B show a message flow diagram for an embodiment where two individuals are performing a financial transaction on the street (for example, a customer and a street vendor). Each has a device (Figure 1, 106 and 108 respectively) enabled with the preferred embodiments described above. In this example, an individual's device would see a vendor and the vendor's device (enabled with various embodiments) would notify them that the vendor was also enabled with a device supporting the identifier search and other protocols described above, as well as being capable of electronic payments. These steps are performed in the following way. In step 804 the customer's device 802 (Device 1) performs an identifier search process as previously described, and detects a device identifier 2 (DI2) sent from Device 2 (803) belonging to the merchant. Device 1 will send a message to the server 801 (also represented by 100 in Figure 1) using the WWAN (cellular data link such as GPRS, EDGE, 1xEV-DO, IS-2000, Wi-Max, LTE,

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or the like) 104 requesting information related to DI2 and its relevance to the entity related to device 1 802. The server 801 then determines the relevance of DI2 based on the account properties stored in the account associated with the consumer Device 1. In this case, the account settings only allow messages from or notifications of entities on a friends list stored in the account record (represented in Figure 10) associated with the consumer. Server 801 responds to device 802 with "no" indicating that DI2 is not relevant to the Consumer.

[0062] The customer, having an account enabled with electronic payments, and wanting an item the vendor has, would press a button or make other input to his phone (or other device) which would indicate they would like to make a purchase and pay using their device (808). In this case the input selection would be "search for merchants." The customer's device would then send a message (809) to the central server directing the server to perform a one time search for merchants, despite the current account settings. In one embodiment, the server would then direct the consumer's device 802 to initiate another search (809). Other embodiments may not include the server commanding Device 1 (802) to perform the search, but rather the search may be performed automatically, or use results from a recent search. In Step 811, Device 1 (802) performs another search and detects the identifier from Device 2 (803), DI2. Device 1 then sends a message 812 to the server again requesting information for all relevant devices detected, which will include at least DI2. In Step 813 the server, having received the request and list including DI2, looks up account information associated with DI2 and determines that the associated entity is a merchant. As the settings of the account associated Device 1 now allow for the notification of the user when a merchant is detected in proximity, DI2 is determined to be relevant to Device 1 and the Entity 1 (EI1) should be notified. The server then sends a message 814 to Device 1 (802) stating merchant services are available in proximity with a list of available merchant's information including information related to the entity (EI2). The user of device 1, Entity 1 (EI1) then provides input in step 815, (pressing a soft key on a touch screen for instance), selecting the specific merchant EI2 to engage with in a transaction. Device 1 (802) will then send a message (816) to the server requesting a transaction with EI2 associated with Device 2 (803). The server (801) will then respond in this embodiment with a message 817 to Device 1 confirming receipt of the requested transaction and providing information to allow the EI1 associated with Device 1 to independently confirm the identity of EI2 associated with Device 2 (803). In this embodiment the identifying

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information can include the name of the merchant, the merchant's logo, a picture of the vendor, or their mobile shopping cart. In other embodiments, the picture may be of a specific unattended vending machine in the location it is currently operating. It may also include other information such as the address of the merchant in cases where a fixed store location is provided. As this particular merchant in this example is a street vendor, an address may not be used. GPS information stored in the account associated with Device 2 may be used as further confirmation in some instances. However, in this example, GPS coordinates are not be available on Device 2 due to lack of capability, or Device 2 being indoors and without sufficient signal to determine a location. Further GPS information from Device 1 (802) may be used to provide further confirmation information. In this embodiment the photograph sent in message 817 shows a picture of the particular merchant and also his city issued business license in text and as a picture of where it is displayed on the cart. The consumer entity EI1 provides input to Device 1 in step 818 confirming the identity of EI2, the merchant entity associated with Device 2 (803). Device 1 then sends a message 819 to the server 801 confirming the identity of the merchant.

[0063] Server 801 then sends a message 820 to the merchant's device 803 notifying them of the request for a transaction with EI1. Device 2 (803) then indicates to the merchant that a customer with the capability and desire to pay electronically is in proximity. In step 821 the customer associated with Device 1 (802) places an order with the merchant associated with Device 2 (803) and a list of products to be purchased is generated and the merchant provides input to Device 2 (803) to proceed with a electronic transaction. In step 822 Device 2 performs a scan of identifiers and DI1 associated with device 1 (802) and the Consumer is detected. A request is sent to the server 801 with a list of identifiers which were detected to determine if any of them are relevant to the merchant. Note that while the merchant device 803, (and the merchant) have now been notified of the desire for EI1 to enter a transaction, they do not necessarily know the identifier for EI1 yet. In other embodiments, the identifier associated with EI1 and Device 1 (802) may be sent in message 819, and a confirmation that this identifier is detected during the scan process 821 may be performed at the device. In the preferred embodiment, further security may be provided by the having the server perform this function independently. The server performs this confirmation in step 824 may matching the device 1 identifier DI1 with the information stored in the account associated with Entity 1 (EI1) also referred to as the Consumer.

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[0064] The server than generates a message 825 to Device 2 (803) indicating that EI1 is relevant, and the transaction participant is present. The message in the preferred embodiment can also include a picture of the Consumer. Additionally, the message could also include other pictures of other individuals allowed to use this device for purchases. If more than one identifier was detected in step 822 and matched in step 824 to entities having requested transactions previously which are pending for that merchant, a list of information for each entity involved with a pending transaction request can be provided in message 825. The merchant then selects the correct consumer using the picture of that consumer, confirming the identity of the part to the transaction in step 826. The consumer information provided in message 825 in another embodiment may simply be the name of the customer and the merchant may either ask their name, or request identification such as a driver's license. In the preferred embodiment, where a picture is passed in message 825, it is not necessary that the individual's name be passed to the merchant for the merchant to be able to provide confirmation of the identity of the Consumer thus providing a level of anonymity to the transaction such as may be present when cash is used.

[0065] Following the confirmation by the merchant of the identity of the Consumer participating in the current transaction in step 826, Device 2 sends a message 827 to the server confirming the identity of the Consumer as Entity 1 (E1), and with information required for the transaction including the list of products to be purchased, their prices, the total price, and a request to charge E1 this total amount. Server 801 then confirms receipt of this message in step 828. The server then sends a message 829 to Device 1 requesting the Consumer to confirm the list of goods to be purchased and the total price to be paid. In step 830, the Consumer (Entity 1) reviews the list and amount to be paid and provides input to device 1 confirming the accuracy of the information and they the authorizing the server to pay. In step 832 the server charges E1 utilizing stored preferred charge card information, stored credit, or other payment methiod such as a PalPalTM user name (PayPal is a trademark of Ebay, Inc.) and password stored in the account associated with E1, and charges the consumer. In the case where a stored credit is used, the Consumer's account can be debited, and the credits not applied to the merchants account until a later step. In the case of a credit card, or PalPalTM transaction, the server provides payment to E2 (the merchant) utilizing information stored in the account associated with Device 2. The server then indicates payment is made to the merchant, and instructing the merchant to deliver the goods

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with message 833. E2 (the Merchant) then provides the goods and provides input to Device 2 that the goods have been delivered in step 834. Message 835 is generated by Device 2 (803) to the server confirming product delivery, and acknowledging the receipt of the payment confirmation message 833. The server can then send message 836 requesting the Consumer to confirm they received the goods. If a confirmation is not received in response to this request, this information may later be used to settle any dispute that might arise. In step 837 the consumer confirms receipt of the products, and message 838 is generated to the server confirming the receipt of goods by the consumer. In Step 839 the server concludes the transaction by completing any steps required to credit the Merchant with the payment amount from the Consumer, if required. The server then sends a message 840 to the Merchant indication the transaction is complete, which is acknowledges in message 841. The Consumer is notified of the completed transaction with message 842, which is acknowledged with message 843.

[0066] Finally, the transaction details may be stored by the server, or sent to a thirdly party server for tracking spending habits of that account holder, or customers of that merchant allowing the merchant to track that specific customer's behavior and cater to them in the future with various specials delivered via email, or during their next visit via their device in the form of an electronic coupon. This process can be performed with a goal to help the merchant expose the customer to other products or services the merchant believes the customer might find desirable.

[0067] The apparatus, systems and methods can be extended to facilitate other types of transactions as well. In one specific application, consider use of the invention to facilitate a transaction such as the rental of an automobile. A well known business called ZipCar TM, presently operating in several major urban areas in the United States, makes available a fleet of vehicles for shared use by their club members who pay a monthly fee plus a per use charge. Using the embodiments herein, the club member would have a wireless device that serves as the "Consumer device" (Device 1) and the ZipCar vehicle would be equipped with a wireless device serving as the "Merchant" device (Device 2). The consumer would walk up to an available ZipCar vehicle and, using their wireless device, start an initial exchange of identifiers with the desired Merchant device, for example, using the short range local wireless network. The Consumer device and/or Merchant device would send a message to an application running on the Server requesting that a person associated with an account for the Consumer be granted access to a specific vehicle

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(e.g., an "object") that is in the vicinity of and associated with the Merchant device. A set of confirmatory messages (such as to exchange access codes, to confirm the location of the vehicle, the per-use fee due, and payment for the same, etc.), are then typically also exchanged between the Consumer and the Merchant device with the assistance of the Server and the long range wireless network. Upon confirmation of the necessary transaction information, the Server sends a message to the Merchant device to unlock the vehicle requested (which may be sent over the second long range wireless network or a yet another network, such as a satellite network).

[0068] Example of a Mobile Device and a Broadcast Device.

[0069] Figure 9 shows a message flow diagram for an embodiment where an individual is in the presence of a broadcast device, such as for the museum example of Figure 2. As with Figure 2, the individual device 202 and the broadcast device 204 are present and enabled. In this example, an individual 902 is in a grocery store and their device 902 (Device 1) performs a scan for identifiers in step 904, as described previously. DI2 is detected having been transmitted from device 2 (903). Device 1 (902) sends a message to server 901 inquiring if DI2 is relevant to the entity associated with Device 1 and if the information associated with that device identifier (DI2) is available to be returned. In step 906, the server retrieves the accounts associated with both DI2 and Device 1 (EI1). The server detects that the entity associated with DI2 is an advertisement company, and that this device is a broadcast device only, and that there is an electronic coupon available for download to Device 1, and multimedia content available to be played if desired. Additionally, the account settings associated with EI1 allow for the notification of broadcast devices in proximity.

[0070] Server 901 then transmits a Response message 907 indicated the presence of the detected device and the content available. The device 902 requests input from the entity associated with the device 901 for permission to download the coupon, and the availability to play content such as video about how to prepare a recipe using the vendors product. In this case the individual associated with Device 1 accepts the content, and a message 909 is sent to the server accepting the content. Response message 910 begins the delivery of the content.

[0071] As previously mentioned, several key distinctions of this embodiment include that the user of device 902 may walk away out of range form the broadcast device 903 and continue to

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receive the content using their cellular link, or may choose to play the content at a later time having stored the detected like in a favorites list. Additionally, the content stored in the account associated with the broadcast device 2 (903) is relevant to the placement of the device and the products near it. Further, as the content is stored in the server 901 rather than in the broadcast device 903, the content may be updated, modified, or deleted at anytime. For example the server 901 knowing that the consumer has never been detected previously, may customize the electronic coupon to provide a deeper discount than a regularly detected consumer. In the case where the devices are used for electronic commerce as in Figure 8, knowledge of the user's past purchases may be used to induce the consumer to try a new product. Alternatively if the consumer is a regular purchaser a loyalty program may provide a coupon upon a particular number of repeated purchases.

[0072] Figure 10 is a processing flow chart performed by the server receiving a request from a device inquiring about the relevant and availability of information associated with detected device identifiers. In step 1001 the server is waiting for a request from a device. When a request is received in decision 1002, step 1003 is performed. In this step the account information associated with the requesting device is retrieved. In step 1004 the information associated with the accounts for each of the detected device identifiers is retrieved. In step 1005 the server performs a matching process between the policies of the requesting account and each of the policies for each account associated with each detected device identifier. In step 1006 the information related to the matched policies for the associated entities will be sent to the requesting mobile device.

[0073] Just as in the previous example of an identifier being deemed relevant to a user based on a friends list, permission for disclosing a device's presence may require being on a friends list as well. For example, when a server receives an inquiry from a device with a list of identifiers, it may only respond with information for users associated with the identifiers that are on that device's friends list, and on each of the individual's friend lists as well. These friends' lists and policies can be stored within a user account which allows for disclosure of a user's presence only to individuals on this list, such as described in Figure 11 (to be described below.)

[0074] It is contemplated that the permissions not be an "all or nothing" decision, but that different classes of information may be assigned different permissions and mechanisms. An

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example of this might be a user's presence, identity, and cart services being made available to only one set of other accounts (or users), while the presence of an anonymous individual being made available to anyone, but with other classes services available such as multi-player games being treated differently. Additionally multiple contacts may be included in the account, each given customized permissions. An example can be that any user may be notified of an anonymous user or other information based on additional policies.

[0075] As only the server contains personal information, and performs the association of an account with a particular identifier, it can inherently enforce the security of the policies as a distinct advantage relative to true peer to peer services. In this way, the central server controls the process of passing information related to an account to a particular requesting device.

[0076] Figure 11 shows an example account record to be associated with an entity and at least one device. The columns of the account record can consist of a Record Index which will be used to described the account, a Field which is a descriptive name for the contents stored in the record, and a Field Information Group Disclosure Policy Assignment List (PAL). The PAL provides rules for the disclosure of the information in the associated row in the Field column. The following list are possible PAL entries:

[0077] ALL: may be disclosed to any requesting entity

[0078] EXPLICIT APPROVAL: the Entity associated with the account must provide input approving the disclosure of the information

[0079] NONE: Do not disclose this information to any other entity

[0080] M: where M is a integer from 1 to N indicating a Information Group Disclosure Policy which may consist of a list of contacts, friends, groups, characteristics, and the like.

[0081] Most of the fields in Figure 11 are self explanatory and typical in the industry such as the account number, however a few fields are worth a clarifying discussion. The Device identifier is in record index 2, with a Identifier type in record 4. The identifier type can define what type of identifier the device associated with this account would use. Record index 10 is the Entity Type Field. This describes is the entity is a Merchant, Individual, or if the device associated with this account is a broadcast only device.

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[0082] Referring now to Figure 12 a timing map reference for scanning times and dormant times for devices is shown. In one embodiment, it is desired that the power consumption and scan timing for the devices in a cellular network be reduced. Since the server and the WWAN is involved with all mobile devices, coordination of the broadcasting periods and the searching periods for the short range radios is possible. This can be based on a common reference time such as that provided by most cellular systems, any the time of day clocks inherently within mobile devices. This allows for reduced power consumption and other resource consumption in the devices. If no coordination is achieved, then the short range receivers in each device must be scanning for transmitted identifiers much more often and for longer durations. Utilizing a common timing base, and the central server to notify the devices of a coordination approach for "active times" and "non-active times" and will allow for the devices to minimize the power consumption in the transmission of and scanning for identifiers. This approach also allows for synchronizing the update of each device's identifier (as described previously) to enhance anonymity and security, coordinated with the central server. The "non-active times" may be used as "boundaries" over which the changing identifiers may be updated. This update may be based on either direct communication with the server, or rule and algorithm based updates previously coordinated with the central server so as to minimize server messaging, but allowing the updates to remain synchronized to the server such that the device and the server are always associating the same identifier between them.

[0083] As will be recognized by an individual skilled in the area of information technology, the concept of a central server may well be implemented as a collection of servers to allow for load balancing, redundancy, and the like in a manor common to the information technology industry.

[0084] Figure 13 shows a diagram of functional blocks associated with the management of dynamically assigned device identifiers. The Server 1301 has an application agent called an Identifier Manager (1303) which has access to a pool of device identifiers (1302). The Identifier Manager monitors timing information and determines when it is time to update a particular device's identifier. This time may be a regular interval, or a random generated time period by an algorithm such as a pseudo-random sequence generator, or a combination of both. When it is time to update a device identifier, Manager 1303 retrieves a new identifier form the pool 1302. The pool of identifiers may be a list or range of identifiers, or generated algorithmically. The new

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identifier is stored in the account associated with the entity determined to require updating and a message sent to the device 1305 associated with that account commanding it to update its device identifier with the new one. This messge is sent over the WWAN Data network 1304 such as IS-2000, HSPA, GPRS, IS-95, Edge, Wi-Max, and the like. All devices 1305 to 1307 will eventually all be updated in a similar manner. This update process does not disrupt ongoing communication and interaction between devices despite the update as the communications are preformed based on the identity of the entities following the detection of the device identifiers which are no longer utilized. This unique capability allows for the updating process to be implemented and not impact the applications being utilized concurrently.

[0085] Other example applications utilizing still other embodiments follow below.

[0086] Requiring the brokering of the communication via a central server can also allow a mobile device to receive information associated with a "broadcast only" device, such as in the museum example discussed previously. This is important, as such broadcast devices can enable a vast set of new applications built upon the infrastructure developed in this application, beyond the museum application. Some of these applications may involve an electronic commerce aspect, for example.

[0087] Electronic Commerce Applications

[0088] Ecommerce between a fixed broadcast device and a mobile device

[0089] Football stadium example

[0090] An embodiment of a transaction model, enabled by the infrastructure described above can be an event such as a concert, or sporting event (particularly when it is an indoor venue where no GPS is available). A number of the broadcast only devices are placed through out the seating areas. The devices are very short range, and only transmit intermittently and as a result may be battery powered and to remain active over a very long time period. Each device can be placed in a known location, in a predicable manner.

[0091] An attendee at the event has his or her device enabled with the identifier protocol and other embodiments described above. The device detects a broadcast device, and interacts over the internet with the server via the WWAN connection (as already described above). The server

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receives an indication of the broadcast device's identifier and the identifier of the account associated with the device which detected the broadcast device. The server retrieves content associated with the service provider's account and provide that content to the application on the requesting mobile device. The content may indicate that the venue has a product delivery service. The user may then press an indication on their device that they would like to see a menu or list of items for sale from the merchant(s) in the venue. The application on the user's device would then allow them to see a menu, for instance, and select items to purchase. The user then would be asked to confirm the purchase. The server would then indicate to the merchant that a user located near a specific broadcast device has ordered something. In this case, it is expected that a delivery fee could also be charged for the enhanced service. The server would facilitate the purchasing of the goods or services from the merchant and payment from customer's account, and provide confirmation to each. Such confirmation can include an electronic receipt provided to the customer, for user upon arrival of the delivery person of the good or service. The customer can then select an indication on their device confirming receipt of the good or service via the mobile device, thereby completing the transfer of funds and the transition. Optionally, the delivery person of the good or service may have an enabled mobile device as well. In this case the identifiers may be detected by the customer's device and reported to the server to confirm that the provider's delivery person was present. Further, the delivery person's device can be able to detect the broadcast device's identifier and reported to the server confirming the delivery person was in the correct area independently. Even further proximity confirmation may be achieved by the customer's device's transmitted identifier being detected by the delivery person's device and reported to the central server further confirming the physical proximity of the parties involved in the transaction. Upon arrival of the delivery person, the customer may be notified that the delivery person is looking for them, and has arrived. These cross confirmations can allow for the central server evidence to justify payments both in completed transactions and in disputed or failed transactions. Further, the delivery person may receive a picture of the requesting customer assisting to identify the customer to whom the food is to be delivered. Once the customer is found, the delivery person can confirm the delivery of the good or service to the customer via the user input on their mobile device, and that confirmation being reported to the central server. The

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customer can have the option to report confirmation or denial of the reception of the product or service as well, as in the last example.

[0092] In another embodiment, the merchant device may be fixed, but have an internet connection (wireless or otherwise). Further, in some embodiments, the merchant may be an automated device such as a vending machine. In such a model, a customer may use their enabled cell phone to purchase an item such as a beverage from the machine without the need to insert currency into the machine. This can be accomplished by the customer's cell phone detecting the vending machine transmission of the identifier or visa-versa. Following the detection of either the customer's identifier by the vending machine, or the customer detecting the vending machine identifier, the respective device notifies the server, which in turn provides notification (assuming the account settings allow for notification) to the potential customer via their device. Assuming the customer selects to purchase an item from the vending machine using their account associated with their device, the customer may be presented a menu as in the example above. The customer may further be presented information to ensure the identity of the vending machine, such as a description of the machine, a machine identification number, or a (most likely) a picture of the machine where it is located. The customer can then confirm this is the machine they are interfacing with, and select to pay via their account. The customer may in one model select the item to dispense by input to their phone, or they may simply select to provide payment to the machine allowing them to make the selection manually as is the typical mode of operation today. The vending machine can then interact with the server via its own internet connection, and participate in the transaction in a manner similar to the mode described above allowing for step by step confirmation as previously described.

[0093] Electronic opinion polling, tied to a known location.

[0094] In a much simpler example, such a capability might be used to tie a survey to a known location in such a way as to provide an e-coupon to the survey taker on their device in return for completion of the survey. Alternatively, this type of interaction can enable a very large crowd to interact with a Jumbo-Tron like display to provide input to polls or to participate in group activities. Users at different locations in a audience may form teams and interact with other teams for group activities.

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[0095] Other Preferred Embodiments

[0096] Applications running on a device may also interact with the server to perform various functions, for example retrieving information associated with an entity or device, by utilizing a detected identifier. Such information may include stored content associated with the entity's account record such as music, pictures, links to social networking sites, instant messaging addresses, advertising content, and even executable scripts or application such as in AJAX. An example of such an application may include the detection of a device's identifier in a fixed location allowing for tour guide like information to be provided for that location.

[0097] As the server may be running applications which perform more function than just the retrieval of content, a pre-defined interaction process may also be applied by the server to the devices such as allowing the approval to share private content with the entity associated with the detected device. This process may eventually allow or disallow the sharing of information and to facilitate the interacting with another entity.

[0098] As a more complex example, in other embodiments, the devices may utilize the server as a third party to provide for new capabilities such as a secure three way e-commerce transaction between two entities. In this more complex process, the server may require confirmation of each party's identity with visual cross verification of the parties using pictures or other unique identifiers. The server may use this visual cross verification in conjunction with detecting that the individuals are in proximity with each other. The server may verify the proximity using GPS or using the peer to peer detection process in another embodiment. Further, the server may facilitate a process requiring each party to perform a step by step confirmation during the transaction including the stages of: the request for purchase, the payment, the receipt of goods and services, and the providing of payment receipt.

[0099] This differs from the approaches employed by prior art location aware mobile social networking techniques in that no GPS is needed to determine when one device is in proximity to another. Many wireless devices in use are not GPS-capable, and even when they are, GPS will often not operate indoors or where the GPS signal is weak. Using a peer to peer detection process to locate nearby devices allows for the operation of proximity detection indoors.

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[0100] Preferred embodiments can also differ from known peer to peer based social networking in that the information flow between the devices running the applications are over the wide area network via a central server, rather than carried over the peer to peer network itself. An example of this is a service called Flobbi, as discussed previously, where community members can identify each other via Bluetooth transmissions, then interact with chat. The messaging in this case is carried over Bluetooth itself. A distinction from such peer to peer approaches is the use of a central server to "broker" the transactions between peers, enhancing the ability to manage security and information disclosure. Such use allows for the opportunity to customize delivered content to include elements such as advertising or other content customized to the recipient based on additional information such as known personal purchasing history, or interests.

[0101] A further distinction of the preferred embodiment is the use of a central server to determine identities of detected peer devices, which additionally allows for secure and fraud resistant application of policies for the disclosure of information and content. An issue with the existing pure peer to peer approaches is that they are not capable of enforcing policy associated with the disclosure of information to unknown entities in a secure and fraud resistant manor. One reason for this is that information related to a user's device must be disclosed in the process of detection in the form of a static identifier. By the nature of the identifier, it must be static or peers would not be able to directly determine the identity of a friend over time with the information stored on their device. By using a central server, the system may coordinate the change of the identifiers from time to time such that the disclosure of an identifier by one device to another does not compromise the identity of the device. In this case the identifier may be assigned from a central server and such server coordinate the identifier's change from time to time.

[0102] Reliance on a central server also allows the secure and fraud resistant application of disclosure policy. Such policy might include the verification of the identity of the party to which information (identity and presence for instance) or content (pictures of the account owner) is to be provided. Such verification is performed in an anonymous way such that in the process of verifying information associated with each party, no personal information is disclosed between the parties prior to satisfaction of some pre-set policy such as inclusion on a friend list or belonging to a specific group or organization. Another important policy required for such services would be the determination of any past negative feed back ratings by other past peers for behavior for the

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particular user to which the information is to be provided. An individual with significant poor ratings having detected a peer, may be denied access to personal information or even notification of arrival of the detected peer based on the server policy setting by the detected peer or the server in general.

[0103] A further distinction is to enable electronic payments for individuals who are in close proximity to each other. The central server can act as a third trusted party to help facilitate the electronic transaction between the individuals. Secondly, the server allows for a convenient, electronically secure, personally secure and anonymous method for each of the individuals to specify the party with which they wish to engage in a transaction. Thirdly, participants in a transaction can cross validate the identities of the individuals engaged in the transaction. Finally, because this method is proximity based it will also work indoors or in other situations where GPS location information is not available.

[0104] Feature Summary of Preferred Embodiments

[0105] 1. In a first embodiment:

[0106] One device is transmitting a wireless identifier using a wireless protocol capable of peer to peer communication;

[0107] The wireless identifier being associated with a specific account on a server connected to the internet;

[0108] A second device receiving the wireless identifier

[0109] The second device capable of communicating with the server over an internet connection;

[0110] The second device requesting information from the service associated with the first identifier

[0111] The second device having a second identifier associated with a second account on the server; and/or

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[0112] The server providing different amounts of information related to the first account based on the parameters associated with one or both of the first and second accounts

[0113] The identifiers associated with the accounts being updated such that the identifiers would no longer be recognized as being associated with specific accounts without past or current interaction with the server;

[0114] Using one or more of Cellular network timing information, and information form the central server to coordinate the broadcast and search times amongst the devices. (to reduce power and resource consumption); and/or

[0115] Data necessary to engage in an E-commerce transaction may be exchanged as well such as the identity verification such as via a picture and/or mutual identifier detection.

[0116] 2. In a second embodiment,

[0117] A device is capable of operating two wireless protocols simultaneously, utilizing a first wireless protocol in the device to detect the proximity of another wireless device and using the second wireless protocol to communicate with a remote server, where:

[0118] One or more of the devices are mobile devices;

[0119] Where the first wireless protocol is a local, or personal area network wireless protocol such as 802.11, Bluetooth, UWB or other local connectivity protocol;

[0120] Where the first wireless capability used for detecting the presence of another device, or advertising the presence or a device;

[0121] Utilizing a wireless wide area data link from one or more of the wireless devices to, optionally:

[0122] Connect to a central server;

[0123] Perform user authorization functions;

[0124] Perform download of information associated with account identifiers utilizing the short range wireless capability;

[0125] Request forwarding of messages / packets to the other active account;

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[0126] Utilizing the messaging with a mobile proximity based social networking capability; and optionally,

[0127] The messaging being performed via the WWAN; and/or

[0128] The server providing a centrally assigned user identity, with relationship brokering or identification capability.

[0129] 3. In another embodiment,

[0130] A central serving capability is provided to mobile devices utilizing a wireless WAN connection to provide and exchange information between one or more application on one or more wireless devices and the central server where

[0131] the information passed to the central server is collected by one wireless device from another wireless device via a separate local wireless reception from the other wireless device;

[0132] the separate local wireless reception from the second wireless device contains information directly assigned by, derived from, or known to the central server associated with the identity of the second wireless device;

[0133] this identity is related to certain information and preferences of an account holder associated with an application operating on the second wireless device;

[0134] the application is operating on both wireless devices;

[0135] the application operating on the first device also provides its own identifying information to the central server as well as detected identifiers from devices with applications on them;

[0136] The central server contains account information registered to the applications running on each wireless device;

[0137] The preferences associated with the account information also contain policies related to the disclosure of one account's stored information to other accounts and hence to their application on their devices;

[0138] These policies including a classification of other accounts each classification having different policies some of these policies being one of:

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[0139] no not allow notification of my presence

[0140] allow notification of my presence

[0141] disclose my name/ do not disclose my name

[0142] disclose age / do not disclose age

[0143] disclose personal details;

[0144] Where an application running on each device can optionally perform point of sale transitions coordinated via the central server, over the WWAN, utilizing user input on each device as confirmation of successive steps in the transition;

[0145] Further, where at least one of the confirmation steps additionally involves displaying an identifying picture related to one of the devices, on the other device;

[0146] Additionally the server performing an authorization for the transition to a third party;

[0147] Or, optionally, a device is interacting with a point of sale device to associate an itemized list of items with a detected second device;

[0148] The service performing a confirmation with the application on the second device requiring user input that the bill of goods list is correct; and/or

[0149] The server storing the information related to the second devices detected account identity and inventory in a database for later use

[0150] 4. In still other embodiments, a device has a wireless capability with no WWAN capability, but only with the ability to broadcast a unique identifier, and

[0151] A central server stores having the broadcast device's details;

[0152] And when the first device provides these detail to the server, authorized and current information about the broadcast device are provided to the first wireless device;

[0153] Where this information optionally includes advertising information or information related to "e-coupons" for special offers for products or services; and/or

[0154] Where the content of the e-coupons might be customized based on the identity of the requesting device or account holder;

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[0155] Where the content is further customized based on other information known by the server related to the user's account ; or

[0156] Where the other information is related to the user's past purchasing practices or previous requests; and/or

[0157] A mobile device, upon detecting a broadcast device and if enabled to do so, will report that broadcast Id to the server over a WWAN, and retrieve the current content from the server associated with that device and:

[0158] Display it to the user on their device; or

[0159] Execute instructions associated with the information retrieved from the server.

[0160] 5. In still further embodiments, a good or service delivery model utilizing the above described broadcast device, is placed in a known location, and further

[0161] A mobile device is for detecting the fixed device's identifier via the WPAM/WLAN;

[0162] The mobile device reporting this identifier and passing an identifier associated with itself, or the account associated with the user utilizing the device;

[0163] The server determining that the detected broadcast device is associated with the broadcast device with a known location;

[0164] The server further determining that the identifier is associated with a service, and further associated with an account or that service;

[0165] The server retrieving content associated with the service provider's account and providing that content to the application on the requesting mobile device;

[0166] Where that content may be a list of items for sale, services for sale, a opinion pole, food menu, or other menu style content which allows for user selection of items, which can be implemented in java code, xml, simple text, or other for example optionally including active code elements;

[0167] The application on the mobile device displaying the content to the user display with the itemized list of goods, services, or other selection items;

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[0168] A user providing selection of one or more of the items, and confirming they wish to purchase said items, and take delivery at or near the location of the fixed broadcast device;

[0169] The server facilitating the purchasing of the goods or services from the merchant's account and the customer's account, and providing confirmation to each. Such confirmation including an electronic receipt provided to the customer, for user upon arrival of the deliverer of the good to or service;

[0170] The customer confirming receipt of the good or service via the mobile device, thereby completing the transfer of funds and the transition; and/or

[0171] The deliverer of the good or service optionally having a mobile device and optionally:

[0172] such that identifiers from that device may be detected by the customers device and reported to the server to confirm that the provider's delivery person was present;

[0173] such that the broadcast devices identifier is detected by the delivery person's mobile device and reported to the server confirming the deliver person was in the correct area

[0174] such that the customer's device's transmitted identifier is detected by the delivery persons device and reported to the central server further confirming the physical proximity of the parties involved in the transaction; and/or

[0175] The delivery person confirming the delivery of the good or service to the customer via the user input on their mobile device, and that confirmation being reported to the central server.

[0176] 6. In another embodiment, a software program is arranged to operate at the application layer on a mobile device, which interfaces to a device driver interface:

[0177] Using wi-fi 802.11 to perform a WLAN local connection protocol; or

[0178] Using Bluetooth to perform the WLAN local connection;

[0179] Where the device driver interface is an NDIS driver or the like;

[0180] Using 1xEVDO, HSDPA, GPRS, EDGE or the like for a wide area WWAN interface;

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[0181] The application then providing the reported identifiers to a server, which will make decisions regarding a users interest in these detected identifiers, and policy regard privacy other identifiers;

[0182] The decision process optionally based on priority of the identifier, the class an identifier belongs to, a list the identifier is, or is not included on;

[0183] Based on the result of the action function,

[0184] Sending at least one detected identifier to the network, potentially with additional information from the action function, and retrieving information back from the server related to that identifiers' account information stored on that server;

[0185] The server then receiving a request from a device's application, with a detected identifier

[0186] The server examining both the requesting and the requested identifier's identity and making a policy decision regarding the release of the requested identifiers information related to their account;

[0187] The server in some cases providing a continuously or periodically changing account or device identifier to a specific application on a device to enhance the privacy of the identity of that device;

[0188] The changing of the identifier may be effected by a rule based generation local to the application, or may be downloaded from the server directly; and/or

[0189] The update of the identifier being synchronized to such that it is coordinated with predetermined scanning and broadcasting periods allowing for a known update boundary;

[0190] 7. In still another embodiment, a method uses the mobile device's time of day derived from the network or other reference for

[0191] synchronizing a PAN/WLAN discovery and advertisement times to save battery life;

[0192] doing the same in a synchronized way among multiple devices;

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[0193] while coordinating the timing information utilizing the WWAN and a central server available commonly to the devices, such as by

[0194] Synchronizing identifier transmission timing to save power from WWAN network parameters obtained for the server;

[0195] Coordinating any identifier updates to this same timing source; and/or

[0196] Using a pool of identifiers available to the central server to assign identifiers to devices changing the identifiers at some time interval derived for the common time reference

[0197] 8. In another embodiment,

[0198] A central server uses an identity manager to assign identifiers to devices using a WWAN cellular data link, and wherein

[0199] identifiers are occasionally changed

[0200] identifiers are assigned from a pool of identifiers available to the servers;

[0201] identifiers are used as 48 bit media access control (MAC) addresses of the short range wireless network adapter

[0202] identifiers are optionally used as

[0203] an SSID in a IBSS in IEEE-802.11 network beacons

[0204] a BSSID of the IEEE802.11 network adapter;

[0205] in a IEEE802.15.1 Inquiry Response Message as the BD_ADDR

[0206] a device name in a Bluetooth name response packet ; or

[0207] listed in a services list as provided in a LMP_features_req message or LMP_features_req_ext message for a Bluetooth device

[0208] While this invention has been particularly shown and described with references to example embodiments thereof, it will be understood by those skilled in the art that various changes in form and details may be made therein without departing from the scope of the invention encompassed by the appended claims.

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SCORE Placeholder Sheet for IFW Content

Application Number: 17366826 Document Date: 07/02/2021

The presence of this form in the IFW record indicates that the following document type was received in electronic format on the date identified above. This content is stored in the SCORE database.

Since this was an electronic submission, there is no physical artifact folder, no artifact folder is recorded in PALM, and no paper documents or physical media exist. The TIFF images in the IFW record were created from the original documents that are stored in SCORE.

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Form Revision Date: March 1, 2019

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number: 17/366,826

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY FEE($)
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	80		N/A	
SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	350		N/A	
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	400		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	30 minus 20 =	* 10	x 50 =	500	OR		
INDEPENDENT CLAIMS (37 CFR 1.16(h))	2 minus 3 =	*	x 240 =	0.00			
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			0.00			
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				0.00			
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	1330		TOTAL	

APPLICATION AS AMENDED - PART II

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY ADDITIONAL FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE($)
AMENDMENT A	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY ADDITIONAL FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE($)
AMENDMENT B	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.

MULTIPLE DEPENDENT CLAIM FEE CALCULATION SHEET

Substitute for Form PTO-1360
(For use with Form PTO/SB/06)

Application Number	Filing Date
17366826	

Applicant(s) James Proctor

* May be used for additional claims or amendments

CLAIMS	AS FILED		AFTER FIRST AMENDMENT		AFTER SECOND AMENDMENT	
	Indep	Depend	Indep	Depend	Indep	Depend
1	1					
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Total Indep	2		0		0	
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Total Claims	30		0		0	

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APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
17/366,826	07/02/2021	2414	1330	111054-0001U7	30	2

CONFIRMATION NO. 8789

FILING RECEIPT

86012
VLP Law Group LLP
555 Bryant Street
Suite 820
Palo Alto, CA 94301

OC000000127058810

Date Mailed: 07/20/2021

Receipt is acknowledged of this non-provisional utility patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF FIRST INVENTOR, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection.

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Inventor(s)

James A. Proctor JR., Indialantic, FL;
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Applicant(s)

Proxicom Wireless LLC, Indialantic, FL

Power of Attorney: The patent practitioners associated with Customer Number 86012

Domestic Priority data as claimed by applicant

This application is a CON of 16/817,896 03/13/2020 PAT 11074615
which is a CON of 15/271,410 09/21/2016
which is a CON of 14/861,563 09/22/2015 ABN
which is a CON of 14/472,477 08/29/2014 PAT 9161164
which is a CON of 13/775,435 02/25/2013 PAT 8849698
which is a CON of 13/212,723 08/18/2011 PAT 8385896
which is a CON of 12/364,828 02/03/2009 PAT 8090359
which claims benefit of 61/095,359 09/09/2008
and claims benefit of 61/095,001 09/08/2008

Foreign Applications for which priority is claimed (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see http://www.uspto.gov for more information.) - None.
Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.

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Permission to Access Application via Priority Document Exchange: Yes

Permission to Access Search Results: Yes

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If Required, Foreign Filing License Granted: 07/16/2021

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 17/366,826**

Projected Publication Date: 10/28/2021

Non-Publication Request: No

Early Publication Request: No

**** SMALL ENTITY ****

Title

EFFICIENT AND SECURE COMMUNICATION USING WIRELESS SERVICE IDENTIFIERS

Preliminary Class

370

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

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Please find below and/or attached an Office communication concerning this application or proceeding.

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Decision Granting Request for Prioritized Examination (Track I)	**Application No.** 17/366,826	**Applicant(s)** Proctor et al.	
	Examiner CHERYL P GIBSON BAYLOR	**Art Unit** OPET	**AIA (FITF) Status** No

1. THE REQUEST FILED 02 July 2021 IS **GRANTED** .

The above-identified application has met the requirements for prioritized examination

A. ☑ for an original nonprovisional application (Track I).
B. ☐ for an application undergoing continued examination (RCE).

2. **The above-identified application will undergo prioritized examination**. The application will be accorded special status throughout its entire course of prosecution until one of the following occurs:

A. filing a **petition for extension of time** to extend the time period for filing a reply;

B. filing an **amendment to amend the application to contain more than four independent claims, more than thirty total claims** , or a multiple dependent claim;

C. filing a **request for continued examination** ;

D. filing a notice of appeal;

E. filing a request for suspension of action;

F. mailing of a notice of allowance;

G. mailing of a final Office action;

H. completion of examination as defined in 37 CFR 41.102; or

I. abandonment of the application.

Telephone inquiries with regard to this decision should be directed to CHERYL GIBSON BAYLOR at (571)272-3213. In his/her absence, calls may be directed to Petition Help Desk at (571) 272-3282.

/CHERYL GIBSON BAYLOR/ Paralegal Specialist, OPET	

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Abstract

A system for monitoring and controlling the distribution of product coupons from a plurality of remote terminals located at the point of sale. The system includes video display terminals for displaying an array of coupons available for selection and means for monitoring and controlling the number of coupons distributed.

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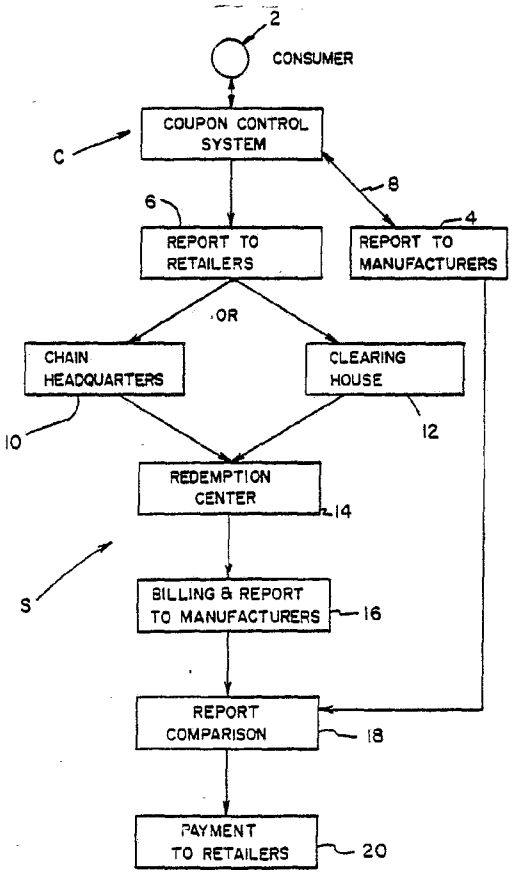
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(57) Abstract

A system for monitoring and controlling the distribution of product coupons from a plurality of remote terminals located at the point of sale. The system includes video display terminals for displaying an array of coupons available for selection and means for monitoring and controlling the number of coupons distributed.



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METHOD AND APPARATUS FOR CONTROLLING THE DISTRIBUTION OF COUPONS

Specification

BACKGROUND OF THE INVENTION

1. Field of Invention:

The present invention relates to a method and apparatus for distributing coupons or other redemption certificates for retail sales of merchandise, such as groceries and dry goods and to a method and apparatus for monitoring and controlling the number of such coupons issued and/or redeemed.

2. Description of the Prior Art

In the past, it was a common marketing scheme for manufacturers to distribute large numbers of coupons or similar redemption certificates in local newspapers or other productions distributed to the general public. These coupons typically included an advertisement for the particular product and provided a discount off the regular price if presented at a participating grocery store at the time of purchase. Coupons redeemed at the various retail outlets were sent to a national clearing house which calculated the amount due to the retailers and billed the manufacturers for the portion due on account of sales of their respective products. While the distribution of coupons was generally regarded as a good advertising and

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marketing technique, the prior art methods of coupon distribution and redemption had serious drawbacks for the manufacturers. For example, the only way redemption has been at all measured is by prior studies, which shows an average redemption to be about 3%. Actual redemption could not be controlled. It was possible that a particular manufacturer's coupon could have an unexpectedly high redemption and cost much more than anticipated.

Furthermore, the prior art method of distribution lent itself to fraudulent practices both by the individual redeeming coupons at a retail store and by the retail outlet itself. For example, an individual purchasing a large amount of groceries during peak business hours at a particular store could have easily been credited for coupons or products they had not actually purchased because of the inconvenience to the store employee of checking each item versus the coupons. The retail stores would, in such circumstances, routinely present all coupons, including those erroneously redeemed, to the national clearing house for payment. It was also possible for store employees to obtain cash for coupons without purchasing the products. In all of these circumstances, the manufacturer was held responsible for the value of the coupon without having made a sale of the product.

SUMMARY OF THE INVENTION

In contrast to the prior art methods and apparatus, the method and apparatus of the present invention provides a unique, controlled coupon advertisement and distribution system which enables the manufacturer to control its liability for coupons and to deter fraudulent redemption. In the method and apparatus of the present invention, the manufacturer may prescribe a particular number of coupons to be redeemed collectively and at each particular retail store. The present invention also greatly reduces the possibility of fraud by enabling coupons to be encoded

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with store identification numbers, expiration dates, uniform product codes, and other information at the point of distribution. By providing point of sale distribution and same day expiration dates the system of the present invention also provides substantial inprovement in the manufacturer's coupon redemption rate as compared to the three per cent rate experienced in the past.

A stand alone coupon dispensing terminal is provided at each retail store. Each stand alone terminal communicates with a host central processing unit located remote from the stores. Coupons are displayed for customer selection at each dispensing terminal on a video menu via a cathode ray tube and touch screen combination in a fashion which enhances customer acceptance by reducing the time necessary to select and obtain coupons. Each terminal may be monitored and controlled via the host computer to obtain data such as the number of coupons issued and the identification of customers using the terminal. The system enables the manufacturer to limit the number of a particular coupon issued from a terminal as well as the number issued in response to activation by a particular credit card. Each terminal includes a self-contained high speed coupon printer which prints the product information, date, time of day, uniform product code, expiration date, a store identification number or any other information desired for particular applications on each coupon issued. The features of the method and apparatus of this invention are too many to mention in this summary. The specification to follow and the claims will particularly point out this invention.

In summary, the present invention provides great benefits to the product manufacturers by enabling the manufacturer to control its maximum liability and reducing the potential for fraud, and benefits the consuming public by providing a convenient means for obtaining coupons at the point of purchase only for those items they desire to

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buy at the time, thereby eliminating the need to clip and save coupons from the newspapers or other advertisements.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a schematic diagram of a system and its role in the over-all coupon reporting and redemption process.

Fig. 2 is a schematic diagram of the system for controlling the distribution and redemption of coupons according to the present invention of Fig. 1.

Fig. 3a is a perspective view of a coupon dispensing terminal which forms part of the system of Fig. 2.

Fig. 3b is a typical coupon printed by the system of this invention.

Fig. 4 is a schematic block diagram of a portion of the coupon dispensing terminal of Fig. 2 and its interface with the host central processing unit.

Figs. 5-9 are schematic flow chart diagrams for the general operation of the remote dispensing terminal computers of Fig. 2 to achieve the desired results of the present invention.

Figs. 10-28 are schematic flow chart diagrams for achieving the particular tasks in the general operations illustrated in Figs. 5-9.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

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I. System Overview

Referring now to Fig. 1, the coupon distribution system of the present invention is illustrated in schematic form in its role in the over-all coupon reporting and redemption process, and designated generally by the letter S. The system S includes a coupon control system C of the present invention which interacts with the consumer 2 to selectively dispense coupons as requested. System C also generates reports 4 and 6 regarding coupon distribution for the manufacturers and retailers, respectively.

In the system of the present invention, the manufacturer is able to prescribe limits for distribution of particular coupons on a collective and per store basis. This feature is illustrated schematically in Fig. 1 by the bi-directional arrow 8. The report 4 is provided to the manufacturer on a periodic basis, such as a weekly basis and includes coupon distribution information for each retail outlet. Report 4 may include the number of coupons dispensed, the store identification information, the dates

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and times of distribution, and customer identification data. This information is valuable to the manufacturer both as an aid in analyzing its marketing techniques and in detecting possible fraudulent coupon distribution or redemption. The report 6 provided to retailers is essentially like report 4 but includes information only as to the particular retail store(s) involved.

Typically, retailers forward the report 6 to a retail chain headquarters 10 or a clearing house 12 to provide a collective accounting for the retail chain or region. In either event, the coupon distribution information is presented to a redemption center 14 which receives such information from retailers throughout the country and prepares a billing statement and report 16 for each participating manufacturer.

The reports 16 and 4 are compared at step 18 to detect errors or fraudulent claims. For example, if the number of coupons presented for redemption exceed the number of coupons dispensed as noted in report 4, the manufacturer may refuse to make payment to the retailers for the excess. Once the system of the present invention is utilized, such discrepancy will be minimized since the manufacturer will be able to pin point and investigate error sources. The manufacturer will make payment to the particular retailers at step 20 thereby concluding the periodic , quarterly, monthly or weekly transaction.

In this fashion, the manufacturer is able to precisely control the number of coupons dispensed on a collective and per store basis and to monitor coupon redemption to prevent fraud. The details of the system S are included in the remaining figures of the drawings and the accompanying description.

II. Description of the Distribution System

Referring now to Fig. 2, the coupon control system C is generally illustrated in schematic block diagram form. System C includes a host central processing unit H which communicates with a number of coupon dispensing terminals

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T, designated T-1 through T-N, via a conventional telecommunications modem M. Each terminal T includes a corresponding customer interface I, designated I-1 through I-N.

Host computer H may be any programmable central processing unit having suitable data storage and processing capabilities to perform the functions described in detail hereinafter. Selection of a particular central processing unit depends upon the needs of the particular distribution system and, given the description contained herein, is a matter within the ordinary skill in the art. In one application, a Digital Equipment Corporation 11T23 System has been used to perform the function of the host computer H and has performed satisfactorily. Other suitably programmed computers having similar architecture could likewise be employed.

Host computer H monitors the operation of the individual terminals T and provides terminals T with the information necessary to dispense the coupons requested by customers. Host computer H stores the data which constitutes the array of coupons available for selection which will be displayed on each terminal T. Thus, the operator is able to control the display of coupons at each and every remote terminal T via host computer H. Host computer H also retains other information such as the date and time of day which is used by the terminals T to achieve the desired results of the present invention. This information is provided to the terminals T in the manner described hereinafter. Host computer H also is programmed to interact with terminals T to allow the operator to prescribe per store and collective limits for each coupon thereby controlling the manufacturers liability.

Most importantly, host computer H is programmed to receive from the terminals T coupon transaction information including the number and type of coupons dispensed, store identification numbers, and customer

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account numbers. Host computer H is programmed to use the information to generate the weekly reports 4 and 6 (Fig. 1) for the manufacturer and retailer, respectively. Programming of the host computer H, given the operational specifications for the host contained herein, and the detailed specification of programming for terminals T described herein, is a matter of ordinary skill in the art of computer programming and hence need not be described herein in detail.

Each of terminals T (Fig. 3) is a stand-alone unit to be placed at a remote location such as in a retail grocery store. Terminals T include a customer interface display I, a coupon dispensing apparatus D, and an activator A (Fig. 3). Terminals T also include a central processing unit such as a microcomputer 22 and the associated peripheral circuitry illustrated schematically in Fig. 4. A terminal housing 24 is provided to enclose the terminal hardware and also to provide storage space in lower cabinet 26 for conveniently storing extra paper for coupons or other materials.

Customer interface display I includes a conventional cathode ray tube 28 for displaying the video menu of coupons available for selection as well as other video graphics, such as advertisements, in response to signals received from microcomputer 22. Overlaying cathode ray tube 28 is a transparent, touch sensitive screen 30 which includes an array of touch activated switches arranged in a regular array to overlay particular coupons displayed on cathode ray tube 28. In the preferred embodiment, a screen having an array of thirty-two (32) switches such as the Model Number TK120S manufactured by Interaction Systems, Inc. is used. Other commonly available and suitable touch sensitive screens may also be employed. In the preferred embodiment, the coupons and switches are arranged so that two switches overlay each coupon to make selection by the customer less troublesome. Other switches incorporated in the touch screen array do not

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correspond to particular coupons but to functions which permit the customer to: (1) hold the page presently being displayed for an additional time period, ie., ten seconds; (2) cause the terminal T to display the next page of the video menu immediately, and (3) quit the selection process prior to reviewing the entire menu.

As will be described in detail below, microcomputer 22 will cause terminal T to sequentially display in page format an entire menu of coupons available for selection. If after a prescribed period of time no selection has been made, microcomputer 22 will cause terminal T to display the next page of coupons and so on until the entire menu has been completed. If no selection has been made throughout the the display process after a prescribed time period, microcomputer 22 causes terminal T to deactivate from the coupon dispensing mode, and begin displaying full page advertisements in a free-standing mode until such time as a customer reactivates terminal T via activator A.

Activator A is a conventional magnetic card reading apparatus adapted to read the data encoded on magnetic tape used in common consumer credit cards. Activator A provides a signal to activate terminal T to the coupon dispensing mode whenever a credit card having an encoded magnetic tape strip is inserted therein. Any of the common bank, gasoline or retail credit cards will activate the terminal T. While this does not prevent a single customer having more than one credit card from repeatedly using the terminal T, use of a credit card activator provides the informational capability as described below to somewhat limit the number of unauthorized transactions and further prevents children from activating the machine.

As will be described hereinafter, terminal T displays only those coupons currently available to the particular customer. Upon activation, terminal T determines whether the same credit card account number has been used within the last week or other predesignated period by comparing

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the present credit card number with those stored in memory in microcomputer 22. If so, microcomputer 22 permits only those coupons still available for selection by that particular customer account number to be displayed. If, for example, the manufacturer has prescribed a one per customer limit for a coupon, and that coupon has been previously issued to the customer under the same credit account number, the coupon will not be displayed. Furthermore, even if the particular credit account number has no selection history, if the maximum number of a particular coupon either collectively or on a store by store basis have been issued, that coupon will no longer be displayed. In this fashion, a manufacturer is provided with much more control over the maximum redemption liability than the prior art method of newspaper distribution.

Coupon dispenser D includes a high speed printer 32 (Fig. 4) of the type suitable for printing on heat sensitive paper to print the coupons selected by the customer. As will be described in detail below, once a particular coupon or group of coupons has been selected, microcomputer 22 causes the data which makes up the particular coupon(s) to be transmitted to coupon printer 32 whereupon the selected coupon(s) are automatically printed and dispensed. Furthermore, if dispenser D fails to provide a signal to indicate that the particular coupon(s) have been printed within a prescribed time period, microcomputer 22 causes an error message to be forwarded to host computer H which places terminal T in the free-standing advertising mode until the problem is rectified.

In the preferred embodiment, coupons are printed on a continuous length of heat-sensitive paper and cut at the appropriate point by a combined printer and cutting machine mounted within terminal T. The coupons printed by dispenser D generally contain the product information and the discount to be applied to the regular price. The

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system of the present invention allows additional information to be printed on the coupon to deter fraud and to encourage prompt use of the coupon. Since dispenser D prints the coupons from data provided from host computer H via terminal T, daily updated expiration dates may be included on the coupon to set, for example, a same day expiration date to encourage immediate use of the coupon. Furthermore, electronically readable uniform product codes may be included on the coupon in the same fashion as the expiration dates or other data specified herein so that an appropriately programmed check out register can read the product code on the coupon and apply the coupon discount only if a product bearing the identical product code has been purchased. This feature prevents customers from overwhelming the store's employees with a large number of coupons and groceries at peak business hours to obtain the benefit of the coupon discount without purchasing the corresponding product.

Coupons are conveniently dispensed to the customer via a slot 34 in the terminal housing 24 as they are printed and cut. It is a feature of the present invention that a customer may select any or all of the displayed coupons and go on to the next page of the menu without having to wait for the selected coupons to be printed. This is accomplished by providing programming and memory associated with microcomputer 22 which stores the customer's selections and prints them sequentially as soon as possible.

The video display presented on terminal T is either in a free-standing advertising mode wherein full screen advertisements for particular products are sequentially displayed or, in the coupon dispensing mode wherein a page formatted, video menu of coupons is displayed for selection by the customer. Terminal T automatically deactivates to the free-standing mode once the entire menu of coupons has been displayed and the appropriate time has elapsed. Interface I also includes a "quit" switch, not

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associated with a particular coupon which permits the customer to abort the normal terminal display sequence before all the coupons have been displayed. This feature frees the terminal T quickly for use by another customer without requiring the display sequence to be completed in each customer transaction, and thereby also prevents subsequent customers from selecting coupons on the previous customer's account number when the previous customer completes his selection before the entire array of coupons is presented. As will be described below, upon activation of the quit switch, microprocessor 22 causes terminal T to return to its free-standing mode prior to the completion of the normal display cycle.

It is a feature of the present invention that the terminal T automatically rotates the order in which the individual coupons are displayed on the cathode ray tube viewing screen 28 each time the terminal is activated. Thus, each particular manufacturer's coupon will appear on the first page of the menu in rotation with the remaining pages and no manufacturer is given preferential marketing treatment.

Each of the terminals T communicates with host computer H to receive updated coupon information and to transmit coupon transaction data. Microcomputer 22 in terminal T automatically establishes communication with host computer H and transfers coupon transaction data at the completion of every seventh transaction. Each transaction is defined by an activation of terminal T via activator A. The information thus provided to host computer H is utilized to compile coupon distribution reports 4 and 6 (Fig. 1) and to monitor the distribution of coupons on a continuous basis.

III. Terminal Components

Further details of terminal T are shown schematically in Fig. 4. As noted above, terminal T includes an activator A, a dispenser D, a customer interface display I

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and a microcomputer 22 with associated peripheral circuitry. Activator A having a conventional magnetic card reading apparatus 36 for reading information from one or more of the magnetic strip tracks on standardized consumer credit cards, and a conventional card reader interface 38 for converting the digitally encoded data from reader 36 into a telecommunication conventional serial format such as ASCII for transmission to microcomputer 22.

Activator A also includes a conventional universal asynchronous receiver/transmitter (UART) 40 which enables data to be transmitted and received between microcomputer 22 and card reader interface 38 in the conventional manner. In the preferred embodiment, UART 40 as and the other UARTS described hereinafter provide a vectored interrupt signal for microcomputer 22 via addressable data bus 42 thereby identifying the source of the interrupt. An interrupt from UART 40 signals the receipt of customer credit account information for transmission to microcomputer 22.

Data bus 42 may be any suitable, addressable data communications bus, such as the Digital Equipment Corporation Q-bus.

Dispenser D includes coupon printer 32 described above, and printer interface 44 which functions similarly to card reader interface 38 to transmit signals to and from printer 32 to microcomputer 22 in digital ASCII format via UART 46.

Customer interface display I includes touch screen 30 described above and associated interface 48 and UART 50 which provide digital, ASCII communications between touch screen 30 and microcomputer 22 in the conventional manner. For example, the analog signals generated by touch screen 30 in response to customer touch selection are converted to digital, ASCII format signals by interface 48 and transmitted to microcomputer 22 via UART 50. UART 50 transmits the data which comprises the coupons or

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advertising information from microcomputer 22 via bus 42 to conventional cathode ray tube interface 52 which converts the digitally formatted graphics data which comprises the coupons or advertising to a format suitable for use by display cathode ray tube 28.

Full duplex communication between microcomputer 22 and host computer H is conducted via modem M and UART 54 functioning in the conventional manner.

In the illustrated embodiment (Fig. 4) microcomputer 22 is an interrupt driven central processing unit such as the Digital Equipment P.D.P. 11/2 which performs data processing functions but has no internal random access memory. Other suitable large scale integrated circuit data processing units with or without internal random access memory could be utilized as well. Associated with microcomputer 22 via bus 42 are a conventional non-volatile read only memory 56, and random access memories 58 and 60. Non-volatile memory 56 may be any suitable non-volatile memory circuit such as the QSB-11 Bubbl-Tec Corporation bubble memory having a one-hundred twenty-eight kilobyte capacity. In the system of the present invention, memory 56 is utilized to store the operating system and background programs for microcomputer 22, the graphic display data, i.e., coupon and advertisements to be displayed on the terminal screen, and current customer credit account numbers and coupon transaction history. Much of this information is duplicated in memories 58, 60 but stored in non-volatile, bubble memory 56 to ensure against loss of the information in the event of power failure.

Memories 58, 60 are conventional thirty-two kilobyte random access memory circuits having serial R.S. 232 data ports and adaptable parity and baud rates so as to be compatible with microcomputer 22 and associated peripheral devices. Memories 58, 60 are utilized by microcomputer 22 for input/output addressing functions, storing operating programming, customer account numbers,

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coupon and advertising data and other functions as described hereinafter in the detailed description of the microcomputer operating program.

Power supply 62 is a conventional direct current power supply suitable for providing terminal T with D.C. power at the specified levels from alternating current line voltage at the remote terminal location. Power supply 62 may also include a keyed switch 64 to allow the terminal T to be energized or de-energized only by persons having a key, such as the store manager, for example.

IV. Description of the Operation of the Dispensing Terminals

A general description of the command sequences for microcomputer 22 will be provided with references to the schematic flow charts in Figs. 5-9. Fig. 5 illustrates the system hierarchy and relative program module priority and identifies the various sub-sequences which microcomputer 22 utilizes to achieve the functional steps set forth in Figs. 5-9. Where necessary or appropriate, these sub-sequences will be described in detail, those not described in detail are matters within the ordinary skill in the programming art. The command sequences for microcomputer 22 are implemented under a foreground/background concept, in which foreground (realtime, interrupt-driven) programs receive on demand immediate, short term control of microcomputer 22, and background (scheduled or requested) programs run over longer periods during non-interrupt time. All interrupt, foreground command sequences are executed on demand, while sequence EXEC, the principal background sequence, and the other background sequences which are utlized by EXEC are run on available, i.e., non-interrupt time. These command sequences will be referred to hereinfter by the designations appearing in Fig. 5.

A. Operational Modes: General Logic

In general, terminals T operate in four basic modes, which are:

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(1) Start up (Fig. 6), with an automatic transition to one of the following on-line modes when all start up parameters are satisfied;

(2) Normal customer (Fig. 7) , with the customer recognition, coupon request and coupon print operations proceeding normally;

(3) Hide and Watch (Fig. 8), with the terminal T available for operating and advertising functions, but commanded by host computer H not to issue coupons; and

(4) Modem Operations (Fig. 9), which are concurrent with the on-line modes, in which full duplex transfer with the host computer H are supported without affecting the customer interface.

The programming of microcomputer 22 can be best understood with reference to these general flow charts with the understanding that routine sub-sequences may be necessary to carry out the functions specified therein. Where the details of such subsequences are matters within the ordinary skill in the programming art, details will not be included herein.

Start up mode 70 is entered either upon command from the host computer H to re-initialize the terminal T or upon power failure at the terminal. In either event, control of microcomputer 22 is transferred to a bootstrap loading sequence 72 stored in memory 56, which causes microcomputer 22 to load the operating system command sequences from memory 56 to the first available address in combined memories 58 and 60. Hereinafter, various sequences will be described as controlling microcomputer 22. It should be understood that such sequences are actually part of the programmed software of microcomputer 22. Control of microcomputer 22 is then transferred to the sequence 74 thus stored in random access memory 58, 60 which causes microcomputer 22 to initialize cathode ray tube 28, printer 32 and modem M. Control of microcomputer 22 is then transferred to host auto-call sequence 76 which

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initiates a call via modem M to host H unless the start up sequence has been entered at the command of the host computer H (step 78), in which case communication has already been initiated. If the call is unsuccessful, a re-dial sequence 80 will cause microcomputer 22 to repeat the attempt every forty-five seconds. Irrespective of whether the call is successful, control of microcomputer 22 is transferred to command sequence 82 which includes command steps 84, 86 and 88 which cause the terminal T to display the first screen of advertising in the free-standing mode and to rotate to the next screen of advertisements every ten seconds. Although not illustrated in Fig. 6, it should be noted that should a customer attempt to activate the terminal T via card reader A while terminal T is operating in this start up mode, thereby causing a card reader interrupt (Fig. 5) to be provided to microcomputer 22, microcomputer 22 causes a "temporarily out of service" message to be displayed for the customer on cathode ray tube 28.

Once communication with host computer H is established (step 80), microcomputer 22 obtains date/time of day data and mode instruction (step 90) from host H. Control is then transferred to command sequences in the Ready mode (Fig. 7) or the Hide and Watch mode (Fig. 8) depending upon instruction from host computer H (step 92).

From the start up mode (Fig. 6), control of microcomputer 22 will normally be transferred to the normal customer or ready mode 100 (Fig. 7). In this mode, command sequence 102 which includes steps 104, 106 and 108, causes microcomputer 22 to display free-standing advertising screens sequentially, changing screens every ten seconds, until the terminal is activated via activator card reader A. Upon receipt of a card reader interrupt (step 110), control of microcomputer 22 is transferred to command sub-sequence 112 (BPSTSK (Fig 5.)) which causes microcomputer 22 to search memory 58, 60 to locate the coupon transaction history, if any, corresponding to the

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customer credit account number presently provided via card reader 36. If no corresponding history is located, command step 114 causes microcomputer 22 to create a new file corresponding to the new customer account number. If, on the other hand, a previous coupon transaction history is located, this data is utilized at step 116 to mask out previously selected coupons from the display if the limit of coupons per period has already been reached under this customer's account number so that requests for coupons utilizing a single account number are limited to the prescribed number of each coupon. Control is then transferred to step 118. As the customer makes selections from the displayed coupons causing a touch screen interrupt (step 120), control of microcomputer 22 is transferred to a background coupon printing command sequence 122 (BPOTSK (Fig. 5)) which causes printer 32 to print and dispense the coupons. If no touch screen interrupt has been received at step 120, control is transferred to an interrogatory command sequence 122 to determine whether the prescribed time for making a selection has elapsed. If so, control is transferred to interrogatory step 124 which causes microcomputer 22 to determine whether the last page of the menu has been displayed. If the time has elapsed and the last page has been displayed, control is transferred to step 126, which causes the transaction to be recorded and return control to the ready sequence. If the last page has not been displayed, but the customer has requested to "quit" selection, (step 128 causes control to be transferred to step 126) where the transaction is recorded and control reverts to the ready sequence awaiting the next transaction.

If at step 122, the prescribed time for making a selection has not elapsed, control is transferred to interrogatory step 130 which causes microcomputer 22 to determine whether the customer has requested the "next page" of coupons. If so, control is transferred to step

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132 which causes microcomputer 22 to retrieve the next page data and returns control to step 118 thereby causing the next page to be displayed. On the other hand, if at step 122, the time has not elapsed, and no "next page" request has been made at step 130, control returns to step 120 continuously until a selection is made or the time for selecting expires. When the customer has completed the transaction, and the coupon is dispensed, the transaction is recorded in coupon history addressed by the account number and control is transferred (step 132) back to the beginning of the ready mode where the sequence is repeated, i.e., advertising is displayed until the next customer activates the terminal and initiates the selection/dispensing sequence. While not explicitly illustrated in Fig. 7, it should be noted that the ready mode may be exited at any time response to command from the host computer H to go to the hide and watch mode, or to the start up mode or as a result of a terminal power failure or local restart.

The host computer will be programmed with over-all limits for the entire terminal so that upon such terminal reporting to the host the attainment of such limits, the host will signal command to terminal T and control of microcomputer 22 is transferred from the ready mode control sequence 100 to the hide and watch mode sequence 140 (Fig. 8). In this mode, command sequence 142 causes microcomputer 22 to display the initial page of free-standing advertising (step 144) until a prescribed time, i.e., ten seconds, has elapsed. At the expiration of the prescribed time, step 146 causes control to be transferred to step 148 to retrieve the next page of advertising and return control to display step 148. This cycle is repeated unless a card reader interrupt is received (step 148) indicating a customer attempt to activate the terminal T. If an interrupt is received, step 148 transfers control to step 150 which causes a "temporarily out of service" message to be displayed to

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the customer on cathode ray tube 28. This message is maintained for a fixed period, i.e., ten seconds, via step 152, after which control is transferred to step 154 to receive mode instructions from host computer H. If the mode has not changed, control is returned (step 156) to the beginning of the hide and watch sequence to continue displaying advertisments until another card reader interrupt is detected. If, however, an updated mode instruction has been received from host computer H via modem M, control is transferred at step 158 to the indicated mode sequence, which will either be the ready mode (Fig. 7) or the start up mode (Fig. 6).

Thus, Hide and Watch sequence 140 may be utilized by host computer H to temporarily disable an individual terminal T to prevent it from issuing coupons, either because of a detected malfunction or because the prescribed coupon limit for the terminal T has been attained.

Referring now to Fig. 9, the terminal modem operations 160 are illustrated in schematic flow chart form. In the preferred embodiment, the input (received data) interrupt of modem M (step 162) is always enabled to receive data from host computer H. Received data is automatically stored by microcomputer 22 at step 164 by the microcomputer interrupt handler. Valid input data will automatically cause control of microcomputer 22 to be transferred (step 166) to the appropriate command sequences such as 168, 170 or 172 to take any action required such as updating customer-oriented data (step 168), change mode of operation (step 170) or take other specified action (step 170) concurrently with on-going terminal operation and modem output, if any.

Microcomputer 22 will cause terminal T to initiate a call to the host computer H (step 172) under any one of three conditions:

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a) On power failure or restart, a call to a host trouble number to obtain date/time of day data is initiated (step 174);

b) On printer failure or other detectable failure, a call to a host trouble number to report an out of service condition (step 176); or,

c) At regularly scheduled intervals, or when a predesignated number of terminal transactions are recorded, to transfer coupon history and coupon counts to the host's data number (step 178).

These modem operations take place automatically and concurrently with terminal operations.

B. Detailed Description of Command Sub-Sequences

In order for microcomputer 22 to operate terminal T to achieve the desired terminal control and monitoring functions illustrated in the general flow charts of Figs. 5-9, control of microcomputer 22 is, as appropriate, transferred to one or more of the sub-sequences listed in Fig. 5 and shown in detail in Figs. 10-28.

1. The Executive Sequence

According to the operating system used in the present invention, control of microcomputer 22 generally resides in the executive command sequence E illustrated in Fig. 18. Control is automatically transferred to this executive sequence E upon completion of the power up sequence P illustrated in Fig. 19.

Sequence P is an initialization sequence which is entered when terminal T is energized. Control is transferred to step P1 which causes microcomputer 22 to transfer or boot the operating system from non-volatile memory 56 to memories 58, 60. Step P2 then transfers control of microcomputer to the operating system, and step P3 causes the microcomputer 22 and the associated peripherals (Fig. 4) to be initialized to begin the operating sequence. Control is then transferred to step P4 which causes a background task flag (BIDLE) to be set

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or posted and transfers control of microcomputer 22 to the executive sequence E (Fig. 18).

The executive sequence E runs at all times that there is no active interrupt as from one of the foreground sequences listed in Fig. 5 and described hereinafter. The executive sequence may be requested to execute any of the background service sequences shown in the program list (Fig. 18) by any other sequence which causes the particular background task flag to be posted or set. The selected background task sequence will then be executed to completion except for servicing interrupt (foreground) requests. As described above, the executive sequence is entered upon power up, with the BIDLE background task flag posted (step P4). The BIDLE task is a background idling task which is executed in the absence of other requests.

Turning now to Fig. 18, executive sequence E is entered at step E1 which causes microcomputer 22 to read the operational mode variable (initialized at step P3 to 1, and subject to control by host H) and to enable card reader 36 (Fig. 4) so that customers may activate terminal T to begin dispensing coupons.

Control is then transferred to step sequence E2 which causes microcomputer 22 to repeatedly determine whether any background task sequence flags have been posted, and to transfer control to the first posted background task. The background task sequences will be described in detail below, but each will return control of microcomputer 22 back to the executive sequence E upon completion. We now turn to a description of the priority, foreground interrupt sequences to which control is transferred upon demand.

2. The Foreground Sub-sequences

The foreground command sub-sequences illustrated generally in Fig. 5 are real-time, interrupt activated and, by definition, asynchronous. Since these sub-sequences interrupt other sequences, and may

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themselves be interrupted, any registers used by a sub-sequence must be saved on entry and restored on exit. Each of the various components of terminal T may be allowed to interrupt microcomputer 22 if enabled (see Fig. 5).

a. Card Reader Interrupt

The card read interrupt (FCRINT) sub-sequence is illustrated in Fig. 10. Control of microcomputer 22 is automatically transferred to this sub-sequence each time an interrupt from card reader 36 is received. At entry, step 180 causes microcomputer 22 to read the interrupt character to determine whether an error condition exists such as will be the case when a customer has improperly used activator A or attempted activation by improper means, or when activator A has malfunctioned.

If an error is detected, control is transferred to step sequence 182 which causes microcomputer 22 to send a "try again" message to the cathode ray tube 28 to prompt the customer to attempt another activation. Sequence 182 also includes steps 184, 186 and 188 which cause microcomputer 22 to post an alarm bit or flag upon the twelfth consecutive card reading error before returning (step 190) control to the last executed step prior to the interrupt.

Typically, no error character will be detected at step 180 and control will be transferred to step 192 which causes microcomputer 22 to determine whether the character from card reader is a start sentinel signaling the beginning of the transmission of customer primary account number data. The term primary account number is used herein to designate the number or code encoded upon the customer's credit card to identify the customer. If the character from the reader is a start sentinel, control is transferred to step 194 which initializes a pointer in the buffer register where the complete account information will be temporarily stored and returns (step 196) control to the point of departure prior to the interrupt. Since

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the card interrupt has not been disabled, the card reader interrupt will cause the next character, i.e., the first character of the account number to be read and so on until a field separator (step 198) or the twentieth character (step 200) is read, either of which marks the end of an account number, whereupon control is transferred to step 202 to disable the card reader interrupt. Thereafter, control is transferred to step 204 which causes a primary account number search flag to be posted which will in the manner described herein ultimately cause microcomputer 22 to begin searching previously entered account numbers to determine whether the present account number has been recently utilized. Step 204 also sets the terminal mode flag to indicate an account number search is in progress, then returns (step 196) control to the point of departure prior to the interrupt. In this manner, as each character prior to the field separator or the twentieth character is read, control is transferred from step 200 to step 206 which causes microprocessor 22 to store the character in the buffer initialized at step 194 until the entire account number is read and stored.

b. Interrupt from the Output to the Cathode Ray Tube (FSINT) (Fig. 11)

Referring now to Fig. 11, on each occasion when an output is provided by microcomputer 22 to UART 50 for transmitting to cathode ray tube 28, such as to display coupons, advertising or messages, control of microcomputer 22 will be transferred to sub-sequence 210. Step 212 of this sub-sequence causes UART 50 to send the next character of output data each time the sequence is entered until the last character is sent. When the last character has been sent, step 214 transfers control of microcomputer 22 to steps 216 and 218 which cause the output buffer pointer to be reset and signal that the output has been completed by setting the FPDFLG flag. Control is then returned (step 220) to the point of departure prior to the interrupt.

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c. Interrupt from Clock (FCLINT) (Fig. 12)

The clock interrupt sub-sequence 222 shown in Fig. 12 is provided to enable microcomputer 22 to maintain time of day and date and to monitor elapsed time from the occurrence of various events as set forth in the drawings. This sub-sequence is entered in response to an internally generated 60HZ clock interrupt. Sub-sequence 222 causes microcomputer 22 to increment an interrupt count (step 224) upon each entry and return (step 226) to the point of departure until sixty (60) entries have been made, i.e., one second has elapsed, whereupon control is transferred from step 228 to step 230. Step 230 causes the clock count register to be cleared and transfers control to step 232 where the seconds, minutes and hours registers of the microcomputer's internal clock are incremented as is appropriate. Control is then transferred to step 234 where the BTMTSK flag is posted to indicate that elapsed time has been incremented so that control of microcomputer 22 may be transferred to that background sub-sequence when appropriate to test for the expiration of any prescribed time limits. Where the time increment made at step 232 was the last of a full day, step 236 transfers control to step 238 to post an end of day (BEDTSK) flag prior to returning (step 226) control to the point of departure prior to interrupt. The end of day (BEDTSK) flag will cause control of microcomputer 22 to be transferred to that background sub-sequence (Fig. 28) to cause microcomputer 22 to perform specified end of day housekeeping chores.

d. Touch Screen Interrupt (FTSINT) (Fig. 13)

Once the touch screen 30 has been enabled, which in the normal course of events occurs after the terminal has been correctly activated by a customer and the first page of the menu of available coupons is displayed, any selection or other input from touch screen 30 will cause an appropriate interrupt to be generated and control of

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microcomputer 22 will be transferred to the interrupt sub-sequence 240 FTSINT illustrated in Fig. 13.

Sub-sequence 240 FTSINT is entered at step 242 which causes microcomputer 22 to store the data character transmitted via UART 50 (Fig. 4) in the touch screen buffer register then transfers control to step 244. Step 244 causes microcomputer 22 to test the touch screen buffer to determine if it is full, and if so forces internal processing by transferring control to steps 246, 248 and 250 in sequence. These steps cause microcomputer 22 to disable the touch screen interrupts (246) reset the touch screen buffer pointer (248) and set the touch screen background task flag (BTSTSK), respectively, then return (252) control of microcomputer 22 to the point of departure prior to interrupt. Setting the BTSTSK flag and disabling the touch screen interrupts causes microcomputer 22 to take up background touch screen task sequence in the manner described hereinafter to process the customer requests. If at step 244 control is transferred to step 254, step 254 causes microcomputer 22 to test the input character to determine if it is one requiring processing such as a "quit", "next page" or "hold" request. If so, control is transferred to steps 246 through 250 to force internal processing as described above. If the character does not require processing, control is returned to the point of departure prior to interrupt.

e. Printer Output Interrupt (FPOINT) (Fig. 14)

Whenever data is provided by microcomputer 22 to UART 46 for transmission to printer 32, such as when selected coupons are to be printed and dispensed to a customer, a printer output interrupt will be provided which will cause control of microcomputer 22 to be transferred to the sub-sequence 260 (FPOINT) illustrated in Fig. 14. This sub-sequence simply causes each character to be sent to printer 32 until a print command (which causes printer 32 to begin printing the coupon) is transmitted. Until a print command is transmitted, control will be transferred

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from step 262 to step 264 thereby causing the next character to be transmitted and the printer output register pointer to be incremented prior to returning (step 266) control to the point of departure prior to interrupt. If, on the other hand, a print command was the last character sent, control is transferred from step 262 to steps 268 and 270 in sequence which reset the printer output buffer pointers (268) and set a task complete (FPOFLG) flag prior to returning (266) control to the point of departure prior to the last interrupt.

f. Printer Input Interrupt (FPIINT) Fig.15)

Printer input interrupts occur when a printing transaction has been completed or a print error is signaled such as for low paper, or a time out error, i.e., where the coupon has not been printed within a prescribed maximum time limit, has occurred. Each time a printer input interrupt is provided to microcomputer 22, control of microcomputer 22 is transferred to background sub-sequence 280 (FPIINT) (Fig. 15).

Sequence FPIINT is entered at step 282 which causes microcomputer 22 to read the input character (from UART 46, Fig. 4) to determine if the printing task has been completed. In the usual case the input character will equal a prescribed value, i.e., "XON", indicating the transaction was completed routinely and control of microcomputer 22 is transferred to step 284. Step 284 causes a microcomputer 22 to set the printing task complete flag and then returns (286) control to the point of departure prior to the last interrupt. If, on the other hand, the input character is not equal to "XON", an error or alarm condition is indicated and control is transferred to step 288.

Step 288 and 290 cause microcomputer 22 to test the printer input character to determine if a time out error (XOF at 288), i.e., the printing was not completed within the specified time, or a low paper (LOP at 290) signal is being provided. In either case, control is transferred to

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the error recording steps 292, and 294 respectively which cause microcomputer 22 to set an error flag indicative of the type of error which has been reported. Control of microcomputer 22 is then transferred to step 296 which causes microcomputer 22 to post a background alarm task flag (BALTSK) and then return (298) control to the point of departure prior to the interrupt. Setting or posting the background alarm task flag will cause microcomputer 22 to take up an appropriate background task to deal with the reported printer error.

g. Modem Output Interrupt (FCOINT) (Fig. 16)

Each time microcomputer 22 provides a section of data for transmission from terminal T to host H via UART 50 and modem M, a modem output interrupt is provided by UART 50 which causes control of microcomputer 22 to be transferred to the foreground sub-sequence 300 (FCOINT) illustrated in Fig. 16. In the preferred embodiment, communications between the host H and terminal T are full duplex in blocks of 140 bytes, with ten (10) leading bytes of overhead, one hundred twenty-eight (128) bytes of data, and two (2) trailing bytes of a transmission error check. The error check variable is designated in the drawings as variable LRC. The LRC bytes represent the sum of the previous one hundred thirty-eight (138) bytes. The LRC counter will be initialized at zero when control is transferred to sub-sequence 300.

Referring now to Fig. 16, control is in the first instance transferred through steps 302, 304, 306 to step 308 since the transmission error check variable LRC is initially zero. Control will likewise be transferred through step 308 to step 310 since the hang up timer will typically not have expired. The hang up timer sequence beginning with step 308 is described more fully below.

Step sequence 310 causes the terminal T to send the next character to the host H, add the value of the character to the transmission error check variable LRC and increment the character count. Control of microcomputer

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22 is then transferred to step 312 which tests the character count to determine if the complete block of data (ten (10) leading, plus one hundred twenty-eight (128) characters) has been sent, and if not returns (314) control to the point of departure so that the above described sequence will be iterated to complete the transmission. If the complete block has been transmitted, the character count will equal one hundred thirty-eight (138), and control will be transferred from step 312 to step 316 which causes microcomputer 22 to reset the character count to zero in preparation for the next transmission and transfer control to step 318.

Step 318 causes microcomputer 22 to increment the LRC counter, i.e., from zero to one in the first instance, and then returns (320) control to the point of departure prior to interrupt. In this fashion, control of microcomputer 22 will again be transferred to sub-sequence 300 to step 302 so the LRC variable can be transmitted to complete the data transmission.

On re-entry, control will be transferred through steps 302 and 304 to step 306. Step 306 control of microcomputer 22 is transferred to step 322 which causes microcomputer 22 to increment the LRC counter, i.e., from 1 to 2, and transfers control to step 324. Step 324 causes the first byte of the LRC variable to be transmitted and then returns (326) control of microcomputer 22 to the point of departure prior to interrupt, whereupon sub-sequence 300 will normally be re-entered at step 302.

On the third entry at step 302, control will pass from step 302 to step 304 (LRC now equals 2) and to step 328. Step 328 causes microcomputer 22 to increment the LRC counter, i.e., from 2 to 3, and transfers control to step 330 to cause the second and last byte of the LRC variable to be transmitted to the host H and then returns (326) to the point of departure prior to interrupt. When control is transferred to step 302 for the fourth time in

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this sequence, LRC will equal 3, and control will be transferred from step 302 to steps 332, 334 and 336 sequentially to clear the LRC counter and the LRC variable (332), reset the modem output buffer pointer (334), and post or set a background task flag (335) in preparation for the next transmission and to signify completion of the present block. Control is then returned (338) to the point of departure prior to interrupt where, if transmission is completed, control of microcomputer 22 will be transferred to another posted background or interrupt task.

Sub-sequence 300 includes a "hang up" test sequence including steps 308, 340, 342, 344 and 346 which causes microcomputer 22 to send a "hang up" message to modem M to cause modem M to disconnect from host H. Upon initialization of an output communication to host H via modem M, microcomputer 22 causes a three second timer to be set to allow host H to respond, if necessary, to the data transmission from terminal T. If this timer has expired, indicating no return message has been received, step 308 causes control of microcomputer 22 to be transferred to steps 340-344. Step 340 causes microcomputer 22 to send a five character "hang up" command to modem M by iterating and testing the character count at step 340, and upon completion, transfer control to steps 342-346. Steps 342-346 cause microcomputer 22 to reset the character count (step 342), reset LRC variable and the three second hang up timer (step 344) and return (step 346) control to the executive sequence.

h. Modem Input Interrupt (FCIINT) (Fig. 17)

Referring now to Fig. 17, control of microcomputer 22 is transferred to the modem input interrupt sub-sequence 350 (FCIINT) in response to an interrupt from UART 54 indicating receipt of input data from host H. In this sub-sequence, control of microcomputer 22 is initially transferred to step 352 which causes a transaction timer to be set equal to two seconds then transfers control to

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step 354. Upon initial entry in this sub-sequence, reception error check variable ILRC and the character counter are equal to zero. As in the modem output interrupt sequence, in this sequence data is received in one hundred thirty-eight (138) character groups followed by the 2 byte ILRC.

Thus, upon initial entry control of microcomputer 22 is transferred from step 352 through steps 354 and 356 to step 358 which causes microcomputer 22 to store the incoming characters in sequence and add the character value to reception error detection variable LRC. Control of microcomputer 22 is then transferred to step 360. Step 360 causes microcomputer 22 to increment the incoming character counter and transfers control to step 362 which will return (364) control to the point of departure prior to interrupt the block of one hundred thirty-eight (138) characters have been received. When the entire block has been received control will be transferred from step 362 to steps 366 and 368 in sequence which cause microcomputer 22 to reset the character counter (366) and increment the ILRC counter (368) to prepare for the next data reception and cause the ILRC error detection counter to be received. From step 368 control is returned (364) to the point of departure prior to interrupt.

Upon re-entry to this interrupt sub-sequence control is transferred through steps 352 and 354 to step 356, whereupon ILRC being equal to one, control is transferred to step 370. Steps 370 and 372 sequentially cause microcomputer 22 to get the first character of the ILRC counter (372) before returning (374) control to the point of interrupt. Upon re-entry, control is transferred through step 352 to step 354 whereupon, ILRC being equal to two, control is transferred to step 376 which causes microcomputer 22 to get the second character of the ILRC variable then transfers control to the error detection sequence 378.

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Sequence 378 begins with interrogatory step 380 which causes microcomputer 22 to compare the received ILRC to the computed ILRC (step 358) to determine if they are equal. If not, control is transferred to step 382 which causes an input error flag to be set so that microcomputer 22 will be prompted to the appropriate action. If no error is detected, control is transferred from step 380 to steps 384, 386 and 388 sequentially which cause microcomputer 22 to reset the ILRC counter and timer to zero (384), reset the input buffer register pointer (386), and post or set a background sequence task flag (BCITSK) (388) before returning (390) control to the point of departure prior to interrupt.

3. The Background Task Sub-sequence

The sub-sequences described in this section are all entered from the executive command sequence E (Fig. 19) as a result of having been requested during some other functional sequence. The request is made by setting or posting the appropriate task flag. The subscript TSK for "task" is used in designating the various background sub-sequences except for BIDLE sub-sequence which is the background idle loop. The tasks that each sub-sequence performs are generally as follows:

a) BIDLE causes the microcomputer 22 to provide free-standing advertising video to cathode ray tube 28 and to rotate ads every ten seconds;

b) BPSTSK causes the microcomputer to put existing or new coupon history files in buffer BPSBFR (Fig. 13, step 242);

c) BTSTSK interprets inputs from touch screen 30, (Fig. 13, step 250), updates coupon history and count files, or the touch screen error file, queues coupon print requests, gets the next coupon screen when required, sets mode flag to 1 and updates non-volatile memory 56 when the task is completed;

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d) BTMTSK is automatically entered each second from foreground clock interrupt sequence FCLINT (Fig. 12) to service any expired timer;

e) BPOTSK causes microcomputer 22 to get the next entry from the printer queue and initiates transfer to the printer (Fig. 15, step 284);

f) BALTSK is executed in the event of printer error conditions to terminate the current printing transaction in an orderly fashion, sets operation mode to five to indicate printer failure, and posts the BCOTSK flag to cause microcomputer 22 to call the host H to report the failure; BALTSK also initiates a call to host H in the event of repeated card reader errors (Fig. 10, step 188) but without setting the operational mode to five;

g) BCOTSK causes the terminal T to initiate a call to host H, and, if a connection is already established, initiate transfer of the next data block (Fig. 16, step 336);

h) BCITSK causes microcomputer 22 to check incoming data from host H and initiates corrective action if necessary; if the input data is acceptable, BCITSK causes microcomputer 22 to perform the indicated action from host H, and also controls the data input timer and recognizes and discards the disconnect data sequence at the end of host communications.

A detailed description of the background task sub-sequences with reference to corresponding flow chart diagram follows.

a. Background Idle Loop Sequence (BIDLE) (Fig. 20)

This sub-sequence is posted upon execution of terminal power up (Fig. 19, step P4) by sequence BTSTSK entering the normal, ready condition, designated mode 1 (Fig. 22a, step 522), by sequence BCITSK entering the Hide and Watch mode designated mode 5 (Fig. 27a, steps 740, 750), by BTMTSK (Fig. 23, step 576) and reposted by BIDLE.

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This sequence causes terminal T to display successive free-standing ads on ten second boundaries.

Referring now to Fig. 20, the details of subsequence BIDLE are illustrated. Upon entry, control is transferred to step 400 which causes microcomputer 22 to determine whether terminal T is in operational modes two (coupon display or transaction) or four (commanded reboot from host H) and if so returns control to executive command sequence E. If terminal T is not in operational modes two or four, control is transferred to step 402 which causes microcomputer 22 to proceed to display the next ad in sequence only if the ten second timer has elapsed which is indicated if the value of CRT end flag is equal to one. If not, control on microcomputer 22 is transferred to step 404 to repost the BIDLE task flag and return (406) control to command sequence E.

If the ten second time for displaying the current ad has expired, control of microcomputer 22 will be transferred to step 408. Step 408 causes microcomputer 22 to get the data which comprises the next ad from memory and transfer control to step 410 to initiate transmittal of this next ad to cathode ray tube 28. Control is then transferred to step sequence 412 which causes the microcomputer to increment the next ad counter until the counter attains the prescribed maximum number designated "max ad" corresponding to the number of distinct ads stored in memory. When the next ad counter reaches "max ad", step sequence 412 causes microcomputer 22 to reset the increment counter to zero to begin the display sequence anew. Thereafter control is transferred to step 414 to reset the ten second timer for the currently displayed ad and control is returned (416) to command sequence E.

b. Customer Account Number Search Task (BPSTSK) (Fig. 21)

This sub-sequence is posted in response to customer activation of terminal T with a credit card having a primary account number (PAN) encoded upon magnetic tape

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which has been read by card reader 36 and stored in a buffer register in random access memory 58, 60 (Fig. 10, steps 204, 206). This sub-sequence essentially searches previously used account numbers to determine if the present account number has been used to activate the terminal to dispense coupons within a prescribed time period, i.e., the last week, and if so, limits the coupons dispensed to that account number to a prescribed maximum by preventing previously selected coupons from being displayed on cathode ray tube 28 for selection. It should be understood that the prescribed maximum number of a particular coupon to be dispensed could be set equal to one, two or more, but most typically will be one. If the account number presented to microcomputer 22 via card reader 36 is new, i.e., not having been previously used within the specified period, it is stored in a random access memory 58,60 file, designated temporary PANFIL, and in non-volatile memory 56 and a full menu of coupons is displayed for the customer.

Referring now to Fig. 21, the details of sub-sequence BPSTSK are illustrated. Upon entry, steps 420 and 422 cause microcomputer 22 to convert the ASCII format account number read from the present customer card to binary coded digital (BCD) for the purpose of comparing it to previously used account numbers stored in memory. Control is then transferred to step 424 which causes microcomputer 22 to initialize a counter corresponding to the number of search attempts (# of tries) and the "next account" pointer to zero. Control is then transferred to step 426 to begin a sequential search of the primary account number file (PANFIL) for previously used primary account numbers.

Step 426 causes microcomputer 22 to stop searching for a matching account number when all previously used and stored account numbers have been compared, by comparing the # of tries counter to the primary account number counter (PAN CNT) which equals the total number of primary account numbers stored in memory. Typically this test

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will fail and control will be transferred to step 428 which causes microcomputer 22 to compare the present primary account number to the one stored at the address identified by the "next" pointer, and if unequal, transfers control to step 430 to increment the "next" pointer and "# of tries" counter and returns control to step 426. This search is repeated until all previous primary account numbers are compared (exit at step 426) or the present account number is located in memory (exit step 428).

If the principal number is new, the "# of tries" counted will eventually be incremented to equal the account counter "PAN CNT", and control of microcomputer 22 will be transferred from step 426 to step 432. Step 432 causes microcomputer 22 to set a "new" account flag and transfers control to step 434. The current account numbers are maintained in a primary account number file (PANFIL) stored in random access memory 58, 60 to facilitate searches for account numbers in a random access memory file without having to search coupon history data as well. Step 434 transfers control of microcomputer 22 to steps 436 and 438 to cause the new primary account number to be stored in this primary account number file in random access memory 58, 60 (step 436) and the primary account number counter to be incremented (step 438) if the file is not full (step 434). If, on the other hand, the primary account number file is full, control is transferred from step 434 to step 440 to increment the primary account number overflow flag. Once the primary account number counter PAN CNT is incremented to four thousand ninety-six, step 442 transfers control of microcomputer 22 to step 440 to increment the file overflow flag. When an overflow condition arises, terminal T will continue to dispense coupons in the normal manner, but the new account numbers and histories will be written over the oldest account numbers and histories in memory. Step 440 causes microcomputer 22 to increment the

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overflow counter in order to maintain a count of the number of overflow transactions. In any event, the count of the number of coupons dispensed is maintained in memory despite the overflow condition.

Whether an overflow condition exists or not, control of microcomputer 22 will be transferred from either step 440 or 442 to step 444 which causes microcomputer 22 to read the address (Logical Bit Number) corresponding to the data sector in memory which contains the most recently entered coupon history data into the primary account buffer. This address will be used by microcomputer 22 to retrieve the coupon history from memory to use as a mask to prevent display of previously selected coupons in subsequent transactions. The new account number is read into the primary account buffer later, at step 458.

Control of microcomputer 22 is then transferred to step 446 which calculates the current increment of the data sector where the new account number is to be stored, and sets the value of variable PAN INC equal to the current increment. Control is then transferred to steps 450, 452 and 454 which cause microcomputer 22 to test the current increment value (step 450) and if equal to eight, reset the current increment to zero (step 452). In the illustrated embodiment, data sectors comprised of eight increments are used and therefore sub-sequence steps 450-454 cause microcomputer 22 to maintain a count of the current increment up to eight and then reset to begin counting again. Each time the count reaches eight, the sector in use has been filled and accordingly the logical bit number is incremented to correspond to the next sector to be used (step 454). Thereafter, control of microcomputer 22 is transferred to steps 456 and 458 which cause microcomputer 22 to set variable "allowed coupon" to the initial count since this is the initial use of the

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current primary account number and store the primary account number in the appropriate buffer (step 458). Control is then transferred to step 460 which causes microcomputer 22 to enable the touch screen interrupt so that coupon selections may be made by the customer. Control is then transferred to step 462 to post background touch screen task (BTSTSK) and returned (464) to the point of departure prior to interrupt.

Returning now to step 428, and assuming the customer's primary account number is found in the primary account number file in random access memory 58, 60, control of microcomputer 22 will be transferred from step 428 to step 466. Step 466 causes microcomputer 22 to read the coupon history corresponding to this account number into pan buffer for use as a mask in the manner described hereafter to prevent the display of previously selected coupons. Control is then transferred to step 468 which causes microcomputer 22 to determine the increment into the pan buffer where the present account number and coupon history are located and retain the location by setting the value of variable PAN INC. The search task then being completed, control of microcomputer 22 is then transferred to steps 460 which causes microcomputer 22 to disable the card reader interrupt and to enable the touch screen interrupt, then transfers control to step 462 which causes microcomputer to post background touch screen task flag (BTSTSK) before returning (464) control to the point of departure prior to interrupt.

This sequence BPSTSK has caused the microcomputer to record the primary account number in the primary account number buffer with "zeros" for an account history thereby allowing full coupon selection if the number was a "new" account, and recalled the coupon history into the principal account buffer to be used as a mask to prevent full selection in the case of previously used account numbers.

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c. Touch Screen Task (BTSTSK) (Fig. 22a-c)

This background task sequence has three entry points and for ease of reference is illustrated in separate Figs. 22a, 22b and 22c, respectively. The first entry from task BTMTSK (Fig. 23), is used to mask previously dispensed coupons from the touch screen and cathode ray tube display and to send the modified display to cathode ray tube 28. The record entry from background task FTSINT (Fig. 13, step 250) is used for causing microcomputer 22 to accept touch screen entries, and the third entry, from background task BPSTSK, is used for initializing sequence pointers to rotate the order of appearance of the screens to the customer.

When control of microcomputer 22 is transferred to this sequence from sequence BTMTSK, entry is at step 470 (Fig. 22). Step 470 causes microcomputer 22 to display a background of blank coupons on cathode ray tube 28 which will be completed with alpha numerics at step 488 and transfers control to step 472. Step 472 causes microcomputer 22 to increment a "screens presented" counter so that only the correct number of screens will be presented to the customer on any given transaction. On the first execution the increment will be from zero to one, and so on until the maximum number has been reached. Control is then transferred to step 474 which causes microcomputer 22 to test the screens presented counter versus the prescribed maximum, and if the maximum number has been exceeded treats the transaction as a "quit" request, as described below. If the maximum number of screens have been presented, control of microcomputer 22 is transferred from step 474 to sub-sequence Q (Fig. 22a) which will be described below. If all the screens have not been presented to the customer, control is transferred from step 474 to step 476 to continue the display sequence. Control is transferred sequentially from step 476 through step 484 to cause microcomputer 22 to determine which screen is to be displayed next (476) and

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to filter the displayed video for the cathode ray tube and the touch screen to eliminate any coupons no longer available for selection.

Step 476 causes the microcomputer 22 to determine which screen of coupons is to be displayed next by reading the "NXTSCN" counter, then transfers control to step 478 which causes the microcomputer to retrieve from memory the coupon history for this customer and this screen of coupons then transfers control to step 480. Step 480 causes microcomputer 22 to compare the coupon usage to the prescribed coupon per customer limit and filter or remove any coupons which are not available by disabling the corresponding touch pads. Control is then transferred to step 482 and 484 which similarly cause microcomputer 22 to eliminate any coupons which are invalid (step 482) by disabling or filtering the corresponding touch pad(s) and to similarly eliminate any coupons which are not available because weekly or other periodic maximum limits (as distinguished from per customer limits) have been attained (step 484).

Control of microcomputer 22 is then transferred to step 486 which causes microcomputer 22 to filter the video screen of coupons to match the modified touch pad array or touch screen so that unavailable coupons will not be displayed. Control is then transferred to step 488 to initiate display of the alpha numeric characters on the background of blank coupons (step 470) for each valid, available coupon on cathode ray tube 28. Control is transferred to steps 490 and 492 which cause microcomputer 22 to start the ten second timer for displaying the screen of coupons (490) and to increment the next screen counter. Control then transfers to loop 494 which causes microcomputer 22 to reset the next screen counter to zero once the total available screens have been displayed prior to returning (496) control to executive sequence E.

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When BTSTSK is entered from the touch screen interrupt sequence FTSINT, control of microcomputer 22 is transferred to step 500 (Fig. 22b). Steps 500 through 508 cause the microcomputer to determine the nature of the touch screen input and transfer control appropriately.

If the touch screen input is a next screen request (step 500) control is transferred to BTMTSK entry A (Fig. 22a) to cause the next screen of coupons to be displayed immediately. If the touch screen input is a hold request (step 502) control is transferred to step 503 to cause the microcomputer 22 to reset the coupon display timer (step 490, Fig. 22a) to permit the present coupon screen to be displayed another ten seconds. If the touch screen input is determined to be a pad error, i.e., a malfunctioning touch screen pad (step 504) control is transferred to step 505 to cause microcomputer 22 to record the malfunction in an appropriate register and return to the executive sequence E.

If the customer has touched an invalid pad, i.e., one underlying a blank space on the display (step 506) control is returned to the executive sequence E since further action is unnecessary. Finally, if the touch screen input is a quit request, (step 508) control is transferred to sub-sequence Q (Fig. 22a).

Upon entry to sub-sequence Q, either from step 508 at the customer request or from step 474 when all screens have been displayed and selection completed, sequence Q causes microcomputer to perform the following end of transaction functions:

i. Write the primary account number data from random access memory file to non-volatile bubble memory 56 if this transaction was initiated with a new account number (steps 510, 512);

ii. Update the coupon counter in non-volatile memory 56 (step 514);

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iii. Update the not sent sector, i.e., the transaction data not yet sent to host H, in non-volatile memory 56 (step 516);

iv. Update the coupon history increments or pointers in non-volatile memory 56 (step 518);

v. Update the coupon history sector in non-volatile memory 56 (step 520);

vi. Reset the buffer pointers, disable the touch screen interrupt, and enable the card reader interrupt to place the terminal in mode 1 condition, i.e., ready to be activated (step 522);

vii. Post the background idle task BIDLE and return to executive sequence E (step 524) unless the not sent sector of non-volatile memory is full (step 526) in which case background task sequence BCOTSK is posted (step 528) prior to returning to cause microcomputer 22 to take appropriate action.

Returning now to Fig. 22b, and assuming the touch screen input is a valid coupon selection input, control of microcompuer 22 passes to step sequence beginning with step 530 which causes the microcomputer 22 to initiate dispensing the selected coupon by queuing the selected coupon data into the printer output buffer and posting the printer output background sequence task BPOTSK (steps 530, 532). Thereafter control is transferred to steps 536 and 538 which cause the microcomputer to disable the touch pad(s) corresponding to the selected coupon (step 536) and update the coupon history and counts in random access memory 58, 60 (step 538). Control is then transferred to steps 540 and 542 which cause the microcomputer 22 to determine whether the maximum number of this coupon have now been dispensed (step 540) and, if so, to correct the touch screen mask to clear the selected coupon from the

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video display (step 542). Control is then transferred to step 546 to set the display timer (Fig. 22a, step 490) to provide a ten second display of the available coupons then returned to executive sequence E.

Entry into background touch screen task BTSTSK from task sequence BPSTSK (Fig. 21, step 462) causes control to be transferred to step 550 (Fig. 22c). This step sequence is simply an initialization sequence to cause microcomputer 22 to rotate the order of appearance of the coupon screens and initialize the screen counter (step 550), and next screen counter (steps 552, 554) prior to using background task sequence BTMTSK entry A (fig. 22a) to display the appropriate screen of coupons. Note that steps 556 and 558 cause the microcomputer to determine whether the last screen, i.e., the fourth screen, has been displayed in this transaction (step 556) and, if so, reset the first screen counter to zero (step 558) which will cause the screen display sequence to begin anew. In either event, control is transferred to step 558 which sets the terminal operating mode to mode 2 to place the terminal in condition for a coupon transaction, prior to exiting to entry A in sequence BTMTSK (Fig. 22a).

d. Timer Task (BTMTSK) (Fig. 23)

This background task sequence (Fig. 23) is posted every second by the clock interrupt FCLINT (Fig. 12, step 234) and posts appropriate background task sequences if a timer has expired. In addition, time task BTMTSK also posts task BCOTSK at the time specified to initiate data transmission to the host H. All timed functions are listed in a timer register corresponding to the timed task. Each time the particular task is begun, the corresponding timer is set by the task sequence which provides an input value to the timer list. Entry into sequence BTMTSK causes control of microcomputer 22 to be transferred to step 570 which causes microcomputer 22 to decrement any positive timer entry.

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Thereafter control is transferred to steps 572, 574 and 576 to cause microcomputer 22 to determine whether any of the listed timers have expired (step 572), and, if so, to set the timer to a negative value to prevent subsequent repetitive time outs (step 574) and to activate (step 576) the corresponding timer executive sequence task (Fig. 18) so that appropriate action may be taken. If no timer has expired, control is transferred from step 572 directly to step 578. Steps 578, 580 and 582 cause microcomputer 22 to increment the data transfer time which equals the elapsed time since the last transfer of coupon transaction data to host H (step 578), test the elapsed time versus the specified period for making scheduled data transmissions (step 580), and if the time has expired (step 582) post background task sequence BCOTSK which initiates a call to the host for data transmission. Thereafter control of microcomputer 22 is returned either from step 580 or 582 to the executive sequence E.

e. Printer Output Task (BPOTSK) (Fig. 24a)

The printer output task BPOTSK may be posted from the BTMTSK sequence (Fig. 23, step 576) in which case entry is at the step sequence illustrated in Fig. 24a, or from the BTSTSK (Fig. 22b, step 532) or FPIINT (Fig. 15, step 284) sequences in which case entry is at the step sequence illustrated in Fig. 24b. Printer output task BPOTSK generally is used to cause the requested coupons to be printed and dispensed with the specified expiration date or other such data and to monitor printer errors.

Referring now to Fig. 24a, entry to BPOTSK from BTMTSK occurs when printer 32 has failed to send a coupon cut signal during a coupon dispensing transaction. The sequence illustrated in Fig. 24a causes microcomputer 22 to monitor printer 32 by providing a six (6) second time period for printer 32 to send the coupon cut signal indicating the transmitted coupon has been dispensed.

Upon initial entry into this sequence, control of microcomputer 22 is transferred to step 590. Step 590

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causes microcomputer 22 to test the state of the timer flag. If the timer flag is not set, control of microcomputer 22 is transferred to steps 592-596 which cause microcomputer 22 to set the timer flag (step 592), prescribe a six second time limit (step 594) and initiate the same printer transfers (step 596). If, at step 590, the timer flag has already been set, an error message is required and control is transferred to steps 598-602 which cause microcomputer 22 to clear the timer flag (step 598), set the Time Out bit in the error word register (step 600) and post background task BALTSK (Step 602) to cause appropriate action to be taken regarding the error. Control is in either case returned (step 604) to the executive sequence.

If the entry into BPOTSK is from the touch screen task, BTSTSK, or from the printer interrupt task, FPIINT, control of microcomputer 22 is transferred to step 610 (Fig. 24b). This sequence is entered to initiate printer output such as to provide the customer with the selected and authorized coupons. Upon entry, steps 610-614 cause microcomputer 22 to clear time out and X off error bits from prior transactions (step 610), clear already called and timer flags likewise set from prior transactions (step 612) and to cancel the previous time entry (step 614).

Control is then transferred to step 616 which causes microcomputer 22 to test the printer queue to determine if any coupons remain to be printed. If not, no further action is required and control is returned (step 618) to the executive sequence.

If, on the other hand, coupons remain in the printer queue to be printed, control of microcomputer 22 is transferred from step 616 to steps 620-628 which cause the microcomputer to decrement the remaining in queue variable and retrieve the next increment of coupon data (step 620), increment the next read pointer to point to the address of data which comprises the next coupon to be printed in accordance with the customer's request, (step 622),

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transfer the coupon print file to the printer output buffer from non-volatile memory 56 (step 624), insert extra data such as an expiration date data if requested (step 626), and initiate transfer of the data to printer 32 under a six second time limit (step 628). The transaction is then completed and control is returned to the executive sequence (step 630).

f. Alarm Task (BALTSK)

Alarm task BALTSK is posted in response to terminal malfunctions or alarm conditions such as from the printer input interrupt sequence FPIINT (Fig. 15, step 296), the card reader interrupt sequence FCRINT (Fig. 10, step 188), or the printer output task BPOTSK (Fig. 24a, step 602). Alarm task BALTSK causes the microcomputer 22 to initiate a call to the host H and, in some circumstances place the terminal T in a disabled, hide and watch mode.

Upon entry into the BALTSK sequence, control of microcomputer 22 is transferred to a series of interrogatory steps (632-636) which cause microcomputer to determine whether the cause of entry was a X off error (step 632), a time out error (step 634), or a low paper error (step 636). If either a X off or time out error is detected, indicating printer failure, control is transferred to step 638 to cause microcomputer 22 to initiate a call to the host and place the terminal in the disabled, hide and watch mode.

Step 638 causes the microcomputer to determine whether the host has already been called by reading an appropriate flag, and if so returns (640) control to the executive sequence in the disabled mode. If the call has not been made, control is transferred to steps 642-648 which cause the microcomputer to set the already called flag (step 642), post call out task BCOTSK (step 644), set the terminal mode to the disabled, hide and watch mode (step 646), and set a sixty (60) second time for printer output task BPOTSK to schedule evaluation in sixty seconds

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(step 648). Control is then returned (step 680) to the executive sequence in the disabled mode.

g. Data Transmission to Host H

Control sequences for microcomputer 22 cause the microcomputer to initiate calls from terminal T at regularly scheduled times, i.e., every six hours, and whenever the full capacity in non-volatile memory 56 allocated for coupon history data is exhausted. Since the host H may only have a limited number of communication lines, so that a particular terminal T may receive a busy signal when a call is attempted, control sequences are provided to redial at the expiration of a fixed time period, e.g., 45 or 60 seconds.

Each time terminal T completes a call to host H, microcomputer 22 will cause the terminal T to send all coupon history information from memory 56 to the host H. The host H will recognize the data from a particular terminal T and record and segregate the data which comprises the particular terminal's coupon history so that it may be accessed by terminal identification number.

After all the coupon history data has been sent, microcomputer 22 will cause terminal T to transmit the coupon count data which is the cumulative count of coupons dispensed by the terminal during the reporting period by coupon type. The terminal's mode and error messages will also be transmitted. Each terminal will also originate a call to the host whenever there has been power-up reboot, or low paper, X off or time out condition at the printer. Coupon transaction data will be transmitted to the host H on these occasions also.

h. Communications Output Task (BCOTSK)

The communications output task will be posted to initiate transfer of data from terminal T to host H in one of six ways:

1. When the not sent buffer of terminal T which stores coupon transaction data not yet sent to host H (Fig. 22a, step 528) is full, microcomputer 22 causes

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terminal T to indicate transfer of coupon history data and coupon counts one sector at a time from the not sent buffer;

2. By foreground communcations output interrupt FCOINT to initiate the transfer of the next sector of coupon data (Fig. 16, step 336);

3. By background alarm task BALTSK to initiate a call to host H to report a printer or card reader failure (Fig. 25, step 644);

4. By the power up sequence P (Fig. 19, step P1; Fig. 6, step 76) to obtain current date/time prior to assuming on-line, ready condition;

5. By the background end of day task BEDTSK (Fig. 28, step 816) for housekeeping transmissions; and,

6. By background communications interrupt task BCIITSK in response to a request from the host (Fig. 27b, step 802).

Each communicated data sector includes a type block which identifies the type of communication. In the illustrated embodiment, types 1-12 are communications from host H, types 20-26 are from terminal T to host H and type zero is either way.

Terminal block types may, for example, include the following:

1. Type 20: Not sent coupon history data consisting of up to seven coupon histories updated by terminal transactions;

2. Type 21: Coupon type count of the number of coupons of each coupon type issued since the last reset; may also include various error words;

3. Type 22: Date/time request calls host after reboot to obtain date/time;

4. Type 23: Printer failure, i.e., the terminal printer has an error condition which has caused microcomputer 22 to place printer 32 in the disabled mode;

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5. Type 24: Low paper in printer.

6. Type 25: Excess card reader errors, indicative that there have been twelve bad reads from card reader 36;

7. Type 26: End of day transmission, where coupon type counts are sent as final, and daily counts are reset.

Host to terminal block types may include the following:

1. Type 1: Commands terminal T to go to ready mode; terminal obeys if printer not failed;

2. Type 2: Commands terminal T to go to disabled, hide and watch mode;

3. Type 3: Commands terminal to prepare for coupon data update by going to disabled mode, transferring current not sent histories and coupon counts, and reset account file, history file pointers and counters;

4. Type 4: Commands terminal to alter terminal identification and date/time, in response to terminal request;

5. Type 5: Same as 4 except no change in terminal identifier;

6. Type 6: Commands terminal to reboot, used to update coupon data;

7. Type 7: Commands terminal to write transmitted date into non-volatile memory;

8. Type 8: Commands terminal to modify coupon count assignment, and to change the maximum number of a particular coupon to be dispensed;

9. Type 9: Provides terminal with beginning limits for dispensing coupons;

10. Type 10: Requests that terminal T send not sent histories and coupon count data.

The host H may transmit data to the terminal T at any time during a connection by changing a communications block type recognized by the terminal to signal a type of

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host command. Terminal T will receive these commands and accomplish the specified tasks.

Having these general communications types in mind, the background communications output task BCOTSK illustrated in Fig. 26 is readily understood. Control of microcomputer 22 will be transferred to BCOTSK sequence as a result of one of the six posting possibilities. If entered from sequence BALTSK control is transferred to step 700 which causes the microcomputer 22 to set the type block which corresponds to the particular alarm or error condition, and transfers control to step 702. Step 702 causes microcomputer 202 to get the type count information from memory and transfers control to step 704 to initiate the data transfer.

If entered after power up, control is transferred to steps 706, 702 and 704 which causes microcomputer 22 to set the type block to type 22 to request the host to provide date/time information (706), get the coupon count information (202) and initiate the transfer (704).

If entered from any of the remaining four possibilities (Fig. 26) control is transferred to step 710 which causes microcomputer 22 to determine if there are any not sent history sectors in the buffer and if not transfers control to steps 712, 702 and 704 which cause microcomputer 22 to set the type block for type counts (712), get the type count data (702) and initiate the transfer (704).

If on the other hand, at step 710, it is determined that there are not sent coupont history sectors, control is transferred to steps 714, 716 and 704 to set the not sent type block (714), get the next not sent sector to transfer (716) and initiate the transfer (704). After each sequence control is returned (720) to the executive sequence.

i. Terminal Control Via Host -
Communication Input Task (BCITSK) (Fig. 27)

The communications input task BCITSK is posted whenever an error free input communication is received

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from host H so that microcomputer 22 will cause terminal T to interpret the message and comply with the host commands. With the above enumerated block types designated to identify particular commands, the input task sequence is simply a series of interrogatories to identify block type and cause the terminal to carry out the commands accordingly.

Referring now to Fig. 27, upon entry to BCITSK, control is transferred to step 730 which evaluates the command block type, and, if block type 1, transfers control to steps 732 and 734 which cause microcomputer 22 to place the terminal in the ready, on line mode (step 734) unless printer 32 has failed (step 732) in which case the command to go to ready is ignored.

If the communication is a block type 2, control will be transferred through step 730 to step 736 and then steps 738-742. Steps 738-742 cause microcomputer 22 to determine whether a coupon transaction is in progress (step 738), and, if so, terminate the transaction (step 742), but in any event, places the terminal T in the disabled, hide and watch mode (step 740).

If the communication is a block type 3, control will be transferred through steps 730 and 736 to step 744 and then to step 746-758 as is appropriate. Steps 746-750 cause microcomputer 22 to terminate any coupon transactions in process, and go to the disabled mode. Steps 752 and 754 cause microcomputer 22 to send any not sent coupon histories. Step 756 and 758 cause microcomputer 22 to send the type counts and initialize internal counters and pointers.

If the communication is a type 4, control is transferred to step 760 and then to steps 762-768 which cause microcomputer 22 to update the terminal identifier (stpe 762), set the date/time data (step 764), determine if a printer failure has occurred (step 766) and, if so, set the appropriate printer failure mode 6 flag (step 768).

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If the communication is a type 5, control is transferred to step 770 and then to step 764-768 as described above thereby causing microcomputer 22 to obtain date/time data and perform a printer error check without changing the identifier for terminal T.

If the communication is a type 6, control is transferred to step 772, then to steps 774-778 which cause microcomputer 22 to terminate any coupon transactions in process (steps 774-776) and transfer control to the boot, block type 11 sequence.

Type 7 communications cause control to be transferred to step 780 and then to steps 782-782. Type 7 is a non-volatile memory write command and steps 782 and 784 cause microcomputer 22 to prevent writing in the addresses reserved for the operating system (step 782) but otherwise to write the new data as instructed (step 784).

Type 8 communications cause control to be transferred to step 786 and then to steps 788-794 as is appropriate. Steps 788 and 790 cause the microcomputer 22 to invalidate a current coupon if the host specifies a zero allotment, and steps 792-794 otherwise cause existing coupon allotments to be adjusted according to the command.

Type 9 commands cause control to be transferred to step 796, and then to step 798 to cause microcomputer 22 to boot in or load the data being transferred from the host H to set up new coupon allotments and account allotments and to receive a new coupon array for display.

Type 10 commands are requests for the terminal T to call the host H and cause control to be transferred to step 802 to post the BCOTSK sequence to initiate the call. After each communication is evaluated and executed control is returned to executive sequence E.

j. End of Day Task (BEDTSK)

In addition to those service programs or tasks listed in Figs. 5 and 19, an end of day background task illustrated in Fig. 28 is provided to cause terminal T to perform certain housekeeping chores at the end of each

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operating day. This task sequence is posted by the timer task, BTMTSK, at the expiration a of twenty-four hour period plus ninety seconds.

Referring now to Fig. 28, upon entry control of microcomputer 22 is transferred to step 804 which causes microcomputer 22 to increment the Julian date to the next day. Thereafter, control is transferred to step sequence 806-812 which cause microcomputer 22 to reset Julian date to 1 at the end of the year, i.e., the 366th day, unless the current year is a leap year. Control is then transferred to steps 814 and 816 which causes microcomputer 22 to reset the end of day timer (step 814) and initiate an end of day call to the host (step 816). Control is then returned to the executive sequence E.

Since implementation of a command control sequence for the host H, given the specifications for terminal T and the communications format contained herein is a matter within the ordinary skill in the art, detailed programming sequences for host H need not be proivded herein.

V. Conclusion

The system of the present invention thus provides an unattended stand alone terminal T for controlling and monitoring the distribution of coupons at a remote location in cooperation with a centrally located host computer H. Once the terminal T is energized and operating it monitors and controls the printing and distribution of coupons in accordance with prescribed operating criteria, coupon limits and customer requests. The terminal T displays and automatically rotates free standing advertisement screens between customer transactions and when in a disabled mode. The terminal T may be activated to the coupon dispensing mode by any customers having a common credit card bearing a primary account number encoded on magnetic tape. In response to a valid activation, terminal T displays only those coupons available for selection to the customer at that time. The data encoded upon the coupons which are dispensed provides

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the manufacturer with a means to monitor and control fraudulent redemption. Customer account numbers and coupon transaction data are recorded, identified and automatically transferred to the host at periodic intervals.

While the preferred embodiment of this invention relates to manufacturers' coupons, it should be understood that other segments of information which can be displayed and withdrawn from a terminal by choice and which need to be controlled as to information continued and in number of dispensed segments are within the scope of the distribution system disclosed herein and hereinafter claimed.

In addition, host H is programmed to accommodate coupon dispensing history from each terminal on a terminal-to-terminal basis as well as a particular coupon-by-terminal and coupon by all terminals basis. Recording of this information on a periodic basis provides the host with the available information to provide meaningful coupon history reports to manufacturers which can be used to verify actual coupon redeemed information as well as provide meaningful market information on a per store, per terminal, per all terminal basis.

The foregoing disclosure and description of the invention are illustrative and explanatory thereof, and various changes in the size, shape and materials, as well as in the details of the illustrated construction may be made without departing from the spirit of the invention.

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CLAIMS:

1. A system for controlling the selection and dispensing of product coupons at a plurality of remote terminals located at predesignated sites such as consumer stores wherein each terminal comprises:

activation means for activating such terminal for consumer transactions;

display means for displaying a plurality of coupons available for selection;

selection means provided to permit selection of a desired coupon by the consumer;

print means for printing and dispensing the coupon selected; and,

control means for monitoring each consumer transaction and for controlling said display means and print means in accordance with prescribed coupon criteria.

2. The system of claim 1, wherein said activation means comprises means for reading encoded consumer identifier cards, and means, responsive to said card reading means, for forming a terminal display activation signal.

3. The system set forth in claim 1, including:

said control means interacting with said display means to provide means for displaying an array of individual coupons on a page formatted video menu.

4. The system set forth in claim 3, including:

means for sequentially displaying a plurality of video menu pages.

5. The system set forth in claim 3, further including:

means for displaying video graphics other than coupons such as advertisements or the like.

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6. The system set forth in claim 3, including:

means for automatically displaying each of said video menu pages for a particular time period.

7. The system set forth in claim 3, wherein said control means includes means for modifying the sequence in which said menu pages are displayed.

8. The system set forth in claim 7, including:

said control means and display means interacting to provide means for holding a particular menu page in display format for an additional period of time.

9. The system set forth in claim 7, including:

said control means and display means interacting to provide means for causing the immediate display of the next menu in sequence.

10. The system set forth in claim 3, wherein said control means includes means for modifying the displayed array of coupons.

11. The system set forth in claim 2, wherein:

said control means includes means for preventing the display of particular coupons in response to activation by a particular credit card.

12. The system set forth in claim 2, wherein said control means includes:

coupon limit means for prescribing a maximum distribution number for each coupon to set a limit on the number of that coupon that is dispensed in a particular time period; and display masking means for preventing the display of those coupons for which the prescribed distribution limit has been attained.

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13. The system set forth in claim 2, wherein said control means further comprises:

transaction storage means for storing a record of each transaction, said transaction record including a customer account identification number and data reflecting the type and number of coupons dispensed in the partaicular transaction.

14. The system set forth in claim 13, wherein said control means further comprises:

means for prescribing a particularized per account limit for each coupon;

means for comparing each customer account number read by said card reading means to the customer account numbers previously stored in said transaction storage means; and,

means for masking the display of any coupon for customer selection for which the per account limit number of coupons have been previously dispensed.

15. The system set forth in claim 13, wherein each of said terminals is associated with a centrally located data processing unit, and wherein said terminal further comprises:

data transmission means for transmitting the stored transaction data to the central data processing unit.

16. The system set forth in claim 15, wherein said data transmission means further comprises:

means for automatically initiating the transmission of the transaction data at regular periodic intervals.

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17. The system set forth in claim 15, wherein said data transmission means further comprises:

means for automatically initiating the transmission of the transaction data stored in said record storing means when the storage capacity of said record storing means is attained.

18. The system set forth in claim 17, wherein said record storing means further comprises:

means for recording the number of customer transactions for which no record is stored in said record storing means.

19. The system set forth in claim 12, wherein said selection means includes:

a touch sensitive screen comprising an array of touch sensitive elements and mounted with said display means for permitting a customer to select a particular displayed coupon by touching said elements of touch sensitive screen at points aligned with the particular coupon; and wherein said control means further comprises touch screen disabling means for disabling those elements of said touch screen aligned with masked coupons.

20. The system set forth in claim 1, wherein:

said display means includes means for displaying an array of individual coupons on a selectable video page formatted menu and means for displaying a plurality of video menu pages in a particular sequence, each page being displayed for a particular time;

said section means providing for the selection of a desired coupon in cooperation with said control means includes a touch sensitive screen mounted with said display means allowing a customer to select a particular displayed coupon by touching said touch sensitive screen at points aligned with the particularly desired coupon.

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21. The system set forth in claim 1, wherein said print means includes:

means for printing and dispensing a coupon bearing a product name, manufacturer, and the amount of discount to be applied to the purchase price.

22. The system set forth in claim 1, wherein said print means includes:

means for printing and dispensing a coupon bearing an encoded unique store identification number, Julian date, and time of day.

23. The system set forth in claim 1, wherein said print means includes:

means for printing and dispensing a coupon bearing an expiration date.

24. The system set forth in claim 1, wherein said print means includes:

means for printing and dispensing a coupon bearing a machine readable uniform product code.

25. The system set forth in claim 1, wherein said print means includes:

means for forming a signal indicative of a printer failure; and

said control means includes means responsive to said printer failure signal for placing said terminal in a standby mode wherein said selection means is inoperable.

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26. A system for controlling the selection and dispensing of product coupons at a plurality of remote terminals located at predesignated sites such as consumer stores, comprising:

a plurality of free standing coupon display terminals located at predesignated sites such as consumer stores, each of said terminals being adapted for bidirectional data communication with a host central processing unit;

each of said terminals including activation means for activating such terminal for consumer use by insertion of a credit card or other card having customer account information stored on a magnetic strip, display means for displaying a plurality of coupons, means providing for the selection of a desired coupon by a consumer, print means for printing and dispensing the coupons selected, terminal control means for continuously monitoring each customer transaction and for controlling said display and print means in response to prescribed criterias;

said host central processing unit including means for the transmitting to each terminal particular information for each coupon;

said host central processing unit further including means for transmitting to each terminal coupon limit criteria such as and including expiration date, and total number of coupons to be dispensed.

27. The system set forth in claim 26, wherein:

each of said terminals includes means for recording each customer transaction and for communicating customer transaction information to host computer.

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28. The system set forth in claim 26, wherein said terminal control means includes:

means for preventing the display of a coupon in response to activation of said terminal by a customer if the limit number of coupons for such customer has been attained.

29. The system set forth in claim 26, wherein said printer means includes :

means for preventing the display of a coupon in response to activation of said terminal by a customer if the limit number of coupons for such terminal has been attained.

30. The system set forth in claim 26, wherein said terminal control means includes:

means for preventing the display of a coupon in response to activation of said terminal by a customer if the limit number of coupons for the system has been attained.

31. The system set forth in claim 26, wherein said terminal control means includes means for transmitting to said host central processing unit transaction information including customer account numbers, and an accounting of coupons printed and dispensed.

32. The system set forth in claim 26, wherein:

said host central processing unit includes means for compiling transaction information provided from each of said terminals and for reporting transaction information on a periodic basis for all terminals, for individual terminals and individual coupons.

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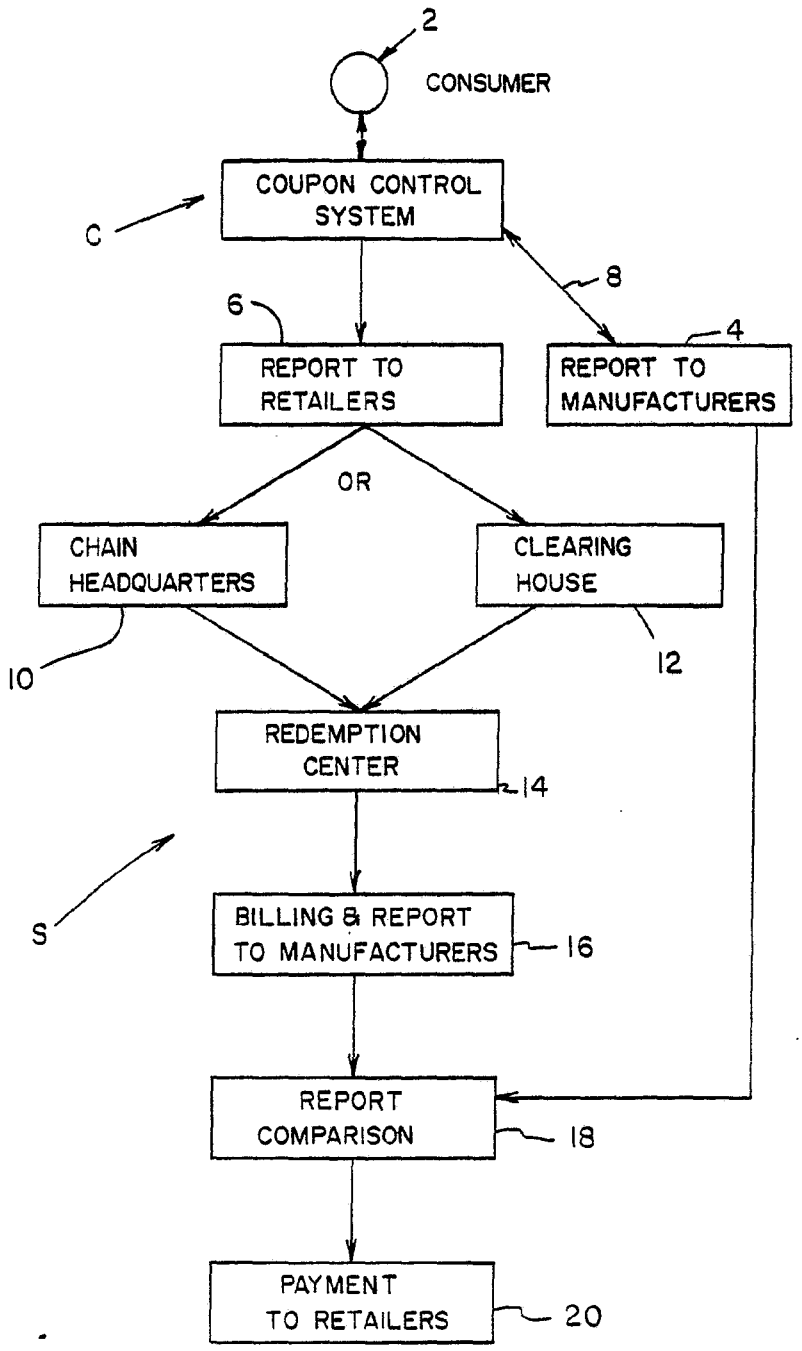


FIG. 1

SUBSTITUTE SHEET

BUREAU OMPI WIPO INTERNATIONAL

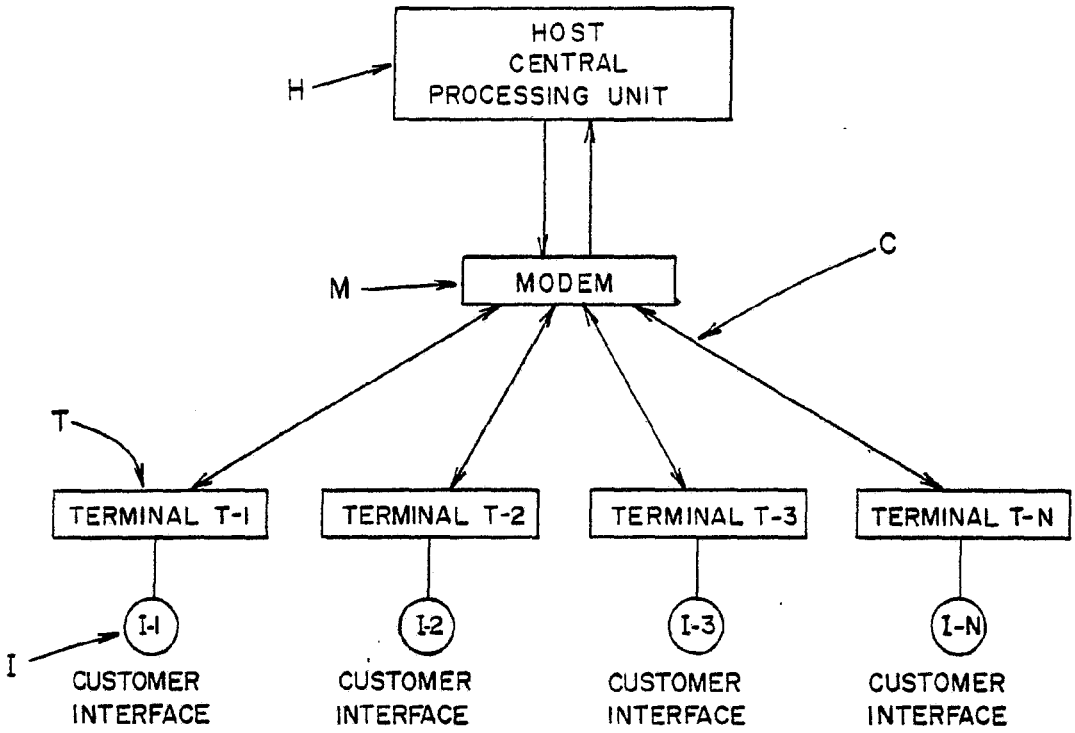


FIG. 2

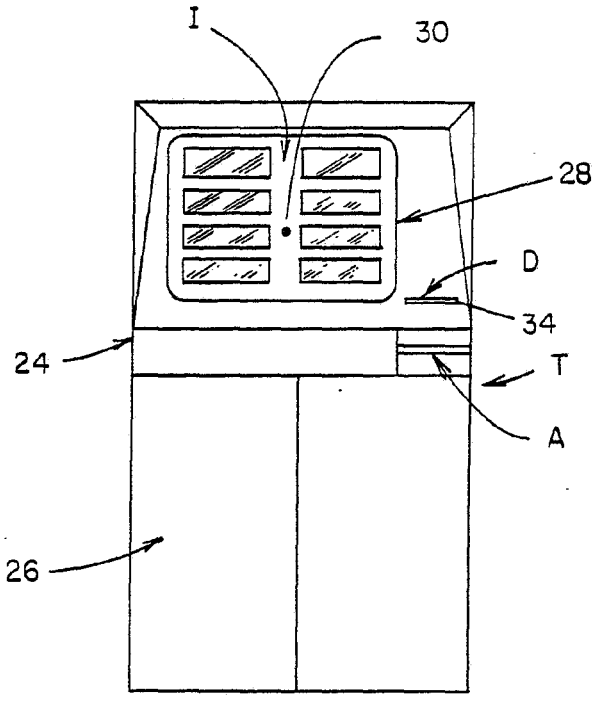


FIG. 3

SUBSTITUTE SHEET

BUREAU OMPI WIPO INTERNATIONAL

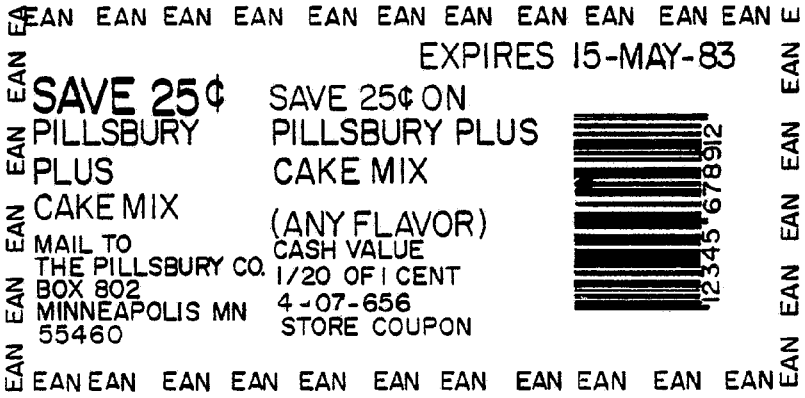


FIG. 3b

BUREAU OMPI WIPO INTERNATIONAL

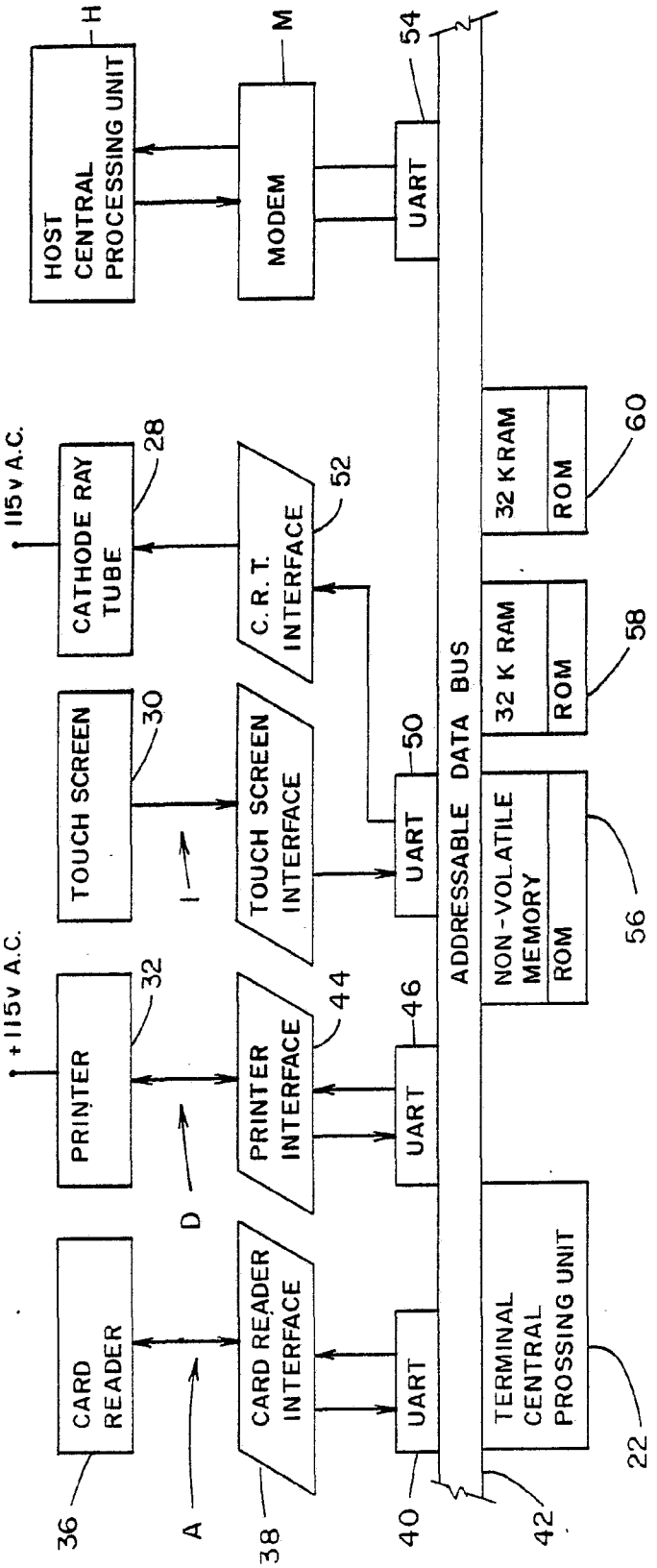


FIG. 4

SUBSTITUTE SHEET

BUREAU OMPI WIPO INTERNATIONAL

FIG.5

SUBSTITUTE SHEET

BUREAU OMPI WIPO INTERNATIONAL

Petitioner Samsung Ex-1004, 0155

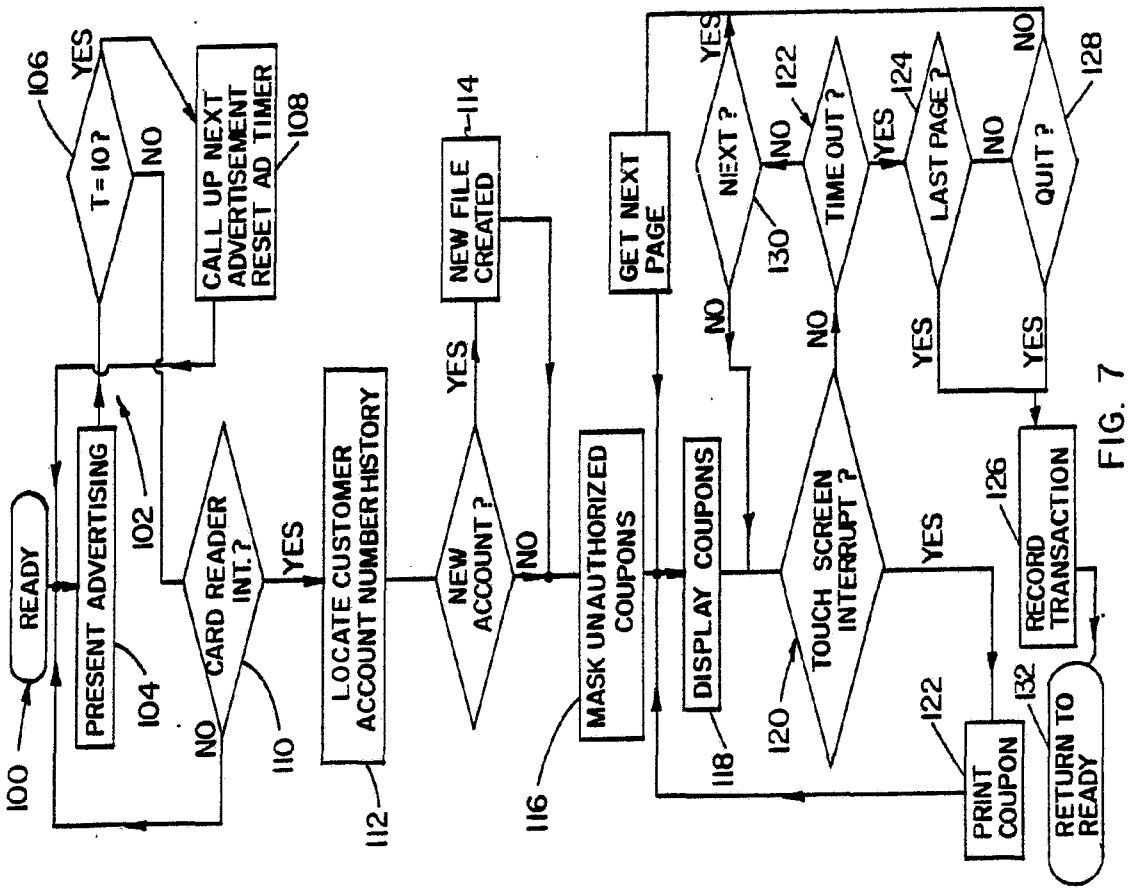


FIG. 7

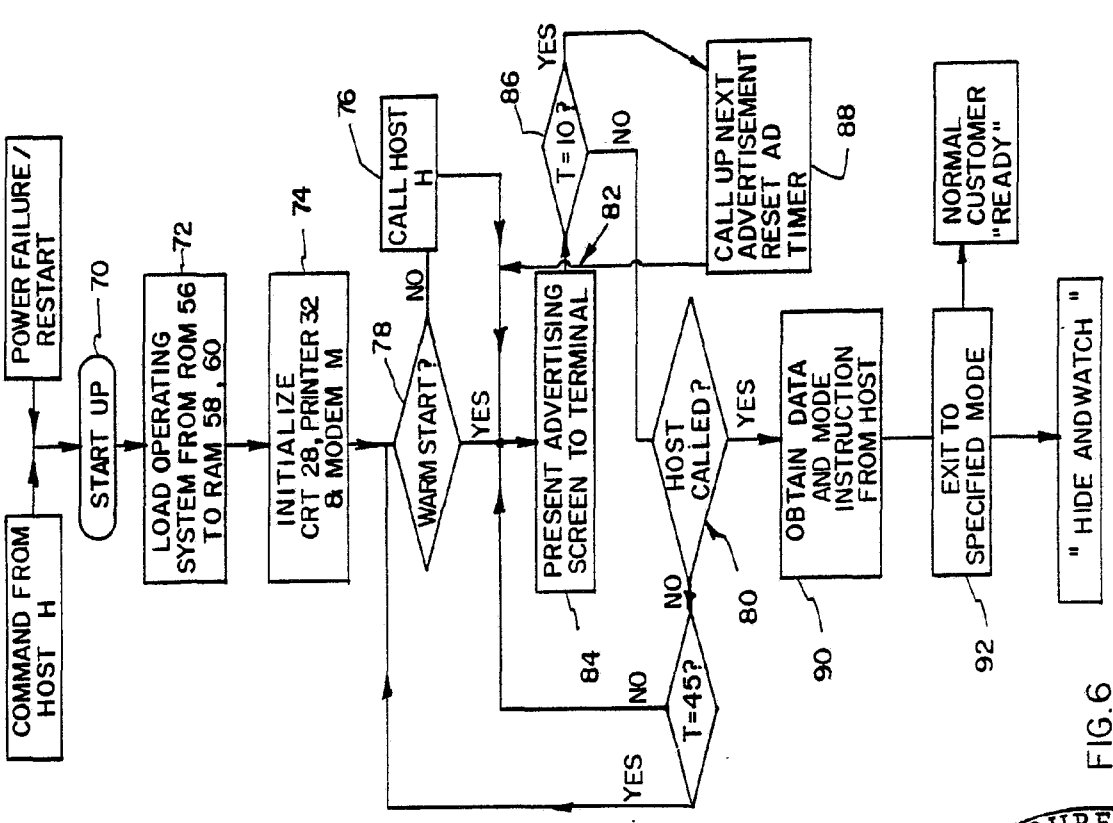


FIG. 6

SUBSTITUTE SHEET

BUREAU OMPI WIPO INTERNATIONAL

Petitioner Samsung Ex-1004, 0156

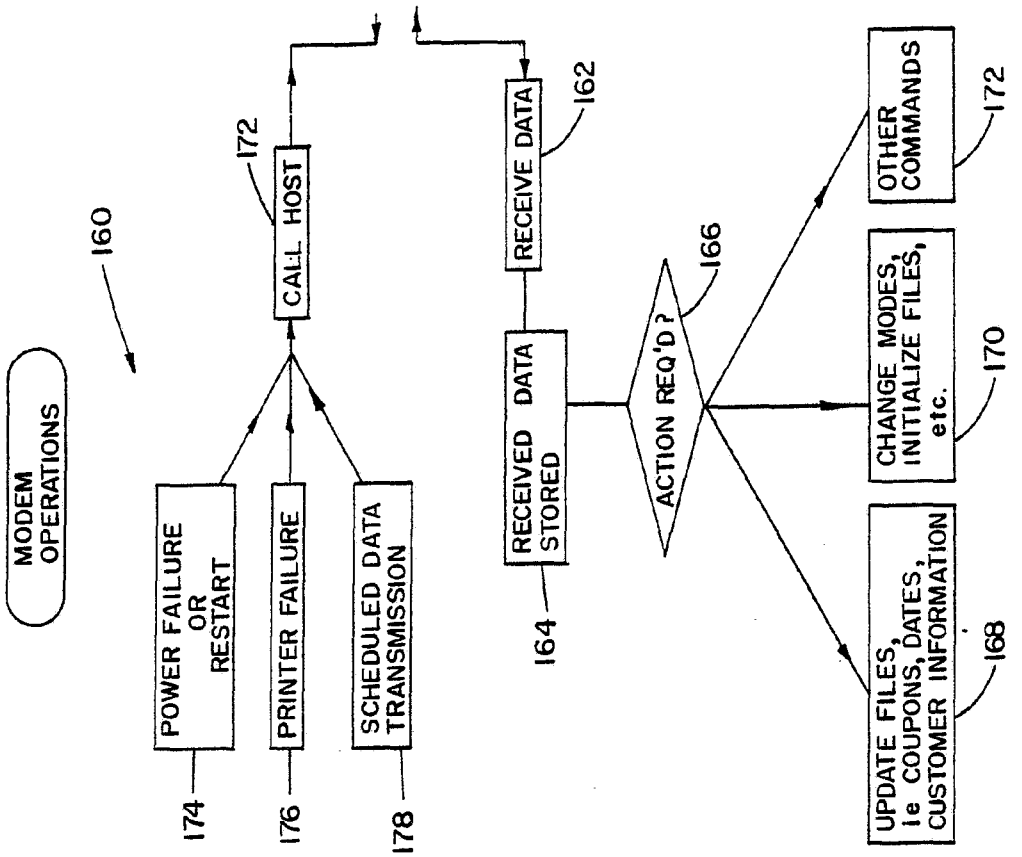


FIG. 9

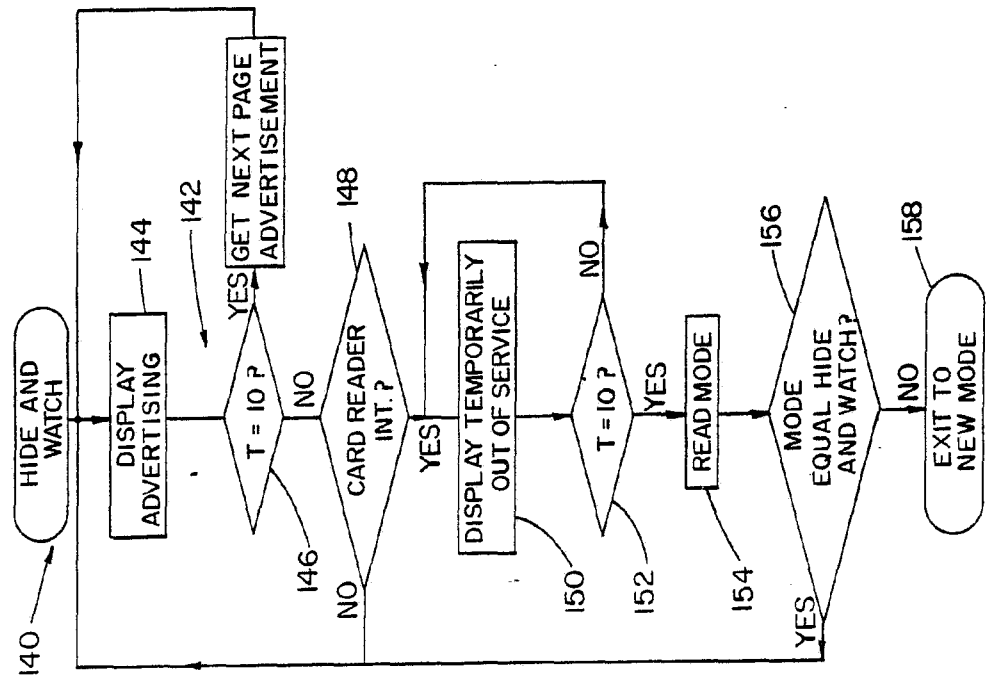


FIG. 8

SUBSTITUTE SHEET

BUREAU OMPI WIPO INTERNATIONAL

Petitioner Samsung Ex-1004, 0157

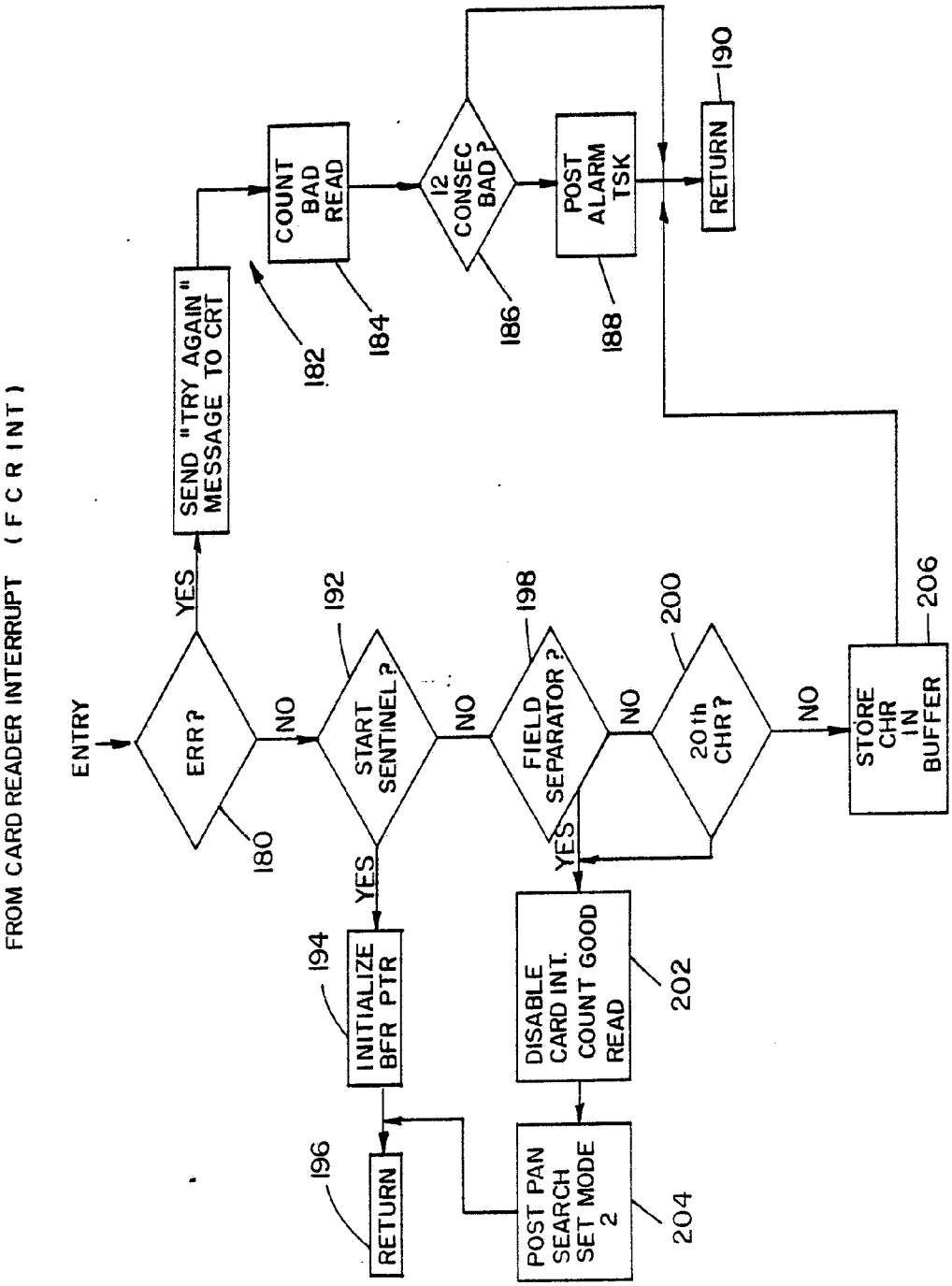


FIG. 10

BUREAU OMPI WIPO INTERNATIONAL

Petitioner Samsung Ex-1004, 0158

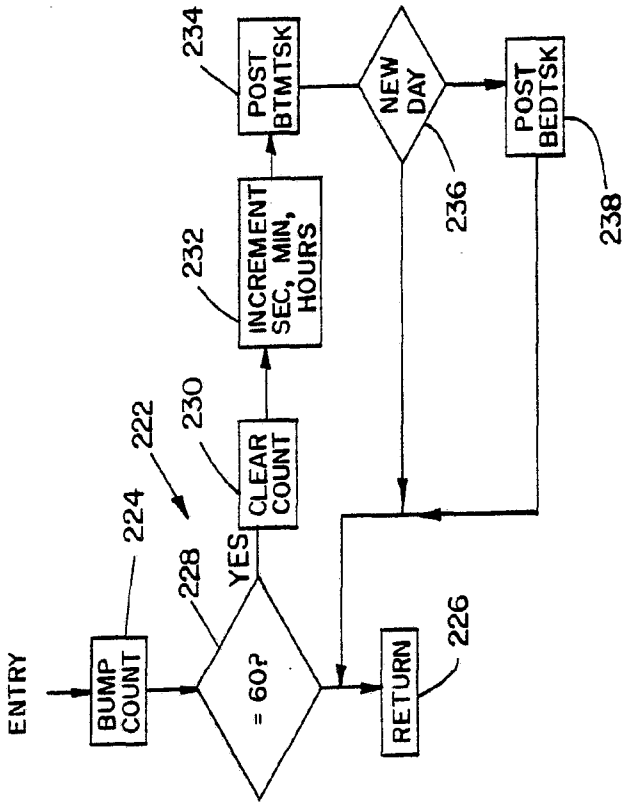


FIG. 12

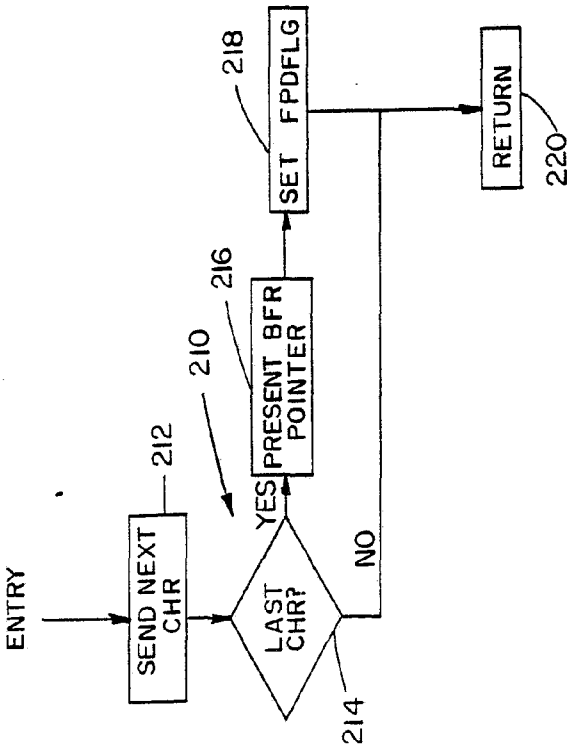


FIG. 11

SUBSTITUTE SHEET

BUREAU OMPI WIPO INTERNATIONAL

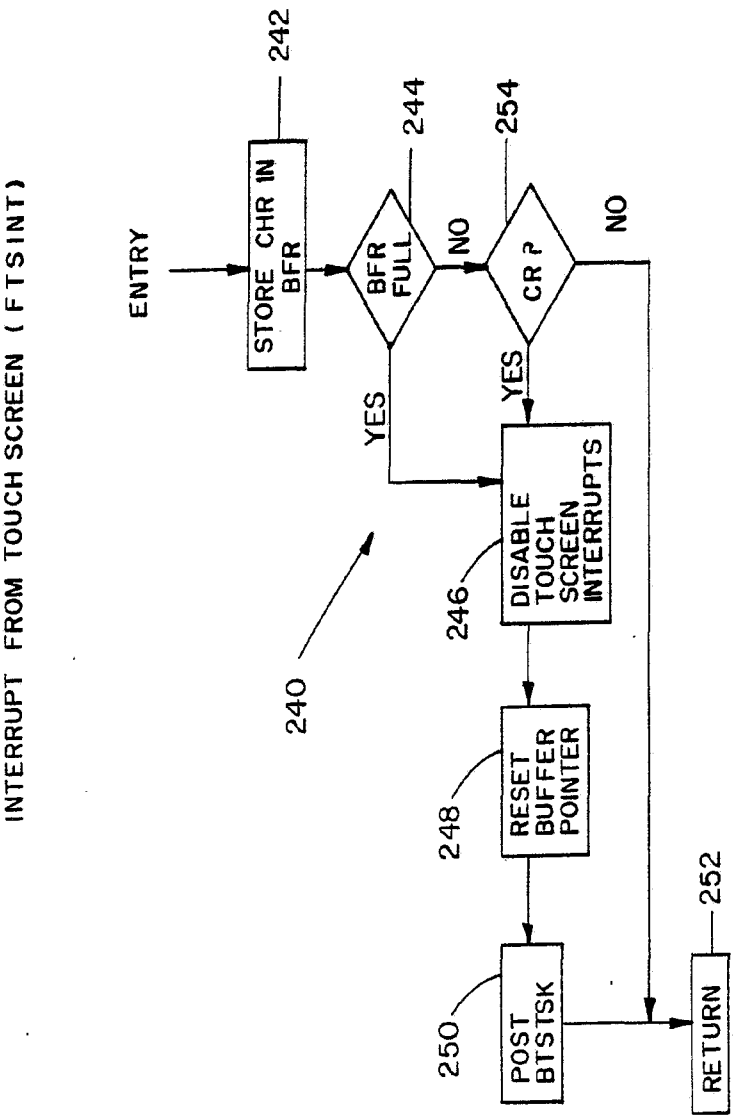


FIG. 13

BUREAU OMPI WIPO INTERNATIONAL

Petitioner Samsung Ex-1004, 0160

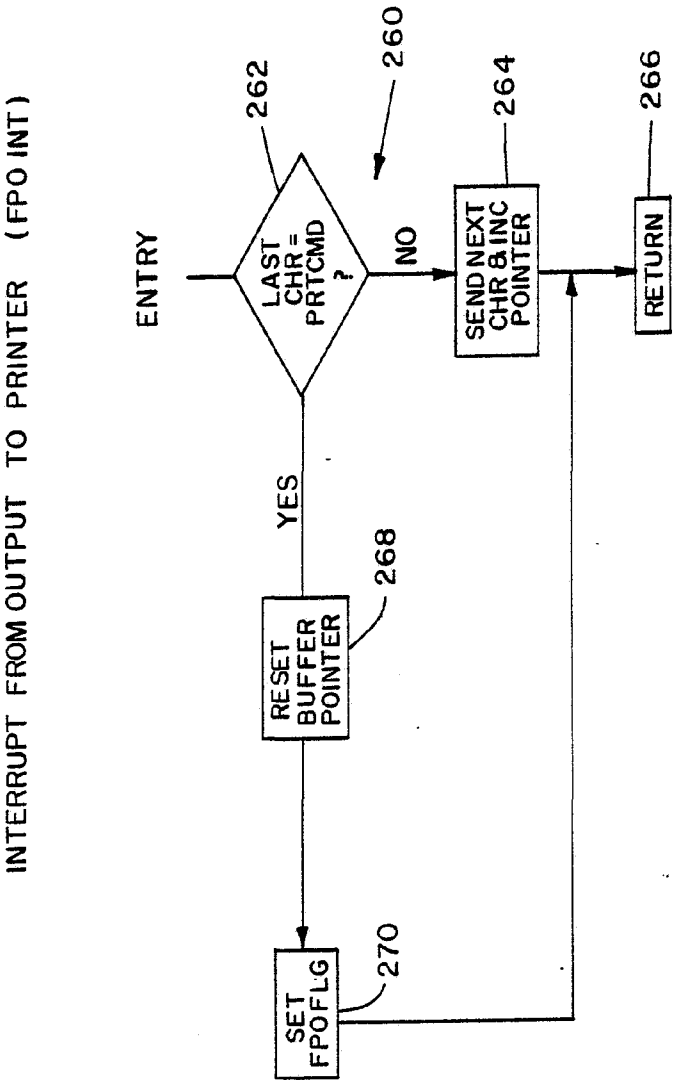


FIG. 14

BUREAU OMPI WIPO INTERNATIONAL

Petitioner Samsung Ex-1004, 0161

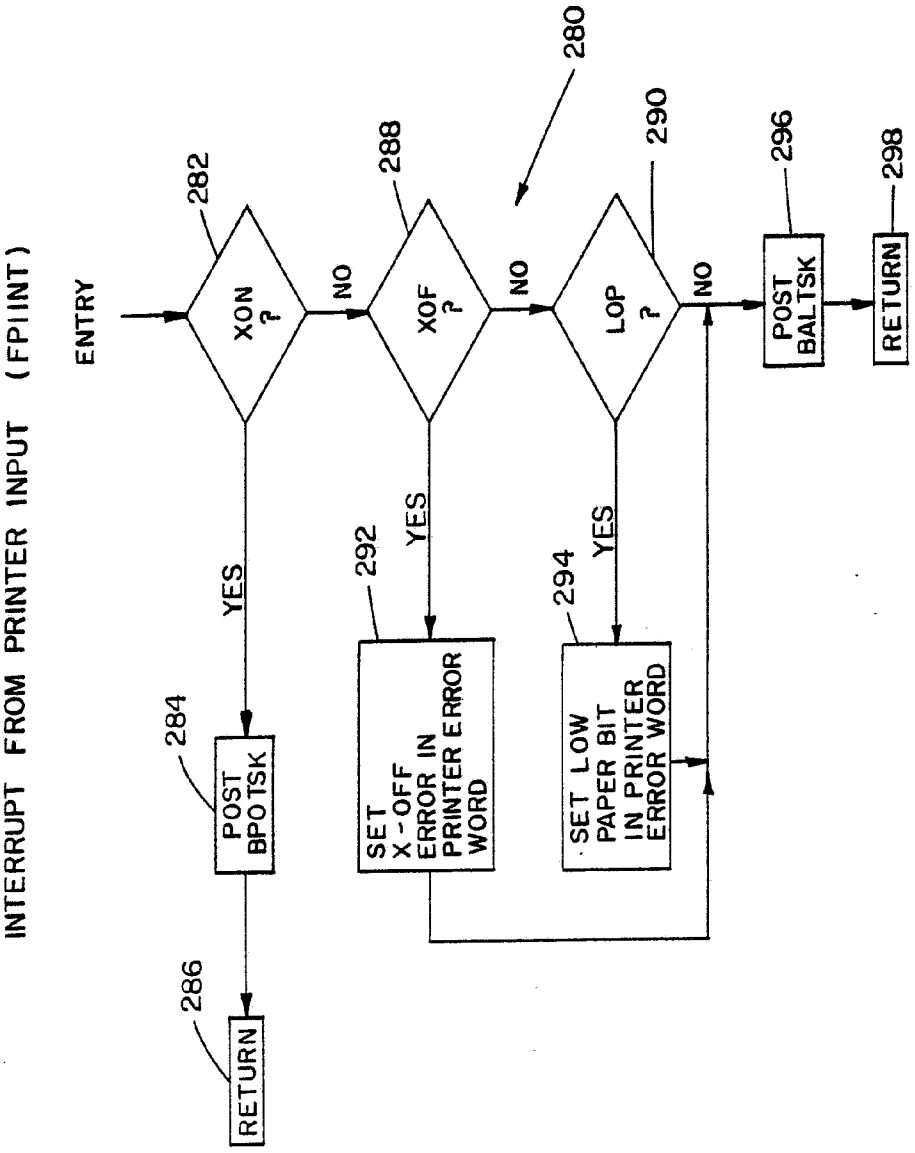


FIG. 15

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BUREAU OMPI WIPO INTERNATIONAL

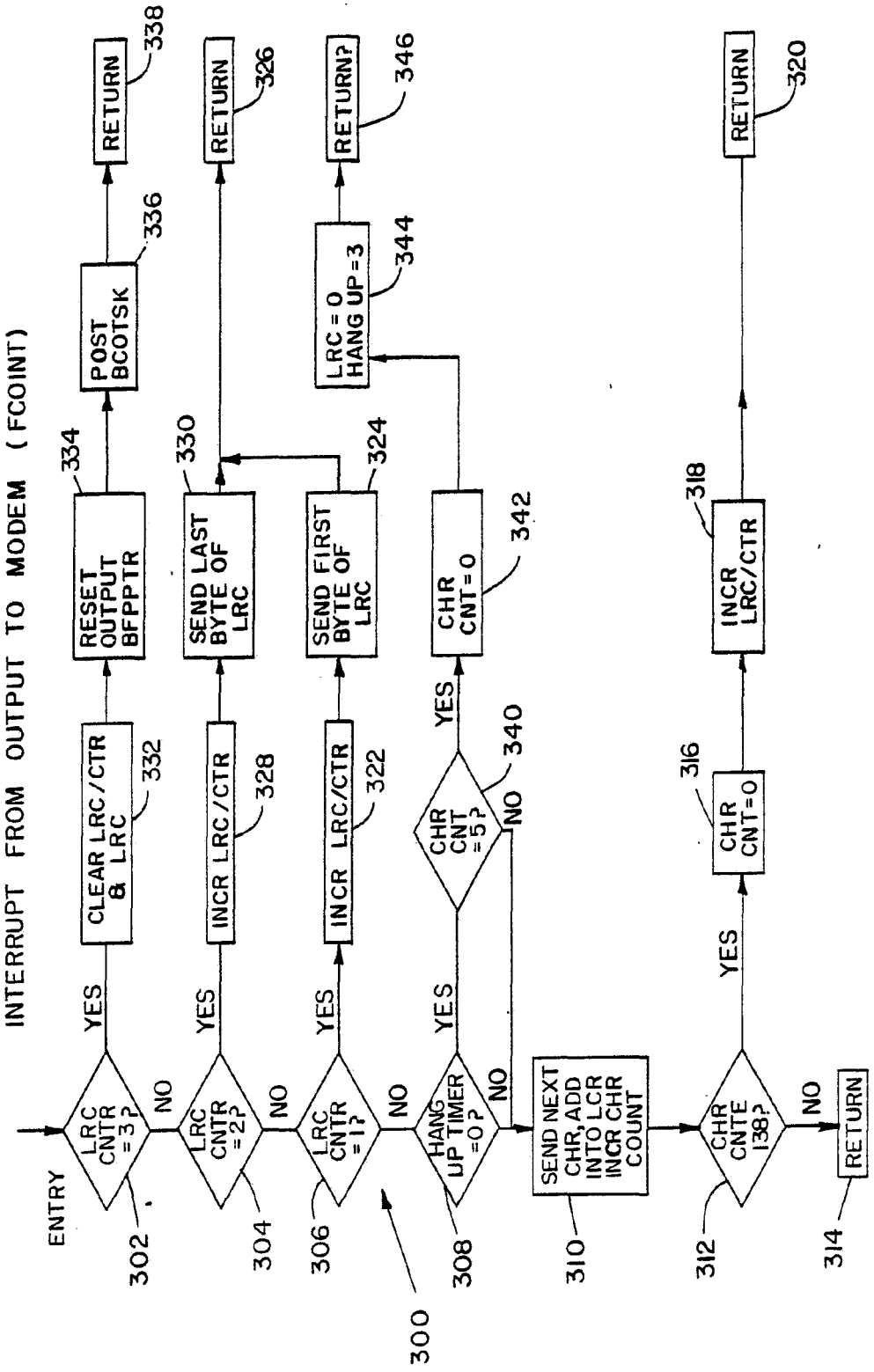


FIG. 16.

BUREAU OMPI WIPO INTERNATIONAL

Petitioner Samsung Ex-1004, 0163

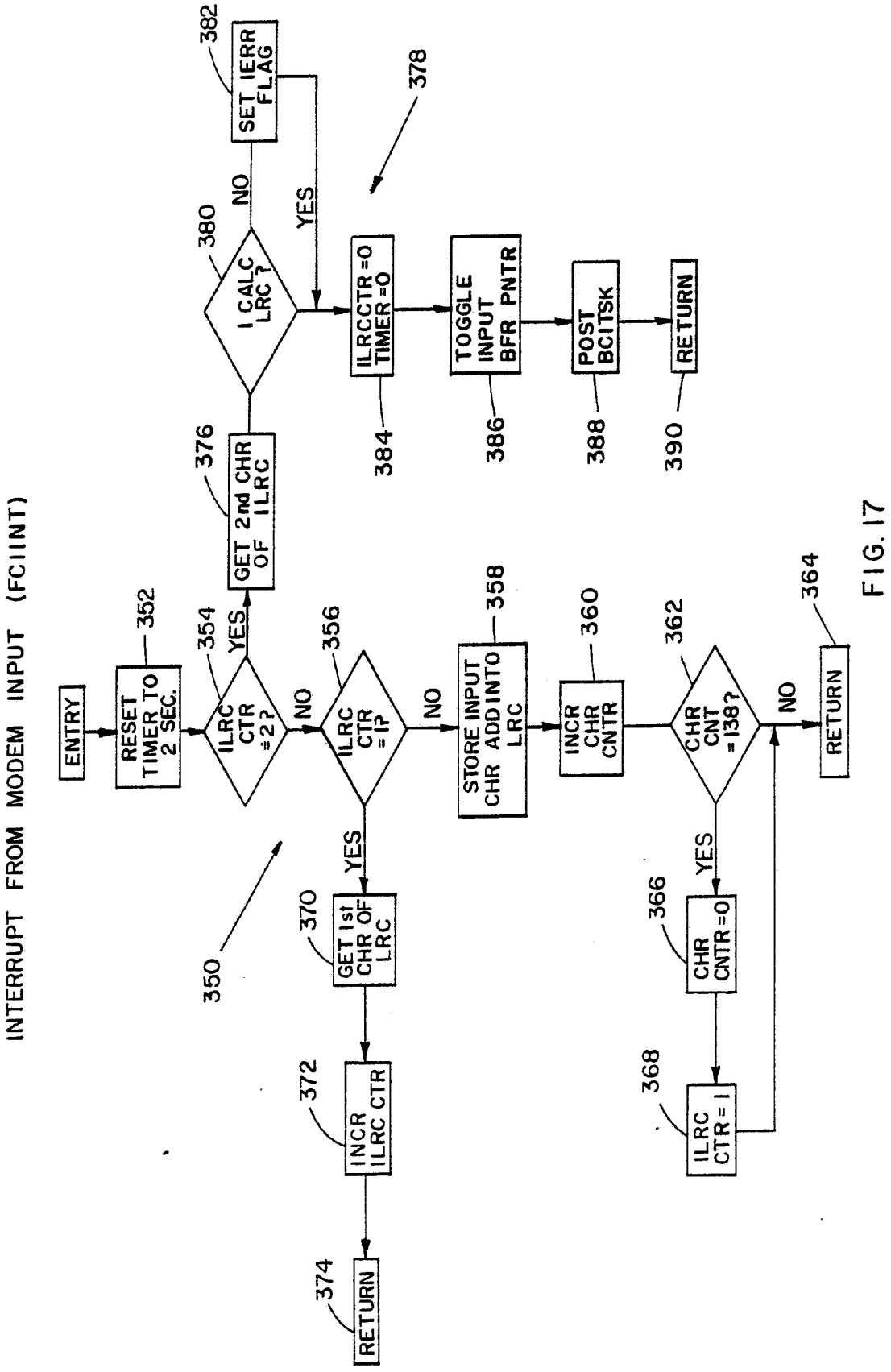


FIG. 17

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BUREAU OMPI WIPO INTERNATIONAL

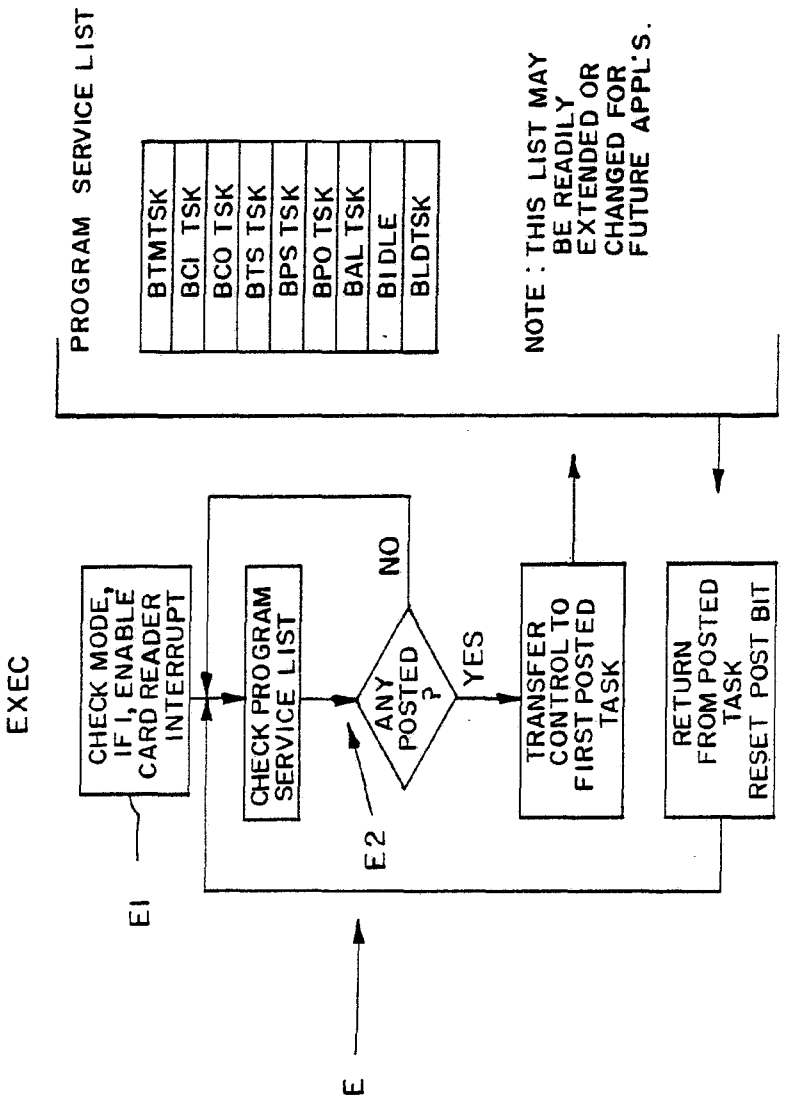


FIG. 18

BUREAU OMPI WIPO INTERNATIONAL

Petitioner Samsung Ex-1004, 0165

COMPUTER POWER UP & OPERATING SYSTEM (HARDWARE/SOFTWARE)

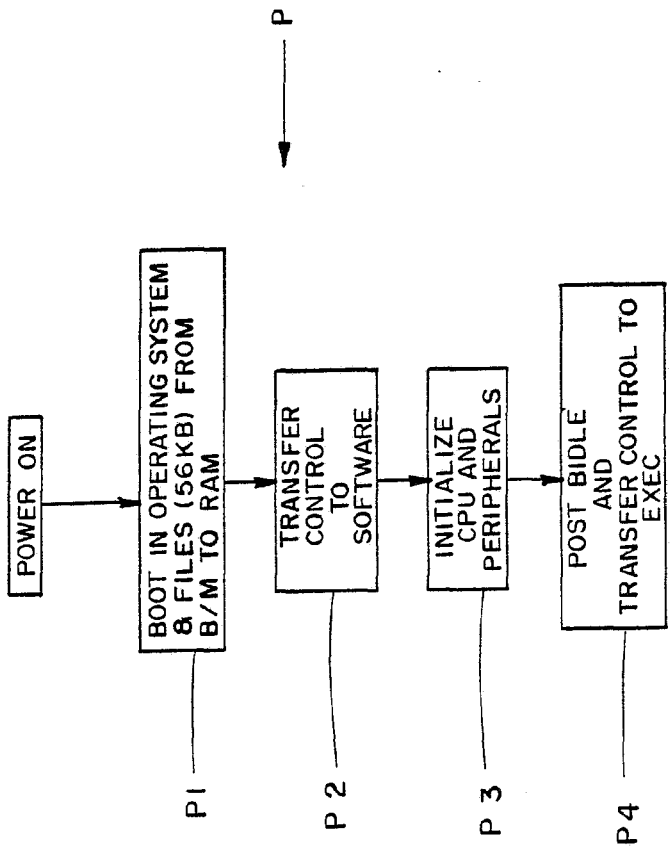


FIG. 19

BUREAU OMPI WIPO INTERNATIONAL

Petitioner Samsung Ex-1004, 0166

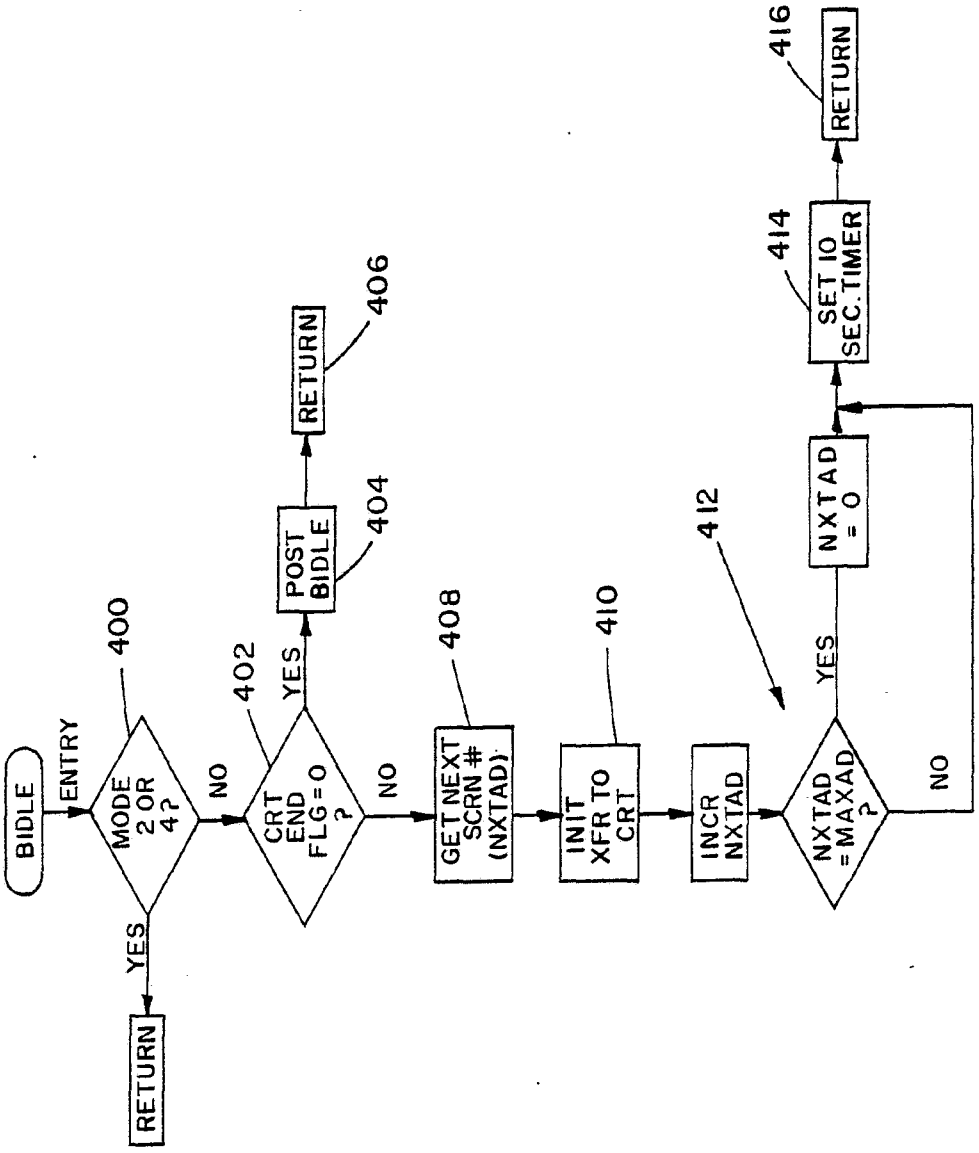


FIG. 20

SUBSTITUTE SHEET

BUREAU OMPI WIPO INTERNATIONAL

Petitioner Samsung Ex-1004, 0167

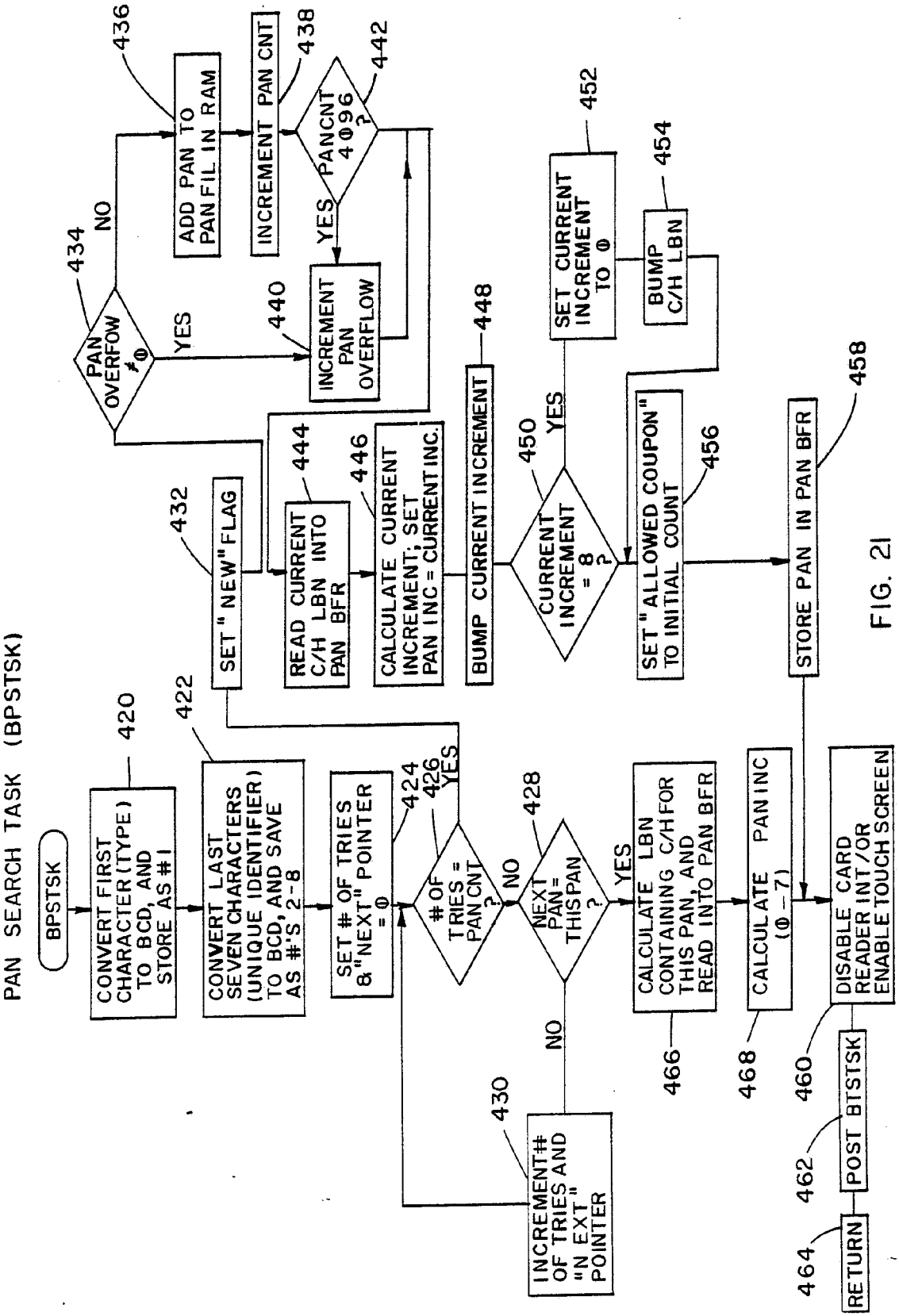


FIG. 21

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BUREAU OMPI WIPO INTERNATIONAL

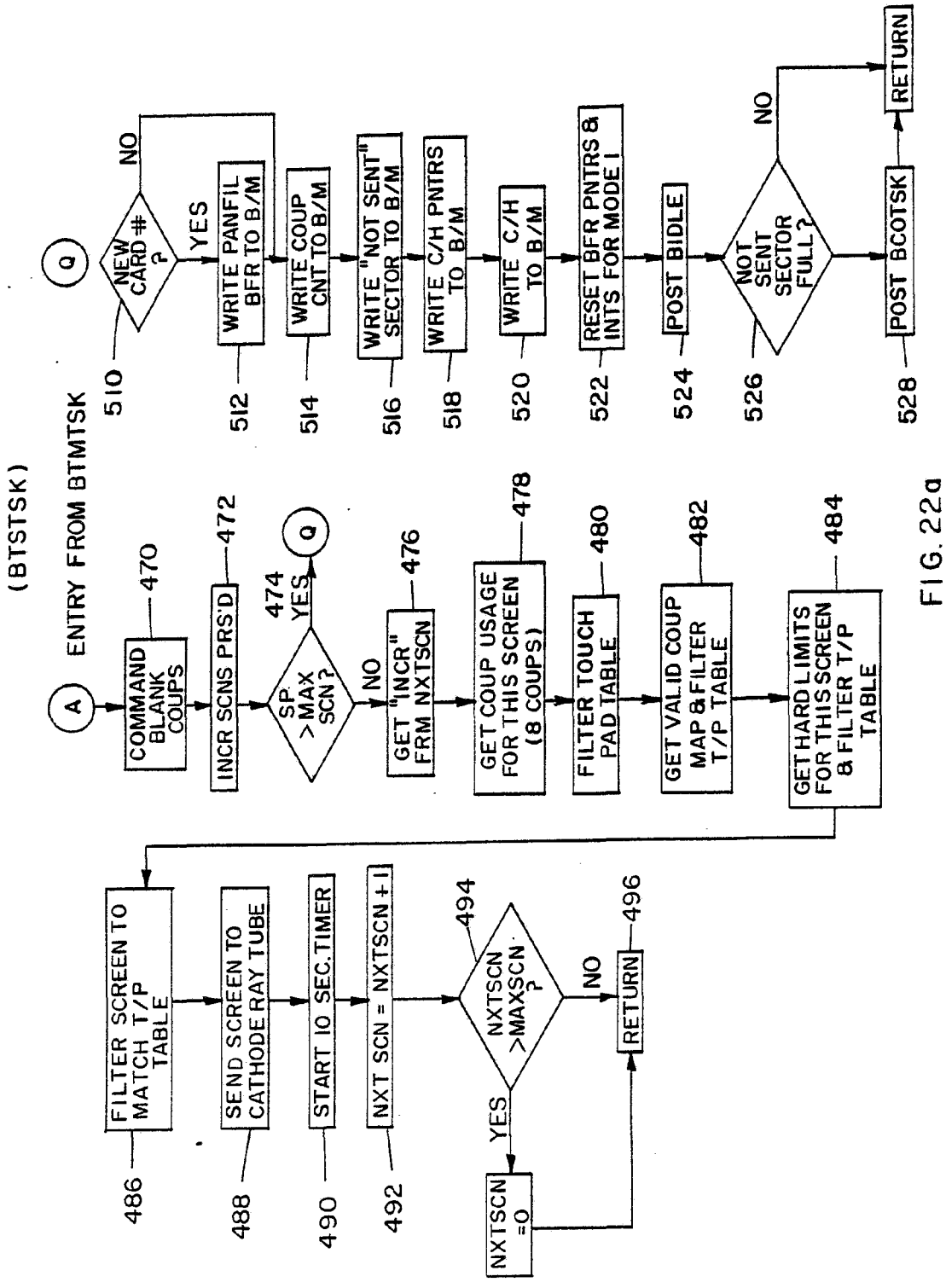


FIG. 22a

SUBSTITUTE SHEET

BUREAU OMPI WIPO INTERNATIONAL

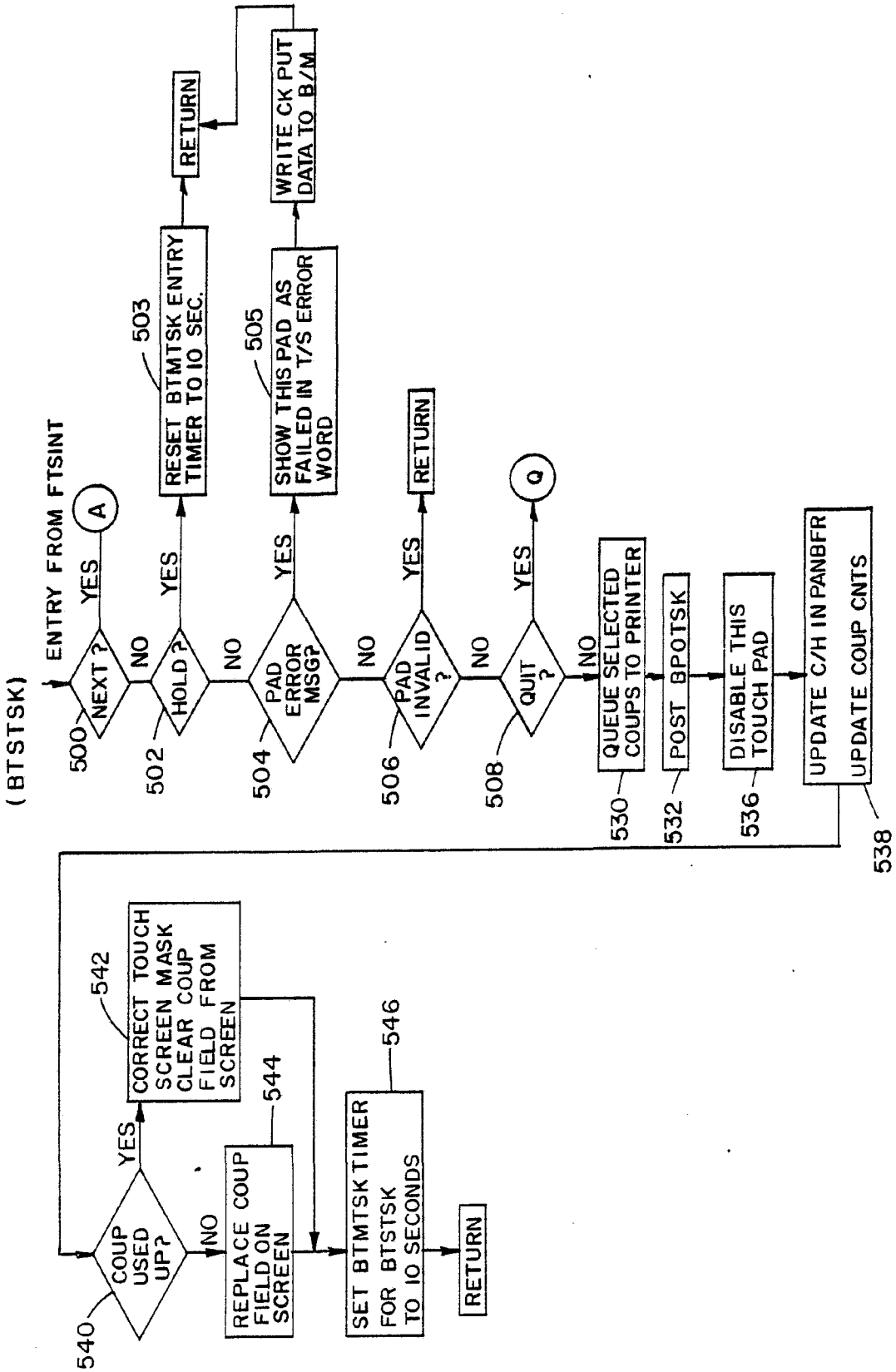


FIG. 22b

BUREAU OMPI WIPO INTERNATIONAL

Petitioner Samsung Ex-1004, 0170

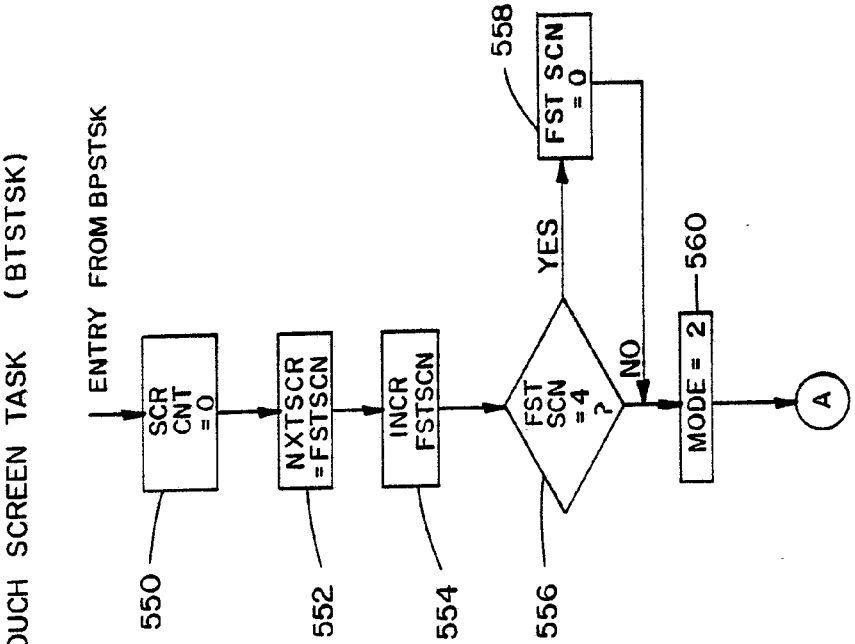


FIG. 22c

SUBSTITUTE SHEET

BUREAU OMPI WIPO INTERNATIONAL

Petitioner Samsung Ex-1004, 0171

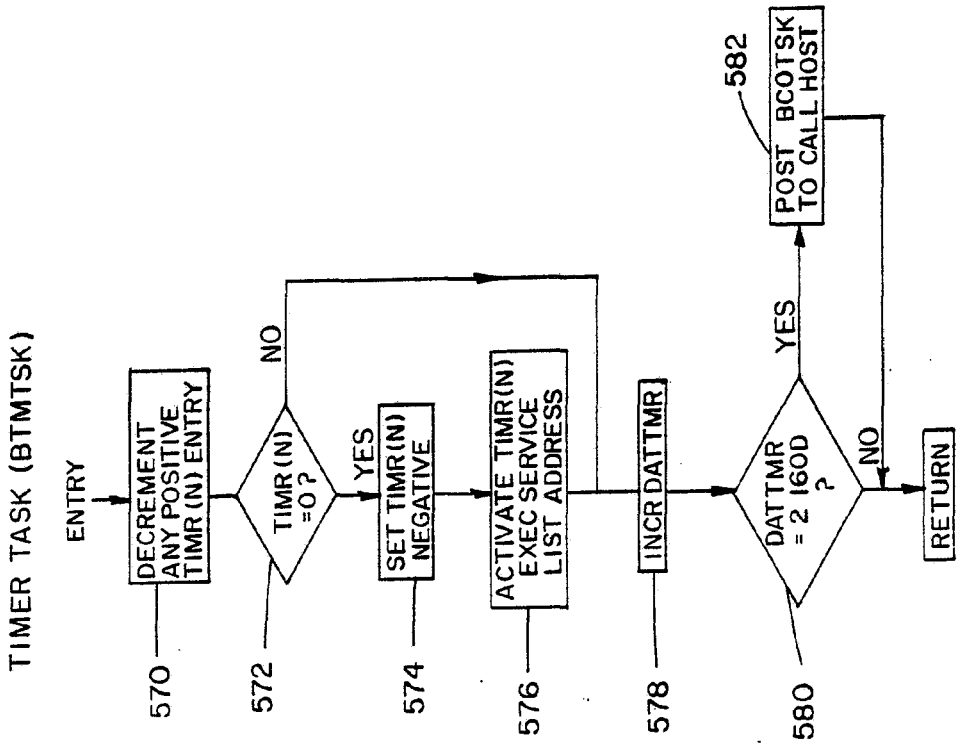


FIG. 23

BUREAU OMPI WIPO INTERNATIONAL

Petitioner Samsung Ex-1004, 0172

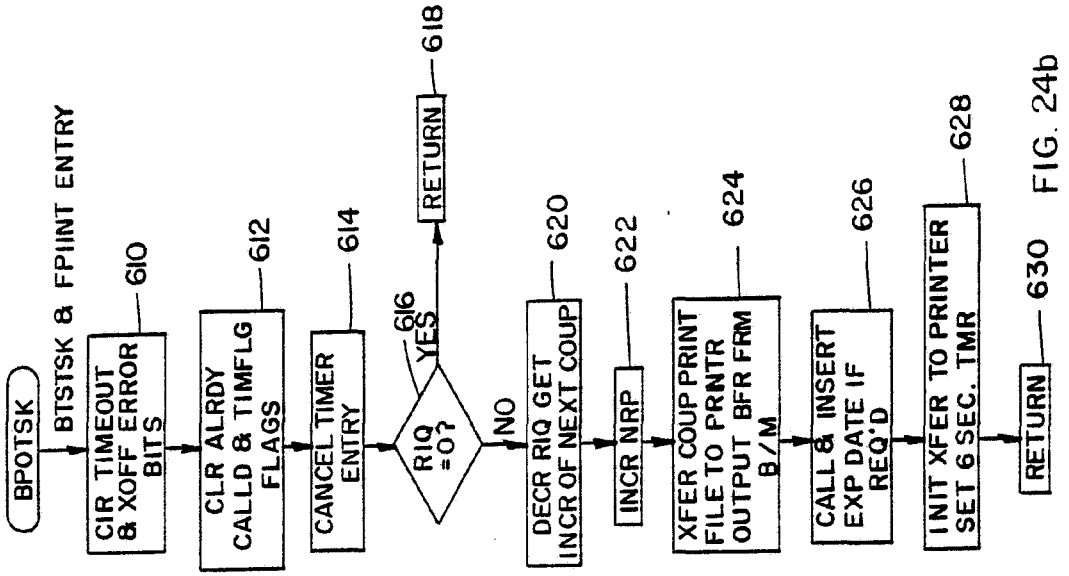


FIG. 24b

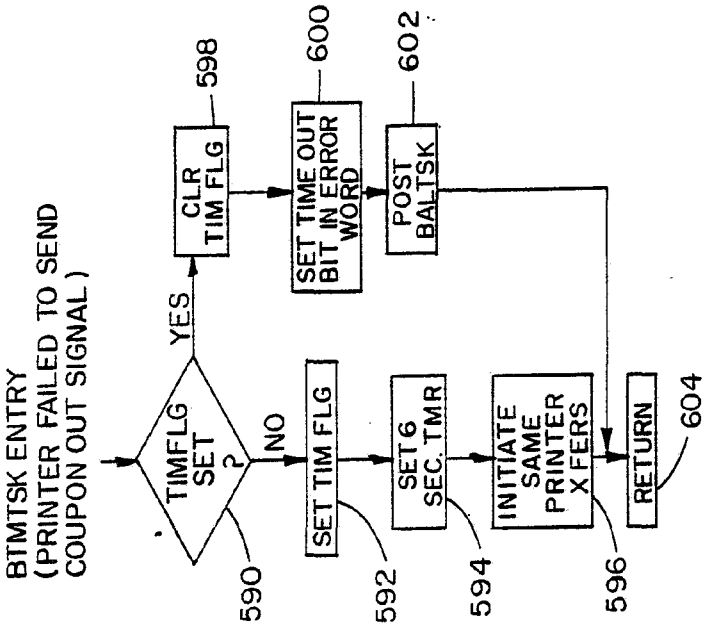


FIG. 24a

BUREAU OMPI WIPO INTERNATIONAL

Petitioner Samsung Ex-1004, 0173

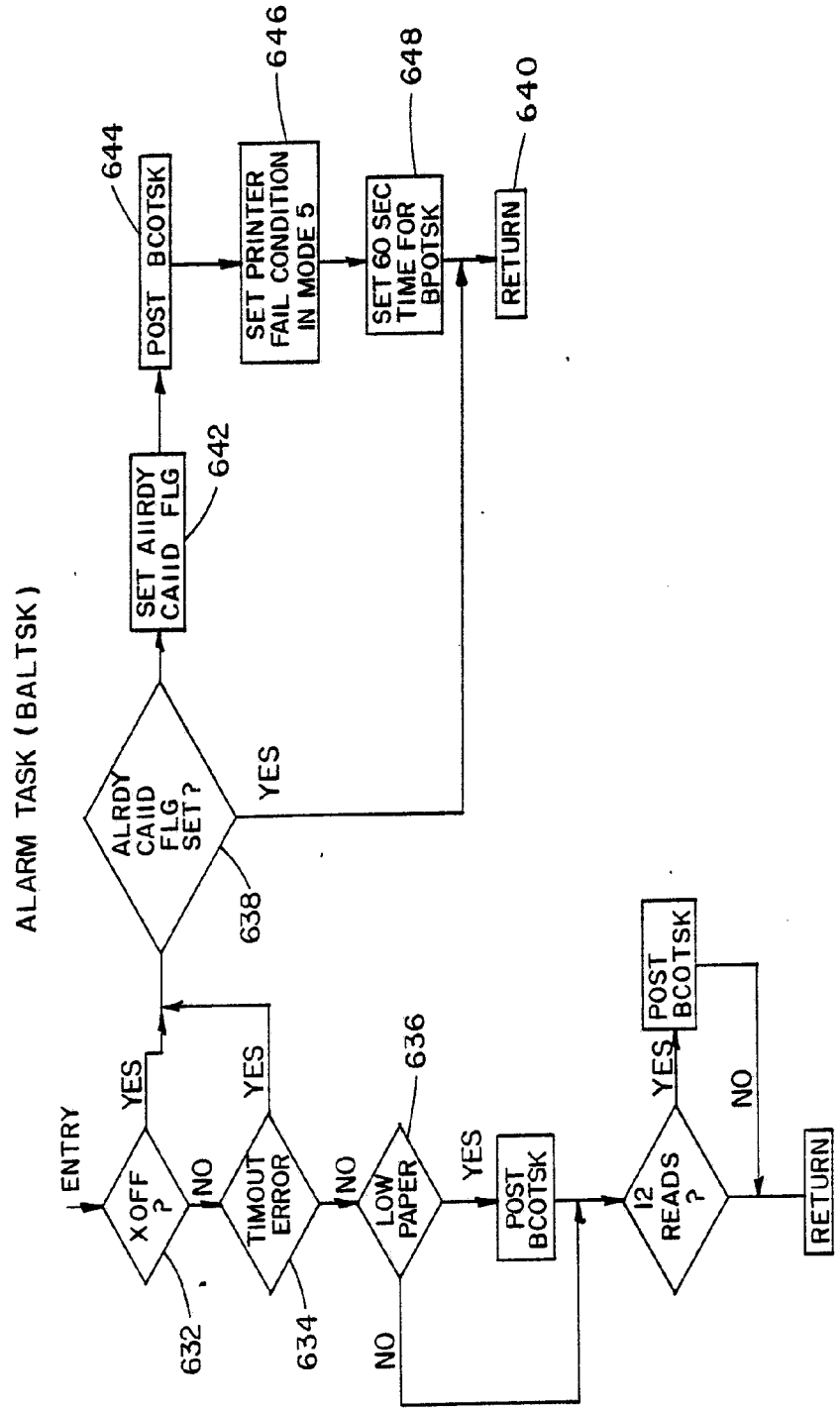


FIG. 25

BUREAU OMPI WIPO INTERNATIONAL

Petitioner Samsung Ex-1004, 0174

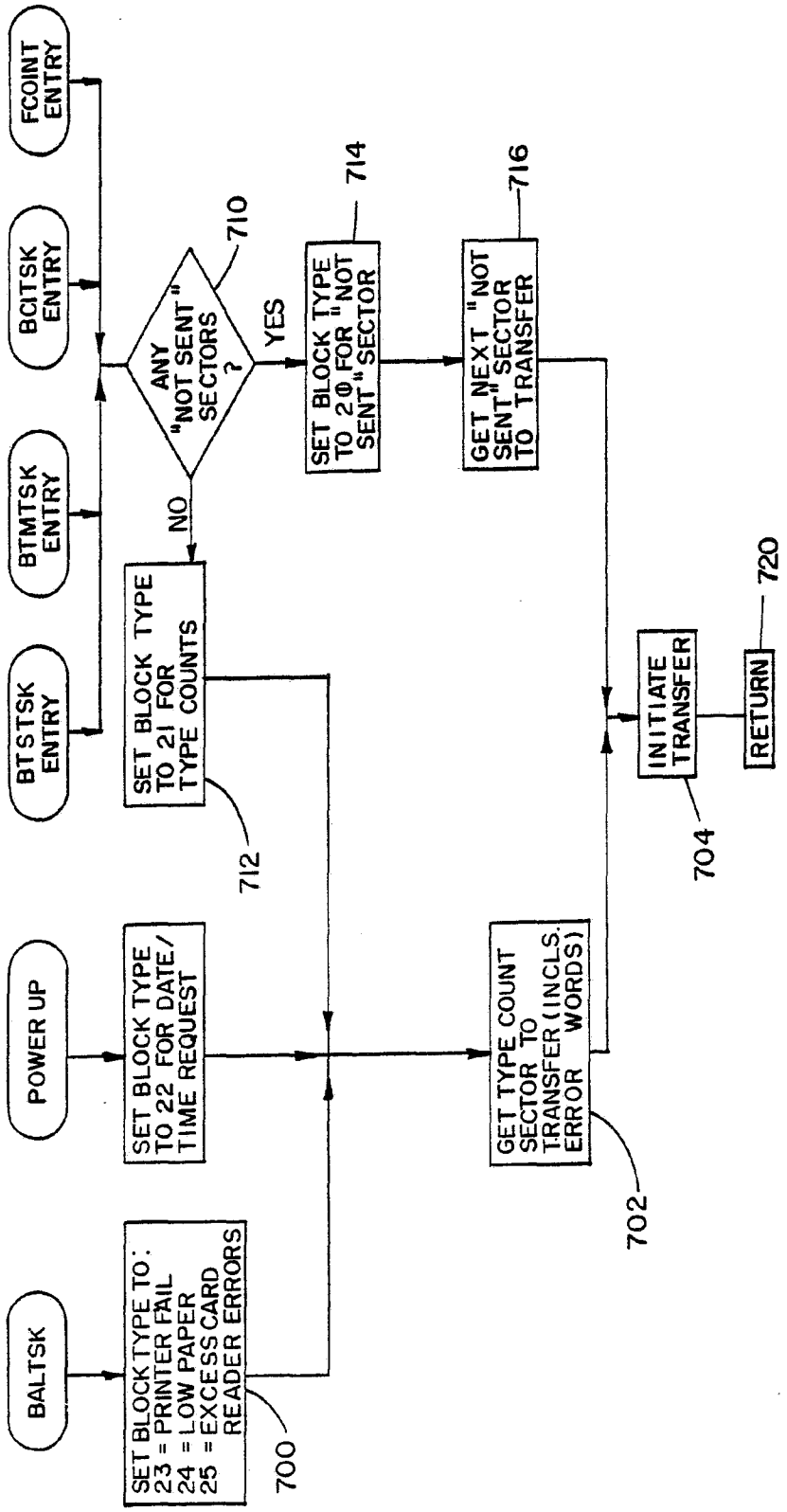


FIG. 26

SUBSTITUTE SHEET

BUREAU OMPI WIPO INTERNATIONAL

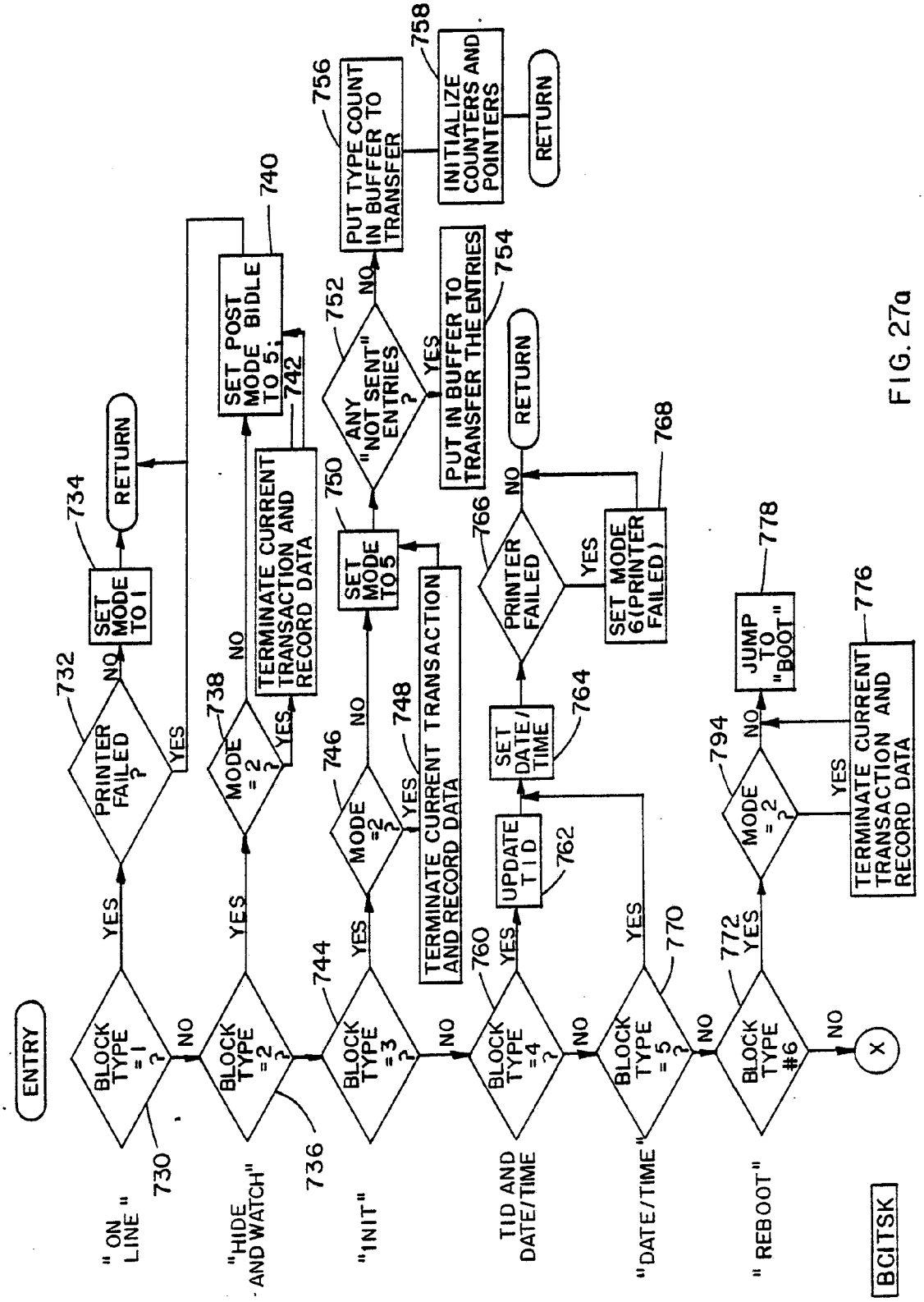


FIG. 27a

SUBSTITUTE SHEET

BUREAU OMPI WIPO INTERNATIONAL

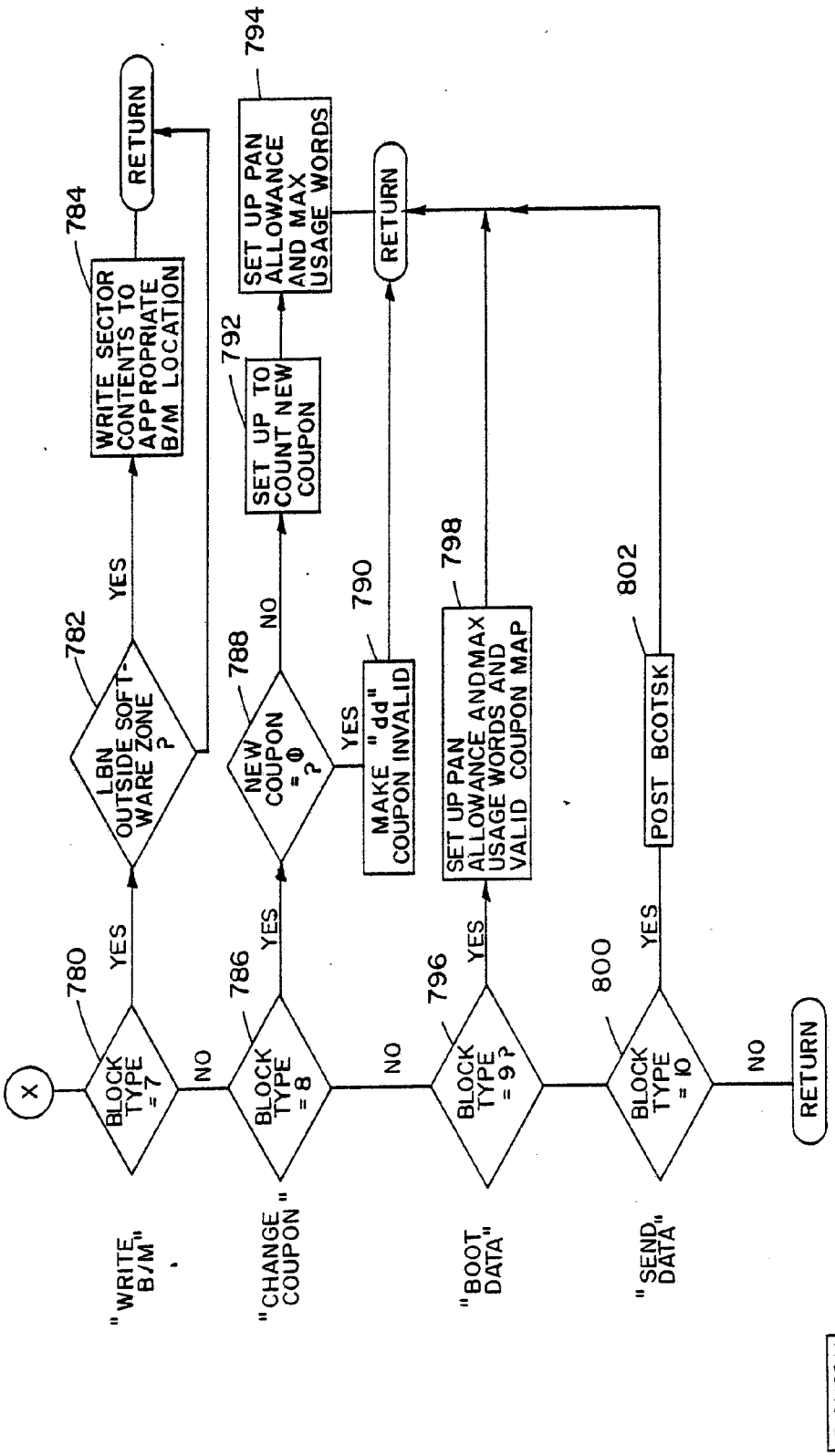


FIG. 27b

BUREAU OMPI WIPO INTERNATIONAL

Petitioner Samsung Ex-1004, 0177

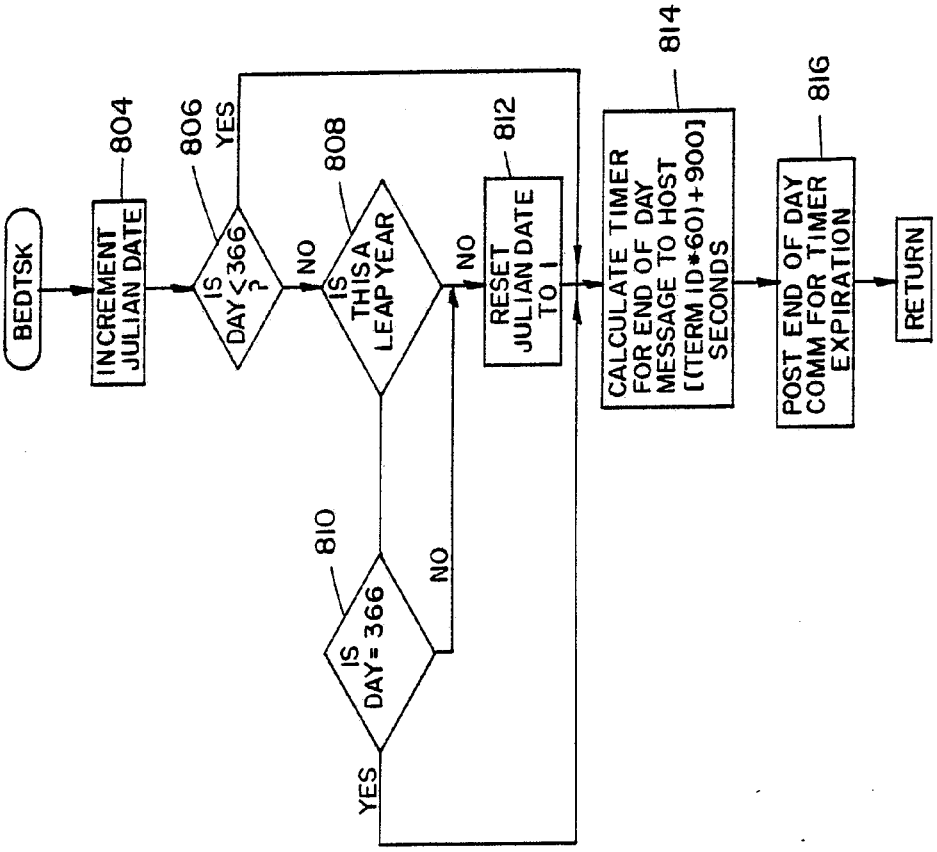


FIG. 28

BUREAU OMPI WIPO INTERNATIONAL

Petitioner Samsung Ex-1004, 0178

INTERNATIONAL SEARCH REPORT

International Application No PCT/US 84/01450

I. CLASSIFICATION OF SUBJECT MATTER (if several classification symbols apply, indicate all) [3]

According to International Patent Classification (IPC) or to both National Classification and IPC

IPC[4] : G 07 B 1/02; G 07 F 7/00; G 06 F 15/24

II. FIELDS SEARCHED

Minimum Documentation Searched [4]

Classification System	Classification Symbols
IPC[4]	G 07 B; G 07 F; G 06 F

Documentation Searched other than Minimum Documentation to the Extent that such Documents are included in the Fields Searched [5]

III. DOCUMENTS CONSIDERED TO BE RELEVANT [14]

Category *	Citation of Document, [16] with indication, where appropriate, of the relevant passages [17]	Relevant to Claim No. [18]
Y	US, A, 4124109 (R. BISSELL) 7 November 1978 see abstract; figures; column 1, line 63 - column 4, line 10; column 5, line 66 - column 6, line 30	1,2
A	--	12,14,26
Y	US, A, 4247759 (Y. NORA) 27 January 1981 see abstract; figures; column 1, lines 35-54; column 2, line 7 - column 5, line 36	1,2
A	--	14,15,26
A	US, A, 4186438 (P.H. BENSON) 29 January 1980 see abstract; figure 1; claims	1,3,4,6-10, 15-17,19-23 26,27
P,A	-- US, A, 4449186 (G.M. KELLY) 15 May 1984 see abstract; figures; column 1, line 60 - column 2, line 52	1-10,13-17, 19,23,26,31 32
	--	

* Special categories of cited documents: [15]

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

IV. CERTIFICATION

Date of the Actual Completion of the International Search [2]	Date of Mailing of this International Search Report [2]
19th December 1984	28 JAN. 1985
International Searching Authority [1]	**Signature of Authorized Officer [20]**
EUROPEAN PATENT OFFICE	G.L.M. Kruydenberg

Form PCT/ISA/210 (second sheet) (October 1981)

Petitioner Samsung Ex-1004, 0179

III. DOCUMENTS CONSIDERED TO BE RELEVANT (CONTINUED FROM THE SECOND SHEET)

Category *	Citation of Document, 16 with indication, where appropriate, of the relevant passages 17	Relevant to Claim No 18
A	GB, A, 2109305 (P.J. WELLS) 2 June 1983 --	
A	US, A, 3890599 (L.G. SIMJIAN) 17 June 1975 --	
A	US, A, 4071697 (N.K. BUSHNELL) 31 January 1978 --	
A	US, A, 4231014 (V. PONZIO) 28 October 1980 --	
A	US, A, 4359631 (L.B. LOCKWOOD) 16 November 1982	

Petitioner Samsung Ex-1004, 0180

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (02-18)
Approved for use through 11/30/2020. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	17366826
Filing Date	2021-07-02
First Named Inventor	James A. Proctor
Art Unit	2468
Examiner Name	
Attorney Docket Number	111054-0001U7

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	17366826
	Filing Date	2021-07-02
	First Named Inventor	James A. Proctor
	Art Unit	2468
	Examiner Name	
	Attorney Docket Number	111054-0001U7

	1	U.S. Appl. No. 60/758,010, filed Jan. 11, 2006 by Rajiv Laroia for Methods and apparatus for facilitating identification, synchronization or acquisition using beacon signals, 30 pages.
	2	U.S. Appl. No. 60/758,011, filed Jan. 11, 2006 by Rajiv Laroia for Methods and apparatus for using beacon signals for identification, synchronization or acquisition in an ad hoc wireless network, 26 pages.
	3	U.S. Appl. No. 60/758,012, filed Jan. 11, 2006 by Rajiv Laroia for Methods and apparatus for using beacon signals in a cognitive radio network, 24 pages.
	4	U.S. Appl. No. 60/845,051, filed Sep. 15, 2006 by Junyi Li for Beacons in a mixed wireless communication system, 30 pages.
	5	U.S. Appl. No. 60/845,052, filed Sep. 15, 2006 by Aleksandar Jovicic for Beacons in a mixed wireless communication system, 29 pages.
	6	U.S. Appl. No. 60/863,304, filed Oct. 27, 2006 by Rajiv Laroia for Power Allocation Scheme, 15 pages.
	7	U.S. Provisional Application No. 61/054,162 filed on May 18, 2008 by Mark Braverman for System And Method For Electronic Payment
	8	U.S. Provisional Application No. 61/122,240 filed on December 12, 2008 by Rajiv Patel for System And Method For Electronic Payment
	9	Using Blouetooth, MC909X User Guide, Symbol Technologies, Inc., pp. 1-66 (2005)
	10	Using MC9094 Phone, MC909X User Guide, Symbol Technologies, Inc., pp. 1-20 (2005)
	11	Wang, et al., "Peer2Me - Rapid Application Framework for Mobile Peer-to-Peer Applications", Department of Compute and Information Science

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	12	Wang, F., et al., "Bridging Physical and Virtual Worlds: Complex Event Processing for RFID Data Streams," University of California, Los Angeles Computer Science Department, Springer-Verlag Berlin Heidelberg 2006, pp. 588-607
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	14	Wauters, R., "TC50: Gift Card Auction Site Rackup Aims to Shake Up Market" [online], Sep. 14, 2009. Retrieved from the Internet URL: http://techcrunch.com/2009/09/14/tc50-gift-card-auction-site-rackup-aims-- to-shake-up-market/, one page.
	15	WaveWorks Portable Shopping System Integration Guide, Integration Services Group, Pittsburgh, Pennsylvania, pp. 1-185
	16	Wei, G., et al., "HiPEC: A Hybrid P2P Model for Electronic Commerce," Zhejiang Gongshang University College of Computer & Information Engineering, pp 1-5 (2008)
	17	Weis et al. "Security and privacy aspects of low-cost radio frequency identification systems". In: Security in pervasive Computing. Springer, 201-212 (2004)
	18	Weis et al., Security and Privacy Aspects of Low-Cost Radio Frequency Identification Systems, International Journal of Security and Networks, Volume 5 Issue 2/3, March 2010, 12 pages.
	19	Wg, Hid, "Device Identification Specification", V12r00, 1-20 (2006) NEED PUBLICATION DETAILS
	20	Yang, H., et al., "Indoor Localization Systems - Tracking objects and personnel with sensors, wireless networks and RFID," Measurement+ Control, Vol. 42/1, Feb. 2009, pp. 18-23
	21	Zhang, Y., et al., "Progress in WWW Research and Development," 1oth Asia-PacificWeb Conference, APWeb 2008, Shenyang, China, April 26-28, 2008 Proceedings, pp. 331-341
	22	Zhou, Y., et al., "A Map Registration Localization Approach based on Mobile Beacons for Wireless Sensor Networks," Communications Research Centre Canada, 2011 Crown, 5 pp.

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Name/Print	David J. Thibodeau, Jr.	Registration Number	31671

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International Application Number:	
Confirmation Number:	8789
Title of Invention:	EFFICIENT AND SECURE COMMUNICATION USING WIRELESS SERVICE IDENTIFIERS
First Named Inventor/Applicant Name:	James A. Proctor
Customer Number:	86012
Filer:	David J. Thibodeau/Elisabeth Smith
Filer Authorized By:	David J. Thibodeau
Attorney Docket Number:	111054-0001U7
Receipt Date:	30-JUL-2021
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	1	Jonathan P. Munson & Vineet K. Gupta, Location-Based Notification as a General-Purpose Service, Proceedings of the 2nd International Workshop on Mobile Commerce (2002) 5 pages.
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	6	Kolodziej, K., et al., "In-Building Positioning: Modeling Location for Indoor World," Proceedings of the 15th Int'l Workshop on Database and Expert Systems Applications (DEXA'04), 5 (2004)
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	12	Lee, T.O., et al., "An Agent-Based Micropayment System for E-commerce," J. Liu and Y. Ye (Eds.): E-commerce Agents, LNAI 2033, pp. 247-263, 2001.
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	19	Nissanka B. Priyantha, et al., Anchor-Free Distributed Localization in Sensor Networks, LCS Tech. Report #892 (2003)
	20	Nissanka B. Priyantha, et al., Mobile-Assisted Localization in Wireless Sensor Networks, IEEE INFOCOM Conf. (Mar. 2005)
	21	Notice of Allowance dated Jul. 1, 2010 for U.S. Appl. No. 12/364,828.
	22	Notice of Allowance, U.S. Appl. No. 13/015,306 mail date Nov. 8, 2012.

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	23	Notice of Allowance, U.S. Appl. No. 13/212,723 mail date Jan. 16, 2013.
	24	Office Action received in related U.S. Appl. No. 12/364,819, dated Aug. 26, 2010.
	25	Office Action received in related U.S. Appl. No. 12/364,823, dated Jun. 16, 2010.
	26	Office Action received in related U.S. Appl. No. 12/364,828, dated May 14, 2010.
	27	Office Action received in related U.S. Appl. No. 12/364,938, dated May 13, 2010.
	28	Office Action, U.S. Appl. No. 12/364,819, mail date Apr. 16, 2012.
	29	Office Action, U.S. Appl. No. 12/364,819, mail date Nov. 15, 2010.
	30	Office Action, U.S. Appl. No. 12/364,938, mail date Sep. 14, 2010.
	31	Office Action, U.S. Appl. No. 13/015,306; Date of Mailing Jan. 9, 2012.
	32	Office Action, U.S. Appl. No. 13/212,766; Date of Mailing: Apr. 26, 2012.
	33	Office Action, U.S. Appl. No. 13/213,028; Date of Mailing: May 5, 2012.

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	34	Office Action; U.S. Appl. No. 12/364,823; Date of Mailing: Dec. 28, 2010.
	35	Office Action; U.S. Appl. No. 12/364,828; Date of Mailing: Sep. 15, 2010.
	36	Office Action; U.S. Appl. No. 12/364,938; Date of Mailing: Jul. 21, 2011.
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	45	Patent Owner Proxicom Wireless, LLC's Preliminary Response Pursuant to 37 C.F.R. 42.107; dated 8/13/2020, Case No. IPR2020-00903, Target Corporation vs. Proxicom Wireless, L.L.C.; pp. 1-50
	46	Patent Owner Proxicom Wireless, LLC's Preliminary Response Pursuant to 37 C.F.R. 42.107; dated 8/13/2020, Case No. IPR2020-00904, Target Corporation vs. Proxicom Wireless, L.L.C.; pp. 1-50
	47	Patent Owner Proxicom Wireless, LLC's Preliminary Response Pursuant to 37 C.F.R. 42.107; dated 8/13/2020, Case No. IPR2020-00931, Target Corporation vs. Proxicom Wireless, L.L.C.; pp. 1-48
	48	Patent Owner Proxicom Wireless, LLC's Preliminary Response Pursuant to 37 C.F.R. 42.107; dated 8/19/2020, Case No. IPR2020-00932, Target Corporation vs. Proxicom Wireless, L.L.C.; pp. 1-46
	49	Patent Owner Proxicom Wireless, LLC's Preliminary Response Pursuant to 37 C.F.R. 42.107; dated 8/19/2020, Case No. IPR2020-00933, Target Corporation vs. Proxicom Wireless, L.L.C.; pp. 1-48
	50	Patent Owner Proxicom Wireless, LLC's Preliminary Response Pursuant to 37 C.F.R. 42.107; dated 9/8/2020, Case No. IPR2020-00934, Target Corporation vs. Proxicom Wireless, L.L.C.; pp. 1-49

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Signature	/David J. Thibodeau, Jr./	Date (YYYY-MM-DD)	2021-07-29
Name/Print	David J. Thibodeau, Jr.	Registration Number	31671

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Doc description: Information Disclosure Statement (IDS) Filed

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Application Number	17366826
Filing Date	2021-07-02
First Named Inventor	James A. Proctor
Art Unit	2468
Examiner Name	
Attorney Docket Number	111054-0001U7

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	1	Patent Owner Proxicom Wireless, LLC's Preliminary Response Pursuant to 37 C.F.R. 42.107; dated 9/8/2020, Case No. IPR2020-00977, Target Corporation vs. Proxicom Wireless, L.L.C.; pp. 1-78
	2	Patent Owner Proxicom Wireless, LLC's Preliminary Response Pursuant to 37 C.F.R. 42.107; dated 9/8/2020, Case No. IPR2020-00978, Target Corporation vs. Proxicom Wireless, L.L.C.; pp. 1-71
	3	Patent Owner Proxicom Wireless, LLC's Preliminary Response Pursuant to 37 C.F.R. 42.107; dated 9/8/2020, Case No. IPR2020-00979, Target Corporation vs. Proxicom Wireless, L.L.C.; pp. 1-78
	4	Patent Owner Proxicom Wireless, LLC's Preliminary Response Pursuant to 37 C.F.R. 42.107; dated 9/8/2020, Case No. IPR2020-00980, Target Corporation vs. Proxicom Wireless, L.L.C.; pp. 1-73
	5	Patro, R.J., "Localization in Wireless Sensor Network with Mobile Beacons," Honeywell Tech. Solution Lab, IEEE 2004, pp. 22-24
	6	Petition for Inter Partes Review, dated 5/15/2020, Case No. IPR2020-00931, Target Corporation vs. Proxicom Wireless, L.L.C.
	7	Petition for Inter Partes Review, dated 5/15/2020, Case No. IPR2020-00932, Target Corporation vs. Proxicom Wireless, L.L.C.
	8	Petition for Inter Partes Review, dated 5/15/2020, Case No. IPR2020-00933, Target Corporation vs. Proxicom Wireless, L.L.C.
	9	Petition for Inter Partes Review, dated 5/27/2020, Case No. IPR2020-00934, Target Corporation vs. Proxicom Wireless, L.L.C.
	10	Petition for Inter Partes Review, dated 5/27/2020, Case No. IPR2020-00977, Target Corporation vs. Proxicom Wireless, L.L.C.
	11	Petition for Inter Partes Review, dated 5/8/2020, Case No. IPR2020-00903, Target Corporation vs. Proxicom Wireless, L.L.C.

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	12	Petition for Inter Partes Review, dated 5/8/2020, Case No. IPR2020-00904, Target Corporation vs. Proxicom Wireless, L.L.C.
	13	Petition for Inter Partes Review, dated 6/1/2020, Case No. IPR2020-00978, Target Corporation vs. Proxicom Wireless, L.L.C.
	14	Petition for Inter Partes Review, dated 6/1/2020, Case No. IPR2020-00979, Target Corporation vs. Proxicom Wireless, L.L.C.
	15	Petition for Inter Partes Review, dated 6/1/2020, Case No. IPR2020-00980, Target Corporation vs. Proxicom Wireless, L.L.C.
	16	Priyantha et al., "The Cricket Indoor Location System," Massachusetts Institute of Technology, pp 1-199 (2005)
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	18	Roth, C.; Email dated April 14, 2020 regarding Initial Identification of Disputed Claim Terms; Target Corporation vs. Droxicom Wireless, L.L.C.; C.A. No. 6:19-cv-1886-RBD-LRH; pp. 1-2
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	22	Savvides, A., et al., "Chapter 15: Localization in Sensor Networks," pp. 327-349

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	24	Shih et al., "Wake on Wireless: An Event Driven Energy Saving Strategy for Battery Operated Devices," MOBICOM '02 September 23-26, 2002, Atlanta, Georgia, USA, Copyright 2002, 12 pages.
	25	Shruthi et al., "Wibree Using Digital Radio Technology" International Journal of Advanced Trends in Computer Science and Engineering, Vol. 3 , No.1, Pages : 260 - 264 (2014), Special Issue of ICETETS 2014 - Held on 24-25 February, 2014 in Malla Reddy Institute of Engineering and Technology, Secunderabad-14, AP, India
	26	Simple Pairing Whitepaper, Bluetooth Special Interest Group, V10r00, (2006)
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	32	Symbol Technologies, PDT 2800 Series, Product Reference Guide, pp. 1-36 (2001)
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	36	Symbol Technologies, Wireless Networker LA-5033 PCT Adapter & LA-5030 PC Card, User Guide, pp. 1-72 (2004)
	37	Target Corporation's Preliminary Invalidity Contentions dated March 16, 2020, filed in Proxicom Wireless LLC v. Target Corporation, U.S. District Court, Middle District of Florida, Orlando Division, C.A. No. 6:19-cv-1886-RBD-LRH
	38	Target's Initial Identification of Disputed Claim Terms; dated April 10, 2020; Case No. IPR2020-00903, Target Corporation vs. Proxicom Wireless, L.L.C.; C.A. No. 6:19-cv-1886-RBD-LRH; pp. 1-6
	39	Target's Initial Identification of Disputed Claim Terms; dated April 10, 2020; Case No. IPR2020-00904, Target Corporation vs. Proxicom Wireless, L.L.C.; C.A. No. 6:19-cv-1886-RBD-LRH; pp. 1-6
	40	Target's Initial Identification of Disputed Claim Terms; dated April 10, 2020; Case No. IPR2020-00931, Target Corporation vs. Proxicom Wireless, L.L.C.; C.A. No. 6:19-cv-1886-RBD-LRH; pp. 1-6
	41	Target's Initial Identification of Disputed Claim Terms; dated April 10, 2020; Case No. IPR2020-00932, Target Corporation vs. Proxicom Wireless, L.L.C.; C.A. No. 6:19-cv-1886-RBD-LRH; pp. 1-6
	42	Target's Initial Identification of Disputed Claim Terms; dated April 10, 2020; Case No. IPR2020-00933, Target Corporation vs. Proxicom Wireless, L.L.C.; C.A. No. 6:19-cv-1886-RBD-LRH; pp. 1-6
	43	Target's Initial Identification of Disputed Claim Terms; dated April 10, 2020; Case No. IPR2020-00934, Target corporation vs. Proxicom Wireless, L.L.C.; C.A. No. 6:19-cv-1886-RBD-LRH; pp. 1-6
	44	Target's Initial Identification of Disputed Claim Terms; dated April 10, 2020; Case No. IPR2020-00977, Target corporation vs. Proxicom Wireless, L.L.C.; C.A. No. 6:19-cv-1886-RBD-LRH; pp. 1-6

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	45	Target's Initial Identification of Disputed Claim Terms; dated April 10, 2020; Case No. IPR2020-00978, Target corporation vs. Proxicom Wireless, L.L.C.; C.A. No. 6:19-cv-1886-RBD-LRH; pp. 1-6
	46	Target's Initial Identification of Disputed Claim Terms; dated April 10, 2020; Case No. IPR2020-00979, Target Corporation vs. Proxicom Wireless, L.L.C.; C.A. No. 6:19-cv-1886-RBD-LRH; pp. 1-6
	47	Target's Initial Identification of Disputed Claim Terms; dated April 10, 2020; Case No. IPR2020-00980, Target Corporation vs. Proxicom Wireless, L.L.C.; C.A. No. 6:19-cv-1886-RBD-LRH; pp. 1-6
	48	Thongthammachart, S., et al., "Bluetooth enables in-door mobile location services," In Proceedings of the 57th IEEE Semiannual Vehicular Technology Conference: VTC2003 (Vol. 3, pp. Session 8H, paper 3) IEEE.
	49	Transaction Receipt; PACER Service Center, dated August 6, 2020, pp. 1-3
	50	Transcript of Telephonic Motion Hearing, dated June 3, 2020; United States District Court, Middle District of Florida, Orlando Division; pp. 1-41; Case No. IPR2020-00903; Target Corporation vs. Proxicom Wireless, L.L.C.; C.A. No. 5:19-cv-1886-RBD-LRH; pp. 1-41

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Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

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See attached certification statement.

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Signature	/David J. Thibodeau, Jr./	Date (YYYY-MM-DD)	2021-07-29
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	2	20060116160	A1	2006-06-01	FUCCELLO JAMES R	
	3	20060125631	A1	2006-06-15	SHARONY JACOB	
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	7	20060193258	A1	2006-08-31	BALLAI PHILIP N	
	8	20060200843	A1	2006-09-07	MORGAN et al.	
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	10	20060229058	A1	2006-10-12	ROSENBERG LOUIS B	
	11	20060234631	A1	2006-10-19	DIEGUEZ JORGE	
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	28	20070025287	A1	2007-02-01	GOREN et al.	
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That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

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See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

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Attorney Docket Number	111054-0001U7

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	26	Declaration of David Hilliard Williams in Support of Petition for Inter Partes Review of U.S. Patent 8,385,913
	27	Declaration of David Hilliard Williams in Support of Petition for Inter Partes Review of U.S. Patent 9,038,129
	28	Declaration of David Hilliard Williams in Support of Petition for Inter Partes Review of U.S. Patent 9,161,164
	29	Declaration of Sylvia Hall-Ellis, Ph.D in Support of Patent Owner's Preliminary Response; Case No. IPR2020-00979, Target Corporation vs. Proxicom Wireless, L.L.C.; pp. 1-66
	30	Defendant's Preliminary Constructions of Proposed Terms, dated May 14, 2020; Case No. IPR2020-00903, Target Corporation vs. Proxicom Wireless, L.L.C.; C.A. No. 6:19-cv-1886-RBD-LRH; pp. 1-28
	31	Defendant's Preliminary Constructions of Proposed Terms, dated May 14, 2020; Case No. IPR2020-00904, Target Corporation vs. Proxicom Wireless, L.L.C.; C.A. No. 6:19-cv-1886-RBD-LRH; pp. 1-28
	32	Defendant's Preliminary Constructions of Proposed Terms, dated May 14, 2020; Case No. IPR2020-00931, Target Corporation vs. Proxicom Wireless, L.L.C.; C.A. No. 6:19-cv-1886-RBD-LRH; pp. 1-28
	33	Defendant's Preliminary Constructions of Proposed Terms, dated May 14, 2020; Case No. IPR2020-00932, Target Corporation vs. Proxicom Wireless, L.L.C.; C.A. No. 6:19-cv-1886-RBD-LRH; pp. 1-28
	34	Defendant's Preliminary Constructions of Proposed Terms, dated May 14, 2020; Case No. IPR2020-00933, Target Corporation vs. Proxicom Wireless, L.L.C.; C.A. No. 6:19-cv-1886-RBD-LRH; pp. 1-28
	35	Defendant's Preliminary Constructions of Proposed Terms, dated May 14, 2020; Case No. IPR2020-00934, Target corporation vs. Proxicom Wireless, L.L.C.; C.A. No. 6:19-cv-1886-RBD-LRH; pp. 1-28
	36	Defendant's Preliminary Constructions of Proposed Terms, dated May 14, 2020; Case No. IPR2020-00977, Target corporation vs. Proxicom Wireless, L.L.C.; C.A. No. 6:19-cv-1886-RBD-LRH; pp. 1-28

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	17366826
	Filing Date	2021-07-02
	First Named Inventor	James A. Proctor
	Art Unit	2468
	Examiner Name	
	Attorney Docket Number	111054-0001U7

	37	Defendant's Preliminary Constructions of Proposed Terms, dated May 14, 2020; Case No. IPR2020-00978, Target corporation vs. Proxicom Wireless, L.L.C.; C.A. No. 6:19-cv-1886-RBD-LRH; pp. 1-28
	38	Defendant's Preliminary Constructions of Proposed Terms, dated May 14, 2020; Case No. IPR2020-00979, Target corporation vs. Proxicom Wireless, L.L.C.; C.A. No. 6:19-cv-1886-RBD-LRH; pp. 1-28
	39	Defendant's Preliminary Constructions of Proposed Terms, dated May 14, 2020; Case No. IPR2020-00980, Target Corporation vs. Proxicom Wireless, L.L.C.; C.A. No. 6:19-cv-1886-RBD-LRH; pp. 1-28
	40	Defendant's Preliminary Constructions of Proposed Terms, dated May 8, 2020; Case No. IPR2020-00903, Target Corporation vs. Proxicom Wireless, L.L.C.; C.A. No. 6:19-cv-1886-RBD-LRH; pp. 1-22
	41	Defendant's Preliminary Constructions of Proposed Terms, dated May 8, 2020; Case No. IPR2020-00904, Target Corporation vs. Proxicom Wireless, L.L.C.; C.A. No. 6:19-cv-1886-RBD-LRH; pp. 1-22
	42	Defendant's Preliminary Constructions of Proposed Terms, dated May 8, 2020; Case No. IPR2020-00931, Target Corporation vs. Proxicom Wireless, L.L.C.; C.A. No. 6:19-cv-1886-RBD-LRH; pp. 1-22
	43	Defendant's Preliminary Constructions of Proposed Terms, dated May 8, 2020; Case No. IPR2020-00932, Target Corporation vs. Proxicom Wireless, L.L.C.; C.A. No. 6:19-cv-1886-RBD-LRH; pp. 1-22
	44	Defendant's Preliminary Constructions of Proposed Terms, dated May 8, 2020; Case No. IPR2020-00933, Target Corporation vs. Proxicom Wireless, L.L.C.; C.A. No. 6:19-cv-1886-RBD-LRH; pp. 1-22
	45	Defendant's Preliminary Constructions of Proposed Terms, dated May 8, 2020; Case No. IPR2020-00934, Target corporation vs. Proxicom Wireless, L.L.C.; C.A. No. 6:19-cv-1886-RBD-LRH; pp. 1-22
	46	Defendant's Preliminary Constructions of Proposed Terms, dated May 8, 2020; Case No. IPR2020-00977, Target corporation vs. Proxicom Wireless, L.L.C.; C.A. No. 6:19-cv-1886-RBD-LRH; pp. 1-22
	47	Defendant's Preliminary Constructions of Proposed Terms, dated May 8, 2020; Case No. IPR2020-00978, Target corporation vs. Proxicom Wireless, L.L.C.; C.A. No. 6:19-cv-1886-RBD-LRH; pp. 1-22

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	48	Defendant's Preliminary Constructions of Proposed Terms, dated May 8, 2020; Case No. IPR2020-00979, Target Corporation vs. Proxicom Wireless, L.L.C.; C.A. No. 6:19-cv-1886-RBD-LRH; pp. 1-22
	49	Defendant's Preliminary Constructions of Proposed Terms, dated May 8, 2020; Case No. IPR2020-00980, Target Corporation vs. Proxicom Wireless, L.L.C.; C.A. No. 6:19-cv-1886-RBD-LRH; pp. 1-22
	50	Duflot, et al., "A Formal Analysis of Bluetooth Device Discovery", School of Computer Science, University of Birmingham, 1-16

If you wish to add additional non-patent literature document citation information please click the Add button Add

EXAMINER SIGNATURE

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	17366826
Filing Date	2021-07-02
First Named Inventor	James A. Proctor
Art Unit	2468
Examiner Name	
Attorney Docket Number	111054-0001U7

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/David J. Thibodeau, Jr./	Date (YYYY-MM-DD)	2021-07-29
Name/Print	David J. Thibodeau, Jr.	Registration Number	31671

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/366,826	07/02/2021	James A. Proctor JR.	111054-0001U7	8789

86012 7590 08/17/2021

VLP Law Group LLP
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Palo Alto, CA 94301

EXAMINER	
HARLEY, JASON A	

ART UNIT	PAPER NUMBER
2468	

NOTIFICATION DATE	DELIVERY MODE
08/17/2021	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patents@vlplawgroup.com

Petitioner Samsung Ex-1004, 0271

Office Action Summary	Application No. 17/366,826	Applicant(s) Proctor et al.	
	Examiner JASON A HARLEY	Art Unit 2468	AIA (FITF) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☑ Responsive to communication(s) filed on 7/2/21.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☐ This action is **FINAL.** 2b) ☑ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5) ☑ Claim(s) 1-30 is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6) ☐ Claim(s) _____ is/are allowed.

7) ☑ Claim(s) 1-30 is/are rejected.

8) ☐ Claim(s) _____ is/are objected to.

9) ☐ Claim(s) _____ are subject to restriction and/or election requirement

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to **PPHfeedback@uspto.gov.**

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☑ The drawing(s) filed on 7/2/21 is/are: a)☑ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a)☐ All b)☐ Some** c)☐ None of the:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☑ Notice of References Cited (PTO-892)

2) ☑ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date 7/30/21,.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date _____.

4) ☐ Other: _____.

Notice of Pre-AIA or AIA Status

1. The present application is being examined under the pre-AIA first to invent provisions.

Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on nonstatutory double patenting provided the reference application or patent either is shown to be commonly owned with the examined application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement. See

MPEP § 717.02 for applications subject to examination under the first inventor to file provisions of the AIA as explained in MPEP § 2159. See MPEP § 2146 *et seq.* for applications not subject to examination under the first inventor to file provisions of the AIA. A terminal disclaimer must be signed in compliance with 37 CFR 1.321(b).

The USPTO Internet website contains terminal disclaimer forms which may be used. Please visit www.uspto.gov/patent/patents-forms. The filing date of the application in which the form is filed determines what form (e.g., PTO/SB/25, PTO/SB/26, PTO/AIA/25, or PTO/AIA/26) should be used. A web-based eTerminal Disclaimer may be filled out completely online using web-screens. An eTerminal Disclaimer that meets all requirements is auto-processed and approved immediately upon submission. For more information about eTerminal Disclaimers, refer to www.uspto.gov/patents/process/file/efs/guidance/eTD-info-I.jsp.

3. Claims 1, 2, 11, 18, 28, 30 rejected on the ground of nonstatutory double patenting as being unpatentable over claims 1, 2, 5, 7, 18, 27 of U.S. Patent No. 11074615. Although the claims at issue are not identical, they are not patentably distinct from each other because the inventive concept of the instant application is the same as the inventive concept of Patent.

Instant application	Patent
1. A method comprising: receiving, by a wireless device, using a short range wireless protocol, a first plurality of	1. A method for reducing communications between one or more servers and a wireless device, and for providing

beacon transmissions associated with a wireless beacon service, each beacon transmission comprising three fields (a) a MAC address, (b) a unique identifier, wherein the unique identifier of each respective beacon transmission does not directly identify a location of a beacon transmitter, and (c) a beacon service identifier, wherein the beacon service identifier of each respective beacon transmission is a number; receiving, by the wireless device using a second wireless protocol, stored information from one or more servers, relating to an entity or object associated with a first unique identifier; selecting one or more of the unique identifiers from the first plurality of beacon transmissions, by filtering the beacon transmissions which include a beacon service identifier indicating that a particular received beacon transmission is associated with the wireless	enhanced security and privacy to a wireless beacon service, the method comprising: transmitting by a beacon transmitter using a short range wireless radio, a first beacon transmission in a first time period, comprising three fields (a) a first MAC address, (b) a first unique identifier, wherein the first unique identifier does not directly identify a location of the beacon transmitter, and (c) a beacon service identifier, wherein the beacon service identifier is a number indicating that the first beacon transmission is associated with the wireless beacon service; receiving, by the wireless device from the one or more servers using a second radio, stored information relating to an entity or object associated with the first unique identifier; receiving, by the wireless device using the short range wireless radio, a first plurality of received beacon transmissions during the first time period; selecting one

beacon service; and taking first further action relating to the stored information, if the first unique identifier is present among the selected one or more unique identifiers.	or more unique identifiers from the first plurality of received beacon transmissions, by filtering the received beacon transmissions which include the beacon service identifier indicating that a particular received beacon transmission is associated with the wireless beacon service; taking further action relating to the stored information, if the first unique identifier is present among the selected one or more unique identifiers; and wherein the stored information comprises at least an identity of the entity or object.
2. The method of claim 1, wherein the receiving, by the wireless device, using a short range wireless protocol, of the first plurality of beacon transmissions occurs in a first time period, and wherein the method further comprises, during a second time period: receiving, by the wireless device, using a short range wireless protocol, a second plurality of beacon transmissions, each of the	2. The method of claim 1, further comprising: transmitting by the same beacon transmitter using the short range wireless radio, a second beacon transmission in a second time period, the second beacon transmission comprising three fields (a) a second MAC Address, (b) a second unique identifier, wherein the second unique identifier does not directly identify a location of the beacon

second plurality of beacon transmissions comprising three fields (a) a MAC address, (b) a unique identifier, wherein the unique identifier of each respective beacon transmission does not directly identify a location of a beacon transmitter, and (c) a beacon service identifier, wherein the beacon service identifier of each respective beacon transmission is a number; selecting one or more of the unique identifiers from the second plurality of beacon transmissions, by filtering the beacon transmissions which include the same beacon service identifier indicating that a particular received beacon transmission is associated with the same wireless beacon service; and taking second further action relating to the stored information, if a second unique identifier is present among the selected one or more unique identifiers, wherein the second unique identifier is associated	transmitter, and (c) the same beacon service identifier, the same beacon service identifier being the same number indicating that the second beacon transmission is also associated with the wireless beacon service; receiving, by the wireless device using the short range wireless radio, a second plurality of received beacon transmissions during the second time period; storing, by the wireless device, second stored information relating to the same entity or object and associated with the second unique identifier; selecting a second set of one or more unique identifiers from the second plurality of received beacon transmissions, by filtering the second plurality of beacon transmissions which include the same beacon service identifier indicating that a particular received beacon transmission is associated with the wireless beacon service; and taking other further action

with the same entity or object, and wherein the second unique identifier is not equal to the first unique identifier.	relating to the second stored information, if the second unique identifier is present among the selected second set of one or more unique identifiers; and wherein the second unique identifier is not equal to the first unique identifier.
28. The method of claim 1 wherein the MAC address is a randomly generated 48 bit number matching a format of a Bluetooth BD ADDR.	5. The method of claim 1 wherein the MAC address is a randomly generated 48 bit number matching a format of a Bluetooth BD_ADDR.
11. The method of claim 1 wherein the first further action comprises: determining, based upon at least a portion of the stored information, that at least one beacon transmitter is associated with a predetermined location.	7. The method of claim 1 wherein the step of taking further action comprises: determining, based upon at least a portion of the stored information, that at least one beacon transmitter is associated with a predetermined location.
30. A mobile wireless device comprising: one or more radios for providing reception and transmission for each of a Bluetooth wireless protocol and a second wireless protocol; one or more processors; and one or more non-transitory memory devices coupled to the	18. The method of claim 1, further comprising: transmitting, by another beacon transmitter using the short range wireless radio, another beacon transmission in another time period, comprising three fields (a) an other MAC Address, (b) an other unique identifier,

one or more processors, the one or more non-transitory memory devices storing a set of instructions that when executed by the one or more processors cause the one or more processors to perform operations including: receiving from a beacon transmitter, using the Bluetooth wireless protocol, a first plurality of beacon transmissions during a first time period, each of the beacon transmissions including (a) a MAC address, (b) a unique identifier, wherein the first unique identifier does not directly identify a location of the beacon transmitter, and (c) a beacon service identifier, wherein the beacon service identifier is a number indicating that each beacon transmission is associated with a wireless beacon service; receiving from one or more servers, using the second wireless protocol, stored information related to an entity or object associated with the first unique; selecting one or	wherein the other unique identifier does not directly identify a location of the other beacon transmitter and (c) the same beacon service identifier, the same beacon service identifier being a number indicating that the other beacon transmission is also associated with the wireless beacon service; receiving, by the wireless device using the short range wireless radio, another plurality of received beacon transmissions during the other time period; storing, by the wireless device, other stored information relating to another entity or object associated with the other unique identifier; selecting another set of one or more unique identifiers from the other plurality of received beacon transmissions, by filtering the other plurality of beacon transmissions which include the same beacon service identifier indicating that a particular received beacon transmission is associated with the wireless beacon

more unique identifiers from the first plurality of beacon transmissions, by filtering the beacon transmissions which include the beacon service identifier indicating that a particular received beacon transmission is associated with the wireless beacon service; taking first further action relating to the stored information, if the first unique identifier is present among the selected one or more unique identifiers; and the operations further including: receiving, by the wireless device, using the Bluetooth wireless protocol wireless, during a second time period, a second plurality of beacon transmissions, each of the second plurality of beacon transmissions comprising three fields (a) a MAC address, (b) a unique identifier, wherein the unique identifier of each respective beacon transmission does not directly identify a location	service; and taking additional further action relating to the other stored information, if the other unique identifier is present among the other set of one or more unique identifiers; wherein a) the other MAC address is not equal to the first MAC address and b) the other unique identifier is not equal to the first unique identifier.

18. The method of claim 2 wherein one or more of the steps performed by the wireless device are performed as a result of an application program executing on the wireless device utilizing a software interface.	27. The method of claim 1, wherein one or more of the steps performed by the wireless device are performed under control of an application program executing on the wireless device either directly via a software interface.

Claim Rejections - 35 USC § 103

4. The following is a quotation of pre-AIA 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained through the invention is not identically disclosed or described as set forth in section 102, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-8, 11, 13, 14-19, 23, 24, 27, 30 is/are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Ballai et al. (U.S. Pub No. 2004/0023640 A1) in view of Masuoka et al. (U.S. 2005/0136845 A1)

1. Ballai teaches a method comprising: receiving, by a wireless device, using a short range wireless protocol **[par 0001**, *The proliferation of IEEE 802.11 wireless protocol*

and the relatively inexpensive hardware for implementing wireless access to communication networks has created a number of security concerns. The wireless access to the network may be established via an access point ("AP")], a first plurality of beacon transmissions associated with a wireless beacon service, each beacon transmission comprising three fields (a) a MAC address, (b) a unique identifier, wherein the unique identifier of each respective beacon transmission does not directly identify a location of a beacon transmitter, and (c) a beacon service identifier, wherein the beacon service identifier of each respective beacon transmission is a number [par **0008, 0016, 0017, 0018**,The *MU 65 accesses the communication network 1 via the APs 10-30, depending where the MU 65 is located at a particular time. Periodically, the APs 10-30 transmit beacon signals. The beacon signal may contain information including a MAC address of the transmitting AP, a service set identification ("SSID"), supported data rates, etc. The SSID identifies a virtual local area network ("VLAN") that is served by a particular WLAN. There may be a plurality of other criteria used to authorize the access to the communication network 1*]; receiving, by the wireless device using a second wireless protocol, stored information from one or more servers, relating to an entity or object associated with a first unique identifier [**par 0025**, *The MU 65 accesses the communication network 1 via the APs 10-30, depending where the MU 65 is located at a particular time. Periodically, the APs 10-30 transmit beacon signals*];

Ballai fail to show selecting one or more of the unique identifiers from the first plurality of beacon transmissions, by filtering the beacon transmissions which include a beacon service identifier indicating that a particular received beacon transmission is associated with the wireless beacon service; and taking first further action relating to the

stored information, if the first unique identifier is present among the selected one or more unique identifiers.

In Masuoka show selecting one or more of the unique identifiers from the first plurality of beacon transmissions, by filtering the beacon transmissions which include a beacon service identifier indicating that a particular received beacon transmission is associated with the wireless beacon service[**par 0074**, *identity information from one or more mini-beacons in its vicinity and then select one of the mini-beacons that best satisfies a set of conditions based on the intensity of the received signals. These procedures encompass operations that sample the signals, filter and smooth the observations and calculate which beacon best satisfies the current criteria and also determine whether the target client is stationary or moving*];; and taking first further action relating to the stored information, if the first unique identifier is present among the selected one or more unique identifiers **[par 0202,** *In particular, the user can obtain the unique ID of the mini-beacon, which is coded during manufacturing. The user can set the transmit power level through the user interface. The mini-beacons 102 may also be implemented with a mechanical dial for setting the transmit power level*].

Before the effective filing date it would have been obvious to one of ordinary skill in the art to combine the teachings of Ballai and Masuoka because this provides a system and method of using wireless communication devices as beacons to allow a target wireless communication device to determine its location.

2. Ballai and Masuoka illustrates the method of claim 1, wherein the receiving, by the wireless device, using a short range wireless protocol, of the first plurality of beacon transmissions occurs in a first time period [Ballai, par 0021, 0031, *The record may also include the signal strength at which the beacon signal was received, the time and date when the record was created and the criteria used to detect the rogue AP 60 (e.g., unverified manufacturers MAC address, no matching SSID, etc.*)], and wherein the method further comprises, during a second time period: receiving, by the wireless device, using a short range wireless protocol, a second plurality of beacon transmissions, each of the second plurality of beacon transmissions comprising three fields (a) a MAC address, (b) a unique identifier, wherein the unique identifier of each respective beacon transmission does not directly identify a location of a beacon transmitter, and (c) a beacon service identifier, wherein the beacon service identifier of each respective beacon transmission is a number[**par 0031**, **0008, 0016, 0017, 0018**, For example, the AP 10 may be set to perform the process for a specified time period, e.g., every 5 minutes to every 8 hours. It may also be set to run only during certain time periods, e.g., between 12:00 AM and 8:00 AM. Alternatively, the AP 10 may be set up to continuously run the process and to perform no other tasks. The *MU 65 accesses the communication network 1 via the APs 10-30, depending where the MU 65 is located at a particular time. Periodically, the APs 10-30 transmit beacon signals. The beacon signal may contain information including a MAC address of the transmitting AP, a service set identification ("SSID"), supported data rates, etc. The SSID identifies a virtual local area network ("VLAN") that is served by a particular WLAN. There may be a plurality of other criteria used to authorize the access to the communication network 1*];

Ballai fail to show selecting one or more of the unique identifiers from the second plurality of beacon transmissions, by filtering the beacon transmissions which include the same beacon service identifier indicating that a particular received beacon transmission is associated with the same wireless beacon service [**par 0074,** *identity information from one or more mini-beacons in its vicinity and then select one of the mini-beacons that best satisfies a set of conditions based on the intensity of the received signals. These procedures encompass operations that sample the signals, filter and smooth the observations and calculate which beacon best satisfies the current criteria and also determine whether the target client is stationary or moving*]; and taking second further action relating to the stored information, if a second unique identifier is present among the selected one or more unique identifiers [**par 0186-0189**, *The first location calculation scheme is valid for either the absolute or difference methods of power setting. The second variation of location calculation is used for the case of the arbitrary deployment scheme*], wherein the second unique identifier is associated with the same entity or object, and wherein the second unique identifier is not equal to the first unique identifier [**par 0078**, *The location of the mini-beacon can be represented either as coordinates or in symbolic form (e.g., Room 1223 or Kitchen) and are input to a min-beacon apparatus 103 and are stored in a computer-readable medium in a table 104 of deployment information*].

Before the effective filing date it would have been obvious to one of ordinary skill in the art to combine the teachings of Ballai and Masuoka because this provides a system and method of using wireless communication devices as beacons to allow a target wireless communication device to determine its location.

3. Ballai and Masuoka defines the method of claim 2 wherein the MAC address received in a beacon transmission including the second unique identifier is different from the MAC address received in a beacon transmission including the first unique identifier, but each such beacon transmission includes the same beacon service identifier [par **0008, 0016, 0017, 0018**,The *MU 65 accesses the communication network 1 via the APs 10-30, depending where the MU 65 is located at a particular time. Periodically, the APs 10-30 transmit beacon signals. The beacon signal may contain information including a MAC address of the transmitting AP, a service set identification ("SSID"), supported data rates, etc. The SSID identifies a virtual local area network ("VLAN") that is served by a particular WLAN. There may be a plurality of other criteria used to authorize the access to the communication network 1*]

4. Ballai and Masuoka provides the method of claim 3, Ballai fail to show wherein the second further action is based upon a function currently being performed on a device associated with the wireless beacon service.

In an analogous art Masuoka show wherein the second further action is based upon a function currently being performed on a device associated with the wireless beacon service [**par 0076**, *such as service discovery, service access, network routing and security, that can themselves be extended to have a spatial aspect (e.g., "Find the closest printer") by incorporating automatically generated location data*].

Before the effective filing date it would have been obvious to one of ordinary skill in the art to combine the teachings of Ballai and Masuoka because this provides a system and method of using wireless communication devices as beacons to allow a target wireless communication device to determine its location.

5. Ballai and Masuoka disclose the method of claim 4, Ballai fail to show wherein the function is related to a current phone call, music being played, a video being played, a multi-player game, or a shared application.

In an analogous art Masuoka show wherein the function is related to a current phone call, music being played, a video being played, a multi-player game, or a shared application [**par 0006, 0212**, *a system for location determination of a wireless telephone that is used to dial an emergency 911 call, The mini-beacons represent a new and different approach to determining approximate location in indoor and outdoor environments, where a client with a mobile computing device (e.g., a mobile computing device with wireless capabilities such as a laptop computer, a PDA, a cell phone, etc.) can communicate with the mini-beacons and determine its own location*].

Before the effective filing date it would have been obvious to one of ordinary skill in the art to combine the teachings of Ballai and Masuoka because this provides a system and method of using wireless communication devices as beacons to allow a target wireless communication device to determine its location.

6. Ballai and Masuoka defines the method of claim 2 Ballai fail to show wherein the first or the second further action is related to receiving advertising information for presentation to a user of the wireless device, based upon the first or the second unique identifiers, or information derived from the first of second unique identifiers.

In an analogous art Masuoka show wherein the first or the second further action is related to receiving advertising information for presentation to a user of the wireless device, based upon the first or the second unique identifiers, or information derived from the first of second unique identifiers [**par 0030**, *beacon devices that are placed in various locations either to represent that location or to represent an object present at that location and also to provide a URL web pointer for that location or object. The beacon periodically broadcasts a message containing the URL and any device that receives the message can access the web pages pointed to by the URL*].

Before the effective filing date it would have been obvious to one of ordinary skill in the art to combine the teachings of Ballai and Masuoka because this provides a system and method of using wireless communication devices as beacons to allow a target wireless communication device to determine its location.

7. Ballai and Masuoka display the method of claim 2 wherein the first further action includes retrieving content from a server based upon information derived from either the first unique identifier or the second unique identifier [**Ballai, par 0007**, *The communication network 1 may also include a plurality of authorized mobile units*

("MU"s), e.g. MU 65 and a plurality of servers, e.g. a server 70. The APs 10-30 may be connected directly to the server 70 as shown, for example, by connection 51 between the server 70 and the AP 30. Each AP 10-30 may be assigned a name, by the network administrator, for ease of reference. This is similar to the practice of naming computers and servers on a network].

8. Ballai and Masuoka disclose the method of claim 2, Ballai fail to show wherein the first or second further action includes sending a message to another device associated with an account related to the first and the second unique identifiers.

In an analogous art Masuoka show wherein the first or second further action includes sending a message to another device associated with an account related to the first and the second unique identifiers **[par 0078**, *The location of the mini-beacon can be represented either as coordinates or in symbolic form (e.g., Room 1223 or Kitchen) and are input to a min-beacon apparatus 103 and are stored in a computer-readable medium in a table 104 of deployment information, indexed by the unique ID of each mini-beacon. The deployment information can be stored in a single table or each beacon may include its information in its transmitted message*].

Before the effective filing date it would have been obvious to one of ordinary skill in the art to combine the teachings of Ballai and Masuoka because this provides a system and method of using wireless communication devices as beacons to allow a target wireless communication device to determine its location.

11. Ballai and Masuoka disclose the method of claim 1, Ballai fail to show wherein the first further action comprises: determining, based upon at least a portion of the stored information, that at least one beacon transmitter is associated with a predetermined location.

In an analogous art Masuoka show wherein the first further action comprises: determining, based upon at least a portion of the stored information, that at least one beacon transmitter is associated with a predetermined location [par 0045, system and method for using wireless communication devices as beacons to determine the relative location of a target wireless communication device. The beacons transmit identifying information that the target device can use to determine the identity of the beacon. The target device can measure the received intensity of the beacon transmissions and determine an associated beacon that best satisfies a specified criteria (e.g., largest signal strength) using a procedure of the present invention that discriminates between multiple beacons]

Before the effective filing date it would have been obvious to one of ordinary skill in the art to combine the teachings of Ballai and Masuoka because this provides a system and method of using wireless communication devices as beacons to allow a target wireless communication device to determine its location.

12. Ballai and Masuoka demonstrate the method of claim 2 wherein the step of taking first further action further includes, by the wireless device, sending of the first unique identifier or information derived from the first unique identifier to at least one of the one

or more servers, and receiving the stored information in response [**Ballai, par 0013**, *The MU 68 transmits an authentication message over a communication channel 52 to the rogue AP 60. The AP 60, configured by the unauthorized user, approves the access for the MU 68 to the communication network 1. The unauthorized user may gain access to the server 70 by attempting to login with a user-name and password, in the same manner as the authorized user*]

13. Ballai and Masuoka create the method of claim 1 further comprising: wherein the stored information is received by the wireless device from at least one of the one or more servers prior to the performing of the first further action [**par 0009**, *If the user of the MU 65 attempts to access the server 70, the MU 65 first waits for a communication channel 50 to the AP 30 to be available. Once the communication channel 50 is available, the MU 65 transmits an authentication message to the AP 30 requesting access to the communication network 1. The authentication message may contain identification data, e.g., the user login name and the user login password*]

14. Ballai and Masuoka define the method of claim 2 further comprising: wherein the stored information is received by the wireless device from at least one of the one or more servers prior to the performing of the first further action[**par 0009**, *If the user of the MU 65 attempts to access the server 70, the MU 65 first waits for a communication channel 50 to the AP 30 to be available. Once the communication channel 50 is*

available, the MU 65 transmits an authentication message to the AP 30 requesting access to the communication network 1. The authentication message may contain identification data, e.g., the user login name and the user login password]

15. Ballai and Masuoka describes the method of claim 1 further comprising: wherein the stored information is used to determine if the first unique identifier is present among the first selected one or more unique identifiers [**Ballai, par 0020**, *The other option, therefore, is to verify the SSID against a database containing authorized SSIDs. If this criteria is utilized, the network administrator or another authorized user may generate a list of valid SSIDs. Therefore, if the rogue AP 60 is manufactured by an authorized manufacturer but the SSID in the beacon is invalid, then the presence of the rogue AP 60 is detected*].

16. Ballai and Masuoka provides the method of claim 2 wherein all beacon transmitter devices participating in the wireless beacon service have the same beacon service identifier for identifying the beacon transmitters as being enabled with the wireless beacon service **[abstract, par 0017**, *The beacon includes identification information of the transmitting access point. A computing arrangement verifies the identification information of the transmitting access point with a preexisting database of the communication network. The preexisting database includes data corresponding to identification information of a plurality of authorized access points. Conversely, WLAN*

100 may serve a plurality of VLANs and a particular AP beacon, from an AP associated with WLAN 100, contain a list of SSIDs]

17. Ballai and Masuoka demonstrate the method of claim 2, Ballai fail to show wherein the second further action comprises: determining, based upon at least a portion of the stored information, that the beacon transmitter is associated with a predetermined location.

In an analogous art Masuoka show wherein the second further action comprises: determining, based upon at least a portion of the stored information, that the beacon transmitter is associated with a predetermined location [Masuoka, par 0081, *The mini-beacon method of the present invention is a proximity scheme determined using signal strength from multiple mini-beacon transmitters at known points measured at the target. Accuracy is improved by adjusting the transmit power from the transmitters and statistically processing the received signal strength values. The mobile client scans for all the mini-beacons it can receive, computes the received signal strength for each scanned beacon, and uses a proximity procedure, incorporating the recent history of received signal strengths to find the beacon that best satisfies the desired condition (e.g., maximum signal strength or lowest transmitter) and the user motion status (e.g., moving or stationary)*|

Before the effective filing date it would have been obvious to one of ordinary skill in the art to combine the teachings of Ballai and Masuoka because this provides a system and method of using wireless communication devices as beacons to allow a target wireless communication device to determine its location.

18. Ballai and Masuoka creates the method of claim 2, Ballai fail to show wherein one or more of the steps performed by the wireless device are performed as a result of an application program executing on the wireless device utilizing a software interface.

In an analogous art Masuoka show wherein one or more of the steps performed by the wireless device are performed as a result of an application program executing on the wireless device utilizing a software interface [par 0075, An embodiment of the mini-beacon device based on the IEEE 802.11 wireless local area network standard that includes a small, low-cost hardware device and associated software that implements a mini-beacon device and the associated software that runs
on a client device such as a mobile computing device with wireless capabilities such as a laptop, a PDA, or a cell phone is described]

Before the effective filing date it would have been obvious to one of ordinary skill in the art to combine the teachings of Ballai and Masuoka because this provides a system and method of using wireless communication devices as beacons to allow a target wireless communication device to determine its location.

19. Ballai and Masuoka defines the claim of 2 Ballai fail to show wherein the second further action is related to a product tied to a location.

In an analogous art Masuoka show wherein the second further action is related to a product tied to a location [**par 0029**, *1) the device transmits programmable ID codes or local data using the IrDA standard communication channel and protocol, 2) angle and range (up to 7 m or 10 m) of IrDA can be adjusted horizontally*]

Before the effective filing date it would have been obvious to one of ordinary skill in the art to combine the teachings of Ballai and Masuoka because this provides a system and method of using wireless communication devices as beacons to allow a target wireless communication device to determine its location.

23. Ballai and Masuoka defines the method of claim 2 wherein the second further action includes steps to allow for a user associated with the wireless device to be provided access to an object or device associated with the wireless beacon service [**Ballai, par 0008**, *The MU 65 accesses the communication network 1 via the APs 10-30, depending where the MU 65 is located at a particular time. Periodically, the APs 10-30 transmit beacon signals*]

24. Ballai and Masuoka disclose the method of claim 2 Ballai fail to show wherein the step of taking second further action additionally comprises: controlling further communications between the wireless device and at least one device or server associated with an entity or object in proximity to the wireless device.

In an analogous art Masuoka show wherein the step of taking second further action additionally comprises: controlling further communications between the wireless device and at least one device or server associated with an entity or object in proximity to the wireless device [par 0051, In addition, when implemented as a client solution, the client has a greater degree of control on the dissemination of its location, providing enhanced privacy protection].

Before the effective filing date it would have been obvious to one of ordinary skill in the art to combine the teachings of Ballai and Masuoka because this provides a system and method of using wireless communication devices as beacons to allow a target wireless communication device to determine its location.

27. Ballai and Masuoka creates the method of claim 2 Ballai fail to show wherein the stored information is used to determine if the second unique identifier is present among the second selected one or more unique identifiers.

In an analogous art Masuoka show wherein the stored information is used to determine if the second unique identifier is present among the second selected one or more unique identifiers **[par 0074, 0160**, *Several procedures are described that are executed by a target client mobile computing device that will receive signals and identity information from one or more mini-beacons in its vicinity and then select one of the mini-beacons that best satisfies a set of conditions based on the intensity of the received signals. The client periodically scans the set of channels in the band of spectrum under consideration and logs the received signal strength (RSS) values of all mini-beacons*

from which it has received a beacon message. The mini-beacon message includes the unique identifier of the beacon].

Before the effective filing date it would have been obvious to one of ordinary skill in the art to combine the teachings of Ballai and Masuoka because this provides a system and method of using wireless communication devices as beacons to allow a target wireless communication device to determine its location.

30. A mobile wireless device comprising: one or more radios for providing reception and transmission for each of a Bluetooth wireless protocol and a second wireless protocol; one or more processors**[par 0001**, *The proliferation of IEEE 802.11 wireless protocol and the relatively inexpensive hardware for implementing wireless access to communication networks has created a number of security concerns. The wireless access to the network may be established via an access point ("AP")*]; and one or more non-transitory memory devices coupled to the one or more processors, the one or more non-transitory memory devices storing a set of instructions that when executed by the one or more processors cause the one or more processors to perform operations including: receiving from a beacon transmitter, using the Bluetooth wireless protocol, a first plurality of beacon transmissions during a first time period, each of the beacon transmissions including (a) a MAC address, (b) a unique identifier, wherein the first unique identifier does not directly identify a location of the beacon transmitter, and (c) a beacon service identifier, wherein the beacon service identifier is a number indicating that each beacon transmission is associated with a wireless beacon service[par **0008,**

0016, 0017, 0018,The *MU 65 accesses the communication network 1 via the APs 10-30, depending where the MU 65 is located at a particular time. Periodically, the APs 10-30 transmit beacon signals. The beacon signal may contain information including a MAC address of the transmitting AP, a service set identification ("SSID"), supported data rates, etc. The SSID identifies a virtual local area network ("VLAN") that is served by a particular WLAN. There may be a plurality of other criteria used to authorize the access to the communication network 1*]; receiving from one or more servers, using the second wireless protocol, stored information related to an entity or object associated with the first unique[**par 0025**, *The MU 65 accesses the communication network 1 via the APs 10-30, depending where the MU 65 is located at a particular time. Periodically, the APs 10-30 transmit beacon signals*]; selecting one or more unique identifiers from the first plurality of beacon transmissions, by filtering the beacon transmissions which include the beacon service identifier indicating that a particular received beacon transmission is associated with the wireless beacon service[**par 0027**, *The AP 30 may then, periodically, send a directed message to the MU 65 requesting it to perform the scanning process (Step 200). The MU 65 then scans each channel, supported by the communication network's 1 protocol, for beacon signals, e.g., all 14 channels in a communication network 1 that use the IEEE 802.11 wireless protocol. Each channel is scanned for a time period long enough to have a high probability of detecting a beacon on the channel*]; taking first further action relating to the stored information, if the first unique identifier is present among the selected one or more unique identifiers; and the operations further including: receiving, by the wireless device, using the Bluetooth wireless protocol wireless, during a second time period, a second plurality of beacon

transmissions, each of the second plurality of beacon transmissions comprising three fields (a) a MAC address, (b) a unique identifier, wherein the unique identifier of each respective beacon transmission does not directly identify a location of a beacon transmitter, and (c) a beacon service identifier, wherein the beacon service identifier of each respective beacon transmission is a number[par **0008, 0016, 0017, 0018**,The *MU 65 accesses the communication network 1 via the APs 10-30, depending where the MU 65 is located at a particular time. Periodically, the APs 10-30 transmit beacon signals. The beacon signal may contain information including a MAC address of the transmitting AP, a service set identification ("SSID"), supported data rates, etc. The SSID identifies a virtual local area network ("VLAN") that is served by a particular WLAN. There may be a plurality of other criteria used to authorize the access to the communication network 1*];; wherein the MAC address received in a beacon transmission including the second unique identifier is different from the MAC address received in a beacon transmission including the first unique identifier, but each such beacon transmission includes the same beacon service identifier [par 0021, *the MAC address, the name of the AP 10, as described above, and the SSID of the AP 10 which discovered the rogue AP 60, as well as the MAC address of the rogue AP 60. The record may also include the signal strength at which the beacon signal was received, the time and date when the record was created and the criteria used to detect the rogue AP 60 (e.g., unverified manufacturers MAC address, no matching SSID, etc.*)].

Ballai fail to show selecting one or more of the unique identifiers from the second plurality of beacon transmissions, by filtering the beacon transmissions which include the same beacon service identifier indicating that a particular received beacon

transmission is associated with the same wireless beacon service; taking second further action relating to the stored information, if a second unique identifier is present among the selected one or more unique identifiers, wherein the second unique identifier is associated with the same entity or object, and wherein the second unique identifier is not equal to the first unique identifier;

In an analogous art Masuoka show selecting one or more of the unique identifiers from the second plurality of beacon transmissions, by filtering the beacon transmissions which include the same beacon service identifier indicating that a particular received beacon transmission is associated with the same wireless beacon service; taking second further action relating to the stored information[**par 0074**, *identity information from one or more mini-beacons in its vicinity and then select one of the mini-beacons that best satisfies a set of conditions based on the intensity of the received signals. These procedures encompass operations that sample the signals, filter and smooth the observations and calculate which beacon best satisfies the current criteria and also determine whether the target client is stationary or moving*], if a second unique identifier is present among the selected one or more unique identifiers, wherein the second unique identifier is associated with the same entity or object, and wherein the second unique identifier is not equal to the first unique identifier**[par 0202,** *In particular, the user can obtain the unique ID of the mini-beacon, which is coded during manufacturing. The user can set the transmit power level through the user interface. The mini-beacons 102 may also be implemented with a mechanical dial for setting the transmit power level*].

Before the effective filing date it would have been obvious to one of ordinary skill in the art to combine the teachings of Ballai and Masuoka because this provides a system and method of using wireless communication devices as beacons to allow a target wireless communication device to determine its location.

6. Claims 9 is/are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Ballai et al. (U.S. Pub No. 2004/0023640 A1) in view of Masuoka et al. (U.S. 2005/0136845 A1) in view of Dohse et al. (U.S. Pub No. 2007/0050258 A1).

9. Ballai and Masuoka describe the method of claim 2 Ballai and Masuoka fail to show wherein following the performance of the first or second further action, a server associated with the an account for the user of the wireless device performs a step of sending a message to an email address associated with the account for the user relating to the entity or object associated with the first or second unique identifiers.

In an analogous art Dohse show wherein following the performance of the first or second further action, a server associated with the an account for the user of the wireless device performs a step of sending a message to an email address associated with the account for the user relating to the entity or object associated with the first or second unique identifiers [**par 0082**, *Function Rebate/Warranty Reminder 408*

preferably matches line-item detail to available rebate offers and warranties provided by Merchant A 103 and Manufacturer 301 and generates at least one pop-up message to Consumer 101 at login, or generates at least one email reminder to Consumer 101].

Before the effective filing date it would have been obvious to one of ordinary skill in the art to combine the teachings of Ballai, Masuoka, and Dohse provide a system for accumulating and storing transaction line-item detail on behalf of consumers.

7. Claims 10 is/are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Ballai et al. (U.S. Pub No. 2004/0023640 A1) in view of Masuoka et al. (U.S. 2005/0136845 A1) in view of Tedesco et al. (U.S. Pub No. 2008/0195621 A1).

10. Ballai and Masuoka defines the method of claim 2, Ballai and Masuoka fail to show wherein the second further action includes preventing sending of the second unique identifier or information derived from the second unique identifier by the wireless device to one or more servers.

In an analogous art Tedesco show wherein the second further action includes preventing sending of the second unique identifier or information derived from the second unique identifier by the wireless device to one or more servers **[claim 9**, *receiving the announcement message at the first media device; comparing the second media device unique identifier to entries on a first media device list to determine if the second media player unique identifier is acceptable or is blocked; comparing the second media device characteristic to a first media device presence preference*].

Before the effective filing date it would have been obvious to one of ordinary skill in the art to combine the teachings of Ballai, Masuoka, and Tedesco because this provides manage presence information distribution and access to facilitate media communication between compatible devices.

8. Claims 20-22 is/are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Ballai et al. (U.S. Pub No. 2004/0023640 A1) in view of Masuoka et al. (U.S. 2005/0136845 A1) in view of Clagett et al. (U.S. Pat No. 5121126 A).

20. Ballai and Masuoka discloses the claim of 2, Ballai and Masuoka fail to show wherein the second further action is related to an advertisement tied to a location.

In an analogous art Clagett show wherein the second further action is related to an advertisement tied to a location [col 7, ln 18-24, *the invention the beacon signal may include advertising or promotional messages such as indicating the nearest location of various types of commercial establishments or facilities such as ATMs*].

Before the effective filing date it would have been obvious to one of ordinary skill in the art to combine the teachings of Ballai, Masuoka, and Clagett because in order to assist individuals in such circumstances, the relevant telephone or base station is provided with a radio beacon capable of broadcasting simple pulse signals or more complex signals containing a variety of information message

21. Ballai and Masuoka displays the method of claim 1 Ballai and Masuoka fail to show wherein the first further action includes determining an address or location associated with the wireless device based at least in part upon the first unique identifier being associated with a pre-determined location, and wherein the wireless device is located indoors where a GPS signal may not be available.

In an analogous art Clagett show wherein the first further action includes determining an address or location associated with the wireless device based at least in part upon the first unique identifier being associated with a pre-determined location, and wherein the wireless device is located indoors where a GPS signal may not be available [**col 1, ln 43-50**, *The telepoint subscriber is provided with a cordless handset which may be used within a predetermined range (presently about 100 yards) from a phone point which may constitute a home, office or public pay telephone. Phone point base stations can be sited in both indoor*]

Before the effective filing date it would have been obvious to one of ordinary skill in the art to combine the teachings of Ballai, Masuoka, and Clagett because in order to assist individuals in such circumstances, the relevant telephone or base station is provided with a radio beacon capable of broadcasting simple pulse signals or more complex signals containing a variety of information message

22. Ballai and Masuoka conveys the method of claim 2 Ballai and Masuoka fail to show wherein the second further action includes determining an address or location associated with the wireless device based at least in part upon the second unique

identifier being associated with a pre-determined location, wherein the wireless device is located indoors where a GPS signal may not be available.

In an analogous art Clagett show wherein the second further action includes determining an address or location associated with the wireless device based at least in part upon the second unique identifier being associated with a pre-determined location, wherein the wireless device is located indoors where a GPS signal may not be available[**col 1, ln 43-50**, *The telepoint subscriber is provided with a cordless handset which may be used within a predetermined range (presently about 100 yards) from a phone point which may constitute a home, office or public pay telephone. Phone point base stations can be sited in both indoor*]

Before the effective filing date it would have been obvious to one of ordinary skill in the art to combine the teachings of Ballai, Masuoka, and Clagett because in order to assist individuals in such circumstances, the relevant telephone or base station is provided with a radio beacon capable of broadcasting simple pulse signals or more complex signals containing a variety of information message

9. Claim 25, 26 is/are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Ballai et al. (U.S. Pub No. 2004/0023640 A1) in view of Masuoka et al. (U.S. 2005/0136845 A1) in view of Sugaya et al. (U.S. Pub No. 2005/0096031 A1).

25. Ballai and Masuoka demonstrate the method of claim 3, Ballai and Masuoka fail to show further comprising: receiving, by the wireless device, timing notification information for coordination of active times for beacon transmissions.

In an analogous art Sugaya show further comprising: receiving, by the wireless device, timing notification information for coordination of active times for beacon transmissions [**claim 40**, *a frame period is created in a pseudo manner to have a same state as timing of transmitting its own beacon and a notification indicating the timing utilized for the bandwidth-guaranteed communication is issued*]

Before the effective filing date it would have been obvious to one of ordinary skill in the art to combine the teachings of Ballai, Masuoka, and Sugaya because timing utilized for a bandwidth-guaranteed communication by using a beacon signal allows any number of neighboring wireless communication apparatuses to be notified in advance that a bandwidth-guaranteed communication is to be performed.

26. Ballai, Masuoka, and Sugaya defines the method of claim 25, Ballai and Masuoka fail to show wherein the receiving, by the wireless device of the timing notification information is not directly from the beacon transmitter.

In an analogous art Sugaya show wherein the receiving, by the wireless device of the timing notification information is not directly from the beacon transmitter [**claim 40**, *a frame period is created in a pseudo manner to have a same state as timing of*

transmitting its own beacon and a notification indicating the timing utilized for the bandwidth-guaranteed communication is issued]

Before the effective filing date it would have been obvious to one of ordinary skill in the art to combine the teachings of Ballai, Masuoka, and Sugaya because timing utilized for a bandwidth-guaranteed communication by using a beacon signal allows any number of neighboring wireless communication apparatuses to be notified in advance that a bandwidth-guaranteed communication is to be performed.

10. Claim 28, 29 is/are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Ballai et al. (U.S. Pub No. 2004/0023640 A1) in view of Masuoka et al. (U.S. 2005/0136845 A1) in view of Famolari et al. (U.S. Pub No. 2007/0043528 A1).

28. Ballai and Masuoka disclose the method of claim 1, Ballai and Masuoka fail to show wherein the MAC address is a randomly generated 48 bit number matching a format of a Bluetooth BD ADDR.

In an analogous art Famolari show wherein the MAC address is a randomly generated 48 bit number matching a format of a Bluetooth BD ADDR [par 0054, Central Server (CS) 10 that preferably maintains the intelligence of the system, manages buddy lists, maps Bluetooth Device Addresses to Usernames and maps locations to BDADDRs (e.g., BDDADDRs include device addresses) of the Bluetooth Access Points].

Before the effective filing date it would have been obvious to one of ordinary skill in the art to combine the teachings of Ballai, Masuoka, and Famolari because a Bluetooth interface and an 802.11 interface, thus allowing the MID to participate on two separate networks as well as to interface with Bluetooth devices.

29. Ballai and Masuoka describe the method of claim 3, Ballai and Masuoka fail to show wherein the short range protocol is derived from Bluetooth.

In an analogous art Famolari show wherein the short range protocol is derived from Bluetooth [**par 0011**, *Bluetooth is a computing and telecommunications industry specification that details how mobile devices can easily interconnect with each other and with non-mobile devices using a short-range wireless connection. Bluetooth creates a digital wireless protocol to address end-user problems arising from the proliferation of various mobile devices that need to keep data synchronized and consistent from one device to another, thereby allowing equipment from different vendors to work seamlessly together. Bluetooth devices may be named according to a common naming concept. For example, a Bluetooth device may possess a Bluetooth Device Name (BDN) or a name associated with a unique Bluetooth Device Address (BDA). Bluetooth devices may also participate in an Internet Protocol (IP) network*].

Before the effective filing date it would have been obvious to one of ordinary skill in the art to combine the teachings of Ballai, Masuoka, and Famolari because a Bluetooth interface and an 802.11 interface, thus allowing the MID to participate on two separate networks as well as to interface with Bluetooth devices.

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to JASON A HARLEY whose telephone number is (571)270-5435. The examiner can normally be reached on 7:30-300 6:30-8:30.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at http://www.uspto.gov/interviewpractice.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Asad M Nawaz can be reached on (571) 272-3988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see https://ppair-my.uspto.gov/pair/PrivatePair. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JASON A HARLEY/
Examiner, Art Unit 2468

/SYED ALI/
Primary Examiner, Art Unit 2468

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Art Unit	2468
Examiner Name	Jason Harley
Attorney Docket Number	111054-0001U7

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	Filing Date	2021-07-02
	First Named Inventor	James A. Proctor
	Art Unit	2468
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	Attorney Docket Number	111054-0001U7

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	Attorney Docket Number	111054-0001U7

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Bibliographic Data

Application No: 17/366,826

Foreign Priority claimed: ○ Yes ◉ No

35 USC 119 (a-d) conditions met: ☐ Yes ☑ No ☐ Met After Allowance

Verified and Acknowledged: /JASON A HARLEY/ Examiner's Signature | Initials

Title: EFFICIENT AND SECURE COMMUNICATION USING WIRELESS SERVICE IDENTIFIERS

FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
07/02/2021	370	2468	111054-0001U7
RULE			

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INVENTORS

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James Arthur Proctor III, Indialantic, FL, UNITED STATES

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		7716484-$ | US-7729326-$ | US-7756467-$ | US-7773995-$ | US-7774231-$ | US-7775430-$ | US-7822000-$ | US-7826425-$ | US-7836512-$ | US-7848765-$ | US-7876701-$ | US-7877082-$ | US-7886962-$ | US-7904952-$ | US-7936736-$ | US-7942337-$ | US-7952481-$ | US-7962369-$ | US-7963441-$ | US-7965983-$ | US-7991644-$ | US-7991664-$ | US-8014755-$ | US-8024272-$ | US-8073795-$ | US-8089405-$ | US-8090359-$ | US-8112794-$ | US-8116749-$ | US-8121917-$ | US-8160495-$ | US-8185133-$ | US-8204039-$ | US-8205240-$ | US-8229458-$ | US-8233841-$ | US-8254338-$ | US-8275359-$ | US-8295819-$ | US-8321913-$ | US-8332521-$ | US-8364171-$ | US-8369842-$ | US-8374592-$ | US-8385896-$ | US-8385913-$ | US-8478300-$ | US-8543500-$ | US-8559968-$ | US-8576846-$ | US-8688570-$ | US-8787575-$ | US-8825538-$ | US-9038129-$ | US-9137012-$ | US-9161164-$ | US-9373091-$ | US-9646319-$ | US-9659285-$ | US-9734198-$ | US-9805347-$).DID.				
S4	180	(US-10133527-$ | US-10140072-$ | US-10387087-$ | US-10489096-$ | US-10642576-$ | US-17366826-$ | US-20010003191-$ | US-20010036200-$ | US-20020032746-$ | US-20020061009-$ | US-20020065720-$ | US-20020073027-$ | US-20020077083-$ | US-20020077118-$ | US-20020101993-$ | US-20020123965-$ | US-20020128932-$ | US-20020131445-$ | US-20020161666-$ | US-20020188565-$ | US-20020188656-$ | US-20030021250-$ | US-20030028481-$ | US-20030045272-$ | US-20030053484-$ | US-20030074259-$ | US-20030100328-$ | US-20030134650-$ | US-20030149874-$ | US-20030158959-$ | US-20030195808-$ | US-20030200140-$ | US-20030200489-$ | US-20030220835-$ | US-20040019564-$ | US-20040030601-$ | US-20040076136-$ | US-20040093268-$	US-PGPUB; USPAT	OR	OFF	2021/08/06 11:44

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		7233801-$ | US-7233960-$ | US-7245602-$ | US-7246149-$ | US-7249182-$ | US-7254406-$ | US-7280836-$ | US-7280847-$ | US-7289810-$ | US-7302256-$ | US-7305245-$ | US-7313120-$ | US-7315944-$ | US-7322043-$ | US-7324824-$ | US-7324957-$ | US-7327701-$ | US-7330112-$ | US-7339909-$ | US-7340438-$ | US-7340439-$ | US-7342876-$ | US-7343564-$ | US-7346341-$ | US-7349871-$ | US-7359674-$ | US-7363494-$ | US-7376433-$ | US-7379920-$ | US-7386878-$ | US-7403120-$ | US-7403762-$ | US-7412246-$ | US-7414988-$ | US-7433649-$ | US-7433694-$ | US-7434723-$ | US-7436831-$ | US-7440781-$ | US-7471954-$).DID.				
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		8090359-$ | US-8116749-$ | US-8369842-$ | US-8385896-$ | US-8385913-$ | US-9038129-$ | US-9161164-$).DID.				
S6	2	("20200304978").PN.	US-PGPUB; USPAT; USOCR; DERWENT	OR	OFF	2021/08/06 11:55
S7	9	((("PROXICOM") near3 ("WIRELESS") near3 ("LLC"))).AS,AANM.	USPAT	OR	OFF	2021/08/06 11:55
S8	579	((("Proctor") near3 ("James") near3 ("A"))).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2021/08/06 11:56
S9	1,982	(beacon near3(transmission or transfer$4 or transmit$5)) same(mac adj address)	US-PGPUB; USPAT	OR	OFF	2021/08/06 12:13
S10	254	(beacon near3(transmission or transfer$4 or transmit$5)) same(picture or photo or jpeg)	US-PGPUB; USPAT	OR	OFF	2021/08/06 12:14
S11	6,564	(beacon near3(transmission or transfer$4 or transmit$5)) same(service)	US-PGPUB; USPAT	OR	OFF	2021/08/06 12:14
S12	9	S9 and S10 and S11	US-PGPUB; USPAT	OR	OFF	2021/08/06 12:15
S13	2,687	(beacon near3(transmission or transfer$4 or transmit$5 or signal$2)) same(mac adj address)	US-PGPUB; USPAT	OR	OFF	2021/08/06 12:18
S14	488	(beacon near3(transmission or transfer$4 or transmit$5 or signal$2)) same(picture or photo or jpeg)	US-PGPUB; USPAT	OR	OFF	2021/08/06 12:18
S15	8,928	(beacon near3(transmission or transfer$4 or transmit$5 or signal$2)) same(service)	US-PGPUB; USPAT	OR	OFF	2021/08/06 12:18
S16	14	S13 and S14 and S15	US-PGPUB; USPAT	OR	OFF	2021/08/06 12:19
S17	3,513	(beacon near3(transmission or transfer$4 or transmit$5 or signal$2)) same(picture or photo or jpeg or content or (fingerprint$2))	US-PGPUB; USPAT	OR	OFF	2021/08/06 12:25
S18	130	S13 and S17 and S15	US-PGPUB; USPAT	OR	OFF	2021/08/06 12:26
S19	2	"20050136845"	US-PGPUB; USPAT	OR	OFF	2021/08/06 12:39
S20	1	"20060050728"	US-PGPUB; USPAT	OR	OFF	2021/08/06 12:39

S21	18,908	(beacon near3(transmission or transfer$4 or transmit$5 or signal$2)) same(service or number)	US-PGPUB; USPAT	OR	OFF	2021/08/06 13:32
S22	2,687	(beacon near3(transmission or transfer$4 or transmit$5 or signal$2)) same(mac adj address)	US-PGPUB; USPAT	OR	OFF	2021/08/06 13:34
S23	8,928	(beacon near3(transmission or transfer$4 or transmit$5 or signal$2)) same(service)	US-PGPUB; USPAT	OR	OFF	2021/08/06 13:34
S24	947	S22 and S21 and S23	US-PGPUB; USPAT	OR	OFF	2021/08/06 13:34
S25	600	(bluetooth or (wifi)) and S24	US-PGPUB; USPAT	OR	OFF	2021/08/06 13:36
S26	29,410	(beacon near3(transmission or transfer$4 or transmit$5 or signal$2)) same(interval$2 or period or time)	US-PGPUB; USPAT	OR	OFF	2021/08/06 13:51
S27	436	S26 and S25	US-PGPUB; USPAT	OR	OFF	2021/08/06 13:52
S28	57	(US-17366826-$ | US-20090197681-$ | US-20090219132-$ | US-20090270120-$ | US-20090271211-$ | US-20090281904-$ | US-20090282130-$ | US-20090285119-$ | US-20090287827-$ | US-20090288012-$ | US-20090291909-$ | US-20090303250-$ | US-20090303926-$ | US-20090307132-$ | US-20090307133-$ | US-20090310517-$ | US-20090311963-$ | US-20090313105-$ | US-20090323647-$ | US-20090323648-$ | US-20090325601-$ | US-20100020746-$ | US-20100030638-$ | US-20100030651-$ | US-20100041402-$ | US-20100049615-$ | US-20100051685-$ | US-20100062758-$ | US-20100063867-$ | US-20100096450-$ | US-20100124196-$ | US-20100138481-$ | US-20100141437-$ | US-20100201536-$ | US-20100250673-$ | US-20100274859-$ | US-20100284447-$ | US-20110039592-$ | US-20110119733-$ | US-20120066043-$ | US-20120066199-$ | US-20130217332-$ | US-20150249637-$ | US-20150281939-$ | US-20160025837-$ | US-20160093184-$ | US-20170011425-$ | US-20170131994-$ | US-20190250239-$ | US-8090359-$ | US-8369842-$ | US-8370955-$ | US-8374592-$ | US-8385896-$ | US-8385913-$ | US-8849698-$ | US-9038129-$ | US-9161164-$).DID.	US-PGPUB; USPAT	OR	OFF	2021/08/06 14:09

S29	488	(beacon near3(transmission or transfer$4 or transmit$5 or signal$2)) same(picture or photo or jpeg)	US-PGPUB; USPAT	OR	OFF	2021/08/06 14:22
S30	49	S29 and S21 and S22	US-PGPUB; USPAT	OR	OFF	2021/08/06 14:22
S31	45	(bluetooth or (wifi)) and S30	US-PGPUB; USPAT	OR	OFF	2021/08/06 14:23
S32	2	"20050136845"	US-PGPUB; USPAT	OR	OFF	2021/08/08 12:49
S33	1	"2006005028"	US-PGPUB; USPAT	OR	OFF	2021/08/09 09:42
S34	1	"20060050728"	US-PGPUB; USPAT	OR	OFF	2021/08/09 09:42
S35	4,841	(advertis$4) same(presentation or display) same(identifier$2)	US-PGPUB; USPAT	OR	OFF	2021/08/09 09:45
S36	43,189	(beacon near3(transmission or transfer$4 or transmit$5))	US-PGPUB; USPAT	OR	OFF	2021/08/09 09:46
S37	202	S35 and S36	US-PGPUB; USPAT	OR	OFF	2021/08/09 09:46
S38	1,414	(advertis$4) same(presentation or display) same(identifier$2) same(ue or terminal or wtru or phone or computer)	US-PGPUB; USPAT	OR	OFF	2021/08/09 09:49
S39	30	S38 and S36	US-PGPUB; USPAT	OR	OFF	2021/08/09 09:49
S40	700	email and S38	US-PGPUB; USPAT	OR	OFF	2021/08/09 10:10
S41	8	S40 and S36	US-PGPUB; USPAT	OR	OFF	2021/08/09 10:10
S42	70,185	beacon same(transmission or transfer$4 or transmit$5)	US-PGPUB; USPAT	OR	OFF	2021/08/09 10:22
S43	25	S40 and S42	US-PGPUB; USPAT	OR	OFF	2021/08/09 10:22
S44	94,136	(account or profile) near7(identifier$2)	US-PGPUB; USPAT	OR	OFF	2021/08/09 10:24
S45	240	S40 and S44	US-PGPUB; USPAT	OR	OFF	2021/08/09 10:24
S46	2	"20080195621"	US-PGPUB; USPAT	OR	OFF	2021/08/09 11:34
S47	58,023	(advertis$4) same(location)	US-PGPUB; USPAT	OR	OFF	2021/08/09 20:03
S48	13,391	(mu or ue or terminal or wtru or phone or apparatus) near7(indoor)	US-PGPUB; USPAT	OR	OFF	2021/08/09 20:13
S49	58,065	(advertis$4) same(location)	US-PGPUB; USPAT	OR	OFF	2021/08/10 09:01

S50	13,399	(mu or ue or terminal or wtru or phone or apparatus) near7(indoor)	US-PGPUB; USPAT	OR	OFF	2021/08/10 09:01
S51	326	S49 and S50	US-PGPUB; USPAT	OR	OFF	2021/08/10 09:01
S52	70,245	beacon same(transmission or transfer$4 or transmit$5)	US-PGPUB; USPAT	OR	OFF	2021/08/10 09:03
S53	89	S51 and S52	US-PGPUB; USPAT	OR	OFF	2021/08/10 09:03
S54	351	(time or timing) near7(notification) same (beacon) same(transmission or transfer$4 or transmit$5)	US-PGPUB; USPAT	OR	OFF	2021/08/10 10:26
S55	97	(timing) near7(notification) same (beacon) same(transmission or transfer$4 or transmit$5)	US-PGPUB; USPAT	OR	OFF	2021/08/10 10:43
S56	2	"20070201417"	US-PGPUB; USPAT	OR	OFF	2021/08/10 11:57
S57	1	"20070043828"	US-PGPUB; USPAT	OR	OFF	2021/08/10 11:57
S58	284	((("Proctor") near3 ("James") near3 ("A"))).INV.	USPAT	OR	OFF	2021/08/10 12:02
S59	34	S58 and beacon	USPAT	OR	OFF	2021/08/10 12:03
S60	1	"16/817896"	USPAT	OR	OFF	2021/08/10 12:06
S61	1	"15271410"	USPAT	OR	OFF	2021/08/10 12:10
S62	0	"15/271410"	USPAT	OR	OFF	2021/08/10 12:10
S63	319,526	h04l 67/306	USPAT	OR	OFF	2021/08/10 19:07
S64	177,597	h04w 4/80	USPAT	OR	OFF	2021/08/10 19:07
S65	319,522	h04l 61/6022	USPAT	OR	OFF	2021/08/10 19:07
S66	177,387	h04w 4/029	USPAT	OR	OFF	2021/08/10 19:08

EAST Search History (Interference)

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8/10/2021 9:54:22 PM
C:\Users\jharley\Documents\EAST\Workspaces\17366826 beacon.wsp

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (02-18)
Approved for use through 11/30/2020. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	17366826
Filing Date	2021-07-02
First Named Inventor	James A. Proctor
Art Unit	2468
Examiner Name	/Jason Harley/
Attorney Docket Number	111054-0001U7

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	Application Number	17366826
	Filing Date	2021-07-02
	First Named Inventor	James A. Proctor
	Art Unit	2468
	Examiner Name	
	Attorney Docket Number	111054-0001U7

/JH/	1	U.S. Appl. No. 60/758,010, filed Jan. 11, 2006 by Rajiv Laroia for Methods and apparatus for facilitating identification, synchronization or acquisition using beacon signals, 30 pages.
/JH/	2	U.S. Appl. No. 60/758,011, filed Jan. 11, 2006 by Rajiv Laroia for Methods and apparatus for using beacon signals for identification, synchronization or acquisition in an ad hoc wireless network, 26 pages.
/JH/	3	U.S. Appl. No. 60/758,012, filed Jan. 11, 2006 by Rajiv Laroia for Methods and apparatus for using beacon signals in a cognitive radio network, 24 pages.
/JH/	4	U.S. Appl. No. 60/845,051, filed Sep. 15, 2006 by Junyi Li for Beacons in a mixed wireless communication system, 30 pages.
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/JH/	6	U.S. Appl. No. 60/863,304, filed Oct. 27, 2006 by Rajiv Laroia for Power Allocation Scheme, 15 pages.
/JH/	7	U.S. Provisional Application No. 61/054,162 filed on May 18, 2008 by Mark Braverman for System And Method For Electronic Payment
/JH/	8	U.S. Provisional Application No. 61/122,240 filed on December 12, 2008 by Rajiv Patel for System And Method For Electronic Payment
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/JH/	10	Using MC9094 Phone, MC909X User Guide, Symbol Technologies, Inc., pp. 1-20 (2005)
/JH/	11	Wang, et al., "Peer2Me - Rapid Application Framework for Mobile Peer-to-Peer Applications", Department of Compute and Information Science

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All References Considered /Jason Harley/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	17366826
	Filing Date	2021-07-02
	First Named Inventor	James A. Proctor
	Art Unit	2468
	Examiner Name	
	Attorney Docket Number	111054-0001U7

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/JH/	16	Wei, G., et al., "HiPEC: A Hybrid P2P Model for Electronic Commerce," Zhejiang Gongshang University College of Computer & Information Engineering, pp 1-5 (2008)
/JH/	17	Weis et al. "Security and privacy aspects of low-cost radio frequency identification systems". In: Security in pervasive Computing. Springer, 201-212 (2004)
/JH/	18	Weis et al., Security and Privacy Aspects of Low-Cost Radio Frequency Identification Systems, International Journal of Security and Networks, Volume 5 Issue 2/3, March 2010, 12 pages.
/JH/	19	Wg, Hid, "Device Identification Specification", V12r00, 1-20 (2006) NEED PUBLICATION DETAILS
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	First Named Inventor	James A. Proctor
	Art Unit	2468
	Examiner Name	Jason Harley
	Attorney Docket Number	111054-0001U7

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Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	17/366,826	Proctor et al.
	Examiner	Art Unit
	JASON A HARLEY	2468

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

CLAIMS

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	08/10/2021								
	1	✓								
	2	✓								
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	4	✓								
	5	✓								
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	7	✓								
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	30	✓								

Petitioner Samsung Ex-1004, 0388

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CPC - Searched*		
Symbol	**Date**	**Examiner**
H04W 4/029	08/10/2021	JH
H04L 67/306	08/10/2021	JH
H04L 61/6022	08/10/2021	JH
H04W 4/80	08/10/2021	JH

CPC Combination Sets - Searched*		
Symbol	**Date**	**Examiner**

US Classification - Searched*			
Class	**Subclass**	**Date**	**Examiner**
455	41.2	08/10/2021	JH
455	456.3	08/10/2021	JH

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	**Date**	**Examiner**
Database Search	08/10/2021	JH
Inventor Search	08/10/2021	JH
101/112 Search	08/10/2021	JH
Ids Search	08/10/2021	JH
Assignee Search	08/10/2021	JH

/SYED ALI/ Primary Examiner, Art Unit 2468	/JASON A HARLEY/ Examiner, Art Unit 2468

Petitioner Samsung Ex-1004, 0389

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Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner

/SYED ALI/ Primary Examiner, Art Unit 2468	/JASON A HARLEY/ Examiner, Art Unit 2468

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Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

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/JH/	2	Patent Owner Proxicom Wireless, LLC's Preliminary Response Pursuant to 37 C.F.R. 42.107; dated 9/8/2020, Case No. IPR2020-00978, Target Corporation vs. Proxicom Wireless, L.L.C.; pp. 1-71
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/JH/	7	Petition for Inter Partes Review, dated 5/15/2020, Case No. IPR2020-00932, Target Corporation vs. Proxicom Wireless, L.L.C.
/JH/	8	Petition for Inter Partes Review, dated 5/15/2020, Case No. IPR2020-00933, Target Corporation vs. Proxicom Wireless, L.L.C.
/JH/	9	Petition for Inter Partes Review, dated 5/27/2020, Case No. IPR2020-00934, Target Corporation vs. Proxicom Wireless, L.L.C.
/JH/	10	Petition for Inter Partes Review, dated 5/27/2020, Case No. IPR2020-00977, Target Corporation vs. Proxicom Wireless, L.L.C.
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/JH/	47	Target's Initial Identification of Disputed Claim Terms; dated April 10, 2020; Case No. IPR2020-00980, Target Corporation vs. Proxicom Wireless, L.L.C.; C.A. No. 6:19-cv-1886-RBD-LRH; pp. 1-6
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All References Considered /Jason Harley/

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	Application Number	17366826
	Filing Date	2021-07-02
	First Named Inventor	James A. Proctor
	Art Unit	2468
	Examiner Name	Jason Harley
	Attorney Docket Number	111054-0001U7

/JH/	34	Office Action; U.S. Appl. No. 12/364,823; Date of Mailing: Dec. 28, 2010.
/JH/	35	Office Action; U.S. Appl. No. 12/364,828; Date of Mailing: Sep. 15, 2010.
/JH/	36	Office Action; U.S. Appl. No. 12/364,938; Date of Mailing: Jul. 21, 2011.
/JH/	37	Office Action; U.S. Appl. No. 13/015,306; Date of Mailing: Jul. 17, 2012.
/JH/	38	Ondrus, J., et al., "An Architecture for Mobile Payments and Couponing in the Retail Industry," 17th Bled eCommerce Conference eGlobal, Bled, Slovenia, June 21-23, 2004, pp. 1-15
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All References Considered /Jason Harley/

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	First Named Inventor	James A. Proctor
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	Attorney Docket Number	111054-0001U7

/JH/	45	Patent Owner Proxicom Wireless, LLC's Preliminary Response Pursuant to 37 C.F.R. 42.107; dated 8/13/2020, Case No. IPR2020-00903, Target Corporation vs. Proxicom Wireless, L.L.C.; pp. 1-50
/JH/	46	Patent Owner Proxicom Wireless, LLC's Preliminary Response Pursuant to 37 C.F.R. 42.107; dated 8/13/2020, Case No. IPR2020-00904, Target Corporation vs. Proxicom Wireless, L.L.C.; pp. 1-50
/JH/	47	Patent Owner Proxicom Wireless, LLC's Preliminary Response Pursuant to 37 C.F.R. 42.107; dated 8/13/2020, Case No. IPR2020-00931, Target Corporation vs. Proxicom Wireless, L.L.C.; pp. 1-48
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/JH/	49	Patent Owner Proxicom Wireless, LLC's Preliminary Response Pursuant to 37 C.F.R. 42.107; dated 8/19/2020, Case No. IPR2020-00933, Target Corporation vs. Proxicom Wireless, L.L.C.; pp. 1-48
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17/366,826	07/02/2021	James A. Proctor JR.	111054-0001U7

CONFIRMATION NO. 8789

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VLP Law Group LLP
555 Bryant Street
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Palo Alto, CA 94301

PUBLICATION NOTICE

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Title:EFFICIENT AND SECURE COMMUNICATION USING WIRELESS SERVICE IDENTIFIERS

Publication No.US-2021-0334851-A1
Publication Date:10/28/2021

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Electronic Patent Application Fee Transmittal

Application Number:	17366826
Filing Date:	02-Jul-2021
Title of Invention:	EFFICIENT AND SECURE COMMUNICATION USING WIRELESS SERVICE IDENTIFIERS
First Named Inventor/Applicant Name:	James A. Proctor
Filer:	David J. Thibodeau/Elisabeth Smith
Attorney Docket Number:	111054-0001U7

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Basic Filing:				
Pages:				
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In re Application of: James A. Proctor

Application No.: 17/366,826

Filed: July 2, 2021

For: EFFICIENT AND SECURE COMMUNICATION USING WIRELESS SERVICE IDENTIFIERS

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Confirmation Number:	8789
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First Named Inventor/Applicant Name:	James A. Proctor
Customer Number:	86012
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	Multipart Description/PDF files in .zip description				
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	Amendment/Req. Reconsideration-After Non-Final Reject		1	1	
	Claims		2	9	
	Applicant Arguments/Remarks Made in an Amendment		10	19	
Warnings:					
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2	Terminal Disclaimer Filed	20211117_111054-0001U7_TPO_Terminal_Disclaimer.pdf	166676 4a6067edddd4d840bec668d666157aeb5ba6f2d4	no	2
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Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A method comprising:

receiving, by a wireless device, using a short range wireless protocol, a first plurality of beacon transmissions associated with a wireless beacon service, each beacon transmission comprising three fields (a) a MAC address, (b) a unique identifier, wherein the unique identifier of each respective beacon transmission does not directly identify a location of a beacon transmitter, and (c) a beacon service identifier, wherein the beacon service identifier of each respective beacon transmission is a number and is not a name of a wireless network that uses the short range wireless protocol;

receiving, by the wireless device using a second wireless protocol, stored information from one or more servers, relating to an entity or object associated with a first unique identifier, and wherein the second wireless protocol is different from the short range wireless protocol;

selecting one or more of the unique identifiers from the first plurality of beacon transmissions, by filtering the beacon transmissions which include a beacon service identifier indicating that a particular received beacon transmission is associated with the wireless beacon service; and

taking first further action relating to the stored information, if the first unique identifier is present among the selected one or more unique identifiers.

2. (Currently Amended) The method of claim 1, wherein the receiving, by the wireless device, using a short range wireless protocol, of the first plurality of beacon transmissions occurs in a first time period, and

wherein the method further comprises, during a second time period:

receiving, by the wireless device, using a short range wireless protocol, a second plurality of beacon transmissions, each of the second plurality of beacon transmissions comprising three fields (a) a MAC address, (b) a unique identifier, wherein the unique identifier of each respective beacon transmission does not directly identify a location of a beacon transmitter, and (c) the[[a]] beacon service identifier, wherein the beacon service identifier of each respective beacon transmission is a number;

selecting one or more of the unique identifiers from the second plurality of beacon transmissions, by filtering the beacon transmissions which include the same beacon service identifier indicating that a particular received beacon transmission is associated with the same wireless beacon service; and

taking second further action relating to the stored information, if a second unique identifier is present among the one or more unique identifiers selected from the second plurality of beacon transmissions, wherein the second unique identifier is associated with the same entity or object, and wherein the second unique identifier is not equal to the first unique identifier, and further wherein the received beacon transmissions including the first and second unique identifiers are received from the same transmitting device.

3. (Original) The method of claim 2 wherein the MAC address received in a beacon transmission including the second unique identifier is different from the MAC address received in a beacon transmission including the first unique identifier, but each such beacon transmission includes the same beacon service identifier.

4. (Original) The method of claim 3 wherein the second further action is based upon a function currently being performed on a device associated with the wireless beacon service.

5. (Original) The method of claim 4 wherein the function is related to

a current phone call,
music being played,
a video being played,
a multi-player game, or
a shared application.

6. (Currently Amended) The method of claim 2 wherein the first or the second further action is related to receiving advertising information for presentation to a user of the wireless device, based upon the first or the second unique identifiers, or information derived from the first ~~of~~ or second unique identifiers.

7. (Original) The method of claim 2 wherein the first further action includes retrieving content from a server based upon information derived from either the first unique identifier or the second unique identifier.

8. (Original) The method of claim 2, wherein the first or second further action includes sending a message to another device associated with an account related to the first and the second unique identifiers.

9. (Original) The method of claim 2 wherein following the performance of the first or second further action, a server associated with the an account for the user of the wireless device performs a step of sending a message to an email address associated with the account for the user relating to the entity or object associated with the first or second unique identifiers.

10. (Original) The method of claim 2 wherein the second further action includes preventing sending of the second unique identifier or information derived from the second unique identifier by the wireless device to one or more servers.

11. (Original) The method of claim 1 wherein the first further action comprises:

determining, based upon at least a portion of the stored information, that at least one beacon transmitter is associated with a predetermined location.

12. (Original) The method of claim 2 wherein the step of taking first further action further includes, by the wireless device,

sending of the first unique identifier or information derived from the first unique identifier to at least one of the one or more servers, and

receiving the stored information in response.

13. (Original) The method of claim 1 further comprising:

wherein the stored information is received by the wireless device from at least one of the one or more servers prior to the performing of the first further action.

14. (Original) The method of claim 2 further comprising:

wherein the stored information is received by the wireless device from at least one of the one or more servers prior to the performing of the first further action.

15. (Original) The method of claim 1 further comprising:

wherein the stored information is used to determine if the first unique identifier is present among the first selected one or more unique identifiers.

16. (Original) The method of claim 2 wherein all beacon transmitter devices participating in the wireless beacon service have the same beacon service identifier for identifying the beacon transmitters as being enabled with the wireless beacon service.

17. (Original) The method of claim 2 wherein the second further action comprises:

determining, based upon at least a portion of the stored information, that the beacon transmitter is associated with a predetermined location.

18. (Original) The method of claim 2 wherein one or more of the steps performed by the wireless device are performed as a result of an application program executing on the wireless device utilizing a software interface.

19. (Currently Amended) The ~~claim of~~ method of claim 2 wherein the second further action is related to[[a]] either a product tied to a location or an advertisement tied to a location.

20. (Canceled)

21. (Original) The method of claim 1 wherein the first further action includes determining an address or location associated with the wireless device based at least in part upon the first unique identifier being associated with a pre-determined location, and wherein the wireless device is located indoors where a GPS signal may not be available.

22. (Original) The method of claim 2 wherein the second further action includes determining an address or location associated with the wireless device based at least in part upon the second unique identifier being associated with a pre-determined location, wherein the wireless device is located indoors where a GPS signal may not be available.

23. (Original) The method of claim 2 wherein the second further action includes steps to allow for a user associated with the wireless device to be provided access to an object or device associated with the wireless beacon service.

24. (Original) The method of claim 2 wherein the step of taking second further action additionally comprises:

controlling further communications between the wireless device and at least one device or server associated with an entity or object in proximity to the wireless device.

25. (Original) The method of claim 3 further comprising:

receiving, by the wireless device, timing notification information for coordination of active times for beacon transmissions.

26. (Original) The method of claim 25 wherein the receiving, by the wireless device of the timing notification information is not directly from the beacon transmitter.

27. (Original) The method of claim 2 wherein the stored information is used to determine if the second unique identifier is present among the second selected one or more unique identifiers.

28. (Original) The method of claim 1 wherein the MAC address is a randomly generated 48 bit number matching a format of a Bluetooth BD_ADDR.

29. (Original) The method of claim 3 wherein the short range protocol is derived from Bluetooth.

30. (Currently Amended) A mobile wireless device comprising:

one or more radios for providing reception and transmission for each of a Bluetooth wireless protocol and a second wireless protocol;

one or more processors; and

one or more ~~non-transitory~~ memory devices coupled to the one or more processors, the one or more non-transitory memory devices storing a set of instructions that when executed by the one or more processors cause the one or more processors to perform operations including:

receiving from a beacon transmitter, using the Bluetooth wireless protocol, a first plurality of beacon transmissions during a first time period, each of the beacon transmissions including (a) a MAC address, (b) a unique identifier, wherein the first unique identifier does not directly identify a location of the beacon transmitter, and (c) a beacon service identifier, wherein the beacon service identifier is a number ~~indicating that each beacon transmission is associated with a wireless beacon service~~ and is not a name of a wireless network that uses the short range wireless protocol;

receiving from one or more servers, using the second wireless protocol, stored information related to an entity or object associated with the first unique;

selecting one or more unique identifiers from the first plurality of beacon transmissions, by filtering the beacon transmissions which include the beacon service identifier indicating that a particular received beacon transmission is associated with the wireless beacon service;

taking first further action relating to the stored information, if the first unique identifier is present among the selected one or more unique identifiers; and

and the operations further including:

receiving, by the wireless device, using the Bluetooth wireless protocol wireless, during a second time period, a second plurality of beacon transmissions, each of the second plurality of beacon transmissions comprising three fields (a) a MAC address, (b) a unique identifier, wherein the unique identifier of each respective beacon transmission does not directly identify a location of a beacon transmitter, and (c) [[a]]the beacon service identifier, wherein the beacon service identifier of each respective beacon transmission is a number;

selecting one or more of the unique identifiers from the second plurality of beacon transmissions, by filtering the beacon transmissions which include the same beacon service identifier indicating that a particular received beacon transmission is associated with the same wireless beacon service;

taking second further action relating to the stored information, if a second unique identifier is present among the ~~selected~~ one or more unique identifiers selected from the second plurality of beacon transmissions, wherein the second unique identifier is associated with the same entity or object, and wherein the second unique identifier is not equal to the first unique identifier, and further wherein the received beacon transmissions including the first and second unique identifiers are received from the same transmitting device; and

wherein the MAC address received in a beacon transmission including the second unique identifier is different from the MAC address received in a beacon transmission including the first unique identifier, but each such beacon transmission includes the same beacon service identifier.

31. (New) A method comprising:

causing reception of, using a short range wireless protocol, a first plurality of beacon transmissions associated with a wireless beacon service, each beacon transmission comprising three fields (a) a MAC address, (b) a unique identifier, wherein the unique identifier of each respective beacon transmission does not directly identify a location of a beacon transmitter, and (c) a beacon service identifier, wherein the beacon service identifier of each respective beacon transmission is a number and is not a name of a wireless network accessible using the short range wireless protocol;

causing reception of, using a second wireless protocol, stored information from one or more servers, relating to an entity or object associated with a first unique identifier, and wherein the second wireless protocol is different from the short range wireless protocol;

causing selection of one or more of the unique identifiers from the first plurality of beacon transmissions, by filtering the beacon transmissions which include a beacon service identifier indicating that a particular received beacon transmission is associated with the wireless beacon service; and

causing first further action, the first further action relating to the stored information, if the first unique identifier is present among the selected one or more unique identifiers.

REMARKS

Claims 1-30 stand rejected. No claim has been allowed.

With entry of the foregoing amendments, claim 20 is cancelled and claim 31 is added.

Thus claims 1-19 and 21-31 are presented for further examination.

Support for Claim Amendments

Claims 1 and 30 are amended to further define the "beacon service identifier" as being a number and which is not a name of a wireless network that uses the short range wireless protocol. The specification explains an example embodiment where a "broadcast only" device would be used to transmit the beacons. See Figure 9 item 903 (Broadcast only device) and the description in paragraph [0069] of scanning for identifiers, See also Figure 11 and mention of a "broadcast only" entity type filed in paragraph [0081] as well as paragraph [0090]. One of skill in the art would appreciate that a broadcast only device is one example of a beacon transmitter that does not use "network names" as now claimed.

Claim 1 is also amended to clarify that the "second wireless protocol" is different from the "short range wireless protocol". This is consistent with at least paragraph [0005] of the specification as filed (e.,g, "Rather than directly exchanging application data flow between the two devices using the short range wireless capability, a second wireless capability then allows for one or more of the devices to communicate with a central server via the internet, and perform an exchange of application data flow.")

Claim 2 is amended to clarify that the "received beacon transmissions including the first and second unique identifiers are received from the same transmitting device".

Claim 19 is amended to incorporate features of original claim 20 which is now canceled.

New claim 31 is a method claim similar to claim 1 but causing the recited steps.

Claim Rejections – Double Patenting

The Applicant is submitting a terminal disclaimer herewith in favor of U.S. Patent 11,074,615 that should overcome this rejection.

Claim Rejections – 35 U.S.C. § 103

Claims 1-8, 11, 13, 14-19, 23, 24, 27, 30 stand rejected under 35 U.S.C. § 103(a) in view of U.S. Pat. Pub. No. 2004/0023640 (Ballai) and U.S. Pat. Pub. No. 2005/0136845 (Masuoka).

Claim 9 stands rejected under 35 U.S.C. § 103(a) in view of Ballai, Masuoka, and U.S. Pat. Pub. No. 2007/0050258 (Dohse).

Claim 10 stands rejected under 35 U.S.C. § 103(a) in view of Ballai, Masuoka, and U.S. Pat. Pub. No. 2008/0195621 (Tedesco).

Claims 20-22 stand rejected under 35 U.S.C. § 103(a) in view of Ballai, Masuoka, and U.S. Patent No. 5,121,126 (Clagett).

Claims 25 and 26 stand rejected under 35 U.S.C. § 103(a) in view of Ballai, Masuoka, and U.S. Pat. Pub. No. 2005/0096031 (Sugaya).

Claims 28 and 29 stand rejected under 35 U.S.C. § 103(a) in view of Ballai, Masuoka, and U.S. Pat. Pub. No. 2007/0043528 (Bae).

All of these rejections are based on a particular interpretation of Ballai and Masuoka that appears to be in error, for several reasons now explained in detail.

1. Contrary to the assertions made in the Office Action, Ballai and Masuoka do not teach or suggest every element of Applicant's claim 1.

Each feature of Applicant's claim 1 believed to be missing from these prior art references is now discussed in detail in the sections labelled A through D.

A. receiving, by a wireless device, using a short range wireless protocol, a first plurality of beacon transmissions associated with a wireless beacon service, each beacon transmission comprising three fields (a) a MAC address, (b) a unique identifier, wherein the unique identifier of each respective beacon transmission does not directly identify a location of a beacon transmitter, and (c) a beacon service identifier, wherein the beacon service identifier of each respective beacon transmission is a number and is not a name of a network that uses the short range wireless protocol.

The Office Action asserts that Ballai teaches this feature of the Applicant's claims, equating Ballai's "access points (AP's)" to the Applicant's "beacon transmitter". The Office Action also notes that Ballai's AP's send "beacon signals" that "include a MAC address of the transmitting AP and a Service Set Identification (SSID) field that identifies a Virtual Local Area Network (VLAN)".

Ballai's beacon transmissions thus only identify two fields – (a) MAC address and (b) SSID – ***but not three fields as claimed.***

It must also be noted that Ballai's "SSID", serving as a VLAN identifier, cannot also serve as Applicant's claimed beacon service identifier. Further limitations in the claim now require the beacon service identifier to not identify the name of a network that uses the short range wireless protocol (e.g. the 802.11 VLAN network). Rather, the claimed beacon service identifier instead indicates that a particular beacon transmission is "associated with a wireless beacon service."

*B. receiving, by the wireless device **using a second wireless protocol**, stored information from one or more servers, relating to an entity or object associated with a first unique identifier*

The Office Action next observes that Ballai at par [0025] explains how a mobile unit (MU) 65 can access a communication network 1 via the APs 10-30, depending om where the MU 65 is located at a particular time, and that the APs periodically transmit beacon signals.

First, the Applicant's claim requires that this second "receiving step" occur using a "second" wireless protocol – that is, a wireless protocol that is different from the "short range wireless protocol" used in the first receiving step. ***Ballai's MUs 65 only use a single wireless protocol (e.g. via "channel 50") to communicate with the APs.*** This is evident from the single "lightning bolt 50 shown in Figure 1 between the MU 65 and AP 30 as well as the text in Ballai at [0027] which states:

> The MU 65 then scans each channel supported by the communication network's 1 protocol, for beacon signals, e.g., all 14 channels in a communication network 1 that use the IEEE 802.11 wireless protocol"). Any communication in Ballai between the MU 65 and the server 70 must therefore occur over the very same channel 50.

There is no "second" communication protocol between the MU 65 and the server 70 that uses a second wireless protocol shown Ballai's drawings or mentioned in the text.

Second, the Applicant's claim also requires the "stored information" received from the server must be "related to an entity or object associated with a first unique identifier". In contrast to this, Ballai's stored information is disclosed as being used to determine if a detected 802.11 access point is rogue (not authorized), by including portions of the legitimate beacon transmissions and can include the SSID (VLAN) and MAC address of valid APs. They do not convey information relating to an entity or object associated with a first unique identifier.

The Examiner also offers no observation about the further requirement of Applicant's claim 1 that the information "received from a server" must relate to "an entity or object associated with a first unique identifier" where the "first unique identifier" was received as part of the beacon transmission. Ballai at [0025] does describe that

> The MU 65 accesses the communication network 1 via the APs 10-30, depending where the MU 65 is located at a particular time. Periodically, the APs 10-30 transmit beacon signals ....

But the office action fails to identify which particular stored information is supposedly received from a server, or that such stored information received from a server would have any relation to the (unidentified) "first unique identifier" that was received as part of the original beacon transmission.

To the extent the examiner equates the MAC address of the beacon transmissions, included in the database of Ballai (the alleged "stored information") as the first unique identifier, then no separate MAC address value, as discussed above, is identified as being present in the beacon transmissions.

C. selecting, by the wireless device, one or more of the unique identifiers from the first plurality of beacon transmissions, by ***filtering the beacon transmissions which include a beacon service identifier indicating that a particular received beacon transmission is associated with the wireless beacon service***

The Office Action then turns to Masuoka for teaching this feature. Masuoka at [par 0074] does have a discussion how to select "one of the mini-beacons" that "best satisfies a set of conditions based on the intensity of the received signals." Masoka explains that this

encompasses operations such as sampling the signals, filtering and smoothing the observations and calculating which beacon best satisfies the "strongest intensity".

On the other hand, the Applicant's claims require "filtering" beacon transmissions based on the presence of a particular "beacon service identifier" i.e., one that is associated with the wireless beacon service. Nowhere in Masuoka is there any discussion of using the content of a beacon transmission to determine whether that beacon transmission will be selected for further processing.

D. taking first further action, by the wireless device, the first further action relating to the stored information received from the one or more servers, if the first unique identifier is present among the selected one or more unique identifiers

The Office Action also relies on Masuoka for teaching this feature, noting that Masuoka at par [0202], explains a user can "obtain the unique ID of the mini-beacon" and then the user can set the transmit power level" of the mini-beacon "through the user interface" or by setting a mechanical dial.

This capability of Masuoka thus relates to a user being able to set a power level for the transmitter. Any user could do this at any time. ***No stored information or selection of unique identifiers is necessary before a user can configure Masuoka's mini beacon***. Such configuration by the user is not a step that is related to stored information received from a server, or conditionally performed by the wireless device itself or an application on the wireless device, based on a first unique identifier being among the selected unique identifiers.

Thus Masuoka does not teach this limitation.

For these several reasons, claim 1 should be allowed.

2. One of skill in the art would not be motivated to combine Ballai and Masuoka to solve the problem of throttling a flood of beacon transmissions

The primary goal of Ballai is to limit the ability of "rogue" devices from accessing a wireless local area network (such as an 802.11 WiFI network). Ballai accomplishes this by requiring authorized access points to transmit beacons that include a known MAC address of the access point and a known VLAN identifier which is transmitted as part of an SSID field.

The stated purpose of Masuoka is to provide a way to determine the location of a mini beacon in a wireless LAN, by measuring signal strengths to estimate range, or through pattern matching against a radio signal strength map.

These different purposes of Ballai and Masuoka would not serve to motivate a skilled person to try to combine their respective features.

Furthermore, any combination of Ballai and Masuoka would require a wireless mobile device to process all beacon transmissions received from an access point, as long as the beacons are of sufficient signal strength and as long as they originate from a beacon transmitter that is connected to the same VLAN. Such a combination therefore is not capable of solving the "beacon message overload" problem" recognized by the Applicant. See Fig. 3 of the Applicant's specification and paragraphs [0047-0048], where it is explained how an "action function" can be used to prevent the further processing of previously detected identifiers:

> If identifiers are found in 302, the device may employ an action function 303, which would act as a filter that determines which of the detected identifiers should be passed to the server. .... The idealized effect of the action function would be to reduce the number of requests to the server by not re-requesting recently requested identifiers which have already been passed

Neither Ballai nor Masuoka identify this or any analogous problem that would motivate one to combine them. Claim 1 is therefore patentable for this reason as well.

3. Claims 2-19 and 20-29 depend from claim 1 and are thus patentable for at least the same reasons that claim 1 is patentable.

4. Claim 2 is patentable for other reasons as well. The office action maps the claimed "second unique identifier" to the coordinates transmitted by the mini beacon in Masouka. But claim 2 requires the unique identifier to "not directly identify a location of a beacon transmitter." Because of this limitation, claim 2 should be allowed.

Furthermore, to the extent the examiner identifiers the MAC address of Ballai as the first unique identifier, it cannot also be the second unique identifier as Ballai changing a mac address of an access point (apparently the alleged "object" associated with the "stored information" in such as mapping). Such a MAC address can not change in embodiments of Ballai. First If Ballai changed its MAC address while maintaining the same SSID/VLAN (the Applicant's claimed beacon service identifier), Ballai would disconnect its users. Second Ballai states that the MAC address is set by the manufacturer of the Access Point, and therefore is disclosed as not changing ([0016] "The MAC address is an identifier assigned by the manufacturer").

5. Claim 3 is also allowable for other reasons. The office action does not cite to anywhere in Ballai where the MAC address changes while maintaining the same beacon service identifier (SSID/VLAN). This is not surprising, since Ballai could not operate with changing MAC addresses and unique identifiers from the same beacon transmitter. This is a direct result of Ballai using the SSID as the name of a VLAN. If Ballai changed its MAC address while

maintaining the same SSID/VLAN (the Applicant's claimed beacon service identifier), Ballai would disconnect its users. Furthermore Ballai states that the MAC address is set by the manufacturer of the Access Point, and therefore is disclosed as not changing ([0016] "The MAC address is an identifier assigned by the manufacturer")

6. Claim 30 is allowable for the same reasons as claim 1 and claim 2, containing the same limitations as claims 1 and 2, but directed to a device.

7. New claim 31 is directed to a method with similar limitations to those of claim 1, and therefore is allowable for these same reasons.

Conclusion

It is believed that all of the pending claims have been addressed. However, the absence of a reply to a specific rejection, issue, or comment, including the Office Action's characterizations of the art, does not signify agreement with or concession of that rejection, issue, or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment or cancellation of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment or cancellation. In particular, Applicant does not concede to the Office Action's various assertions that specific claim recitations or specific teachings are well-known or prior art. Applicant reserves the right to prosecute the rejected claims in further prosecution of this or related applications.

If the Examiner believes a discussion would assist with further prosecution of the

application, he is invited to contact the undersigned.

Respectfully submitted,

Date: 17 November 2021

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant :	Proctor, J. et al.	Art Unit :	2468
Serial No. :	17/366,826	Examiner :	HARLEY, JASON A
Filed :	July 02, 2021	Conf. No. :	8789
Title :	EFFICIENT AND SECURE COMMUNICATION USING WIRELESS SERVICE IDENTIFIERS		

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

AMENDMENT IN REPLY TO NON-FINAL ACTION

In response to the office action mailed August 17, 2021 please enter a response as follows:

Amendments to the Claims are reflected in the claim listing that begins on page 2.

Remarks/Arguments begin on page 10.

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 17/366,826	Filing Date 07/02/2021	☐ To be Mailed

ENTITY: ☐ LARGE ☑ SMALL ☐ MICRO

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A		N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A		N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*		x $50 =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*		x $240 =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).				
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))					
* If the difference in column 1 is less than zero, enter "0" in column 2.				TOTAL	

APPLICATION AS AMENDED - PART II

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT	11/17/2021	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 30	Minus	** 30	= 0		x $50 =	0
	Independent (37 CFR 1.16(h))	* 3	Minus	*** 3	= 0		x $240 =	0
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	0

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=		x $0 =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=		x $0 =	
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	

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** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".	/NICOL D SCOTT/
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Application Number	Application/Control No.	Applicant(s)/Patent under Reexamination	
* 17/366,826 *	17/366,826	Proctor et al.	
	Examiner	**Art Unit**	
	HARLEY, JASON A	2468	

Document Code - DISQ	**Internal Document - DO NOT MAIL**

TERMINAL DISCLAIMER	☑ APPROVED	☐ DISAPPROVED
Date Filed: **17 November 2021**	**This patent is subject to a Terminal Disclaimer**	

Approved/Disapproved by:

/JEAN PROCTOR/

Technology Center: OPLC

Telephone: (571)272-1040

_____

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (01-10)
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	17366826
Filing Date	2021-07-02
First Named Inventor	James Arthur Proctor, Jr.
Art Unit	2468
Examiner Name	HARLEY, JASON A
Attorney Docket Number	111054-0001U7

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
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	Filing Date	2021-07-02
	First Named Inventor	James Arthur Proctor, Jr.
	Art Unit	2468
	Examiner Name	HARLEY, JASON A
	Attorney Docket Number	111054-0001U7

	1	Final Written Decision per 35 U.S.C. 138 dated November 8, 2021, IPR2020-00903, Patent 9,038,129 B2, Target Corporation v. Proxicom Wireless, L.L.C. (41 pages)
	2	Final Written Decision per 35 U.S.C. 138 dated November 8, 2021, IPR2020-00904, Patent 7,936,736 B2, Target Corporation v. Proxicom Wireless, L.L.C. (48 pages)
	3	Final Written Decision per 35 U.S.C. 138 dated November 8, 2021, IPR2020-00933, Patent 8,374,592 B2, Target Corporation v. Proxicom Wireless, L.L.C. (38 pages)
	4	Final Written Decision per 35 U.S.C. 138 dated November 8, 2021, IPR2020-00931, Patent 8,090,359 B2, Target Corporation v. Proxicom Wireless, L.L.C. (51 pages)
	5	Final Written Decision per 35 U.S.C. 138 dated November 8, 2021, IPR2020-00932, Patent 8,090,359 B2, Target Corporation v. Proxicom Wireless, L.L.C. (40 pages)
	6	Final Written Decision per 35 U.S.C. 138 dated November 30, 2021, IPR2020-00977, Patent 8,369,842 B2, Target Corporation v. Proxicom Wireless, L.L.C. (45 pages)
	7	Final Written Decision per 35 U.S.C. 138 dated November 30, 2021, IPR2020-00979, Patent 9,161,142 B2, Target Corporation v. Proxicom Wireless, L.L.C. (51 pages)
	8	Final Written Decision per 35 U.S.C. 138 dated November 30, 2021, IPR2020-00980, Patent 8,385,913 B2, Target Corporation v. Proxicom Wireless, L.L.C. (47 pages)
	9	Final Written Decision per 35 U.S.C. 138 dated November 30, 2021, IPR2020-00934, Patent 8,385,896 B2, Target Corporation v. Proxicom Wireless, L.L.C. (55 pages)

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EXAMINER SIGNATURE

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	17366826
	Filing Date	2021-07-02
	First Named Inventor	James Arthur Proctor, Jr.
	Art Unit	2468
	Examiner Name	HARLEY, JASON A
	Attorney Docket Number	111054-0001U7

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	17366826
Filing Date	2021-07-02
First Named Inventor	James Arthur Proctor, Jr.
Art Unit	2468
Examiner Name	HARLEY, JASON A
Attorney Docket Number	111054-0001U7

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☒ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☒ See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/David J Thibodeau Jr Reg No 31671/	Date (YYYY-MM-DD)	2021-12-02
Name/Print	David J. Thibodeau, Jr.	Registration Number	31,671

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Acknowledgement Receipt

EFS ID:	44416352
Application Number:	17366826
International Application Number:	
Confirmation Number:	8789
Title of Invention:	EFFICIENT AND SECURE COMMUNICATION USING WIRELESS SERVICE IDENTIFIERS
First Named Inventor/Applicant Name:	James A. Proctor
Customer Number:	86012
Filer:	David J. Thibodeau/Elisabeth Smith
Filer Authorized By:	David J. Thibodeau
Attorney Docket Number:	111054-0001U7
Receipt Date:	02-DEC-2021
Filing Date:	02-JUL-2021
Time Stamp:	11:05:52
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	20211201_111054-0001U7_TPO_SIDS_Final_IPR_Decisions.pdf	612248 b40bfd7eb23c5c53a9479b0ac01b1016dab64fc6	no	5

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2	Non Patent Literature	IPR2020-00903_Final_Written_Decision.pdf	1796550 7d87157b29951cfe1b0ce47fe53aa432ebb08d8e	no	41
Warnings:					
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3	Non Patent Literature	IPR2020-00904_Final_Written_Decision.pdf	2108538 90ada6a6eaf3d16db03d78effc9fc4106e12570e	no	48
Warnings:					
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4	Non Patent Literature	IPR2020-00931_Final_Written_Decision.pdf	2039402 728a793da0a66241f9ca6476692b9c56406db103	no	51
Warnings:					
Information:					
5	Non Patent Literature	IPR2020-00932_Final_Written_Decision.pdf	1624777 0d70173bcad057d3dc4d2cc74d946df884227ec1	no	40
Warnings:					
Information:					
6	Non Patent Literature	IPR2020-00933_Final_Written_Decision.pdf	1524205 a228ca4cd2199836bd787e6c77570e4a1783ccfc	no	38
Warnings:					
Information:					
7	Non Patent Literature	IPR2020-00934_Final_Written_Decision.pdf	529390 078a689f4e74b2a419f2011efb0982f22d4c44b5	no	55
Warnings:					
Information:					

8	Non Patent Literature	IPR2020-00977_Final_Written_Decision.pdf	419199 9ff62ca4fb94c1d2d5ffb9016c993b4f5266bea2	no	45
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Information:					
9	Non Patent Literature	IPR2020-00979_Final_Written_Decision.pdf	436569 66362ead125c406c01b501d2da82288601ee4340	no	51
Warnings:					
Information:					
10	Non Patent Literature	IPR2020-00980_Final_Written_Decision.pdf	418834 edff67824c87df421b88b890d2d3d5cc7c838f69	no	47
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If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (01-10)
Approved for use through 07/31/2012. OMB 0651-0031
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	17366826
Filing Date	2021-07-02
First Named Inventor	James Arthur Proctor, Jr.
Art Unit	2468
Examiner Name	HARLEY, JASON A
Attorney Docket Number	111054-0001U7

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	17366826
	Filing Date	2021-07-02
	First Named Inventor	James Arthur Proctor, Jr.
	Art Unit	2468
	Examiner Name	HARLEY, JASON A
	Attorney Docket Number	111054-0001U7

/JH/	1	Final Written Decision per 35 U.S.C. 138 dated November 8, 2021, IPR2020-00903, Patent 9,038,129 B2, Target Corporation v. Proxicom Wireless, L.L.C. (41 pages)
/JH/	2	Final Written Decision per 35 U.S.C. 138 dated November 8, 2021, IPR2020-00904, Patent 7,936,736 B2, Target Corporation v. Proxicom Wireless, L.L.C. (48 pages)
/JH/	3	Final Written Decision per 35 U.S.C. 138 dated November 8, 2021, IPR2020-00933, Patent 8,374,592 B2, Target Corporation v. Proxicom Wireless, L.L.C. (38 pages)
/JH/	4	Final Written Decision per 35 U.S.C. 138 dated November 8, 2021, IPR2020-00931, Patent 8,090,359 B2, Target Corporation v. Proxicom Wireless, L.L.C. (51 pages)
/JH/	5	Final Written Decision per 35 U.S.C. 138 dated November 8, 2021, IPR2020-00932, Patent 8,090,359 B2, Target Corporation v. Proxicom Wireless, L.L.C. (40 pages)
/JH/	6	Final Written Decision per 35 U.S.C. 138 dated November 30, 2021, IPR2020-00977, Patent 8,369,842 B2, Target Corporation v. Proxicom Wireless, L.L.C. (45 pages)
/JH/	7	Final Written Decision per 35 U.S.C. 138 dated November 30, 2021, IPR2020-00979, Patent 9,161,142 B2, Target Corporation v. Proxicom Wireless, L.L.C. (51 pages)
/JH/	8	Final Written Decision per 35 U.S.C. 138 dated November 30, 2021, IPR2020-00980, Patent 8,385,913 B2, Target Corporation v. Proxicom Wireless, L.L.C. (47 pages)
/JH/	9	Final Written Decision per 35 U.S.C. 138 dated November 30, 2021, IPR2020-00934, Patent 8,385,896 B2, Target Corporation v. Proxicom Wireless, L.L.C. (55 pages)

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EXAMINER SIGNATURE

Examiner Signature	/Jason Harley/	Date Considered	12/6/21

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

EFS Web 2.1.17

All References Considered /Jason Harley/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	17366826
Filing Date	2021-07-02
First Named Inventor	James Arthur Proctor, Jr.
Art Unit	2468
Examiner Name	HARLEY, JASON A
Attorney Docket Number	111054-0001U7

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	17366826
	Filing Date	2021-07-02
	First Named Inventor	James Arthur Proctor, Jr.
	Art Unit	2468
	Examiner Name	HARLEY, JASON A
	Attorney Docket Number	111054-0001U7

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☒ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☒ See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/David J Thibodeau Jr Reg No 31671/	Date (YYYY-MM-DD)	2021-12-02
Name/Print	David J. Thibodeau, Jr.	Registration Number	31,671

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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The information provided by you in this form will be subject to the following routine uses:

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4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

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9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	17/366,826	Proctor, James A.
	Examiner	Art Unit
	JASON A HARLEY	2468

CPC - Searched*		
Symbol	**Date**	**Examiner**
H04W 4/029	08/10/2021	JH
H04L 67/306	08/10/2021	JH
H04L 61/6022	08/10/2021	JH
H04W 4/80	08/10/2021	JH
H04W 4/02	12/03/2021	JH
H04W 8/26	12/03/2021	JH
H04L 41/12	12/03/2021	JH
H04L 67/18	12/03/2021	JH

CPC Combination Sets - Searched*		
Symbol	**Date**	**Examiner**

US Classification - Searched*			
Class	**Subclass**	**Date**	**Examiner**
455	41.2	08/10/2021	JH
455	456.3	08/10/2021	JH

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

/SYED ALI/ Primary Examiner, Art Unit 2468	/JASON A HARLEY/ Examiner, Art Unit 2468

Petitioner Samsung Ex-1004, 0445

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	17/366,826	Proctor, James A.
	Examiner	Art Unit
	JASON A HARLEY	2468

Search Notes		
Search Notes	**Date**	**Examiner**
Database Search	08/10/2021, 12/3/21	JH
Inventor Search	08/10/2021	JH
101/112 Search	08/10/2021	JH
Ids Search	08/10/2021	JH
Assignee Search	08/10/2021	JH
NPL Search	12/03/2021	JH
Continuation Search	12/03/2021	JH

Interference Search			
US Class/CPC Symbol	**US Subclass/CPC Group**	**Date**	**Examiner**

/SYED ALI/ Primary Examiner, Art Unit 2468	/JASON A HARLEY/ Examiner, Art Unit 2468

Petitioner Samsung Ex-1004, 0446

Notice of References Cited	Application/Control No. 17/366,826	Applicant(s)/Patent Under Reexamination Proctor et al.	
	Examiner JASON A HARLEY	Art Unit 2468	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-20150200811-A1	07-2015	KASSLIN; Mika	H04L41/0853	370/254
*	B	US-20030224787-A1	12-2003	Gandolfo, Pierre T.	H04W52/46	455/434
*	C	US-20060268746-A1	11-2006	Wijting; Carl Simon	H04W74/0808	370/254
*	D	US-20080205340-A1	08-2008	Meylan; Arnaud	H04W48/18	370/331
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Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	17/366,826	Proctor, James A.
	Examiner	**Art Unit**
	JASON A HARLEY	2468

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

CLAIMS

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	08/10/2021	12/03/2021							
	1	✓	✓							
	2	✓	✓							
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	29	✓	✓							
	30	✓	✓							
	31		✓							

Petitioner Samsung Ex-1004, 0448

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Petitioner Samsung Ex-1004, 0449

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6. MGR: Multi-parameter Green Reliable communication for Internet of Things in 5G network..... 2

Petitioner Samsung Ex-1004, 0450

Search Strategy

Databases: Inspec®

Set#	Searched for	Results
S1	(beacon service identifier mac address)	6°

° Duplicates are removed from the search and from the result count.

Petitioner Samsung Ex-1004, 0451

Document 1 of 6

Protecting location privacy with dynamic Mac address exchanging in wireless networks

Author: Ming Lei 1 ; ZiJie Qi 1 ; Xiaoyan Hong 1 ; Vrbsky, Susan V. 1 1 Dept. of Comput. Sci., Univ. of Alabama, Tuscaloosa, AL, Univ. of Alabama, Dept. of Comput. Sci., Tuscaloosa, 35487-0290, AL, USA mlei@cs.ua.edu ; zqi@cs.ua.edu ; hxy@cs.ua.edu ; vrbsky@cs.ua.edu

Publication info: 2007 IEEE Intelligence and Security Informatics : 378. IEEE. (2007)

ProQuest document link

Databases: Inspec® (1898 - current)

Document 2 of 6

Rogue access point detection mechanism considering sequence number of beacon frame for wireless local area networks

Author: Ketkhaw, Apisak 1 ; Thipchaksurat, Sakchai 1 1 Dept. of Comput. Eng., King Mongkut's Inst. of Technol. Ladkrabang, Bangkok, King Mongkut's Institute of Technology Ladkrabang, Department of Computer Engineering, Bangkok, 10520, Thailand kaapisak@mut.ac.th ; sakchai.th@kmitl.ac.th

Publication info: 2017 14th International Conference on Electrical Engineering/Electronics, Computer, Telecommunications and Information Technology (ECTI-CON) : 509-12. IEEE. (2017)

ProQuest document link

Databases: Inspec® (1898 - current)

Document 3 of 6

The Internet of Things vision: Key features, applications and open issues

Author: Borgia, Eleonora 1 1 Inst. of Inf. & Telematics (IIT), Pisa, Institute of Informatics and Telematics (IIT), via G. Moruzzi 1, Pisa, 56124, Italy eleonora.borgia@iit.cnr.it

Publication info: Computer Communications 54 : 1-31. Elsevier B.V. (Dec 1, 2014)

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Databases: Inspec® (1898 - current)

Document 4 of 6

Efficient naming, addressing and profile services in Internet-of-Things sensory environments

Author: Liu, Chi Harold 1 ; Bo Yang 2 ; Tiancheng Liu 1 1 Internet-of-Things Infrastruct. Manage., IBM Res., Beijing, IBM Research, Internet-of-Things Infrastructure Management, Beijing, China chiliu@ieee.org ; liutc@cn.ibm.com 2 Emerging Technol. Inst., IBM China Dev. Lab., IBM China Development Laboratory, Emerging Technology Institute, China boyang@cn.ibm.com

Publication info: Ad Hoc Networks 18 : 85-101. Elsevier Science B.V. (Jul 2014)

ProQuest document link

Petitioner Samsung Ex-1004, 0452

Databases: Inspec® (1898 - current)

Document 5 of 6

A novel method for metropolitan-scale Wi-Fi localization based on public telephone booths

Author: Hui Tian 1 ; Linyuan Xia 1 ; Mok, Esmond 2 1 Dept. of Remote Sensing & Geographic Inf. Eng., Sun Yat-sen Univ., Guangzhou, Sun Yat-sen University, Department of Remote Sensing and Geographic Information Engineering, Guangzhou, China tian.hui@gmail.com 2 Dept. of Land Surveying & Geo-Inf., Hong Kong Polytech. Univ., Hong Kong, Hong Kong Polytechnic University, Department of Land Surveying and Geo-Informatics, Hong Kong, China

Publication info: 2010 IEEE/ION Position, Location and Navigation Symposium - PLANS 2010 : 357-64. IEEE. (2010)

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Databases: Inspec® (1898 - current)

Document 6 of 6

MGR: Multi-parameter Green Reliable communication for Internet of Things in 5G network

Author: Din, Sadia 1 ; Ahmad, Awais 2 ; Paul, Anand 1 ; Seungmin Rho 3 1 Sch. of Comput. Sci. & Eng., Kyungpook Nat. Univ., Daegu, Kyungpook National University, School of Computer Science and Engineering, Daegu, South Korea research.2486@gmail.com ; paul.editor@gmail.com 2 Dept. of Inf. & Commun. Eng., Yeungnam Univ., Gyeongsan, Yeungnam University, Department of Information and Communication Engineering, Gyeongsan, South Korea aahmad.marwat@gmail.com 3 Dept. of Media Software, Sungkyul Univ., Anyang, Sungkyul University, Department of Media Software, Anyang, South Korea smrho@sungkyul.edu

Publication info: Journal of Parallel and Distributed Computing 118 : 34-45. Elsevier B.V. (Aug 2018)

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Databases: Inspec® (1898 - current)

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Petitioner Samsung Ex-1004, 0453

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EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	154	(US-17366826-$ | US-20060114104-$ | US-20060116160-$ | US-20060125631-$ | US-20060141932-$ | US-20060153085-$ | US-20060171341-$ | US-20060193258-$ | US-20060200843-$ | US-20060217131-$ | US-20060229058-$ | US-20060234631-$ | US-20060240840-$ | US-20060245373-$ | US-20060245393-$ | US-20060245404-$ | US-20060264212-$ | US-20060268765-$ | US-20060268834-$ | US-20060270412-$ | US-20060282738-$ | US-20060287813-$ | US-20070001904-$ | US-20070002833-$ | US-20070004427-$ | US-20070004428-$ | US-20070010278-$ | US-20070015549-$ | US-20070025287-$ | US-20070026818-$ | US-20070030824-$ | US-20070032225-$ | US-20070043828-$ | US-20070049297-$ | US-20070060105-$ | US-20070060117-$ | US-20070060130-$ | US-20070061487-$ | US-20070078851-$ | US-20070081503-$ | US-20070091859-$ | US-20070094084-$ | US-20070096909-$ | US-20070100651-$ | US-20070106612-$ | US-20070117576-$ | US-20070118748-$ | US-20070121534-$ | US-20070121550-$ | US-20070133453-$ | US-20070143348-$ | US-20070161382-$ | US-20070173248-$ | US-20070178886-$ | US-20070178907-$ | US-20070179792-$ | US-20070187491-$ | US-20070190494-$ | US-20070201417-$ | US-20070204158-$ | US-20070211727-$ | US-20070230441-$ | US-20070233367-$ | US-20070237321-$ | US-20070242643-$ | US-20070242765-$ | US-20070244633-$ | US-20070244811-$ | US-20070255653-$ | US-20070264968-$ | US-20070264991-$ | US-20070270099-$ | US-20070280269-$ | US-20070281634-$ | US-20070286111-$ | US-20080002641-$ | US-20080008117-$ | US-20080008118-$ | US-20080008119-$ | US-20080008120-$ | US-20080008121-$	US-PGPUB; USPAT	OR	OFF	2021/08/06 11:35

		| US-20080009307-$ | US-20080010190-$ | US-20080025282-$ | US-20080036653-$ | US-20080037487-$ | US-20080039020-$ | US-20080045236-$ | US-20080051033-$ | US-20080051059-$ | US-20080052109-$ | US-20080056215-$ | US-20080070593-$ | US-20080071874-$ | US-20080080397-$ | US-20080089519-$ | US-20080097851-$ | US-20080097879-$ | US-20080099552-$ | US-20080102856-$ | US-20080104227-$ | US-20080108308-$ | US-20080109741-$ | US-20080109843-$ | US-20080114647-$ | US-20080114699-$ | US-20080114834-$ | US-20080119136-$ | US-20080132170-$ | US-20080132223-$ | US-20080132252-$ | US-20080133336-$ | US-20080133403-$ | US-20080134052-$ | US-20080136621-$ | US-20080139114-$ | US-20080139217-$ | US-20080140714-$ | US-20080167961-$ | US-20080167988-$ | US-20080176583-$ | US-20080177668-$ | US-20080181154-$ | US-20080182591-$ | US-20080182592-$ | US-20080188261-$ | US-20080189394-$ | US-20080195621-$ | US-20080208762-$ | US-20080214116-$ | US-20080214166-$ | US-20080220746-$ | US-20080222711-$ | US-20080248815-$ | US-20080249928-$ | US-20080255947-$ | US-20080261564-$ | US-20080262928-$ | US-20080288408-$ | US-20080301102-$ | US-20080305738-$ | US-20080306825-$ | US-20080313079-$ | US-20080313082-$ | US-20090016248-$ | US-20090016250-$ | US-20090016255-$ | US-20090016315-$ | US-20090016353-$ | US-20090016524-$ | US-20090019168-$ | US-20090022096-$ | US-20090037286-$ | US-20090061901-$ | US-20090063624-$).DID.				
S3	79	(US-7492254-$ | US-7502933-$ | US-7509131-$ | US-7515914-$ | US-7522058-$ | US-7545784-$ | US-7546141-$ | US-7580699-$ | US-7590246-$ | US-7620026-$ | US-7630986-$ | US-7647024-$ | US-7647055-$ | US-7661132-$ | US-7702108-$ | US-7711100-$ | US-7711620-$ | US-7714712-$ | US-	US-PGPUB; USPAT	OR	OFF	2021/08/06 11:44

		7716484-$ | US-7729326-$ | US-7756467-$ | US-7773995-$ | US-7774231-$ | US-7775430-$ | US-7822000-$ | US-7826425-$ | US-7836512-$ | US-7848765-$ | US-7876701-$ | US-7877082-$ | US-7886962-$ | US-7904952-$ | US-7936736-$ | US-7942337-$ | US-7952481-$ | US-7962369-$ | US-7963441-$ | US-7965983-$ | US-7991644-$ | US-7991664-$ | US-8014755-$ | US-8024272-$ | US-8073795-$ | US-8089405-$ | US-8090359-$ | US-8112794-$ | US-8116749-$ | US-8121917-$ | US-8160495-$ | US-8185133-$ | US-8204039-$ | US-8205240-$ | US-8229458-$ | US-8233841-$ | US-8254338-$ | US-8275359-$ | US-8295819-$ | US-8321913-$ | US-8332521-$ | US-8364171-$ | US-8369842-$ | US-8374592-$ | US-8385896-$ | US-8385913-$ | US-8478300-$ | US-8543500-$ | US-8559968-$ | US-8576846-$ | US-8688570-$ | US-8787575-$ | US-8825538-$ | US-9038129-$ | US-9137012-$ | US-9161164-$ | US-9373091-$ | US-9646319-$ | US-9659285-$ | US-9734198-$ | US-9805347-$).DID.				
S4	180	(US-10133527-$ | US-10140072-$ | US-10387087-$ | US-10489096-$ | US-10642576-$ | US-17366826-$ | US-20010003191-$ | US-20010036200-$ | US-20020032746-$ | US-20020061009-$ | US-20020065720-$ | US-20020073027-$ | US-20020077083-$ | US-20020077118-$ | US-20020101993-$ | US-20020123965-$ | US-20020128932-$ | US-20020131445-$ | US-20020161666-$ | US-20020188565-$ | US-20020188656-$ | US-20030021250-$ | US-20030028481-$ | US-20030045272-$ | US-20030053484-$ | US-20030074259-$ | US-20030100328-$ | US-20030134650-$ | US-20030149874-$ | US-20030158959-$ | US-20030195808-$ | US-20030200140-$ | US-20030200489-$ | US-20030220835-$ | US-20040019564-$ | US-20040030601-$ | US-20040076136-$ | US-20040093268-$	US-PGPUB; USPAT	OR	OFF	2021/08/06 11:44

| US-20040097243-$ | US-20040137886-$ | US-20040167837-$ | US-20040186768-$ | US-20040190468-$ | US-20040203895-$ | US-20040205198-$ | US-20040208151-$ | US-20040243519-$ | US-20040245332-$ | US-20040260608-$ | US-20040264404-$ | US-20040264466-$ | US-20050038876-$ | US-20050047385-$ | US-20050054350-$ | US-20050068928-$ | US-20050086211-$ | US-20050099291-$ | US-20050113090-$ | US-5804803-$ | US-5815811-$ | US-5987011-$ | US-6002918-$ | US-6049711-$ | US-6067297-$ | US-6081629-$ | US-6163771-$ | US-6188681-$ | US-6199048-$ | US-6233565-$ | US-6236674-$ | US-6259898-$ | US-6422462-$ | US-6439345-$ | US-6446208-$ | US-6487540-$ | US-6487601-$ | US-6493550-$ | US-6553006-$ | US-6580700-$ | US-6587034-$ | US-6601040-$ | US-6615804-$ | US-6616049-$ | US-6629149-$ | US-6675017-$ | US-6675153-$ | US-6700535-$ | US-6712274-$ | US-6715681-$ | US-6716101-$ | US-6738808-$ | US-6788702-$ | US-6791997-$ | US-6799049-$ | US-6837436-$ | US-6845338-$ | US-6857021-$ | US-6868079-$ | US-6901270-$ | US-6909399-$ | US-6909721-$ | US-6929149-$ | US-6934535-$ | US-6965914-$ | US-6970850-$ | US-6978165-$ | US-6990587-$ | US-6993049-$ | US-7003283-$ | US-7005968-$ | US-7010267-$ | US-7016336-$ | US-7020106-$ | US-7030761-$ | US-7030812-$ | US-7039027-$ | US-7039358-$ | US-7065559-$ | US-7126926-$ | US-7127236-$ | US-7142120-$ | US-7142527-$ | US-7151764-$ | US-7156311-$ | US-7158756-$ | US-7167487-$ | US-7173922-$ | US-7173923-$ | US-7174031-$ | US-7177594-$ | US-7181521-$ | US-7185204-$ | US-7194438-$ | US-7197326-$ | US-7200132-$ | US-7206820-$ | US-7207480-$ | US-7209468-$ | US-7213742-$ | US-7213743-$ | US-7221668-$ | US-

		7233801-$ | US-7233960-$ | US-7245602-$ | US-7246149-$ | US-7249182-$ | US-7254406-$ | US-7280836-$ | US-7280847-$ | US-7289810-$ | US-7302256-$ | US-7305245-$ | US-7313120-$ | US-7315944-$ | US-7322043-$ | US-7324824-$ | US-7324957-$ | US-7327701-$ | US-7330112-$ | US-7339909-$ | US-7340438-$ | US-7340439-$ | US-7342876-$ | US-7343564-$ | US-7346341-$ | US-7349871-$ | US-7359674-$ | US-7363494-$ | US-7376433-$ | US-7379920-$ | US-7386878-$ | US-7403120-$ | US-7403762-$ | US-7412246-$ | US-7414988-$ | US-7433649-$ | US-7433694-$ | US-7434723-$ | US-7436831-$ | US-7440781-$ | US-7471954-$).DID.				
S5	65	(US-0156856-$ | US-0702686-$ | US-1098477-$ | US-1207654-$ | US-1296155-$ | US-17366826-$ | US-1759620-$ | US-1908235-$ | US-20050114654-$ | US-20050124359-$ | US-20050131837-$ | US-20050136845-$ | US-20050136891-$ | US-20050156026-$ | US-20050165667-$ | US-20050174975-$ | US-20050180367-$ | US-20050185615-$ | US-20050187873-$ | US-20050187959-$ | US-20050188062-$ | US-20050213553-$ | US-20050243737-$ | US-20050243781-$ | US-20050250552-$ | US-20050266868-$ | US-20050273440-$ | US-20060003785-$ | US-20060022038-$ | US-20060029024-$ | US-20060030335-$ | US-20060032901-$ | US-20060045042-$ | US-20060046709-$ | US-20060047835-$ | US-20060050728-$ | US-20060069922-$ | US-20060079284-$ | US-20060085419-$ | US-20060089134-$ | US-20060089876-$ | US-20060094447-$ | US-20060095348-$ | US-20060095349-$ | US-20060099966-$ | US-20060104200-$ | US-20060104243-$ | US-20060106850-$ | US-20060111045-$ | US-2218268-$ | US-2235002-$ | US-2506121-$ | US-2564287-$ | US-2688189-$ | US-2752347-$ | US-2766024-$ | US-2766184-$ | US-2798749-$ | US-7936736-$ | US-	US-PGPUB; USPAT	OR	OFF	2021/08/06 11:45

		8090359-$ | US-8116749-$ | US-8369842-$ | US-8385896-$ | US-8385913-$ | US-9038129-$ | US-9161164-$).DID.				
S6	2	("20200304978").PN.	US-PGPUB; USPAT; USOCR; DERWENT	OR	OFF	2021/08/06 11:55
S7	9	((("PROXICOM") near3 ("WIRELESS") near3 ("LLC"))).AS,AANM.	USPAT	OR	OFF	2021/08/06 11:55
S8	579	((("Proctor") near3 ("James") near3 ("A"))).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2021/08/06 11:56
S9	1,982	(beacon near3(transmission or transfer$4 or transmit$5)) same(mac adj address)	US-PGPUB; USPAT	OR	OFF	2021/08/06 12:13
S10	254	(beacon near3(transmission or transfer$4 or transmit$5)) same(picture or photo or jpeg)	US-PGPUB; USPAT	OR	OFF	2021/08/06 12:14
S11	6,564	(beacon near3(transmission or transfer$4 or transmit$5)) same(service)	US-PGPUB; USPAT	OR	OFF	2021/08/06 12:14
S12	9	S9 and S10 and S11	US-PGPUB; USPAT	OR	OFF	2021/08/06 12:15
S13	2,687	(beacon near3(transmission or transfer$4 or transmit$5 or signal$2)) same(mac adj address)	US-PGPUB; USPAT	OR	OFF	2021/08/06 12:18
S14	488	(beacon near3(transmission or transfer$4 or transmit$5 or signal$2)) same(picture or photo or jpeg)	US-PGPUB; USPAT	OR	OFF	2021/08/06 12:18
S15	8,928	(beacon near3(transmission or transfer$4 or transmit$5 or signal$2)) same(service)	US-PGPUB; USPAT	OR	OFF	2021/08/06 12:18
S16	14	S13 and S14 and S15	US-PGPUB; USPAT	OR	OFF	2021/08/06 12:19
S17	3,513	(beacon near3(transmission or transfer$4 or transmit$5 or signal$2)) same(picture or photo or jpeg or content or (fingerprint$2))	US-PGPUB; USPAT	OR	OFF	2021/08/06 12:25
S18	130	S13 and S17 and S15	US-PGPUB; USPAT	OR	OFF	2021/08/06 12:26
S19	2	"20050136845"	US-PGPUB; USPAT	OR	OFF	2021/08/06 12:39
S20	1	"20060050728"	US-PGPUB; USPAT	OR	OFF	2021/08/06 12:39

S21	18,908	(beacon near3(transmission or transfer$4 or transmit$5 or signal$2)) same(service or number)	US-PGPUB; USPAT	OR	OFF	2021/08/06 13:32
S22	2,687	(beacon near3(transmission or transfer$4 or transmit$5 or signal$2)) same(mac adj address)	US-PGPUB; USPAT	OR	OFF	2021/08/06 13:34
S23	8,928	(beacon near3(transmission or transfer$4 or transmit$5 or signal$2)) same(service)	US-PGPUB; USPAT	OR	OFF	2021/08/06 13:34
S24	947	S22 and S21 and S23	US-PGPUB; USPAT	OR	OFF	2021/08/06 13:34
S25	600	(bluetooth or (wifi)) and S24	US-PGPUB; USPAT	OR	OFF	2021/08/06 13:36
S26	29,410	(beacon near3(transmission or transfer$4 or transmit$5 or signal$2)) same(interval$2 or period or time)	US-PGPUB; USPAT	OR	OFF	2021/08/06 13:51
S27	436	S26 and S25	US-PGPUB; USPAT	OR	OFF	2021/08/06 13:52
S28	57	(US-17366826-$ | US-20090197681-$ | US-20090219132-$ | US-20090270120-$ | US-20090271211-$ | US-20090281904-$ | US-20090282130-$ | US-20090285119-$ | US-20090287827-$ | US-20090288012-$ | US-20090291909-$ | US-20090303250-$ | US-20090303926-$ | US-20090307132-$ | US-20090307133-$ | US-20090310517-$ | US-20090311963-$ | US-20090313105-$ | US-20090323647-$ | US-20090323648-$ | US-20090325601-$ | US-20100020746-$ | US-20100030638-$ | US-20100030651-$ | US-20100041402-$ | US-20100049615-$ | US-20100051685-$ | US-20100062758-$ | US-20100063867-$ | US-20100096450-$ | US-20100124196-$ | US-20100138481-$ | US-20100141437-$ | US-20100201536-$ | US-20100250673-$ | US-20100274859-$ | US-20100284447-$ | US-20110039592-$ | US-20110119733-$ | US-20120066043-$ | US-20120066199-$ | US-20130217332-$ | US-20150249637-$ | US-20150281939-$ | US-20160025837-$ | US-20160093184-$ | US-20170011425-$ | US-20170131994-$ | US-20190250239-$ | US-8090359-$ | US-8369842-$ | US-8370955-$ | US-8374592-$ | US-8385896-$ | US-8385913-$ | US-8849698-$ | US-9038129-$ | US-9161164-$).DID.	US-PGPUB; USPAT	OR	OFF	2021/08/06 14:09

S29	488	(beacon near3(transmission or transfer$4 or transmit$5 or signal$2)) same(picture or photo or jpeg)	US-PGPUB; USPAT	OR	OFF	2021/08/06 14:22
S30	49	S29 and S21 and S22	US-PGPUB; USPAT	OR	OFF	2021/08/06 14:22
S31	45	(bluetooth or (wifi)) and S30	US-PGPUB; USPAT	OR	OFF	2021/08/06 14:23
S32	2	"20050136845"	US-PGPUB; USPAT	OR	OFF	2021/08/08 12:49
S33	1	"2006005028"	US-PGPUB; USPAT	OR	OFF	2021/08/09 09:42
S34	1	"20060050728"	US-PGPUB; USPAT	OR	OFF	2021/08/09 09:42
S35	4,841	(advertis$4) same(presentation or display) same(identifier$2)	US-PGPUB; USPAT	OR	OFF	2021/08/09 09:45
S36	43,189	(beacon near3(transmission or transfer$4 or transmit$5))	US-PGPUB; USPAT	OR	OFF	2021/08/09 09:46
S37	202	S35 and S36	US-PGPUB; USPAT	OR	OFF	2021/08/09 09:46
S38	1,414	(advertis$4) same(presentation or display) same(identifier$2) same(ue or terminal or wtru or phone or computer)	US-PGPUB; USPAT	OR	OFF	2021/08/09 09:49
S39	30	S38 and S36	US-PGPUB; USPAT	OR	OFF	2021/08/09 09:49
S40	700	email and S38	US-PGPUB; USPAT	OR	OFF	2021/08/09 10:10
S41	8	S40 and S36	US-PGPUB; USPAT	OR	OFF	2021/08/09 10:10
S42	70,185	beacon same(transmission or transfer$4 or transmit$5)	US-PGPUB; USPAT	OR	OFF	2021/08/09 10:22
S43	25	S40 and S42	US-PGPUB; USPAT	OR	OFF	2021/08/09 10:22
S44	94,136	(account or profile) near7(identifier$2)	US-PGPUB; USPAT	OR	OFF	2021/08/09 10:24
S45	240	S40 and S44	US-PGPUB; USPAT	OR	OFF	2021/08/09 10:24
S46	2	"20080195621"	US-PGPUB; USPAT	OR	OFF	2021/08/09 11:34
S47	58,023	(advertis$4) same(location)	US-PGPUB; USPAT	OR	OFF	2021/08/09 20:03
S48	13,391	(mu or ue or terminal or wtru or phone or apparatus) near7(indoor)	US-PGPUB; USPAT	OR	OFF	2021/08/09 20:13
S49	58,065	(advertis$4) same(location)	US-PGPUB; USPAT	OR	OFF	2021/08/10 09:01

S50	13,399	(mu or ue or terminal or wtru or phone or apparatus) near7(indoor)	US-PGPUB; USPAT	OR	OFF	2021/08/10 09:01
S51	326	S49 and S50	US-PGPUB; USPAT	OR	OFF	2021/08/10 09:01
S52	70,245	beacon same(transmission or transfer$4 or transmit$5)	US-PGPUB; USPAT	OR	OFF	2021/08/10 09:03
S53	89	S51 and S52	US-PGPUB; USPAT	OR	OFF	2021/08/10 09:03
S54	351	(time or timing) near7(notification) same (beacon) same(transmission or transfer$4 or transmit$5)	US-PGPUB; USPAT	OR	OFF	2021/08/10 10:26
S55	97	(timing) near7(notification) same (beacon) same(transmission or transfer$4 or transmit$5)	US-PGPUB; USPAT	OR	OFF	2021/08/10 10:43
S56	2	"20070201417"	US-PGPUB; USPAT	OR	OFF	2021/08/10 11:57
S57	1	"20070043828"	US-PGPUB; USPAT	OR	OFF	2021/08/10 11:57
S58	284	((("Proctor") near3 ("James") near3 ("A"))).INV.	USPAT	OR	OFF	2021/08/10 12:02
S59	34	S58 and beacon	USPAT	OR	OFF	2021/08/10 12:03
S60	1	"16/817896"	USPAT	OR	OFF	2021/08/10 12:06
S61	1	"15271410"	USPAT	OR	OFF	2021/08/10 12:10
S62	0	"15/271410"	USPAT	OR	OFF	2021/08/10 12:10
S63	319,526	h04l 67/306	USPAT	OR	OFF	2021/08/10 19:07
S64	177,597	h04w 4/80	USPAT	OR	OFF	2021/08/10 19:07
S65	319,522	h04l 61/6022	USPAT	OR	OFF	2021/08/10 19:07
S66	177,387	h04w 4/029	USPAT	OR	OFF	2021/08/10 19:08
S67	3	"16/247626"	US-PGPUB; USPAT	OR	OFF	2021/08/10 21:59
S68	3,160	(beacon near2 (transmission or transfer$5 or data or message or packet$2)) same(contain$4 or includ$4 or hav$4 or compris$5) same(field$2)	US-PGPUB; USPAT	OR	OFF	2021/12/02 20:48
S69	829	(beacon near2 (transmission or transfer$5 or data or message or	US-PGPUB; USPAT	OR	OFF	2021/12/02 20:49

		packet$2)) near7(contain$4 or includ$4 or hav$4 or compris$5) near7(field$2)				
S70	343	S69 and (mac adj address)	US-PGPUB; USPAT	OR	OFF	2021/12/02 20:50
S71	0	(service adj idenifier) and S70	US-PGPUB; USPAT	OR	OFF	2021/12/02 20:52
S73	2	"20040023640"	US-PGPUB; USPAT	OR	OFF	2021/12/03 10:32
S74	829	(beacon near2 (transmission or transfer$5 or data or message or packet$2)) near7(contain$4 or includ$4 or hav$4 or compris$5) near7(field$2)	US-PGPUB; USPAT	OR	OFF	2021/12/03 13:45
S75	343	S74 and (mac adj address)	US-PGPUB; USPAT	OR	OFF	2021/12/03 13:45
S76	4	(service adj identifier) and S75	US-PGPUB; USPAT	OR	OFF	2021/12/03 13:45
S77	9	((("PROXICOM") near3 ("WIRELESS") near3 ("LLC"))).AS,AANM.	USPAT	OR	OFF	2021/12/03 13:53
S78	582	((("Proctor") near3 ("James") near3 ("A"))).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2021/12/03 13:53
S79	65	(US-0156856-$ | US-0702686-$ | US-1098477-$ | US-1207654-$ | US-1296155-$ | US-17366826-$ | US-1759620-$ | US-1908235-$ | US-20050114654-$ | US-20050124359-$ | US-20050131837-$ | US-20050136845-$ | US-20050136891-$ | US-20050156026-$ | US-20050165667-$ | US-20050174975-$ | US-20050180367-$ | US-20050185615-$ | US-20050187873-$ | US-20050187959-$ | US-20050188062-$ | US-20050213553-$ | US-20050243737-$ | US-20050243781-$ | US-20050250552-$ | US-20050266868-$ | US-20050273440-$ | US-20060003785-$ | US-20060022038-$ | US-20060029024-$ | US-20060030335-$ | US-20060032901-$ | US-20060045042-$ | US-20060046709-$ | US-20060047835-$ | US-20060050728-$ | US-20060069922-$ | US-20060079284-$ | US-20060085419-$ | US-20060089134-$ | US-20060089876-$ | US-20060094447-$ | US-20060095348-$ | US-20060095349-$ | US-20060099966-$ | US-20060104200-$ | US-20060104243-$ | US-20060106850-$ | US-20060111045-$ | US-2218268-$ | US-2235002-$ | US-	US-PGPUB; USPAT	OR	OFF	2021/12/03 13:54

		2506121-$ | US-2564287-$ | US-2688189-$ | US-2752347-$ | US-2766024-$ | US-2766184-$ | US-2798749-$ | US-7936736-$ | US-8090359-$ | US-8116749-$ | US-8369842-$ | US-8385896-$ | US-8385913-$ | US-9038129-$ | US-9161164-$).DID.				
S80	79	(US-7492254-$ | US-7502933-$ | US-7509131-$ | US-7515914-$ | US-7522058-$ | US-7545784-$ | US-7546141-$ | US-7580699-$ | US-7590246-$ | US-7620026-$ | US-7630986-$ | US-7647024-$ | US-7647055-$ | US-7661132-$ | US-7702108-$ | US-7711100-$ | US-7711620-$ | US-7714712-$ | US-7716484-$ | US-7729326-$ | US-7756467-$ | US-7773995-$ | US-7774231-$ | US-7775430-$ | US-7822000-$ | US-7826425-$ | US-7836512-$ | US-7848765-$ | US-7876701-$ | US-7877082-$ | US-7886962-$ | US-7904952-$ | US-7936736-$ | US-7942337-$ | US-7952481-$ | US-7962369-$ | US-7963441-$ | US-7965983-$ | US-7991644-$ | US-7991664-$ | US-8014755-$ | US-8024272-$ | US-8073795-$ | US-8089405-$ | US-8090359-$ | US-8112794-$ | US-8116749-$ | US-8121917-$ | US-8160495-$ | US-8185133-$ | US-8204039-$ | US-8205240-$ | US-8229458-$ | US-8233841-$ | US-8254338-$ | US-8275359-$ | US-8295819-$ | US-8321913-$ | US-8332521-$ | US-8364171-$ | US-8369842-$ | US-8374592-$ | US-8385896-$ | US-8385913-$ | US-8478300-$ | US-8543500-$ | US-8559968-$ | US-8576846-$ | US-8688570-$ | US-8787575-$ | US-8825538-$ | US-9038129-$ | US-9137012-$ | US-9161164-$ | US-9373091-$ | US-9646319-$ | US-9659285-$ | US-9734198-$ | US-9805347-$).DID.	US-PGPUB; USPAT	OR	OFF	2021/12/03 13:54
S81	399,008	h04w 4/02	US-PGPUB; USPAT	OR	OFF	2021/12/03 14:40

S82	395,522	h04w 8/26	US-PGPUB; USPAT	OR	OFF	2021/12/03 14:40
S83	651,491	h04l 41/12	US-PGPUB; USPAT	OR	OFF	2021/12/03 14:40
S84	650,389	h04l 67/18	US-PGPUB; USPAT	OR	OFF	2021/12/03 14:40
S85	829	(beacon near2 (transmission or transfer$5 or data or message or packet$2)) near7(contain$4 or includ$4 or hav$4 or compris$5) near7(field$2)	US-PGPUB; USPAT	OR	OFF	2021/12/05 13:03
S86	343	S85 and (mac adj address)	US-PGPUB; USPAT	OR	OFF	2021/12/05 13:03
S87	6	(service adj (identifier or id)) and S86	US-PGPUB; USPAT	OR	OFF	2021/12/05 13:03
S88	26	((service or beacon) adj (identifier or id)) and S86	US-PGPUB; USPAT	OR	OFF	2021/12/05 13:10
S89	1,274	(beacon near2 (transmission or transfer$5 or data or message or packet$2)) near7(contain$4 or includ$4 or hav$4 or compris$5) near7(field$2 or parameter$2)	US-PGPUB; USPAT	OR	OFF	2021/12/05 13:14
S90	127	((service or beacon) adj (identifier or id)) and S89	US-PGPUB; USPAT	OR	OFF	2021/12/05 13:15
S91	538	S89 and (mac adj address)	US-PGPUB; USPAT	OR	OFF	2021/12/05 13:18
S92	37	((service or beacon) adj (identifier or id)) and S91	US-PGPUB; USPAT	OR	OFF	2021/12/05 13:18
S93	5,104	(beacon near2 (transmission or transfer$5 or data or message or packet$2)) same(contain$4 or includ$4 or hav$4 or compris$5) same(field$2 or parameter$2)	US-PGPUB; USPAT	OR	OFF	2021/12/05 13:24
S94	1,800	S93 and (mac adj address)	US-PGPUB; USPAT	OR	OFF	2021/12/05 13:24
S95	200	((service or beacon) adj (identifier or id)) and S94	US-PGPUB; USPAT	OR	OFF	2021/12/05 13:25
S96	962	(beacon near2 (transmission or transfer$5 or data or message or packet$2)) same(contain$4 or includ$4 or hav$4 or compris$5) same(mac adj address$2)	US-PGPUB; USPAT	OR	OFF	2021/12/05 13:27
S97	2,967	(beacon near2 (transmission or transfer$5 or data or message or packet$2)) same(contain$4 or includ$4 or hav$4 or compris$5) same(service)	US-PGPUB; USPAT	OR	OFF	2021/12/05 13:28

S98	4,384	(beacon near2 (transmission or transfer$5 or data or message or packet$2)) same(contain$4 or includ$4 or hav$4 or compris$5) same(number)	US-PGPUB; USPAT	OR	OFF	2021/12/05 13:28
S99	98	S98 and S97 and S96	US-PGPUB; USPAT	OR	OFF	2021/12/05 13:29

EAST Search History (Interference)

<This search history is empty>

12/6/2021 8:01:18 AM
C:\Users\jharley\Documents\EAST\Workspaces\17366826 beacon.wsp

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/366,826	07/02/2021	James A. Proctor JR.	111054-0001U7	8789

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EXAMINER	
HARLEY, JASON A	

ART UNIT	PAPER NUMBER
2468	

NOTIFICATION DATE	DELIVERY MODE
12/13/2021	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patents@vlplawgroup.com

Office Action Summary	Application No. 17/366,826	Applicant(s) Proctor, James A.	
	Examiner JASON A HARLEY	Art Unit 2468	AIA (FITF) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☑ Responsive to communication(s) filed on 12/2/21.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☑ This action is **FINAL.** 2b) ☐ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5) ☑ Claim(s) 1-19 and 21-31 is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6) ☐ Claim(s) _____ is/are allowed.

7) ☑ Claim(s) 1-19 and 21-31 is/are rejected.

8) ☐ Claim(s) _____ is/are objected to.

9) ☐ Claim(s) _____ are subject to restriction and/or election requirement

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to **PPHfeedback@uspto.gov.**

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☑ The drawing(s) filed on 7/2/21 is/are: a)☑ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a)☐ All b)☐ Some** c)☐ None of the:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☑ Notice of References Cited (PTO-892)

2) ☑ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date 12/2/21.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date _____.

4) ☐ Other: _____.

Petitioner Samsung Ex-1004, 0468

Notice of Pre-AIA or AIA Status

1. The present application is being examined under the pre-AIA first to invent provisions.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112(a):

> (a) IN GENERAL.—The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor or joint inventor of carrying out the invention.

The following is a quotation of the first paragraph of pre-AIA 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1, 2, 30 rejected under 35 U.S.C. 112(a) or 35 U.S.C. 112 (pre-AIA), first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor or a joint inventor, or for applications subject to pre-AIA 35 U.S.C. 112, the inventor(s), at the time the application was filed, had possession of the claimed invention. The applicant specification does not disclose the identifier is a number and is not a name of a wireless network.

Claim Rejections - 35 USC § 103

3. The following is a quotation of pre-AIA 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained through the invention is not identically disclosed or described as set forth in section 102, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-8, 11, 13, 14-19, 23, 24, 27, 30 is/are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Ballai et al. (U.S. Pub No. 2004/0023640 A1) in view of Masuoka et al. (U..S. Pub No. 2005/0136845 A1) in further view of Gandolfo (U.S. Pub No.2003/0224787 A1).

1. Ballai teaches a method comprising: receiving, by a wireless device, using a short range wireless protocol [**par 0001**, *The proliferation of IEEE 802.11 wireless protocol and the relatively inexpensive hardware for implementing wireless access to communication networks has created a number of security concerns. The wireless access to the network may be established via an access point ("AP")*], receiving, by the wireless device using a second wireless protocol, stored information from one or more servers, relating to an entity or object associated with a first unique identifier, and wherein the second wireless protocol is different from the short range wireless

protocol[**par 0025**, *The MU 65 accesses the communication network 1 via the APs 10-30, depending where the MU 65 is located at a particular time. Periodically, the APs 10-30 transmit beacon signals. The system for handling communication of these records between the APs 10-30 and the server 70 may be implemented with the common simple network management protocol ("SNMP") or a similar protocol*];

Ballai fail to show selecting one or more of the unique identifiers from the first plurality of beacon transmissions, by filtering the beacon transmissions which include a beacon service identifier indicating that a particular received beacon transmission is associated with the wireless beacon service; and taking first further action relating to the stored information, if the first unique identifier is present among the selected one or more unique identifiers.

In Masuoka show selecting one or more of the unique identifiers from the first plurality of beacon transmissions, by filtering the beacon transmissions which include a beacon service identifier indicating that a particular received beacon transmission is associated with the wireless beacon service[**par 0074**, *identity information from one or more mini-beacons in its vicinity and then select one of the mini-beacons that best satisfies a set of conditions based on the intensity of the received signals. These procedures encompass operations that sample the signals, filter and smooth the observations and calculate which beacon best satisfies the current criteria and also determine whether the target client is stationary or moving*]; and taking first further action relating to the stored information, if the first unique identifier is present among the selected one or more unique identifiers [**par 0202**, *In particular, the user can obtain the unique ID of the mini-beacon, which is coded during manufacturing. The user can set*

the transmit power level through the user interface. The mini-beacons 102 may also be implemented with a mechanical dial for setting the transmit power level].

Before the effective filing date it would have been obvious to one of ordinary skill in the art to combine the teachings of Ballai and Masuoka because this provides a system and method of using wireless communication devices as beacons to allow a target wireless communication device to determine its location.

Ballai and Masuoka fail to show a first plurality of beacon transmissions associated with a wireless beacon service, each beacon transmission comprising three fields (a) a MAC address, (b) a unique identifier, wherein the unique identifier of each respective beacon transmission does not directly identify a location of a beacon transmitter, and (c) a beacon service identifier, wherein the beacon service identifier of each respective beacon transmission is a number and is a number and is not a name of a wireless network that use the short range wireless protocol.

In an analogous Gandolfo show a first plurality of beacon transmissions associated with a wireless beacon service, each beacon transmission comprising three fields (a) a MAC address, (b) a unique identifier, wherein the unique identifier of each respective beacon transmission does not directly identify a location of a beacon transmitter, and (c) a beacon service identifier, wherein the beacon service identifier of each respective beacon transmission is a number and is a number and is not a name of a wireless network that use the short range wireless protocol [**par 0108**, *This broadcast message could be a modified beacon or a separate broadcast message. As shown in FIG. 8, a broadcast message according to a preferred embodiment of the present invention includes a MAC header field 805, a sequence number field 810, a*

router/controller identifier (ID) field 815, an age field 820, a hop count field 825, a load feedback field 830, a number of associated devices field 835, and a device record field 840. The device record field 840 includes one or more device records 845. Each device record 845 includes a neighborhood MAC address field 850, a bridge connection field 855, a service field 860, a data rate field 865, and any additional fields 870, as necessary].

Before the effective filing date it would have been obvious to one of ordinary skill in the art to combine the teachings of Ballai, Masuoka, and Gandolfo because provide a way by which networks could communicate with adjacent networks without the need for a fixed wired backbone.

2. Ballai, Masuoka, and Gandolfo illustrates the method of claim 1, wherein the receiving, by the wireless device, using a short range wireless protocol, of the first plurality of beacon transmissions occurs in a first time period [Ballai, **par 0021, 0031**, *The record may also include the signal strength at which the beacon signal was received, the time and date when the record was created and the criteria used to detect the rogue AP 60 (e.g., unverified manufacturers MAC address, no matching SSID, etc.*)], and wherein the method further comprises, during a second time period: receiving, by the wireless device, using a short range wireless protocol, a second plurality of beacon transmissions, each of the second plurality of beacon transmissions comprising

Ballai show selecting one or more of the unique identifiers from the second plurality of beacon transmissions, by filtering the beacon transmissions which include

the same beacon service identifier indicating that a particular received beacon transmission is associated with the same wireless beacon service, and taking second further action relating to the stored information, if a second unique identifier is present among the selected one or more unique identifiers selected from the second plurality of beacon transmissions wherein the second unique identifier is associated with the same entity or object, and wherein the second unique identifier is not equal to the first unique identifier.

Masuoka show selecting one or more of the unique identifiers from the second plurality of beacon transmissions, by filtering the beacon transmissions which include the same beacon service identifier indicating that a particular received beacon transmission is associated with the same wireless beacon service [par 0074, *identity information from one or more mini-beacons in its vicinity and then select one of the mini-beacons that best satisfies a set of conditions based on the intensity of the received signals. These procedures encompass operations that sample the signals, filter and smooth the observations and calculate which beacon best satisfies the current criteria and also determine whether the target client is stationary or moving*]; and taking second further action relating to the stored information, if a second unique identifier is present among the selected one or more unique identifiers [**par 0186-0189**, *The first location calculation scheme is valid for either the absolute or difference methods of power setting. The second variation of location calculation is used for the case of the arbitrary deployment scheme*], wherein the second unique identifier is associated with the same entity or object, and wherein the second unique identifier is not equal to the first unique identifier [**par 0078**, *The location of the mini-beacon can be represented either as*

coordinates or in symbolic form (e.g., Room 1223 or Kitchen) and are input to a min-beacon apparatus 103 and are stored in a computer-readable medium in a table 104 of deployment information].

Before the effective filing date it would have been obvious to one of ordinary skill in the art to combine the teachings of Ballai and Masuoka because this provides a system and method of using wireless communication devices as beacons to allow a target wireless communication device to determine its location.

Ballai and Masuoka fail to show wherein the method further comprises, during a second time period: receiving, by the wireless device, using a short range wireless protocol, a second plurality of beacon transmissions, each of the second plurality of beacon transmissions comprising three fields (a) a MAC address, (b) a unique identifier, wherein the unique identifier of each respective beacon transmission does not directly identify a location of a beacon transmitter, and (c) a beacon service identifier, wherein the beacon service identifier of each respective beacon transmission is a number, and further wherein the received beacon transmissions including the first and second unique identifiers are received from the same transmitting device

In an analogous art Gandolfo show wherein the method further comprises, during a second time period: receiving, by the wireless device, using a short range wireless protocol, a second plurality of beacon transmissions, each of the second plurality of beacon transmissions comprising three fields (a) a MAC address, (b) a unique identifier, wherein the unique identifier of each respective beacon transmission does not directly identify a location of a beacon transmitter, and (c) the beacon service identifier, wherein the beacon service identifier of each respective beacon transmission is a number[**par**

0108, *This broadcast message could be a modified beacon or a separate broadcast message. As shown in FIG. 8, a broadcast message according to a preferred embodiment of the present invention includes a MAC header field 805, a sequence number field 810, a router/controller identifier (ID) field 815, an age field 820, a hop count field 825, a load feedback field 830, a number of associated devices field 835, and a device record field 840. The device record field 840 includes one or more device records 845. Each device record 845 includes a neighborhood MAC address field 850, a bridge connection field 855, a service field 860, a data rate field 865, and any additional fields 870, as necessary*].

Before the effective filing date it would have been obvious to one of ordinary skill in the art to combine the teachings of Ballai, Masuoka, and Gandolfo because provide a way by which networks could communicate with adjacent networks without the need for a fixed wired backbone.

3. Ballai, Masuoka, and Gandolfo defines the method of claim 2 wherein the MAC address received in a beacon transmission including the second unique identifier is different from the MAC address received in a beacon transmission including the first unique identifier, but each such beacon transmission includes the same beacon service identifier [**par 0008, 0016, 0017, 0018**, *The MU 65 accesses the communication network 1 via the APs 10-30, depending where the MU 65 is located at a particular time. Periodically, the APs 10-30 transmit beacon signals. The beacon signal may contain information including a MAC address of the transmitting AP, a service set identification*

("SSID"), supported data rates, etc. The SSID identifies a virtual local area network ("VLAN") that is served by a particular WLAN. There may be a plurality of other criteria used to authorize the access to the communication network 1]

4. Ballai, Masuoka, and Gandolfo provides the method of claim 3, Ballai and Gandolfo fail to show wherein the second further action is based upon a function currently being performed on a device associated with the wireless beacon service.

In an analogous art Masuoka show wherein the second further action is based upon a function currently being performed on a device associated with the wireless beacon service [**par 0076**, *such as service discovery, service access, network routing and security, that can themselves be extended to have a spatial aspect (e.g., "Find the closest printer") by incorporating automatically generated location data*].

Before the effective filing date it would have been obvious to one of ordinary skill in the art to combine the teachings of Ballai, Masuoka, and Gandolfo because this provides a system and method of using wireless communication devices as beacons to allow a target wireless communication device to determine its location.

5. Ballai, Masuoka, and Gandolfo disclose the method of claim 4, Ballai and Gandolfo fail to show wherein the function is related to a current phone call, music being played, a video being played, a multi-player game, or a shared application.

In an analogous art Masuoka show wherein the function is related to a current phone call, music being played, a video being played, a multi-player game, or a shared application [**par 0006, 0212**, *a system for location determination of a wireless telephone*

that is used to dial an emergency 911 call, The mini-beacons represent a new and different approach to determining approximate location in indoor and outdoor environments, where a client with a mobile computing device (e.g., a mobile computing device with wireless capabilities such as a laptop computer, a PDA, a cell phone, etc.) can communicate with the mini-beacons and determine its own location].

Before the effective filing date it would have been obvious to one of ordinary skill in the art to combine the teachings of Ballai, Gandolfo, and Masuoka because this provides a system and method of using wireless communication devices as beacons to allow a target wireless communication device to determine its location.

6. Ballai, Masuoka, and Gandolfo defines the method of claim 2 Ballai and Gandolfo fail to show wherein the first or the second further action is related to receiving advertising information for presentation to a user of the wireless device, based upon the first or the second unique identifiers, or information derived from the first of second unique identifiers.

In an analogous art Masuoka show wherein the first or the second further action is related to receiving advertising information for presentation to a user of the wireless device, based upon the first or the second unique identifiers, or information derived from the first of second unique identifiers [**par 0030**, *beacon devices that are placed in various locations either to represent that location or to represent an object present at that location and also to provide a URL web pointer for that location or object. The beacon periodically broadcasts a message containing the URL and any device that receives the message can access the web pages pointed to by the URL*].

Before the effective filing date it would have been obvious to one of ordinary skill in the art to combine the teachings of Ballai, Masuoka, and Gandolfo because this provides a system and method of using wireless communication devices as beacons to allow a target wireless communication device to determine its location.

7. Ballai, Masuoka, and Gandolfo display the method of claim 2 wherein the first further action includes retrieving content from a server based upon information derived from either the first unique identifier or the second unique identifier [Ballai**, par 0007**, *The communication network 1 may also include a plurality of authorized mobile units ("MU"s), e.g. MU 65 and a plurality of servers, e.g. a server 70. The APs 10-30 may be connected directly to the server 70 as shown, for example, by connection 51 between the server 70 and the AP 30. Each AP 10-30 may be assigned a name, by the network administrator, for ease of reference. This is similar to the practice of naming computers and servers on a network*].

8. Ballai, Masuoka, and Gandolfo disclose the method of claim 2, Ballai and Gandolfo fail to show wherein the first or second further action includes sending a message to another device associated with an account related to the first and the second unique identifiers.

In an analogous art Masuoka show wherein the first or second further action includes sending a message to another device associated with an account related to the first and the second unique identifiers [**par 0078**, *The location of the mini-beacon can be*

represented either as coordinates or in symbolic form (e.g., Room 1223 or Kitchen) and are input to a min-beacon apparatus 103 and are stored in a computer-readable medium in a table 104 of deployment information, indexed by the unique ID of each mini-beacon. The deployment information can be stored in a single table or each beacon may include its information in its transmitted message].

Before the effective filing date it would have been obvious to one of ordinary skill in the art to combine the teachings of Ballai, Gandolfo, and Masuoka because this provides a system and method of using wireless communication devices as beacons to allow a target wireless communication device to determine its location.

11. Ballai, Masuoka, and Gandolfo disclose the method of claim 1, Ballai and Gandolfo fail to show wherein the first further action comprises: determining, based upon at least a portion of the stored information, that at least one beacon transmitter is associated with a predetermined location.

In an analogous art Masuoka show wherein the first further action comprises: determining, based upon at least a portion of the stored information, that at least one beacon transmitter is associated with a predetermined location [**par 0045**, *system and method for using wireless communication devices as beacons to determine the relative location of a target wireless communication device. The beacons transmit identifying information that the target device can use to determine the identity of the beacon. The target device can measure the received intensity of the beacon transmissions and determine an associated beacon that best satisfies a specified criteria (e.g., largest*

signal strength) using a procedure of the present invention that discriminates between multiple beacons]

Before the effective filing date it would have been obvious to one of ordinary skill in the art to combine the teachings of Ballai, Masuoka, and Gandolfo because this provides a system and method of using wireless communication devices as beacons to allow a target wireless communication device to determine its location.

12. Ballai, Masuoka, and Gandolfo demonstrate the method of claim 2 wherein the step of taking first further action further includes, by the wireless device, sending of the first unique identifier or information derived from the first unique identifier to at least one of the one or more servers, and receiving the stored information in response [Ballai, **par 0013**, *The MU 68 transmits an authentication message over a communication channel 52 to the rogue AP 60. The AP 60, configured by the unauthorized user, approves the access for the MU 68 to the communication network 1. The unauthorized user may gain access to the server 70 by attempting to login with a user-name and password, in the same manner as the authorized user*|

13. Ballai, Masuoka, and Gandolfo create the method of claim 1 further comprising: wherein the stored information is received by the wireless device from at least one of the one or more servers prior to the performing of the first further action [**par 0009**, *if the user of the MU 65 attempts to access the server 70, the MU 65 first waits for a communication channel 50 to the AP 30 to be available. Once the communication channel 50 is available, the MU 65 transmits an authentication message to the AP 30*

requesting access to the communication network 1. The authentication message may contain identification data, e.g., the user login name and the user login password]

14. Ballai, Masuoka, and Gandolfo define the method of claim 2 further comprising: wherein the stored information is received by the wireless device from at least one of the one or more servers prior to the performing of the first further action [**par 0009**, *if the user of the MU 65 attempts to access the server 70, the MU 65 first waits for a communication channel 50 to the AP 30 to be available. Once the communication channel 50 is available, the MU 65 transmits an authentication message to the AP 30 requesting access to the communication network 1. The authentication message may contain identification data, e.g., the user login name and the user login password*]

15. Ballai, Masuoka, and Gandolfo describes the method of claim 1 further comprising: wherein the stored information is used to determine if the first unique identifier is present among the first selected one or more unique identifiers **[Ballai, par 0020**, *The other option, therefore, is to verify the SSID against a database containing authorized SSIDs. If this criteria is utilized, the network administrator or another authorized user may generate a list of valid SSIDs. Therefore, if the rogue AP 60 is manufactured by an authorized manufacturer but the SSID in the beacon is invalid, then the presence of the rogue AP 60 is detected*].

16. Ballai, Masuoka, and Gandolfo provides the method of claim 2 wherein all beacon transmitter devices participating in the wireless beacon service have the same beacon

service identifier for identifying the beacon transmitters as being enabled with the wireless beacon service [abstract, par 0017, The beacon includes identification information of the transmitting access point. A computing arrangement verifies the identification information of the transmitting access point with a preexisting database of the communication network. The preexisting database includes data corresponding to identification information of a plurality of authorized access points. Conversely, WLAN 100 may serve a plurality of VLANs and a particular AP beacon, from an AP associated with WLAN 100, contain a list of SSIDs|

17. Ballai, Gandolfo, and Masuoka demonstrate the method of claim 2, Ballai and Gandolfo fail to show wherein the second further action comprises: determining, based upon at least a portion of the stored information, that the beacon transmitter is associated with a predetermined location.

In an analogous art Masuoka show wherein the second further action comprises: determining, based upon at least a portion of the stored information, that the beacon transmitter is associated with a predetermined location [Masuoka, **par 0081**, *The mini-beacon method of the present invention is a proximity scheme determined using signal strength from multiple mini-beacon transmitters at known points measured at the target. Accuracy is improved by adjusting the transmit power from the transmitters and statistically processing the received signal strength values. The mobile client scans for all the mini-beacons it can receive, computes the received signal strength for each scanned beacon, and uses a proximity procedure, incorporating the recent history of received signal strengths to find the beacon that best satisfies the desired condition*

(e.g., Maximum signal strength or lowest transmitter) and the user motion status (e.g., moving or stationary)|

Before the effective filing date it would have been obvious to one of ordinary skill in the art to combine the teachings of Ballai, Masuoka, and Gandolfo because this provides a system and method of using wireless communication devices as beacons to allow a target wireless communication device to determine its location.

18. Ballai, Masuoka, and Gandolfo creates the method of claim 2, Ballai and Gandolfo fail to show wherein one or more of the steps performed by the wireless device are performed as a result of an application program executing on the wireless device utilizing a software interface.

In an analogous art Masuoka show wherein one or more of the steps performed by the wireless device are performed as a result of an application program executing on the wireless device utilizing a software interface [**par 0075**, *An embodiment of the mini-beacon device based on the IEEE 802.11 wireless local area network standard that includes a small, low-cost hardware device and associated software that implements a mini-beacon device and the associated software that runs on a client device such as a mobile computing device with wireless capabilities such as a laptop, a PDA, or a cell phone is descr*ibed]

Before the effective filing date it would have been obvious to one of ordinary skill in the art to combine the teachings of Ballai, Gandolfo, and Masuoka because this

provides a system and method of using wireless communication devices as beacons to allow a target wireless communication device to determine its location.

19. Ballai, Masuoka, and Gandolfo defines the method of claim 2 Ballai and Gandolfo fail to show wherein the second further action is related to either a product tied to a location or an advertisement tied to a location.

In an analogous art Masuoka show wherein the second further action is related to either a product tied to a location or an advertisement tied to a location [**par 0029**, 7) *the device transmits programmable ID codes or local data using the IrDA standard communication channel and protocol, 2) angle and range (up to 7m or 10 m) of IrDA can be adjusted horizontally*|

Before the effective filing date it would have been obvious to one of ordinary skill in the art to combine the teachings of Ballai, Masuoka, and Gandolfo because this provides a system and method of using wireless communication devices as beacons to allow a target wireless communication device to determine its location.

23. Ballai, Masuoka, and Gandolfo defines the method of claim 2 wherein the second further action includes steps to allow for a user associated with the wireless device to be provided access to an object or device associated with the wireless beacon service [Ballai, **par 0008**, *The MU 65 accesses the communication network 1 via the APs 10-30, depending where the MU 65 is located at a particular time. Periodically, the APs 10-30 transmit beacon signals*]

24. Ballai, Masuoka, and Gandolfo disclose the method of claim 2 Ballai and Gandolfo fail to show wherein the step of taking second further action additionally comprises: controlling further communications between the wireless device and at least one device or server associated with an entity or object in proximity to the wireless device.

In an analogous art Masuoka show wherein the step of taking second further action additionally comprises: controlling further communications between the wireless device and at least one device or server associated with an entity or object in proximity to the wireless device [par 0051, In addition, when implemented as a client solution, the client has a greater degree of control on the dissemination of its location, providing enhanced privacy protection].

Before the effective filing date it would have been obvious to one of ordinary skill in the art to combine the teachings of Ballai, Masuoka, and Gandolfo because this provides a system and method of using wireless communication devices as beacons to allow a target wireless communication device to determine its location.

27. Ballai and Masuoka creates the method of claim 2 Ballai and Gandolfo fail to show wherein the stored information is used to determine if the second unique identifier is present among the second selected one or more unique identifiers.

In an analogous art Masuoka show wherein the stored information is used to determine if the second unique identifier is present among the second selected one or more unique identifiers [**par 0074, 0160**, *Several procedures are described that are executed by a target client mobile computing device that will receive signals and identity*

information from one or more mini-beacons in its vicinity and then select one of the mini-beacons that best satisfies a set of conditions based on the intensity of the received signals. The client periodically scans the set of channels in the band of spectrum under consideration and logs the received signal strength (RSS) values of all mini-beacons from which it has received a beacon message. The mini-beacon message includes the unique identifier of the beacon].

Before the effective filing date it would have been obvious to one of ordinary skill in the art to combine the teachings of Ballai, Gandolfo, and Masuoka because this provides a system and method of using wireless communication devices as beacons to allow a target wireless communication device to determine its location.

30. Ballai teaches a mobile wireless device comprising: one or more radios for providing reception and transmission for each of a Bluetooth wireless protocol and a second wireless protocol; one or more processors [**par 0001**, *The proliferation of IEEE 802.11 wireless protocol and the relatively inexpensive hardware for implementing wireless access to communication networks has created a number of security concerns. The wireless access to the network may be established via an access point ("AP")*]; receiving from one or more servers, using the second wireless protocol, stored information related to an entity or object associated with the first unique [par 0025, *The MU 65 accesses the communication network 1 via the APs 10-30, depending where the MU 65 is located at a particular time. Periodically, the APs 10-30 transmit beacon signals*]; selecting one or more unique identifiers from the first plurality of beacon transmissions, by filtering the beacon transmissions which include the beacon service

identifier indicating that a particular received beacon transmission is associated with the wireless beacon service [**par 0027**, *The AP 30 may then, periodically, send a directed message to the MU 65 requesting it to perform the scanning process (Step 200). The MU 65 then scans each channel, supported by the communication network's 1 protocol, for beacon signals, e.g., all 14 channels in a communication network 1 that use the IEEE 802.11 wireless protocol. Each channel is scanned for a time period long enough to have a high probability of detecting a beacon on the channel*]; taking first further action relating to the stored information, if the first unique identifier is present among the selected one or more unique identifiers; and the operations further including: receiving, by the wireless device, using the Bluetooth wireless protocol wireless, during a second time period, a second plurality of beacon transmissions, each of the second plurality of beacon transmissions comprising three fields (a) a MAC address, (b) a unique identifier, wherein the unique identifier of each respective beacon transmission does not directly identify a location of a beacon transmitter, and (c) a beacon service identifier, wherein the beacon service identifier of each respective beacon transmission is a number| [par 0008, 0016, 0017, 0018, *The MU 65 accesses the communication network 1 via the APs 10-30, depending where the MU 65 is located at a particular time. Periodically, the APs 10-30 transmit beacon signals. The beacon signal may contain information including a MAC address of the transmitting AP, a service set identification ("SSID"), supported data rates, etc. The SSID identifies a virtual local area network ("VLAN") that is served by a particular WLAN. There may be plurality of other criteria used to authorize the access to the communication network 1*]; wherein the MAC address received in a beacon transmission including the second unique identifier is different

from the MAC address received in a beacon transmission including the first unique identifier, but each such beacon transmission includes the same beacon service identifier [**par 0021**, *the MAC address, the name of the AP 10, as described above, and the SSID of the AP 10 which discovered the rogue AP 60, as well as the MAC address of the rogue AP 60. The record may also include the signal strength at which the beacon signal was received, the time and date when the record was created and the criteria used to detect the rogue AP 60 (e.g., unverified manufacturers MAC address, no matching SSID, etc.*)].

Ballai fail to show selecting one or more of the unique identifiers from the second plurality of beacon transmissions, by filtering the beacon transmissions which include the same beacon service identifier indicating that a particular received beacon transmission is associated with the same wireless beacon service; taking second further action relating to the stored information, if a second unique identifier is present among the selected one or more unique identifiers, wherein the second unique identifier is associated with the same entity or object, and wherein the second unique identifier is not equal to the first unique identifier;

In an analogous art Masuoka show selecting one or more of the unique identifiers from the second plurality of beacon transmissions, by filtering the beacon transmissions which include the same beacon service identifier indicating that a particular received beacon transmission is associated with the same wireless beacon service; taking second further action relating to the stored information[**par 0074**, *identity information from one or more mini-beacons in its vicinity and then select one of the mini-beacons that best satisfies a set of conditions based on the intensity of the received*

signals. These procedures encompass operations that sample the signals, filter and smooth the observations and calculate which beacon best satisfies the current criteria and also determine whether the target client is stationary or moving], if a second unique identifier is present among the selected one or more unique identifiers, wherein the second unique identifier is associated with the same entity or object, and wherein the second unique identifier is not equal to the first unique identifier[**par 0202**, *In particular, the user can obtain the unique ID of the mini-beacon, which is coded during manufacturing. The user can set the transmit power level through the user interface. The mini-beacons 102 may also be implemented with a mechanical dial for setting the transmit power level*].

Before the effective filing date it would have been obvious to one of ordinary skill in the art to combine the teachings of Ballai and Masuoka because this provides a system and method of using wireless communication devices as beacons to allow a target wireless communication device to determine its location.

Ballai and Masuoka fail to show one or more memory devices coupled to the one or more processors, the one or more non-transitory memory devices storing a set of instructions that when executed by the one or more processors cause the one or more processors to perform operations including: receiving from a beacon transmitter, using the Bluetooth wireless protocol, a first plurality of beacon transmissions during a first time period, each of the beacon transmissions including (a) a MAC address, (b) a unique identifier, wherein the first unique identifier does not directly identify a location of the beacon transmitter, and (c) a beacon service identifier, wherein the beacon service identifier is a number and is not a name of wireless network that uses the short range

wireless protocol, and further wherein the received beacon transmission including the first and second unique identifiers are received from the same transmitting device.

In an analogous art Gandolfo show one or more memory devices coupled to the one or more processors, the one or more non-transitory memory devices storing a set of instructions that when executed by the one or more processors cause the one or more processors to perform operations including: receiving from a beacon transmitter, using the Bluetooth wireless protocol, a first plurality of beacon transmissions during a first time period, each of the beacon transmissions including (a) a MAC address, (b) a unique identifier, wherein the first unique identifier does not directly identify a location of the beacon transmitter, and (c) a beacon service identifier, wherein the beacon service identifier is a number and is not a name of wireless network that uses the short range wireless protocol [**par 0108**, *This broadcast message could be a modified beacon or a separate broadcast message. As shown in FIG. 8, a broadcast message according to a preferred embodiment of the present invention includes a MAC header field 805, a sequence number field 810, a router/controller identifier (ID) field 815, an age field 820, a hop count field 825, a load feedback field 830, a number of associated devices field 835, and a device record field 840. The device record field 840 includes one or more device records 845. Each device record 845 includes a neighborhood MAC address field 850, a bridge connection field 855, a service field 860, a data rate field 865, and any additional fields 870, as necessary*] wherein the beacon service identifier is a number and is not a name of wireless network that uses the short range wireless protocol, and further wherein the received beacon transmission including the first and second unique identifiers are received from the same transmitting device **[par 0104**,

Each controller 510a, 510b will then be responsible for transmitting a broadcast message (beacon or other transmission) at a regular interval (e.g., every second or two). This broadcast message should include a list of all the devices that are associated to it, the type of service provided by each one of its associated devices]

Before the effective filing date it would have been obvious to one of ordinary skill in the art to combine the teachings of Ballai, Masuoka, and Gandolfo because provide a way by which networks could communicate with adjacent networks without the need for a fixed wired backbone.

31. Ballai teaches a method comprising: causing reception of, using a short range wireless protocol **[par 0001**, *The proliferation of IEEE 802.11 wireless protocol and the relatively inexpensive hardware for implementing wireless access to communication networks has created a number of security concerns. The wireless access to the network may be established via an access point ("AP")*], causing reception of, using a second wireless protocol, stored information from one or more servers[**par 0025**, *The MU 65 accesses the communication network 1 via the APs 10-30, depending where the MU 65 is located at a particular time. Periodically, the APs 10-30 transmit beacon signals*];, relating to an entity or object associated with a first unique identifier, and wherein the second wireless protocol is different from the short range wireless protocol [**par 0001**, *The proliferation of IEEE 802.11 wireless protocol and the relatively inexpensive hardware for implementing wireless access to communication networks has created a number of security concerns. The wireless access to the network may be*

established via an access point ("AP")]; causing selection of one or more of the unique identifiers from the first plurality of beacon transmissions, by filtering the beacon transmissions which include a beacon service identifier indicating that a particular received beacon transmission is associated with the wireless beacon service **[par 0027**, *The AP 30 may then, periodically, send a directed message to the MU 65 requesting it to perform the scanning process (Step 200). The MU 65 then scans each channel, supported by the communication network's 1 protocol, for beacon signals, e.g., all 14 channels in a communication network 1 that use the IEEE 802.11 wireless protocol. Each channel is scanned for a time period long enough to have a high probability of detecting a beacon on the channel*];

Ballai fail to show a first plurality of beacon transmissions associated with a wireless beacon service, each beacon transmission comprising three fields (a) a MAC address, (b) a unique identifier, wherein the unique identifier of each respective beacon transmission does not directly identify a location of a beacon transmitter, and (c) a beacon service identifier, wherein the beacon service identifier of each respective beacon transmission is a number and is not a name of a wireless network accessible using the short range wireless protocol;

In an analogous art Gandolfo show a first plurality of beacon transmissions associated with a wireless beacon service, each beacon transmission comprising three fields (a) a MAC address, (b) a unique identifier, wherein the unique identifier of each respective beacon transmission does not directly identify a location of a beacon transmitter, and (c) a beacon service identifier, wherein the beacon service identifier of each respective beacon transmission is a number and is not a name of a wireless

network accessible using the short range wireless protocol [**par 0108**, *This broadcast message could be a modified beacon or a separate broadcast message. As shown in FIG. 8, a broadcast message according to a preferred embodiment of the present invention includes a MAC header field 805, a sequence number field 810, a router/controller identifier (ID) field 815, an age field 820, a hop count field 825, a load feedback field 830, a number of associated devices field 835, and a device record field 840. The device record field 840 includes one or more device records 845. Each device record 845 includes a neighborhood MAC address field 850, a bridge connection field 855, a service field 860, a data rate field 865, and any additional fields 870, as necessary*].

Before the effective filing date it would have been obvious to one of ordinary skill in the art to combine the teachings of Ballai, Masuoka, and Gandolfo because provide a way by which networks could communicate with adjacent networks without the need for a fixed wired backbone.

Ballai and Gandolfo fail to show causing first further action, the first further action relating to the stored information, if the first unique identifier is present among the selected one or more unique identifiers.

In an analogous art Masuoka show causing first further action, the first further action relating to the stored information, if the first unique identifier is present among the selected one or more unique identifiers [**par 0202**, *In particular, the user can obtain the unique ID of the mini-beacon, which is coded during manufacturing. The user can set the transmit power level through the user interface. The mini-beacons 102 may also be implemented with a mechanical dial for setting the transmit power level*].

Before the effective filing date it would have been obvious to one of ordinary skill in the art to combine the teachings of Ballai. Gandolfo, and Masuoka because this provides a system and method of using wireless communication devices as beacons to allow a target wireless communication device to determine its location.

5. Claims 9 is/are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Ballai et al. (U.S. Pub No. 2004/0023640 A1) in view of Masuoka et al. (U.S. 2005/0136845 A1), Gandolfo (U.S. Pub No. 2003/0224787 A1), in view of Dohse et al. (U.S. Pub No. 2007/0050258 A1).

9. Ballai, Masuoka, and Gandolfo describe the method of claim 2 Ballai, Masuoka, and Gandolfo fail to show wherein following the performance of the first or second further action, a server associated with the an account for the user of the wireless device performs a step of sending a message to an email address associated with the account for the user relating to the entity or object associated with the first or second unique identifiers.

In an analogous art Dohse show wherein following the performance of the first or second further action, a server associated with the an account for the user of the wireless device performs a step of sending a message to an email address associated with the account for the user relating to the entity or object associated with the first or second unique identifiers [**par 0082**, *Function Rebate/Warranty Reminder 408*

preferably matches line-item detail to available rebate offers and warranties provided by Merchant A 103 and Manufacturer 301 and generates at least one pop-up message to Consumer 101 at login, or generates at least one email reminder to Consumer 107].

Before the effective filing date it would have been obvious to one of ordinary skill in the art to combine the teachings of Ballai, Masuoka, Gandolfo, and Dohse provide a system for accumulating and storing transaction line-item detail on behalf of consumers.

6. Claims 10 is/are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Ballai et al. (U.S. Pub No. 2004/0023640 A1) in view of Masuoka et al. (U.S. 2005/0136845 A1), Gandolfo (U.S. Pub No. 2003/0224787 A1) in view of Tedesco et al. (U.S. Pub No. 2008/0195621 A1).

10. Ballai, Masuoka, and Gandolfo defines the method of claim 2, Ballai, Masuoka, and Gandolfo fail to show wherein the second further action includes preventing sending of the second unique identifier or information derived from the second unique identifier by the wireless device to one or more servers.

In an analogous art Tedesco show wherein the second further action includes preventing sending of the second unique identifier or information derived from the second unique identifier by the wireless device to one or more servers [**claim 9**, *receiving the announcement message at the first media device; comparing the second media device unique identifier to entries on a first media device list to determine if the second media player unique identifier is acceptable or is blocked; comparing the second media device characteristic to a first media device presence preference*].

Before the effective filing date it would have been obvious to one of ordinary skill in the art to combine the teachings of Ballai, Masuoka, Gandolfo, and Tedesco because this provides manage presence information distribution and access to facilitate media communication between compatible devices.

6. Claims 20-22 is/are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Ballai et al. (U.S. Pub No. 2004/0023640 A1) in view of Masuoka et al. (U.S. 2005/0136845 A1), Gandolfo (U.S. Pub No. 2003/0224787 A1) in view of Clagett et al. (U.S. Pat No. 5121126 A).

20. Ballai, Gandolfo, and Masuoka discloses the claim of 2, Ballai, Gandolfo, and Masuoka fail to show wherein the second further action is related to an advertisement tied to a location.

In an analogous art Clagett show wherein the second further action is related to an advertisement tied to a location [**col 7, ln 18-24**, *the invention the beacon signal may include advertising or promotional messages such as indicating the nearest location of various types of commercial establishments or facilities such as ATMs*].

Before the effective filing date it would have been obvious to one of ordinary skill in the art to combine the teachings of Ballai, Masuoka, Gandolfo, and Clagett because in order to assist individuals in such circumstances, the relevant telephone or base station is provided with a radio beacon capable of broadcasting simple pulse signals or more complex signals containing a variety of information message

21. Ballai, Masuoka, and Gandolfo displays the method of claim 1 Ballai, Gandolfo, and Masuoka fail to show wherein the first further action includes determining an address or location associated with the wireless device based at least in part upon the first unique identifier being associated with a pre-determined location, and wherein the wireless device is located indoors where a GPS signal may not be available.

In an analogous art Clagett show wherein the first further action includes determining an address or location associated with the wireless device based at least in part upon the first unique identifier being associated with a pre-determined location, and wherein the wireless device is located indoors where a GPS signal may not be available [**col 1, ln 43-50**, *The telepoint subscriber is provided with a cordless handset which may be used within a predetermined range (presently about 100 yards) from a phone point which may constitute a home, office or public pay telephone. Phone point base stations can be sited in both indoor*]

Before the effective filing date it would have been obvious to one of ordinary skill in the art to combine the teachings of Ballai, Masuoka, Gandolfo, and Clagett because in order to assist individuals in such circumstances, the relevant telephone or base station is provided with a radio beacon capable of broadcasting simple pulse signals or more complex signals containing a variety of information message

22. Ballai, Masuoka, and Gandolfo conveys the method of claim 2 Ballai, Masuoka, and Gandolfo fail to show wherein the second further action includes determining an address or location associated with the wireless device based at least in part upon the

second unique identifier being associated with a pre-determined location, wherein the wireless device is located indoors where a GPS signal may not be available.

In an analogous art Clagett show wherein the second further action includes determining an address or location associated with the wireless device based at least in part upon the second unique identifier being associated with a pre-determined location, wherein the wireless device is located indoors where a GPS signal may not be available[**col 1, ln 43-50**, *The telepoint subscriber is provided with a cordless handset which may be used within a predetermined range (presently about 100 yards) from a phone point which may constitute a home, office or public pay telephone. Phone point base stations can be sited in both indoor*|

Before the effective filing date it would have been obvious to one of ordinary skill in the art to combine the teachings of Ballai, Masuoka, Gandolfo, and Clagett because in order to assist individuals in such circumstances, the relevant telephone or base station is provided with a radio beacon capable of broadcasting simple pulse signals or more complex signals containing a variety of information message

7. Claim 25, 26 is/are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Ballai et al. (U.S. Pub No. 2004/0023640 A1) in view of Masuoka et al. (U.S. 2005/0136845 A1), Gandolfo (U.S. Pub No. 2003/0224787 A1) in view of Sugaya et al. (U.S. Pub No. 2005/0096031 A1).

25. Ballai, Masuoka, and Gandolfo demonstrate the method of claim 3, Ballai, Masuoka, and Gandolfo fail to show further comprising: receiving, by the wireless device, timing notification information for coordination of active times for beacon transmissions.

In an analogous art Sugaya show further comprising: receiving, by the wireless device, timing notification information for coordination of active times for beacon transmissions [claim 40, *a frame period is created in a pseudo manner to have a same state as timing of transmitting its own beacon and a notification indicating the timing utilized for the bandwidth-guaranteed communication is issued*]

Before the effective filing date it would have been obvious to one of ordinary skill in the art to combine the teachings of Ballai, Masuoka, Gandolfo, and Sugaya because timing utilized for a bandwidth-guaranteed communication by using a beacon signal allows any number of neighboring wireless communication apparatuses to be notified in advance that a bandwidth-guaranteed communication is to be performed.

26. Ballai, Masuoka, Gandolfo, and Sugaya defines the method of claim 25, Ballai, Gandolfo and Masuoka fail to show wherein the receiving, by the wireless device of the timing notification information is not directly from the beacon transmitter.

In an analogous art Sugaya show wherein the receiving, by the wireless device of the timing notification information is not directly from the beacon transmitter [**claim 40**, *a frame period is created in a pseudo manner to have a same state as timing of transmitting its own beacon and a notification indicating the timing utilized for the bandwidth-guaranteed communication is issued*]

Before the effective filing date it would have been obvious to one of ordinary skill in the art to combine the teachings of Ballai, Masuoka, Gandolfo, and Sugaya because timing utilized for a bandwidth-guaranteed communication by using a beacon signal allows any number of neighboring wireless communication apparatuses to be notified in advance that a bandwidth-guaranteed communication is to be performed.

8. Claim 28, 29 is/are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Ballai et al. (U.S. Pub No. 2004/0023640 A1) in view of Masuoka et al. (U.S. 2005/0136845 A1), Gandolfo (U.S. Pub No. 2003/0224787 A1) in view of Famolari et al. (U.S. Pub No. 2007/0043528 A1).

28. Ballai, Masuoka, and Gandolfo disclose the method of claim 1, Ballai, Masuoka, and Gandolfo fail to show wherein the MAC address is a randomly generated 48 bit number matching a format of a Bluetooth BD ADDR.

In an analogous art Famolari show wherein the MAC address is a randomly generated 48 bit number matching a format of a Bluetooth BD ADDR [**par 0054**, *Central Server (CS) 10 that preferably maintains the intelligence of the system, manages buddy lists, maps Bluetooth Device Addresses to Usernames and maps locations to BDADDRs (e.g., BDBDADDRs include device addresses) of the Bluetooth Access Points*].

Before the effective filing date it would have been obvious to one of ordinary skill in the art to combine the teachings of Ballai, Masuoka, Gandolfo, and Famolari because

a Bluetooth interface and an 802.11 interface, thus allowing the MID to participate on two separate networks as well as to interface with Bluetooth devices.

29. Ballai, Gandolfo, and Masuoka describe the method of claim 3, Ballai, Gandolfo, and Masuoka fail to show wherein the short range protocol is derived from Bluetooth.

In an analogous art Famolari show wherein the short range protocol is derived from Bluetooth **[par 0011**, *Bluetooth is a computing and telecommunications industry specification that details how mobile devices can easily interconnect with each other and with non-mobile devices using a short-range wireless connection. Bluetooth creates a digital wireless protocol to address end-user problems arising from the proliferation of various mobile devices that need to keep data synchronized and consistent from one device to another, thereby allowing equipment from different vendors to work seamlessly together. Bluetooth devices may be named according to a common naming concept. For example, a Bluetooth device may possess a Bluetooth Device Name (BDN) or a name associated with a unique Bluetooth Device Address (BDA). Bluetooth devices may also participate in an Internet Protocol (IP) network*].

Before the effective filing date it would have been obvious to one of ordinary skill in the art to combine the teachings of Ballai, Masuoka, Gandolfo, and Famolari because a Bluetooth interface and an 802.11 interface, thus allowing the MID to participate on two separate networks as well as to interface with Bluetooth devices.

Response to Arguments

1) First, the Applicant's claim requires that this second "receiving step" occur using a "second" wireless protocol — that is, a wireless protocol that is different from the "short range wireless protocol" used in the first receiving step. Ballai's MUs 65 only use a single wireless protocol (e.g. via "channel 50") to communicate with the APs.

The examiner respectfully disagrees paragraph 0025, 0027, The server 70 may then display the predicted location by shading in the area on the map. The system for handling communication of these records between the APs 10-30 and the server 70 may be implemented with the common simple network management protocol ("SNMP") or a similar protocol. The MU 65 then scans each channel, supported by the communication network's 1 protocol, for beacon signals, e.g., all 14 channels in a communication network 1 that use the IEEE 802.11 wireless protocol. The paragraphs shows using a SNMP protocol and the MU searches network channels using wireless protocol.

2) The Examiner also offers no observation about the further requirement of Applicant's claim 1 that the information "received from a server" must relate to

"an entity or object associated with a first unique identifier" where the "first unique identifier" was received as part of the beacon transmission.

The examiner respectfully disagrees paragraph 0016 shows, the beacon signal may contain information including a MAC address of the transmitting AP, a service set identification ("SSID"), supported data rates, etc. The mac address, ssid and supported data rates are unique identifiers associated with the beacon signal.

3) But the office action fails to identify which particular stored information is supposedly received from a server, or that such stored information received from a server would have any relation to the (unidentified) "first unique identifier" that was received as part of the original beacon transmission.

The examiner respectfully disagrees paragraph 0010 shows the server has a database that includes identification information about devices that are specifically prohibited from accessing the communication network 1. When the AP 30 receives the authentication message it performs an authentication process. The authentication process may include verifying the identification data received with the database. If the identification data is not verified, then the MU 65 is denied access to the communication network.

4) On the other hand, the Applicant's claims require "filtering" beacon transmissions based on the presence of a particular "beacon service identifier" 1.e., one that is associated with the wireless beacon service. Nowhere in Masuoka is there any discussion of using the content of a beacon transmission to determine whether that beacon transmission will be selected for further processing.

The examiner respectfully disagrees the applicant claim does not state filtering beacon transmissions for further processing therefore applicant argument is moot

5) This capability of Masuoka thus relates to a user being able to set a power level for the transmitter. Any user could do this at any time. No stored information or selection of unique identifiers is necessary before a user can configure Masuoka's mini beacon. Such configuration by the user is not a step that is related to stored information received from a server, or conditionally performed by the wireless device itself or an application on the wireless device, based on a first unique identifier being among the selected unique identifiers.

The examiner respectfully disagree the applicants claim does not state the step has to be related, therefore applicant argument is moot.

6) These different purposes of Ballai and Masuoka would not serve to motivate a skilled person to try to combine their respective features.

The examiner respectfully disagrees the rationale to modify or combine the prior art does not have to be expressly stated in the prior art; the rationale may be expressly or impliedly contained in the prior art or it may be reasoned from knowledge generally available to one of ordinary skill in the art, established scientific principles, or legal precedent established by prior case law. Please review MPEP 2144 (I.).

7) The office action maps the claimed “second unique identifier” to the coordinates transmitted by the mini beacon in Masouka. But claim 2 requires the unique identifier to “not directly identify a location of a beacon transmitter.” Because of this limitation, claim 2 should be allowed. Furthermore, to the extent the examiner identifiers the MAC address of Ballai as the first unique identifier, it cannot also be the second unique identifier as Ballai changing a mac address of an access point (apparently the alleged “object” associated with the “stored information” in such as mapping).

5. The examiner respectfully disagrees paragraph 0016 shows, the beacon signal may contain information including a MAC address of the transmitting AP, a service set identification ("SSID"), supported data rates, etc. The mac address, ssid and supported data rates are unique identifiers associated with the beacon signal.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to JASON A HARLEY whose telephone number is (571)270-5435. The examiner can normally be reached 7:30-300 6:30-8:30.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at http://www.uspto.gov/interviewpractice.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Asad M Nawaz can be reached on (571) 272-3988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/JASON A HARLEY/
Examiner, Art Unit 2468

/SYED ALI/
Primary Examiner, Art Unit 2468

PTO/SB/08a (02-18)
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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	17366826
Filing Date	2021-07-02
First Named Inventor	James A. Proctor
Art Unit	2468
Examiner Name	HARLEY, JASON A
Attorney Docket Number	111054-0001U7

U.S.PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	17366826
	Filing Date	2021-07-02
	First Named Inventor	James A. Proctor
	Art Unit	2468
	Examiner Name	HARLEY, JASON A
	Attorney Docket Number	111054-0001U7

	1	Non-Final Office Action received for U.S. Patent Application No. 14/861,563, mailed on May 09, 2016, 16 pages.
	2	Non-Final Office Action received for U.S. Patent Application No. 16/817,896, mailed on Jun 09, 2020, 22 pages.
	3	Non-Final Office Action received for U.S. Patent Application No. 16/817,896, mailed on Nov 24, 2020, 34 pages.
	4	Non-Final Office Action received for U.S. Patent Application No. 16/817,896, mailed on Sep 03, 2020, 23 pages.
	5	Notice of Allowance received for U.S. Patent Application No. 16/817,896, mailed on Jun 08, 2021, 17 pages.
	6	Notice of Allowance received for U.S. Patent Application No. 16/817,896, mailed on Jun 28, 2021, 4 pages.
	7	Notice of Allowance received for U.S. Patent Application No. 16/817,896, mailed on Mar 19, 2021, 17 pages.

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EXAMINER SIGNATURE

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	17366826
Filing Date	2021-07-02
First Named Inventor	James A. Proctor
Art Unit	2468
Examiner Name	HARLEY, JASON A
Attorney Docket Number	111054-0001U7

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☒ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☒ See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/David Thibodeau/	Date (YYYY-MM-DD)	2022-02-22
Name/Print	David Thibodeau	Registration Number	31671

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

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Electronic Acknowledgement Receipt

EFS ID:	45058776
Application Number:	17366826
International Application Number:	
Confirmation Number:	8789
Title of Invention:	EFFICIENT AND SECURE COMMUNICATION USING WIRELESS SERVICE IDENTIFIERS
First Named Inventor/Applicant Name:	James A. Proctor
Customer Number:	86012
Filer:	David J. Thibodeau/Elisabeth Smith
Filer Authorized By:	David J. Thibodeau
Attorney Docket Number:	111054-0001U7
Receipt Date:	22-FEB-2022
Filing Date:	02-JUL-2021
Time Stamp:	20:23:36
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	IDS_17366826_1.pdf	1043748 441efaec41a053e81e63095c6383be7f33ccc764	no	4

Warnings:

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2	Non Patent Literature	1_14861563_1041801.pdf	524348 123d6a29a2134c4442f482ac94f9e78643bebb1f	no	16
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5	Non Patent Literature	4_16817896_3_1041824.pdf	907519 a52a3fb36857d6a2bdb84c0cde09e29fdd433362	no	23
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6	Non Patent Literature	5_16817896_1041802.pdf	801016 2516e10e93b1e11e6776b9f81e922f95d04e97fb	no	17
Warnings:					
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7	Non Patent Literature	6_137230_1041825.pdf	143545 3fb65441ed2bde97ef3866c93fe74f355c670008	no	4
Warnings:					
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If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

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UNITED STATES PATENT AND TRADEMARK OFFICE

USPTO Automated Interview Request (AIR)

Mar 29 2022

This paper requesting to schedule and/or conduct an interview is appropriate because:

This submission is requested to be accepted as an authorization for this interview to communicate via the internet. Recognizing that Internet communications are not secure, I hereby authorize the USPTO to communicate with the undersigned concerning scheduling of the interview via video conference, instant messaging, or electronic mail, and to conduct the interview in accordance with office practice including video conferencing.

Name(s):
David J Thibodeau

S-signature:
/David J Thibodeau/

Registration Number:
31671

U.S. Application Number:
17366826

Confirmation Number:
8789

E-mail Address:
DThibodeau@VLPLawGroup.com

Phone Number:
+1 6179255520

Proposed Time of Interview:
4-6-2022 10:00 AM ET

Alternative Proposed Time(s) of Interview:
4-6-2022 2:30 PM ET

Alternative Proposed Time(s) of Interview:
4-5-2022 3:00 PM ET

Prefered Interview Type:
Telephonic

I am the applicant or applicant's representative for this application.

Topic for Discussion:
Whether the claims enclosed with the amendment filed on 29-MAR-2022 overcome the 35 USC 112 rejection; as well as the 103 rejection in view of Ballai, Masuoka and Gandolfo

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A method comprising:

receiving, ~~by~~ at a wireless device, ~~using~~ via a short range wireless protocol, a first plurality of beacon transmissions ~~associated with a wireless beacon service~~, each beacon transmission comprising three fields (a) a MAC address, (b) a unique identifier, wherein the unique identifier of each respective beacon transmission does not directly identify a location of a beacon transmitter, and (c) a beacon service identifier, wherein the beacon service identifier of each respective beacon transmission ~~is~~ identifies a ~~number and is not a name of a~~ wireless beacon service as opposed to identifying a communication network or a device ~~that uses~~ accessible using the short range wireless protocol;

receiving, ~~by~~ at the wireless device ~~using~~ via a second wireless protocol, stored information from one or more servers, the stored information relating to ~~an~~ a particular entity or object associated with a first unique identifier, and wherein the second wireless protocol is different from the short range wireless protocol;

~~selecting~~ causing selection of one or more of the unique identifiers from the first plurality of beacon transmissions, by filtering the beacon transmissions which include a particular beacon service identifier indicating that a particular received beacon transmission is associated with ~~the~~ a particular wireless beacon service; and

taking first further action relating to the stored information, if the first unique identifier is present among the selected one or more unique identifiers.

2. (Currently Amended) The method of claim 1, wherein the receiving, ~~by~~ at the wireless device, ~~using~~ via a short range wireless protocol, of the first plurality of beacon transmissions occurs in a first time period, and

wherein the method further comprises, during a second time period:

receiving, ~~by~~ at the wireless device, ~~using~~ via a short range wireless protocol, a second plurality of beacon transmissions, each of the second plurality of beacon transmissions comprising three fields (a) a MAC address, (b) a unique identifier, wherein the unique identifier of each respective beacon transmission does not directly identify a location of a beacon transmitter, and (c) ~~the~~a beacon service identifier, wherein the beacon service identifier of each respective beacon transmission ~~is a number~~ identifies a wireless beacon service as opposed to identifying a communication network or a device accessible using the short range wireless protocol;

~~selecting~~ causing selection of one or more of the unique identifiers from the second plurality of beacon transmissions, by filtering the beacon transmissions which include the same particular beacon service identifier indicating that ~~a~~ the particular received beacon transmission is associated with the same particular wireless beacon service; and

taking second further action relating to the stored information, if a second unique identifier is present among the one or more unique identifiers selected from the second plurality of beacon transmissions, wherein the first unique identifier and the second unique identifier ~~is~~ are both associated with the same particular entity or object, and wherein the second unique identifier is not equal to the first unique identifier, and further wherein the received beacon transmissions including the first and second unique identifiers are received from ~~the~~a same transmitting device.

3. (Currently Amended) The method of claim 2 wherein the MAC address received in a beacon transmission including the second unique identifier is different from the MAC address received in a beacon transmission including the first unique identifier, but each such beacon transmission includes the same beacon service identifier, and wherein a plurality of beacon

transmissions including the particular service identifier and the first unique identifier are received in the first time period, and no beacon transmissions including the same service identifier and the second unique identifier are received in the first time period.

4. (Original) The method of claim 3 wherein the second further action is based upon a function currently being performed on a device associated with the wireless beacon service.

5. (Original) The method of claim 4 wherein the function is related to a current phone call,

music being played,

a video being played,

a multi-player game, or

a shared application.

6. (Currently Amended) The method of claim 2 wherein the first or the second further action is related to receiving advertising information for presentation to a user of the wireless device, based upon the first or the second unique identifier~~s~~, or information derived from the first or second unique ~~identifiers~~ identifier.

7. (Original) The method of claim 2 wherein the first further action includes retrieving content from a server based upon information derived from either the first unique identifier or the second unique identifier.

8. (Original) The method of claim 2, wherein the first or second further action includes sending a message to another device associated with an account related to the first and the second unique identifiers.

9. (Currently Amended) The method of claim 2 wherein following the performance of the first or second further action, a server associated with ~~the~~ an account for ~~the~~ a user of the wireless device performs a step of sending a message to an email address associated with the account for the user, the email relating to the same particular entity or object associated with the first or second unique ~~identifiers~~ identifier.

10. (Currently Amended) The method of claim 2 wherein the second further action includes preventing sending of the second unique identifier or information derived from the second unique identifier by the wireless device to at least one of the one or more servers.

11. (Previously Presented) The method of claim 1 wherein the first further action comprises: determining, based upon at least a portion of the stored information, that at least one beacon transmitter is associated with a predetermined location.

12. (Currently Amended) The method of claim 2 wherein the step of taking first further action further includes~~, by~~ causing the wireless device~~,~~ to:

~~sending of~~ send the first unique identifier or information derived from the first unique identifier to at least one of the one or more servers, and

~~receiving~~ receive the stored information in response.

13. (Currently Amended) The method of claim 1 ~~further comprising:~~

wherein the stored information is received ~~by~~ at the wireless device from at least one of the one or more servers prior to the performing of the first further action.

14. (Currently Amended) The method of claim 2 ~~further comprising:~~

wherein the stored information is received ~~by~~ at the wireless device from at least one of the one or more servers prior to the performing of the first further action.

15. (Currently Amended) The method of claim 1 further comprising:

~~wherein~~ using the stored information ~~is used~~ to determine if the first unique identifier is present among the first selected one or more unique identifiers.

16. (Currently Amended) The method of claim 2 wherein all beacon transmitter devices participating in the particular wireless beacon service have the same particular beacon service identifier ~~for identifying the beacon transmitters as being enabled with the wireless beacon service~~.

17. (Original) The method of claim 2 wherein the second further action comprises:

determining, based upon at least a portion of the stored information, that the beacon transmitter is associated with a predetermined location.

18. (Currently Amended) The method of claim 2 wherein one or more of the steps performed ~~by~~ at the wireless device are performed as a result of an application program executing on the wireless device ~~utilizing a software interface~~.

19. (Currently Amended) The ~~claim of~~ method of claim 2 wherein the second further action is related to either a product tied to a location or an advertisement tied to a location.

20. (Canceled)

21. (Original) The method of claim 1 wherein the first further action includes determining an address or location associated with the wireless device based at least in part upon the first unique identifier being associated with a pre-determined location, and wherein the wireless device is located indoors where a GPS signal may not be available.

22. (Original) The method of claim 2 wherein the second further action includes determining an address or location associated with the wireless device based at least in part upon the second unique identifier being associated with a pre-determined location, wherein the wireless device is located indoors where a GPS signal may not be available.

23. (Currently Amended) The method of claim 2 wherein the second further action includes ~~steps to allow for~~ allowing a user associated with the wireless device to be provided access to an object or device associated with the wireless beacon service.

24. (Original) The method of claim 2 wherein the step of taking second further action additionally comprises:

controlling further communications between the wireless device and at least one device or server associated with an entity or object in proximity to the wireless device.

25. (Currently Amended) The method of claim 3 further comprising:

receiving, ~~by~~ at the wireless device, timing notification information for coordination of active times for beacon transmissions.

26. (Currently Amended) The method of claim 25 wherein the receiving, ~~by~~at the wireless device of the timing notification information is not directly from the beacon transmitter.

27. (Currently Amended) The method of claim 2 ~~wherein~~ further comprising:

using the stored information ~~is used~~ to determine if the second unique identifier is present among the ~~second~~ selected one or more of the unique identifiers from the second plurality of beacon transmissions.

28. (Original) The method of claim 1 wherein the MAC address is a randomly generated 48 bit number matching a format of a Bluetooth BD_ADDR.

29. (Original) The method of claim 3 wherein the short range protocol is derived from Bluetooth.

30. (Currently Amended) A mobile wireless device comprising:

one or more radios for providing reception and transmission for each of a Bluetooth wireless protocol and a second wireless protocol;

one or more processors; and

one or more memory devices coupled to the one or more processors, the one or more non-transitory memory devices storing a set of instructions that when executed by the one or more processors cause the one or more processors to perform operations including:

receiving from a beacon transmitter, using the Bluetooth wireless protocol, a first plurality of beacon transmissions during a first time period, each of the beacon transmissions including (a) a MAC address, (b) a unique identifier, wherein the ~~first~~ unique identifier does not directly identify a location of the beacon transmitter, and (c) a beacon service identifier, wherein the beacon service identifier ~~is a number and is not a name~~ of each respective beacon transmission identifies a wireless beacon service as opposed to identifying a communication network or a device ~~that uses~~ accessible using the ~~short range~~ Bluetooth wireless protocol;

receiving from one or more servers, using the second wireless protocol, stored information related to ~~an~~a entity or object associated with ~~the~~ a first unique identifier;

selecting one or more unique identifiers from the first plurality of beacon transmissions, by filtering the beacon transmissions which include ~~the~~ a particular beacon service identifier indicating that a particular received beacon transmission is associated with the particular wireless beacon service;

taking first further action relating to the stored information, if the first unique identifier is present among the selected one or more unique identifiers; ~~and~~

~~and the operations further including:~~

receiving, by the wireless device, using the Bluetooth wireless protocol ~~wireless~~, during a second time period, a second plurality of beacon transmissions, each of the second plurality of beacon transmissions comprising three fields (a) a MAC address, (b) a unique identifier, wherein the unique identifier of each respective beacon transmission does not directly identify a location of a beacon transmitter, and (c) the beacon service identifier, wherein the beacon service identifier of each respective beacon transmission ~~is a number~~ identifies a wireless beacon service as opposed to identifying a communication network or a device accessible using the Bluetooth wireless protocol;

selecting one or more of the unique identifiers from the second plurality of beacon transmissions, by filtering the beacon transmissions which include the same particular beacon service identifier indicating that a particular received beacon transmission is associated with the same particular wireless beacon service;

taking second further action relating to the stored information, if a second unique identifier is present among the one or more unique identifiers selected from the second plurality of beacon transmissions, wherein the second unique identifier is associated with the same entity or object, and wherein the second unique identifier is not equal to the first unique identifier, and further wherein the received beacon transmissions including the first and second unique identifiers are received from ~~the~~a same transmitting device; and

wherein the MAC address received in a beacon transmission including the second unique identifier is different from the MAC address received in a beacon transmission including the first unique identifier, but each such beacon transmission includes the same particular beacon service identifier.

31. (Currently Amended) A ~~method comprising~~ computer program product for installation in a non-transitory medium in a wireless device, the computer program product

comprising computer program instructions that, when executed by one or more processors in the wireless device, cause the wireless device to:

~~causing reception of, using a short range wireless protocol,~~ process a first plurality of beacon transmissions ~~associated with a wireless beacon service,~~, received at the mobile wireless device via a Bluetooth protocol, each beacon transmission comprising three fields (a) a MAC address, (b) a unique identifier, wherein the unique identifier of each respective beacon transmission does not directly identify a location of a beacon transmitter, and (c) a beacon service identifier, wherein the beacon service identifier of each respective beacon transmission ~~is a number and is not a name of~~ identifies a wireless beacon service as opposed to identifying a communication network or a device accessible using the ~~short range~~ Bluetooth wireless protocol;

~~causing reception of, using a second wireless protocol,~~ process stored information transferred from one or more servers~~, relating~~ to the mobile wireless device via a second wireless protocol, wherein the stored information relates to an entity or object associated with a first unique identifier, and wherein the second wireless protocol is different from the ~~short range~~ Bluetooth wireless protocol;

~~causing selection of~~ select one or more of the unique identifiers from the first plurality of beacon transmissions, by filtering the beacon transmissions which include a particular beacon service identifier indicating that a particular received beacon transmission is associated with ~~the~~ a particular wireless beacon service; and

~~causing first~~ perform a further action, the ~~first~~ further action relating to the stored information, if the first unique identifier is present among the selected one or more unique identifiers.

REMARKS

Claims 1-19 and 21-31 are presented for further examination.

EXPLANATION OF CLAIM AMENDMENTS

Independent claims 1, 30 and 31 are amended and narrowed to specifically now require that:

- the "beacon service identifier" "identifies a wireless beacon service" as "**opposed to identifying a communication network or a device accessible using the short range wireless protocol**" (and not just any "name" or "number"); and

- selection of "a **particular** beacon service identifier" that indicates a particular received beacon transmission is "associated with a **particular** wireless beacon service"

These amendments to the independent claims, and other amendments to the dependent claims are in the nature of clarifying the scope of the matter claimed without broadening their scope. Therefore, this amendment is believed to be proper after a Final Office Action and timely under 37 CFR. 1.116.

Support for the amendments to claims 1, 30 and 31 is discussed in more detail below.

Support for the amendment to claim 3 is found in the original application at least at paragraphs [0013], [0056-0057], [101], [0187-189]. For example the specification teaches in [0187-0189] ".. providing a continuously or periodically changing account or device identifier to a specific application on a device to enhance the privacy of the identity of that device;" .. "changing of the identifier may be effected by a rule based generation local to the application.. ", and that "The

update of the identifier being synchronized to such that it is coordinated with predetermined scanning and broadcasting periods allowing for a known update boundary".

CLAIM REJECTIONS – 35 USC 112 (Pre-AIA, First Paragraph)

The claims stand rejected as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor or a joint inventor, or for applications subject to pre-AIA 35 U.S.C. 112, the inventor(s), at the time the application was filed, had possession of the claimed invention.

The Examiner was concerned that the specification does not disclose "the identifier is a number" and is "not a name of a wireless network."

With entry of the foregoing amendments, claims 1, 30 and 31 now replace "not a name of a wireless network" with "identifies a wireless beacon service as opposed to identifying a communication network or a device accessible using the short range wireless protocol".

Support for this amendment is found in several places in the specification which explain that the "beacon transmitter" may be a "broadcast only" device, in some embodiments. See for example Pars. [0080], [0040-0043], [0086], [0090], and [0150].

Fig. 9 depicts a "Device 2 (broadcast only device) 903", and the associated descriptive text indicates that the beacon transmitter is operating in a mode in which it only broadcasts beacons, thus the beacon transmitter is not receiving using the short range wireless protocol. Therefore the transmitted beacons from that beacon transmitter (and specifically the Beacon Service Identifier as claimed) are not identifying a device or communication network accessible from the beacon transmitter using the short range wireless protocol.

In an additional example, Paragraph [0081] discloses, in relation to Fig. 11, that some devices may be "broadcast only", that is operating in a mode in which the beacon transmitting device is not configured to receive communications using the short range wireless link to access another communication network (such as using an 802.11 access point) or devices, but rather is only configured to transmit the beacons for identification purposes (and thus *not* to advertise the availability of another network (or other devices) accessible using the device transmitting the beacons. In other words, such a beacon transmitter is "not identifying a communication network or device accessible using the short range wireless protocol", as claimed.

> "Most of the fields in FIG. 11 are self explanatory and typical in the industry such as the account number, however a few fields are worth a clarifying discussion .. Record index **10** is the Entity Type Field. This describes is the entity is a Merchant, Individual, or if the device associated with this account is a **broadcast only device."** **([0081] emphasis added.)**
>
> "Requiring the brokering of the communication via a central server can also allow a mobile device to receive information associated with a a **" broadcast only " device, such as in the museum example discussed previously.** This is important, as such broadcast devices can enable a vast set of new applications built upon the infrastructure developed in this application , beyond the museum application. Some of these applications may involve an electronic commerce aspect, for example." **([0086] emphasis added.)**

In Par [0090], additional details are provided, showing that operating in a broadcast only mode enables battery power operation, so that the device then only transmits intermittently and therefore does not provide access to a network connected to the device transmitting the beacons, and more specifically is not therefore "identifying a communication network or device accessible using the short range wireless protocol".

> "An embodiment of a transaction model, enabled by the infrastructure described above can be an event such as a concert, or sporting event (particularly when it is an indoor venue where no GPS is available). A number of **the broadcast only devices** are placed through out the seating areas. The devices are very short range, and **only transmit intermittently** and as a result may be battery powered and to remain active over a very

> long time period. Each device can be placed in a known location, in a predicable manner." **([0090], emphasis added.)**

As of the effective filing date of the application, one of skill in the art would have understood that such wireless beacon transmissions transmitted by a broadcast only device would NOT identify and provide access to a communication network using the short range wireless protocol. Nor would such a broadcast device identify and provide access to a device using the short range wireless protocol (such as might be the case, for example, for the transmissions from a standard WiFi access point which does generally provide access to a wired network "behind" the access point using "infrastructure mode" (the SSID) or an associated device (BSSID)). See Par. [0057]:

> "One component of a infrastructure network based wireless LAN is the use of a central access point or AP. In a mobile network the use of a central AP is not practical, as only the AP transmits an identifier, which does not meet the requirements of the preferred embodiment. The second topology for Wi- Fi networks is the so - called Ad - Hoc mode of operations, referred to as an independent basic service set or IBSS." **[0057]**

While there are embodiments in which a beacon transmitter may be attached to a another network (See Par. [0092] for example), the ***beacon service identifier*** in those embodiments continues to identify a ***wireless beacon service*** as previously claimed, and now is further claimed to require that it also does not identify "a communication network or a device accessible using the short range wireless protocol" which is supported as disclosed above in relation to a "broadcast only" beacon transmitter.

No new matter has been added.

CLAIM REJECTIONS – 35 USC 103

Claims 1-8, 11, 13, 14-19, 23, 24, 27, and 30 stand rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Ballai et al. (U.S. Pub No. 2004/0023640 A1) in view of Masuoka et al. (U..S. Pub No. 2005/0136845 A1) in further view of Gandolfo (U.S. Pub No.2003/0224787 A1).

The Applicant believes that the combination of Ballai, Masuoka and Gandolfo fail to teach or suggest several elements of the claims.

I. The Final Office Action does not Meet the Patent Office's Burden of Setting Forth a Prima Facie Case of Obviousness

In the following sections, a passage from claim 1 is presented with underlining, followed by the Examiner's last stated position in italics, and then followed by the Applicant's explanation for why the cited claim passage differs from the cited art.

(a) <u>receiving, at the wireless device via a second wireless protocol, stored information from one or more servers, the stored information relating to a particular entity or object associated with a first unique identifier, and wherein the second wireless protocol is different from the short range wireless protocol</u>

Examiner's Argument: [Ballai par 0025, The MU 65 accesses the communication network 1 via the APs 10-30, depending where the MU 65 is located at a particular time. Periodically, the APs 10- 30 transmit beacon signals. The system for handling communication of these records between the APs 10-30 and the server 70 may be implemented with the common simple network management protocol ("SNMP") or a similar protocol]

Applicant's Response:

A. In Ballai, the "wireless devices", that is the "mobile units" (MUs) 65, only operate using a single wireless protocol (WiFi). Therefore, the MUs 65 in Ballai do not receive "stored information" using a second wireless protocol" as claimed.

B. SNMP or "Simple Network Management Protocol" is used on the wired link 51 between the access points (APs) and the server in Ballai – and is not used on the wireless link between the APs and the MUs (the Applicant's "**second"** wireless protocol at the wireless device as claimed). While Ballai discloses different embodiments in which the MU performs scanning for rogue access points, SNMP is not disclosed as being used in such embodiments.

C. SNMP is also not a wireless protocol as claimed. SNMP is a standard that operates at the network layer and called "Simple Network Management Protocol" (as defined by the IETF as RFC 1157 (https://datatracker.ietf.org/doc/html/rfc1157)). SNMP defines a "solution to the network management problem" (RFC1157 at 3.2). It does not specify or define anything about the lower layers, such as link layer or a physical layer, and does not mention wireless at all. It certainly does not define anything about a "second" **wireless** connection as claimed.

D. Ballai does not disclose two different ***wireless*** protocols. Ballai only discloses using 802.11 to both scan at an MU for beacons from rogue access points ([0026-27], [0033]), and for the MUs to communicate with the legitimate 802.11 access points to which the MUs are connected. (See Ballai at [0026] "the APs may request that MUs supporting rouge AP detection functionality perform the scanning process as well".) Thus, Ballai discloses utilizing a **single** wireless protocol – and that single wireless protocol is not different from the "short range wireless protocol" used to receive the beacons during the scanning for rouge 802.11 Access Points. In contrast to this, the Applicant's claim requires "the second wireless protocol" to be "different from the short range wireless

protocol".

Ballai does not suggest nor make it obvious to utilize any other wireless protocol from the MUs. In one embodiment, Ballai explicitly teaches that the APs request that the MUs perform the scans, if they are enabled as a detector. "APs may request that MUs supporting rogue AP **detection** functionality perform the detection as well" Ballai at [0026]. In a different embodiment, Ballai discloses the MU may replace the AP in operation (See [0032] "the MU 65 as the **detecto**r, instead of the APs", and also hat the MUs may operate with no wireless connectivity for periods of time when "there is no coverage from authorized APs"). Given that in first embodiment mentioned (at [0026]) the AP commands the scans and reports back, and a second embodiment (at [0032]) where the MU has the standalone ability to identify rogue access points when there is no coverage, Ballai has no suggestion, teaching, motivation or benefit for using or the needed for any additional wireless link in addition to protocol used by the authorized APs.

In addition, if the MU in Ballai operates without the need for connectivity to the authorized APs using locally stored information, no location information determination is required as the mobile unit is disclosed as using a history of the detected signal power of a rogue AP to allow a user to move toward the device to physically locate it (See Par. [0032], and [0034] "*The user of the MU 65 may specifically track the rogue AP 60 by selecting it from the rogue AP detected register 85. The last Signal Strength measurement for the rogue AP 60 is then displayed on a bar chart 75 and a graph of past Signal Strength values are shown on a graph 80. The user can then locate the rogue AP 60 by moving to various locations as guided by the increasing Signal Strength values to find it.*". Thus, the only embodiment in Ballao in which no connectivity to the authorized APs is provided for, is also the only embodiment in which information is stored at the MU relating to authorized APs, is also the only embodiment taught as not utilizing

location determination processes. Ballai therefore actually teaches away from any combination with Masuoka.

E. While not clearly or convincingly disclosed in Ballai, to the extent a table of authorized devices is stored on an MU operating as a rouge AP detector, this still would not comprise "*information associated with a unique identifier for which any further action would be taken*", as recited by subsequent claim limitations. This is because only devices which are NOT authorized would trigger an action associated with having detected a rouge access point. There is no disclosure in Ballai of a MU utilizing any stored information of valid APs to allow or disallow a connection. The rouge detection process in the MU is disclosed as reporting and displaying, and nothing more ("When the MU 65 finds the rogue AP 60 it may display the record on the rogue AP detected register 85. The information displayed from the record may be user Selectable. For example, the MAC address and Signal Strength may be displayed." [0033]). Therefore there is no "stored information relating to a particular entity or object associated with a first unique identifier," received from a server for unknown rogue access points, and therefore there also cannot be any "further action" relating to the such stored information when a rogue AP is detected. In fact, Figure 3 of Ballai depicts a screen of a computer (MU) used as the mobile rogue access point detector. Only information related to a detected rogue AP is displayed. No "further actions" that depend on "stored information" are defined for known access points in Ballai, as will be discussed further below.

(b) causing selection of one or more of the unique identifiers from the first plurality of beacon transmissions, by filtering the beacon transmissions which include a particular beacon service identifier indicating that a particular received beacon transmission is associated with a particular wireless beacon service (as amended)

Examiner's Argument: [Masuoka par 0074, identity information from one or more mini-beacons in its vicinity and then select one of the mini-beacons that best satisfies a set of conditions based

on the intensity of the received signals. These procedures encompass operations that sample the signals, filter and smooth the observations and calculate which beacon best satisfies the current criteria and also determine whether the target client is stationary or moving]

Applicant's Response:

A. The Applicant's claimed "causing selection" step requires looking at a value of a field so that it can select only those beacons which include a ***particular*** "beacon service identifier". The beacon service identifier is a value contained in a data field. It is not "based on" an intensity of a received signal.

B. It is not possible to determine the value of a data field (such as the claimed beacon service identifier) based on a signal intensity measurement. Nor is it possible to determine whether a received transmission is "associated with a particular wireless beacon service" by performing operations such as intensity measurements, or sampling or smoothing alone. These each require detecting a data value contained in the encoded signal – such as by ***decoding*** a "sampled", "filtered", and "smoothed" signal" – and then comparing that decoded data value against the beacon service identifier.

C. Per the Applicant's claim, the beacon service identifier is used to determine whether or not **"a particular received beacon transmission**" is associated with a **particular** beacon service, as now claimed. It is not possible to determine if a transmission is "associated with a **particular** wireless beacon service" by merely considering its received signal strength. Such further operations such as detecting a particular field and whether that field matches other values are not "inherent" in Masuoka or the other prior art. The examiner must supply either a rationale for the inherent disclosure or evidence demonstrating the presence of the inherency. See *Schering Corp. v. Geneva Pharmaceuticals, Inc*. 339 F.3d 1372 (Fed Cir. 2003) and MPEP (need cite).

D. Masuoka does mention that "current criteria" might include determining (from the intensity) whether the target is moving or stationary), but that does still not suggest other criteria such as ***selecting only certain transmissions*** based on the value of a data field (such as the claimed beacon service identifier). For example, according to Masuoka, *"The target device can measure the received intensity of the beacon transmissions and determine an associated beacon that best Satisfies a* ***Specified criteria (e.g., largest signal Strength)****"* (Masuoka, Abstract, emphasis added).

Further detail is provided in Masuoka at Paragraph [0078] confirming that only received signal strength is utilized and that the "current criteria" apply only to the use of signal strength specifically. *"The target device will conduct measurements of the* ***Signal intensities received from all the mini-beacons within range by a measurement unit 107*** *..* ***determination unit 106 uses the data from a history file 108*** *and some of the deployment information 104 to determine the target client location and motion Status."* .. *"The determination unit 106 discriminates between* ***received signal Strengths transmitted by the beacons, and determines which of the beacons to Select*** *..,* ***based upon the current received signals,*** *the history, the target device motion status, and* ***Specified criteria (Such as largest signal Strength)***. ([0078] Emphasis Added). The "specified criteria" is thus based upon signal strength being "largest" or "largest signal strength difference" and "smallest location coverage area" (also signal strength based) - see Par. 157. It is clear that all these "criteria" are based upon the detected signal strength, and none is disclosed as relating to the value of a transmitted field relating to a "beacon service".

An additional example of the implementation of the location determination approach based upon RSS (Receive Signal Strength) as the only measured signal attribute is provided in Masuoka at [210] *"Thus the RSS for all mini-beacons 102 could be*

determined and fed to the line-based location calculation module. The location calculation module was provided with a table that included the mini-beacon Symbolic locations and the transmission power, indexed by the mini-beacon MAC address (this served as a unique ID). The location calculation would return the nearest beacon which would be converted to a symbolic location and reported to the calling application program.".

Finally, details related to the "smoothing" and other processing are described as being specially performed relating to these signal strength measurements, rather than some other property in Masuoka at [0222] "*2. How to handle the observed signal strength fluctuations: The mini-beacon of the present invention includes Smoothing procedures to compensation for variations in the received signal strength (multi-path, measurement methods, background noise, receiver implementation, etc), and there is significant variance in the measured values. If the actual instantaneous value of the reading were used, the location determination would be very unstable,"*

Based upon the forgoing, it is clear that the only attribute from the disclosed beacons of Masuoka that is used for the selection of a beacon to utilize in location determination is the **signal strength**, with at most some processing to increase the measurement reliability of that measurement as discussed above (and in relation to Masuoka at [0222]).

(c) <u>taking first further action relating to the stored information, if the first unique identifier is present among the selected one or more unique identifiers</u>

Examiner's Argument: [Masuoka par 0202, In particular, the user can obtain the unique ID of the mini-beacon, which is coded during manufacturing. The user can set the transmit power level through the user interface. The mini-beacons 102 may also be implemented with a mechanical dial for setting the transmit power level.

Applicant's Response:

A. The Applicant's claim requires the "stored information" to be first received from a server – and then the ***action must be related to that same "stored information" that was received from a server***. Masuoka's ability for a user to manually "set a transmit power level" is not related to information received from a server.

B. Furthermore, the supposed "unique ID" in Masuoka is explicitly stated to have been "coded during manufacturing", and is not disclosed as having been received from the server by the wireless device. In the example provided in Masuoka at [0202], immediately before the citation, Masuoka states "It is assumed that the mini-beacons 102 will be configured by a user computing device with a WLAN card that is running a Software program designed to communicate with the mini-beacons 102. This program provides a user interface that allows easy configuration of the beacons over the WLAN. In particular, the user can obtain the unique ID of the mini-beacon, which is coded during manufacturing." Thus, in the cited example, the "user computing device" is configuring the mini-beacon, and Masuoka provides no suggestion of obtaining the unique identifier from a server. In-contrast, a person of ordinary skill would expect a configuration process to discover the device based upon its transmissions including the unique ID, and then proceed to configure it.

C. "Setting a transmit power level" as in Masuoka is also not the claimed "determining if a first unique identifier is "among the selected identifiers". As stated above, Masuoka at [0204] relates to configuring the AP for operation, and therefore is not relevant to the forgoing claim limitations, including "taking further action" using the "stored information" only if the unique identifier is among the selected identifiers.

D. This argument is also not "moot" as suggested at page 38 of the Final Office Action. The claim explicitly requires the action to be related to the stored information – it cannot be just any action. The examiners "stored information" is apparently the table of authorized

access points in Ballia, residing on the mobile unit (MU) of Ballai. As discussed above, no action is taken with respect to the known access points of Ballai, but only when unknown access points are detected. Thus any action based upon an embodiment of Ballai would occur when no information is present relating to a detected beacon of Masuoka. In fact, Ballai's purpose is to determine the location of unknown rogue APs, where the purpose of Masuoka is to determine the location of a mobile unit based upon known access points. Therfore any stored information in Ballai cannot be related to any detected beacon information of Masuoka.

(d) a first plurality of beacon transmissions, each beacon transmission comprising three fields (a) a MAC address, (b) a unique identifier, wherein the unique identifier of each respective beacon transmission does not directly identify a location of a beacon transmitter, and (c) a beacon service identifier, wherein the beacon service identifier of each respective beacon transmission identifies a beacon service as opposed to identifying a communication network or device accessible using the short range wireless protocol (as currently amended)

Examiner Argument: [Gandolfo par 0108, This broadcast message could be a modified beacon or a separate broadcast message. As shown in FIG. 8, a broadcast message according to a preferred embodiment of the present invention includes a MAC header field 805, a sequence number field 810, a router/controller identifier (ID) field 815, an age field 820, a hop count field 825, a load feedback field 830, a number of associated devices field 835, and a device record field 840. The device record field 840 includes one or more device records 845. Each device record 845 includes a neighborhood MAC address field 850, a bridge connection field 855, a service field 860, a data rate field 865, and any additional fields 870, as necessary].

Applicant's Response:

A. The alleged "beacon service identifier" of Gandolfo is identified apparently as a "device record", which both identifies a device and a network accessible using the short range wireless protocol, and therefore does not meet this limitation as now claimed because the beacon service identifier is distinguished as being different from

identifying a network or device accessible using the short range wireless protocol, based upon the claim language "beacon service identifier of each respective beacon transmission identifies a beacon **service as opposed to identifying a communication network or device accessible using the short range wireless protocol**" (as currently amended).

B. In Gandolfo the service field 860 does not relate to a **beacon service** as claimed. Gandolfo's service field is part of a "device record field" that describes a service provided by a particular device (for example, such a field might be used by the device to advertise that it is a printer, a DVD player, a TV, or a display, etc.). The devices in Gandolfo are not providing a beacon service, but a service of a device accessible using the short range wireless protocol, as discussed above, and now clarified as amended.

II. One of Skill in the Art Would not be Motivated to Combine the Cited References

The Examiner provided two rationales for combining the references, repeated below in italics. The Applicant disagrees that one of skill on the art would have been motivated to do so. As explained below, the references would then fail to work for their intended purpose if combined.

Examiner Argument: Before the effective filing date it would have been obvious to one of ordinary skill in the art to combine the teachings of Ballai and Masuoka because this provides a system and method of using wireless communication devices as beacons to allow a target wireless communication device to determine its location.

Examiner Argument: Before the effective filing date it would have been obvious to one of ordinary skill in the art to combine the teachings of Ballai, Masuoka, and Gandolfo because provide a way by which networks could communicate with adjacent networks without the need for a fixed wired backbone.

Applicant's Response:

Ballai and Masuoka

Ballai is concerned with detecting rogue Access Points (APs) in a wireless local area network. It relies on a wired back bone between the APs and a server.

Masuoka is concerned with detecting the location of a device using beacons.

One would not look to Masouka's location determination approach to benefit Ballai's stand alone Mobile Unit (MU) rouge AP detection approach. As will be shown below, the MU of Ballai, in the stand alone embodiment (using the on-board AP information – the alleged "stored information"), locates the rogue AP by the user physically moving toward it rather than another location approach.

Ballai discloses three embodiments for detecting rouge APs:

> 1) the Access points perform the scans and report to a server [0025],
> 2) The "indirect scanning" approach: the mobile unit (MU) performs scans at the request of the APs, and reports all detected devices back to the AP, which can perform the rouge identification [0026], and
> 3) the MU can perform the entire detection process, even when not connected to any APs (out of the coverage area) ("*the MU 65 as the* ***detector****, instead of the APs*", and also that the MUs may operate with no wireless connectivity for periods of time when *"there is no coverage from authorized APs"* [0032]).

Embodiments 1 and 2 are not relevant to the claims as no information relating to the authorized APs (or unauthorized APs for that matter) are stored on the MUs, leaving only embodiment 3 as a relevant embodiment, in which the table of authorized APs is presumably stored on the MU.

Referring to the "stand alone" MU embodiment of Ballai, when the MU is operating without the need for connectivity to the authorized APs using locally stored information, **no location information determination is required** as the mobile unit is disclosed as using a history of the detected signal power of a rogue AP to allow a user to move toward the device to physically locate it (See Par. [0032], and [0034] "*The user of the MU 65 may specifically track the rogue AP 60 by selecting it from the rogue AP detected register 85. The last Signal Strength measurement for the rogue AP 60 is then displayed on a bar chart 75 and a graph of past Signal Strength values are shown on a graph 80. The user can then locate the rogue AP 60 by moving to various locations as guided by the increasing Signal Strength values to find it.*". Thus, the only embodiment in which information is stored at the MU relating to authorized APs, is also the only embodiment taught as not utilizing location determination processes but simply guiding the user to the rouge AP, and therefore **Ballai therefore actually teaches away from this combination with Masuoka's location determination approaches.**

Further, as noted above, the table in Balia is specifically unrelated to the rogue APs, and thus can not serve as "the stored information relating to a particular entity or object associated with a first unique identifier", which is allegedly the rogue APs (unknown) identifier.

Gandolfo, Ballia, and Masuoka

Gandolfo is concerned with enabling communication between wireless devices operating in two different networks. Gandolfo recognizes that a problem occurs when relying on wired backbones and thus seeks to eliminate their use.

Gandolfo therefore explicitly teaches away from using the wired backbone of Ballai. In Ballai, the wireless devices can connect to the server over the available WiFi network. There is no stated need or benefit in Ballai for a wireless device to reach other networks. Therefore the skilled person would not look to Ballai to improve Gandolfo or look to Gandolfo to improve Ballai.

Masuoka also suggests nothing about communicating with other networks, or eliminating a fixed wired backbone or detecting rogue devices. Therefore one would not look to Gandolfo to improve Masuoka or Ballai.

Also, there is no motivation to combine Gandolfo with Masuoka. Masuoka is concerned with determining a location. But the beacons of Gandolfo must carry a "hop count" indicating how many other devices a message has travelled through before it is transmitted to the mobile device. The fact that Gandolfo's beacons are relayed over several hops with indeterminant locations would frustrate Masuoka's specific purpose of determining location.

Furthermore, without the benefit of hindsight from the Applicant's disclosure, it would be unclear why a "modified beacon" carrying a "service field 860" (as in Gandolfo), would have been looked at to serve as a beacon service identifier to be used in conjunction with a power based filtering / selection step of Masuoka, or what that motivation would have been, to arrive at the claimed "selection of one or more of the unique identifiers from the first plurality of beacon transmissions, by filtering the beacon transmissions which include a particular beacon service identifier indicating that a particular received beacon transmission is associated with a particular wireless beacon service". The signal-power-based selection of Masuoka cannot utilize the alleged beacon service identifier (the service field 860) of Gandolfo to filter with "the service field" to select a "particular beacon service'.

MPEP § 2142 requires that "impermissible hindsight must be avoided and the examiner's legal conclusion of obviousness "must be reached on the basis of the facts gleaned from the prior art" (emphasis added).

There is no intersection of the stated purposes of the references. Since Ballai, Masuoka and Gandolfo would each not work or would not improve their respective operation if combined as suggested by the Examiner, it logically follows that the conclusion of obviousness has been improperly gleaned from Applicant's own specification and that the cited prior art combination is an exercise of impermissible hindsight.

Furthermore, none of the references recognize the problem solved by the Applicant—to reduce the processing of beacon transmissions that would otherwise result in a request being sent to a server. The Examiner has not explained why one of skill in the art seeking to solve this problem would have looked to the reference in an attempt to find a solution to the problem, i.e., the Examiner has provided no factual reasons as to why the prior art is pertinent to the Applicant's identified problem. In order for a reference to be "reasonably pertinent" to a problem, it must "logically [] have commended itself to an inventor's attention in considering his problem. " *In re ICON Health and Fitness, Inc.*, 496 F.3d 1374, 1379-80 (Fed. Cir. 2007) as cited in MPEP 2141.01(a)(I). Given that the three references cited each frustrate the purposes of the others, no such pertinence exists.

III. The Other Claims are Patentable for the Same Reasons

Claims 2-19 and 20-29 depend from claim 1 and thus incorporate the same limitations. These dependent claims are thus patentable for at least the same reasons stated above

Independent claims 30 and 31 recite the same or analogous limitations as claim 1. These other independent claims are thus patentable for the same reasons stated for claim 1.

CONCLUSION

It is believed that all remaining issues regarding the application have been addressed. However, the absence of a reply to a specific rejection, issue, or comment, including the Office Action's characterizations of the art, does not signify agreement with or concession of that rejection, issue, or comment. In addition, because the arguments made above may not be exhaustive, there

may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment or cancellation of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment or cancellation. In particular, Applicant does not concede to the Office Action's various assertions that specific claim recitations or specific teachings are well-known or prior art. Applicant reserves the right to prosecute the rejected claims in further prosecution of this or related applications.

If the Examiner believes a discussion would assist with further prosecution of the application, he is invited to contact the undersigned.

Respectfully submitted,

Date: March 29, 2022

/David J Thibodeau Jr Reg No 31671/

David J. Thibodeau, Jr.
Reg. No. 31,671
VLP Law Group LLP
Customer Number 86012
Tel.: (617) 925-5520
Fax: (617) 925-5530

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant :	Proctor, J. et al.	Art Unit :	2468
Serial No. :	17/366,826	Examiner :	HARLEY, JASON A
Filed :	July 02, 2021	Conf. No. :	8789
Title :	EFFICIENT AND SECURE COMMUNICATION USING WIRELESS SERVICE IDENTIFIERS		

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

AMENDMENT UNDER 37 CFR 1.116 IN REPLY TO FINAL ACTION

In response to the Final Office Action mailed December 14, 2021, and in connection with the After Final Consideration Pilot 2.0 Request filed herewith, please consider entering an amendment as follows:

Amendments to the Claims are reflected in the claim listing that begins on page 2.

Remarks/Arguments begin on page 11.

Electronic Patent Application Fee Transmittal

Application Number:	17366826
Filing Date:	02-Jul-2021
Title of Invention:	EFFICIENT AND SECURE COMMUNICATION USING WIRELESS SERVICE IDENTIFIERS
First Named Inventor/Applicant Name:	James A. Proctor
Filer:	David J. Thibodeau/Elisabeth Smith
Attorney Docket Number:	111054-0001U7

Filed as Small Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension - 1 month with $0 paid	2251	1	110	110
Miscellaneous:				
			Total in USD ($)	**110**

Electronic Acknowledgement Receipt

EFS ID:	45339994
Application Number:	17366826
International Application Number:	
Confirmation Number:	8789
Title of Invention:	EFFICIENT AND SECURE COMMUNICATION USING WIRELESS SERVICE IDENTIFIERS
First Named Inventor/Applicant Name:	James A. Proctor
Customer Number:	86012
Filer:	David J. Thibodeau/Elisabeth Smith
Filer Authorized By:	David J. Thibodeau
Attorney Docket Number:	111054-0001U7
Receipt Date:	29-MAR-2022
Filing Date:	02-JUL-2021
Time Stamp:	10:40:22
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	$110
RAM confirmation Number	E20223SA40453728
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Response After Final Action	20220329_111054-0001U7_TPO_Response_Final_Office_Action.pdf	268615 958406738d6b495d63c6b492891d42e0edcebe5a	no	29
Warnings:					
Information:					
2	After Final Consideration Program Request	20220329_111054-0001U7_TPO_AFCP_Request.pdf	228695 4df2456642e12bd69e9a661e0fdfc6d190bd4b02	no	2
Warnings:					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	38327 4cf340234b35647ab05937acf0c382924f4eb6fe	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	535637		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Doc Code: A.NE.AFCP
Document Description: After Final Consideration Pilot Program Request

PTO/SB/434 (12-20)

CERTIFICATION AND REQUEST FOR CONSIDERATION UNDER THE AFTER FINAL CONSIDERATION PILOT PROGRAM 2.0

Practitioner Docket No.:	Application No.:	Filing Date:
111054-0001U7	17/366,826	07-02-2021
First Named Inventor:	**Title:**	
James A. Proctor	EFFICIENT AND SECURE COMMUNICATION USING WIRELESS SERVICE IDENTIFIERS	

APPLICANT HEREBY CERTIFIES THE FOLLOWING AND REQUESTS CONSIDERATION UNDER THE AFTER FINAL CONSIDERATION PILOT PROGRAM 2.0 (AFCP 2.0) OF THE ACCOMPANYING RESPONSE UNDER 37 CFR 1.116.

1. The above-identified application is (i) an original utility, plant, or design nonprovisional application filed under 35 U.S.C. 111(a) [a continuing application (*e.g.*, a continuation or divisional application) is filed under 35 U.S.C. 111(a) and is eligible under (i)], or (ii) an international application that has entered the national stage in compliance with 35 U.S.C. 371(c).
2. The above-identified application contains an outstanding final rejection.
3. Submitted herewith is a response under 37 CFR 1.116 to the outstanding final rejection. The response includes an amendment to at least one independent claim, and the amendment does not broaden the scope of the independent claim in any aspect.
4. This certification and request for consideration under AFCP 2.0 is the only AFCP 2.0 certification and request filed in response to the outstanding final rejection.
5. Applicant is willing and available to participate in any interview requested by the examiner concerning the present response.
6. This certification and request is being filed electronically using the Office's electronic filing system (EFS-Web).
7. Any fees that would be necessary consistent with current practice concerning responses after final rejection under 37 CFR 1.116, *e.g.*, extension of time fees, are being concurrently filed herewith. [There is no additional fee required to request consideration under AFCP 2.0.]
8. By filing this certification and request, applicant acknowledges the following:
    - Reissue applications and reexamination proceedings are not eligible to participate in AFCP 2.0.
    - The examiner will verify that the AFCP 2.0 submission is compliant, *i.e.*, that the requirements of the program have been met (see items 1 to 7 above). For compliant submissions:
        - The examiner will review the response under 37 CFR 1.116 to determine if additional search and/or consideration (i) is necessitated by the amendment and (ii) could be completed within the time allotted under AFCP 2.0. If additional search and/or consideration is required but cannot be completed within the allotted time, the examiner will process the submission consistent with current practice concerning responses after final rejection under 37 CFR 1.116, *e.g.*, by mailing an advisory action.
        - If the examiner determines that the amendment does not necessitate additional search and/or consideration, or if the examiner determines that additional search and/or consideration is required and could be completed within the allotted time, then the examiner will consider whether the amendment places the application in condition for allowance (after completing the additional search and/or consideration, if required). If the examiner determines that the amendment does not place the application in condition for allowance, then the examiner will contact the applicant and request an interview.
            - The interview will be conducted by the examiner, and if the examiner does not have negotiation authority, a primary examiner and/or supervisory patent examiner will also participate.
            - If the applicant declines the interview, or if the interview cannot be scheduled within ten (10) calendar days from the date that the examiner first contacts the applicant, then the examiner will proceed consistent with current practice concerning responses after final rejection under 37 CFR 1.116.

Signature	Date	Practitioner Registration No.
/David J Thibodeau Jr/	29-March-2022	31671
Name (Print/Typed)	**Telephone Number**	
David J. Thibodeau, Jr.	(617) 925-5520	

***Note**: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications. Submit multiple forms if more than one signature is required, see below*.*

☐ * Total of _____ forms are submitted.

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	17/366,826	Proctor et al.
	Examiner	**Art Unit**
	JASON A HARLEY	2468

CPC						
Symbol					**Type**	**Version**
G06Q	/	30	/	0261	F	2013-01-01
H04W	/	4	/	029	I	2018-02-01
H04W	/	4	/	21	I	2018-02-01
H04W	/	4	/	80	I	2018-02-01
G06Q	/	10	/	0875	I	2013-01-01
G06Q	/	20	/	202	I	2013-01-01
G06Q	/	30	/	0207	I	2013-01-01
G06Q	/	30	/	0222	I	2013-01-01
G06Q	/	30	/	0226	I	2013-01-01
G06Q	/	30	/	0242	I	2013-01-01
G06Q	/	30	/	0282	I	2013-01-01
G06Q	/	30	/	0601	I	2013-01-01
G06Q	/	30	/	0623	I	2013-01-01
H04L	/	63	/	20	I	2013-01-01
H04W	/	8	/	005	I	2013-01-01
H04W	/	12	/	02	I	2013-01-01
H04W	/	12	/	04	I	2013-01-01
H04L	/	67	/	24	I	2013-01-01
H04L	/	67	/	306	I	2013-01-01
H04L	/	67	/	18	I	2013-01-01
H04L	/	69	/	18	I	2013-01-01
H04W	/	76	/	11	I	2018-02-01
H04W	/	8	/	26	I	2013-01-01
G06F	/	21	/	60	I	2013-01-01
G06Q	/	20	/	3224	I	2013-01-01
G06Q	/	20	/	3278	I	2013-01-01
G06Q	/	20	/	385	I	2013-01-01
G06Q	/	20	/	4016	I	2013-01-01
G06Q	/	50	/	01	I	2013-01-01
H04W	/	4	/	023	I	2013-01-01
H04W	/	88	/	06	A	2013-01-01

/JASON A HARLEY/ Examiner, Art Unit 2468 (Assistant Examiner)	17 April 2022 (Date)	**Total Claims Allowed:** 30	
/WUTCHUNG CHU/ Primary Examiner, Art Unit 2468 (Primary Examiner)	19 April 2022 (Date)	O.G. Print Claim(s) 1	O.G. Print Figure 4

U.S. Patent and Trademark Office — Part of Paper No.: 20220417

Petitioner Samsung Ex-1004, 0552

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	17/366,826	Proctor et al.
	Examiner	**Art Unit**
	JASON A HARLEY	2468

CPC							
Symbol						**Type**	**Version**
H04L	/	61	/	2038		A	2013-01-01
H04L	/	61	/	6022		A	2013-01-01

CPC Combination Sets								
Symbol					**Type**	**Set**	**Ranking**	**Version**
	/		/					

/JASON A HARLEY/ Examiner, Art Unit 2468	17 April 2022	**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	30	
/WUTCHUNG CHU/ Primary Examiner, Art Unit 2468	19 April 2022	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	4

U.S. Patent and Trademark Office — Part of Paper No.: 20220417

Petitioner Samsung Ex-1004, 0553

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	17/366,826	Proctor et al.
	Examiner	**Art Unit**
	JASON A HARLEY	2468

INTERNATIONAL CLASSIFICATION					
CLAIMED					
H04W	/	4	/	80	
H04W	/	4	/	029	
H04W	/	36	/	34	
H04B	/	5	/	00	
H04W	/	4	/	029	
H04W	/	84	/	12	
H04W	/	40	/	24	

NON-CLAIMED				
	/		/	

US ORIGINAL CLASSIFICATION	
CLASS	**SUBCLASS**
370	230

CROSS REFERENCES(S)						
CLASS	**SUBCLASS (ONE SUBCLASS PER BLOCK)**					
455	41.2					

/JASON A HARLEY/ Examiner, Art Unit 2468 (Assistant Examiner)	17 April 2022 (Date)	**Total Claims Allowed:** 30	
/WUTCHUNG CHU/ Primary Examiner, Art Unit 2468 (Primary Examiner)	19 April 2022 (Date)	O.G. Print Claim(s) 1	O.G. Print Figure 4

U.S. Patent and Trademark Office

Part of Paper No.: 20220417

Petitioner Samsung Ex-1004, 0554

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	17/366,826	Proctor et al.
	Examiner	**Art Unit**
	JASON A HARLEY	2468

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIMS

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
1	1	10	10		19	27	28								
2	2	11	11	19	20	28	29								
3	3	12	12	20	21	29	30								
4	4	13	13	21	22	30	31								
5	5	14	14	22	23										
6	6	15	15	23	24										
7	7	16	16	24	25										
8	8	17	17	25	26										
9	9	18	18	26	27										

/JASON A HARLEY/ Examiner, Art Unit 2468 (Assistant Examiner)	17 April 2022 (Date)	**Total Claims Allowed:** 30	
/WUTCHUNG CHU/ Primary Examiner, Art Unit 2468 (Primary Examiner)	19 April 2022 (Date)	O.G. Print Claim(s) 1	O.G. Print Figure 4

Notice of References Cited	Application/Control No. 17/366,826	Applicant(s)/Patent Under Reexamination Proctor et al.	
	Examiner JASON A HARLEY	Art Unit 2468	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-20150200811-A1	07-2015	KASSLIN; Mika	H04W48/18	370/254
*	B	US-20030224787-A1	12-2003	Gandolfo, Pierre T.	H04W8/08	455/435.2
*	C	US-20080205340-A1	08-2008	Meylan; Arnaud	H04W8/005	370/331
	D					
	E					
	F					
	G					
	H					
	I					
	J					
	K					
	L					
	M					

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

86012 7590 04/28/2022

VLP Law Group LLP
555 Bryant Street
Suite 820
Palo Alto, CA 94301

EXAMINER
HARLEY, JASON A

ART UNIT	PAPER NUMBER
2468	

DATE MAILED: 04/28/2022

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/366,826	07/02/2021	James A. Proctor JR.	111054-0001U7	8789

TITLE OF INVENTION: EFFICIENT AND SECURE COMMUNICATION USING WIRELESS SERVICE IDENTIFIERS

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$600	$0.00	$0.00	$600	07/28/2022

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Maintenance fees are due in utility patents issuing on applications filed on or after Dec. 12, 1980. It is patentee's responsibility to ensure timely payment of maintenance fees when due. More information is available at www.uspto.gov/PatentMaintenanceFees.

Petitioner Samsung Ex-1004, 0557

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

By fax, send to: (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

86012 7590 04/28/2022

VLP Law Group LLP
555 Bryant Street
Suite 820
Palo Alto, CA 94301

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

(Typed or printed name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/366,826	07/02/2021	James A. Proctor JR.	111054-0001U7	8789

TITLE OF INVENTION: EFFICIENT AND SECURE COMMUNICATION USING WIRELESS SERVICE IDENTIFIERS

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$600	$0.00	$0.00	$600	07/28/2022

EXAMINER	ART UNIT	CLASS-SUBCLASS
HARLEY, JASON A	2468	370-329000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

❑ Change of correspondence address (or Change of Correspondence Address form PTO/AIA/122 or PTO/SB/122) attached.

❑ "Fee Address" indication (or "Fee Address" Indication form PTO/AIA/47 or PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 _____
2 _____
3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ❑ Individual ❑ Corporation or other private group entity ❑ Government

4a. Fees submitted: ❑ Issue Fee ❑ Publication Fee (if required) ❑ Advance Order - # of Copies _____

4b. Method of Payment: *(Please first reapply any previously paid fee shown above)*

❑ Electronic Payment via EFS-Web ❑ Enclosed check ❑ Non-electronic payment by credit card (Attach form PTO-2038)

❑ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. _____

5. **Change in Entity Status** (from status indicated above)

❑ Applicant certifying micro entity status. See 37 CFR 1.29

❑ Applicant asserting small entity status. See 37 CFR 1.27

❑ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

Petitioner Samsung Ex-1004, 0558

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/366,826	07/02/2021	James A. Proctor JR.	111054-0001U7	8789

86012 7590 04/28/2022

VLP Law Group LLP
555 Bryant Street
Suite 820
Palo Alto, CA 94301

EXAMINER	
HARLEY, JASON A	
ART UNIT	PAPER NUMBER
2468	

DATE MAILED: 04/28/2022

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(Applications filed on or after May 29, 2000)

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

Petitioner Samsung Ex-1004, 0559

OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Notice of Allowability	Application No. 17/366,826	Applicant(s) Proctor et al.	
	Examiner JASON A HARLEY	Art Unit 2468	AIA (FITF) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☑ This communication is responsive to 3/29/22.
   ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

3. ☑ The allowed claim(s) is/are 1-19 and 21-31 . As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information , please see **http://www.uspto.gov/patents/init_events/pph/index.jsp** or send an inquiry to **PPHfeedback@uspto.gov.**

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   Certified copies:

   a) ☐ All b) ☐ Some* c) ☐ None of the:

   1. ☐ Certified copies of the priority documents have been received.
   2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
   3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____ .

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☑ Notice of References Cited (PTO-892)
2. ☑ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date 2/22/22.
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material _____.
4. ☑ Interview Summary (PTO-413), Paper No./Mail Date. _____.
5. ☐ Examiner's Amendment/Comment
6. ☑ Examiner's Statement of Reasons for Allowance
7. ☐ Other _____.

/JASON A HARLEY/ Examiner, Art Unit 2468	/WUTCHUNG CHU/ Primary Examiner, Art Unit 2468

Notice of Pre-AIA or AIA Status

1. The present application is being examined under the pre-AIA first to invent provisions.

Allowable Subject Matter

2. Claims 1-19 and 21-31 are allowed. The prior art disclose receiving at a wireless device via a short range wireless protocol, a first plurality of beacon transmissions each beacon comprising three fields. The prior art fail to show a beacon service identifier wherein the beacon service identifier wherein the beacon service identifier of each respective beacon transmission identifies beacon service as opposed to identifying a communication network or a device accessible using the short range wireless protocol.

Conclusion

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to JASON A HARLEY whose telephone number is (571)270-5435. The examiner can normally be reached 7:30-300 6:30-8:30.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an

interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at http://www.uspto.gov/interviewpractice.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Asad M Nawaz can be reached on (571) 272-3988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of published or unpublished applications may be obtained from Patent Center. Unpublished application information in Patent Center is available to registered users. To file and manage patent submissions in Patent Center, visit: https://patentcenter.uspto.gov. Visit https://www.uspto.gov/patents/apply/patent-center for more information about Patent Center and https://www.uspto.gov/patents/docx for information about filing in DOCX format. For additional questions, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JASON A HARLEY/
Examiner, Art Unit 2468

/WUTCHUNG CHU/
Primary Examiner, Art Unit 2468

Applicant-Initiated Interview Summary	**Application No.** 17/366,826	**Applicant(s)** Proctor et al.		
	Examiner JASON A HARLEY	**Art Unit** 2468	**AIA (First Inventor to File) Status** No	**Page** 1 of 1

All Participants (applicant, applicants representative, PTO personnel)	**Title**	**Type**
JASON A HARLEY	Examiner	Telephonic
David Thibodeau 31671	Attorney	

Date of Interview: 15 April 2022

Issues Discussed:

Proposed Amendment(s)

The applicant initiated interview to discuss claim amendments and prior art. The applicant discuss amendments regarding the beacons service identifier identifying beacon service as opposed to identifying a communication network or a device. The applicant believe the case should be in condition for allowance. The will conduct further search and consideration upon receipt of formal response.

/JASON A HARLEY/ Examiner, Art Unit 2468	/WUTCHUNG CHU/ Primary Examiner, Art Unit 2468

Applicant is reminded that a complete written statement as to the substance of the interview must be made of record in the application file. It is the applicants responsibility to provide the written statement, unless the interview was initiated by the Examiner and the Examiner has indicated that a written summary will be provided. See MPEP 713.04
Please further see:
MPEP 713.04
Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews, paragraph (b)
37 CFR § 1.2 Business to be transacted in writing

Applicant recordation instructions: The formal written reply to the last Office action must include the substance of the interview. (See MPEP section 713.04). If a reply to the last Office action has already been filed, applicant is given a non-extendable period of the longer of one month or thirty days from this interview date, or the mailing date of this interview summary form, whichever is later, to file a statement of the substance of the interview.

Examiner recordation instructions: Examiners must summarize the substance of any interview of record. A complete and proper recordation of the substance of an interview should include the items listed in MPEP 713.04 for complete and proper recordation including the identification of the general thrust of each argument or issue discussed, a general indication of any other pertinent matters discussed regarding patentability and the general results or outcome of the interview, to include an indication as to whether or not agreement was reached on the issues raised.

Petitioner Samsung Ex-1004, 0564

PE2E SEARCH - Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	British Equivalents	Time Stamp
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Petitioner Samsung Ex-1004, 0565

		20070178886-$ | US- 20070178907-$ | US- 20070179792-$ | US- 20070187491-$ | US- 20070190494-$ | US- 20070201417-$ | US- 20070204158-$ | US- 20070211727-$ | US- 20070230441-$ | US- 20070233367-$ | US- 20070237321-$ | US- 20070242643-$ | US- 20070242765-$ | US- 20070244633-$ | US- 20070244811-$ | US- 20070255653-$ | US- 20070264968-$ | US- 20070264991-$ | US- 20070270099-$ | US- 20070280269-$ | US- 20070281634-$ | US- 20070286111-$ | US- 20080002641-$ | US- 20080008117-$ | US- 20080008118-$ | US- 20080008119-$ | US- 20080008120-$ | US- 20080008121-$ | US- 20080009307-$ | US- 20080010190-$ | US- 20080025282-$ | US- 20080036653-$ | US- 20080037487-$ | US- 20080039020-$ | US- 20080045236-$ | US- 20080051033-$ | US- 20080051059-$ | US- 20080052109-$ | US- 20080056215-$ | US- 20080070593-$ | US- 20080071874-$ | US- 20080080397-$ | US- 20080089519-$ | US- 20080097851-$ | US- 20080097879-$ | US- 20080099552-$ | US- 20080102856-$ | US- 20080104227-$ | US- 20080108308-$ | US- 20080109741-$ | US- 20080109843-$ | US- 20080114647-$ | US- 20080114699-$ | US- 20080114834-$ | US- 20080119136-$ | US- 20080132170-$ | US- 20080132223-$ | US- 20080132252-$ | US-					

Petitioner Samsung Ex-1004, 0566

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L3	79	(US-7492254-$ | US- 7502933-$ | US- 7509131-$ | US- 7515914-$ | US- 7522058-$ | US- 7545784-$ | US- 7546141-$ | US- 7580699-$ | US- 7590246-$ | US- 7620026-$ | US- 7630986-$ | US- 7647024-$ | US- 7647055-$ | US- 7661132-$ | US-	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/08/06 11:44 AM

Petitioner Samsung Ex-1004, 0567

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Petitioner Samsung Ex-1004, 0568

		9137012-$ | US- 9161164-$ | US- 9373091-$ | US- 9646319-$ | US- 9659285-$ | US- 9734198-$ | US- 9805347-$).DID.					
L4	180	(US-10133527-$ | US- 10140072-$ | US- 10387087-$ | US- 10489096-$ | US- 10642576-$ | US- 17366826-$ | US- 20010003191-$ | US- 20010036200-$ | US- 20020032746-$ | US- 20020061009-$ | US- 20020065720-$ | US- 20020073027-$ | US- 20020077083-$ | US- 20020077118-$ | US- 20020101993-$ | US- 20020123965-$ | US- 20020128932-$ | US- 20020131445-$ | US- 20020161666-$ | US- 20020188565-$ | US- 20020188656-$ | US- 20030021250-$ | US- 20030028481-$ | US- 20030045272-$ | US- 20030053484-$ | US- 20030074259-$ | US- 20030100328-$ | US- 20030134650-$ | US- 20030149874-$ | US- 20030158959-$ | US- 20030195808-$ | US- 20030200140-$ | US- 20030200489-$ | US- 20030220835-$ | US- 20040019564-$ | US- 20040030601-$ | US- 20040076136-$ | US- 20040093268-$ | US- 20040097243-$ | US- 20040137886-$ | US- 20040167837-$ | US- 20040186768-$ | US- 20040190468-$ | US- 20040203895-$ | US- 20040205198-$ | US- 20040208151-$ | US- 20040243519-$ | US- 20040245332-$ | US- 20040260608-$ | US- 20040264404-$ | US- 20040264466-$ | US-	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/08/06 11:44 AM

Petitioner Samsung Ex-1004, 0569

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Petitioner Samsung Ex-1004, 0570

		7005968-$ | US- 7010267-$ | US- 7016336-$ | US- 7020106-$ | US- 7030761-$ | US- 7030812-$ | US- 7039027-$ | US- 7039358-$ | US- 7065559-$ | US- 7126926-$ | US- 7127236-$ | US- 7142120-$ | US- 7142527-$ | US- 7151764-$ | US- 7156311-$ | US- 7158756-$ | US- 7167487-$ | US- 7173922-$ | US- 7173923-$ | US- 7174031-$ | US- 7177594-$ | US- 7181521-$ | US- 7185204-$ | US- 7194438-$ | US- 7197326-$ | US- 7200132-$ | US- 7206820-$ | US- 7207480-$ | US- 7209468-$ | US- 7213742-$ | US- 7213743-$ | US- 7221668-$ | US- 7233801-$ | US- 7233960-$ | US- 7245602-$ | US- 7246149-$ | US- 7249182-$ | US- 7254406-$ | US- 7280836-$ | US- 7280847-$ | US- 7289810-$ | US- 7302256-$ | US- 7305245-$ | US- 7313120-$ | US- 7315944-$ | US- 7322043-$ | US- 7324824-$ | US- 7324957-$ | US- 7327701-$ | US- 7330112-$ | US- 7339909-$ | US- 7340438-$ | US- 7340439-$ | US- 7342876-$ | US- 7343564-$ | US- 7346341-$ | US- 7349871-$ | US- 7359674-$ | US-					

Petitioner Samsung Ex-1004, 0571

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L5	65	(US-0156856-$ | US- 0702686-$ | US- 1098477-$ | US- 1207654-$ | US- 1296155-$ | US- 17366826-$ | US- 1759620-$ | US- 1908235-$ | US- 20050114654-$ | US- 20050124359-$ | US- 20050131837-$ | US- 20050136845-$ | US- 20050136891-$ | US- 20050156026-$ | US- 20050165667-$ | US- 20050174975-$ | US- 20050180367-$ | US- 20050185615-$ | US- 20050187873-$ | US- 20050187959-$ | US- 20050188062-$ | US- 20050213553-$ | US- 20050243737-$ | US- 20050243781-$ | US- 20050250552-$ | US- 20050266868-$ | US- 20050273440-$ | US- 20060003785-$ | US- 20060022038-$ | US- 20060029024-$ | US- 20060030335-$ | US- 20060032901-$ | US- 20060045042-$ | US- 20060046709-$ | US- 20060047835-$ | US- 20060050728-$ | US- 20060069922-$ | US- 20060079284-$ | US- 20060085419-$ | US- 20060089134-$ | US- 20060089876-$ | US- 20060094447-$ | US- 20060095348-$ | US- 20060095349-$ | US-	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/08/06 11:45 AM

Petitioner Samsung Ex-1004, 0572

		20060099966-$ | US-20060104200-$ | US-20060104243-$ | US-20060106850-$ | US-20060111045-$ | US-2218268-$ | US-2235002-$ | US-2506121-$ | US-2564287-$ | US-2688189-$ | US-2752347-$ | US-2766024-$ | US-2766184-$ | US-2798749-$ | US-7936736-$ | US-8090359-$ | US-8116749-$ | US-8369842-$ | US-8385896-$ | US-8385913-$ | US-9038129-$ | US-9161164-$).DID.					
L6	2	("20200304978").PN.	(US-PGPUB; USPAT; USOCR; DERWENT)	OR	OFF	OFF	2021/08/06 11:55 AM
L7	9	((("PROXICOM") near3 ("WIRELESS") near3 ("LLC"))).AS,AANM.	(USPAT)	OR	OFF	OFF	2021/08/06 11:55 AM
L8	579	((("Proctor") near3 ("James") near3 ("A"))).INV.	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2021/08/06 11:56 AM
L9	1982	(beacon near3(transmission or transfer$4 or transmit$5)) same(mac adj address)	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/08/06 12:13 PM
L10	254	(beacon near3(transmission or transfer$4 or transmit$5)) same(picture or photo or jpeg)	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/08/06 12:14 PM
L11	6564	(beacon near3(transmission or transfer$4 or transmit$5)) same(service)	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/08/06 12:14 PM
L12	9	L9 and L10 and L11	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/08/06 12:15 PM
L13	2687	(beacon near3(transmission or transfer$4 or transmit$5 or signal$2)) same(mac adj address)	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/08/06 12:18 PM
L14	488	(beacon near3(transmission or	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/08/06 12:18 PM

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		transfer$4 or transmit$5 or signal$2)) same(picture or photo or jpeg)					
L15	8928	(beacon near3(transmission or transfer$4 or transmit$5 or signal$2)) same(service)	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/08/06 12:18 PM
L16	14	L13 and L14 and L15	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/08/06 12:19 PM
L17	3513	(beacon near3(transmission or transfer$4 or transmit$5 or signal$2)) same(picture or photo or jpeg or content or (fingerprint$2))	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/08/06 12:25 PM
L18	130	L13 and L17 and L15	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/08/06 12:26 PM
L19	2	"20050136845"	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/08/06 12:39 PM
L20	1	"20060050728"	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/08/06 12:39 PM
L21	18908	(beacon near3(transmission or transfer$4 or transmit$5 or signal$2)) same(service or number)	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/08/06 01:32 PM
L22	2687	(beacon near3(transmission or transfer$4 or transmit$5 or signal$2)) same(mac adj address)	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/08/06 01:34 PM
L23	8928	(beacon near3(transmission or transfer$4 or transmit$5 or signal$2)) same(service)	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/08/06 01:34 PM
L24	947	L22 and L21 and L23	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/08/06 01:34 PM
L25	600	(bluetooth or (wifi)) and L24	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/08/06 01:36 PM
L26	29410	(beacon near3(transmission or transfer$4 or transmit$5 or signal$2)) same(interval$2 or period or time)	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/08/06 01:51 PM
L27	436	L26 and L25	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/08/06 01:52 PM
L28	57	(US-17366826-$ | US-	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/08/06

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		20090197681-$ | US- 20090219132-$ | US- 20090270120-$ | US- 20090271211-$ | US- 20090281904-$ | US- 20090282130-$ | US- 20090285119-$ | US- 20090287827-$ | US- 20090288012-$ | US- 20090291909-$ | US- 20090303250-$ | US- 20090303926-$ | US- 20090307132-$ | US- 20090307133-$ | US- 20090310517-$ | US- 20090311963-$ | US- 20090313105-$ | US- 20090323647-$ | US- 20090323648-$ | US- 20090325601-$ | US- 20100020746-$ | US- 20100030638-$ | US- 20100030651-$ | US- 20100041402-$ | US- 20100049615-$ | US- 20100051685-$ | US- 20100062758-$ | US- 20100063867-$ | US- 20100096450-$ | US- 20100124196-$ | US- 20100138481-$ | US- 20100141437-$ | US- 20100201536-$ | US- 20100250673-$ | US- 20100274859-$ | US- 20100284447-$ | US- 20110039592-$ | US- 20110119733-$ | US- 20120066043-$ | US- 20120066199-$ | US- 20130217332-$ | US- 20150249637-$ | US- 20150281939-$ | US- 20160025837-$ | US- 20160093184-$ | US- 20170011425-$ | US- 20170131994-$ | US- 20190250239-$ | US- 8090359-$ | US- 8369842-$ | US- 8370955-$ | US- 8374592-$ | US- 8385896-$ | US- 8385913-$ | US- 8849698-$ | US- 9038129-$ | US- 9161164-$).DID.					02:09 PM
L29	488	(beacon	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/08/06

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		near3(transmission or transfer$4 or transmit$5 or signal$2)) same(picture or photo or jpeg)					02:22 PM
L30	49	L29 and L21 and L22	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/08/06 02:22 PM
L31	45	(bluetooth or (wifi)) and L30	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/08/06 02:23 PM
L32	2	"20050136845"	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/08/08 12:49 PM
L33	1	"2006005028"	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/08/09 09:42 AM
L34	1	"20060050728"	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/08/09 09:42 AM
L35	4841	(advertis$4) same(presentation or display) same(identifier$2)	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/08/09 09:45 AM
L36	43189	(beacon near3(transmission or transfer$4 or transmit$5))	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/08/09 09:46 AM
L37	202	L35 and L36	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/08/09 09:46 AM
L38	1414	(advertis$4) same(presentation or display) same(identifier$2) same(ue or terminal or wtru or phone or computer)	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/08/09 09:49 AM
L39	30	L38 and L36	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/08/09 09:49 AM
L40	700	email and L38	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/08/09 10:10 AM
L41	8	L40 and L36	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/08/09 10:10 AM
L42	70185	beacon same(transmission or transfer$4 or transmit$5)	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/08/09 10:22 AM
L43	25	L40 and L42	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/08/09 10:22 AM
L44	94136	(account or profile) near7(identifier$2)	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/08/09 10:24 AM
L45	240	L40 and L44	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/08/09 10:24 AM
L46	2	"20080195621"	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/08/09 11:34 AM
L47	58023	(advertis$4) same(location)	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/08/09 08:03 PM

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L48	13391	(mu or ue or terminal or wtru or phone or apparatus) near7(indoor)	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/08/09 08:13 PM
L49	58065	(advertis$4) same(location)	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/08/10 09:01 AM
L50	13399	(mu or ue or terminal or wtru or phone or apparatus) near7(indoor)	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/08/10 09:01 AM
L51	326	L49 and L50	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/08/10 09:01 AM
L52	70245	beacon same(transmission or transfer$4 or transmit$5)	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/08/10 09:03 AM
L53	89	L51 and L52	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/08/10 09:03 AM
L54	351	(time or timing) near7(notification) same (beacon) same(transmission or transfer$4 or transmit$5)	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/08/10 10:26 AM
L55	97	(timing) near7(notification) same (beacon) same(transmission or transfer$4 or transmit$5)	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/08/10 10:43 AM
L56	2	"20070201417"	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/08/10 11:57 AM
L57	1	"20070043828"	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/08/10 11:57 AM
L58	284	((("Proctor") near3 ("James") near3 ("A"))).INV.	(USPAT)	OR	OFF	OFF	2021/08/10 12:02 PM
L59	34	L58 and beacon	(USPAT)	OR	OFF	OFF	2021/08/10 12:03 PM
L60	1	"16/817896"	(USPAT)	OR	OFF	OFF	2021/08/10 12:06 PM
L61	1	"15271410"	(USPAT)	OR	OFF	OFF	2021/08/10 12:10 PM
L62	0	"15/271410"	(USPAT)	OR	OFF	OFF	2021/08/10 12:10 PM
L63	319526	h04l 67/306	(USPAT)	OR	OFF	OFF	2021/08/10 07:07 PM
L64	177597	h04w 4/80	(USPAT)	OR	OFF	OFF	2021/08/10 07:07 PM
L65	319522	h04l 61/6022	(USPAT)	OR	OFF	OFF	2021/08/10 07:07 PM
L66	177387	h04w 4/029	(USPAT)	OR	OFF	OFF	2021/08/10

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							07:08 PM
L67	3	"16/247626"	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/08/10 09:59 PM
L68	3160	(beacon near2 (transmission or transfer$5 or data or message or packet$2)) same(contain$4 or includ$4 or hav$4 or compris$5) same(field$2)	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/12/02 08:48 PM
L69	829	(beacon near2 (transmission or transfer$5 or data or message or packet$2)) near7(contain$4 or includ$4 or hav$4 or compris$5) near7(field$2)	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/12/02 08:49 PM
L70	343	L69 and (mac adj address)	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/12/02 08:50 PM
L71	0	(service adj idenifier) and L70	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/12/02 08:52 PM
L73	2	"20040023640"	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/12/03 10:32 AM
L74	829	(beacon near2 (transmission or transfer$5 or data or message or packet$2)) near7(contain$4 or includ$4 or hav$4 or compris$5) near7(field$2)	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/12/03 01:45 PM
L75	343	L74 and (mac adj address)	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/12/03 01:45 PM
L76	4	(service adj identifier) and L75	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/12/03 01:45 PM
L77	9	((("PROXICOM") near3 ("WIRELESS") near3 ("LLC"))).AS,AANM.	(USPAT)	OR	OFF	OFF	2021/12/03 01:53 PM
L78	582	((("Proctor") near3 ("James") near3 ("A"))).INV.	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2021/12/03 01:53 PM
L79	65	(US-0156856-$ | US-0702686-$ | US-1098477-$ | US-1207654-$ | US-1296155-$ | US-17366826-$ | US-1759620-$ | US-1908235-$ | US-20050114654-$ | US-20050124359-$ | US-20050131837-$ | US-	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/12/03 01:54 PM

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		20050136845-$ | US- 20050136891-$ | US- 20050156026-$ | US- 20050165667-$ | US- 20050174975-$ | US- 20050180367-$ | US- 20050185615-$ | US- 20050187873-$ | US- 20050187959-$ | US- 20050188062-$ | US- 20050213553-$ | US- 20050243737-$ | US- 20050243781-$ | US- 20050250552-$ | US- 20050266868-$ | US- 20050273440-$ | US- 20060003785-$ | US- 20060022038-$ | US- 20060029024-$ | US- 20060030335-$ | US- 20060032901-$ | US- 20060045042-$ | US- 20060046709-$ | US- 20060047835-$ | US- 20060050728-$ | US- 20060069922-$ | US- 20060079284-$ | US- 20060085419-$ | US- 20060089134-$ | US- 20060089876-$ | US- 20060094447-$ | US- 20060095348-$ | US- 20060095349-$ | US- 20060099966-$ | US- 20060104200-$ | US- 20060104243-$ | US- 20060106850-$ | US- 20060111045-$ | US- 2218268-$ | US- 2235002-$ | US- 2506121-$ | US- 2564287-$ | US- 2688189-$ | US- 2752347-$ | US- 2766024-$ | US- 2766184-$ | US- 2798749-$ | US- 7936736-$ | US- 8090359-$ | US- 8116749-$ | US- 8369842-$ | US- 8385896-$ | US- 8385913-$ | US- 9038129-$ | US- 9161164-$).DID.				
L80	79	(US-7492254-$ | US- 7502933-$ | US- 7509131-$ | US-	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/12/03 01:54 PM

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		7515914-$ | US- 7522058-$ | US- 7545784-$ | US- 7546141-$ | US- 7580699-$ | US- 7590246-$ | US- 7620026-$ | US- 7630986-$ | US- 7647024-$ | US- 7647055-$ | US- 7661132-$ | US- 7702108-$ | US- 7711100-$ | US- 7711620-$ | US- 7714712-$ | US- 7716484-$ | US- 7729326-$ | US- 7756467-$ | US- 7773995-$ | US- 7774231-$ | US- 7775430-$ | US- 7822000-$ | US- 7826425-$ | US- 7836512-$ | US- 7848765-$ | US- 7876701-$ | US- 7877082-$ | US- 7886962-$ | US- 7904952-$ | US- 7936736-$ | US- 7942337-$ | US- 7952481-$ | US- 7962369-$ | US- 7963441-$ | US- 7965983-$ | US- 7991644-$ | US- 7991664-$ | US- 8014755-$ | US- 8024272-$ | US- 8073795-$ | US- 8089405-$ | US- 8090359-$ | US- 8112794-$ | US- 8116749-$ | US- 8121917-$ | US- 8160495-$ | US- 8185133-$ | US- 8204039-$ | US- 8205240-$ | US- 8229458-$ | US- 8233841-$ | US- 8254338-$ | US- 8275359-$ | US- 8295819-$ | US- 8321913-$ | US- 8332521-$ | US- 8364171-$ | US- 8369842-$ | US-					

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		8374592-$ | US-8385896-$ | US-8385913-$ | US-8478300-$ | US-8543500-$ | US-8559968-$ | US-8576846-$ | US-8688570-$ | US-8787575-$ | US-8825538-$ | US-9038129-$ | US-9137012-$ | US-9161164-$ | US-9373091-$ | US-9646319-$ | US-9659285-$ | US-9734198-$ | US-9805347-$).DID.					
L81	399008	h04w 4/02	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/12/03 02:40 PM
L82	395522	h04w 8/26	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/12/03 02:40 PM
L83	651491	h04l 41/12	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/12/03 02:40 PM
L84	650389	h04l 67/18	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/12/03 02:40 PM
L85	829	(beacon near2 (transmission or transfer$5 or data or message or packet$2)) near7(contain$4 or includ$4 or hav$4 or compris$5) near7(field$2)	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/12/05 01:03 PM
L86	343	L85 and (mac adj address)	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/12/05 01:03 PM
L87	6	(service adj (identifier or id)) and L86	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/12/05 01:03 PM
L88	26	((service or beacon) adj (identifier or id)) and L86	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/12/05 01:10 PM
L89	1274	(beacon near2 (transmission or transfer$5 or data or message or packet$2)) near7(contain$4 or includ$4 or hav$4 or compris$5) near7(field$2 or parameter$2)	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/12/05 01:14 PM
L90	127	((service or beacon) adj (identifier or id)) and L89	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/12/05 01:15 PM
L91	538	L89 and (mac adj	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/12/05

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		address)					01:18 PM
L92	37	((service or beacon) adj (identifier or id)) and L91	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/12/05 01:18 PM
L93	5104	(beacon near2 (transmission or transfer$5 or data or message or packet$2)) same(contain$4 or includ$4 or hav$4 or compris$5) same(field$2 or parameter$2)	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/12/05 01:24 PM
L94	1800	L93 and (mac adj address)	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/12/05 01:24 PM
L95	200	((service or beacon) adj (identifier or id)) and L94	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/12/05 01:25 PM
L96	962	(beacon near2 (transmission or transfer$5 or data or message or packet$2)) same(contain$4 or includ$4 or hav$4 or compris$5) same(mac adj address$2)	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/12/05 01:27 PM
L97	2967	(beacon near2 (transmission or transfer$5 or data or message or packet$2)) same(contain$4 or includ$4 or hav$4 or compris$5) same(service)	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/12/05 01:28 PM
L98	4384	(beacon near2 (transmission or transfer$5 or data or message or packet$2)) same(contain$4 or includ$4 or hav$4 or compris$5) same(number)	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/12/05 01:28 PM
L99	98	L98 and L97 and L96	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/12/05 01:29 PM
L100	2	"20180234959"	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/12/06 10:39 AM
L101	1	"20180167883"	(US-PGPUB; USPAT)	OR	OFF	OFF	2021/12/06 10:48 AM
L102	9	((("PROXICOM") near3 ("WIRELESS") near3 ("LLC"))).AS,AANM.	(USPAT)	OR	OFF	OFF	2022/04/17 09:08 PM
L103	586	((("Proctor") near3 ("James") near3 ("A"))).INV.	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2022/04/17 09:08 PM

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PE2E SEARCH - Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	British Equivalents	Time Stamp
N1	254	(beacon near3(transmission OR transfer$4 OR transmit$5)) SAME (picture OR photo OR jpeg)	(US-PGPUB; USPAT)	OR	OFF	OFF	2022/04/17 09:09 PM
N2	19507	(beacon near3(transmission OR transfer$4 OR transmit$5 OR signal$2)) SAME (service OR number)	(US-PGPUB; USPAT)	OR	OFF	OFF	2022/04/17 09:09 PM
N3	45	(bluetooth OR (wifi)) AND L30	(US-PGPUB; USPAT)	OR	OFF	OFF	2022/04/17 09:09 PM
N4	60436	(advertis$4) SAME (location)	(US-PGPUB; USPAT)	OR	OFF	OFF	2022/04/17 09:09 PM
N5	340	(time OR timing) near7(notification) SAME (beacon) SAME (transmission OR transfer$4 OR transmit$5)	(US-PGPUB; USPAT)	OR	OFF	OFF	2022/04/17 09:10 PM
N6	71	L58 AND beacon	(US-PGPUB; USPAT)	OR	OFF	OFF	2022/04/17 09:10 PM
N7	4926	(beacon near2 (transmission OR transfer$5 OR data OR message OR packet$2)) SAME (contain$4 OR includ$4 OR hav$4 OR compris$5) SAME (number)	(US-PGPUB; USPAT)	OR	OFF	OFF	2022/04/17 09:10 PM
N8	28	((service OR beacon) ADJ (identifier OR id)) AND L86	(US-PGPUB; USPAT)	OR	OFF	OFF	2022/04/17 09:14 PM
N9	5344	(beacon near2 (transmission OR transfer$5 OR data OR message OR packet$2)) SAME (contain$4 OR includ$4 OR hav$4 OR compris$5) SAME (field$2 OR parameter$2)	(US-PGPUB; USPAT)	OR	OFF	OFF	2022/04/17 09:14 PM
N10	45	(bluetooth OR (wifi)) AND L30	(US-PGPUB; USPAT)	OR	OFF	OFF	2022/04/17 09:14 PM
N11	6	(service ADJ (identifier OR id)) AND L86	(US-PGPUB; USPAT)	OR	OFF	OFF	2022/04/17 09:14 PM

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N12	28	((service OR beacon) ADJ (identifier OR id)) AND L91	(US-PGPUB; USPAT)	OR	OFF	OFF	2022/04/17 09:15 PM
N13	3085	(beacon near2 (transmission OR transfer$5 OR data OR message OR packet$2)) SAME (contain$4 OR includ$4 OR hav$4 OR compris$5) SAME (service)	(US-PGPUB; USPAT)	OR	OFF	OFF	2022/04/17 09:15 PM
N14	94	(timing) near7(notification) SAME (beacon) SAME (transmission OR transfer$4 OR transmit$5)	(US-PGPUB; USPAT)	OR	OFF	OFF	2022/04/17 09:17 PM
N15	128	L13 AND L17 AND L15	(US-PGPUB; USPAT)	OR	OFF	OFF	2022/04/17 09:29 PM

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PTO/SB/08a (02-18)
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	17366826
Filing Date	2021-07-02
First Named Inventor	James A. Proctor
Art Unit	2468
Examiner Name	HARLEY, JASON A
Attorney Docket Number	111054-0001U7

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Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
/JH/	1	8352323	B2	2013-01-08	Fisher Michelle	

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All References Considered /Jason Harley/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	17366826
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	Attorney Docket Number	111054-0001U7

/JH/ /	1	Non-Final Office Action received for U.S. Patent Application No. 14/861,563, mailed on May 09, 2016, 16 pages.
/JH/	2	Non-Final Office Action received for U.S. Patent Application No. 16/817,896, mailed on Jun 09, 2020, 22 pages.
/JH/	3	Non-Final Office Action received for U.S. Patent Application No. 16/817,896, mailed on Nov 24, 2020, 34 pages.
/JH/	4	Non-Final Office Action received for U.S. Patent Application No. 16/817,896, mailed on Sep 03, 2020, 23 pages.
/JH/	5	Notice of Allowance received for U.S. Patent Application No. 16/817,896, mailed on Jun 08, 2021, 17 pages.
/JH/	6	Notice of Allowance received for U.S. Patent Application No. 16/817,896, mailed on Jun 28, 2021, 4 pages.
/JH/	7	Notice of Allowance received for U.S. Patent Application No. 16/817,896, mailed on Mar 19, 2021, 17 pages.

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EXAMINER SIGNATURE

Examiner Signature	/Jason Harley/	Date Considered	4/17/22

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

All References Considered /Jason Harley/

EFS Web 2.1.18

Bibliographic Data

Application No: 17/366,826

Foreign Priority claimed: ○ Yes ◉ No

35 USC 119 (a-d) conditions met: ☐ Yes ☑ No ☐ Met After Allowance

Verified and Acknowledged: /JASON A HARLEY/ Examiner's Signature | Initials

Title: EFFICIENT AND SECURE COMMUNICATION USING WIRELESS SERVICE IDENTIFIERS

FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
07/02/2021	370	2468	111054-0001U7
RULE			

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INVENTORS

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James Arthur Proctor III, Indialantic, FL, UNITED STATES

CONTINUING DATA

This application is a CON of 16817896 03/13/2020 PAT 11074615

16817896 is a CON of 15271410 09/21/2016

15271410 is a CON of 14861563 09/22/2015ABN

14861563 is a CON of 14472477 08/29/2014 PAT 9161164

14472477 is a CON of 13775435 02/25/2013 PAT 8849698

13775435 is a CON of 13212723 08/18/2011 PAT 8385896

13212723 is a CON of 12364828 02/03/2009 PAT 8090359

12364828 has PRO of 61095359 09/09/2008

12364828 has PRO of 61095001 09/08/2008

FOREIGN APPLICATIONS

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UNITED STATES

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Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	17/366,826	Proctor et al.
	Examiner	Art Unit
	JASON A HARLEY	2468

CPC - Searched*		
Symbol	**Date**	**Examiner**
H04W 4/029	08/10/2021	JH
H04L 67/306	08/10/2021	JH
H04L 61/6022	08/10/2021	JH
H04W 4/80	08/10/2021	JH
H04W 4/02	12/03/2021	JH
H04W 8/26	12/03/2021	JH
H04L 41/12	12/03/2021	JH
H04L 67/18	12/03/2021	JH

CPC Combination Sets - Searched*		
Symbol	**Date**	**Examiner**

US Classification - Searched*			
Class	**Subclass**	**Date**	**Examiner**
455	41.2	08/10/2021	JH
455	456.3	08/10/2021	JH

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

/SYED ALI/ Primary Examiner, Art Unit 2468	/JASON A HARLEY/ Examiner, Art Unit 2468

Petitioner Samsung Ex-1004, 0589

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	17/366,826	Proctor et al.
	Examiner	Art Unit
	JASON A HARLEY	2468

Search Notes		
Search Notes	**Date**	**Examiner**
Database Search	08/10/2021, 12/3/21, 4/17/22	JH
Inventor Search	08/10/2021	JH
101/112 Search	08/10/2021	JH
Ids Search	08/10/2021	JH
Assignee Search	08/10/2021	JH
NPL Search	12/03/2021	JH
Continuation Search	12/03/2021	JH

Interference Search			
US Class/CPC Symbol	**US Subclass/CPC Group**	**Date**	**Examiner**
H04M	1/72412	04/17/2022	JH
H04L	43/0811	04/17/2022	JH
H04B	5/0031	04/17/2022	JH

/SYED ALI/ Primary Examiner, Art Unit 2468	/JASON A HARLEY/ Examiner, Art Unit 2468

Petitioner Samsung Ex-1004, 0590

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant :	Proctor, J. et al.	Art Unit :	2468
Serial No. :	17/366,826	Examiner :	HARLEY, JASON A
Filed :	July 02, 2021	Conf. No. :	8789
Title :	EFFICIENT AND SECURE COMMUNICATION USING WIRELESS SERVICE IDENTIFIERS		

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

AMENDMENT UNDER 37 CFR 1.312 AFTER ALLOWANCE

In response to the Notice of Allowance mailed April 28, 2022, please consider entering an amendment as follows:

Amendments to the Claims are reflected in the claim listing that begins on page 2.

Remarks begin on page 11.

Amendments to the Claims:

This listing of claims would replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Previously Presented) A method comprising:

receiving, at a wireless device, via a short range wireless protocol, a first plurality of beacon transmissions, each beacon transmission comprising three fields (a) a MAC address, (b) a unique identifier, wherein the unique identifier of each respective beacon transmission does not directly identify a location of a beacon transmitter, and (c) a beacon service identifier, wherein the beacon service identifier of each respective beacon transmission identifies a wireless beacon service as opposed to identifying a communication network or a device accessible using the short range wireless protocol;

receiving, at the wireless device via a second wireless protocol, stored information from one or more servers, the stored information relating to a particular entity or object associated with a first unique identifier, and wherein the second wireless protocol is different from the short range wireless protocol;

causing selection of one or more of the unique identifiers from the first plurality of beacon transmissions, by filtering the beacon transmissions which include a particular beacon service identifier indicating that a particular received beacon transmission is associated with a particular wireless beacon service; and

taking first further action relating to the stored information, if the first unique identifier is present among the selected one or more unique identifiers.

2. (Previously Presented) The method of claim 1, wherein the receiving, at the wireless device, via a short range wireless protocol, of the first plurality of beacon transmissions occurs in a first time period, and

wherein the method further comprises, during a second time period:

receiving, at the wireless device, via a short range wireless protocol, a second plurality of beacon transmissions, each of the second plurality of beacon transmissions comprising three fields (a) a MAC address, (b) a unique identifier, wherein the unique identifier of each respective beacon transmission does not directly identify a location of a beacon transmitter, and (c) a beacon service identifier, wherein the beacon service identifier of each respective beacon transmission identifies a wireless beacon service as opposed to identifying a communication network or a device accessible using the short range wireless protocol;

causing selection of one or more of the unique identifiers from the second plurality of beacon transmissions, by filtering the beacon transmissions which include the same particular beacon service identifier indicating that the particular received beacon transmission is associated with the same particular wireless beacon service; and

taking second further action relating to the stored information, if a second unique identifier is present among the one or more unique identifiers selected from the second plurality of beacon transmissions, wherein the first unique identifier and the second unique identifier is are both associated with the same particular entity or object, and wherein the second unique identifier is not equal to the first unique identifier, and further wherein the received beacon transmissions including the first and second unique identifiers are received from a same transmitting device.

3. (Currently Amended) The method of claim 2 wherein the MAC address received in a beacon transmission including the second unique identifier is different from the MAC address received in a beacon transmission including the first unique identifier, but each such beacon transmission includes the same particular beacon service identifier, and wherein a plurality of beacon transmissions including the particular service identifier and the first unique identifier are

received in the first time period, and no beacon transmissions including the same particular service identifier and the second unique identifier are received in the first time period.

4. (Original) The method of claim 3 wherein the second further action is based upon a function currently being performed on a device associated with the wireless beacon service.

5. (Original) The method of claim 4 wherein the function is related to
a current phone call,
music being played,
a video being played,
a multi-player game, or
a shared application.

6. (Currently Amended) The method of claim 2 wherein the first or the second further action is related to receiving advertising information for presentation to a user of the wireless device, based upon the first or the second unique identifier ~~identifiers~~, or information derived from the first or second unique identifier.

7. (Currently Amended) The method of claim 2 wherein one or more of the first further action and the second further action includes ~~retrieving~~ receiving content from a server based upon information derived from either the first unique identifier or the second unique identifier.

8. (Original) The method of claim 2, wherein the first or second further action includes sending a message to another device associated with an account related to the first and the second unique identifiers.

9. (Currently Amended) The method of claim 2 wherein following the performance of the first or second further action, a server associated with an account for a user of the wireless device performs a step of sending ~~a~~ an email message to an email address associated with the account for the user, the email message relating to the same particular entity or object ~~associated with the first or second unique identifier~~.

10. (Previously Presented) The method of claim 2 wherein the second further action includes preventing sending of the second unique identifier or information derived from the second unique identifier by the wireless device to at least one of the one or more servers.

11. (Previously Presented) The method of claim 1 wherein the first further action comprises: determining, based upon at least a portion of the stored information, that at least one beacon transmitter is associated with a predetermined location.

12. (Currently Amended) The method of claim 1 [[2]] wherein the step of taking first further action further includes causing the wireless device, to:

send the first unique identifier or information derived from the first unique identifier to at least one of the one or more servers, and

receive the stored information in response.

13. (Previously Presented) The method of claim 1 wherein the stored information is received at the wireless device from at least one of the one or more servers prior to the performing of the first further action.

14. (Currently Amended) The method of claim 2 wherein the stored information is received at the wireless device from at least one of the one or more servers prior to ~~the~~ performing one or more of the first and the second further action.

15. (Previously Presented) The method of claim 1 further comprising:

using the stored information to determine if the first unique identifier is present among the first selected one or more unique identifiers.

16. (Previously Presented) The method of claim 2 wherein all beacon transmitter devices participating in the particular wireless beacon service have the same particular beacon service identifier.

17. (Original) The method of claim 2 wherein the second further action comprises:

determining, based upon at least a portion of the stored information, that the beacon transmitter is associated with a predetermined location.

18. (Previously Presented) The method of claim 2 wherein one or more of the steps performed at the wireless device are performed as a result of an application program executing on the wireless device.

19. (Previously Presented) The method of claim 2 wherein the second further action is related to either a product tied to a location or an advertisement tied to a location.

20. (Canceled)

21. (Original) The method of claim 1 wherein the first further action includes determining an address or location associated with the wireless device based at least in part upon the first

unique identifier being associated with a pre-determined location, and wherein the wireless device is located indoors where a GPS signal may not be available.

22. (Original) The method of claim 2 wherein the second further action includes determining an address or location associated with the wireless device based at least in part upon the second unique identifier being associated with a pre-determined location, wherein the wireless device is located indoors where a GPS signal may not be available.

23. (Previously Presented) The method of claim 2 wherein the second further action includes allowing a user associated with the wireless device to be provided access to an object or device associated with the wireless beacon service.

24. (Original) The method of claim 2 wherein the step of taking second further action additionally comprises:

controlling further communications between the wireless device and at least one device or server associated with an entity or object in proximity to the wireless device.

25. (Previously Presented) The method of claim 3 further comprising:

receiving, at the wireless device, timing notification information for coordination of active times for beacon transmissions.

26. (Previously Presented) The method of claim 25 wherein the receiving, at the wireless device of the timing notification information is not directly from the beacon transmitter.

27. (Previously Presented) The method of claim 2 further comprising:

using the stored information to determine if the second unique identifier is present among the selected one or more of the unique identifiers from the second plurality of beacon transmissions.

28. (Original) The method of claim 1 wherein the MAC address is a randomly generated 48 bit number matching a format of a Bluetooth BD_ADDR.

29. (Original) The method of claim 3 wherein the short range protocol is derived from Bluetooth.

30. (Currently Amended) A mobile wireless device comprising:

one or more radios for providing reception and transmission for each of a Bluetooth wireless protocol and a second wireless protocol;

one or more processors; and

one or more memory devices coupled to the one or more processors, the one or more ~~non-transitory~~ memory devices storing a set of instructions that when executed by the one or more processors cause the one or more processors to perform operations including:

receiving from a beacon transmitter, using the Bluetooth wireless protocol, a first plurality of beacon transmissions during a first time period, each of the beacon transmissions including (a) a MAC address, (b) a unique identifier, wherein the unique identifier does not directly identify a location of the beacon transmitter, and (c) a beacon service identifier, wherein the beacon service identifier of each respective beacon transmission identifies a wireless beacon service as opposed to identifying a communication network or a device accessible using the Bluetooth wireless protocol;

receiving from one or more servers, using the second wireless protocol, stored information related to a entity or object associated with a first unique identifier;

selecting one or more unique identifiers from the first plurality of beacon transmissions, by filtering the beacon transmissions which include a particular beacon service

identifier indicating that a particular received beacon transmission is associated with the particular wireless beacon service;

taking first further action relating to the stored information, if the first unique identifier is present among the selected one or more unique identifiers;

receiving, by the wireless device, using the Bluetooth wireless protocol, during a second time period, a second plurality of beacon transmissions, each of the second plurality of beacon transmissions comprising three fields (a) a MAC address, (b) a unique identifier, wherein the unique identifier of each respective beacon transmission does not directly identify a location of a beacon transmitter, and (c) the beacon service identifier, wherein the beacon service identifier of each respective beacon transmission identifies a wireless beacon service as opposed to identifying a communication network or a device accessible using the Bluetooth wireless protocol;

selecting one or more of the unique identifiers from the second plurality of beacon transmissions, by filtering the beacon transmissions which include the same particular beacon service identifier indicating that a particular received beacon transmission is associated with the same particular wireless beacon service;

taking second further action relating to the stored information, if a second unique identifier is present among the one or more unique identifiers selected from the second plurality of beacon transmissions, wherein the second unique identifier is associated with the same entity or object, and wherein the second unique identifier is not equal to the first unique identifier, and further wherein the received beacon transmissions including the first and second unique identifiers are received from a same transmitting device; and

wherein the MAC address received in a beacon transmission including the second unique identifier is different from the MAC address received in a beacon transmission including the first unique identifier, but each such beacon transmission includes the same particular beacon service identifier.

31. (Currently Amended) A computer program product for installation in a memory ~~non-transitory medium~~ in a wireless device, the computer program product comprising computer program instructions that, when executed by one or more processors in the wireless device, cause the wireless device to:

process a first plurality of beacon transmissions, received at the mobile wireless device via a Bluetooth protocol, each beacon transmission comprising three fields (a) a MAC address, (b) a unique identifier, wherein the unique identifier of each respective beacon transmission does not directly identify a location of a beacon transmitter, and (c) a beacon service identifier, wherein the beacon service identifier of each respective beacon transmission identifies a wireless beacon service as opposed to identifying a communication network or a device accessible using the Bluetooth wireless protocol;

process stored information transferred from one or more servers to the mobile wireless device via a second wireless protocol, wherein the stored information relates to an entity or object associated with a first unique identifier, and wherein the second wireless protocol is different from the Bluetooth wireless protocol;

select one or more of the unique identifiers from the first plurality of beacon transmissions, by filtering the beacon transmissions which include a particular beacon service identifier indicating that a particular received beacon transmission is associated with a particular wireless beacon service; and

perform a first further action, the first further action relating to the stored information, if the first unique identifier is present among the selected one or more unique identifiers.

32. (New) The computer program product of claim 31 wherein the computer program instructions, when executed by the one or more processors in the wireless device, cause the wireless device to:

during a first time period:

process the first plurality of beacon transmissions in the first time period, and

during a second time period:

process a second plurality of beacon transmissions, received at the mobile wireless device via the Bluetooth protocol, each beacon transmission comprising three fields (a) a MAC address, (b) a unique identifier, wherein the unique identifier of each respective beacon transmission does not directly identify a location of a beacon transmitter, and (c) a beacon service identifier, wherein the beacon service identifier of each respective beacon transmission identifies a wireless beacon service as opposed to identifying a communication network or a device accessible using the Bluetooth wireless protocol;

select one or more of the unique identifiers from the second plurality of beacon transmissions, by filtering the beacon transmissions which include the same particular beacon service identifier indicating that the particular received beacon transmission is associated with the same particular wireless beacon service; and

perform a second further action relating to the stored information, if a second unique identifier is present among the one or more unique identifiers selected from the second plurality of beacon transmissions, wherein the first unique identifier and the second unique identifier are both associated with the same particular entity or object, and wherein the second unique identifier is not equal to the first unique identifier, and further wherein the received beacon transmissions including the first and second unique identifiers are received from a same transmitting device.

33. (New) The computer program product of claim 32 wherein the MAC address received in a beacon transmission including the second unique identifier is different from the MAC address received in a beacon transmission including the first unique identifier, but each such beacon transmission includes the same particular beacon service identifier, and wherein a plurality of beacon transmissions including the particular beacon service identifier and the first unique identifier are received in the first time period, and no beacon transmissions including the same service identifier and the second unique identifier are received in the first time period.

34. (New) The computer program product of claim 33 wherein the second further action is based upon a function currently being performed on a device associated with the wireless beacon service.

35. (New) The computer program product of claim 34 wherein the function is related to a current phone call,

music being played,

a video being played,

a multi-player game, or

a shared application.

36. (New) The computer program product of claim 32 wherein the first or the second further action is additionally related to receiving advertising information for presentation to a user of the wireless device, based upon the first or the second unique identifiers, or based upon information derived from the first or second unique identifier.

37. (New) The method of claim 31 wherein the first further action is additionally related to receiving advertising information for presentation to a user of the wireless device, based upon the unique identifier, or based upon information derived from the first unique identifier.

38. (New) The computer program product of claim 32 wherein one or more of the first further action and the second further action additionally includes causing the wireless device to receive content from a server based upon information derived from either the first unique identifier or the second unique identifier.

39. (New) The computer program product of claim 31 wherein the first further action additionally includes causing the wireless device to receive content from a server based upon information derived from the first unique identifier.

40. (New) The computer program product of claim 32, wherein the first or second further action additionally includes causing the wireless device to send a message to another device associated with an account related to the first or the second unique identifiers, or information derived from the first or the second unique identifiers.

41. (New) The computer program product of claim 32, wherein the computer program instructions, when executed by the one or more processors in the wireless device, further cause the wireless device to:

after the first or second further action:

send information to a server associated with an account for a user of the wireless device, to enable the server to send a message to an email address associated with the account for the user.

42. (New) The computer program product of claim 31, wherein the first further action additionally includes causing the wireless device to send information to a server associated with an account for a user of the wireless device, and enabling the server to send a message to an email address associated with the account for the user as a result of the first further action.

43. (New) The computer program product of claim 32 wherein the second further action additionally includes causing the wireless device to prevent sending the second unique identifier or information derived from the second unique identifier by the wireless device to at least one of the one or more servers.

44. (New) The computer program product of claim 31 wherein the first further action additionally includes causing the wireless device to determine that at least one beacon transmitter is associated with a predetermined location.

45. (New) The computer program product of claim 31 wherein the first further action additionally includes causing the wireless device to:

send the first unique identifier or information derived from the first unique identifier to at least one of the one or more servers, and

subsequently receive the stored information in response thereto.

46. (New) The computer program product of claim 31 wherein the computer program instructions, when executed by the one or more processors in the wireless device, further cause the wireless device to

receive stored information at the wireless device from at least one of the one or more servers prior to performing the first further action.

47. (New) The computer program product of claim 32 wherein the computer program instructions, when executed by the one or more processors in the wireless device, further cause the wireless device to:

receive stored information at the wireless device from at least one of the one or more servers prior to performing one or more of the first and the second further action.

48. (New) The computer program product of claim 31 wherein the computer program instructions, when executed by the one or more processors in the wireless device, further cause the wireless device to:

use the stored information to determine if the first unique identifier is present among the first selected one or more unique identifiers.

49. (New) The computer program product of claim 32 wherein all beacon transmitter devices participating in the particular wireless beacon service have the same particular beacon service identifier.

50. (New) The computer program product of claim 32 wherein the second further action additionally includes causing the wireless device to determine, based upon at least a portion of the stored information, that the beacon transmitter is associated with a predetermined location.

51. (New) The computer program product of claim 31 wherein the first further action additionally includes causing the wireless device to display a current location, based at least in part upon a predetermined location associated with the first unique identifier, or based at least in part upon information derived from the first unique identifier.

52. (New) The computer program product of claim 32 wherein the second further action additionally includes causing the wireless device to display a current location on the wireless device, based at least in part upon a predetermined location associated with the second unique identifier, or based at least in part upon information derived from the second unique identifier.

53. (New) The computer program product of claim 32 wherein the second further action is additionally related to either a product tied to a location or to an advertisement tied to a location

54. (New) The computer program product of claim 31 wherein the first further action additionally includes causing the wireless device to determine an address or location associated with the wireless device based at least in part upon the first unique identifier being associated with a pre-determined location, when the wireless device is located indoors where a GPS signal may not be available.

55. (New) The computer program product of claim 32 wherein the second further action additionally includes causing the wireless device to determine an address or location associated with the wireless device based at least in part upon the second unique identifier being associated with a pre-determined location, when the wireless device is located indoors where a GPS signal may not be available.

56. (New) The computer program product of claim 32 wherein the second further action additionally includes causing the wireless device to allow a user associated with the wireless device to access to an object or device associated with the wireless beacon service.

57. (New) The computer program product of claim 32 wherein the second further action additionally includes causing the wireless device to control further communications between the wireless device and at least one other device or server associated with an entity or object in proximity to the wireless device.

58. (New) The computer program product of claim 33 wherein the computer program instructions, when executed by the wireless device, further cause the wireless device to:

receive, at the wireless device, timing notification information for coordination of active times for beacon transmissions.

59. (New) The computer program product of claim 58 wherein the timing notification information is not received directly from the beacon transmitter.

60. (New) The computer program product of claim 32 wherein the computer program instructions, when executed by the wireless device, further cause the wireless device to:

use the stored information to determine if the second unique identifier is present among the selected one or more of the unique identifiers from the second plurality of beacon transmissions.

61. (New) The computer program product of claim 31 further comprising program instructions that, when executed by the one or more processors, cause the wireless device to:

use the stored information to determine if the first unique identifier is present among the selected one or more of the unique identifiers from the first plurality of beacon transmissions.

62. (New) The computer program product of claim 31 wherein the MAC address is a randomly generated 48 bit number matching a format of a Bluetooth BD_ADDR.

63. (New) The mobile wireless device of claim 30 wherein the operations further comprise:

receiving, at the mobile wireless device, timing notification information for coordination of active times for beacon transmissions.

64. (New) The mobile wireless device of claim 63 wherein the receiving, at the mobile wireless device of the timing notification information is not directly from the beacon transmitter.

65. (New) The mobile wireless device of claim 30 wherein the operations further comprise:

using the stored information to determine if the second unique identifier is present among the selected one or more of the unique identifiers from the second plurality of beacon transmissions.

66. (New) The mobile wireless device of claim 30 wherein each MAC address or a respective beacon transmission is a randomly generated 48 bit number matching a format of a Bluetooth BD_ADDR.

67. (New) The mobile wireless device of claim 30 wherein the second further action is based upon a function currently being performed on a device associated with the wireless beacon service.

68. (New) The mobile wireless device of claim 67 wherein the function is related to
a current phone call,
music being played,
a video being played,
a multi-player game, or
a shared application.

69. (New) The mobile wireless device of claim 30 wherein one or more of the first further action and the second further action includes receiving content from a server based upon information derived from either the first unique identifier or the second unique identifier.

70. (New) The mobile wireless device of claim 30, wherein the first or second further action includes sending a message or causing a server to send a message to another device associated with an account related to the first and the second unique identifiers.

71. (New) The mobile wireless device of claim 30 wherein the second further action includes preventing sending of the second unique identifier or information derived from the second unique identifier by the mobile wireless device to at least one of the one or more servers.

72. (New) The mobile wireless device of claim 30 wherein at least one of the first further action or the second further action comprises: determining that at least one beacon transmitter is associated with a predetermined location.

73. (New) The mobile wireless device of claim 30 wherein the operations further comprise:

using the stored information to determine if the first unique identifier is present among the first selected one or more unique identifiers.

74. (New) The mobile wireless device of claim 30 wherein one of the first further action and second further action additionally includes

determining an address or location associated with the wireless device based at least in part upon the first or second unique identifier or information derived from the first or second unique identifier being associated with a pre-determined location, and wherein the mobile wireless device may be located indoors where a GPS signal may not be available.

75. (New) The mobile wireless device of claim 30 wherein the second further action includes allowing a user associated with the mobile wireless device to be provided access to an object or device associated with the wireless beacon service.

76. (New) The mobile wireless device of claim 30 wherein the first or second further action additionally comprises:

controlling further communications between the mobile wireless device and at least one device or server associated with an entity or object in proximity to the wireless device based upon information derived from the first or second unique identifier.

77. (New) The method of claim 1 wherein the first further action is related to receiving advertising information for presentation to a user of the wireless device, based upon the first unique identifier, or information derived from the first unique identifier.

78. (New) The method of claim 1 wherein the first further action includes receiving content from a server based upon information derived from the first unique identifier.

79. (New) The method of claim 1 wherein following the performance of the first further action, a server associated with an account for a user of the wireless device performs a step of sending an email message to an email address associated with the account for the user as a result of the first further action.

80. (New) The method of claim 1 wherein the first further action comprises: determining that at least one beacon transmitter is associated with a predetermined location.

81. (New) The method of claim 2 wherein the second further action comprises:
determining that the beacon transmitter is associated with a predetermined location.

82. (New) The method of claim 1 wherein the first further action is related to either a product tied to a location or an advertisement tied to a location.

83. (New) The method of claim 3 wherein the step of taking second further action additionally comprises:
controlling further communications between the wireless device and at least one device or server associated with an entity or object in proximity to the wireless device.

84. (New) The method of claim 1 further comprising:

using the stored information to determine if the first unique identifier is present among the selected one or more of the unique identifiers from the first plurality of beacon transmissions.

REMARKS

Allowed claims 1-19 and 21-31 and new claims 32-84 are presented for further consideration.

The Applicant believes entry of these amendments is proper under 37 CFR 1.312 for the following reasons:

(A) The amendments are needed to fully protect the invention as they would

a. Correct formal matters such as potential antecedent basis and other errors in some of the allowed claims (namely allowed claims 3, 6, 7, 9, 14, 30 and 31);
b. Present a complete set of dependent claims from allowed independent claim 31 (namely new claims 32-66);
c. Present a more complete set of dependent claims from allowed claim 30 (namely new claims 63-76); and
d. Present a more complete set of dependent claims from allowed claim 1 (namely new claims 77-84).

(B) Since all newly added claims depend from allowed base claims, it is believed that consideration of the amendments would require no new search and no substantial amount of additional examination work on the part of the Office.

(C) Each of the newly added claims correspond to already allowed claims. The following table lists each new claim number and the corresponding already allowed dependent claim:

New Dependent Claim Numbers	Corresponding Allowed Dependent Claims
32-36	2-6
37-39	7
40-47	8-13
48,49,50	15,16,17
51,52	6 (see also [0062])
53	19
54-66	22-28
67,68,69,70	4,5,7,8
71,72	10,11
73	15
74,75,76	21,23,24
77,78,79	6,7,9
80,81	11, 17
82,83,84	19,24,27

In the case of new claims 51 and 52, support is found in the specification as filed at paragraph [0062].

(D) These amendments were not presented earlier since (a) no independent claim had been allowed and (b) while the application was under Track I Prioritized Examination status, the total number of claims was limited to 30.

Therefore, entry of these amendments is believed to be proper under 37 CFR 1.312.

Applicant respectfully notes that there are additional reasons for allowance that have not been specifically cited in the Notice of Allowance, and which apply to various one of the allowed claims, in addition to or instead of the Examiner's stated reasons. Applicant respectfully suggests that notwithstanding the Examiner's Reasons for Allowance, it is believed that each of the allowed claims is patentable in its own right and/or for other reasons raised during the prosecution and/or explained in the specification of this application. To the extent that any statements regarding patentability of any claims allowed by the Examiner made by the Applicant

or the Examiner in any document filed in this application are inconsistent with or not included in the Examiner's Reasons for Allowance, they are incorporated by reference herein.

CONCLUSION

Although a credit card is being provided herewith to cover the additional claim fees, the Director is authorized to charge any additional claim fees or credit any overpayment to Deposit Account No. 50-4929.

If the Examiner believes a discussion would assist with further prosecution of the application, he is invited to contact the undersigned.

Respectfully submitted,

Date: June 2, 2022

/David J Thibodeau Jr Reg No 31671/
David J. Thibodeau, Jr.
Reg. No. 31,671
VLP Law Group LLP
Customer Number 86012
Tel.: (617) 925-5520
Fax: (617) 925-5530

Electronic Patent Application Fee Transmittal

Application Number:	17366826
Filing Date:	02-Jul-2021
Title of Invention:	EFFICIENT AND SECURE COMMUNICATION USING WIRELESS SERVICE IDENTIFIERS
First Named Inventor/Applicant Name:	James A. Proctor
Filer:	David J. Thibodeau/Elisabeth Smith
Attorney Docket Number:	111054-0001U7

Filed as Small Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
CLAIMS IN EXCESS OF 20	2202	54	50	2700
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension-of-Time:				
Miscellaneous:				
			Total in USD ($)	**2700**

Electronic Acknowledgement Receipt

EFS ID:	45856536
Application Number:	17366826
International Application Number:	
Confirmation Number:	8789
Title of Invention:	EFFICIENT AND SECURE COMMUNICATION USING WIRELESS SERVICE IDENTIFIERS
First Named Inventor/Applicant Name:	James A. Proctor
Customer Number:	86012
Filer:	David J. Thibodeau/Elisabeth Smith
Filer Authorized By:	David J. Thibodeau
Attorney Docket Number:	111054-0001U7
Receipt Date:	02-JUN-2022
Filing Date:	02-JUL-2021
Time Stamp:	10:57:18
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	$2700
RAM confirmation Number	E202262A58172999
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Amendment after Notice of Allowance (Rule 312)	20220602_111054-0001U7_TPO_312_Amendment.pdf	171120 533147b78f3ca8d082fb33682f6ceddcc07b84ff	no	24
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	38054 9ca37954d9675162bf968b90cf984918f8fa997f	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	209174		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	17/366,826	Proctor et al.
	Examiner	**Art Unit**
	JASON A HARLEY	2468

CPC						
Symbol					**Type**	**Version**
G06Q	/	30	/	0261	F	2013-01-01
H04W	/	4	/	029	I	2018-02-01
H04W	/	4	/	21	I	2018-02-01
H04W	/	4	/	80	I	2018-02-01
G06Q	/	10	/	0875	I	2013-01-01
G06Q	/	20	/	202	I	2013-01-01
G06Q	/	30	/	0207	I	2013-01-01
G06Q	/	30	/	0222	I	2013-01-01
G06Q	/	30	/	0226	I	2013-01-01
G06Q	/	30	/	0242	I	2013-01-01
G06Q	/	30	/	0282	I	2013-01-01
G06Q	/	30	/	0601	I	2013-01-01
G06Q	/	30	/	0623	I	2013-01-01
H04L	/	63	/	20	I	2013-01-01
H04W	/	8	/	005	I	2013-01-01
H04W	/	12	/	02	I	2013-01-01
H04W	/	12	/	04	I	2013-01-01
H04L	/	67	/	306	I	2013-01-01
H04L	/	69	/	18	I	2013-01-01
H04W	/	76	/	11	I	2018-02-01
H04W	/	8	/	26	I	2013-01-01
H04L	/	67	/	52	I	2022-05-01
H04L	/	67	/	54	I	2022-05-01
G06F	/	21	/	60	I	2013-01-01
G06Q	/	20	/	3224	I	2013-01-01
G06Q	/	20	/	3278	I	2013-01-01
G06Q	/	20	/	385	I	2013-01-01
G06Q	/	20	/	4016	I	2013-01-01
G06Q	/	50	/	01	I	2013-01-01
H04W	/	4	/	023	I	2013-01-01
H04W	/	88	/	06	A	2013-01-01

/JASON A HARLEY/ Examiner, Art Unit 2468 (Assistant Examiner)	27 May 2022 (Date)	**Total Claims Allowed:** 29	
/SYED ALI/ Primary Examiner, Art Unit 2468 (Primary Examiner)	27 May 2022 (Date)	O.G. Print Claim(s) 1	O.G. Print Figure 4

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	17/366,826	Proctor et al.
	Examiner	**Art Unit**
	JASON A HARLEY	2468

CPC							
Symbol						**Type**	**Version**
H04L	/	61	/	5038		A	2022-05-01
H04L	/	2101	/	622		A	2022-05-01

CPC Combination Sets								
Symbol					**Type**	**Set**	**Ranking**	**Version**
	/		/					

/JASON A HARLEY/ Examiner, Art Unit 2468	27 May 2022	**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	29	
/SYED ALI/ Primary Examiner, Art Unit 2468	27 May 2022	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	4

U.S. Patent and Trademark Office — Part of Paper No.: 20220527

Petitioner Samsung Ex-1004, 0620

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	17/366,826	Proctor et al.
	Examiner	**Art Unit**
	JASON A HARLEY	2468

INTERNATIONAL CLASSIFICATION					
CLAIMED					
H04W	/	4	/	80	
H04W	/	4	/	029	
H04W	/	36	/	34	
H04B	/	5	/	00	
H04W	/	4	/	029	
H04W	/	84	/	12	
H04W	/	40	/	24	

NON-CLAIMED				
	/		/	

US ORIGINAL CLASSIFICATION	
CLASS	**SUBCLASS**
370	230

CROSS REFERENCES(S)						
CLASS	**SUBCLASS (ONE SUBCLASS PER BLOCK)**					
455	41.2					

/JASON A HARLEY/ Examiner, Art Unit 2468 (Assistant Examiner)	27 May 2022 (Date)	**Total Claims Allowed:** 29	
/SYED ALI/ Primary Examiner, Art Unit 2468 (Primary Examiner)	27 May 2022 (Date)	O.G. Print Claim(s) 1	O.G. Print Figure 4

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	17/366,826	Proctor et al.
	Examiner	**Art Unit**
	JASON A HARLEY	2468

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIMS

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
1	1	10	10		19	26	28								
2	2	11	11		20	27	29								
3	3	12	12	19	21	28	30								
4	4	13	13	20	22	29	31								
5	5	14	14	21	23										
6	6	15	15	22	24										
7	7	16	16	23	25										
8	8	17	17	24	26										
9	9	18	18	25	27										

/JASON A HARLEY/ Examiner, Art Unit 2468	27 May 2022	**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	29	
/SYED ALI/ Primary Examiner, Art Unit 2468	27 May 2022	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	4

U.S. Patent and Trademark Office

Part of Paper No.: 20220527

Petitioner Samsung Ex-1004, 0622

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/366,826	07/02/2021	James A. Proctor JR.	111054-0001U7	8789

86012 7590 06/02/2022

VLP Law Group LLP
555 Bryant Street
Suite 820
Palo Alto, CA 94301

EXAMINER	
HARLEY, JASON A	

ART UNIT	PAPER NUMBER
2468	

NOTIFICATION DATE	DELIVERY MODE
06/02/2022	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patents@vlplawgroup.com

Petitioner Samsung Ex-1004, 0623

corrected ***Notice of Allowability***	**Application No.** 17/366,826	**Applicant(s)** Proctor et al.	
	Examiner JASON A HARLEY	**Art Unit** 2468	**AIA (FITF) Status** No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☑ This communication is responsive to 5/16/22.
   ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

3. ☑ The allowed claim(s) is/are 1-19 and 21-31 . As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information , please see **http://www.uspto.gov/patents/init_events/pph/index.jsp** or send an inquiry to **PPHfeedback@uspto.gov.**

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   Certified copies:

   a) ☐ All b) ☐ Some* c) ☐ None of the:

   1. ☐ Certified copies of the priority documents have been received.
   2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
   3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____ .

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____.
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material _____.
4. ☐ Interview Summary (PTO-413), Paper No./Mail Date. _____.
5. ☐ Examiner's Amendment/Comment
6. ☐ Examiner's Statement of Reasons for Allowance
7. ☑ Other PTOL.

/SYED ALI/ Primary Examiner, Art Unit 2468	/JASON A HARLEY/ Examiner, Art Unit 2468

Petitioner Samsung Ex-1004, 0624

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

By fax, send to: (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

86012 7590 04/28/2022

VLP Law Group LLP
555 Bryant Street
Suite 820
Palo Alto, CA 94301

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

Elisabeth Smith	(Typed or printed name)
/Elisabeth Smith/	(Signature)
June 7, 2022	(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/366,826	07/02/2021	James A. Proctor JR.	111054-0001U7	8789

TITLE OF INVENTION: EFFICIENT AND SECURE COMMUNICATION USING WIRELESS SERVICE IDENTIFIERS

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$600	$0.00	$0.00	$600	07/28/2022

EXAMINER	ART UNIT	CLASS-SUBCLASS
HARLEY, JASON A	2468	370-329000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

☐ Change of correspondence address (or Change of Correspondence Address form PTO/AIA/122 or PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/AIA/47 or PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 David J. Thibodeau, Jr.
2 VLP Law Group, LLC
3

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE: Proxicom Wireless LLC

(B) RESIDENCE: (CITY and STATE OR COUNTRY): Indialantic, Florida

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☒ Corporation or other private group entity ☐ Government

4a. Fees submitted: ☒ Issue Fee ☐ Publication Fee (if required) ☐ Advance Order - # of Copies _____

4b. Method of Payment: *(Please first reapply any previously paid fee shown above)*

☒ Electronic Payment via EFS-Web ☐ Enclosed check ☐ Non-electronic payment by credit card (Attach form PTO-2038)

☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. _____

5. **Change in Entity Status** (from status indicated above)

☐ Applicant certifying micro entity status. See 37 CFR 1.29

☐ Applicant asserting small entity status. See 37 CFR 1.27

☐ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature /David J Thibodeau Jr Reg No 31671/ Date 7-June-2022

Typed or printed name David J. Thibodeau, Jr. Registration No. 31671

PTOL-85 Part B (08-18) Approved for use through 01/31/2020 OMB 0651-0033 U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Petitioner Samsung Ex-1004, 0625

Electronic Acknowledgement Receipt

EFS ID:	45894211
Application Number:	17366826
International Application Number:	
Confirmation Number:	8789
Title of Invention:	EFFICIENT AND SECURE COMMUNICATION USING WIRELESS SERVICE IDENTIFIERS
First Named Inventor/Applicant Name:	James A. Proctor
Customer Number:	86012
Filer:	David J. Thibodeau/Elisabeth Smith
Filer Authorized By:	David J. Thibodeau
Attorney Docket Number:	111054-0001U7
Receipt Date:	07-JUN-2022
Filing Date:	02-JUL-2021
Time Stamp:	13:46:28
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	$600
RAM confirmation Number	E202267D46433565
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Issue Fee Payment (PTO-85B)	20220607_111054-0001U7_TPO_Issue_Fee_Trans.pdf	892079 65f5f8a62abadc1338cf998afa241e74bcdd7b60	no	1
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	38035 ca15934bf2702975d66489349dc31fbf4b76a00f	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	930114		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Electronic Patent Application Fee Transmittal

Application Number:	17366826
Filing Date:	02-Jul-2021
Title of Invention:	EFFICIENT AND SECURE COMMUNICATION USING WIRELESS SERVICE IDENTIFIERS
First Named Inventor/Applicant Name:	James A. Proctor
Filer:	David J. Thibodeau/Elisabeth Smith
Attorney Docket Number:	111054-0001U7

Filed as Small Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
UTILITY APPL ISSUE FEE	2501	1	600	600

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension-of-Time:				
Miscellaneous:				
			Total in USD ($)	**600**

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	17/366,826	Proctor et al.
	Examiner	**Art Unit**
	JASON A HARLEY	2468

CPC						
Symbol					**Type**	**Version**
G06Q	/	30	/	0261	F	2013-01-01
H04W	/	4	/	029	I	2018-02-01
H04W	/	4	/	21	I	2018-02-01
H04W	/	4	/	80	I	2018-02-01
G06Q	/	10	/	0875	I	2013-01-01
G06Q	/	20	/	202	I	2013-01-01
G06Q	/	30	/	0207	I	2013-01-01
G06Q	/	30	/	0222	I	2013-01-01
G06Q	/	30	/	0226	I	2013-01-01
G06Q	/	30	/	0242	I	2013-01-01
G06Q	/	30	/	0282	I	2013-01-01
G06Q	/	30	/	0601	I	2013-01-01
G06Q	/	30	/	0623	I	2013-01-01
H04L	/	63	/	20	I	2013-01-01
H04W	/	8	/	005	I	2013-01-01
H04W	/	12	/	02	I	2013-01-01
H04W	/	12	/	04	I	2013-01-01
H04L	/	67	/	306	I	2013-01-01
H04L	/	69	/	18	I	2013-01-01
H04W	/	76	/	11	I	2018-02-01
H04W	/	8	/	26	I	2013-01-01
H04L	/	67	/	52	I	2022-05-01
H04L	/	67	/	54	I	2022-05-01
G06F	/	21	/	60	I	2013-01-01
G06Q	/	20	/	3224	I	2013-01-01
G06Q	/	20	/	3278	I	2013-01-01
G06Q	/	20	/	385	I	2013-01-01
G06Q	/	20	/	4016	I	2013-01-01
G06Q	/	50	/	01	I	2013-01-01
H04W	/	4	/	023	I	2013-01-01
H04W	/	88	/	06	A	2013-01-01

/JASON A HARLEY/ Examiner, Art Unit 2468 (Assistant Examiner) (Date)	**Total Claims Allowed:** 30	
/SYED ALI/ Primary Examiner, Art Unit 2468 (Primary Examiner) (Date)	O.G. Print Claim(s) 1	O.G. Print Figure 4

U.S. Patent and Trademark Office Part of Paper No.: 20220617

Petitioner Samsung Ex-1004, 0630

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	17/366,826	Proctor et al.
	Examiner	**Art Unit**
	JASON A HARLEY	2468

CPC							
Symbol						**Type**	**Version**
H04L	/	61	/	5038		A	2022-05-01
H04L	/	2101	/	622		A	2022-05-01

CPC Combination Sets								
Symbol					**Type**	**Set**	**Ranking**	**Version**
	/		/					

/JASON A HARLEY/ Examiner, Art Unit 2468 (Assistant Examiner) (Date)	**Total Claims Allowed:** 30	
/SYED ALI/ Primary Examiner, Art Unit 2468 (Primary Examiner) (Date)	O.G. Print Claim(s) 1	O.G. Print Figure 4

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	17/366,826	Proctor et al.
	Examiner	**Art Unit**
	JASON A HARLEY	2468

INTERNATIONAL CLASSIFICATION					
CLAIMED					
H04W	/	4	/	80	
H04W	/	4	/	029	
H04W	/	36	/	34	
H04B	/	5	/	00	
H04W	/	4	/	029	
H04W	/	84	/	12	
H04W	/	40	/	24	

NON-CLAIMED				
	/		/	

US ORIGINAL CLASSIFICATION	
CLASS	**SUBCLASS**
370	230

CROSS REFERENCES(S)						
CLASS	**SUBCLASS (ONE SUBCLASS PER BLOCK)**					
455	41.2					

/JASON A HARLEY/ Examiner, Art Unit 2468 (Assistant Examiner) (Date)	**Total Claims Allowed:** 30	
/SYED ALI/ Primary Examiner, Art Unit 2468 (Primary Examiner) (Date)	O.G. Print Claim(s) 1	O.G. Print Figure 4

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	17/366,826	Proctor et al.
	Examiner	**Art Unit**
	JASON A HARLEY	2468

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIMS

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
1	1	10	10	19	19	27	28								
2	2	11	11		20	28	29								
3	3	12	12	20	21	29	30								
4	4	13	13	21	22	30	31								
5	5	14	14	22	23										
6	6	15	15	23	24										
7	7	16	16	24	25										
8	8	17	17	25	26										
9	9	18	18	26	27										

/JASON A HARLEY/ Examiner, Art Unit 2468 (Assistant Examiner) (Date)	**Total Claims Allowed:** 30	
/SYED ALI/ Primary Examiner, Art Unit 2468 (Primary Examiner) (Date)	O.G. Print Claim(s) 1	O.G. Print Figure 4

U.S. Patent and Trademark Office Part of Paper No.: 20220617

Petitioner Samsung Ex-1004, 0633

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/366,826	07/02/2021	James A. Proctor JR.	111054-0001U7	8789

86012 7590 06/23/2022

VLP Law Group LLP
555 Bryant Street
Suite 820
Palo Alto, CA 94301

EXAMINER	
HARLEY, JASON A	

ART UNIT	PAPER NUMBER
2468	

NOTIFICATION DATE	DELIVERY MODE
06/23/2022	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patents@vlplawgroup.com

Petitioner Samsung Ex-1004, 0634

Corrected ***Notice of Allowability***	**Application No.** 17/366,826	**Applicant(s)** Proctor et al.	
	Examiner JASON A HARLEY	**Art Unit** 2468	**AIA (FITF) Status** No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☑ This communication is responsive to 6/3/22.
   ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

3. ☑ The allowed claim(s) is/are 1-19 and 21-31 . As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information , please see **http://www.uspto.gov/patents/init_events/pph/index.jsp** or send an inquiry to **PPHfeedback@uspto.gov.**

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   Certified copies:

   a) ☐ All b) ☐ Some* c) ☐ None of the:

   1. ☐ Certified copies of the priority documents have been received.
   2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
   3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____ .

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____.
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material _____.
4. ☐ Interview Summary (PTO-413), Paper No./Mail Date. _____.
5. ☐ Examiner's Amendment/Comment
6. ☐ Examiner's Statement of Reasons for Allowance
7. ☐ Other _____.

/JASON A HARLEY/ Examiner, Art Unit 2468	/SYED ALI/ Primary Examiner, Art Unit 2468

UNITED STATES PATENT AND TRADEMARK OFFICE

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United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/366,826	07/02/2021	James A. Proctor JR.	111054-0001U7	8789

86012 7590 08/05/2022

VLP Law Group LLP
555 Bryant Street
Suite 820
Palo Alto, CA 94301

EXAMINER	
HARLEY, JASON A	

ART UNIT	PAPER NUMBER
2468	

NOTIFICATION DATE	DELIVERY MODE
08/05/2022	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patents@vlplawgroup.com

Petitioner Samsung Ex-1004, 0636

Response to Rule 312 Communication	Application No.	Applicant(s)	
	17/366,826	Proctor et al.	
	Examiner	Art Unit	AIA (FITF) Status
	JASON A HARLEY	2468	No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

1. ☑ The amendment filed on 03 June 2022 under 37 CFR 1.312 has been considered, and has been:

a) ☐ entered.

b) ☐ entered as directed to matters of form not affecting the scope of the invention.

c) ☐ disapproved because the amendment was filed after the payment of the issue fee.

Any amendment filed after the date the issue fee is paid must be accompanied by a petition under 37 CFR 1.313(c)(1) and the required fee to withdraw the application from issue.

d) ☑ disapproved. See explanation below.

e) ☐ entered in part. See explanation below.

f) ☐ not entered because the supplemental or corrected Application Data sheet (ADS)

☐ was not accompanied by a petition to accept an unintentionally delayed claim under 37 CFR 1.55 or 27 CFR 1.78;

☐ did not identify the information being changed in accordance with 37 CFR 1.76(c)(2);

☐ was not properly signed in accordance with 37 CFR 1.76(e) (or 37 CFR 1.33(b) for applications filed prior to September 16, 2012).

The amendments will not be entered according to MPEP 7.87 37 CFR 1.312 the amendment would require an additional search, and the amendment would involve materially added work on the part of the Office checking excessive editorial changes in the specification or claims.

/JASON A HARLEY/ Examiner, Art Unit 2468	/KHALED M KASSIM/ Primary Examiner, Art Unit 2468

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	17366826
	Filing Date	2021-07-02
	First Named Inventor	James A. Proctor
	Art Unit	2468
	Examiner Name	
	Attorney Docket Number	111054-0001U7

Change(s) applied to document
/JH/
/A.C./
6/27/2022

	94	20080080397	A1	2008-04-03	SAMSUNG ELECTRONICS CO LTD Niranjan et al.	
	95	20080089519	A1	2008-04-17	EKBERG JAN-ERIK	
	96	20080097851	A1	2008-04-24	BEMMEL et al.	
	97	20080097879	A1	2008-04-24	SADOWSKI et al.	
	98	20080099552	A1	2008-05-01	GRILLION ROBERT JOHN	
	99	20080102856	A1	2008-05-01	FORTESCUE et al.	
	100	20080104227	A1	2008-05-01	BIRNIE et al.	
	101	20080108308	A1	2008-05-08	ULLAH SHAH	
	102	20080109741	A1	2008-05-08	MESSING et al.	
	103	20080109843	A1	2008-05-08	ULLAH SHAH	
/JH/	104	20080114647	A1	2008-05-15	SINGER et al.	

EFS Web 2.1.18

All References Considered /Jason Harley/

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/366,826	09/13/2022	11443344	111054-0001U7	8789

86012 7590 08/24/2022

VLP Law Group LLP
555 Bryant Street
Suite 820
Palo Alto, CA 94301

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment is 0 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Patents Stakeholder Experience (OPSE), Stakeholder Support Division (SSD) at (571)-272-4200.

INVENTOR(s) (Please see PAIR WEB site http://pair.uspto.gov for additional inventors):

James A. Proctor JR., Indialantic, FL;
James Arthur Proctor III, Indialantic, FL;

APPLICANT(s) (Please see PAIR WEB site http://pair.uspto.gov for additional applicants):

Proxicom Wireless LLC, Indialantic, FL

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The USA offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to encourage and facilitate business investment. To learn more about why the USA is the best country in the world to develop technology, manufacture products, and grow your business, visit SelectUSA.gov.

PTO-2326 (05-2022)
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

REQUEST FOR REFUND

Reference # *(Patent #, Application #, Trademark Serial #, Registration #, etc.)*	**Title of Invention or Mark Information**	
17/366,826	Efficient and Secure Communication Using Wireless Service Identifiers	
Attorney Docket # *(if applicable)*	**Payment Date** *(mm/dd/yyyy)*	**Refund Request Amount**
111054-0001U7	06/02/2022	$ 2,700.00

Refund Option *(Select one)*

- (●) If approved, issue the refund to the account associated with the original payment.
- ( ) If approved, and the original payment was a check, issue the refund to deposit account # _____.
- ( ) If approved, and the original payment was a check, issue the refund as a U.S. Treasury check.

Reason for Refund Request *Refund requests must generally be filed within 2 years of payment date (37 CFR 1.26 and 2.209)*

- [ ] Duplicate Payment
- [ ] No Fee Due
- [ ] Office Error
- [ ] Small Entity Later Established* (*must be filed within 3 months of payment date, 37 CFR 1.28)
- [x] Other Entry of amendment with extra claims was refused

Rationale *(Supporting documentation may be submitted with this form)*

The Applicant filed an amendment after allowance under 37 CFR 1.312 requesting entry of additional claims on June 2, 2022. Entry of the amendment was refused on August 5, 2022.

Requester's Information

Company or Firm Name *(if applicable)*		
VLP Law Group LLP		
Address Line 1	**City**	**State/Region**
555 Bryant Street	Palo Alto	CA
Address Line 2 *(if applicable)*	**Country**	**Zip/Postal Code**
Suite 820	USA	94301
Email Address *(You will receive an acknowledgment of receipt only if you provide a valid email address)*		**Phone Number**
patents@vlplawgroup.com		617-925-5520
Requester's Name		**Registration Number** *(if applicable)*
David J Thibodeau		31671
Signature		**Date** *(mm/dd/yyyy)*
/David J Thibodeau/		09/09/2022

Submit online: USPTO's patent electronic filing system (Patent Center or EFS-Web), or
Fax to: 571-273-6500, or
Mail to: Mail Stop 16, Director of the U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450

Electronic Acknowledgement Receipt

EFS ID:	46583346
Application Number:	17366826
International Application Number:	
Confirmation Number:	8789
Title of Invention:	EFFICIENT AND SECURE COMMUNICATION USING WIRELESS SERVICE IDENTIFIERS
First Named Inventor/Applicant Name:	James A. Proctor
Customer Number:	86012
Filer:	David J. Thibodeau/Elisabeth Smith
Filer Authorized By:	David J. Thibodeau
Attorney Docket Number:	111054-0001U7
Receipt Date:	09-SEP-2022
Filing Date:	02-JUL-2021
Time Stamp:	11:01:38
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Refund Request	20220909_111054-0001U7_TPO_Refund_Request.pdf	681377 6d42e136dd6281e94b13d1986c11ffb7972cb5b9	no	1

Warnings:

Information:	
Total Files Size (in bytes):	681377

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

United States Patent and Trademark Office

Office of the Chief Financial Officer

April 13, 2023

VLP Law Group LLP
Attn: DAVID J. THIBODEAU
555 Bryant Street,
Suite 820
Palo Alto, CA 94301

Dear Sir/Madam,

The United States Patent and Trademark Office (USPTO) has reviewed your refund request for Reference Number **17366826** - Refund Request ID **REFND-20220912-54586**. Below is the current status of your refund request assigned to the following processing area: Office of Patent Examination Support Services

Fee code	Decision	Decision Reason(s)	Refund Amount
2202	Dismissed	A change of purpose after payment of a fee will not entitle a party to a refund of such fee (37 CFR 1.26(a))	$0.00

Please refer to the following page to review the detailed dismissal reason(s).

You will receive a separate decision letter for any additional fee codes assigned to other processing areas, if applicable. Decisions may be subject to change if an error is identified.

For questions related to this decision, contact the Case Resolution Team at (571) 272-1720 or case.resolution@USPTO.GOV.

Thank you,
Refund Branch

Enclosure: Refund Dismissal Reason(s)

Refund Dismissal Reason(s) for fee code 2202:

- A change of purpose after payment of a fee will not entitle a party to a refund of such fee (37 CFR 1.26(a)). When an applicant or patentee takes an action "by mistake" (e.g., maintains a patent in force "by mistake"), the submission of fees required to take that action (e.g., a maintenance fee submitted for such patent) is not a "fee paid by mistake" within the meaning of 35 U.S.C. 42(d) (MPEP 607.02).

Petitioner Samsung Ex-1004, 0644

PTO/AIA/96 (11-23)
Approved for use through 05/31/2024. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

STATEMENT UNDER 37 CFR 3.73(c)

First Named Inventor/Patent Owner: Secure Communications Technologies, LLC

Application No./Patent No.: 11,443,344 Filed/Issue Date: 2022-09-13

Titled: EFFICIENT AND SECURE COMMUNICATION USING WIRELESS SERVICE IDENTIFIERS

Secure Communications Technologies, LLC, a Limited Liability Company

(Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that, for the patent application/patent identified above, it is (choose **one** of options 1, 2, 3 or 4 below):

1. ☑ The assignee of the entire right, title, and interest.

2. ☐ An assignee of less than the entire right, title, and interest (check applicable box):

   ☐ The extent (by percentage) of its ownership interest is _____%. Additional Statement(s) by the owners holding the balance of the interest must be submitted to account for 100% of the ownership interest.

   ☐ There are unspecified percentages of ownership. The other parties, including inventors, who together own the entire right, title and interest are:

   Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

3. ☐ The assignee of an undivided interest in the entirety (a complete assignment from one of the joint inventors was made). The other parties, including inventors, who together own the entire right, title, and interest are:

   Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

4. ☐ The recipient, via a court proceeding or the like (*e.g.*, bankruptcy, probate), of an undivided interest in the entirety (a complete transfer of ownership interest was made). The certified document(s) showing the transfer is attached.

The interest identified in option 1, 2 or 3 above (not option 4) is evidenced by either (choose **one** of options A or B below):

A. ☐ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel _____, Frame _____, or for which a copy thereof is attached*.

B. ☑ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: Proctor, James A, Jr.; Proctor, James A. III To: Proxicom Wireless, LLC

   The document was recorded in the United States Patent and Trademark Office at
   Reel 057686, Frame 0786, or for which a copy thereof is attached*.

2. From: Proxicom Wireless, LLC To: Secure Communications Technologies, LLC

   The document was recorded in the United States Patent and Trademark Office at
   Reel 067063, Frame 0085, or for which a copy thereof is attached*.

A Federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with an information collection subject to the requirements of the Paperwork Reduction Act of 1995, unless the information collection has a currently valid OMB Control Number. The OMB Control Number for this information collection is 0651-0031. Public burden for this form is estimated to average 12 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the information collection. Send comments regarding this burden estimate or any other aspect of this information collection, including suggestions for reducing this burden to the Chief Administrative Officer, United States Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450 or email InformationCollection@uspto.gov. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

PTO/AIA/96 (11-23)
Approved for use through 05/31/2024. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

STATEMENT UNDER 37 CFR 3.73(c)

3. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at

Reel _____, Frame _____, or for which a copy thereof is attached*.

4. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at

Reel _____, Frame _____, or for which a copy thereof is attached*.

5. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at

Reel _____, Frame _____, or for which a copy thereof is attached*.

6. From: _____ To: _____

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☐ Additional documents in the chain of title are listed on a supplemental sheet(s).

☐ *As required by 37 CFR 3.73(c)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (i.e., a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

/Thomas Cecil/	2024-11-29
Signature	Date
Thomas Cecil	77,598
Printed or Typed Name	Title or Registration Number

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If you do not furnish the information requested on this form, the USPTO may not be able to process and/or examine your submission, which may result in termination of proceedings, abandonment of the application, and/or expiration of the patent.

Doc Code: PA..
Document Description: Power of Attorney

PTO/AIA/82A (07-13)
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Application Number	17/366,826
Filing Date	2021-07-02
First Named Inventor	Proctor, James A Jr.
Title	EFFICIENT AND SECURE COMMUNICATION USING WIRELESS SERVICE IDENTIFIERS
Art Unit	2468
Examiner Name	Harley, Jason A
Attorney Docket Number	SCT-015

SIGNATURE of Applicant or Patent Practitioner

Signature	/Thomas Cecil/	Date (Optional)	
Name	Thomas Cecil	Registration Number	77,598
Title (if Applicant is a juristic entity)			
Applicant Name (if Applicant is a juristic entity)			

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications. If more than one applicant, use multiple forms.

☐ *Total of _____ forms are submitted.

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If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Doc Code: PA..
Document Description: Power of Attorney

PTO/AIA/82B (07-13)
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POWER OF ATTORNEY BY APPLICANT

I hereby revoke all previous powers of attorney given in the application identified in either the attached transmittal letter or the boxes below.

Application Number	Filing Date

(Note: The boxes above may be left blank if information is provided on form PTO/AIA/82A.)

☑ I hereby appoint the Patent Practitioner(s) associated with the following Customer Number as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above: 175089

OR

☐ I hereby appoint Practitioner(s) named in the attached list (form PTO/AIA/82C) as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the patent application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above. (Note: Complete form PTO/AIA/82C.)

Please recognize or change the correspondence address for the application identified in the attached transmittal letter or the boxes above to:

☑ The address associated with the above-mentioned Customer Number

OR

☐ The address associated with Customer Number:

OR

☐ Firm or Individual Name					
Address					
City		State		Zip	
Country					
Telephone		Email			

I am the Applicant (if the Applicant is a juristic entity, list the Applicant name in the box):

Secure Communication Technologies, LLC

☐ Inventor or Joint Inventor (title not required below)

☐ Legal Representative of a Deceased or Legally Incapacitated Inventor (title not required below)

☑ Assignee or Person to Whom the Inventor is Under an Obligation to Assign (provide signer's title if applicant is a juristic entity)

☐ Person Who Otherwise Shows Sufficient Proprietary Interest (e.g., a petition under 37 CFR 1.46(b)(2) was granted in the application or is concurrently being filed with this document) (provide signer's title if applicant is a juristic entity)

SIGNATURE of Applicant for Patent

The undersigned (whose title is supplied below) is authorized to act on behalf of the applicant (e.g., where the applicant is a juristic entity).

Signature	/Eric Albritton/	Date (Optional)	
Name	Eric Albritton		
Title	Manager, Secure Communication Technologies, LLC		

NOTE: Signature - This form must be signed by the applicant in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. If more than one applicant, use multiple forms.

☐ Total of forms are submitted.

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ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
17/366,826	**11/29/2024 04:38:41 PM Z ET**	**3414-0001U7**

Title of Invention

EFFICIENT AND SECURE COMMUNICATION USING WIRELESS SERVICE IDENTIFIERS

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	11443344
CONFIRMATION #	8789	FILED BY	Thomas Cecil
PATENT CENTER #	68168863	FILING DATE	07/02/2021
CUSTOMER #	86012	FIRST NAMED INVENTOR	James A. Proctor JR.
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	-

Documents

TOTAL DOCUMENTS: 2

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
SCT-015US - 373c Statement.pdf	3	Assignee showing of ownership per 37 CFR 3.73	235 KB
SCT-015 POA.pdf	2	Power of Attorney	347 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
SCT-015US - 373c Statement.pdf	82A8C1835FDA80C3144D55CDFA1A17F9B268AB3D3AC916C6EC868973C6246B9870466B25A882B0AFCF593AE431FB98C825A9D0633D104E46E579DEE4BE55FE09
SCT-015 POA.pdf	65BA6BE4C731CD3A6A69A879DE56A5CEE6482B99500DC9AEDA6BF8F14A48DB5A91BCC72BEFBC9F364B9FB6573C5F3904

4B5C11D66AF0F4D84A50E88533A46D8C

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

AO 120 (Rev. 08/10)

TO:	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Eastern District of Texas on the following

☐ Trademarks or ☑ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
2:24 CV 484	7/3/2024	Eastern District of Texas

PLAINTIFF	DEFENDANT
SECURE COMMUNICATION TECHNOLOGIES LLC	SAMSUNG ELECTRONICS CO., LTD., SAMSUNG ELECTRONICS AMERICA, INC.

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	11,334,918	5/17/2022	Secure Communication Technologies, LLC
2	11,443,344	9/13/2022	Secure Communication Technologies, LLC
3	11,687,971	6/27/2023	Secure Communication Technologies, LLC
4			
5			

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1		
2		
3		
4		
5		

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE

Copy 1—Upon initiation of action, mail this copy to Director **Copy 3—Upon termination of action, mail this copy to Director**
Copy 2—Upon filing document adding patent(s), mail this copy to Director **Copy 4—Case file copy**