CLAIMS

1. A communication system comprising:

a first communication terminal device having a wireless LAN connection function;

a second communication terminal device having a wireless LAN connection function; and

a communication device having a wireless LAN access point function and a display function,

the first communication terminal device connecting to the communication device via a wireless LAN,

the second communication terminal device connecting, under permission from the first communication terminal device, to the communication device via the wireless LAN and using the display function of the communication device through the connection,

the first communication terminal device and the communication device communicating with each other to confirm whether the permission for the second communication terminal device to connect to and use the communication device is to be continued or terminated, and,

in response to a termination of the permission, the communication device terminating the connection with the second communication terminal device via the wireless LAN to make the second communication terminal device unable to use the display function.

2. The communication system according to claim 1, wherein,

for the permission, the first communication terminal device transmits, to the second communication terminal device, connection information necessary for a connection via the wireless LAN through short range communication with the second communication terminal device, and

the second communication terminal device connects to the

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communication device via the wireless LAN by using the connection information.

3. The communication system according to claim 1, wherein

the communication device regularly confirms, with the first communication terminal device, whether to continue or terminate the permission, after the connection to the second communication terminal device, and continues the connection with the second communication terminal device upon the permission being to be continued, while terminating the connection with the second communication terminal device upon the permission being to be terminated.

4. The communication system according to claim 1, wherein

the first communication terminal device regularly confirms, with a user, whether to continue or terminate the permission, after the connection to the second communication terminal device, and transmits information indicating termination of the permission, to the communication device upon the permission being to be terminated, and,

upon receiving the information indicating termination of the permission, the communication device terminates the connection with the second communication terminal device.

5. The communication system according to claim 1, wherein,

for the confirmation, the first communication terminal device displays, for a user, information for confirming whether to continue or terminate the permission on a display screen, receives an input made through a user operation for continuing or terminating the permission, and transmits information indicating that the permission is to be continued or terminated in accordance with the input to the communication device.

6. The communication system according to claim 1, wherein,

for the confirmation, the communication device transmits information for confirming whether to continue or terminate the permission, to the first communication terminal device,

upon receiving the information for the confirmation, the first communication terminal device transmits response information to the communication device, and

the communication device determines that the permission is to be continued upon receiving the response information from the first communication terminal device, and determines that the permission is to be terminated and terminates the connection with the second communication terminal device upon not receiving the response information.

7. The communication system according to claim 1, wherein

the communication device has a configuration in which an access point device having the wireless LAN access point function and a display device having the display function connect to each other via communication,

the first communication terminal device connects to the access point device via the wireless LAN,

the second communication terminal device connects, under permission from the first communication terminal device, with the access point device via the wireless LAN and uses the display function of the display device via the access point device through the connection via the wireless LAN,

the first communication terminal device and the access point device communicate with each other to confirm whether to continue or terminate the permission, and,

in response to a termination of the permission, the access point device terminates the connection with the second

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communication terminal device via the wireless LAN to make the second communication terminal device unable to use the display function.

8. The communication system according to claim 1, wherein,

for the permission, the first communication terminal device transmits, to the second communication terminal device, connection information necessary for a connection via the wireless LAN through short range communication with the second communication terminal device, and the second communication terminal device transmits address information on the second communication terminal device to the first communication terminal device,

the first communication terminal device transmits the address information on the second communication terminal device to the communication device,

the communication device registers the address information on the second communication terminal device into a permission list,

the second communication terminal device connects to the communication device via the wireless LAN by using the connection information,

upon the permission being to be terminated, the first communication terminal device causes the communication device to delete the address information on the second communication terminal device from the permission list of the communication device, and,

upon the address information on the second communication terminal device being not registered in the permission list, the communication device terminates the connection with the second communication terminal device.

9. The communication system according to claim 1, wherein,

for the permission, the first communication terminal device transmits, to the second communication terminal device, connection information necessary for a connection via the wireless LAN through

short range communication with the second communication terminal device, and the second communication terminal device transmits address information on the second communication terminal device to the first communication terminal device,

the first communication terminal device registers the address information on the second communication terminal device into a permission list,

the second communication terminal device connects to the communication device via the wireless LAN by using the connection information,

upon the permission being to be terminated, the first communication terminal device deletes the address information on the second communication terminal device from the permission list, and

the communication device performs communication for confirmation with the first communication terminal device and, upon the address information on the second communication terminal device being not registered in the permission list of the communication device, terminates the connection with the second communication terminal device.

10. The communication system according to claim 1, wherein,

for the permission, the first communication terminal device requests a one-time password from the communication device, and the communication device responds with the one-time password,

the first communication terminal device transmits, to the second communication terminal device, connection information including the one-time password necessary for a connection via the wireless LAN through short range communication with the second communication terminal device, and

the second communication terminal device connects to the communication device via the wireless LAN by using the connection

information including the one-time password.

11. The communication system according to claim 1, wherein,

for the permission, the second communication terminal device performs short range communication with the communication device, the communication device transmits, to the second communication terminal device, connection information necessary for a connection via the wireless LAN, and the second communication terminal device transmits address information on the second communication terminal device to the communication device,

the communication device registers the address information on the second communication terminal device into a permission list,

the second communication terminal device connects to the communication device via the wireless LAN by using the connection information,

upon the permission being to be terminated, the first communication terminal device causes the communication device to delete the address information on the second communication terminal device from the permission list of the communication device, and,

upon the address information on the second communication terminal device being not registered in the permission list, the communication device terminates the connection with the second communication terminal device.

12. The communication system according to claim 1, wherein,

for the permission, the second communication terminal device requests a one-time password from the communication device through short range communication with the communication device, and the communication device transmits connection information including the one-time password necessary for a connection via the wireless LAN, to the second communication terminal device, and

the second communication terminal device connects to the

communication device via the wireless LAN by using the connection information including the one-time password.

13. The communication system according to claim 1, wherein,

for the permission, the first communication terminal device transmits, to the second communication terminal device, connection information necessary for a connection via the wireless LAN through short range communication with the second communication terminal device,

the second communication terminal device connects to the communication device via the wireless LAN by using the connection information,

after the communication device and the second communication terminal device connect to each other, the communication device or the first communication terminal device performs communication for confirming whether to continue or terminate the permission, and continues the connection between the communication device and the second communication terminal device upon the permission being to be continued, while terminating the connection between the communication device and the second communication terminal device upon the permission being to be terminated, and,

in the short range communication, the first communication terminal device displays a bar code representing the connection information on a display screen thereof and the second communication terminal device captures an image of the bar code with a camera to read the connection information.

14. A communication device for constituting a communication system including a first communication terminal device having a wireless LAN connection function; a second communication terminal device having a wireless LAN connection function; and the communication device having a wireless LAN access point function

and a display function,

the first communication terminal device connecting to the communication device via a wireless LAN,

the second communication terminal device connecting, under permission from the first communication terminal device, to the communication device via the wireless LAN and using the display function of the communication device through the connection,

the first communication terminal device and the communication device communicating with each other to confirm whether the permission for the second communication terminal device to connect to and use the communication device is to be continued or terminated, and,

in response to a termination of the permission, the communication device terminating the connection with the second communication terminal device via the wireless LAN to make the second communication terminal device unable to use the display function.

15. A communication terminal device for constituting a communication system including a first communication terminal device having a wireless LAN connection function; a second communication terminal device having a wireless LAN connection function; and a communication device having a wireless LAN access point function and a display function, the communication terminal device serving as the first communication terminal device,

the first communication terminal device connecting to the communication device via a wireless LAN,

the second communication terminal device connecting, under permission from the first communication terminal device, to the communication device via the wireless LAN and using the display function of the communication device through the connection,

the first communication terminal device and the communication device communicating with each other to confirm whether the

permission for the second communication terminal device to connect to and use the communication device is to be continued or terminated, and,

in response to a termination of the permission, the communication device terminating the connection with the second communication terminal device via the wireless LAN to make the second communication terminal device unable to use the display function.

ABSTRACT

Provided is a technology which pertains to wireless LAN communication systems and with which it is possible to achieve convenience in that a terminal of a user who is external to an organization can temporarily use the system and to ensure security in such a case. The present communication system comprises: a first terminal which is used by a user internal to an organization; a second terminal which is used by a user external to the organization; and a communication device which has a display function and a wireless LAN access point function inside the organization. The first terminal connects to the communication device via a wireless LAN. The second terminal connects, under permission from the first terminal, to the communication device via the wireless LAN. The second terminal uses the display function of the communication device through the connection via the wireless LAN. The first terminal and the communication device confirm whether the permission is to be continued or terminated. In response to a termination of the permission, the communication device terminates the connection with the second terminal via the wireless LAN to make the second terminal unable to use the display function.

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	T&A-10860
	Application Number	
Title of Invention	COMMUNICATION SYSTEM, COMMUNICATION DEVICE AND COMMUNICATION TERMINAL DEVICE	

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:

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	Application Number	
Title of Invention	COMMUNICATION SYSTEM, COMMUNICATION DEVICE AND COMMUNICATION TERMINAL DEVICE	

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Correspondence Information:

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

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

Customer Number	24956		
Email Address	ptomail@mmiplaw.com	Add Email	Remove Email

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	T&A-10860
	Application Number	
Title of Invention	COMMUNICATION SYSTEM, COMMUNICATION DEVICE AND COMMUNICATION TERMINAL DEVICE	

Application Information:

Title of the Invention	COMMUNICATION SYSTEM, COMMUNICATION DEVICE AND COMMUNICATION TERMINAL DEVICE		
Attorney Docket Number	T&A-10860	**Small Entity Status Claimed** ☐	
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	13	**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.

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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)
	a 371 of international	PCT/JP2014/072783	2014-08-29

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).

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Application Number	Country[i]	Filing Date (YYYY-MM-DD)	Access Code[i] (if applicable)

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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.

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	T&A-10860
	Application Number	
Title of Invention	COMMUNICATION SYSTEM, COMMUNICATION DEVICE AND COMMUNICATION TERMINAL DEVICE	

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.

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	T&A-10860
	Application Number	
Title of Invention	COMMUNICATION SYSTEM, COMMUNICATION DEVICE AND COMMUNICATION TERMINAL DEVICE	

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. ☒

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Mailing Address Information For Applicant:			
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Phone Number		Fax Number	
Email Address			

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Assignee Information including Non-Applicant Assignee Information:

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	T&A-10860
	Application Number	
Title of Invention	COMMUNICATION SYSTEM, COMMUNICATION DEVICE AND COMMUNICATION TERMINAL DEVICE	

Assignee 1

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

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Mailing Address Information For Assignee including Non-Applicant Assignee:

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Address 2			
City		**State/Province**	
Country i		Postal Code	
Phone Number		Fax Number	
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Signature:

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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	/Shrinath Malur/			Date (YYYY-MM-DD)	2017-02-17
First Name	Shrinath	Last Name	Malur	Registration Number	34,663

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	T&A-10860
	Application Number	
Title of Invention	COMMUNICATION SYSTEM, COMMUNICATION DEVICE AND COMMUNICATION TERMINAL DEVICE	

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.**

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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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PTO-1390 (06-13)
Approved for use through 6/30/2013. OMB 0651-0021
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.

TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A SUBMISSION UNDER 35 U.S.C. 371

Attorney Docket No.	
T&A-10860	
U.S. Application No. (if known, see 37 CFR 1.5)	

International Application No.	International Filing Date	Priority Date Claimed
PCT/JP2014/072783	August 29, 2014	

Title of Invention
COMMUNICATION SYSTEM, COMMUNICATION DEVICE AND COMMUNICATION TERMINAL DEVICE

First Named Inventor
Nobuo MASUOKA

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information.

1. ☑ This is an express request to begin national examination procedures (35 U.S.C. 371(f)). NOTE: The express request under 35 U.S.C. 371(f) will not be effective unless the requirements under 35 U.S.C. 371(c)(1), (2), and (4) for payment of the basic national fee, copy of the International Application and English translation thereof (if required), and the oath or declaration of the inventor(s) have been received.
2. ☑ A copy of the International Application (35 U.S.C. 371(c)(2)) is attached hereto (not required if the International Application was previously communicated by the International Bureau or was filed in the United States Receiving Office (RO/US)).
3. An English language translation of the International Application (35 U.S.C. 371(c)(2))
   a. ☑ is attached hereto.
   b. ☐ has been previously submitted under 35 U.S.C. 154(d)(4).
4. An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4))
   a. ☑ is attached.
   b. ☐ was previously filed in the international phase under PCT Rule 4.17(iv).

Items 5 to 8 below concern amendments made in the international phase.

PCT Article 19 and 34 amendments

5. ☐ Amendments to the claims under PCT Article 19 are attached (not required if communicated by the International Bureau) (35 U.S.C. 371(c)(3)).
6. ☐ English translation of the PCT Article 19 amendment is attached (35 U.S.C. 371(c)(3)).
7. ☐ English translation of annexes (Article 19 and/or 34 amendments only) of the International Preliminary Examination Report is attached (35 U.S.C. 371(c)(5)).

Cancellation of amendments made in the international phase

8a. ☐ Do not enter the amendment made in the international phase under PCT Article 19.

8b. ☐ Do not enter the amendment made in the international phase under PCT Article 34.

NOTE: A proper amendment made in English under Article 19 or 34 will be entered in the U.S. national phase application absent a clear instruction from applicant not to enter the amendment(s).

The following items 9 to 17 concern a document(s) or information included.

9. ☑ An Information Disclosure Statement under 37 CFR 1.97 and 1.98.
10. ☐ A preliminary amendment.
11. ☑ An Application Data Sheet under 37 CFR 1.76.
12. ☐ A substitute specification. NOTE: A substitute specification cannot include claims. See 37 CFR 1.125(b).
13. ☑ A power of attorney and/or change of address letter.
14. ☐ A computer-readable form of the sequence listing in accordance with PCT Rule 13*ter*.3 and 37 CFR 1.821-1.825.
15. ☐ Assignment papers *(cover sheet and document(s))*. Name of Assignee: _____
16. ☐ 37 CFR 3.73(c) Statement *(when there is an Assignee)*.

This collection of information is required by 37 CFR 1.414 and 1.491-1.492. 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 15 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: Mail Stop PCT, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

U.S. APPLN. No. (if known – see 37 CFR 1.5)	INTERNATIONAL APPLICATION No.	ATTORNEY DOCKET No.
	PCT/JP2014/072783	T&A-10860

17. ☑ Other items or information:

International Published Application; PCT Request; International Search Report; Written Opinion and Cited References.

The following fees have been submitted.	CALCULATIONS	PTO USE ONLY
18. ☑ Basic national fee (37 CFR 1.492(a)) **$280**	$ 280.00	
19. ☑ Examination fee (37 CFR 1.492(c)) If the written opinion prepared by ISA/US or the international preliminary examination report prepared by IPEA/US indicates all claims satisfy provisions of PCT Article 33(1)-(4) ..... **$0** All other situations **$720**	$ 720.00	
20. ☑ Search fee (37 CFR 1.492(b)) If the written opinion prepared by ISA/US or the international preliminary examination report prepared by IPEA/US indicates all claims satisfy provisions of PCT Article 33(1)-(4) ..... **$0** Search fee (37 CFR 1.445(a)(2)) has been paid on the international application to the USPTO as an International Searching Authority ..... **$120** International Search Report prepared by an ISA other than the US and provided to the Office or previously communicated to the US by the IB ..... **$480** All other situations **$600**	$ 480.00	
TOTAL OF 18, 19, and 20 =	$ 1,480.00	
☐ Additional fee for specification and drawings filed in paper over 100 sheets (excluding sequence listing in compliance with 37 CFR 1.821(c) or (e) in an electronic medium or computer program listing in an electronic medium) (37 CFR 1.492(j)). Fee for each additional 50 sheets of paper or fraction thereof **$400**		

Total Sheets	Extra Sheets	Number of each addition 50 or fraction thereof (round **up** to a whole number)	RATE	
62 - 100 =	/ 50 =		x **$400**	$
Surcharge of **$140.00** for furnishing any of the search fee, examination fee, or the oath or declaration after the date of commencement of the national stage (37 CFR 1.492(h)).				$

CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE		
Total claims	15 - 20 =		x **$80**	$	
Independent claims	3 - 3 =		x **$420**	$	
MULTIPLE DEPENDENT CLAIM(S) (if applicable)			**+ $780**	$	
Processing fee of **$140.00** for furnishing the English translation later than 30 months from the earliest claimed priority date (37 CFR 1.492(i)). +				$	
TOTAL OF ABOVE CALCULATIONS =				$ 1,480.00	
☐ **Applicant asserts small entity status.** See 37 CFR 1.27. Fees above are reduced by ½.					
☐ **Applicant certifies micro entity status.** See 37 CFR 1.29. Fees above are reduced by ¾. Applicant must attach form PTO/SB/15A or B or equivalent.					
TOTAL NATIONAL FEE =				$ 1,480.00	
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). **$40.00** per property. +				$	
TOTAL FEES ENCLOSED =				$ 1,480.00	
				Amount to be refunded:	$
				Amount to be charged:	$

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Ex. 1002, Page 21

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.

a. ☐ A check in the amount of $_____ to cover the above fees is enclosed.

b. ☐ Please charge my Deposit Account No. _____ in the amount of $_____ to cover the above fees.

c. ☑ The Director is hereby authorized to charge additional fees which may be required, or credit any overpayment, to Deposit Account No. 501417 as follows:

i. ☑ any required fee.

ii. ☐ any required fee except for excess claims fees required under 37 CFR 1.492(d) and (e) and multiple dependent claim fee required under 37 CFR 1.492(f).

d. ☑ Fees are to be charged to a credit card. **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. The PTO-2038 should only be mailed or faxed to the USPTO. However, when paying the basic national fee, the PTO-2038 may NOT be faxed to the USPTO.

ADVISORY: If filing by EFS-Web, do **NOT** attach the PTO-2038 form as a PDF along with your EFS-Web submission. Please be advised that this is **not** recommended and by doing so your **credit card information may be displayed via PAIR**. To protect your information, it is recommended to pay fees online by using the electronic payment method.

NOTE: Where an appropriate time limit under 37 CFR 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the International Application to pending status.

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 1: 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**.

NOTE 2: A U.S. national stage application may not claim priority to the international application of which it is the national phase. The filing date of a U.S. national stage application is the international filing date. See 35 U.S.C. 363.

Correspondence Address

☑ The address associated with Customer Number: 24956 **OR** ☐ Correspondence address below

Name					
Address					
City		State		Zip Code	
Country		Telephone			
Email					

Signature	/Shrinath Malur/	Date	February 17, 2017
Name (Print/Type)	Shrinath Malur	Registration No. (Attorney/Agent)	34,663

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.

MULTIPLE DEPENDENT CLAIM FEE CALCULATION SHEET

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

Application Number	Filing Date
15504668	

Applicant(s) Nobuo MASUOKA

* May be used for additional claims or amendments

CLAIMS	AS FILED		AFTER FIRST AMENDMENT		AFTER SECOND AMENDMENT	
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Total Depend	12	↵	0	↵	0	↵
Total Claims	15		0		0	

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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

U.S. APPLICATION NUMBER NO.	FIRST NAMED INVENTOR	ATTY. DOCKET NO.
15/504,668	Nobuo MASUOKA	T&A-10860

24956
MATTINGLY & MALUR, PC
1800 DIAGONAL ROAD
SUITE 210
ALEXANDRIA, VA 22314

INTERNATIONAL APPLICATION NO.	
PCT/JP2014/072783	
I.A. FILING DATE	PRIORITY DATE
08/29/2014	

CONFIRMATION NO. 8696
371 ACCEPTANCE LETTER

OC000000092227348

Date Mailed: 06/22/2017

NOTICE OF ACCEPTANCE OF APPLICATION UNDER 35 U.S.C 371 AND 37 CFR 1.495

The applicant is hereby advised that the United States Patent and Trademark Office, in its capacity as a Designated / Elected Office (37 CFR 1.495), has ACCEPTED the above identified international application for national patentability examination in the United States Patent and Trademark Office.

The United States Application Number assigned to the application is shown above. A Filing Receipt will be issued for the present application in due course. **THE DATE APPEARING ON THE FILING RECEIPT AS THE "FILING DATE or 371(c) DATE" IS THE DATE ON WHICH THE LAST OF THE 35 U.S.C. 371 (c)(1) and (c)(2) REQUIREMENTS HAS BEEN RECEIVED IN THE OFFICE. THIS DATE IS SHOWN BELOW.** The filing date of the above identified application is the international filing date of the international application (Article 11(3) and 35 U.S.C. 363)

02/17/2017
DATE OF RECEIPT OF 35 U.S.C.
371(c)(1) and (c)(2) REQUIREMENTS

The following items have been received:

- Copy of the International Application filed on 02/17/2017
- English Translation of the IA filed on 02/17/2017
- Copy of the International Search Report filed on 02/17/2017
- Information Disclosure Statements filed on 02/17/2017
- Inventor's Oath or Declaration filed on 02/17/2017
- Request for Immediate Examination filed on 02/17/2017
- U.S. Basic National Fees filed on 02/17/2017
- Authorize Access to Search Results filed on 02/17/2017
- Power of Attorney filed on 02/17/2017
- Non-English Language Application filed on 02/17/2017
- Authorization to Permit Access filed on 02/17/2017
- Application Data Sheet (37 CFR 1.76) filed on 02/17/2017

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Ex. 1002, Page 25

Applicant is reminded that any communications to the United States Patent and Trademark Office must be mailed to the address given in the heading and include the U.S. application no. shown above (37 CFR 1.5)

RODERICK M JONES

Telephone: (571) 272-9083

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Ex. 1002, Page 26

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 NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
15/504,668	02/17/2017	Nobuo MASUOKA	T&A-10860

CONFIRMATION NO. 8696

24956
MATTINGLY & MALUR, PC
1800 DIAGONAL ROAD
SUITE 210
ALEXANDRIA, VA 22314

PUBLICATION NOTICE

OC000000094404263

Title:COMMUNICATION SYSTEM, COMMUNICATION DEVICE AND COMMUNICATION TERMINAL DEVICE

Publication No.US-2017-0280327-A1
Publication Date:09/28/2017

NOTICE OF PUBLICATION OF APPLICATION

The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

The publication may be accessed through the USPTO's publically available Searchable Databases via the Internet at www.uspto.gov. The direct link to access the publication is currently http://www.uspto.gov/patft/.

The publication process established by the Office does not provide for mailing a copy of the publication to applicant. A copy of the publication may be obtained from the Office upon payment of the appropriate fee set forth in 37 CFR 1.19(a)(1). Orders for copies of patent application publications are handled by the USPTO's Public Records Division. The Public Records Division can be reached by telephone at (571) 272-3150 or (800) 972-6382, by facsimile at (571) 273-3250, by mail addressed to the United States Patent and Trademark Office, Public Records Division, Alexandria, VA 22313-1450 or via the Internet.

In addition, information on the status of the application, including the mailing date of Office actions and the dates of receipt of correspondence filed in the Office, may also be accessed via the Internet through the Patent Electronic Business Center at www.uspto.gov using the public side of the Patent Application Information and Retrieval (PAIR) system. The direct link to access this status information is currently https://portal.uspto.gov/pair/PublicPair. Prior to publication, such status information is confidential and may only be obtained by applicant using the private side of PAIR.

Further assistance in electronically accessing the publication, or about PAIR, is available by calling the Patent Electronic Business Center at 1-866-217-9197.

Office of Data Managment, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

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Ex. 1002, Page 27

Doc Code: R46C.REQ
Document Description: Request under 37 CFR 1.46(c) to correct, update or change the applicant.

PTO/AIA/41 (04-15)
Approved for use through 11/30/2020. 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.

REQUEST TO CORRECT OR UPDATE THE NAME OF THE APPLICANT UNDER 37 CFR 1.46(c)(1), OR CHANGE THE APPLICANT UNDER 37 CFR 1.46(c)(2)

(FOR USE ONLY IN APPLICATIONS FILED ON OR AFTER SEPTEMBER 16, 2012)

Application Number	15/504,668
Filing Date	February 17, 2017
First Named Inventor	Nobuo MASUOKA
Art Unit	2491
Examiner Name	A. PATEL
Practitioner Docket Number	T&A-10860

To: Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Applicant hereby **requests that the name of the applicant be corrected or updated under 37 CFR 1.46(c)(1), or that the applicant be changed under 37 CFR 1.46(c)(2),** in the above-identified application. **Requests under 37 CFR 1.46(c)(1) or (c)(2) cannot be submitted after payment of the issue fee or if the application has been patented.**

Please check the applicable box(es) below.

☐ 1. This request is to **correct or update the name of the applicant** (**under 37 CFR 1.46(c)(1)**) and includes:

☐ An application data sheet (ADS) in accordance with 37 CFR 1.76(c) with the corrected or updated information shown with markings (*e.g.*, underlining for insertions, strikethrough for deletions). A Corrected Web-based ADS may be used.

Note: Requests under 37 CFR 1.46(c)(1) may be filed to correct typographical errors in the name of the § 1.46 applicant, or for updating the name of the § 1.46 applicant (*i.e.*, where there is no change in the applicant itself but just in the applicant's name). See the Manual of Patent Examining Procedure (MPEP) section 605.01.

■ 2. This request is to **change the applicant** (**under 37 CFR 1.46(c)(2)**) and includes:

■ An application data sheet (ADS) in accordance with 37 CFR 1.76(c) that identifies the changes with proper markings (underlining for insertions and strikethrough for deletions). A Corrected Web-based ADS may be used.

■ A Statement Under 37 CFR 3.73(c) (Form PTO/AIA/96 or equivalent). See MPEP 325.

I am the

☐ applicant* ■ attorney or agent of record Registration number 30,293 ☐ attorney or agent acting under 37 CFR 1.34 Registration number _____

Signature /John R. Mattingly/

Typed or printed name John R. Mattingly

Date July 25, 2018

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. *Juristic entities must be represented by a patent practitioner (See 37 CFR 1.31, applicable to any paper filed on or after September 16, 2012 that is presented on behalf of a juristic entity, regardless of application filing date). Submit multiple forms if more than one signature is required, see below**.

☐ ** Total of _____ forms are submitted.

This collection of information is required by 37 CFR 1.36. 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 12 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.

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	T&A-10860
	Application Number	15/504,668
Title of Invention	COMMUNICATION SYSTEM, COMMUNICATION DEVICE AND COMMUNICATION TERMINAL DEVICE	

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

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

City		Country of Residence [i]	

Mailing Address of Inventor:

Address 1	
Address 2	

City		State/Province	
Postal Code		Country [i]	

Inventor 2 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix

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

City		Country of Residence [i]	

Mailing Address of Inventor:

Address 1	
Address 2	

City		State/Province	
Postal Code		Country [i]	

Inventor 3 Remove

Legal Name

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Ex. 1002, Page 30

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	T&A-10860
	Application Number	15/504,668
Title of Invention	COMMUNICATION SYSTEM, COMMUNICATION DEVICE AND COMMUNICATION TERMINAL DEVICE	

Prefix	Given Name	Middle Name	Family Name	Suffix

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

City		Country of Residence [i]	

Mailing Address of Inventor:

Address 1	
Address 2	

City		State/Province	
Postal Code		Country [i]	

Inventor 4 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix

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

City		Country of Residence [i]	

Mailing Address of Inventor:

Address 1	
Address 2	

City		State/Province	
Postal Code		Country [i]	

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).

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

Customer Number		
Email Address		Add Email Remove Email

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	T&A-10860
	Application Number	15/504,668
Title of Invention	COMMUNICATION SYSTEM, COMMUNICATION DEVICE AND COMMUNICATION TERMINAL DEVICE	

Application Information:

Title of the Invention	COMMUNICATION SYSTEM, COMMUNICATION DEVICE AND COMMUNICATION TERMINAL DEVICE		
Attorney Docket Number	T&A-10860	**Small Entity Status Claimed**	☐
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)		**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			

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	T&A-10860
	Application Number	15/504,668
Title of Invention	COMMUNICATION SYSTEM, COMMUNICATION DEVICE AND COMMUNICATION TERMINAL DEVICE	

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			Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)

Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the **Add** button.

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.

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.

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	T&A-10860
	Application Number	15/504,668
Title of Invention	COMMUNICATION SYSTEM, COMMUNICATION DEVICE AND COMMUNICATION TERMINAL DEVICE	

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	T&A-10860
	Application Number	15/504,668
Title of Invention	COMMUNICATION SYSTEM, COMMUNICATION DEVICE AND COMMUNICATION TERMINAL DEVICE	

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

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	~~HITACHI MAXELL, LTD.~~ Maxell, Ltd.		
Mailing Address Information For Applicant:			
Address 1	~~1-88, Ushitora 1-chome, Ibaraki-shi,~~ 1 Koizumi, Oyamazaki, Oyamazaki-cho, Otokuni-gun		
Address 2			
City	~~Osaka~~ Kyoto	**State/Province**	
Country JP		Postal Code	~~567-8567~~ 618-8525
Phone Number		Fax Number	
Email Address			

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

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	T&A-10860
	Application Number	15/504,668
Title of Invention	COMMUNICATION SYSTEM, COMMUNICATION DEVICE AND COMMUNICATION TERMINAL DEVICE	

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.

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.

Signature:

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	/John R. Mattingly/			Date (YYYY-MM-DD)	2018-07-25
First Name	John	Last Name	Mattingly	Registration Number	30,293

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

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	T&A-10860
	Application Number	15/504,668
Title of Invention	COMMUNICATION SYSTEM, COMMUNICATION DEVICE AND COMMUNICATION TERMINAL DEVICE	

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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STATEMENT UNDER 37 CFR 3.73(c)

Applicant/Patent Owner: Maxell, Ltd.

Application No./Patent No.: 15/504,668 Filed/Issue Date: February 17, 2017

Titled: COMMUNICATION SYSTEM, COMMUNICATION DEVICE AND COMMUNICATION TERMINAL DEVICE

Maxell, Ltd., a Corporation

(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: Nobuo MASUOKA et al. To: Hitachi Maxell, Ltd.

   The document was recorded in the United States Patent and Trademark Office at
   Reel 041283, Frame 0017, or for which a copy thereof is attached.

2. From: Hitachi Maxell, Ltd. To: Maxell, Ltd.

   The document was recorded in the United States Patent and Trademark Office at
   Reel 045142, Frame 0208, or for which a copy thereof is attached.

This collection of information is required by 37 CFR 3.73(b). 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 12 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.

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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: _____

The document was recorded in the United States Patent and Trademark Office at

Reel _____, Frame _____, or for which a copy thereof is attached.

☐ 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.

/John R. Mattingly/	July 25, 2018
Signature	Date
John R. Mattingly	30,293
Printed or Typed Name	Title or Registration 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.

PTO/AIA/80 (07-12)
Approved for use through 11/30/2014. 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(c).

I hereby appoint:

■ Practitioners associated with Customer Number: 24956

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 assignments documents attached to this form in accordance with 37 CFR 3.73(c).

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

■ The address associated with Customer Number: 24956

OR

☐	Firm or Individual Name			
	Address			
	City		State	Zip
	Country			
	Telephone		Email	

Assignee Name and Address:

Maxell, Ltd.
1, Koizumi, Oyamazaki, Oyamazaki-cho Otokuni-gun, Kyoto 618-8525, Japan

A copy of this form, together with a statement under 37 CFR 3.73(c) (Form PTO/AIA/96 or equivalent) is required to be Filed in each application in which this form is used. The statement under 37 CFR 3.73(c) may be completed by one of The practitioners appointed in this form, 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	Kazuhiro Kaizaki	Date	Oct. 17. 2017
Name	Kazuhiro Kaizaki	Telephone	
Title	Vice President		

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.**

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.

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 NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
15/504,668	02/17/2017	Nobuo MASUOKA	T&A-10860

CONFIRMATION NO. 8696

POA ACCEPTANCE LETTER

24956
MATTINGLY & MALUR, PC
1800 DIAGONAL ROAD
SUITE 210
ALEXANDRIA, VA 22314

OC000000101311464

Date Mailed: 07/30/2018

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 07/25/2018.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at **(571) 272-4000** or **(571) 272-4200** or **1-888-786-0101**.

/lqchau/

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Ex. 1002, Page 44

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	580	(send$ transmit$) WITH (connection near3 (details parameters information)) WITH short	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 07:45
L2	415	1 and @ad<="20140829"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 07:46
L3	643	regularly WITH (confirm$ check$ monitor$3) WITH connection	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 07:50
L4	434	3 and @ad<="20140829"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 07:54
L5	673134	(terminat$ disconnect$ maintain$ continu$) WITH connection	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 07:57
L6	122	3 same 5	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 07:57
L7	68	6 and @ad<="20140829"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 07:57
L8	394	3 and 5	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:01
L9	249	8 and @ad<="20140829"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:01
L10	532	(terminat$ disconnect$) WITH connection WITH (rogue unauthoriz$)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:10
L11	0	3 and 10	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:10
L12	336969	(confirm$ check$ monitor$3) WITH connection	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:10

L13	230	10 and 12	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:10
L14	200	13 and @ad<="20140829"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:11
L15	5433	(terminat$ disconnect$ maintain$ continu$) WITH connection WITH request$ WITH user	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:18
L16	5433	5 and 15	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:18
L17	289766	(terminat$ disconnect$) WITH connection	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:19
L19	3615	15 and 17	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:19
L20	2910	19 and @ad<="20140829"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:19
L21	15755	(terminat$ disconnect$) WITH connection WITH (button gui message popup)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:20
L22	586	12 and 15 and 21	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:21
L23	507	22 and @ad<="20140829"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:22
L24	2335	12 and 15	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:23
L25	731	12 same 15	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:23
L26	600	25 and @ad<="20140829"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:23
L27	1	"20170280327".pn.	US-PGPUB	OR	ON	2018/10/10 08:27
L28	1	L27 and regularly	US-PGPUB	OR	ON	2018/10/10 08:27
L29	56	14 and 21	US-PGPUB; USPAT; EPO;	OR	ON	2018/10/10 08:33

			JPO; DERWENT			
L30	13738	(terminat$ disconnect$) WITH connection WITH (response respond$)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:46
L31	1050	15 and 30	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:47
L32	830	31 and @ad<="20140829"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:47
L33	88	1 and address with list	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 09:17
L34	25	33 and (remov$ delet$) WITH address	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 09:18
L35	19	34 and @ad<="20140829"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 09:18
L36	227992	request$ WITH (OTP "one time password" "one-time password" passcode code "authentication code" "authorization code")	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 09:24
L37	85	1 and 36	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 09:24
L38	66	37 and @ad<="20140829"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 09:24
L39	5	1 and display$ WITH connection WITH (qr barcode "bar code")	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 09:46
L40	2	39 and @ad<="20140829"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 09:46
L41	109	(send$ transmit$) WITH (connection near3 (details parameters information)) WITH (qr barcode "bar code")	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 09:47
L42	12	41 and short near range	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 09:48
L43	8	42 and @ad<="20140829"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 09:48

S1	1210	726/4.cor.	USPAT	OR	ON	2018/10/09 09:51
S2	1	"20170280327".pn.	US-PGPUB	OR	ON	2018/10/09 09:52
S3	109056	(H04W12/08 or H04L63/0838 or H04W76/10 or H04W12/04 or H04W12/06 or H04W76/00 or H04W84/12).cpc.	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/09 10:13
S4	460	MASUOKA near NOBUO	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/09 10:14
S5	1	S4 and permission and LAN and terminating	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/09 10:14
S6	483	HASHIMOTO near YASUNOBU	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/09 10:15
S7	2	S6 and permission and LAN and terminating	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/09 10:15
S8	349	YOSHIZAWA near KAZUHIKO	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/09 10:15
S9	2	S8 and permission and LAN and terminating	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/09 10:15
S10	1141	SUZUKI near MOTOYUKI	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/09 10:15
S11	2	S10 and permission and LAN and terminating	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/09 10:15
S12	1	S2 and "display function"	US-PGPUB	OR	ON	2018/10/09 10:30
S13	8234	request$ WITH (permission access$5 control$5) WITH (projector "display device")	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/09 10:44
S14	1923	"access point" WITH (projector "display device")	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/09 10:46
S15	212	S13 and S14	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/09 10:46
S16	115	S15 and @ad<="20140829"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/09 10:46

S17	1	"20050036509".pn.	US-PGPUB	OR	ON	2018/10/09 11:00
S18	1	S17 and permission	US-PGPUB	OR	ON	2018/10/09 11:00
S19	1	S17 and terminat$	US-PGPUB	OR	ON	2018/10/09 11:01
S20	53	projector WITH ("built in" capabil$ function) WITH "access point"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/09 11:03
S21	31	S20 and @ad<="20140829"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/09 11:03
S22	0	S17 and short	US-PGPUB	OR	ON	2018/10/09 11:10
S23	1	S17 and disconnect$	US-PGPUB	OR	ON	2018/10/09 11:11
S24	1	S17 and connect$6	US-PGPUB	OR	ON	2018/10/09 11:13
S25	1	S17 and connect$6 WITH (monitor$3 regular$ confirm$)	US-PGPUB	OR	ON	2018/10/09 11:18

10/10/2018 11:39:17 AM
C:\Users\amoorthy\Documents\EAST\Workspaces\15504668.wsp

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	15/504,668	MASUOKA et al.
	Examiner	Art Unit
	ARAVIND K MOORTHY	2492

✓	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	10/09/2018								
	1	✓								
	2	✓								
	3	✓								
	4	✓								
	5	✓								
	6	✓								
	7	✓								
	8	✓								
	9	✓								
	10	✓								
	11	✓								
	12	✓								
	13	✓								
	14	✓								
	15	✓								

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	15/504,668	MASUOKA et al.
	Examiner	Art Unit
	ARAVIND K MOORTHY	2492

CPC - Searched*		
Symbol	Date	Examiner
H04W 12/08, 76/10, 12/04, 12/06, 76/00, 84/12	10/09/2018	AM
H04L 63/0838	10/09/2018	AM

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner
726	4	10/09/2018	AM

* 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
Inventor name search: Palm and East- search strategy enclosed	10/09/2018	AM
East (US-PGPUB, USPAT, EPO, JPO, DERWENT)- See search history printout	10/09/2018	AM

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner

SAMSUNG
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Alexandria, Virginia 22313-1450
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/504,668	02/17/2017	Nobuo MASUOKA	T&A-10860	8696

24956 7590 10/12/2018

MATTINGLY & MALUR, PC
1800 DIAGONAL ROAD
SUITE 210
ALEXANDRIA, VA 22314

EXAMINER
MOORTHY, ARAVIND K

ART UNIT	PAPER NUMBER
2492	

NOTIFICATION DATE	DELIVERY MODE
10/12/2018	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):

ptomail@mmiplaw.com

Office Action Summary	Application No. 15/504,668	Applicant(s) MASUOKA et al.	
	Examiner ARAVIND K MOORTHY	Art Unit 2492	AIA Status Yes

-- 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 17 February 2017.

☐ 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) 1-15 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) 1-15 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 See Continuation Sheet 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 _____.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date _____.

4) ☐ Other: _____.

Continuation of Application Papers 11): 17 February 2017

DETAILED ACTION

Notice of Pre-AIA or AIA Status

The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

1. This is in response to the communications filed on 25 July 2018.

2. Claims 1-15 are pending in the application.

3. Claims 1-15 have been rejected.

Specification

4. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words in length. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc. In addition, the form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided.

The abstract exceeds the 150 word limit.

Information Disclosure Statement

5. The examiner has considered the information disclosure statement (IDS) filed on 17 February 2017.

Claim Rejections - 35 USC § 112

The following is a quotation of 35 U.S.C. 112(b):

(b) CONCLUSION.—The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the inventor or a joint inventor regards as the invention.

The following is a quotation of 35 U.S.C. 112 (pre-AIA), second paragraph:
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 3 and 4 are rejected under 35 U.S.C. 112(b) or 35 U.S.C. 112 (pre-AIA), second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the inventor or a joint inventor, or for pre-AIA the applicant regards as the invention.

The term "regularly" in claims 3 and 4 is a relative term which renders the claim indefinite. The term "regularly" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Claim 7 recites the limitation "the wireless LAN access point function" in line 3 of the claim. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103 are summarized as follows:

1. Determining the scope and contents of the prior art.

2. Ascertaining the differences between the prior art and the claims at issue.

3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 1, 5, 7, 14 and 15 is/are rejected under 35 U.S.C. 103 as being unpatentable over Acharya et al US 2005/0036509 A1 (hereinafter Acharya) in view of Sugiyama US 2013/0057591 A1.

As to claim 1, Acharya discloses a communication system comprising:

a first communication terminal device having a wireless LAN connection function (i.e. various computing devices such as mobile phones) [0036];

a second communication terminal device having a wireless LAN connection function (i.e. various computing devices such as mobile phones) [0036]; and

a communication device having a display function (i.e. projector that is connected to the wireless network) [0036],

the first communication terminal device connecting to the communication device via a wireless LAN (i.e. computing devices connected to the projector through the wireless network) [0036],

the second communication terminal device connecting, under permission from the first communication terminal device, to the communication device via the wireless LAN and using the display function of the communication device through the connection (i.e. other user must request permission from the main device to gain access to the projector) [0059],

the first communication terminal device and the communication device communicating with each other to confirm whether the permission for the second communication terminal device to connect to and use the communication device is to be continued or terminated (i.e. the user has a button to connect/disconnect other users) [0084-0085], and,

in response to a termination of the permission, the communication device terminating the connection with the second communication terminal device via the wireless LAN to make the second communication terminal device unable to use the display function (i.e. the user has a button to connect/disconnect other users) [0084-0085].

Acharya does not teach the communication device having a wireless LAN access point function.

Sugiyama teaches a projector that has a wireless LAN access point apparatus function [0076].

Therefore, it would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to

have modified Acharya so that the communication device would have had a wireless LAN access point function.

It would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified Acharya by the teaching of Sugiyama because it helps allow multiple devices to connect to the projector securely [0015].

As to claim 5, Acharya teaches the communication system according to claim 1, wherein,

> for the confirmation, the first communication terminal device displays, for a user, information for confirming whether to continue or terminate the permission on a display screen, receives an input made through a user operation for continuing or terminating the permission, and transmits information indicating that the permission is to be continued or terminated in accordance with the input to the communication device (i.e. the user has a button to connect/disconnect other users) [0084-0085].

As to claim 7, Acharya teaches the communication system according to claim 1, wherein

> the communication device has a display device having the display function connect to each other via communication (i.e. projector that is connected to the wireless network) [0036],

the first communication terminal device connects to the access point device via the wireless LAN (i.e. computing devices connected to the projector through the wireless network) [0036],

the second communication terminal device connects, under permission from the first communication terminal device, with the access point device via the wireless LAN and uses the display function of the display device via the access point device through the connection via the wireless LAN (i.e. other user must request permission from the main device to gain access to the projector) [0059],

the first communication terminal device and the access point device communicate with each other to confirm whether to continue or terminate the permission (i.e. the user has a button to connect/disconnect other users) [0084-0085],

in response to a termination of the permission, the access point device terminates the connection with the second communication terminal device via the wireless LAN to make the second communication terminal device unable to use the display function (i.e. the user has a button to connect/disconnect other users) [0084-0085].

Acharya does not teach the communication device having a wireless LAN access point function.

Sugiyama teaches a projector that has a wireless LAN access point apparatus function [0076].

Therefore, it would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified Acharya so that the communication device would have had a wireless LAN access point function.

It would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified Acharya by the teaching of Sugiyama because it helps allow multiple devices to connect to the projector securely [0015].

As to claim 14, Acharya discloses a communication device for constituting a communication system including a first communication terminal device having a wireless LAN connection function (i.e. various computing devices such as mobile phones) [0036]; a second communication terminal device having a wireless LAN connection function (i.e. various computing devices such as mobile phones) [0036]; and the communication device having a display function (i.e. computing devices connected to the projector through the wireless network) [0036],

> the first communication terminal device connecting to the communication device via a wireless LAN (i.e. computing devices connected to the projector through the wireless network) [0036],
>
> the second communication terminal device connecting, under permission from the first communication terminal device, to the communication device via the wireless LAN and using the display function of the communication device through

the connection (i.e. other user must request permission from the main device to gain access to the projector) [0059],

the first communication terminal device and the communication device communicating with each other to confirm whether the permission for the second communication terminal device to connect to and use the communication device is to be continued or terminated (i.e. the user has a button to connect/disconnect other users) [0084-0085], and,

in response to a termination of the permission, the communication device terminating the connection with the second communication terminal device via the wireless LAN to make the second communication terminal device unable to use the display function (i.e. the user has a button to connect/disconnect other users) [0084-0085].

Acharya does not teach the communication device having a wireless LAN access point function.

Sugiyama teaches a projector that has a wireless LAN access point apparatus function [0076].

Therefore, it would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified Acharya so that the communication device would have had a wireless LAN access point function.

It would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified Acharya by the teaching of Sugiyama because it helps allow multiple devices to connect to the projector securely [0015].

As to claim 15, Acharya discloses a communication terminal device for constituting a communication system including a first communication terminal device having a wireless LAN connection function (i.e. various computing devices such as mobile phones) [0036]; a second communication terminal device having a wireless LAN connection function (i.e. various computing devices such as mobile phones) [0036]; and a communication device having a display function (i.e. computing devices connected to the projector through the wireless network) [0036], the communication terminal device serving as the first communication terminal device [0036],

> the first communication terminal device connecting to the communication device via a wireless LAN (i.e. computing devices connected to the projector through the wireless network) [0036],
>
> the second communication terminal device connecting, under permission from the first communication terminal device, to the communication device via the wireless LAN and using the display function of the communication device through the connection (i.e. other user must request permission from the main device to gain access to the projector) [0059],
>
> the first communication terminal device and the communication device communicating with each other to confirm whether the permission for the second

communication terminal device to connect to and use the communication device is to be continued or terminated (i.e. the user has a button to connect/disconnect other users) [0084-0085], and,

in response to a termination of the permission, the communication device terminating the connection with the second communication terminal device via the wireless LAN to make the second communication terminal device unable to use the display function (i.e. the user has a button to connect/disconnect other users) [0084-0085].

Acharya does not teach the communication device having a wireless LAN access point function.

Sugiyama teaches a projector that has a wireless LAN access point apparatus function [0076].

Therefore, it would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified Acharya so that the communication device would have had a wireless LAN access point function.

It would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified Acharya by the teaching of Sugiyama because it helps allow multiple devices to connect to the projector securely [0015].

8. Claims 2, 10 and 12 is/are rejected under 35 U.S.C. 103 as being unpatentable over Acharya et al US 2005/0036509 A1 (hereinafter Acharya) and Sugiyama US 2013/0057591 A1 as applied to claim 1 above, and further in view of Miura US 2015/0327310 A1.

As to claim 2, the Acharya-Sugiyama combination does not teach for the permission, the first communication terminal device transmits, to the second communication terminal device, connection information necessary for a connection via the wireless LAN through short range communication with the second communication terminal device. The Acharya-Sugiyama combination does not teach the second communication terminal device connects to the communication device via the wireless LAN by using the connection information.

Miura teaches transmitting connection information through short range wireless communication [0106]. Miura teaches establishing a connection using the connection information [0106].

Therefore, it would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified the Acharya-Sugiyama combination so that for the permission, the first communication terminal device would have transmitted, to the second communication terminal device, connection information necessary for a connection via the wireless LAN through short range communication with the second communication terminal device. The second communication terminal device would have connected to the communication device via the wireless LAN by using the connection information.

It would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified the Acharya-Sugiyama combination by the teaching of Miura because it enables easy distribution of information towards an unspecified large number of parties by utilizing short range wireless communication [0005].

As to claim 10, the Acharya-Sugiyama combination does not teach for the permission, the first communication terminal device requests a one-time password from the communication device, and the communication device responds with the one-time password. The Acharya-Sugiyama combination does not teach the first communication terminal device transmits, to the second communication terminal device, connection information including the one-time password necessary for a connection via the wireless LAN through short range communication with the second communication terminal device. The Acharya-Sugiyama combination does not teach the second communication terminal device connects to the communication device via the wireless LAN by using the connection information including the one-time password.

Miura teaches requesting a PIN code required for authentication to establish a connection [0069]. Miura teaches transmitting connection information through short range wireless communication [0106]. Miura teaches establishing a connection using the connection information [0106].

Therefore, it would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified the Acharya-Sugiyama combination so that for the permission the first communication terminal device would have requested a one-time password from the

communication device. The communication device would have responded with the one-time password. The first communication terminal device would have transmitted, to the second communication terminal device, connection information necessary for a connection via the wireless LAN through short range communication with the second communication terminal device. The second communication terminal device would have connected to the communication device via the wireless LAN by using the connection information including the one-time password.

It would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified the Acharya-Sugiyama combination by the teaching of Miura because it enables easy distribution of information towards an unspecified large number of parties by utilizing short range wireless communication [0005].

As to claim 12, the Acharya-Sugiyama combination does not teach for the permission, the second communication terminal device requests a one-time password from the communication device through short range communication with the communication device, and the communication device transmits connection information including the one-time password necessary for a connection via the wireless LAN, to the second communication terminal device. The Acharya-Sugiyama combination does not teach the second communication terminal device connects to the communication device via the wireless LAN by using the connection information including the one-time password.

Miura teaches requesting a PIN code required for authentication to establish a connection [0069]. Miura teaches transmitting connection information through short range wireless

communication [0106]. Miura teaches establishing a connection using the connection information [0106].

Therefore, it would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified the Acharya-Sugiyama combination so that for the permission the first communication terminal device would have requested a one-time password from the communication device. The communication device would have responded with the one-time password. The first communication terminal device would have transmitted, to the second communication terminal device, connection information necessary for a connection via the wireless LAN through short range communication with the second communication terminal device. The second communication terminal device would have connected to the communication device via the wireless LAN by using the connection information including the one-time password.

It would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified the Acharya-Sugiyama combination by the teaching of Miura because it enables easy distribution of information towards an unspecified large number of parties by utilizing short range wireless communication [0005].

9. Claim 3 is/are rejected under 35 U.S.C. 103 as being unpatentable over Acharya et al US 2005/0036509 A1 (hereinafter Acharya) and Sugiyama US 2013/0057591 A1 as applied to claim 1 above, and further in view of Hefetz US 2014/0337503 A1.

As to claim 3, the Acharya-Sugiyama combination does not teach that the communication device regularly confirms, with the first communication terminal device, whether to continue or terminate the permission, after the connection to the second communication terminal device, and continues the connection with the second communication terminal device upon the permission being to be continued, while terminating the connection with the second communication terminal device upon the permission being to be terminated.

Hefetz teaches checking connections and monitoring exiting connections [0087, 0089]. Hefetz teaches maintain connections [0089]. Hefetz teaches disconnecting unauthorized connections [0101].

Therefore, it would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified the Acharya-Sugiyama combination so that the communication device would have regularly confirmed, with the first communication terminal device, whether to continue or terminate the permission, after the connection to the second communication terminal device, and continued the connection with the second communication terminal device upon the permission being to be continued, while terminating the connection with the second communication terminal device upon the permission being to be terminated.

It would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified the Acharya-Sugiyama combination by the teaching of Hefetz because it provides a mechanism for acquiring a user's consent to establish a connection [0026].

10. Claim 4 is/are rejected under 35 U.S.C. 103 as being unpatentable over Acharya et al US 2005/0036509 A1 (hereinafter Acharya) and Sugiyama US 2013/0057591 A1 as applied to claim 1 above, and further in view of Lee et al US 2014/0325361 A1 (hereinafter Lee).

As to claim 4, the Acharya-Sugiyama combination does not teach that the first communication terminal device regularly confirms, with a user, whether to continue or terminate the permission, after the connection to the second communication terminal device, and transmits information indicating termination of the permission, to the communication device upon the permission being to be terminated, and, upon receiving the information indicating termination of the permission, the communication device terminates the connection with the second communication terminal device.

Lee teaches checking a connection state [0030]. Lee teaches sending a message requesting a disconnection [0030].

Therefore, it would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified the Acharya-Sugiyama combination so that the first communication terminal device would have regularly confirmed, with a user, whether to continue or terminate the permission, after the connection to the second communication terminal device, and transmitted information indicating termination of the permission, to the communication device upon the permission being to be terminated, and, upon receiving the information indicating termination of the permission, the communication device terminated the connection with the second communication terminal device.

It would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified the Acharya-Sugiyama combination by the teaching of Lee because it helps control presentation of slides using a mobile terminal [0003].

11. Claim 6 is/are rejected under 35 U.S.C. 103 as being unpatentable over Acharya et al US 2005/0036509 A1 (hereinafter Acharya) and Sugiyama US 2013/0057591 A1 as applied to claim 1 above, and further in view of Saito et al US 2011/0237191 A1 (hereinafter Saito).

As to claim 6, the Acharya-Sugiyama combination does not teach for the confirmation, the communication device transmits information for confirming whether to continue or terminate the permission, to the first communication terminal device. The Acharya-Sugiyama combination does not teach upon receiving the information for the confirmation, the first communication terminal device transmits response information to the communication device. The Acharya-Sugiyama combination does not teach the communication device determines that the permission is to be continued upon receiving the response information from the first communication terminal device, and determines that the permission is to be terminated and terminates the connection with the second communication terminal device upon not receiving the response information.

Saito teaches a disconnection request [0044]. Saito teaches receiving a disconnection response [0033]. Saito teaches if no response is received then the connection is disconnected [0042].

Therefore, it would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to

have modified the Acharya-Sugiyama combination so that for the confirmation, the communication device would have transmitted information for confirming whether to continue or terminate the permission, to the first communication terminal device. Upon receiving the information for the confirmation, the first communication terminal device would have transmitted response information to the communication device. The communication device would have determined that the permission is to be continued upon receiving the response information from the first communication terminal device, and determined that the permission was to be terminated and terminated the connection with the second communication terminal device upon not receiving the response information.

It would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified the Acharya-Sugiyama combination by the teaching of Saito because it provides a system for simultaneously connecting multiple communication protocols to another short range wireless communication system [0002].

12. Claims 8, 9 and 11 is/are rejected under 35 U.S.C. 103 as being unpatentable over Acharya et al US 2005/0036509 A1 (hereinafter Acharya) and Sugiyama US 2013/0057591 A1 as applied to claim 1 above, and further in view of Hatayama et al US 2010/0323682 A1 (hereinafter Hatayama).

As to claim 8, the Acharya-Sugiyama combination does not teach for the permission, the first communication terminal device transmits, to the second communication terminal device, connection information necessary for a connection via the wireless LAN through short range communication with the second communication terminal device, and the second communication terminal device transmits address information on the second communication terminal device to the

first communication terminal device. The Acharya-Sugiyama combination does not teach the first communication terminal device transmits the address information on the second communication terminal device to the communication device. The Acharya-Sugiyama combination does not teach the communication device registers the address information on the second communication terminal device into a permission list. The Acharya-Sugiyama combination does not teach the second communication terminal device connects to the communication device via the wireless LAN by using the connection information. The Acharya-Sugiyama combination does not teach that upon the permission being to be terminated, the first communication terminal device causes the communication device to delete the address information on the second communication terminal device from the permission list of the communication device. The Acharya-Sugiyama combination does not teach that upon the address information on the second communication terminal device being not registered in the permission list, the communication device terminates the connection with the second communication terminal device.

Hatayama teaches short distance radio [0081]. Hatayama teaches sending connection setting information over short distance radio [0099]. Hatayama teaches adding address information to a list [0084]. Hatayama teaches deleting address information from the list [0258].

Therefore, it would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified the Acharya-Sugiyama combination so that for the permission, the first communication terminal device would have transmitted, to the second communication terminal device, connection information necessary for a connection via the wireless LAN through short range communication with the second communication terminal device, and the second

communication terminal device would have transmitted address information on the second communication terminal device to the first communication terminal device. The first communication terminal device would have transmitted the address information on the second communication terminal device to the communication device. The communication device would have registered the address information on the second communication terminal device into a permission list. The second communication terminal device would have connected to the communication device via the wireless LAN by using the connection information. Upon the permission being to be terminated, the first communication terminal device would have caused the communication device to delete the address information on the second communication terminal device from the permission list of the communication device. Upon the address information on the second communication terminal device being not registered in the permission list, the communication device would have terminated the connection with the second communication terminal device.

It would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified the Acharya-Sugiyama combination by the teaching of Hatayama because it provides a system for easy acquisition of content [0008].

As to claim 9, the Acharya-Sugiyama combination does not teach for the permission, the first communication terminal device transmits, to the second communication terminal device, connection information necessary for a connection via the wireless LAN through short range communication with the second communication terminal device, and the second communication terminal device transmits address information on the second communication terminal device to the

first communication terminal device. The Acharya-Sugiyama combination does not teach the first communication terminal device registers the address information on the second communication terminal device into a permission list. The Acharya-Sugiyama combination does not teach the second communication terminal device connects to the communication device via the wireless LAN by using the connection information. The Acharya-Sugiyama combination does not teach upon the permission being to be terminated, the first communication terminal device deletes the address information on the second communication terminal device from the permission list. The Acharya-Sugiyama combination does not teach the communication device performs communication for confirmation with the first communication terminal device and, upon the address information on the second communication terminal device being not registered in the permission list of the communication device, terminates the connection with the second communication terminal device.

Hatayama teaches short distance radio [0081]. Hatayama teaches sending connection setting information over short distance radio [0099]. Hatayama teaches adding address information to a list [0084]. Hatayama teaches deleting address information from the list [0258].

Therefore, it would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified the Acharya-Sugiyama combination so that for the permission, the first communication terminal device would have transmitted, to the second communication terminal device, connection information necessary for a connection via the wireless LAN through short range communication with the second communication terminal device, and the second communication terminal device would have transmitted address information on the second

communication terminal device to the first communication terminal device. The first communication terminal device would have transmitted the address information on the second communication terminal device to the communication device. The communication device would have registered the address information on the second communication terminal device into a permission list. The second communication terminal device would have connected to the communication device via the wireless LAN by using the connection information. Upon the permission being to be terminated, the first communication terminal device would have caused the communication device to delete the address information on the second communication terminal device from the permission list of the communication device. Upon the address information on the second communication terminal device being not registered in the permission list, the communication device would have terminated the connection with the second communication terminal device.

It would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified the Acharya-Sugiyama combination by the teaching of Hatayama because it provides a system for easy acquisition of content [0008].

As to claim 11, the Acharya-Sugiyama combination does not teach for the permission, the second communication terminal device performs short range communication with the communication device, the communication device transmits, to the second communication terminal device, connection information necessary for a connection via the wireless LAN, and the second communication terminal device transmits address information on the second communication terminal device to the communication device. The Acharya-Sugiyama

combination does not teach the communication device registers the address information on the second communication terminal device into a permission list. The Acharya-Sugiyama combination does not teach the second communication terminal device connects to the communication device via the wireless LAN by using the connection information. the Acharya-Sugiyama combination does not teach upon the permission being to be terminated, the first communication terminal device causes the communication device to delete the address information on the second communication terminal device from the permission list of the communication device. The Acharya-Sugiyama combination does not teach upon the address information on the second communication terminal device being not registered in the permission list, the communication device terminates the connection with the second communication terminal device.

Hatayama teaches short distance radio [0081]. Hatayama teaches sending connection setting information over short distance radio [0099]. Hatayama teaches adding address information to a list [0084]. Hatayama teaches deleting address information from the list [0258].

Therefore, it would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified the Acharya-Sugiyama combination so that for the permission, the first communication terminal device would have transmitted, to the second communication terminal device, connection information necessary for a connection via the wireless LAN through short range communication with the second communication terminal device, and the second communication terminal device would have transmitted address information on the second communication terminal device to the first communication terminal device. The first communication terminal device would have transmitted the address information on the second

communication terminal device to the communication device. The communication device would have registered the address information on the second communication terminal device into a permission list. The second communication terminal device would have connected to the communication device via the wireless LAN by using the connection information. Upon the permission being to be terminated, the first communication terminal device would have caused the communication device to delete the address information on the second communication terminal device from the permission list of the communication device. Upon the address information on the second communication terminal device being not registered in the permission list, the communication device would have terminated the connection with the second communication terminal device.

It would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified the Acharya-Sugiyama combination by the teaching of Hatayama because it provides a system for easy acquisition of content [0008].

13. Claim 13 is/are rejected under 35 U.S.C. 103 as being unpatentable over Acharya et al US 2005/0036509 A1 (hereinafter Acharya) and Sugiyama US 2013/0057591 A1 as applied to claim 1 above, and further in view of Doss et al US 2013/0221084 A1 (hereinafter Doss).

As to claim 13, the Acharya-Sugiyama combination does not teach for the permission, the first communication terminal device transmits, to the second communication terminal device, connection information necessary for a connection via the wireless LAN through short range communication with the second communication terminal device. The Acharya-Sugiyama combination does not teach the second communication terminal device connects to the

communication device via the wireless LAN by using the connection information. the Acharya-Sugiyama combination does not teach that after the communication device and the second communication terminal device connect to each other, the communication device or the first communication terminal device performs communication for confirming whether to continue or terminate the permission, and continues the connection between the communication device and the second communication terminal device upon the permission being to be continued, while terminating the connection between the communication device and the second communication terminal device upon the permission being to be terminated. The Acharya-Sugiyama combination does not teach in the short range communication, the first communication terminal device displays a bar code representing the connection information on a display screen thereof and the second communication terminal device captures an image of the bar code with a camera to read the connection information.

Doss teaches using short-range communication [0054]. Doss teaches transmitting connection information [0095]. Doss teaches the connection information is in a QR code that can be scanned by a device [0095].

Therefore, it would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified the Acharya-Sugiyama combination so that for the permission, the first communication terminal device would have transmitted, to the second communication terminal device, connection information necessary for a connection via the wireless LAN through short range communication with the second communication terminal device. The second communication terminal device would have connected to the communication device via the

wireless LAN by using the connection information. After the communication device and the second communication terminal device connected to each other, the communication device or the first communication terminal device would have performed communication for confirming whether to continue or terminate the permission, and continued the connection between the communication device and the second communication terminal device upon the permission being to be continued, while terminating the connection between the communication device and the second communication terminal device upon the permission being to be terminated. In the short range communication, the first communication terminal device would have displayed a bar code representing the connection information on a display screen thereof and the second communication terminal device captured an image of the bar code with a camera to read the connection information.

It would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified the Acharya-Sugiyama combination by the teaching of Doss because the connection information in a visual tag provides a more secure connection [0008].

Conclusion

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ARAVIND K MOORTHY whose telephone number is (571)272-3793. The examiner can normally be reached on M-F 7:30-7:30.

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, Saleh Najjar can be reached on 571-272-4006. 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 http://pair-direct.uspto.gov. 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.

/ARAVIND K MOORTHY/
Primary Examiner, Art Unit 2492

REMARKS / ARGUMENTS

Claims 1-2 and 4-15 remain pending in this application. Claim 3 has been canceled without prejudice and without disclaimer. No new matter has been added.

Specification

The original Abstract has been replaced with a replacement Abstract to overcome the objection.

35 U.S.C. §112

It is submitted that the amendments to claims 1 and 4 overcome the rejection under 35 U.S.C. §112.

35 U.S.C. §103

Claims 1, 5, 7, 14 and 15 stand rejected under 35 U.S.C. §103 as being unpatentable over Acharya et al. (U.S. Publication No. 2005/0036509; hereinafter "Acharya") in view of Sugiyama (U.S. Publication No. 2013/0057591; hereinafter "Sugiyama"). **Claims 2, 10 and 12** stand rejected under 35 U.S.C. §103 as being unpatentable over Acharya and Sugiyama and further in view of Miura (U.S. Publication No. 2015/0327310; hereinafter "Miura"). **Claim 3** stands rejected under 35 U.S.C. §103 as being unpatentable over Acharya and Sugiyama and further in view of Hefetz (U.S. Publication No. 2014/0337503; hereinafter "Hefetz"). **Claim 4**

stands rejected under 35 U.S.C. §103 as being unpatentable over Acharya and Sugiyama and further in view of Lee et al. (U.S. Publication No. 2014/0325361; hereinafter "Lee"). **Claim 6** stands rejected under 35 U.S.C. §103 as being unpatentable over Acharya and Sugiyama and further in view of Saito et al. (U.S. Publication No. 2011/0237191; hereinafter "Saito"). **Claims 8, 9 and 11** stand rejected under 35 U.S.C. §103 as being unpatentable over Acharya and Sugiyama and further in view of Hatayama et al. (U.S. Publication No. 2010/0323682; hereinafter "Hatayama"). **Claim 13** stands rejected under 35 U.S.C. §103 as being unpatentable over Acharya and Sugiyama and further in view of Doss et al. (U.S. Publication No. 2013/0221084; hereinafter "Doss"). These rejections are traversed as follows.

For example, claim 1 has been amended for purposes of clarification and to incorporate subject matter similar to claim 3. Claims 14 and 15 have been amended to include similar subject matter. As amended, claim 1 is directed to a communication system that includes:

> a first communication terminal device;
> a second communication terminal device;
> an access point device; and
> a communication device having a display function,
> the first communication terminal device connecting to the communication device via the access point device,
> the second communication terminal device connecting, under permission from the first communication terminal device, to the communication device via the access point device and using the display function of the communication device through the connection,

the first communication terminal device and the communication device communicating with each other to confirm whether the permission for the second communication terminal device to connect to and use the communication device is to be continued or terminated,

the communication device performing communication with the first communication terminal device at predetermined time intervals for confirming whether to continue or terminate the permission for the second communication terminal device to connect to the communication device, after the connection to the second communication terminal device, and continuing the connection with the second communication terminal device upon confirming the permission is to be continued, while terminating the connection with the second communication terminal device upon confirming the permission is to be terminated, and

in response to a termination of the permission, the communication device terminating the connection with the second communication terminal device to make the second communication terminal device unable to use the display function.

In rejecting claim 3, the Examiner recognizes certain deficiencies in Acharya and Sugiyama and relies on Hefetz to allegedly cure such defects. *See* OA of Oct. 12, 2018 at p. 16. Hefetz discloses that a presence of a connection to a server is monitored. *See* [0087]. While Hefetz discloses to check the connection to the server if the connection is open and active for more than a predetermined amount of time at [0089], Hefetz is silent as to disclosing or suggesting "*the communication device performing communication with the first communication terminal device at predetermined time intervals for confirming whether to continue or terminate the permission for the second communication terminal device to connect to the communication device, after the connection to the second communication terminal device, and continuing the connection with the second communication terminal*

device upon confirming the permission is to be continued, while terminating the connection with the second communication terminal device upon confirming the permission is to be terminated" as recited in amended claim 1.

Accordingly, it is submitted that Acharya, Sugiyama and Hefetz fail to render claim 1 unpatentable. It is further submitted that the secondary references of Miura, Lee, Saito, Hatayama and Doss, whether considered separately or in combination, fail to cure the shortcomings in Acharya, Sugiyama and Hefetz.

Accordingly, it is respectfully submitted that claim 1 is patentable over the art of record for at least the foregoing reasons. Dependent claims 2 and 4-13 are also submitted to be patentable for at least being dependent on a base claim asserted to be allowable. In addition, it is submitted that claims 14 and 15 are patentable over the art of record at least for reasons similar to claim 1.

As such, it is respectfully requested that the rejections under 35 U.S.C. §103 be withdrawn.

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Conclusion

In view of the foregoing, Applicant respectfully requests that a timely Notice of Allowance be issued in this case. Please charge any shortage of fees due in connection with the filing of this paper, or credit any overpayment of fees, to Deposit Account 50-1417.

Respectfully submitted,

MATTINGLY & MALUR, PC

/Shrinath Malur/
Shrinath Malur, Reg. No. 34,663
(703) 684-1120

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Amendments to the Claims:

This listing of claims will replace all prior versions and listing of claims in the application.

Listing of Claims:

1. (Currently amended) A communication system comprising:

a first communication terminal device ~~having a wireless LAN connection function~~;

a second communication terminal device ~~having a wireless LAN connection function~~;

an access point device; and

a communication device having ~~a wireless LAN access point function and~~ a display function,

the first communication terminal device connecting to the communication device via ~~a wireless LAN~~the access point device,

the second communication terminal device connecting, under permission from the first communication terminal device, to the communication device via the ~~wireless LAN~~access point device and using the display function of the communication device through the connection,

the first communication terminal device and the communication device communicating with each other to confirm whether the permission for the second

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communication terminal device to connect to and use the communication device is to be continued or terminated, ~~and,~~

the communication device performing communication with the first communication terminal device at predetermined time intervals for confirming whether to continue or terminate the permission for the second communication terminal device to connect to the communication device, after the connection to the second communication terminal device, and continuing the connection with the second communication terminal device upon confirming the permission is to be continued, while terminating the connection with the second communication terminal device upon confirming the permission is to be terminated, and

in response to a termination of the permission, the communication device terminating the connection with the second communication terminal device ~~via the wireless LAN~~ to make the second communication terminal device unable to use the display function.

2. (Currently amended) The communication system according to claim 1, wherein,

for the permission, the first communication terminal device transmits, to the second communication terminal device, connection information necessary for a connection via the ~~wireless LAN~~access point device through short range communication with the second communication terminal device, and

the second communication terminal device connects to the communication device via the ~~wireless LAN~~access point device by using the connection information.

3. (Canceled).

4. (Currently amended) The communication system according to claim 1, wherein

the first communication terminal device ~~regularly confirms~~confirming, with a user at the predetermined time intervals, whether to continue or terminate the permission for the second communication terminal device to connect to the communication device, after the connection to the second communication terminal device, and transmits information indicating termination of the ~~permission,~~ permission to the communication device upon confirming the permission ~~being~~ is to be terminated, ~~and,~~and

upon receiving the information indicating termination of the permission, the communication device ~~terminates~~ terminating the connection with the second communication terminal device.

5. (Original) The communication system according to claim 1, wherein,

for the confirmation, the first communication terminal device displays, for a user, information for confirming whether to continue or terminate the permission on a display screen, receives an input made through a user operation for continuing or

terminating the permission, and transmits information indicating that the permission is to be continued or terminated in accordance with the input to the communication device.

6. (Currently amended) The communication system according to claim 1, wherein,

for the confirmation, the communication device transmits information for confirming whether to continue or terminate the ~~permission,~~ permission to the first communication terminal device,

upon receiving the information for the confirmation, the first communication terminal device transmits response information to the communication device, and

the communication device determines that the permission is to be continued upon receiving the response information from the first communication terminal device, and determines that the permission is to be terminated and terminates the connection with the second communication terminal device upon not receiving the response information.

7. (Currently amended) The communication system according to claim 1, wherein

~~the communication device has a configuration in which an access point device having the wireless LAN access point function and a display device having the display function connect to each other via communication,~~

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the first communication terminal device connects to the access point device via ~~the~~ a wireless LAN,

the second communication terminal device connects, under permission from the first communication terminal device, with the access point device via the wireless LAN and uses the display function of the ~~display~~ communication device via the access point device through the connection via the wireless LAN,

~~the first communication terminal device and the access point device communicate with each other to confirm whether to continue or terminate the permission, and,~~

in response to ~~a termination~~the termination of the permission, the access point device terminates the connection with the second communication terminal device via the wireless LAN to make the second communication terminal device unable to use the display function.

8. (Currently amended) The communication system according to claim 1, wherein,

for the permission, the first communication terminal device transmits, to the second communication terminal device, connection information necessary for a connection via the ~~wireless LAN~~access point device through short range communication with the second communication terminal device, and the second communication terminal device transmits address information on the second communication terminal device to the first communication terminal device,

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the first communication terminal device transmits the address information on the second communication terminal device to the communication device,

the communication device registers the address information on the second communication terminal device into a permission list,

the second communication terminal device connects to the communication device via the ~~wireless LAN~~access point device by using the connection information,

upon confirming the permission ~~being~~ is to be terminated, the first communication terminal device causes the communication device to delete the address information on the second communication terminal device from the permission list of the communication device, and,

upon the address information on the second communication terminal device being not registered in the permission list, the communication device terminates the connection with the second communication terminal device.

9. (Currently amended) The communication system according to claim 1, wherein,

for the permission, the first communication terminal device transmits, to the second communication terminal device, connection information necessary for a connection via the ~~wireless LAN~~access point device through short range communication with the second communication terminal device, and the second communication terminal device transmits address information on the second communication terminal device to the first communication terminal device,

the first communication terminal device registers the address information on the second communication terminal device into a permission list,

the second communication terminal device connects to the communication device via the ~~wireless LAN~~access point device by using the connection information,

upon confirming the permission ~~being~~ is to be terminated, the first communication terminal device deletes the address information on the second communication terminal device from the permission list, and

the communication device performs communication for confirmation with the first communication terminal device and, upon the address information on the second communication terminal device being not registered in the permission list of the communication device, terminates the connection with the second communication terminal device.

10. (Currently amended) The communication system according to claim 1, wherein,

for the permission, the first communication terminal device requests a one-time password from the communication device, and the communication device responds with the one-time password,

the first communication terminal device transmits, to the second communication terminal device, connection information including the one-time password necessary for a connection via the ~~wireless LAN~~access point device

through short range communication with the second communication terminal device, and

the second communication terminal device connects to the communication device via the ~~wireless LAN~~access point device by using the connection information including the one-time password.

11. (Currently amended) The communication system according to claim 1, wherein,

for the permission, the second communication terminal device performs short range communication with the communication device, the communication device transmits, to the second communication terminal device, connection information necessary for a connection via the ~~wireless LAN~~access point device, and the second communication terminal device transmits address information on the second communication terminal device to the communication device,

the communication device registers the address information on the second communication terminal device into a permission list,

the second communication terminal device connects to the communication device via the ~~wireless LAN~~access point device by using the connection information,

upon confirming the permission ~~being~~ is to be terminated, the first communication terminal device causes the communication device to delete the address information on the second communication terminal device from the permission list of the communication device, and,

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upon the address information on the second communication terminal device being not registered in the permission list, the communication device terminates the connection with the second communication terminal device.

12. (Currently amended) The communication system according to claim 1, wherein,

for the permission, the second communication terminal device requests a one-time password from the communication device through short range communication with the communication device, and the communication device transmits connection information including the one-time password necessary for a connection via the ~~wireless LAN,~~ access point device to the second communication terminal device, and

the second communication terminal device connects to the communication device via the ~~wireless LAN~~access point device by using the connection information including the one-time password.

13. (Currently amended) The communication system according to claim 1, wherein,

for the permission, the first communication terminal device transmits, to the second communication terminal device, connection information necessary for a connection via the ~~wireless LAN~~access point device through short range communication with the second communication terminal device,

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the second communication terminal device connects to the communication device via the ~~wireless LAN~~access point device by using the connection information, and

~~after the communication device and the second communication terminal device connect to each other, the communication device or the first communication terminal device performs communication for confirming whether to continue or terminate the permission, and continues the connection between the communication device and the second communication terminal device upon the permission being to be continued, while terminating the connection between the communication device and the second communication terminal device upon the permission being to be terminated, and,~~

in the short range communication, the first communication terminal device displays a bar code representing the connection information on a display screen thereof and the second communication terminal device captures an image of the bar code with a camera to read the connection information.

14. (Currently amended) A communication device for constituting a communication system including a first communication terminal device, ~~having a wireless LAN connection function;~~ a second communication terminal device, ~~having a wireless LAN connection function;~~ and an access point device, the communication device having ~~a wireless LAN access point function and~~ a display function,

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the first communication terminal device connecting to the communication device via ~~a wireless LAN~~ the access point device,

the second communication terminal device connecting, under permission from the first communication terminal device, to the communication device via the ~~wireless LAN~~access point device and using the display function of the communication device through the connection,

the first communication terminal device and the communication device communicating with each other to confirm whether the permission for the second communication terminal device to connect to and use the communication device is to be continued or terminated, ~~and,~~

the communication device performing communication with the first communication terminal device at predetermined time intervals for confirming whether to continue or terminate the permission for the second communication terminal device to connect to the communication device, after the connection to the second communication terminal device, and continuing the connection with the second communication terminal device upon confirming the permission is to be continued, while terminating the connection with the second communication terminal device upon confirming the permission is to be terminated, and

in response to a termination of the permission, the communication device terminating the connection with the second communication terminal device via the

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~~wireless LAN~~access point device to make the second communication terminal device unable to use the display function.

15. (Currently amended) A communication terminal device for constituting a communication system including a first communication terminal device, ~~having a wireless LAN connection function;~~ a second communication terminal device, an access point device, ~~having a wireless LAN connection function;~~ and a communication device having ~~a wireless LAN access point function and~~ a display function, the communication terminal device serving as the first communication terminal device,

the first communication terminal device connecting to the communication device via ~~a wireless LAN~~the access point device,

the second communication terminal device connecting, under permission from the first communication terminal device, to the communication device via the ~~wireless LAN~~access point device and using the display function of the communication device through the connection,

the first communication terminal device and the communication device communicating with each other to confirm whether the permission for the second communication terminal device to connect to and use the communication device is to be continued or terminated, ~~and,~~

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the communication device performing communication with the first communication terminal device at predetermined time intervals for confirming whether to continue or terminate the permission for the second communication terminal device to connect to the communication device, after the connection to the second communication terminal device, and continuing the connection with the second communication terminal device upon confirming the permission is to be continued, while terminating the connection with the second communication terminal device upon confirming the permission is to be terminated, and

in response to a termination of the permission, the communication device terminating the connection with the second communication terminal device ~~via the wireless LAN~~ to make the second communication terminal device unable to use the display function.

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Amendments to the Abstract:

Please replace the originally filed abstract with the following.

ABSTRACT

A wireless LAN communication system which achieves convenience where a terminal of a user who is external to an organization can temporarily use the system while ensuring security. For example, a first terminal is used by a user internal to an organization and a second terminal is used by a user external to the organization. A communication device has a display function and the first terminal connects to the communication device via a wireless LAN access point device. The second terminal connects, under permission from the first terminal, to the communication device via the wireless LAN access point. The second terminal uses the display function of the communication device through the connection via the wireless LAN access point. The first terminal and the communication device confirm whether the permission is to be continued or terminated to make the second terminal unable to use the display function.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No.	: 15/504,668	Confirmation No.	: 8696
Inventor(s)	: Nobuo MASUOKA et al.	TC/GAU	: 2492
Filed	: February 17, 2017	Examiner	: MOORTHY, ARAVIND K
Title	: COMMUNICATION SYSTEM, COMMUNICATION DEVICE AND COMMUNICATION TERMINAL DEVICE		
Docket No.	: T&A-10860		

Customer No.: 24956

AMENDMENT

Mail Stop: Amendment
Commissioner of Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Date: April 1, 2019

Sir:

In response to the Office Action of October 12, 2018, please amend the above-identified application as follows. A fee for a three-month Extension of Time accompanies this response.

Amendments to the Abstract begin on page 2 of this paper.

Amendments to the Claims are reflected in the listing of claims which begins on page 3 of this paper.

Remarks / **Arguments** are included following the amendments.

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	1210	726/4.cor.	USPAT	OR	ON	2018/10/09 09:51
S2	1	"20170280327".pn.	US-PGPUB	OR	ON	2018/10/09 09:52
S3	109056	(H04W12/08 or H04L63/0838 or H04W76/10 or H04W12/04 or H04W12/06 or H04W76/00 or H04W84/12).cpc.	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/09 10:13
S4	460	MASUOKA near NOBUO	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/09 10:14
S5	1	S4 and permission and LAN and terminating	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/09 10:14
S6	483	HASHIMOTO near YASUNOBU	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/09 10:15
S7	2	S6 and permission and LAN and terminating	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/09 10:15
S8	349	YOSHIZAWA near KAZUHIKO	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/09 10:15
S9	2	S8 and permission and LAN and terminating	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/09 10:15
S10	1141	SUZUKI near MOTOYUKI	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/09 10:15
S11	2	S10 and permission and LAN and terminating	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/09 10:15
S12	1	S2 and "display function"	US-PGPUB	OR	ON	2018/10/09 10:30
S13	8234	request$ WITH (permission access$5 control$5) WITH (projector "display device")	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/09 10:44
S14	1923	"access point" WITH (projector "display device")	US-PGPUB; USPAT;	OR	ON	2018/10/09 10:46

			EPO; JPO; DERWENT			
S15	212	S13 and S14	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/09 10:46
S16	115	S15 and @ad<="20140829"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/09 10:46
S17	1	"20050036509".pn.	US-PGPUB	OR	ON	2018/10/09 11:00
S18	1	S17 and permission	US-PGPUB	OR	ON	2018/10/09 11:00
S19	1	S17 and terminat$	US-PGPUB	OR	ON	2018/10/09 11:01
S20	53	projector WITH ("built in" capabil$ function) WITH "access point"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/09 11:03
S21	31	S20 and @ad<="20140829"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/09 11:03
S22	0	S17 and short	US-PGPUB	OR	ON	2018/10/09 11:10
S23	1	S17 and disconnect$	US-PGPUB	OR	ON	2018/10/09 11:11
S24	1	S17 and connect$6	US-PGPUB	OR	ON	2018/10/09 11:13
S25	1	S17 and connect$6 WITH (monitor$3 regular$ confirm$)	US-PGPUB	OR	ON	2018/10/09 11:18
S26	580	(send$ transmit$) WITH (connection near3 (details parameters information)) WITH short	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 07:45
S27	415	S26 and @ad<="20140829"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 07:46
S28	643	regularly WITH (confirm$ check$ monitor$3) WITH connection	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 07:50
S29	434	S28 and @ad<="20140829"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 07:54
S30	673134	(terminat$ disconnect$ maintain$ continu$) WITH connection	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 07:57
S31	122	S28 same S30	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 07:57
S32	68	S31 and @ad<="20140829"	US-PGPUB;	OR	ON	2018/10/10

			USPAT; EPO; JPO; DERWENT			07:57
S33	394	S28 and S30	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:01
S34	249	S33 and @ad<="20140829"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:01
S35	532	(terminat$ disconnect$) WITH connection WITH (rogue unauthoriz$)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:10
S36	0	S28 and S35	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:10
S37	336969	(confirm$ check$ monitor$3) WITH connection	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:10
S38	230	S35 and S37	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:10
S39	200	S38 and @ad<="20140829"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:11
S40	5433	(terminat$ disconnect$ maintain$ continu$) WITH connection WITH request$ WITH user	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:18
S41	5433	S30 and S40	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:18
S42	289766	(terminat$ disconnect$) WITH connection	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:19
S43	3615	S40 and S42	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:19
S44	2910	S43 and @ad<="20140829"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:19
S45	15755	(terminat$ disconnect$) WITH connection WITH (button gui message popup)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:20
S46	586	S37 and S40 and S45	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:21

S47	507	S46 and @ad<="20140829"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:22
S48	2335	S37 and S40	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:23
S49	731	S37 same S40	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:23
S50	600	S49 and @ad<="20140829"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:23
S51	1	"20170280327".pn.	US-PGPUB	OR	ON	2018/10/10 08:27
S52	1	S51 and regularly	US-PGPUB	OR	ON	2018/10/10 08:27
S53	56	S39 and S45	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:33
S54	13738	(terminat$ disconnect$) WITH connection WITH (response respond$)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:46
S55	1050	S40 and S54	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:47
S56	830	S55 and @ad<="20140829"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:47
S57	88	S26 and address with list	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 09:17
S58	25	S57 and (remov$ delet$) WITH address	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 09:18
S59	19	S58 and @ad<="20140829"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 09:18
S60	227992	request$ WITH (OTP "one time password" "one-time password" passcode code "authentication code" "authorization code")	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 09:24
S61	85	S26 and S60	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 09:24
S62	66	S61 and @ad<="20140829"	US-PGPUB; USPAT;	OR	ON	2018/10/10 09:24

			EPO; JPO; DERWENT			
S63	5	S26 and display$ WITH connection WITH (qr barcode "bar code")	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 09:46
S64	2	S63 and @ad<="20140829"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 09:46
S65	109	(send$ transmit$) WITH (connection near3 (details parameters information)) WITH (qr barcode "bar code")	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 09:47
S66	12	S65 and short near range	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 09:48
S67	8	S66 and @ad<="20140829"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 09:48
S68	9110	(router gateway firewall "access point") WITH (projector "display device")	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2019/06/25 07:33
S69	2860	(permission privilege "access control" ACL) WITH (projector "display device")	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2019/06/25 07:35
S70	220	S68 and S69	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2019/06/25 07:36
S71	104	S70 and @ad<="20140829"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2019/06/25 07:36
S72	1	"20050036509".pn.	US-PGPUB	OR	ON	2019/06/25 07:42
S74	1	S72 and (router gateway firewall "access point")	US-PGPUB	OR	ON	2019/06/25 07:43
S75	392	predetermin$ WITH (time interval window) WITH (confirm$ acknowledg$) WITH (continu$ terminat$ disconnect$) WITH (connection communication)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2019/06/25 07:47
S76	293	S75 and @ad<="20140829"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2019/06/25 07:47
S77	4334	predetermin$ near3 (time interval window) WITH (continu$ terminat$ disconnect$) near3 (connection communication)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2019/06/25 07:54
S78	3352	S77 and @ad<="20140829"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2019/06/25 07:55

S79	4936	((predetermin$ near2 (time interval window)) (elaps$ near2 (time interval window))) WITH (continu$ maintain$ terminat$ disconnect$) near2 (connection communication)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2019/06/25 08:07
S80	3776	S79 and @ad<="20140829"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2019/06/25 08:13

6/ 25/ 2019 1:33:39 PM
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Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	15/504,668	MASUOKA et al.
	Examiner	Art Unit
	ARAVIND K MOORTHY	2492

CPC - Searched*		
Symbol	Date	Examiner
H04W 12/08, 76/10, 12/04, 12/06, 76/00, 84/12	10/09/2018	AM
H04L 63/0838	10/09/2018	AM
none	06/25/2019	AM

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner
726	4	10/09/2018	AM
none	one	06/25/2019	AM

* 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
Inventor name search: Palm and East- search strategy enclosed	10/09/2018	AM
East (US-PGPUB, USPAT, EPO, JPO, DERWENT)- See search history printout	10/09/2018	AM
East (US-PGPUB, USPAT, EPO, JPO, DERWENT)- See search history printout	06/25/2019	AM

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner

SAMSUNG
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/504,668	02/17/2017	Nobuo MASUOKA	T&A-10860	8696

24956 7590 07/01/2019

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EXAMINER
MOORTHY, ARAVIND K

ART UNIT	PAPER NUMBER
2492	

NOTIFICATION DATE	DELIVERY MODE
07/01/2019	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):

ptomail@mmiplaw.com

Office Action Summary	Application No. 15/504,668	Applicant(s) MASUOKA et al.	
	Examiner ARAVIND K MOORTHY	Art Unit 2492	AIA (FITF) Status Yes

-- 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 01 April 2019.

☐ 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) 1-2 and 4-15 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) 1-2 and 4-15 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 17 February 2017 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 _____.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date _____.

4) ☐ Other: _____.

DETAILED ACTION

Notice of Pre-AIA or AIA Status

The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

1. This is in response to the amendment filed on 1 April 2019.

2. Claims 1, 2 and 4-15 are pending in the application.

3. Claims 1, 2 and 4-15 have been rejected.

4. Claim 3 has been cancelled.

Response to Arguments

5. Applicant's arguments with respect to claims 1, 2 and 4-15 have been considered but are moot because the arguments do not apply to any of the references being used in the current rejection.

Claim Rejections - 35 USC § 103

In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

> A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103 are summarized as follows:

1. Determining the scope and contents of the prior art.

2. Ascertaining the differences between the prior art and the claims at issue.

3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 1, 4, 5, 14 and 15 is/are rejected under 35 U.S.C. 103 as being unpatentable over Acharya et al US 2005/0036509 A1 (hereinafter Acharya) in view of Kumar US 2014/0233443 A1.

As to claim 1, Acharya discloses a communication system comprising:

a first communication terminal device (i.e. various computing devices such as mobile phones) [0036];

a second communication terminal device i.e. various computing devices such as mobile phones) [0036];

an access point device (i.e. wireless access point 150) [0036]; and

a communication device having a display function (i.e. projector that is connected to the wireless network) [0036],

the first communication terminal device connecting to the communication device via the access point device (i.e. computing devices connected to the projector through the wireless network) [0036],

the second communication terminal device connecting, under permission from the first communication terminal device, to the communication device via the

access point device and using the display function of the communication device through the connection (i.e. other user must request permission from the main device to gain access to the projector) [0059],

the first communication terminal device and the communication device communicating with each other to confirm whether the permission for the second communication terminal device to connect to and use the communication device is to be continued or terminated (i.e. the user has a button to connect/disconnect other users) [0084-0085], and,

in response to a termination of the permission, the communication device terminating the connection with the second communication terminal device to make the second communication terminal device unable to use the display function (i.e. the user has a button to connect/disconnect other users) [0084-0085].

Acharya does not teach the communication device performing communication with the first communication terminal device at predetermined time intervals for confirming whether to continue or terminate the permission for the second communication terminal device to connect to the communication device, after the connection to the second communication terminal device, and continuing the connection with the second communication terminal device upon confirming the permission is to be continued, while terminating the connection with the second communication terminal device upon confirming the permission is to be terminated.

Kumar teaches at predetermine time periods terminating or maintaining a connection with devices [0037, 0042].

Therefore, it would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified Acharya so that the communication device performing communication with the first communication terminal device at predetermined time intervals for confirming whether to continue or terminate the permission for the second communication terminal device to connect to the communication device, after the connection to the second communication terminal device, and continuing the connection with the second communication terminal device upon confirming the permission was to be continued, while terminating the connection with the second communication terminal device upon confirming the permission was to be terminated.

It would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified Acharya by the teaching of Kumar because it helps maintain valid connections [0004].

As to claim 4, Acharya does not teach that the first communication terminal device confirming, with a user at the predetermined time intervals, whether to continue or terminate the permission for the second communication terminal device to connect to the communication device, after the connection to the second communication terminal device, and transmits information indicating termination of the permission to the communication device upon confirming the permission is to be terminated, and upon receiving the information indicating termination of the permission, the communication device terminates the connection with the second communication terminal device.

Kumar teaches at predetermine time periods terminating or maintaining a connection with devices [0037, 0042].

Therefore, it would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified Acharya so that the first communication terminal device would have confirmed, with a user at the predetermined time intervals, whether to continue or terminate the permission for the second communication terminal device to connect to the communication device, after the connection to the second communication terminal device, and transmitted information indicating termination of the permission to the communication device upon confirming the permission was to be terminated, and upon receiving the information indicating termination of the permission, the communication device terminates the connection with the second communication terminal device.

It would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified Acharya by the teaching of Kumar because it helps maintain valid connections [0004].

As to claim 5, Acharya teaches the communication system according to claim 1, wherein,

> for the confirmation, the first communication terminal device displays, for a user, information for confirming whether to continue or terminate the permission on a display screen, receives an input made through a user operation for continuing or terminating the permission, and transmits information indicating that the permission is to be continued or terminated in accordance with the input to the communication device (i.e. the user has a button to connect/disconnect other users) [0084-0085].

As to claim 14, Acharya discloses a communication device for constituting a communication system including a first communication terminal device, a second communication terminal device, and an access point device (i.e. wireless access point 150) [0036], the communication device having a display function (i.e. computing devices connected to the projector through the wireless network) [0036],

the first communication terminal device connecting to the communication device (i.e. computing devices connected to the projector through the wireless network) [0036],

the second communication terminal device connecting, under permission from the first communication terminal device, to the communication device via the access point device and using the display function of the communication device through the connection (i.e. other user must request permission from the main device to gain access to the projector) [0059],

the first communication terminal device and the communication device communicating with each other to confirm whether the permission for the second communication terminal device to connect to and use the communication device is to be continued or terminated (i.e. the user has a button to connect/disconnect other users) [0084-0085],

in response to a termination of the permission, the communication device terminating the connection with the second communication terminal device via the access point device to make the second communication terminal device unable to

use the display function (i.e. the user has a button to connect/disconnect other users) [0084-0085].

Acharya does not teach the communication device performing communication with the first communication terminal device at predetermined time intervals for confirming whether to continue or terminate the permission for the second communication terminal device to connect to the communication device, after the connection to the second communication terminal device, and continuing the connection with the second communication terminal device upon confirming the permission is to be continued, while terminating the connection with the second communication terminal device upon confirming the permission is to be terminated.

Kumar teaches at predetermine time periods terminating or maintaining a connection with devices [0037, 0042].

Therefore, it would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified Acharya so that the communication device performing communication with the first communication terminal device at predetermined time intervals for confirming whether to continue or terminate the permission for the second communication terminal device to connect to the communication device, after the connection to the second communication terminal device, and continuing the connection with the second communication terminal device upon confirming the permission was to be continued, while terminating the connection with the second communication terminal device upon confirming the permission was to be terminated.

It would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified Acharya by the teaching of Kumar because it helps maintain valid connections [0004].

As to claim 15, Acharya discloses a communication terminal device for constituting a communication system including a first communication terminal device (i.e. various computing devices such as mobile phones) [0036], a second communication terminal device (i.e. various computing devices such as mobile phones) [0036], an access point device (i.e. wireless access point 150) [0036], and a communication device having a display function (i.e. computing devices connected to the projector through the wireless network) [0036], the communication terminal device serving as the first communication terminal device [0036],

> the first communication terminal device connecting to the communication device via the access point device (i.e. computing devices connected to the projector through the wireless network) [0036],
>
> the second communication terminal device connecting, under permission from the first communication terminal device, to the communication device via the access point device and using the display function of the communication device through the connection (i.e. other user must request permission from the main device to gain access to the projector) [0059],
>
> the first communication terminal device and the communication device communicating with each other to confirm whether the permission for the second communication terminal device to connect to and use the communication device is

to be continued or terminated (i.e. the user has a button to connect/disconnect other users) [0084-0085],

in response to a termination of the permission, the communication device terminating the connection with the second communication terminal device to make the second communication terminal device unable to use the display function (i.e. the user has a button to connect/disconnect other users) [0084-0085].

Acharya does not teach the communication device performing communication with the first communication terminal device at predetermined time intervals for confirming whether to continue or terminate the permission for the second communication terminal device to connect to the communication device, after the connection to the second communication terminal device, and continuing the connection with the second communication terminal device upon confirming the permission is to be continued, while terminating the connection with the second communication terminal device upon confirming the permission is to be terminated.

Kumar teaches at predetermine time periods terminating or maintaining a connection with devices [0037, 0042].

Therefore, it would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified Acharya so that the communication device performing communication with the first communication terminal device at predetermined time intervals for confirming whether to continue or terminate the permission for the second communication terminal device to connect to the communication device, after the connection to the second communication terminal device, and

continuing the connection with the second communication terminal device upon confirming the permission was to be continued, while terminating the connection with the second communication terminal device upon confirming the permission was to be terminated.

It would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified Acharya by the teaching of Kumar because it helps maintain valid connections [0004].

7. Claims 2, 10 and 12 is/are rejected under 35 U.S.C. 103 as being unpatentable over Acharya et al US 2005/0036509 A1 (hereinafter Acharya) and Kumar US 2014/0233443 A1 as applied to claim 1 above, and further in view of Miura US 2015/0327310 A1.

As to claim 2, the Acharya-Kumar combination does not teach for the permission, the first communication terminal device transmits, to the second communication terminal device, connection information necessary for a connection via the access point device through short range communication with the second communication terminal device. The Acharya-Kumar combination does not teach the second communication terminal device connects to the communication device via the access point device by using the connection information.

Miura teaches transmitting connection information through short range wireless communication [0106]. Miura teaches establishing a connection using the connection information [0106].

Therefore, it would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified the Acharya-Kumar combination so that for the permission, the first communication

terminal device would have transmitted, to the second communication terminal device, connection information necessary for a connection via the access point device through short range communication with the second communication terminal device. The second communication terminal device would have connected to the communication device via the access point device by using the connection information.

It would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified the Acharya-Kumar combination by the teaching of Miura because it enables easy distribution of information towards an unspecified large number of parties by utilizing short range wireless communication [0005].

As to claim 10, the Acharya-Kumar combination does not teach for the permission, the first communication terminal device requests a one-time password from the communication device, and the communication device responds with the one-time password. The Acharya-Kumar combination does not teach the first communication terminal device transmits, to the second communication terminal device, connection information including the one-time password necessary for a connection via the access point device through short range communication with the second communication terminal device. The Acharya-Kumar combination does not teach the second communication terminal device connects to the communication device via the access point device by using the connection information including the one-time password.

Miura teaches requesting a PIN code required for authentication to establish a connection [0069]. Miura teaches transmitting connection information through short range wireless

communication [0106]. Miura teaches establishing a connection using the connection information [0106].

Therefore, it would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified the Acharya-Kumar combination so that for the permission the first communication terminal device would have requested a one-time password from the communication device. The communication device would have responded with the one-time password. The first communication terminal device would have transmitted, to the second communication terminal device, connection information necessary for a connection via the access point device through short range communication with the second communication terminal device. The second communication terminal device would have connected to the communication device via the access point device by using the connection information including the one-time password.

It would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified the Acharya-Kumar combination by the teaching of Miura because it enables easy distribution of information towards an unspecified large number of parties by utilizing short range wireless communication [0005].

As to claim 12, the Acharya-Kumar combination does not teach for the permission, the second communication terminal device requests a one-time password from the communication device through short range communication with the communication device, and the communication device transmits connection information including the one-time password necessary for a connection via the access point device, to the second communication terminal

device. The Acharya-Kumar combination does not teach the second communication terminal device connects to the communication device via the access point device by using the connection information including the one-time password.

Miura teaches requesting a PIN code required for authentication to establish a connection [0069]. Miura teaches transmitting connection information through short range wireless communication [0106]. Miura teaches establishing a connection using the connection information [0106].

Therefore, it would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified the Acharya-Kumar combination so that for the permission the first communication terminal device would have requested a one-time password from the communication device. The communication device would have responded with the one-time password. The first communication terminal device would have transmitted, to the second communication terminal device, connection information necessary for a connection via the access point device through short range communication with the second communication terminal device. The second communication terminal device would have connected to the communication device via the access point device by using the connection information including the one-time password.

It would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified the Acharya-Kumar combination by the teaching of Miura because it enables easy distribution of information towards an unspecified large number of parties by utilizing short range wireless communication [0005].

8. Claim 6 is/are rejected under 35 U.S.C. 103 as being unpatentable over Acharya et al US 2005/0036509 A1 (hereinafter Acharya) and Kumar US 2014/0233443 A1 as applied to claim 1 above, and further in view of Saito et al US 2011/0237191 A1 (hereinafter Saito).

As to claim 6, the Acharya-Kumar combination does not teach for the confirmation, the communication device transmits information for confirming whether to continue or terminate the permission to the first communication terminal device. The Acharya-Kumar combination does not teach upon receiving the information for the confirmation, the first communication terminal device transmits response information to the communication device. The Acharya-Kumar combination does not teach the communication device determines that the permission is to be continued upon receiving the response information from the first communication terminal device, and determines that the permission is to be terminated and terminates the connection with the second communication terminal device upon not receiving the response information.

Saito teaches a disconnection request [0044]. Saito teaches receiving a disconnection response [0033]. Saito teaches if no response is received then the connection is disconnected [0042].

Therefore, it would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified the Acharya-Kumar combination so that for the confirmation, the communication device would have transmitted information for confirming whether to continue or terminate the permission to the first communication terminal device. Upon receiving the information for the confirmation, the first communication terminal device would have transmitted response information to the communication device. The communication device would have determined that

the permission is to be continued upon receiving the response information from the first communication terminal device, and determined that the permission was to be terminated and terminated the connection with the second communication terminal device upon not receiving the response information.

It would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified the Acharya-Kumar combination by the teaching of Saito because it provides a system for simultaneously connecting multiple communication protocols to another short range wireless communication system [0002].

9. Claim 7 is/are rejected under 35 U.S.C. 103 as being unpatentable over Acharya et al US 2005/0036509 A1 (hereinafter Acharya) and Kumar US 2014/0233443 A1 as applied to claim 1 above, and further in view of Saito et al US 2011/0237191 A1 (hereinafter Saito).

As to claim 7, the Acharya-Kumar combination teaches the communication system according to claim 1, wherein

> the second communication terminal device connects, under permission from the first communication terminal device, with the access point device and uses the display function of the display device via the access point device through the connection (i.e. other user must request permission from the main device to gain access to the projector) [Acharya 0059],
>
> in response to the termination of the permission, the access point device terminates the connection with the second communication terminal device to make

the second communication terminal device unable to use the display function (i.e. the user has a button to connect/disconnect other users) [Ahcarya 0084-0085].

Acharya does not teach the first and second terminal device having a wireless LAN access point function.

Sugiyama teaches a projector that has a wireless LAN access point apparatus function [0076].

Therefore, it would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified the Acharya-Kumar combination so that the communication device would have had a wireless LAN access point function.

It would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified the Acharya-Kumar combination by the teaching of Sugiyama because it helps allow multiple devices to connect to the projector securely [0015].

10. Claims 8, 9 and 11 is/are rejected under 35 U.S.C. 103 as being unpatentable over Acharya et al US 2005/0036509 A1 (hereinafter Acharya) and Kumar US 2014/0233443 A1 as applied to claim 1 above, and further in view of Hatayama et al US 2010/0323682 A1 (hereinafter Hatayama).

As to claim 8, the Acharya-Kumar combination does not teach for the permission, the first communication terminal device transmits, to the second communication terminal device, connection information necessary for a connection via the access point device through short range

communication with the second communication terminal device, and the second communication terminal device transmits address information on the second communication terminal device to the first communication terminal device. The Acharya-Kumar combination does not teach the first communication terminal device transmits the address information on the second communication terminal device to the communication device. The Acharya-Kumar combination does not teach the communication device registers the address information on the second communication terminal device into a permission list. The Acharya-Kumar combination does not teach the second communication terminal device connects to the communication device via the access point device by using the connection information. The Acharya-Kumar combination does not teach that upon confirming the permission is to be terminated, the first communication terminal device causes the communication device to delete the address information on the second communication terminal device from the permission list of the communication device. The Acharya-Kumar combination does not teach that upon the address information on the second communication terminal device being not registered in the permission list, the communication device terminates the connection with the second communication terminal device.

Hatayama teaches short distance radio [0081]. Hatayama teaches sending connection setting information over short distance radio [0099]. Hatayama teaches adding address information to a list [0084]. Hatayama teaches deleting address information from the list [0258].

Therefore, it would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified the Acharya-Kumar combination so that for the permission, the first communication terminal device would have transmitted, to the second communication terminal device, connection

information necessary for a connection via the access point device through short range communication with the second communication terminal device, and the second communication terminal device would have transmitted address information on the second communication terminal device to the first communication terminal device. The first communication terminal device would have transmitted the address information on the second communication terminal device to the communication device. The communication device would have registered the address information on the second communication terminal device into a permission list. The second communication terminal device would have connected to the communication device via the access point device by using the connection information. Upon confirming the permission is to be terminated, the first communication terminal device would have caused the communication device to delete the address information on the second communication terminal device from the permission list of the communication device. Upon the address information on the second communication terminal device being not registered in the permission list, the communication device would have terminated the connection with the second communication terminal device.

It would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified the Acharya-Kumar combination by the teaching of Hatayama because it provides a system for easy acquisition of content [0008].

As to claim 9, the Acharya-Kumar combination does not teach for the permission, the first communication terminal device transmits, to the second communication terminal device, connection information necessary for a connection via the access point device through short range communication with the second communication terminal device, and the second communication

terminal device transmits address information on the second communication terminal device to the first communication terminal device. The Acharya-Kumar combination does not teach the first communication terminal device registers the address information on the second communication terminal device into a permission list. The Acharya-Kumar combination does not teach the second communication terminal device connects to the communication device via the access point device by using the connection information. The Acharya-Kumar combination does not teach upon confirming the permission is to be terminated, the first communication terminal device deletes the address information on the second communication terminal device from the permission list. The Acharya-Kumar combination does not teach the communication device performs communication for confirmation with the first communication terminal device and, upon the address information on the second communication terminal device being not registered in the permission list of the communication device, terminates the connection with the second communication terminal device.

Hatayama teaches short distance radio [0081]. Hatayama teaches sending connection setting information over short distance radio [0099]. Hatayama teaches adding address information to a list [0084]. Hatayama teaches deleting address information from the list [0258].

Therefore, it would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified the Acharya-Kumar combination so that for the permission, the first communication terminal device would have transmitted, to the second communication terminal device, connection information necessary for a connection via the access point device through short range communication with the second communication terminal device, and the second communication terminal device would have transmitted address information on the second communication

terminal device to the first communication terminal device. The first communication terminal device would have transmitted the address information on the second communication terminal device to the communication device. The communication device would have registered the address information on the second communication terminal device into a permission list. The second communication terminal device would have connected to the communication device via the access point device by using the connection information. Upon confirming the permission is to be terminated, the first communication terminal device would have caused the communication device to delete the address information on the second communication terminal device from the permission list of the communication device. Upon the address information on the second communication terminal device being not registered in the permission list, the communication device would have terminated the connection with the second communication terminal device.

It would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified the Acharya-Kumar combination by the teaching of Hatayama because it provides a system for easy acquisition of content [0008].

As to claim 11, the Acharya-Kumar combination does not teach for the permission, the second communication terminal device performs short range communication with the communication device, the communication device transmits, to the second communication terminal device, connection information necessary for a connection via the access point device, and the second communication terminal device transmits address information on the second communication terminal device to the communication device. The Acharya-Kumar combination does not teach the communication device registers the address information on the second

communication terminal device into a permission list. The Acharya-Kumar combination does not teach the second communication terminal device connects to the communication device via the access point device by using the connection information. The Acharya-Kumar combination does not teach upon confirming the permission is to be terminated, the first communication terminal device causes the communication device to delete the address information on the second communication terminal device from the permission list of the communication device. The Acharya-Kumar combination does not teach upon the address information on the second communication terminal device being not registered in the permission list, the communication device terminates the connection with the second communication terminal device.

Hatayama teaches short distance radio [0081]. Hatayama teaches sending connection setting information over short distance radio [0099]. Hatayama teaches adding address information to a list [0084]. Hatayama teaches deleting address information from the list [0258].

Therefore, it would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified the Acharya-Kumar combination so that for the permission, the first communication terminal device would have transmitted, to the second communication terminal device, connection information necessary for a connection via the access point device through short range communication with the second communication terminal device, and the second communication terminal device would have transmitted address information on the second communication terminal device to the first communication terminal device. The first communication terminal device would have transmitted the address information on the second communication terminal device to the communication device. The communication device would have registered the

address information on the second communication terminal device into a permission list. The second communication terminal device would have connected to the communication device via the access point device by using the connection information. Upon confirming the permission is to be terminated, the first communication terminal device would have caused the communication device to delete the address information on the second communication terminal device from the permission list of the communication device. Upon the address information on the second communication terminal device being not registered in the permission list, the communication device would have terminated the connection with the second communication terminal device.

It would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified the Acharya-Kumar combination by the teaching of Hatayama because it provides a system for easy acquisition of content [0008].

11. Claim 13 is/are rejected under 35 U.S.C. 103 as being unpatentable over Acharya et al US 2005/0036509 A1 (hereinafter Acharya) and Kumar US 2014/0233443 A1 as applied to claim 1 above, and further in view of Doss et al US 2013/0221084 A1 (hereinafter Doss).

As to claim 13, the Acharya-Kumar combination does not teach for the permission, the first communication terminal device transmits, to the second communication terminal device, connection information necessary for a connection via the access point device through short range communication with the second communication terminal device. The Acharya-Kumar combination does not teach the second communication terminal device connects to the communication device via the access point device by using the connection information. The Acharya-Kumar combination does not teach in the short range communication, the first

communication terminal device displays a bar code representing the connection information on a display screen thereof and the second communication terminal device captures an image of the bar code with a camera to read the connection information.

Doss teaches using short-range communication [0054]. Doss teaches transmitting connection information [0095]. Doss teaches the connection information is in a QR code that can be scanned by a device [0095].

Therefore, it would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified the Acharya-Kumar combination so that for the permission, the first communication terminal device would have transmitted, to the second communication terminal device, connection information necessary for a connection via the access point device through short range communication with the second communication terminal device. The second communication terminal device would have connected to the communication device via the access point device by using the connection information. In the short range communication, the first communication terminal device would have displayed a bar code representing the connection information on a display screen thereof and the second communication terminal device captured an image of the bar code with a camera to read the connection information.

It would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified the Acharya-Kumar combination by the teaching of Doss because the connection information in a visual tag provides a more secure connection [0008].

Conclusion

12. 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.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ARAVIND K MOORTHY whose telephone number is (571)272-3793. The examiner can normally be reached on M-F 7:30-7:30.

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, Saleh Najjar can be reached on 571-272-4006. 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 http://pair-direct.uspto.gov. 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.

/ARAVIND K MOORTHY/
Primary Examiner, Art Unit 2492

PTO/SB/08a (02-18)
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(Not for submission under 37 CFR 1.99)

Application Number	15504668
Filing Date	2017-02-17
First Named Inventor	MASUOKA, N.
Art Unit	2492
Examiner Name	MOORTHY, A. K.
Attorney Docket Number	T&A-10860

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	15504668
	Filing Date	2017-02-17
	First Named Inventor	MASUOKA, N.
	Art Unit	2492
	Examiner Name	MOORTHY, A. K.
	Attorney Docket Number	T&A-10860

	1	Japanese Office Action received in corresponding Japanese Application No. 2018-052030 dated April 16, 2019	☒
	2	MUKAI, J. et al., "Issuing and Managing Wi-Fi Guest Accounts for Android Smartphones by Exploiting Information of Proximity between Terminals", The Institute of Electronics, Information and Communication Engineers Technical Report, January 16, 2014, Vol. 113, No. 398	☒
	3	HORIKOSHI, I., "Network Construction Learned on Site", Nikkei Communications, October 30, 2012, pp. 46-49, No. 586, Nikkei Business Publications Inc.	☒

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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	15504668
Filing Date	2017-02-17
First Named Inventor	MASUOKA, N.
Art Unit	2492
Examiner Name	MOORTHY, A. K.
Attorney Docket Number	T&A-10860

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	/Shrinath Malur/	Date (YYYY-MM-DD)	2019-07-10
Name/Print	Shrinath Malur	Registration Number	34,663

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.**

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 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.

REMARKS / ARGUMENTS

Claims 1-15 have been canceled without prejudice or disclaimer. Claims 16-29 are newly added. No new matter has been added.

35 U.S.C. §103

Claims 1, 4, 5, 14 and 15 stand rejected under 35 U.S.C. §103 as being unpatentable over Acharya et al. (U.S. Publication No. 2005/0036509; hereinafter "Acharya") in view of Kumar (U.S. Publication No. 2014/0233443; hereinafter "Kumar"). **Claims 2, 10 and 12** stand rejected under 35 U.S.C. §103 as being unpatentable over Acharya and Kumar and further in view of Miura (U.S. Publication No. 2015/0327310; hereinafter "Miura"). **Claims 6 and 7** stand rejected under 35 U.S.C. §103 as being unpatentable over Acharya and Kumar and further in view of Saito et al. (U.S. Publication No. 2011/0237191; hereinafter "Saito"). **Claims 8, 9 and 11** stand rejected under 35 U.S.C. §103 as being unpatentable over Acharya and Kumar and further in view of Hatayama et al. (U.S. Publication No. 2010/0323682; hereinafter "Hatayama"). **Claim 13** stands rejected under 35 U.S.C. §103 as being unpatentable over Acharya and Kumar and further in view of Doss et al. (U.S. Publication No. 2013/0221084; hereinafter "Doss"). These rejections are traversed as follows.

Claim 16 is directed to:

> 16. A communication system comprising:
> a communication device;
> an access point device;
> a first communication terminal configured to connect to the communication device via the access point device and transmit a first

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instruction to remotely control the communication device connected with the first communication terminal; and

a second communication terminal configured to, if having permission from the first communication terminal, establish a connection with the communication device to use the communication device;

wherein, in a case that the communication device receives the first instruction from the first communication terminal while the communication device outputs data received from the second communication terminal that established the connection with the communication device, the communication device is configured to control a display operation of the data received from the second communication terminal in accordance with the first instruction from the first communication terminal,

wherein, in a case that the communication device receives a second instruction to terminate the permission from the first communication terminal, the communication device is configured to terminate the connection with the second communication terminal in accordance with the second instruction from the first communication terminal.

Therefore, claim 16 now clearly recites that "in a case that the communication device receives the first instruction from the first communication terminal while the communication device outputs data received from the second communication terminal that established the connection with the communication device, the communication device is configured to control a display operation of the data received from the second communication terminal in accordance with the first instruction from the first communication terminal" and "wherein, in a case that the communication device receives a second instruction to terminate the permission from the first communication terminal, the communication device is configured to terminate the connection with the second communication terminal in accordance with the second instruction from the first communication terminal." Support for the limitation can be found, by way of example only, in paragraphs [0066], [0069], and [0226] of the corresponding publication, U.S. Pub. No. 2017/0280327.

On the other hand, Acharya does not disclose that when the communication device remotely receives the instruction from the first communication terminal, the communication device which is displaying the data received from the second communication terminal controls the display in accordance with the instruction remotely received from the first communication terminal. The deficiencies in Acharya are not overcome by resort to any of the remaining references.

As such, it is submitted that independent claim 16 is patentable. It is further submitted that independent claims 28 and 29 are patentable for similar reasons and the remaining claims are dependent claims.

Conclusion

In view of the foregoing, Applicant respectfully requests that a timely Notice of Allowance be issued in this case. Please charge any shortage of fees due in connection with the filing of this paper, or credit any overpayment of fees, to Deposit Account 50-1417.

Respectfully submitted,

MATTINGLY & MALUR, PC

/Shrinath Malur/
Shrinath Malur, Reg. No. 34,663
(703) 684-1120

Amendments to the Claims:

This listing of claims will replace all prior versions and listing of claims in the application.

Listing of Claims:

1.-15. (Canceled).

16. (New) A communication system comprising:

a communication device;

an access point device;

a first communication terminal configured to connect to the communication device via the access point device and transmit a first instruction to remotely control the communication device connected with the first communication terminal; and

a second communication terminal configured to, if having permission from the first communication terminal, establish a connection with the communication device to use the communication device;

wherein, in a case that the communication device receives the first instruction from the first communication terminal while the communication device outputs data received from the second communication terminal that established the connection with the communication device, the communication device is configured to control a display operation of the data received from the second communication terminal in accordance with the first instruction from the first communication terminal,

wherein, in a case that the communication device receives a second instruction to terminate the permission from the first communication terminal, the

communication device is configured to terminate the connection with the second communication terminal in accordance with the second instruction from the first communication terminal.

17. (New) The communication system according to claim 16, wherein,

for the permission, the first communication terminal transmits, to the second communication terminal, connection information necessary for a connection through short range communication with the second communication terminal, and the second communication terminal connects to the communication device by using the connection information

18. (New) The communication system according to claim 16, wherein,

the communication device performing communication with the first communication terminal at predetermined time intervals for confirming whether to continue or terminate the permission for the second communication terminal to connect to the communication device, after the connection to the second communication terminal, and continuing the connection with the second communication terminal upon confirming the permission is to be continued, while terminating the connection with the second communication terminal upon confirming the permission is to be terminated.

19. (New) The communication system according to claim 16, wherein,

the first communication terminal confirming, with a user at the predetermined time intervals, whether to continue or terminate the permission for the second communication terminal to connect to the communication device, after the connection to the second communication terminal, and transmits information indicating termination of the permission to the communication device upon confirming the permission is to be terminated, and upon receiving the information indicating termination of the permission, the communication device terminating the connection with the second communication terminal.

20. (New) The communication system according to claim 16, wherein,

the first communication terminal displays information whether to terminate the permission on a display screen, receives an input operation for terminating the permission, and transmits information to terminate the permission as the second instruction to the communication device in accordance with the input operation for terminating the permission.

21. (New) The communication system according to claim 16, wherein,

in a case that the communication device is able to receive information from the first communication terminal, the communication device controls the communication device in accordance with information from the first communication terminal,

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wherein, in a case that the communication device is unable to receive information from the first communication terminal, the communication terminal device terminates the connection with the second communication terminal.

22. (New) The communication system according to claim 16, wherein,

for the permission, the first communication terminal transmits, to the second communication terminal, connection information necessary for a connection through short range communication with the second communication terminal, and the second communication terminal transmits address information on the second communication terminal to the first communication terminal, the first communication terminal transmits the address information on the second communication terminal to the communication device, the communication device registers the address information on the second communication terminal into a permission list, the second communication terminal connects to the communication device by using the connection information, upon confirming the permission is to be terminated, the first communication terminal causes the communication device to deletes the address information on the second communication terminal from the permission list of the communication device, and, upon the address information on the second communication terminal being not registered in the permission list, the communication device terminates the connection with the second communication terminal.

23. (New) The communication system according to claim 16, wherein,

for the permission, the first communication terminal transmits, to the second communication terminal, connection information necessary for a connection through short range communication with the second communication terminal, and the second communication terminal transmits address information on the second communication terminal to the first communication terminal, the first communication terminal registers the address information on the second communication terminal into a permission list, the second communication terminal connects to the communication device by using the connection information, upon confirming the permission is to be terminated, the first communication terminal causes the communication device to deletes the address information on the second communication terminal from the permission list, and the communication device performs communication for confirmation with the first communication terminal and, upon the address information on the second communication terminal being not registered in the permission list of the communication device, terminates the connection with the second communication terminal.

24. (New) The communication system according to claim 16, wherein,

for the permission, the first communication terminal requests a one-time password from the communication device, and the communication device responds with the one-time password, the first communication terminal transmits, to the second communication terminal, connection information including the one-time password necessary for a connection through short range communication with the second communication terminal, and the second communication terminal connects

to the communication device by using the connection information including the one-time password.

25. (New) The communication system according to claim 16, wherein,

for the permission, the second communication terminal performs short range communication with the communication device, the communication device transmits, to the second communication terminal, connection information necessary for a connection, and the second communication terminal transmits address information on the second communication terminal to the communication device, the communication device registers the address information on the second communication terminal into a permission list, the second communication terminal connects to the communication device by using the connection information, upon confirming the permission is to be terminated, the first communication terminal causes the communication device to deletes the address information on the second communication terminal from the permission list of the communication device, and, upon the address information on the second communication terminal being not registered in the permission list, the communication device terminates the connection with the second communication terminal.

26. (New) The communication system according to claim 16, wherein,

for the permission, the second communication terminal requests a one-time password from the communication device through short range communication with the communication device, and the communication device transmits connection

information including the one-time password necessary for a connection to the second communication terminal, and the second communication terminal connects to the communication device by using the connection information including the one-time password.

27. (New) The communication system according to claim 16, wherein,

for the permission, the first communication terminal transmits, to the second communication terminal, connection information necessary for a connection through short range communication with the second communication terminal, the second communication terminal connects to the communication device by using the connection information, and in the short range communication, the first communication terminal displays a bar code representing the connection information on a display screen thereof and the second communication terminal captures an image of the bar code with a camera to read the connection information.

28. (New) A communication terminal comprising:

a wireless connection interface configured to connect a communication device via an access point device; and

a controller configured to control the wireless connection interface to transmit a first instruction to remotely control the communication device connected with the communication terminal;

wherein the controller is configured to transmit permission to establish a connection for the communication device and another communication terminal,

wherein, in a case that the controller controls to transmit the first instruction to the communication device while the communication device outputs data received from the other communication terminal that established the connection with the communication device, the controller is configured to control a display operation of the data received from the other communication terminal in accordance with the first instruction,

wherein, in a case that the controller transmits a second instruction to terminate the permission from the first communication terminal, the controller is configured to transmit information to terminate the connection with the second communication terminal to the communication device in accordance with the second instruction.

29. (New) A communication device comprising:

a wireless connection interface configured to connect a communication terminal and another communication terminal; and

a controller configured to control the wireless connection interface,

wherein the wireless connection interface is configured to connect to the communication terminal via an access point device,

wherein the controller is configured to control to establish a connection with the other communication terminal, if having permission from the communication terminal, and control data received from the other communication terminal,

wherein, if the wireless communication interface receives information to remotely control the data from the communication terminal while the controller

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controls the data received from the other communication terminal, the controller is configured to control the data in accordance with information from the communication terminal,

wherein, if the wireless communication interface receives information to terminate the permission from the communication terminal, the controller is configured to terminate the connection with the other communication terminal.

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No.	: 15/504,668	Confirmation No.	: 8696
Inventor(s)	: Nobuo MASUOKA et al.	TC/GAU	: 2492
Filed	: February 17, 2017	Examiner	: MOORTHY, ARAVIND K
Title	: COMMUNICATION SYSTEM, COMMUNICATION DEVICE AND COMMUNICATION TERMINAL DEVICE		
Docket No.	: T&A-10860		
Customer No.: 24956			

AMENDMENT

Mail Stop: Amendment
Commissioner of Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Date: December 2, 2019

Sir:

In response to the Office Action (Final Rejection) of July 1, 2019, please amend the above-identified application as follows. A fee for a two-month Extension of Time and a Request for Continued Examination (RCE) accompany this response.

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this paper.

Remarks / **Arguments** are included following the amendments.

Doc code: RCEX
Doc description: Request for Continued Examination (RCE)

PTO/SB/30EFS (07-14)
Approved for use through 07/31/2016. 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 contains a valid OMB control number.

REQUEST FOR CONTINUED EXAMINATION(RCE)TRANSMITTAL
(Submitted Only via EFS-Web)

Application Number	15504668	Filing Date	2017-02-17	Docket Number (if applicable)	T&A-10860	Art Unit	2492
First Named Inventor	Nobuo MASUOKA			Examiner Name	MOORTHY, ARAVIND K		

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.
Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, to any international application that does not comply with the requirements of 35 U.S.C. 371, or to any design application. The Instruction Sheet for this form is located at WWW.USPTO.GOV.

SUBMISSION REQUIRED UNDER 37 CFR 1.114

Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

☐ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.

- ☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____
- ☐ Other _____

☒ Enclosed

- ☒ Amendment/Reply
- ☐ Information Disclosure Statement (IDS)
- ☐ Affidavit(s)/ Declaration(s)
- ☐ Other _____

MISCELLANEOUS

☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of months _____ (Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)

☐ Other _____

FEES

The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.

☒ The Director is hereby authorized to charge any underpayment of fees, or credit any overpayments, to Deposit Account No 501417

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

☒ Patent Practitioner Signature

Applicant Signature

PTO/SB/30EFS (07-14)
Approved for use through 07/31/2016. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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Signature of Registered U.S. Patent Practitioner			
Signature	/Shrinath Malur/	Date (YYYY-MM-DD)	2019-12-02
Name	Shrinath Malur	Registration Number	34663

This collection of information is required by 37 CFR 1.114. 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 12 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.

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 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 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.

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	1	"20050036509".pn.	US-PGPUB	OR	ON	2020/02/04 07:56
L2	1	1 and controller	US-PGPUB	OR	ON	2020/02/04 08:42
S1	1210	726/4.cor.	USPAT	OR	ON	2018/10/09 09:51
S2	1	"20170280327".pn.	US-PGPUB	OR	ON	2018/10/09 09:52
S3	109056	(H04W12/08 or H04L63/0838 or H04W76/10 or H04W12/04 or H04W12/06 or H04W76/00 or H04W84/12).cpc.	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/09 10:13
S4	460	MASUOKA near NOBUO	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/09 10:14
S5	1	S4 and permission and LAN and terminating	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/09 10:14
S6	483	HASHIMOTO near YASUNOBU	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/09 10:15
S7	2	S6 and permission and LAN and terminating	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/09 10:15
S8	349	YOSHIZAWA near KAZUHIKO	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/09 10:15
S9	2	S8 and permission and LAN and terminating	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/09 10:15
S10	1141	SUZUKI near MOTOYUKI	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/09 10:15
S11	2	S10 and permission and LAN and terminating	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/09 10:15
S12	1	S2 and "display function"	US-PGPUB	OR	ON	2018/10/09 10:30
S13	8234	request$ WITH (permission access$5 control$5) WITH (projector "display	US-PGPUB; USPAT;	OR	ON	2018/10/09 10:44

		device")	EPO; JPO; DERWENT			
S14	1923	"access point" WITH (projector "display device")	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/09 10:46
S15	212	S13 and S14	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/09 10:46
S16	115	S15 and @ad<="20140829"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/09 10:46
S17	1	"20050036509".pn.	US-PGPUB	OR	ON	2018/10/09 11:00
S18	1	S17 and permission	US-PGPUB	OR	ON	2018/10/09 11:00
S19	1	S17 and terminat$	US-PGPUB	OR	ON	2018/10/09 11:01
S20	53	projector WITH ("built in" capabil$ function) WITH "access point"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/09 11:03
S21	31	S20 and @ad<="20140829"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/09 11:03
S22	0	S17 and short	US-PGPUB	OR	ON	2018/10/09 11:10
S23	1	S17 and disconnect$	US-PGPUB	OR	ON	2018/10/09 11:11
S24	1	S17 and connect$6	US-PGPUB	OR	ON	2018/10/09 11:13
S25	1	S17 and connect$6 WITH (monitor$3 regular$ confirm$)	US-PGPUB	OR	ON	2018/10/09 11:18
S26	580	(send$ transmit$) WITH (connection near3 (details parameters information)) WITH short	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 07:45
S27	415	S26 and @ad<="20140829"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 07:46
S28	643	regularly WITH (confirm$ check$ monitor$3) WITH connection	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 07:50
S29	434	S28 and @ad<="20140829"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 07:54
S30	673134	(terminat$ disconnect$ maintain$ continu$) WITH connection	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 07:57
S31	122	S28 same S30	US-PGPUB;	OR	ON	2018/10/10

			USPAT; EPO; JPO; DERWENT			07:57
S32	68	S31 and @ad<="20140829"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 07:57
S33	394	S28 and S30	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:01
S34	249	S33 and @ad<="20140829"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:01
S35	532	(terminat$ disconnect$) WITH connection WITH (rogue unauthoriz$)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:10
S36	0	S28 and S35	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:10
S37	336969	(confirm$ check$ monitor$3) WITH connection	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:10
S38	230	S35 and S37	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:10
S39	200	S38 and @ad<="20140829"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:11
S40	5433	(terminat$ disconnect$ maintain$ continu$) WITH connection WITH request$ WITH user	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:18
S41	5433	S30 and S40	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:18
S42	289766	(terminat$ disconnect$) WITH connection	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:19
S43	3615	S40 and S42	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:19
S44	2910	S43 and @ad<="20140829"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:19
S45	15755	(terminat$ disconnect$) WITH connection WITH (button gui message popup)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:20

S46	586	S37 and S40 and S45	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:21
S47	507	S46 and @ad<="20140829"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:22
S48	2335	S37 and S40	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:23
S49	731	S37 same S40	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:23
S50	600	S49 and @ad<="20140829"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:23
S51	1	"20170280327".pn.	US-PGPUB	OR	ON	2018/10/10 08:27
S52	1	S51 and regularly	US-PGPUB	OR	ON	2018/10/10 08:27
S53	56	S39 and S45	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:33
S54	13738	(terminat$ disconnect$) WITH connection WITH (response respond$)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:46
S55	1050	S40 and S54	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:47
S56	830	S55 and @ad<="20140829"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:47
S57	88	S26 and address with list	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 09:17
S58	25	S57 and (remov$ delet$) WITH address	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 09:18
S59	19	S58 and @ad<="20140829"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 09:18
S60	227992	request$ WITH (OTP "one time password" "one-time password" passcode code "authentication code" "authorization code")	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 09:24
S61	85	S26 and S60	US-PGPUB; USPAT;	OR	ON	2018/10/10 09:24

			EPO; JPO; DERWENT			
S62	66	S61 and @ad<="20140829"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 09:24
S63	5	S26 and display$ WITH connection WITH (qr barcode "bar code")	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 09:46
S64	2	S63 and @ad<="20140829"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 09:46
S65	109	(send$ transmit$) WITH (connection near3 (details parameters information)) WITH (qr barcode "bar code")	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 09:47
S66	12	S65 and short near range	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 09:48
S67	8	S66 and @ad<="20140829"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 09:48
S68	9110	(router gateway firewall "access point") WITH (projector "display device")	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2019/06/25 07:33
S69	2860	(permission privilege "access control" ACL) WITH (projector "display device")	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2019/06/25 07:35
S70	220	S68 and S69	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2019/06/25 07:36
S71	104	S70 and @ad<="20140829"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2019/06/25 07:36
S72	1	"20050036509".pn.	US-PGPUB	OR	ON	2019/06/25 07:42
S74	1	S72 and (router gateway firewall "access point")	US-PGPUB	OR	ON	2019/06/25 07:43
S75	392	predetermin$ WITH (time interval window) WITH (confirm$ acknowledg$) WITH (continu$ terminat$ disconnect$) WITH (connection communication)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2019/06/25 07:47
S76	293	S75 and @ad<="20140829"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2019/06/25 07:47
S77	4334	predetermin$ near3 (time interval window) WITH (continu$ terminat$ disconnect$) near3 (connection communication)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2019/06/25 07:54

S78	3352	S77 and @ad<="20140829"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2019/06/25 07:55
S79	4936	((predetermin$ near2 (time interval window)) (elaps$ near2 (time interval window))) WITH (continu$ maintain$ terminat$ disconnect$) near2 (connection communication)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2019/06/25 08:07
S80	3776	S79 and @ad<="20140829"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2019/06/25 08:13

EAST Search History (Interference)

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2/ 4/ 2020 9:36:00 AM
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Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	15/504,668	MASUOKA et al.
	Examiner	Art Unit
	ARAVIND K MOORTHY	2492

✓	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	10/09/2018	06/25/2019	02/04/2020						
	1	✓	✓	-						
	2	✓	✓	-						
	3	✓	-	-						
	4	✓	✓	-						
	5	✓	✓	-						
	6	✓	✓	-						
	7	✓	✓	-						
	8	✓	✓	-						
	9	✓	✓	-						
	10	✓	✓	-						
	11	✓	✓	-						
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	16			✓						
	17			✓						
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	25			✓						
	26			✓						
	27			✓						
	28			✓						
	29			✓						

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	15/504,668	MASUOKA et al.
	Examiner	Art Unit
	ARAVIND K MOORTHY	2492

CPC - Searched*		
Symbol	**Date**	**Examiner**
H04W 12/08, 76/10, 12/04, 12/06, 76/00, 84/12	10/09/2018	AM
H04L 63/0838	10/09/2018	AM
none	06/25/2019	AM
none	02/04/2020	AM

CPC Combination Sets - Searched*		
Symbol	**Date**	**Examiner**

US Classification - Searched*			
Class	**Subclass**	**Date**	**Examiner**
726	4	10/09/2018	AM
none	one	06/25/2019	AM
none	none	02/04/2020	AM

* 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**
Inventor name search: Palm and East- search strategy enclosed	10/09/2018	AM
East (US-PGPUB, USPAT, EPO, JPO, DERWENT)- See search history printout	10/09/2018	AM
East (US-PGPUB, USPAT, EPO, JPO, DERWENT)- See search history printout	06/25/2019	AM
East (US-PGPUB, USPAT, EPO, JPO, DERWENT)- See search history printout	02/04/2020	AM

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Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	15/504,668	MASUOKA et al.
	Examiner	Art Unit
	ARAVIND K MOORTHY	2492

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner

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Ex. 1002, Page 164

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/504,668	02/17/2017	Nobuo MASUOKA	T&A-10860	8696

24956 7590 02/07/2020

MATTINGLY & MALUR, PC
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SUITE 210
ALEXANDRIA, VA 22314

EXAMINER	
MOORTHY, ARAVIND K	

ART UNIT	PAPER NUMBER
2492	

NOTIFICATION DATE	DELIVERY MODE
02/07/2020	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):

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Office Action Summary	Application No. 15/504,668	Applicant(s) MASUOKA et al.	
	Examiner ARAVIND K MOORTHY	Art Unit 2492	AIA (FITF) Status Yes

-- 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 02 December 2019.

☐ 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) 16-29 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) 16-29 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 17 February 2017 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 _____.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date _____.

4) ☐ Other: _____.

DETAILED ACTION

Notice of Pre-AIA or AIA Status

The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

1. This is in response to the RCE filed on 2 December 2019.

2. Claims 16-29 are pending in the application.

3. Claims 16-29 have been rejected.

4. Claims 1-15 have been cancelled.

Continued Examination Under 37 CFR 1.114

5. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2 December 2019 has been entered.

Information Disclosure Statement

6. The examiner has considered the information disclosure statement (IDS) filed on 10 July 2019.

Response to Arguments

7. Applicant's arguments filed 2 December 2019 have been fully considered but they are not persuasive.

On page 13 the applicant argues that Acharya does not disclose that when the communication device remotely receives the instruction from the first communication terminal, the communication device which is displaying the data received from the second communication

terminal controls the display in accordance with the instruction remotely received from the first communication terminal.

The examiner respectfully disagrees. Acharya discloses displaying based on permissions from i.e. approved users or if there is an instruction to disconnect then disconnecting devices [0085-0086].

Claim Rejections - 35 USC § 102

In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a)(1) the claimed invention was patented, described in a printed publication, or in public use, on sale or otherwise available to the public before the effective filing date of the claimed invention.

8. Claim(s) 16, 20, 21, 28 and 29 is/are rejected under 35 U.S.C. 102(a)(1) as being anticipated by Acharya et al US 2005/0036509 A1 (hereinafter Acharya).

As to claim 16, Acharya discloses a communication system comprising:

a communication device (i.e. projector that is connected to the wireless network) [0036];

an access point device (i.e. wireless access point) [0036];

a first communication terminal configured to connect to the communication device via the access point device and transmit a first instruction to remotely control the communication device connected with the first communication terminal (i.e.

computing devices connected to the projector through the wireless network) [0036]; and

a second communication terminal configured to, if having permission from the first communication terminal, establish a connection with the communication device to use the communication device (i.e. other user must request permission from the main device to gain access to the projector) [0059];

wherein, in a case that the communication device receives the first instruction from the first communication terminal while the communication device outputs data received from the second communication terminal that established the connection with the communication device, the communication device is configured to control a display operation of the data received from the second communication terminal in accordance with the first instruction from the first communication terminal (i.e. the user has a button to connect/disconnect other users) [0084-0085],

wherein, in a case that the communication device receives a second instruction to terminate the permission from the first communication terminal, the communication device is configured to terminate the connection with the second communication terminal in accordance with the second instruction from the first communication terminal (i.e. the user has a button to connect/disconnect other users) [0084-0085].

As to claim 20, Acharya discloses the communication system according to claim 16, wherein,

the first communication terminal displays information whether to terminate the permission on a display screen, receives an input operation for terminating the permission, and transmits information to terminate the permission as the second instruction to the communication device in accordance with the input operation for terminating the permission (i.e. the user has a button to connect/disconnect other users) [0084-0085].

As to claim 21, Acharya discloses the communication system according to claim 16, wherein,

in a case that the communication device is able to receive information from the first communication terminal (i.e. able to make a connection) [0054-0055], the communication device controls the communication device in accordance with information from the first communication terminal (i.e. user A has control over the projector) [0057],

wherein, in a case that the communication device is unable to receive information from the first communication terminal, the communication terminal device terminates the connection with the second communication terminal (i.e. user is logged off) [0057].

As to claim 28, Acharya discloses a communication terminal comprising:

a wireless connection interface configured to connect a communication device via an access point device (i.e. wireless access point) [0036]; and

a controller configured to control the wireless connection interface to transmit a first instruction to remotely control the communication device connected

with the communication terminal (i.e. computing devices connected to the projector through the wireless network) [0036];

wherein the controller is configured to transmit permission to establish a connection for the communication device and another communication terminal (i.e. other user must request permission from the main device to gain access to the projector) [0059],

wherein, in a case that the controller controls to transmit the first instruction to the communication device while the communication device outputs data received from the other communication terminal that established the connection with the communication device, the controller is configured to control a display operation of the data received from the other communication terminal in accordance with the first instruction (i.e. the user has a button to connect/disconnect other users) [0084-0085],

wherein, in a case that the controller transmits a second instruction to terminate the permission from the first communication terminal, the controller is configured to transmit information to terminate the connection with the second communication terminal to the communication device in accordance with the second instruction (i.e. the user has a button to connect/disconnect other users) [0084-0085].

As to claim 29, Acharya discloses a communication device comprising:

a wireless connection interface configured to connect a communication terminal and another communication terminal (i.e. computing devices connected to the projector through the wireless network) [0036]; and

a controller configured to control the wireless connection interface [0039],

wherein the wireless connection interface is configured to connect to the communication terminal via an access point device (i.e. wireless access point) [0036],

wherein the controller is configured to control to establish a connection with the other communication terminal, if having permission from the communication terminal, and control data received from the other communication terminal (i.e. other user must request permission from the main device to gain access to the projector) [0059],

wherein, if the wireless communication interface receives information to remotely control the data from the communication terminal while the controller controls the data received from the other communication terminal, the controller is configured to control the data in accordance with information from the communication terminal (i.e. the user has a button to connect/disconnect other users) [0084-0085],

wherein, if the wireless communication interface receives information to terminate the permission from the communication terminal, the controller is configured to terminate the connection with the other communication terminal (i.e. the user has a button to connect/disconnect other users) [0084-0085].

Claim Rejections - 35 USC § 103

In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the

statutory basis for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

> A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103 are summarized as follows:

1. Determining the scope and contents of the prior art.

2. Ascertaining the differences between the prior art and the claims at issue.

3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. Claims 17, 24 and 26 is/are rejected under 35 U.S.C. 103 as being unpatentable over Acharya et al US 2005/0036509 A1 (hereinafter Acharya) as applied to claim 16 above, and further in view of Miura US 2015/0327310 A1.

As to claim 17, Acharya does not teach the communication system according to claim 16, wherein, for the permission, the first communication terminal transmits, to the second communication terminal, connection information necessary for a connection through short range communication with the second communication terminal, and the second communication terminal connects to the communication device by using the connection information

Miura teaches transmitting connection information through short range wireless communication [0106]. Miura teaches establishing a connection using the connection information [0106].

Therefore, it would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified Acharya so that for the permission, the first communication terminal device would have transmitted, to the second communication terminal device, connection information necessary for a connection via the access point device through short range communication with the second communication terminal device. The second communication terminal device would have connected to the communication device via the access point device by using the connection information.

It would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified Acharya by the teaching of Miura because it enables easy distribution of information towards an unspecified large number of parties by utilizing short range wireless communication [0005].

As to claim 24, Acharya does not teach the communication system according to claim 16, wherein, for the permission, the first communication terminal requests a one-time password from the communication device, and the communication device responds with the one-time password, the first communication terminal transmits, to the second communication terminal, connection information including the one-time password necessary for a connection through short range communication with the second communication terminal, and the second communication terminal

connects to the communication device by using the connection information including the one- time password.

Miura teaches requesting a PIN code required for authentication to establish a connection [0069]. Miura teaches transmitting connection information through short range wireless communication [0106]. Miura teaches establishing a connection using the connection information [0106].

Therefore, it would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified Acharya so that for the permission the first communication terminal device would have requested a one-time password from the communication device. The communication device would have responded with the one-time password. The first communication terminal device would have transmitted, to the second communication terminal device, connection information necessary for a connection via the access point device through short range communication with the second communication terminal device. The second communication terminal device would have connected to the communication device via the access point device by using the connection information including the one-time password.

It would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified Acharya by the teaching of Miura because it enables easy distribution of information towards an unspecified large number of parties by utilizing short range wireless communication [0005].

As to claim 26, Acharya does not teach the communication system according to claim 16, wherein, for the permission, the second communication terminal requests a one-time password from the communication device through short range communication with the communication device, and the communication device transmits connection information including the one-time password necessary for a connection to the second communication terminal, and the second communication terminal connects to the communication device by using the connection information including the one- time password.

Miura teaches requesting a PIN code required for authentication to establish a connection [0069]. Miura teaches transmitting connection information through short range wireless communication [0106]. Miura teaches establishing a connection using the connection information [0106].

Therefore, it would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified Acharya so that for the permission the first communication terminal device would have requested a one-time password from the communication device. The communication device would have responded with the one-time password. The first communication terminal device would have transmitted, to the second communication terminal device, connection information necessary for a connection via the access point device through short range communication with the second communication terminal device. The second communication terminal device would have connected to the communication device via the access point device by using the connection information including the one-time password.

It would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified Acharya by the teaching of Miura because it enables easy distribution of information towards an unspecified large number of parties by utilizing short range wireless communication [0005].

10. Claims 18 and 19 is/are rejected under 35 U.S.C. 103 as being unpatentable over Acharya et al US 2005/0036509 A1 (hereinafter Acharya) as applied to claim 16 above, and further in view of Kumar US 2014/0233443 A1.

As to claim 18, Acharya does not teach the communication system according to claim 16, wherein, the communication device performing communication with the first communication terminal at predetermined time intervals for confirming whether to continue or terminate the permission for the second communication terminal to connect to the communication device, after the connection to the second communication terminal, and continuing the connection with the second communication terminal upon confirming the permission is to be continued, while terminating the connection with the second communication terminal upon confirming the permission is to be terminated.

Kumar teaches at predetermine time periods terminating or maintaining a connection with devices [0037, 0042].

Therefore, it would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified Acharya so that the communication device would have performed communication with the first communication terminal at predetermined time intervals for confirming whether to continue or terminate the permission for the second communication terminal to connect to the

communication device. After the connection to the second communication terminal, and continuing the connection with the second communication terminal upon confirming the permission was to be continued, while terminating the connection with the second communication terminal upon confirming the permission was to be terminated.

It would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified Acharya by the teaching of Kumar because it helps maintain valid connections [0004].

As to claim 19, Acharya does not teach the communication system according to claim 16, wherein, first communication terminal confirming, with a user at the predetermined time intervals, whether to continue or terminate the permission for the second communication terminal to connect to the communication device, after the connection to the second communication terminal, and transmits information indicating termination of the permission to the communication device upon confirming the permission is to be terminated, and upon receiving the information indicating termination of the permission, the communication device terminating the connection with the second communication terminal.

Kumar teaches at predetermine time periods terminating or maintaining a connection with devices [0037, 0042].

Therefore, it would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified Acharya so that the first communication terminal would have confirmed, with a user at the predetermined time intervals, whether to continue or terminate the permission for the

second communication terminal to connect to the communication device. After the connection to the second communication terminal, and transmitted information indicating termination of the permission to the communication device upon confirming the permission is to be terminated, and upon receiving the information indicating termination of the permission, the communication device would have terminated the connection with the second communication terminal.

It would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified Acharya by the teaching of Kumar because it helps maintain valid connections [0004].

11. Claims 22, 23 and 25 is/are rejected under 35 U.S.C. 103 as being unpatentable over Acharya et al US 2005/0036509 A1 (hereinafter Acharya) as applied to claim 16 above, and further in view of Hatayama et al US 2010/0323682 A1 (hereinafter Hatayama).

As to claim 22, Acharya does not teach the communication system according to claim 16, wherein, for the permission, the first communication terminal transmits, to the second communication terminal, connection information necessary for a connection through short range communication with the second communication terminal, and the second communication terminal transmits address information on the second communication terminal to the first communication terminal, the first communication terminal transmits the address information on the second communication terminal to the communication device, the communication device registers the address information on the second communication terminal into a permission list, the second communication terminal connects to the communication device by using the connection information, upon confirming the permission is to be terminated, the first communication terminal causes the communication device to deletes the address information on the second communication

terminal from the permission list of the communication device, and, upon the address information on the second communication terminal being not registered in the permission list, the communication device terminates the connection with the second communication terminal.

Hatayama teaches short distance radio [0081]. Hatayama teaches sending connection setting information over short distance radio [0099]. Hatayama teaches adding address information to a list [0084]. Hatayama teaches deleting address information from the list [0258].

Therefore, it would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified Acharya so that for the permission, the first communication terminal device would have transmitted, to the second communication terminal device, connection information necessary for a connection via the access point device through short range communication with the second communication terminal device, and the second communication terminal device would have transmitted address information on the second communication terminal device to the first communication terminal device. The first communication terminal device would have transmitted the address information on the second communication terminal device to the communication device. The communication device would have registered the address information on the second communication terminal device into a permission list. The second communication terminal device would have connected to the communication device via the access point device by using the connection information. Upon confirming the permission is to be terminated, the first communication terminal device would have caused the communication device to delete the address information on the second communication terminal device from the permission list of the communication device. Upon the address information on the second communication terminal

device being not registered in the permission list, the communication device would have terminated the connection with the second communication terminal device.

It would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified Acharya by the teaching of Hatayama because it provides a system for easy acquisition of content [0008].

As to claim 23, Acharya does not teach the communication system according to claim 16, wherein, for the permission, the first communication terminal transmits, to the second communication terminal, connection information necessary for a connection through short range communication with the second communication terminal, and the second communication terminal transmits address information on the second communication terminal to the first communication terminal, the first communication terminal registers the address information on the second communication terminal into a permission list, the second communication terminal connects to the communication device by using the connection information, upon confirming the permission is to be terminated, the first communication terminal causes the communication device to deletes the address information on the second communication terminal from the permission list, and the communication device performs communication for confirmation with the first communication terminal and, upon the address information on the second communication terminal being not registered in the permission list of the communication device, terminates the connection with the second communication terminal.

Hatayama teaches short distance radio [0081]. Hatayama teaches sending connection setting information over short distance radio [0099]. Hatayama teaches adding address information to a list [0084]. Hatayama teaches deleting address information from the list [0258].

Therefore, it would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified Acharya so that for the permission, the first communication terminal device would have transmitted, to the second communication terminal device, connection information necessary for a connection via the access point device through short range communication with the second communication terminal device, and the second communication terminal device would have transmitted address information on the second communication terminal device to the first communication terminal device. The first communication terminal device would have transmitted the address information on the second communication terminal device to the communication device. The communication device would have registered the address information on the second communication terminal device into a permission list. The second communication terminal device would have connected to the communication device via the access point device by using the connection information. Upon confirming the permission is to be terminated, the first communication terminal device would have caused the communication device to delete the address information on the second communication terminal device from the permission list of the communication device. Upon the address information on the second communication terminal device being not registered in the permission list, the communication device would have terminated the connection with the second communication terminal device.

It would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified Acharya by the teaching of Hatayama because it provides a system for easy acquisition of content [0008].

As to claim 25, Acharya does not teach the communication system according to claim 16, wherein, for the permission, the second communication terminal performs short range communication with the communication device, the communication device transmits, to the second communication terminal, connection information necessary for a connection, and the second communication terminal transmits address information on the second communication terminal to the communication device, the communication device registers the address information on the second communication terminal into a permission list, the second communication terminal connects to the communication device by using the connection information, upon confirming the permission is to be terminated, the first communication terminal causes the communication device to deletes the address information on the second communication terminal from the permission list of the communication device, and, upon the address information on the second communication terminal being not registered in the permission list, the communication device terminates the connection with the second communication terminal.

Hatayama teaches short distance radio [0081]. Hatayama teaches sending connection setting information over short distance radio [0099]. Hatayama teaches adding address information to a list [0084]. Hatayama teaches deleting address information from the list [0258].

Therefore, it would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to

have modified Acharya so that for the permission, the first communication terminal device would have transmitted, to the second communication terminal device, connection information necessary for a connection via the access point device through short range communication with the second communication terminal device, and the second communication terminal device would have transmitted address information on the second communication terminal device to the first communication terminal device. The first communication terminal device would have transmitted the address information on the second communication terminal device to the communication device. The communication device would have registered the address information on the second communication terminal device into a permission list. The second communication terminal device would have connected to the communication device via the access point device by using the connection information. Upon confirming the permission is to be terminated, the first communication terminal device would have caused the communication device to delete the address information on the second communication terminal device from the permission list of the communication device. Upon the address information on the second communication terminal device being not registered in the permission list, the communication device would have terminated the connection with the second communication terminal device.

It would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified Acharya by the teaching of Hatayama because it provides a system for easy acquisition of content [0008].

12. Claim 27 is/are rejected under 35 U.S.C. 103 as being unpatentable over Acharya et al US 2005/0036509 A1 (hereinafter Acharya) as applied to claim 16 above, and further in view of Doss et al US 2013/0221084 A1 (hereinafter Doss).

As to claim 27, Acharya does not teach the communication system according to claim 16, wherein, for the permission, the first communication terminal transmits, to the second communication terminal, connection information necessary for a connection through short range communication with the second communication terminal, the second communication terminal connects to the communication device by using the connection information, and in the short range communication, the first communication terminal displays a bar code representing the connection information on a display screen thereof and the second communication terminal captures an image of the bar code with a camera to read the connection information.

Doss teaches using short-range communication [0054]. Doss teaches transmitting connection information [0095]. Doss teaches the connection information is in a QR code that can be scanned by a device [0095].

Therefore, it would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified Acharya so that for the permission, the first communication terminal device would have transmitted, to the second communication terminal device, connection information necessary for a connection via the access point device through short range communication with the second communication terminal device. The second communication terminal device would have connected to the communication device via the access point device by using the connection information. In the short range communication, the first communication terminal device would

have displayed a bar code representing the connection information on a display screen thereof and the second communication terminal device captured an image of the bar code with a camera to read the connection information.

It would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified Acharya by the teaching of Doss because the connection information in a visual tag provides a more secure connection [0008].

Conclusion

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ARAVIND K MOORTHY whose telephone number is (571)272-3793. The examiner can normally be reached on M-F 7:30-7:30.

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, Saleh Najjar can be reached on 571-272-4006. 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.

/ARAVIND K MOORTHY/
Primary Examiner, Art Unit 2492

REMARKS / ARGUMENTS

Claims 16-30 are pending. Claim 30 was newly added. No new matter has been added.

35 U.S.C. §§102 and 103

Claims 16, 20, 21, 28 and 29 stand rejected under 35 U.S.C. §102(a)(1) as being anticipated by Acharya et al. (U.S. Publication No. 2005/0036509; hereinafter "Acharya"). **Claims 17, 24 and 26** stand rejected under 35 U.S.C. §103 as being unpatentable over in view of Acharya in view of Miura (U.S. Publication No. 2015/0327310; hereinafter "Miura"). **Claims 18 and 19** stand rejected under 35 U.S.C. §103 as being unpatentable over Acharya in view of Kumar (U.S. Publication No. 2014/0233443; hereinafter "Kumar"). **Claims 22, 23 and 25** stand rejected under 35 U.S.C. §103 as being unpatentable over Acharya in view of Hatayama et al. (U.S. Publication No. 2010/0323682; hereinafter "Hatayama"). **Claim 27** stands rejected under 35 U.S.C. §103 as being unpatentable over Acharya in view of Doss et al. (U.S. Publication No. 2013/0221084; hereinafter "Doss"). These rejections are traversed as follows.

Claim 1, as amended, is directed to:

> 16. A communication system comprising:
> a communication device;
> an access point device;
> a first communication terminal configured to connect to the communication device via the access point device and transmit a first instruction to remotely control the communication device connected with the first communication terminal; and

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a second communication terminal configured to, if having permission from the first communication terminal, establish a connection with the communication device to use the communication device;

wherein, in a case that the communication device receives the first instruction from the first communication terminal while the communication device outputs data received from the second communication terminal that established the connection with the communication device, the communication device is configured to control a state of a display operation of the data received from the second communication terminal in accordance with the first instruction from the first communication terminal while maintaining the connection with the second communication terminal,

wherein, in a case that the communication device receives a second instruction to terminate the permission from the first communication terminal, the communication device is configured to terminate the connection with the second communication terminal in accordance with the second instruction from the first communication terminal.

The Examiner's attention is directed, by way of example only, to paragraphs [0050], [0066], [0069], [0153] and [0187] and Fig. 2 of the corresponding publication (U.S. Pub. No. 2017/0280327). The claimed invention includes the following features:

(1) In a case that the communication device receives the first instruction (remote control instruction) from the first communication terminal, the communication device that is displaying the data received from the second communication terminal controls a state of displaying the data in accordance with the first instruction (remote control instruction) received from the first communication terminal while maintaining the connection with the second communication terminal

(2) The first communication terminal transmits, to the communication device, the second instruction to terminate the permission of connection of the second communication terminal with the communication device.

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(3) In the control of the state of displaying the data by the first instruction, the connection between the communication device and the second communication terminal is maintained.

(4) The second instruction terminates the permission of connection between the communication device and the second communication terminal.

(5) The first instruction is different from the second instruction in that the first instruction does not include the information to terminate the permission of connection between the communication device and the second communication terminal.

It is respectfully submitted that the cited references fail to disclose or suggest all of the claimed features of the present claims. For example, none of the cited references disclose or suggest that:

> wherein, in a case that the communication device receives the first instruction from the first communication terminal while the communication device outputs data received from the second communication terminal that established the connection with the communication device, the communication device is configured to control a state of a display operation of the data received from the second communication terminal in accordance with the first instruction from the first communication terminal while maintaining the connection with the second communication terminal

The claimed "first instruction" from the first communication terminal controls a state of a display operation of the data received from the second communication terminal. Meanwhile, the claimed "second instruction" from the first communication terminal is an instruction to terminate the permission of connection between the communication device and the second communication terminal. As shown in Fig. 2, terminal 1 connects to projector 3 through connection 41 (211) and then uses the

display function 31 of the projector 3 (212). Permission is given by terminal 1 to terminal 2 to use the projector 3 (201). Thereafter, terminal 2 can may use of display function 31 of projector 3 (222). Termination of permission is then sent from terminal 1 to terminate the connection of terminal 2 (213, 202, 223). Note that with respect to the timeline at the top of Fig. 2, (212) and (222) overlap.

In rejection the claims, the Examiner places substantial reliance upon paragraphs [0084], [0085] and [0086] of Acharya, which are reproduced below:

> [0084] FIG. 13 shows an example of a display-sharing interface 1300 that may be displayed on a user's computing device once the user establishes communication with a shared display device, such as the projector 110 in FIG. 1, and gains control over the display device. The display-sharing interface 1300 depicted here includes a Start Presentation button 1310, a Sharing Mode section 1320 (which may also be called a Projector Access section), a window minimizing checkbox 1350, a Show User List button 1360, a Projector Info button 1370, a Hide Screen button 1330, and a Disconnect button 1340.
>
> [0085] When the user selects the Start Presentation button 1310, the user's computing system initiates a presentation or other pre-selected video display or other pre-selected audiovisual display for presentation on the display device. The window minimizing checkbox 1350 may be selected if the user wishes the display-sharing interface 1300 to be removed from the main view of the user's computing device after the user's presentation is initiated. If the user wishes the presentation to be blanked or hidden, the user may select the Hide Screen button 1330. This button 1330 enables a user to temporarily blank the display being viewed by an audience when the user wishes to discusses a point without the distractions of a visible display. This button 1330 also allows a user to blank the display device at the conclusion of the user's presentation. As an alternative to blanking the display, the Hide Screen button 1330 may cause the display device to present a pre-determined graphic selected by the user. The Projector Info button 1370 calls an informational interface with information for monitoring the display device, and may also be used for maintaining the display device and administering lists of approved users on the display device. The Disconnect button 1340 may be selected by a user to terminate the user's control over the display device at the conclusion of the user's presentation.
>
> [0086] The Sharing Mode section 1320 depicted in FIG. 13 includes options for selecting a mode for sharing access to the display device. As depicted in

> this example, this section includes radio buttons to select one of three access modes. A first access mode 1322 is designated to allow any user to gain control of the projector. This first access mode 1322 may implement the access-sharing protocol described above for the self-service multiple-user access mode (illustrated by example in FIG. 4). A second access mode 1324 is designated to force any other users to obtain the permission of the current user (the user currently with control and use of the display device) before the other users may use the display device. This second access mode 1324 may implement the access-sharing protocol described above for the roundtable multiple-user access mode (illustrated by example in FIG. 5). A third access mode 1326 ignores all requests for control of the display device. This third access mode may implement the access-sharing protocol described above for the single-user access mode (illustrated by example in FIG. 3).

Accordingly, Acharya discloses in Fig. 13 several access modes and a "second access mode 1324 is designated to force any other users to obtain the permission of the current user (the user currently with control and use of the display device) before the other users may use the display device" (see para. [0086]). In this case, the control of the display state can only be performed only by "current user" having the authority to display on projector 110. In addition, the user operation screens shown in Fig. 13 to Fig. 25 relate to permission and therefore are unrelated to the claimed "first instruction" from the first communication terminal controls a state of a display operation of the data received from the second communication terminal.

The deficiencies in Acharya are not overcome by resort to any of the remaining references of record. In addition all of the independent claims have been amended in the same manner as claim 1. As such, it is submitted that all of the pending claims are patentable. New dependent claim 30 is supported by at least the description in paragraph [0050] and Fig. 2 of the '327 publication.

Conclusion

In view of the foregoing, Applicant respectfully requests that a timely Notice of Allowance be issued in this case. Please charge any shortage of fees due in connection with the filing of this paper, or credit any overpayment of fees, to Deposit Account 50-1417.

Respectfully submitted,

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Amendments to the Claims:

This listing of claims will replace all prior versions and listing of claims in the application.

Listing of Claims:

1.-15. (Canceled).

16. (Currently Amended) A communication system comprising:

a communication device;

an access point device;

a first communication terminal configured to connect to the communication device via the access point device and transmit a first instruction to remotely control the communication device connected with the first communication terminal; and

a second communication terminal configured to, if having permission from the first communication terminal, establish a connection with the communication device to use the communication device;

wherein, in a case that the communication device receives the first instruction from the first communication terminal while the communication device outputs data received from the second communication terminal that established the connection with the communication device, the communication device is configured to control a state of a display operation of the data received from the second communication terminal in accordance with the first instruction from the first communication terminal while maintaining the connection with the second communication terminal,

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wherein, in a case that the communication device receives a second instruction to terminate the permission from the first communication terminal, the communication device is configured to terminate the connection with the second communication terminal in accordance with the second instruction from the first communication terminal.

17. (Previously Presented) The communication system according to claim 16, wherein,

for the permission, the first communication terminal transmits, to the second communication terminal, connection information necessary for a connection through short range communication with the second communication terminal, and the second communication terminal connects to the communication device by using the connection information

18. (Previously Presented) The communication system according to claim 16, wherein,

the communication device performing communication with the first communication terminal at predetermined time intervals for confirming whether to continue or terminate the permission for the second communication terminal to connect to the communication device, after the connection to the second communication terminal, and continuing the connection with the second communication terminal upon confirming the permission is to be continued, while

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terminating the connection with the second communication terminal upon confirming the permission is to be terminated.

19. (Previously Presented) The communication system according to claim 16, wherein,

the first communication terminal confirming, with a user at the predetermined time intervals, whether to continue or terminate the permission for the second communication terminal to connect to the communication device, after the connection to the second communication terminal, and transmits information indicating termination of the permission to the communication device upon confirming the permission is to be terminated, and upon receiving the information indicating termination of the permission, the communication device terminating the connection with the second communication terminal.

20. (Previously Presented) The communication system according to claim 16, wherein,

the first communication terminal displays information whether to terminate the permission on a display screen, receives an input operation for terminating the permission, and transmits information to terminate the permission as the second instruction to the communication device in accordance with the input operation for terminating the permission.

21. (Previously Presented) The communication system according to claim 16, wherein,

in a case that the communication device is able to receive information from the first communication terminal, the communication device controls the communication device in accordance with information from the first communication terminal,

wherein, in a case that the communication device is unable to receive information from the first communication terminal, the communication terminal device terminates the connection with the second communication terminal.

22. (Previously Presented) The communication system according to claim 16, wherein,

for the permission, the first communication terminal transmits, to the second communication terminal, connection information necessary for a connection through short range communication with the second communication terminal, and the second communication terminal transmits address information on the second communication terminal to the first communication terminal, the first communication terminal transmits the address information on the second communication terminal to the communication device, the communication device registers the address information on the second communication terminal into a permission list, the second communication terminal connects to the communication device by using the connection information, upon confirming the permission is to be terminated, the first communication terminal causes the communication device to deletes the address

information on the second communication terminal from the permission list of the communication device, and, upon the address information on the second communication terminal being not registered in the permission list, the communication device terminates the connection with the second communication terminal.

23. (Previously Presented) The communication system according to claim 16, wherein,

for the permission, the first communication terminal transmits, to the second communication terminal, connection information necessary for a connection through short range communication with the second communication terminal, and the second communication terminal transmits address information on the second communication terminal to the first communication terminal, the first communication terminal registers the address information on the second communication terminal into a permission list, the second communication terminal connects to the communication device by using the connection information, upon confirming the permission is to be terminated, the first communication terminal causes the communication device to deletes the address information on the second communication terminal from the permission list, and the communication device performs communication for confirmation with the first communication terminal and, upon the address information on the second communication terminal being not registered in the permission list of the communication device, terminates the connection with the second communication terminal.

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24. (Previously Presented) The communication system according to claim 16, wherein,

for the permission, the first communication terminal requests a one-time password from the communication device, and the communication device responds with the one-time password, the first communication terminal transmits, to the second communication terminal, connection information including the one-time password necessary for a connection through short range communication with the second communication terminal, and the second communication terminal connects to the communication device by using the connection information including the one-time password.

25. (Previously Presented) The communication system according to claim 16, wherein,

for the permission, the second communication terminal performs short range communication with the communication device, the communication device transmits, to the second communication terminal, connection information necessary for a connection, and the second communication terminal transmits address information on the second communication terminal to the communication device, the communication device registers the address information on the second communication terminal into a permission list, the second communication terminal connects to the communication device by using the connection information, upon confirming the permission is to be terminated, the first communication terminal

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causes the communication device to deletes the address information on the second communication terminal from the permission list of the communication device, and, upon the address information on the second communication terminal being not registered in the permission list, the communication device terminates the connection with the second communication terminal.

26. (Previously Presented) The communication system according to claim 16, wherein,

for the permission, the second communication terminal requests a one-time password from the communication device through short range communication with the communication device, and the communication device transmits connection information including the one-time password necessary for a connection to the second communication terminal, and the second communication terminal connects to the communication device by using the connection information including the one-time password.

27. (Previously Presented) The communication system according to claim 16, wherein,

for the permission, the first communication terminal transmits, to the second communication terminal, connection information necessary for a connection through short range communication with the second communication terminal, the second communication terminal connects to the communication device by using the connection information, and in the short range communication, the first

communication terminal displays a bar code representing the connection information on a display screen thereof and the second communication terminal captures an image of the bar code with a camera to read the connection information.

28. (Currently Amended) A communication terminal comprising:

a wireless connection interface configured to connect to a communication device via an access point device; and

a controller configured to control the wireless connection interface to transmit a first instruction to remotely control the communication device connected with the communication terminal;

wherein the controller is configured to transmit permission to establish a connection for the communication device and another communication terminal,

wherein, in a case that the controller controls to transmit the first instruction to the communication device while the communication device outputs data received from the other communication terminal that established the connection with the communication device, the controller is configured to control a state of a display operation of the data ~~received from the other communication terminal~~ in accordance with the first instruction while maintaining the connection for the communication device and the other communication terminal,

wherein, in a case that the controller transmits a second instruction to terminate the permission from the ~~first~~ communication terminal, the controller is configured to transmit information to terminate the connection with the ~~second~~ other

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communication terminal to the communication device in accordance with the second instruction.

29. (Currently Amended) A communication device comprising:

a wireless connection interface configured to connect to a communication terminal and another communication terminal; and

a controller configured to control the wireless connection interface,

wherein the wireless connection interface is configured to connect to the communication terminal via an access point device,

wherein the controller is configured to control to establish a connection with the other communication terminal, if having permission from the communication terminal, and control data received from the other communication terminal,

wherein, in a case that ~~if~~ the wireless communication interface receives information to remotely control a state of a display of the data from the communication terminal while the controller controls the data received from the other communication terminal, the controller is configured to control the data in accordance with information from the communication terminal while maintaining the connection with the other communication terminal,

wherein, in a case that ~~if~~ the wireless communication interface receives information to terminate the permission from the communication terminal, the controller is configured to terminate the connection with the other communication terminal.

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30. (New) The communication system according to claim 16, wherein,

the second communication terminal controls the communication device while maintaining the connection with the communication device, and the first communication terminal controls the communication device while maintaining the connection with the communication device via the access point.

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Amendments to the Drawings:

In Fig. 2, “TERMINAL B” has been changed to “TERMINAL 2”

A Replacement Drawing Sheet is submitted herewith.

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Amendments to the Claims:

Please amend paragraphs [0087], [0116], [0124], [0158] and [0162] of the published application as follows. No new matter is added.

[0087] For example, the terminal 1 of the user A of the company A has permission to connect to the projector 3, which serves as an access point of the wireless LAN 4 communication system of the company A, and the SSID and password are given in advance to the user A. In addition, the SSID and password are not given to the user B of the company B, which prevents the ~~terminal B~~terminal 2 from establishing a connection to the access point of the wireless LAN 4 communication system of the company A.

[0116] This operation allows the terminal 1 to receive confirmation request information from the projector 3 in S16 and send a response. Subsequently, the terminal 1 returns from the non-sleep state to the normal state triggered by termination of the connection 41 with the projector 3, termination of the permission given to the ~~terminal B~~terminal 2 of the user B, termination of the application 15, or the like.

[0124] In FIG. 6, steps S11 to S15 are the same as those in FIG. 5. In step S16a, the terminal 1 of the user A performs, by itself, regular confirmation regarding permission given to the terminal 2 of the user B. In the confirmation in S16a, for example, the first confirmation method, the second confirmation method, or the like can be employed as described above. In the first confirmation method, the application 15 of the terminal 1 displays information for confirmation on the screen of the terminal 1 at regular timings from the time of establishing the connection 42 of the terminal 2 in S14. The user A checks the information for confirmation on the screen and makes an input operation for selection corresponding to continuance or termination of the permission given to the ~~terminal B~~terminal 2 of the user B.

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[0158] In S28-1, when terminating permission for the ~~terminal B~~terminal 2 of the user B to connect to and use the projector 3, the user A performs an input operation for terminating the permission on the screen provided by the application 15 of the terminal 1. In S28-2, in response to the operation in S28-1, the application 15 of the terminal 1 deletes the information on Mb, which is the MAC address of the terminal 2 whose permission is to be terminated, from the permission list 52.

[0162] With reference to FIG. 10, a communication system and the like of Embodiment 3 are described. In Embodiment 3, a one-time password is issued for control of permission for the ~~terminal B~~terminal 2 of the user B to connect to and use the projector 3. This one-time password is information prepared for control unique to Embodiment 3 and different from the above-described password associated with an SSID.

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No.	: 15/504,668	Confirmation No.	: 8696
Inventor(s)	: Nobuo MASUOKA et al.	TC/GAU	: 2492
Filed	: February 17, 2017	Examiner	: MOORTHY, ARAVIND K
Title	: COMMUNICATION SYSTEM, COMMUNICATION DEVICE AND COMMUNICATION TERMINAL DEVICE		
Docket No.	: T&A-10860		
Customer No.: 24956			

AMENDMENT

Mail Stop: Amendment
Commissioner of Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Date: July 6, 2020

Sir:

In response to the Office Action of February 7, 2020, please amend the above-identified application as follows. A fee for a two-month Extension of Time accompanies this response.

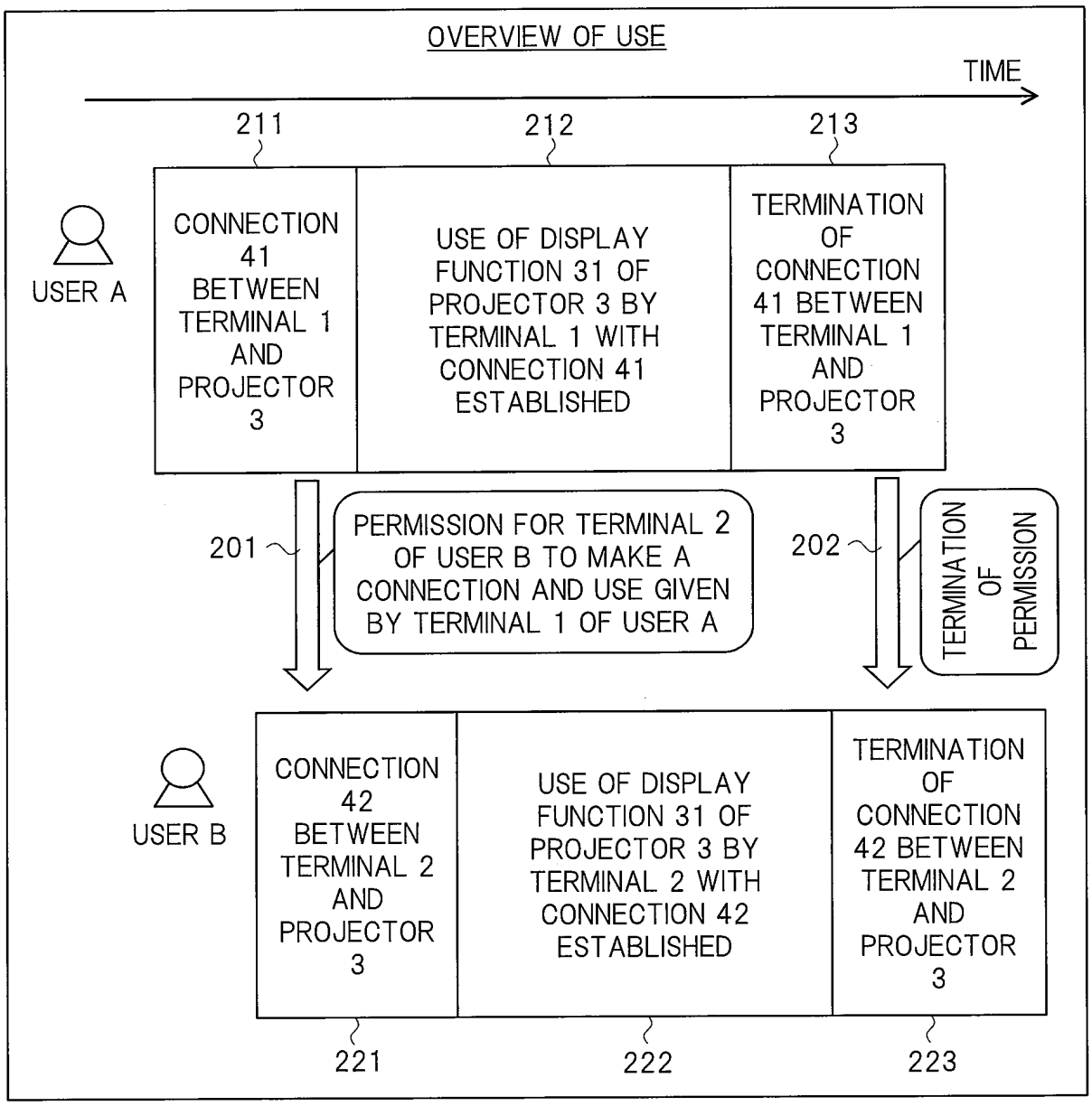
Amendments to the Specification are reflected on page 2 of this paper.

Amendments to the Drawings begin on page 4 of this paper.

Amendments to the Claims are reflected in the listing of claims which begins on page 5 of this paper.

Remarks / **Arguments** are included following the amendments.

FIG. 2


OVERVIEW OF USE
TIME
211
212
213
USER A
CONNECTION 41 BETWEEN TERMINAL 1 AND PROJECTOR 3
USE OF DISPLAY FUNCTION 31 OF PROJECTOR 3 BY TERMINAL 1 WITH CONNECTION 41 ESTABLISHED
TERMINATION OF CONNECTION 41 BETWEEN TERMINAL 1 AND PROJECTOR 3
201
PERMISSION FOR TERMINAL 2 OF USER B TO MAKE A CONNECTION AND USE GIVEN BY TERMINAL 1 OF USER A
202
TERMINATION OF PERMISSION
USER B
CONNECTION 42 BETWEEN TERMINAL 2 AND PROJECTOR 3
USE OF DISPLAY FUNCTION 31 OF PROJECTOR 3 BY TERMINAL 2 WITH CONNECTION 42 ESTABLISHED
TERMINATION OF CONNECTION 42 BETWEEN TERMINAL 2 AND PROJECTOR 3
221
222
223

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	1	"20040267981".pn.	US-PGPUB	OR	ON	2020/07/31 06:09
L2	1	1 and state	US-PGPUB	OR	ON	2020/07/31 06:09
L3	1	1 and "s112"	US-PGPUB	OR	ON	2020/07/31 06:10
L4	1	1 and projector with display$	US-PGPUB	OR	ON	2020/07/31 06:15
L5	1	1 and connection	US-PGPUB	OR	ON	2020/07/31 06:19
S1	1,210	726/4.cor.	USPAT	OR	ON	2018/10/09 09:51
S2	1	"20170280327".pn.	US-PGPUB	OR	ON	2018/10/09 09:52
S3	109,056	(H04W12/08 or H04L63/0838 or H04W76/10 or H04W12/04 or H04W12/06 or H04W76/00 or H04W84/12).cpc.	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/09 10:13
S4	460	MASUOKA near NOBUO	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/09 10:14
S5	1	S4 and permission and LAN and terminating	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/09 10:14
S6	483	HASHIMOTO near YASUNOBU	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/09 10:15
S7	2	S6 and permission and LAN and terminating	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/09 10:15
S8	349	YOSHIZAWA near KAZUHIKO	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/09 10:15
S9	2	S8 and permission and LAN and terminating	US-PGPUB; USPAT; EPO;	OR	ON	2018/10/09 10:15

			JPO; DERWENT			
S10	1,141	SUZUKI near MOTOYUKI	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/09 10:15
S11	2	S10 and permission and LAN and terminating	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/09 10:15
S12	1	S2 and "display function"	US-PGPUB	OR	ON	2018/10/09 10:30
S13	8,234	request$ WITH (permission access$5 control$5) WITH (projector "display device")	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/09 10:44
S14	1,923	"access point" WITH (projector "display device")	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/09 10:46
S15	212	S13 and S14	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/09 10:46
S16	115	S15 and @ad<="20140829"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/09 10:46
S17	1	"20050036509".pn.	US-PGPUB	OR	ON	2018/10/09 11:00
S18	1	S17 and permission	US-PGPUB	OR	ON	2018/10/09 11:00
S19	1	S17 and terminat$	US-PGPUB	OR	ON	2018/10/09 11:01
S20	53	projector WITH ("built in" capabil$ function) WITH "access point"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/09 11:03
S21	31	S20 and @ad<="20140829"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/09 11:03
S22	0	S17 and short	US-PGPUB	OR	ON	2018/10/09 11:10
S23	1	S17 and disconnect$	US-PGPUB	OR	ON	2018/10/09 11:11

S24	1	S17 and connect$6	US-PGPUB	OR	ON	2018/10/09 11:13
S25	1	S17 and connect$6 WITH (monitor$3 regular$ confirm$)	US-PGPUB	OR	ON	2018/10/09 11:18
S26	580	(send$ transmit$) WITH (connection near3 (details parameters information)) WITH short	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 07:45
S27	415	S26 and @ad<="20140829"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 07:46
S28	643	regularly WITH (confirm$ check$ monitor$3) WITH connection	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 07:50
S29	434	S28 and @ad<="20140829"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 07:54
S30	673,134	(terminat$ disconnect$ maintain$ continu$) WITH connection	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 07:57
S31	122	S28 same S30	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 07:57
S32	68	S31 and @ad<="20140829"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 07:57
S33	394	S28 and S30	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:01
S34	249	S33 and @ad<="20140829"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:01
S35	532	(terminat$ disconnect$) WITH connection WITH (rogue unauthoriz$)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:10
S36	0	S28 and S35	US-PGPUB; USPAT; EPO;	OR	ON	2018/10/10 08:10

			JPO; DERWENT			
S37	336,969	(confirm$ check$ monitor$3) WITH connection	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:10
S38	230	S35 and S37	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:10
S39	200	S38 and @ad<="20140829"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:11
S40	5,433	(terminat$ disconnect$ maintain$ continu$) WITH connection WITH request$ WITH user	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:18
S41	5,433	S30 and S40	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:18
S42	289,766	(terminat$ disconnect$) WITH connection	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:19
S43	3,615	S40 and S42	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:19
S44	2,910	S43 and @ad<="20140829"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:19
S45	15,755	(terminat$ disconnect$) WITH connection WITH (button gui message popup)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:20
S46	586	S37 and S40 and S45	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:21
S47	507	S46 and @ad<="20140829"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:22

S48	2,335	S37 and S40	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:23
S49	731	S37 same S40	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:23
S50	600	S49 and @ad<="20140829"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:23
S51	1	"20170280327".pn.	US-PGPUB	OR	ON	2018/10/10 08:27
S52	1	S51 and regularly	US-PGPUB	OR	ON	2018/10/10 08:27
S53	56	S39 and S45	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:33
S54	13,738	(terminat$ disconnect$) WITH connection WITH (response respond$)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:46
S55	1,050	S40 and S54	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:47
S56	830	S55 and @ad<="20140829"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 08:47
S57	88	S26 and address with list	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 09:17
S58	25	S57 and (remov$ delet$) WITH address	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 09:18
S59	19	S58 and @ad<="20140829"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 09:18
S60	227,992	request$ WITH (OTP "one time password" "one-time password"	US-PGPUB; USPAT; EPO;	OR	ON	2018/10/10 09:24

		passcode code "authentication code" "authorization code")	JPO; DERWENT			
S61	85	S26 and S60	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 09:24
S62	66	S61 and @ad<="20140829"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 09:24
S63	5	S26 and display$ WITH connection WITH (qr barcode "bar code")	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 09:46
S64	2	S63 and @ad<="20140829"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 09:46
S65	109	(send$ transmit$) WITH (connection near3 (details parameters information)) WITH (qr barcode "bar code")	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 09:47
S66	12	S65 and short near range	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 09:48
S67	8	S66 and @ad<="20140829"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2018/10/10 09:48
S68	9,110	(router gateway firewall "access point") WITH (projector "display device")	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2019/06/25 07:33
S69	2,860	(permission privilege "access control" ACL) WITH (projector "display device")	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2019/06/25 07:35
S70	220	S68 and S69	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2019/06/25 07:36
S71	104	S70 and @ad<="20140829"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2019/06/25 07:36

S72	1	"20050036509".pn.	US-PGPUB	OR	ON	2019/06/25 07:42
S74	1	S72 and (router gateway firewall "access point")	US-PGPUB	OR	ON	2019/06/25 07:43
S75	392	predetermin$ WITH (time interval window) WITH (confirm$ acknowledg$) WITH (continu$ terminat$ disconnect$) WITH (connection communication)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2019/06/25 07:47
S76	293	S75 and @ad<="20140829"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2019/06/25 07:47
S77	4,334	predetermin$ near3 (time interval window) WITH (continu$ terminat$ disconnect$) near3 (connection communication)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2019/06/25 07:54
S78	3,352	S77 and @ad<="20140829"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2019/06/25 07:55
S79	4,936	((predetermin$ near2 (time interval window)) (elaps$ near2 (time interval window))) WITH (continu$ maintain$ terminat$ disconnect$) near2 (connection communication)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2019/06/25 08:07
S80	3,776	S79 and @ad<="20140829"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2019/06/25 08:13
S81	1	"20050036509".pn.	US-PGPUB	OR	ON	2020/02/04 07:56
S82	1	S81 and controller	US-PGPUB	OR	ON	2020/02/04 08:42
S83	1	"20170280327".pn.	US-PGPUB	OR	ON	2020/07/30 10:00
S84	1	S83 and state	US-PGPUB	OR	ON	2020/07/30 10:00
S85	136	projector WITH maintain$ WITH connection	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2020/07/30 10:01
S86	894,121	(state condition) WITH display	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2020/07/30 10:01

S87	37	S85 and S86	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2020/07/30 10:02
S88	28	S87 and @ad<="20140829"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2020/07/30 10:02
S89	103	S85 and @ad<="20140829"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2020/07/30 10:05
S90	71	S89 and display	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2020/07/30 10:06
S91	1	"20050036509".pn.	US-PGPUB	OR	ON	2020/07/30 11:31
S92	1	S91 and connection	US-PGPUB	OR	ON	2020/07/30 11:31
S93	1	S91 and control$6	US-PGPUB	OR	ON	2020/07/30 11:32
S94	136	projector WITH maintain$ WITH connection	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2020/07/31 05:29
S95	103	S94 and @ad<="20140829"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2020/07/31 05:29
S96	71	S95 and display	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2020/07/31 05:29
S97	7	S96 and kakemura	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2020/07/31 05:29

EAST Search History (Interference)

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7/31/2020 6:32:56 AM
C:\Users\amoorthy\Documents\EAST\Workspaces\15504668.wsp

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/504,668	02/17/2017	Nobuo MASUOKA	T&A-10860	8696

24956 7590 08/04/2020

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EXAMINER	
MOORTHY, ARAVIND K	

ART UNIT	PAPER NUMBER
2492	

NOTIFICATION DATE	DELIVERY MODE
08/04/2020	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):

ptomail@mmiplaw.com

Office Action Summary	Application No. 15/504,668	Applicant(s) MASUOKA et al.	
	Examiner ARAVIND K MOORTHY	Art Unit 2492	AIA (FITF) Status Yes

-- 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 06 July 2020.

☐ 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) 16-30 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) 16-30 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 17 February 2017 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 _____.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date _____.

4) ☐ Other: _____.

DETAILED ACTION

Notice of Pre-AIA or AIA Status

The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

1. This is in response to the amendment filed on 06 July 2020.

2. Claims 16-30 are pending in the application.

3. Claims 16-30 have been rejected.

4. Claims 1-15 have been cancelled.

Response to Arguments

5. Applicant's arguments with respect to claims 16-30 have been considered but are moot because the arguments do not apply to any of the references being used in the current rejection.

Claim Rejections - 35 USC § 103

In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

> A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103 are summarized as follows:

1. Determining the scope and contents of the prior art.

2. Ascertaining the differences between the prior art and the claims at issue.

3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 16, 20, 21 and 28-30 is/are rejected under 35 U.S.C. 103 as being unpatentable over Acharya et al US 2005/0036509 A1 (hereinafter Acharya) in view of Kakemura US 2004/0267981 A1.

As to claim 16, Acharya discloses a communication system comprising:

a communication device (i.e. projector that is connected to the wireless network) [0036];

an access point device (i.e. wireless access point) [0036];

a first communication terminal configured to connect to the communication device via the access point device and transmit a first instruction to remotely control the communication device connected with the first communication terminal (i.e. computing devices connected to the projector through the wireless network) [0036]; and

a second communication terminal configured to, if having permission from the first communication terminal, establish a connection with the communication device to use the communication device (i.e. other user must request permission from the main device to gain access to the projector) [0059];

wherein, in a case that the communication device receives the first instruction from the first communication terminal while the communication device

outputs data received from the second communication terminal that established the connection with the communication device, the communication device is configured to control a display operation of the data received from the second communication terminal in accordance with the first instruction from the first communication terminal (i.e. the user has a button to connect/disconnect other users) [0084-0085],

wherein, in a case that the communication device receives a second instruction to terminate the permission from the first communication terminal, the communication device is configured to terminate the connection with the second communication terminal in accordance with the second instruction from the first communication terminal (i.e. the user has a button to connect/disconnect other users) [0084-0085].

Acharya does not teach that the communication device is configured to control a state of a display operation. Acharya does not teach while maintaining the connection with the second communication terminal.

Kakemura teaches the communication device is configured to control a state of a display operation (i.e. control what is displayed) [0117]. Kakemura teaches while maintaining the connection with the second communication terminal (i.e. connection is maintained until user selects "stop" button) [0088].

Therefore, it would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified Acharya so that the communication device would have been configured to control

a state of a display operation. The connection with the second communication terminal would have been maintained.

It would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified Acharya by the teaching of Kakemura because it helps prevent unrestricted changing of information processing apparatus transmitting image data to the projector [0008].

As to claim 20, Acharya teaches the communication system according to claim 16, wherein,

> the first communication terminal displays information whether to terminate the permission on a display screen, receives an input operation for terminating the permission, and transmits information to terminate the permission as the second instruction to the communication device in accordance with the input operation for terminating the permission (i.e. the user has a button to connect/disconnect other users) [0084-0085].

As to claim 21, Acharya teaches the communication system according to claim 16, wherein,

> in a case that the communication device is able to receive information from the first communication terminal (i.e. able to make a connection) [0054-0055], the communication device controls the communication device in accordance with information from the first communication terminal (i.e. user A has control over the projector) [0057],
>
> wherein, in a case that the communication device is unable to receive information from the first communication terminal, the communication terminal

device terminates the connection with the second communication terminal (i.e. user is logged off) [0057].

As to claim 28, Acharya discloses a communication terminal comprising:

a wireless connection interface configured to connect a communication device via an access point device (i.e. wireless access point) [0036]; and

a controller configured to control the wireless connection interface to transmit a first instruction to remotely control the communication device connected with the communication terminal (i.e. computing devices connected to the projector through the wireless network) [0036];

wherein the controller is configured to transmit permission to establish a connection for the communication device and another communication terminal (i.e. other user must request permission from the main device to gain access to the projector) [0059],

wherein, in a case that the controller controls to transmit the first instruction to the communication device while the communication device outputs data received from the other communication terminal that established the connection with the communication device, the controller is configured to control a display operation of the data received from the other communication terminal in accordance with the first instruction (i.e. the user has a button to connect/disconnect other users) [0084-0085],

wherein, in a case that the controller transmits a second instruction to terminate the permission from the first communication terminal, the controller is configured to transmit information to terminate the connection with the second

communication terminal to the communication device in accordance with the second instruction (i.e. the user has a button to connect/disconnect other users) [0084-0085].

Acharya does not teach that the communication device is configured to control a state of a display operation. Acharya does not teach while maintaining the connection with the second communication terminal.

Kakemura teaches the communication device is configured to control a state of a display operation (i.e. control what is displayed) [0117]. Kakemura teaches while maintaining the connection with the second communication terminal (i.e. connection is maintained until user selects "stop" button) [0088].

Therefore, it would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified Acharya so that the communication device would have been configured to control a state of a display operation. The connection with the second communication terminal would have been maintained.

It would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified Acharya by the teaching of Kakemura because it helps prevent unrestricted changing of information processing apparatus transmitting image data to the projector [0008].

As to claim 29, Acharya discloses a communication device comprising:

a wireless connection interface configured to connect a communication terminal and another communication terminal (i.e. computing devices connected to the projector through the wireless network) [0036]; and

a controller configured to control the wireless connection interface [0039],

wherein the wireless connection interface is configured to connect to the communication terminal via an access point device (i.e. wireless access point) [0036],

wherein the controller is configured to control to establish a connection with the other communication terminal, if having permission from the communication terminal, and control data received from the other communication terminal (i.e. other user must request permission from the main device to gain access to the projector) [0059],

wherein, in a case that the wireless communication interface receives information to remotely control the data from the communication terminal while the controller controls the data received from the other communication terminal, the controller is configured to control the data in accordance with information from the communication terminal (i.e. the user has a button to connect/disconnect other users) [0084-0085],

wherein, in a case that the wireless communication interface receives information to terminate the permission from the communication terminal, the controller is configured to terminate the connection with the other communication terminal (i.e. the user has a button to connect/disconnect other users) [0084-0085].

Acharya does not teach that the communication device is configured to control a state of a display operation. Acharya does not teach while maintaining the connection with the second communication terminal.

Kakemura teaches the communication device is configured to control a state of a display operation (i.e. control what is displayed) [0117]. Kakemura teaches while maintaining the connection with the second communication terminal (i.e. connection is maintained until user selects "stop" button) [0088].

Therefore, it would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified Acharya so that the communication device would have been configured to control a state of a display operation. The connection with the second communication terminal would have been maintained.

It would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified Acharya by the teaching of Kakemura because it helps prevent unrestricted changing of information processing apparatus transmitting image data to the projector [0008].

As to claim 30, Acharya teaches the communication system according to claim 16, wherein,

> the second communication terminal controls the communication device while maintaining the connection with the communication device (i.e. devices obtain control of the projector) [0056], and the first communication terminal controls the communication device while maintaining the connection with the communication device via the access point (i.e. communication devices maintain connection through a wired or wireless connection) [0054].

Claim Rejections - 35 USC § 103

In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

> A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103 are summarized as follows:

1. Determining the scope and contents of the prior art.

2. Ascertaining the differences between the prior art and the claims at issue.

3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 17, 24 and 26 is/are rejected under 35 U.S.C. 103 as being unpatentable over Acharya et al US 2005/0036509 A1 (hereinafter Acharya) and Kakemura US 2004/0267981 A1 as applied to claim 16 above, and further in view of Miura US 2015/0327310 A1.

As to claim 17, the Acharya-Kakemura combination does not teach the communication system according to claim 16, wherein, for the permission, the first communication terminal transmits, to the second communication terminal, connection information necessary for a

connection through short range communication with the second communication terminal, and the second communication terminal connects to the communication device by using the connection information

Miura teaches transmitting connection information through short range wireless communication [0106]. Miura teaches establishing a connection using the connection information [0106].

Therefore, it would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified the Acharya-Kakemura combination so that for the permission, the first communication terminal device would have transmitted, to the second communication terminal device, connection information necessary for a connection via the access point device through short range communication with the second communication terminal device. The second communication terminal device would have connected to the communication device via the access point device by using the connection information.

It would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified the Acharya-Kakemura combination by the teaching of Miura because it enables easy distribution of information towards an unspecified large number of parties by utilizing short range wireless communication [0005].

As to claim 24, the Acharya-Kakemura combination does not teach the communication system according to claim 16, wherein, for the permission, the first communication terminal

requests a one-time password from the communication device, and the communication device responds with the one-time password, the first communication terminal transmits, to the second communication terminal, connection information including the one-time password necessary for a connection through short range communication with the second communication terminal, and the second communication terminal connects to the communication device by using the connection information including the one- time password.

Miura teaches requesting a PIN code required for authentication to establish a connection [0069]. Miura teaches transmitting connection information through short range wireless communication [0106]. Miura teaches establishing a connection using the connection information [0106].

Therefore, it would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified the Acharya-Kakemura combination so that for the permission the first communication terminal device would have requested a one-time password from the communication device. The communication device would have responded with the one-time password. The first communication terminal device would have transmitted, to the second communication terminal device, connection information necessary for a connection via the access point device through short range communication with the second communication terminal device. The second communication terminal device would have connected to the communication device via the access point device by using the connection information including the one-time password.

It would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified

the Acharya-Kakemura combination by the teaching of Miura because it enables easy distribution of information towards an unspecified large number of parties by utilizing short range wireless communication [0005].

As to claim 26, the Acharya-Kakemura combination does not teach the communication system according to claim 16, wherein, for the permission, the second communication terminal requests a one-time password from the communication device through short range communication with the communication device, and the communication device transmits connection information including the one-time password necessary for a connection to the second communication terminal, and the second communication terminal connects to the communication device by using the connection information including the one- time password.

Miura teaches requesting a PIN code required for authentication to establish a connection [0069]. Miura teaches transmitting connection information through short range wireless communication [0106]. Miura teaches establishing a connection using the connection information [0106].

Therefore, it would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified the Acharya-Kakemura combination so that for the permission the first communication terminal device would have requested a one-time password from the communication device. The communication device would have responded with the one-time password. The first communication terminal device would have transmitted, to the second communication terminal device, connection information necessary for a connection via the access point device through short range communication with the second communication terminal device.

The second communication terminal device would have connected to the communication device via the access point device by using the connection information including the one-time password.

It would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified the Acharya-Kakemura combination by the teaching of Miura because it enables easy distribution of information towards an unspecified large number of parties by utilizing short range wireless communication [0005].

8. Claims 18 and 19 is/are rejected under 35 U.S.C. 103 as being unpatentable over Acharya et al US 2005/0036509 A1 (hereinafter Acharya) and Kakemura US 2004/0267981 A1 as applied to claim 16 above, and further in view of Kumar US 2014/0233443 A1.

As to claim 18, the Acharya-Kakemura combination does not teach the communication system according to claim 16, wherein, the communication device performing communication with the first communication terminal at predetermined time intervals for confirming whether to continue or terminate the permission for the second communication terminal to connect to the communication device, after the connection to the second communication terminal, and continuing the connection with the second communication terminal upon confirming the permission is to be continued, while terminating the connection with the second communication terminal upon confirming the permission is to be terminated.

Kumar teaches at predetermine time periods terminating or maintaining a connection with devices [0037, 0042].

Therefore, it would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified the Acharya-Kakemura combination so that the communication device would have performed communication with the first communication terminal at predetermined time intervals for confirming whether to continue or terminate the permission for the second communication terminal to connect to the communication device. After the connection to the second communication terminal, and continuing the connection with the second communication terminal upon confirming the permission was to be continued, while terminating the connection with the second communication terminal upon confirming the permission was to be terminated.

It would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified the Acharya-Kakemura combination by the teaching of Kumar because it helps maintain valid connections [0004].

As to claim 19, the Acharya-Kakemura combination does not teach the communication system according to claim 16, wherein, first communication terminal confirming, with a user at the predetermined time intervals, whether to continue or terminate the permission for the second communication terminal to connect to the communication device, after the connection to the second communication terminal, and transmits information indicating termination of the permission to the communication device upon confirming the permission is to be terminated, and upon receiving the information indicating termination of the permission, the communication device terminating the connection with the second communication terminal.

Kumar teaches at predetermine time periods terminating or maintaining a connection with devices [0037, 0042].

Therefore, it would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified the Acharya-Kakemura combination so that the first communication terminal would have confirmed, with a user at the predetermined time intervals, whether to continue or terminate the permission for the second communication terminal to connect to the communication device. After the connection to the second communication terminal, and transmitted information indicating termination of the permission to the communication device upon confirming the permission is to be terminated, and upon receiving the information indicating termination of the permission, the communication device would have terminated the connection with the second communication terminal.

It would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified the Acharya-Kakemura combination by the teaching of Kumar because it helps maintain valid connections [0004].

9. Claims 22, 23 and 25 is/are rejected under 35 U.S.C. 103 as being unpatentable over Acharya et al US 2005/0036509 A1 (hereinafter Acharya) and Kakemura US 2004/0267981 A1 as applied to claim 16 above, and further in view of Hatayama et al US 2010/0323682 A1 (hereinafter Hatayama).

As to claim 22, the Acharya-Kakemura combination does not teach the communication system according to claim 16, wherein, for the permission, the first communication terminal

transmits, to the second communication terminal, connection information necessary for a connection through short range communication with the second communication terminal, and the second communication terminal transmits address information on the second communication terminal to the first communication terminal, the first communication terminal transmits the address information on the second communication terminal to the communication device, the communication device registers the address information on the second communication terminal into a permission list, the second communication terminal connects to the communication device by using the connection information, upon confirming the permission is to be terminated, the first communication terminal causes the communication device to deletes the address information on the second communication terminal from the permission list of the communication device, and, upon the address information on the second communication terminal being not registered in the permission list, the communication device terminates the connection with the second communication terminal.

Hatayama teaches short distance radio [0081]. Hatayama teaches sending connection setting information over short distance radio [0099]. Hatayama teaches adding address information to a list [0084]. Hatayama teaches deleting address information from the list [0258].

Therefore, it would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified the Acharya-Kakemura combination so that for the permission, the first communication terminal device would have transmitted, to the second communication terminal device, connection information necessary for a connection via the access point device through short range communication with the second communication terminal device, and the second

communication terminal device would have transmitted address information on the second communication terminal device to the first communication terminal device. The first communication terminal device would have transmitted the address information on the second communication terminal device to the communication device. The communication device would have registered the address information on the second communication terminal device into a permission list. The second communication terminal device would have connected to the communication device via the access point device by using the connection information. Upon confirming the permission is to be terminated, the first communication terminal device would have caused the communication device to delete the address information on the second communication terminal device from the permission list of the communication device. Upon the address information on the second communication terminal device being not registered in the permission list, the communication device would have terminated the connection with the second communication terminal device.

It would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified the Acharya-Kakemura combination by the teaching of Hatayama because it provides a system for easy acquisition of content [0008].

As to claim 23, the Acharya-Kakemura combination does not teach the communication system according to claim 16, wherein, for the permission, the first communication terminal transmits, to the second communication terminal, connection information necessary for a connection through short range communication with the second communication terminal, and the second communication terminal transmits address information on the second communication

terminal to the first communication terminal, the first communication terminal registers the address information on the second communication terminal into a permission list, the second communication terminal connects to the communication device by using the connection information, upon confirming the permission is to be terminated, the first communication terminal causes the communication device to deletes the address information on the second communication terminal from the permission list, and the communication device performs communication for confirmation with the first communication terminal and, upon the address information on the second communication terminal being not registered in the permission list of the communication device, terminates the connection with the second communication terminal.

Hatayama teaches short distance radio [0081]. Hatayama teaches sending connection setting information over short distance radio [0099]. Hatayama teaches adding address information to a list [0084]. Hatayama teaches deleting address information from the list [0258].

Therefore, it would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified the Acharya-Kakemura combination so that for the permission, the first communication terminal device would have transmitted, to the second communication terminal device, connection information necessary for a connection via the access point device through short range communication with the second communication terminal device, and the second communication terminal device would have transmitted address information on the second communication terminal device to the first communication terminal device. The first communication terminal device would have transmitted the address information on the second communication terminal device to the communication device. The communication device would

have registered the address information on the second communication terminal device into a permission list. The second communication terminal device would have connected to the communication device via the access point device by using the connection information. Upon confirming the permission is to be terminated, the first communication terminal device would have caused the communication device to delete the address information on the second communication terminal device from the permission list of the communication device. Upon the address information on the second communication terminal device being not registered in the permission list, the communication device would have terminated the connection with the second communication terminal device.

It would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified the Acharya-Kakemura combination by the teaching of Hatayama because it provides a system for easy acquisition of content [0008].

As to claim 25, the Acharya-Kakemura combination does not teach the communication system according to claim 16, wherein, for the permission, the second communication terminal performs short range communication with the communication device, the communication device transmits, to the second communication terminal, connection information necessary for a connection, and the second communication terminal transmits address information on the second communication terminal to the communication device, the communication device registers the address information on the second communication terminal into a permission list, the second communication terminal connects to the communication device by using the connection information, upon confirming the permission is to be terminated, the first communication terminal

causes the communication device to deletes the address information on the second communication terminal from the permission list of the communication device, and, upon the address information on the second communication terminal being not registered in the permission list, the communication device terminates the connection with the second communication terminal.

Hatayama teaches short distance radio [0081]. Hatayama teaches sending connection setting information over short distance radio [0099]. Hatayama teaches adding address information to a list [0084]. Hatayama teaches deleting address information from the list [0258].

Therefore, it would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified the Acharya-Kakemura combination so that for the permission, the first communication terminal device would have transmitted, to the second communication terminal device, connection information necessary for a connection via the access point device through short range communication with the second communication terminal device, and the second communication terminal device would have transmitted address information on the second communication terminal device to the first communication terminal device. The first communication terminal device would have transmitted the address information on the second communication terminal device to the communication device. The communication device would have registered the address information on the second communication terminal device into a permission list. The second communication terminal device would have connected to the communication device via the access point device by using the connection information. Upon confirming the permission is to be terminated, the first communication terminal device would have caused the communication device to delete the address information on the second communication

terminal device from the permission list of the communication device. Upon the address information on the second communication terminal device being not registered in the permission list, the communication device would have terminated the connection with the second communication terminal device.

It would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified the Acharya-Kakemura combination by the teaching of Hatayama because it provides a system for easy acquisition of content [0008].

10. Claim 27 is/are rejected under 35 U.S.C. 103 as being unpatentable over Acharya et al US 2005/0036509 A1 (hereinafter Acharya) and Kakemura US 2004/0267981 A1 as applied to claim 16 above, and further in view of Doss et al US 2013/0221084 A1 (hereinafter Doss).

As to claim 27, the Acharya-Kakemura combination does not teach the communication system according to claim 16, wherein, for the permission, the first communication terminal transmits, to the second communication terminal, connection information necessary for a connection through short range communication with the second communication terminal, the second communication terminal connects to the communication device by using the connection information, and in the short range communication, the first communication terminal displays a bar code representing the connection information on a display screen thereof and the second communication terminal captures an image of the bar code with a camera to read the connection information.

Doss teaches using short-range communication [0054]. Doss teaches transmitting connection information [0095]. Doss teaches the connection information is in a QR code that can be scanned by a device [0095].

Therefore, it would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified the Acharya-Kakemura combination so that for the permission, the first communication terminal device would have transmitted, to the second communication terminal device, connection information necessary for a connection via the access point device through short range communication with the second communication terminal device. The second communication terminal device would have connected to the communication device via the access point device by using the connection information. In the short range communication, the first communication terminal device would have displayed a bar code representing the connection information on a display screen thereof and the second communication terminal device captured an image of the bar code with a camera to read the connection information.

It would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified the Acharya-Kakemura combination by the teaching of Doss because the connection information in a visual tag provides a more secure connection [0008].

Conclusion

11. 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.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ARAVIND K MOORTHY whose telephone number is (571)272-3793. The examiner can normally be reached on M-F 7:30-7:30.

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, Saleh Najjar can be reached on 571-272-4006. 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.

/ARAVIND K MOORTHY/
Primary Examiner, Art Unit 2492

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No.	: 15/504,668	Confirmation No.	: 8696
Inventor(s)	: Nobuo MASUOKA et al.	TC/GAU	: 2492
Filed	: February 17, 2017	Examiner	: MOORTHY, ARAVIND K
Title	: COMMUNICATION SYSTEM, COMMUNICATION DEVICE AND COMMUNICATION TERMINAL DEVICE		
Docket No.	: T&A-10860		
Customer No.: 24956			

Amendment

Mail Stop: Amendment
Commissioner of Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Date: November 30, 2020

Sir:

In response to the Office Action (Final Rejection) of August 4, 2020, please amend the above-identified application as follows. A fee for a one-month Extension of Time and a Request for Continued Examination (RCE) accompany this response.

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this paper.

Remarks / **Arguments** are included following the amendments.

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	15/504,668	MASUOKA et al.
	Examiner	Art Unit
	ARAVIND K MOORTHY	2492

✓	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	10/09/2018	06/25/2019	02/04/2020	07/30/2020					
	1	✓	✓	-	-					
	2	✓	✓	-	-					
	3	✓	-	-	-					
	4	✓	✓	-	-					
	5	✓	✓	-	-					
	6	✓	✓	-	-					
	7	✓	✓	-	-					
	8	✓	✓	-	-					
	9	✓	✓	-	-					
	10	✓	✓	-	-					
	11	✓	✓	-	-					
	12	✓	✓	-	-					
	13	✓	✓	-	-					
	14	✓	✓	-	-					
	15	✓	✓	-	-					
	16			✓	✓					
	17			✓	✓					
	18			✓	✓					
	19			✓	✓					
	20			✓	✓					
	21			✓	✓					
	22			✓	✓					
	23			✓	✓					
	24			✓	✓					
	25			✓	✓					
	26			✓	✓					
	27			✓	✓					
	28			✓	✓					
	29			✓	✓					
	30				✓					

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/504,668	02/17/2017	Nobuo MASUOKA	T&A-10860	8696

24956 7590 08/04/2020

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ALEXANDRIA, VA 22314

EXAMINER
MOORTHY, ARAVIND K

ART UNIT	PAPER NUMBER
2492	

NOTIFICATION DATE	DELIVERY MODE
08/04/2020	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):

ptomail@mmiplaw.com

Office Action Summary	Application No. 15/504,668	Applicant(s) MASUOKA et al.	
	Examiner ARAVIND K MOORTHY	Art Unit 2492	AIA (FITF) Status Yes

-- 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 06 July 2020.

☐ 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) 16-30 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) 16-30 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 17 February 2017 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 _____.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date _____.

4) ☐ Other: _____.

DETAILED ACTION

Notice of Pre-AIA or AIA Status

The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

1. This is in response to the amendment filed on 06 July 2020.

2. Claims 16-30 are pending in the application.

3. Claims 16-30 have been rejected.

4. Claims 1-15 have been cancelled.

Response to Arguments

5. Applicant's arguments with respect to claims 16-30 have been considered but are moot because the arguments do not apply to any of the references being used in the current rejection.

Claim Rejections - 35 USC § 103

In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

> A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103 are summarized as follows:

1. Determining the scope and contents of the prior art.

2. Ascertaining the differences between the prior art and the claims at issue.

3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 16, 20, 21 and 28-30 is/are rejected under 35 U.S.C. 103 as being unpatentable over Acharya et al US 2005/0036509 A1 (hereinafter Acharya) in view of Kakemura US 2004/0267981 A1.

As to claim 16, Acharya discloses a communication system comprising:

a communication device (i.e. projector that is connected to the wireless network) [0036];

an access point device (i.e. wireless access point) [0036];

a first communication terminal configured to connect to the communication device via the access point device and transmit a first instruction to remotely control the communication device connected with the first communication terminal (i.e. computing devices connected to the projector through the wireless network) [0036]; and

a second communication terminal configured to, if having permission from the first communication terminal, establish a connection with the communication device to use the communication device (i.e. other user must request permission from the main device to gain access to the projector) [0059];

wherein, in a case that the communication device receives the first instruction from the first communication terminal while the communication device

outputs data received from the second communication terminal that established the connection with the communication device, the communication device is configured to control a display operation of the data received from the second communication terminal in accordance with the first instruction from the first communication terminal (i.e. the user has a button to connect/disconnect other users) [0084-0085],

wherein, in a case that the communication device receives a second instruction to terminate the permission from the first communication terminal, the communication device is configured to terminate the connection with the second communication terminal in accordance with the second instruction from the first communication terminal (i.e. the user has a button to connect/disconnect other users) [0084-0085].

Acharya does not teach that the communication device is configured to control a state of a display operation. Acharya does not teach while maintaining the connection with the second communication terminal.

Kakemura teaches the communication device is configured to control a state of a display operation (i.e. control what is displayed) [0117]. Kakemura teaches while maintaining the connection with the second communication terminal (i.e. connection is maintained until user selects "stop" button) [0088].

Therefore, it would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified Acharya so that the communication device would have been configured to control

a state of a display operation. The connection with the second communication terminal would have been maintained.

It would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified Acharya by the teaching of Kakemura because it helps prevent unrestricted changing of information processing apparatus transmitting image data to the projector [0008].

As to claim 20, Acharya teaches the communication system according to claim 16, wherein,

> the first communication terminal displays information whether to terminate the permission on a display screen, receives an input operation for terminating the permission, and transmits information to terminate the permission as the second instruction to the communication device in accordance with the input operation for terminating the permission (i.e. the user has a button to connect/disconnect other users) [0084-0085].

As to claim 21, Acharya teaches the communication system according to claim 16, wherein,

> in a case that the communication device is able to receive information from the first communication terminal (i.e. able to make a connection) [0054-0055], the communication device controls the communication device in accordance with information from the first communication terminal (i.e. user A has control over the projector) [0057],
>
> wherein, in a case that the communication device is unable to receive information from the first communication terminal, the communication terminal

device terminates the connection with the second communication terminal (i.e. user is logged off) [0057].

As to claim 28, Acharya discloses a communication terminal comprising:

a wireless connection interface configured to connect a communication device via an access point device (i.e. wireless access point) [0036]; and

a controller configured to control the wireless connection interface to transmit a first instruction to remotely control the communication device connected with the communication terminal (i.e. computing devices connected to the projector through the wireless network) [0036];

wherein the controller is configured to transmit permission to establish a connection for the communication device and another communication terminal (i.e. other user must request permission from the main device to gain access to the projector) [0059],

wherein, in a case that the controller controls to transmit the first instruction to the communication device while the communication device outputs data received from the other communication terminal that established the connection with the communication device, the controller is configured to control a display operation of the data received from the other communication terminal in accordance with the first instruction (i.e. the user has a button to connect/disconnect other users) [0084-0085],

wherein, in a case that the controller transmits a second instruction to terminate the permission from the first communication terminal, the controller is configured to transmit information to terminate the connection with the second

communication terminal to the communication device in accordance with the second instruction (i.e. the user has a button to connect/disconnect other users) [0084-0085].

Acharya does not teach that the communication device is configured to control a state of a display operation. Acharya does not teach while maintaining the connection with the second communication terminal.

Kakemura teaches the communication device is configured to control a state of a display operation (i.e. control what is displayed) [0117]. Kakemura teaches while maintaining the connection with the second communication terminal (i.e. connection is maintained until user selects "stop" button) [0088].

Therefore, it would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified Acharya so that the communication device would have been configured to control a state of a display operation. The connection with the second communication terminal would have been maintained.

It would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified Acharya by the teaching of Kakemura because it helps prevent unrestricted changing of information processing apparatus transmitting image data to the projector [0008].

As to claim 29, Acharya discloses a communication device comprising:

a wireless connection interface configured to connect a communication terminal and another communication terminal (i.e. computing devices connected to the projector through the wireless network) [0036]; and

a controller configured to control the wireless connection interface [0039],

wherein the wireless connection interface is configured to connect to the communication terminal via an access point device (i.e. wireless access point) [0036],

wherein the controller is configured to control to establish a connection with the other communication terminal, if having permission from the communication terminal, and control data received from the other communication terminal (i.e. other user must request permission from the main device to gain access to the projector) [0059],

wherein, in a case that the wireless communication interface receives information to remotely control the data from the communication terminal while the controller controls the data received from the other communication terminal, the controller is configured to control the data in accordance with information from the communication terminal (i.e. the user has a button to connect/disconnect other users) [0084-0085],

wherein, in a case that the wireless communication interface receives information to terminate the permission from the communication terminal, the controller is configured to terminate the connection with the other communication terminal (i.e. the user has a button to connect/disconnect other users) [0084-0085].

Acharya does not teach that the communication device is configured to control a state of a display operation. Acharya does not teach while maintaining the connection with the second communication terminal.

Kakemura teaches the communication device is configured to control a state of a display operation (i.e. control what is displayed) [0117]. Kakemura teaches while maintaining the connection with the second communication terminal (i.e. connection is maintained until user selects "stop" button) [0088].

Therefore, it would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified Acharya so that the communication device would have been configured to control a state of a display operation. The connection with the second communication terminal would have been maintained.

It would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified Acharya by the teaching of Kakemura because it helps prevent unrestricted changing of information processing apparatus transmitting image data to the projector [0008].

As to claim 30, Acharya teaches the communication system according to claim 16, wherein,

> the second communication terminal controls the communication device while maintaining the connection with the communication device (i.e. devices obtain control of the projector) [0056], and the first communication terminal controls the communication device while maintaining the connection with the communication device via the access point (i.e. communication devices maintain connection through a wired or wireless connection) [0054].

Claim Rejections - 35 USC § 103

In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

> A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103 are summarized as follows:

1. Determining the scope and contents of the prior art.

2. Ascertaining the differences between the prior art and the claims at issue.

3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 17, 24 and 26 is/are rejected under 35 U.S.C. 103 as being unpatentable over Acharya et al US 2005/0036509 A1 (hereinafter Acharya) and Kakemura US 2004/0267981 A1 as applied to claim 16 above, and further in view of Miura US 2015/0327310 A1.

As to claim 17, the Acharya-Kakemura combination does not teach the communication system according to claim 16, wherein, for the permission, the first communication terminal transmits, to the second communication terminal, connection information necessary for a

connection through short range communication with the second communication terminal, and the second communication terminal connects to the communication device by using the connection information

Miura teaches transmitting connection information through short range wireless communication [0106]. Miura teaches establishing a connection using the connection information [0106].

Therefore, it would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified the Acharya-Kakemura combination so that for the permission, the first communication terminal device would have transmitted, to the second communication terminal device, connection information necessary for a connection via the access point device through short range communication with the second communication terminal device. The second communication terminal device would have connected to the communication device via the access point device by using the connection information.

It would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified the Acharya-Kakemura combination by the teaching of Miura because it enables easy distribution of information towards an unspecified large number of parties by utilizing short range wireless communication [0005].

As to claim 24, the Acharya-Kakemura combination does not teach the communication system according to claim 16, wherein, for the permission, the first communication terminal

requests a one-time password from the communication device, and the communication device responds with the one-time password, the first communication terminal transmits, to the second communication terminal, connection information including the one-time password necessary for a connection through short range communication with the second communication terminal, and the second communication terminal connects to the communication device by using the connection information including the one- time password.

Miura teaches requesting a PIN code required for authentication to establish a connection [0069]. Miura teaches transmitting connection information through short range wireless communication [0106]. Miura teaches establishing a connection using the connection information [0106].

Therefore, it would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified the Acharya-Kakemura combination so that for the permission the first communication terminal device would have requested a one-time password from the communication device. The communication device would have responded with the one-time password. The first communication terminal device would have transmitted, to the second communication terminal device, connection information necessary for a connection via the access point device through short range communication with the second communication terminal device. The second communication terminal device would have connected to the communication device via the access point device by using the connection information including the one-time password.

It would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified

the Acharya-Kakemura combination by the teaching of Miura because it enables easy distribution of information towards an unspecified large number of parties by utilizing short range wireless communication [0005].

As to claim 26, the Acharya-Kakemura combination does not teach the communication system according to claim 16, wherein, for the permission, the second communication terminal requests a one-time password from the communication device through short range communication with the communication device, and the communication device transmits connection information including the one-time password necessary for a connection to the second communication terminal, and the second communication terminal connects to the communication device by using the connection information including the one- time password.

Miura teaches requesting a PIN code required for authentication to establish a connection [0069]. Miura teaches transmitting connection information through short range wireless communication [0106]. Miura teaches establishing a connection using the connection information [0106].

Therefore, it would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified the Acharya-Kakemura combination so that for the permission the first communication terminal device would have requested a one-time password from the communication device. The communication device would have responded with the one-time password. The first communication terminal device would have transmitted, to the second communication terminal device, connection information necessary for a connection via the access point device through short range communication with the second communication terminal device.

The second communication terminal device would have connected to the communication device via the access point device by using the connection information including the one-time password.

It would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified the Acharya-Kakemura combination by the teaching of Miura because it enables easy distribution of information towards an unspecified large number of parties by utilizing short range wireless communication [0005].

8. Claims 18 and 19 is/are rejected under 35 U.S.C. 103 as being unpatentable over Acharya et al US 2005/0036509 A1 (hereinafter Acharya) and Kakemura US 2004/0267981 A1 as applied to claim 16 above, and further in view of Kumar US 2014/0233443 A1.

As to claim 18, the Acharya-Kakemura combination does not teach the communication system according to claim 16, wherein, the communication device performing communication with the first communication terminal at predetermined time intervals for confirming whether to continue or terminate the permission for the second communication terminal to connect to the communication device, after the connection to the second communication terminal, and continuing the connection with the second communication terminal upon confirming the permission is to be continued, while terminating the connection with the second communication terminal upon confirming the permission is to be terminated.

Kumar teaches at predetermine time periods terminating or maintaining a connection with devices [0037, 0042].

Therefore, it would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified the Acharya-Kakemura combination so that the communication device would have performed communication with the first communication terminal at predetermined time intervals for confirming whether to continue or terminate the permission for the second communication terminal to connect to the communication device. After the connection to the second communication terminal, and continuing the connection with the second communication terminal upon confirming the permission was to be continued, while terminating the connection with the second communication terminal upon confirming the permission was to be terminated.

It would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified the Acharya-Kakemura combination by the teaching of Kumar because it helps maintain valid connections [0004].

As to claim 19, the Acharya-Kakemura combination does not teach the communication system according to claim 16, wherein, first communication terminal confirming, with a user at the predetermined time intervals, whether to continue or terminate the permission for the second communication terminal to connect to the communication device, after the connection to the second communication terminal, and transmits information indicating termination of the permission to the communication device upon confirming the permission is to be terminated, and upon receiving the information indicating termination of the permission, the communication device terminating the connection with the second communication terminal.

Kumar teaches at predetermine time periods terminating or maintaining a connection with devices [0037, 0042].

Therefore, it would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified the Acharya-Kakemura combination so that the first communication terminal would have confirmed, with a user at the predetermined time intervals, whether to continue or terminate the permission for the second communication terminal to connect to the communication device. After the connection to the second communication terminal, and transmitted information indicating termination of the permission to the communication device upon confirming the permission is to be terminated, and upon receiving the information indicating termination of the permission, the communication device would have terminated the connection with the second communication terminal.

It would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified the Acharya-Kakemura combination by the teaching of Kumar because it helps maintain valid connections [0004].

9. Claims 22, 23 and 25 is/are rejected under 35 U.S.C. 103 as being unpatentable over Acharya et al US 2005/0036509 A1 (hereinafter Acharya) and Kakemura US 2004/0267981 A1 as applied to claim 16 above, and further in view of Hatayama et al US 2010/0323682 A1 (hereinafter Hatayama).

As to claim 22, the Acharya-Kakemura combination does not teach the communication system according to claim 16, wherein, for the permission, the first communication terminal

transmits, to the second communication terminal, connection information necessary for a connection through short range communication with the second communication terminal, and the second communication terminal transmits address information on the second communication terminal to the first communication terminal, the first communication terminal transmits the address information on the second communication terminal to the communication device, the communication device registers the address information on the second communication terminal into a permission list, the second communication terminal connects to the communication device by using the connection information, upon confirming the permission is to be terminated, the first communication terminal causes the communication device to deletes the address information on the second communication terminal from the permission list of the communication device, and, upon the address information on the second communication terminal being not registered in the permission list, the communication device terminates the connection with the second communication terminal.

Hatayama teaches short distance radio [0081]. Hatayama teaches sending connection setting information over short distance radio [0099]. Hatayama teaches adding address information to a list [0084]. Hatayama teaches deleting address information from the list [0258].

Therefore, it would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified the Acharya-Kakemura combination so that for the permission, the first communication terminal device would have transmitted, to the second communication terminal device, connection information necessary for a connection via the access point device through short range communication with the second communication terminal device, and the second

communication terminal device would have transmitted address information on the second communication terminal device to the first communication terminal device. The first communication terminal device would have transmitted the address information on the second communication terminal device to the communication device. The communication device would have registered the address information on the second communication terminal device into a permission list. The second communication terminal device would have connected to the communication device via the access point device by using the connection information. Upon confirming the permission is to be terminated, the first communication terminal device would have caused the communication device to delete the address information on the second communication terminal device from the permission list of the communication device. Upon the address information on the second communication terminal device being not registered in the permission list, the communication device would have terminated the connection with the second communication terminal device.

It would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified the Acharya-Kakemura combination by the teaching of Hatayama because it provides a system for easy acquisition of content [0008].

As to claim 23, the Acharya-Kakemura combination does not teach the communication system according to claim 16, wherein, for the permission, the first communication terminal transmits, to the second communication terminal, connection information necessary for a connection through short range communication with the second communication terminal, and the second communication terminal transmits address information on the second communication

terminal to the first communication terminal, the first communication terminal registers the address information on the second communication terminal into a permission list, the second communication terminal connects to the communication device by using the connection information, upon confirming the permission is to be terminated, the first communication terminal causes the communication device to deletes the address information on the second communication terminal from the permission list, and the communication device performs communication for confirmation with the first communication terminal and, upon the address information on the second communication terminal being not registered in the permission list of the communication device, terminates the connection with the second communication terminal.

Hatayama teaches short distance radio [0081]. Hatayama teaches sending connection setting information over short distance radio [0099]. Hatayama teaches adding address information to a list [0084]. Hatayama teaches deleting address information from the list [0258].

Therefore, it would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified the Acharya-Kakemura combination so that for the permission, the first communication terminal device would have transmitted, to the second communication terminal device, connection information necessary for a connection via the access point device through short range communication with the second communication terminal device, and the second communication terminal device would have transmitted address information on the second communication terminal device to the first communication terminal device. The first communication terminal device would have transmitted the address information on the second communication terminal device to the communication device. The communication device would

have registered the address information on the second communication terminal device into a permission list. The second communication terminal device would have connected to the communication device via the access point device by using the connection information. Upon confirming the permission is to be terminated, the first communication terminal device would have caused the communication device to delete the address information on the second communication terminal device from the permission list of the communication device. Upon the address information on the second communication terminal device being not registered in the permission list, the communication device would have terminated the connection with the second communication terminal device.

It would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified the Acharya-Kakemura combination by the teaching of Hatayama because it provides a system for easy acquisition of content [0008].

As to claim 25, the Acharya-Kakemura combination does not teach the communication system according to claim 16, wherein, for the permission, the second communication terminal performs short range communication with the communication device, the communication device transmits, to the second communication terminal, connection information necessary for a connection, and the second communication terminal transmits address information on the second communication terminal to the communication device, the communication device registers the address information on the second communication terminal into a permission list, the second communication terminal connects to the communication device by using the connection information, upon confirming the permission is to be terminated, the first communication terminal

causes the communication device to deletes the address information on the second communication terminal from the permission list of the communication device, and, upon the address information on the second communication terminal being not registered in the permission list, the communication device terminates the connection with the second communication terminal.

Hatayama teaches short distance radio [0081]. Hatayama teaches sending connection setting information over short distance radio [0099]. Hatayama teaches adding address information to a list [0084]. Hatayama teaches deleting address information from the list [0258].

Therefore, it would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified the Acharya-Kakemura combination so that for the permission, the first communication terminal device would have transmitted, to the second communication terminal device, connection information necessary for a connection via the access point device through short range communication with the second communication terminal device, and the second communication terminal device would have transmitted address information on the second communication terminal device to the first communication terminal device. The first communication terminal device would have transmitted the address information on the second communication terminal device to the communication device. The communication device would have registered the address information on the second communication terminal device into a permission list. The second communication terminal device would have connected to the communication device via the access point device by using the connection information. Upon confirming the permission is to be terminated, the first communication terminal device would have caused the communication device to delete the address information on the second communication

terminal device from the permission list of the communication device. Upon the address information on the second communication terminal device being not registered in the permission list, the communication device would have terminated the connection with the second communication terminal device.

It would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified the Acharya-Kakemura combination by the teaching of Hatayama because it provides a system for easy acquisition of content [0008].

10. Claim 27 is/are rejected under 35 U.S.C. 103 as being unpatentable over Acharya et al US 2005/0036509 A1 (hereinafter Acharya) and Kakemura US 2004/0267981 A1 as applied to claim 16 above, and further in view of Doss et al US 2013/0221084 A1 (hereinafter Doss).

As to claim 27, the Acharya-Kakemura combination does not teach the communication system according to claim 16, wherein, for the permission, the first communication terminal transmits, to the second communication terminal, connection information necessary for a connection through short range communication with the second communication terminal, the second communication terminal connects to the communication device by using the connection information, and in the short range communication, the first communication terminal displays a bar code representing the connection information on a display screen thereof and the second communication terminal captures an image of the bar code with a camera to read the connection information.

Doss teaches using short-range communication [0054]. Doss teaches transmitting connection information [0095]. Doss teaches the connection information is in a QR code that can be scanned by a device [0095].

Therefore, it would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified the Acharya-Kakemura combination so that for the permission, the first communication terminal device would have transmitted, to the second communication terminal device, connection information necessary for a connection via the access point device through short range communication with the second communication terminal device. The second communication terminal device would have connected to the communication device via the access point device by using the connection information. In the short range communication, the first communication terminal device would have displayed a bar code representing the connection information on a display screen thereof and the second communication terminal device captured an image of the bar code with a camera to read the connection information.

It would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains to have modified the Acharya-Kakemura combination by the teaching of Doss because the connection information in a visual tag provides a more secure connection [0008].

Conclusion

11. 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.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ARAVIND K MOORTHY whose telephone number is (571)272-3793. The examiner can normally be reached on M-F 7:30-7:30.

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, Saleh Najjar can be reached on 571-272-4006. 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.

/ARAVIND K MOORTHY/
Primary Examiner, Art Unit 2492

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/504,668	02/17/2017	Nobuo MASUOKA	T&A-10860	8696

24956 7590 11/05/2020

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EXAMINER
MOORTHY, ARAVIND K

ART UNIT	PAPER NUMBER
2492	

NOTIFICATION DATE	DELIVERY MODE
11/05/2020	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):

ptomail@mmiplaw.com

Applicant-Initiated Interview Summary	**Application No.** 15/504,668	**Applicant(s)** MASUOKA et al.		
	Examiner ARAVIND K MOORTHY	**Art Unit** 2492	**AIA (First Inventor to File) Status** Yes	**Page** 1 of 1

All Participants (applicant, applicants representative, PTO personnel)	**Title**	**Type**
ARAVIND K MOORTHY	Primary Examiner	Telephonic
Shrinath Malur	Attorney of Record	

Date of Interview: 02 November 2020

Issues Discussed:

35 U.S.C. 103

The attorney and examiner discussed the claim language of "control a state of a display operation". Both sides discussed their interpretation of the limitation. The examiner stated that the state of display operation was broad. No agreement was reached.

/ARAVIND K MOORTHY/ Primary Examiner, Art Unit 2492	

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.

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No.	: 15/504,668	Confirmation No.	: 8696
Inventor(s)	: Nobuo MASUOKA et al.	TC/GAU	: 2492
Filed	: February 17, 2017	Examiner	: MOORTHY, ARAVIND K
Title	: COMMUNICATION SYSTEM, COMMUNICATION DEVICE AND COMMUNICATION TERMINAL DEVICE		
Docket No.	: T&A-10860		
Customer No.: 24956			

Amendment

Mail Stop: Amendment
Commissioner of Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Date: November 30, 2020

Sir:

In response to the Office Action (Final Rejection) of August 4, 2020, please amend the above-identified application as follows. A fee for a one-month Extension of Time and a Request for Continued Examination (RCE) accompany this response.

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this paper.

Remarks / **Arguments** are included following the amendments.

Amendments to the Claims:

This listing of claims will replace all prior versions and listing of claims in the application.

Listing of Claims:

1.-15. (Canceled).

16. (Currently Amended) A communication system comprising:

a communication device;

an access point device;

a first communication terminal configured to connect to the communication device via the access point device and transmit a command~~first instruction~~ to remotely control a display operation on the communication device connected with the first communication terminal; and

a second communication terminal configured to, if having permission from the first communication terminal, establish a connection with the communication device to use the communication device;

wherein, ~~in a case that the communication device receives the first instruction from the first communication terminal~~ while the communication device outputs data received from the second communication terminal that has established the connection with the communication device and upon receiving, by the communication device, the command from the first communication terminal, the

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communication device is configured to control ~~a state of a display operation of the~~ how to display the data received from the second communication terminal ~~in accordance with the first instruction from the first communication terminal~~ while maintaining the connection with the second communication terminal, and

wherein, when~~in a case that~~ the communication device receives information~~a second instruction~~ to terminate the permission from the first communication terminal, the communication device is configured to terminate the connection with the second communication terminal in accordance with the information to terminate permission received~~second instruction~~ from the first communication terminal.

17. (Previously Presented) The communication system according to claim 16, wherein,

for the permission, the first communication terminal transmits, to the second communication terminal, connection information necessary for a connection through short range communication with the second communication terminal, and the second communication terminal connects to the communication device by using the connection information

18. (Previously Presented) The communication system according to claim 16, wherein,

the communication device performing communication with the first communication terminal at predetermined time intervals for confirming whether to

continue or terminate the permission for the second communication terminal to connect to the communication device, after the connection to the second communication terminal, and continuing the connection with the second communication terminal upon confirming the permission is to be continued, while terminating the connection with the second communication terminal upon confirming the permission is to be terminated.

19. (Previously Presented) The communication system according to claim 16, wherein,

the first communication terminal confirming, with a user at the predetermined time intervals, whether to continue or terminate the permission for the second communication terminal to connect to the communication device, after the connection to the second communication terminal, and transmits information indicating termination of the permission to the communication device upon confirming the permission is to be terminated, and upon receiving the information indicating termination of the permission, the communication device terminating the connection with the second communication terminal.

20. (Currently Amended) The communication system according to claim 16, wherein,

the first communication terminal displays information whether to terminate the permission on a display screen, receives an input operation for terminating the

permission, and transmits the information to terminate the permission ~~as the second instruction~~ to the communication device in accordance with the input operation for terminating the permission.

21. (Previously Presented) The communication system according to claim 16, wherein,

in a case that the communication device is able to receive information from the first communication terminal, the communication device controls the communication device in accordance with information from the first communication terminal,

wherein, in a case that the communication device is unable to receive information from the first communication terminal, the communication terminal device terminates the connection with the second communication terminal.

22. (Previously Presented) The communication system according to claim 16, wherein,

for the permission, the first communication terminal transmits, to the second communication terminal, connection information necessary for a connection through short range communication with the second communication terminal, and the second communication terminal transmits address information on the second communication terminal to the first communication terminal, the first communication terminal transmits the address information on the second communication terminal to the

communication device, the communication device registers the address information on the second communication terminal into a permission list, the second communication terminal connects to the communication device by using the connection information, upon confirming the permission is to be terminated, the first communication terminal causes the communication device to deletes the address information on the second communication terminal from the permission list of the communication device, and, upon the address information on the second communication terminal being not registered in the permission list, the communication device terminates the connection with the second communication terminal.

23. (Previously Presented) The communication system according to claim 16, wherein,

for the permission, the first communication terminal transmits, to the second communication terminal, connection information necessary for a connection through short range communication with the second communication terminal, and the second communication terminal transmits address information on the second communication terminal to the first communication terminal, the first communication terminal registers the address information on the second communication terminal into a permission list, the second communication terminal connects to the communication device by using the connection information, upon confirming the permission is to be terminated, the first communication terminal causes the communication device to

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deletes the address information on the second communication terminal from the permission list, and the communication device performs communication for confirmation with the first communication terminal and, upon the address information on the second communication terminal being not registered in the permission list of the communication device, terminates the connection with the second communication terminal.

24. (Previously Presented) The communication system according to claim 16, wherein,

for the permission, the first communication terminal requests a one-time password from the communication device, and the communication device responds with the one-time password, the first communication terminal transmits, to the second communication terminal, connection information including the one-time password necessary for a connection through short range communication with the second communication terminal, and the second communication terminal connects to the communication device by using the connection information including the one-time password.

25. (Previously Presented) The communication system according to claim 16, wherein,

for the permission, the second communication terminal performs short range communication with the communication device, the communication device transmits,

to the second communication terminal, connection information necessary for a connection, and the second communication terminal transmits address information on the second communication terminal to the communication device, the communication device registers the address information on the second communication terminal into a permission list, the second communication terminal connects to the communication device by using the connection information, upon confirming the permission is to be terminated, the first communication terminal causes the communication device to deletes the address information on the second communication terminal from the permission list of the communication device, and, upon the address information on the second communication terminal being not registered in the permission list, the communication device terminates the connection with the second communication terminal.

26. (Previously Presented) The communication system according to claim 16, wherein,

for the permission, the second communication terminal requests a one-time password from the communication device through short range communication with the communication device, and the communication device transmits connection information including the one-time password necessary for a connection to the second communication terminal, and the second communication terminal connects to the communication device by using the connection information including the one-time password.

27. (Previously Presented) The communication system according to claim 16, wherein,

for the permission, the first communication terminal transmits, to the second communication terminal, connection information necessary for a connection through short range communication with the second communication terminal, the second communication terminal connects to the communication device by using the connection information, and in the short range communication, the first communication terminal displays a bar code representing the connection information on a display screen thereof and the second communication terminal captures an image of the bar code with a camera to read the connection information.

28. (Currently Amended) A communication terminal comprising:

a wireless connection interface configured to connect to a communication device via an access point device; and

a controller configured to control the wireless connection interface and to transmit a commandfirst instruction to remotely control a display operation on the communication device connected with the communication terminal,terminal;

wherein the controller is configured to transmit permission to establish a connection for the communication device and another communication terminal,

wherein, in a case that the controller controls to transmit the first instruction to the communication device while the communication device outputs data received

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from the another~~other~~ communication terminal that has established the connection with the communication device, the controller is configured to transmit the command to control ~~a state of a display operation of~~ how to display the data ~~in accordance with the first instruction~~ while ~~maintaining the connection for~~ the communication device and the another~~other~~ communication terminal are connected, and

wherein, when~~in a case that~~ the controller transmits information~~a second instruction~~ to terminate the permission from the communication terminal, the controller is configured to transmit the information to terminate the connection with the another~~other~~ communication terminal to the communication device ~~in accordance with the second instruction~~.

29. (Currently Amended) A communication device comprising:

a wireless connection interface configured to connect to a communication terminal and another communication terminal; and

a controller configured to control the wireless connection interface,

wherein the wireless connection interface is configured to connect to the communication terminal via an access point device,

wherein the controller is configured to control to establish a connection with the another~~other~~ communication terminal, if having permission from the communication terminal, and control data received from the another~~other~~ communication terminal,

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wherein, ~~in a case that the wireless communication interface receives information to remotely control a state of a display of the data from the communication terminal~~ while the controller controls the data received from the another~~other~~ communication terminal and upon receiving at the wireless communication interface, from the communication terminal, a command to remotely control how the data received from the another communication terminal is displayed, the controller is configured to control the data received from the another communication terminal in accordance with the command ~~information~~ from the communication terminal while maintaining the connection with the another~~other~~ communication terminal, and

wherein, when~~in a case that~~ the wireless communication interface receives information to terminate the permission from the communication terminal, the controller is configured to terminate the connection with the another~~other~~ communication terminal.

30. (Previously Presented) The communication system according to claim 16, wherein,

the second communication terminal controls the communication device while maintaining the connection with the communication device, and the first communication terminal controls the communication device while maintaining the connection with the communication device via the access point.

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REMARKS / ARGUMENTS

Claims 16-30 are pending. No new matter has been added.

Interview

Applicant wishes to thank the Examiner for conducting an interview with the undersigned on November 2, 2020. The amendments contained herein and the following remarks include the substance of that which was discussed during the interview.

35 U.S.C. §103

Claims 16, 20, 21, and 28-30 stand rejected under 35 U.S.C. §103 as being unpatentable over Acharya et al. (U.S. Publication No. 2005/0036509; hereinafter "Acharya") I view of Kakemura (U.S. Publication No. 2004/0267981; hereinafter "Kakemura"). **Claims 17, 24 and 26** stand rejected under 35 U.S.C. §103 as being unpatentable over in view of Acharya in view of Kakemura and further in view of Miura (U.S. Publication No. 2015/0327310; hereinafter "Miura"). **Claims 18 and 19** stand rejected under 35 U.S.C. §103 as being unpatentable over Acharya in view of Kakemura and further in view of Kumar (U.S. Publication No. 2014/0233443; hereinafter "Kumar"). **Claims 22, 23 and 25** stand rejected under 35 U.S.C. §103 as being unpatentable over Acharya in view of Kakemura and further in view of Hatayama et al. (U.S. Publication No. 2010/0323682; hereinafter "Hatayama"). **Claim 27** stands rejected under 35 U.S.C. §103 as being unpatentable over Acharya

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in view of Kakemura and further in view of Doss et al. (U.S. Publication No. 2013/0221084; hereinafter "Doss"). These rejections are traversed as follows.

Claim 16 is directed to:

> 16. A communication system comprising:
> a communication device;
> an access point device;
> a first communication terminal configured to connect to the communication device via the access point device and transmit a command to remotely control a display operation on the communication device connected with the first communication terminal; and
> a second communication terminal configured to, if having permission from the first communication terminal, establish a connection with the communication device to use the communication device;
> wherein, while the communication device outputs data received from the second communication terminal that has established the connection with the communication device and upon receiving, by the communication device, the command from the first communication terminal, the communication device is configured to control how to display the data received from the second communication terminal while maintaining the connection with the second communication terminal, and
> wherein, when the communication device receives information to terminate the permission from the first communication terminal, the communication device is configured to terminate the connection with the second communication terminal in accordance with the information to terminate permission received from the first communication terminal.

The Examiner's attention is directed, by way of example only, to paragraphs [0050], [0066], [0069], [0153] and [0187] and Fig. 2 of the corresponding publication (U.S. Pub. No. 2017/0280327).

The claimed invention includes the following features:

(1) In a case that the communication device receives the command (remote control command) from the first communication terminal, the communication device that is displaying the data received from the second communication terminal controls how to display the data in accordance with the command (remote control

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command) received from the first communication terminal while maintaining the connection with the second communication terminal.

(2) The first communication terminal transmits, to the communication device, information to terminate the permission of connection of the second communication terminal with the communication device.

(3) In the control of the display of the data by the command, the connection between the communication device and the second communication terminal is maintained.

(4) The information to terminate, terminates the permission of connection between the communication device and the second communication terminal.

(5) The command is different from the information to terminate in that the command does not include the information to terminate the permission of connection between the communication device and the second communication terminal.

It is respectfully submitted that the cited references fail to disclose or suggest all of the claimed features of the present claims. For example, none of the cited references disclose or suggest that:

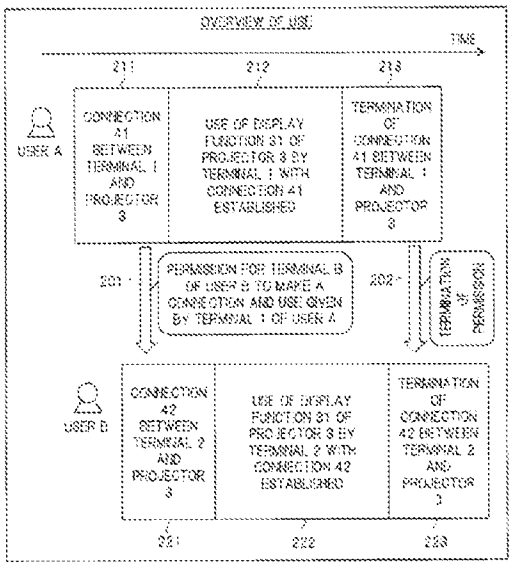
> wherein, while the communication device outputs data received from the second communication terminal that has established the connection with the communication device and upon receiving, by the communication device, the command from the first communication terminal, the communication device is configured to control how to display the data received from the second communication terminal while maintaining the connection with the second communication terminal

The claimed "command" from the first communication terminal controls the display of the data received from the second communication terminal. Meanwhile,

the claimed "information" from the first communication terminal is information to terminate the permission of connection between the communication device and the second communication terminal.

Fig. 2 is reproduced below:

FIG. 2



As shown in Fig. 2, terminal 1 connects to projector 3 through connection 41 (211) and then uses the display function 31 of the projector 3 (212). Permission is given by terminal 1 to terminal 2 to use the projector 3 (201). Thereafter, terminal 2 can may use of display function 31 of projector 3 (222). Termination of permission is then sent from terminal 1 to terminate the connection of terminal 2 (213, 202, 223). Note that with respect to the timeline at the top of Fig. 2, (212) and (222) overlap.

Terminal 1 transmits a signal including a command for control or setting or the display operation to the projector, where the display operation includes, for example,

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starting or stopping of a video (see para. [0069]). In other words, Terminal 1 controls how data from Terminal 2 is displayed on the communication device.

In rejection the claims, the Examiner places substantial reliance upon paragraphs [0084], [0085] and [0086] of Acharya, which are reproduced below:

> [0084] FIG. 13 shows an example of a display-sharing interface 1300 that may be displayed on a user's computing device once the user establishes communication with a shared display device, such as the projector 110 in FIG. 1, and gains control over the display device. The display-sharing interface 1300 depicted here includes a Start Presentation button 1310, a Sharing Mode section 1320 (which may also be called a Projector Access section), a window minimizing checkbox 1350, a Show User List button 1360, a Projector Info button 1370, a Hide Screen button 1330, and a Disconnect button 1340.
>
> [0085] When the user selects the Start Presentation button 1310, the user's computing system initiates a presentation or other pre-selected video display or other pre-selected audiovisual display for presentation on the display device. The window minimizing checkbox 1350 may be selected if the user wishes the display-sharing interface 1300 to be removed from the main view of the user's computing device after the user's presentation is initiated. If the user wishes the presentation to be blanked or hidden, the user may select the Hide Screen button 1330. This button 1330 enables a user to temporarily blank the display being viewed by an audience when the user wishes to discusses a point without the distractions of a visible display. This button 1330 also allows a user to blank the display device at the conclusion of the user's presentation. As an alternative to blanking the display, the Hide Screen button 1330 may cause the display device to present a pre-determined graphic selected by the user. The Projector Info button 1370 calls an informational interface with information for monitoring the display device, and may also be used for maintaining the display device and administering lists of approved users on the display device. The Disconnect button 1340 may be selected by a user to terminate the user's control over the display device at the conclusion of the user's presentation.
>
> [0086] The Sharing Mode section 1320 depicted in FIG. 13 includes options for selecting a mode for sharing access to the display device. As depicted in this example, this section includes radio buttons to select one of three access modes. A first access mode 1322 is designated to allow any user to gain control of the projector. This first access mode 1322 may implement the access-sharing protocol described above for the self-service multiple-user access mode (illustrated by example in FIG. 4). A second access mode 1324

> is designated to force any other users to obtain the permission of the current user (the user currently with control and use of the display device) before the other users may use the display device. This second access mode 1324 may implement the access-sharing protocol described above for the roundtable multiple-user access mode (illustrated by example in FIG. 5). A third access mode 1326 ignores all requests for control of the display device. This third access mode may implement the access-sharing protocol described above for the single-user access mode (illustrated by example in FIG. 3).

Accordingly, Acharya discloses in Fig. 13 several access modes and a "second access mode 1324 is designated to force any other users to obtain the permission of the current user (the user currently with control and use of the display device) before the other users may use the display device" (see para. [0086]). In this case, the control of the display state can only be performed only by "current user" having the authority to display on projector 110. In addition, the user operation screens shown in Fig. 13 to Fig. 25 relate to permission and therefore are unrelated to the claimed "command" from the first communication terminal to control how to display the data received from the second communication terminal.

The deficiencies in Acharya are not overcome by resort to Kakemura. Kakemura discloses that a user of a first information processing apparatus may permit or inhibit a request for presentation of another information processing apparatus (see para. [0117]). Also, the STOP button referred to in paragraph [0088] is a button operated by the user of the PDA 1 to stop the wireless connection of PDA 1 itself. In addition, Kakemura discloses that the control of the terminal (terminal corresponding to the first communication terminal in the pending claims) that can give the connection permission to other terminals of this application is transferred to

the terminal (terminal corresponding to the second communication terminal) that has obtained the connection permission of the image transmission (see para. [0103]). Therefore, Kakemura does not cure the deficiencies in Acharya.

The arguments for patentability of claim 16 also apply to the remaining independent claims. As such, it is submitted that all of the pending claims are patentable.

Conclusion

In view of the foregoing, Applicant respectfully requests that a timely Notice of Allowance be issued in this case. Please charge any shortage of fees due in connection with the filing of this paper, or credit any overpayment of fees, to Deposit Account 50-1417.

Respectfully submitted,

MATTINGLY & MALUR, PC

/Shrinath Malur/
Shrinath Malur, Reg. No. 34,663
(703) 684-1120

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NOTICE OF ALLOWANCE AND FEE(S) DUE

24956 7590 02/01/2021

MATTINGLY & MALUR, PC
1800 DIAGONAL ROAD
SUITE 210
ALEXANDRIA, VA 22314

EXAMINER
MOORTHY, ARAVIND K

ART UNIT	PAPER NUMBER
2492	

DATE MAILED: 02/01/2021

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/504,668	02/17/2017	Nobuo MASUOKA	T&A-10860	8696

TITLE OF INVENTION: COMMUNICATION SYSTEM, COMMUNICATION DEVICE AND COMMUNICATION TERMINAL DEVICE

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	$1200	$0.00	$0.00	$1200	05/03/2021

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 and an extra copy of the form should be submitted. 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.

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
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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)

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ALEXANDRIA, VA 22314

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.
15/504,668	02/17/2017	Nobuo MASUOKA	T&A-10860	8696

TITLE OF INVENTION: COMMUNICATION SYSTEM, COMMUNICATION DEVICE AND COMMUNICATION TERMINAL DEVICE

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	$1200	$0.00	$0.00	$1200	05/03/2021

EXAMINER	ART UNIT	CLASS-SUBCLASS
MOORTHY, ARAVIND K	2492	726-004000

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/SB/122) attached.

❑ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-09 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 _____
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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)*

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❑ 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. _____

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/504,668	02/17/2017	Nobuo MASUOKA	T&A-10860	8696

24956 7590 02/01/2021

MATTINGLY & MALUR, PC
1800 DIAGONAL ROAD
SUITE 210
ALEXANDRIA, VA 22314

EXAMINER	
MOORTHY, ARAVIND K	
ART UNIT	PAPER NUMBER
2492	

DATE MAILED: 02/01/2021

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.

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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. 15/504,668	Applicant(s) MASUOKA et al.	
	Examiner ARAVIND K MOORTHY	Art Unit 2492	AIA (FITF) Status Yes

-- 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 the RCE filed on 30 November 2020.
   ☐ 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 16-30 . 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 _____.

/ARAVIND K MOORTHY/
Primary Examiner, Art Unit 2492

DETAILED ACTION

Notice of Pre-AIA or AIA Status

The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

1. This is in response to the RCE filed on 30 November 2020.

2. Claims 16-30 are pending in the application.

3. Claims 16-30 have been allowed.

4. Claims 1-15 have been cancelled.

Continued Examination Under 37 CFR 1.114

5. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 30 November 2020 has been entered.

Allowable Subject Matter

6. Claims 16-30 are allowed.

The following is an examiner's statement of reasons for allowance:

The applicant's arguments filed on 30 November 2020 have been deemed persuasive. Specifically, the prior art does not disclose, teach or fairly suggest the feature of "wherein, while the communication device outputs data received from the second communication terminal that has established the connection with the communication device and upon receiving, by the communication device, the command from the first communication terminal, the communication device is configured to control how to display the data received from the second

communication terminal while maintaining the connection with the second communication terminal".

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Relevant Prior Art

7. The following references have been considered relevant by the examiner:

A. Birkler et al US 2014/0197232 A1 directed to a server in a communications network that establishes a communication channel between a user's device and another device having a display [abstract].

B. Lieb et al US 2014/0164930 A1 directed to providing authentication information from a user of a mobile computing device to the presentation server, causing the presentation server to provide a view of a presentation to a viewer device via viewer link, wherein the presentation is stored on the presentation server [abstract].

C. Harrison et al US 2013/0143651 A1 directed to techniques and tools for controlling public output devices with client devices over a network [abstract].

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ARAVIND K MOORTHY whose telephone number is (571)272-3793. The examiner can normally be reached on M-F 7:30-7:30.

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, Saleh Najjar can be reached on 571-272-4006. 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.

/ARAVIND K MOORTHY/
Primary Examiner, Art Unit 2492

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No.	: 15/504,668	Confirmation No.	: 8696
Inventor(s)	: Nobuo MASUOKA et al.	TC/GAU	: 2492
Filed	: February 17, 2017	Examiner	: MOORTHY, ARAVIND K
Title	: COMMUNICATION SYSTEM, COMMUNICATION DEVICE AND COMMUNICATION TERMINAL DEVICE		
Docket No.	: T&A-10860		
Customer No.: 24956			

AMENDMENT UNDER 37 CFR §1.312

Mail Stop: Issue Fee
Commissioner of Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Date: April 29, 2021

Sir:

In response to the Notice of Allowance mailed February 1, 2021, the following amendments and remarks are respectfully submitted in connection with the above-identified application.

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this paper.

Remarks / **Arguments** are included following the amendments.

Amendments to the Claims:

This listing of claims will replace all prior versions and listing of claims in the application.

Listing of Claims:

1.-15. (Canceled).

16. (Previously Presented) A communication system comprising:

a communication device;

an access point device;

a first communication terminal configured to connect to the communication device via the access point device and transmit a command to remotely control a display operation on the communication device connected with the first communication terminal; and

a second communication terminal configured to, if having permission from the first communication terminal, establish a connection with the communication device to use the communication device;

wherein, while the communication device outputs data received from the second communication terminal that has established the connection with the communication device and upon receiving, by the communication device, the command from the first communication terminal, the communication device is configured to control how to display the data received from the second

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communication terminal while maintaining the connection with the second communication terminal, and

wherein, when the communication device receives information to terminate the permission from the first communication terminal, the communication device is configured to terminate the connection with the second communication terminal in accordance with the information to terminate permission received from the first communication terminal.

17. (Previously Presented) The communication system according to claim 16, wherein,

for the permission, the first communication terminal transmits, to the second communication terminal, connection information necessary for a connection through short range communication with the second communication terminal, and the second communication terminal connects to the communication device by using the connection information

18. (Previously Presented) The communication system according to claim 16, wherein,

the communication device performing communication with the first communication terminal at predetermined time intervals for confirming whether to continue or terminate the permission for the second communication terminal to connect to the communication device, after the connection to the second

communication terminal, and continuing the connection with the second communication terminal upon confirming the permission is to be continued, while terminating the connection with the second communication terminal upon confirming the permission is to be terminated.

19. (Previously Presented) The communication system according to claim 16, wherein,

the first communication terminal confirming, with a user at the predetermined time intervals, whether to continue or terminate the permission for the second communication terminal to connect to the communication device, after the connection to the second communication terminal, and transmits information indicating termination of the permission to the communication device upon confirming the permission is to be terminated, and upon receiving the information indicating termination of the permission, the communication device terminating the connection with the second communication terminal.

20. (Previously Presented) The communication system according to claim 16, wherein,

the first communication terminal displays information whether to terminate the permission on a display screen, receives an input operation for terminating the permission, and transmits the information to terminate the permission to the

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communication device in accordance with the input operation for terminating the permission.

21. (Currently Amended) The communication system according to claim 16, wherein,

in a case that the communication device is able to receive information from the first communication terminal, the communication device controls the communication device in accordance with information from the first communication terminal,

wherein, in a case that the communication device is unable to receive information from the first communication terminal, the communication ~~terminal~~ device terminates the connection with the second communication terminal.

22. (Previously Presented) The communication system according to claim 16, wherein,

for the permission, the first communication terminal transmits, to the second communication terminal, connection information necessary for a connection through short range communication with the second communication terminal, and the second communication terminal transmits address information on the second communication terminal to the first communication terminal, the first communication terminal transmits the address information on the second communication terminal to the communication device, the communication device registers the address information

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on the second communication terminal into a permission list, the second communication terminal connects to the communication device by using the connection information, upon confirming the permission is to be terminated, the first communication terminal causes the communication device to deletes the address information on the second communication terminal from the permission list of the communication device, and, upon the address information on the second communication terminal being not registered in the permission list, the communication device terminates the connection with the second communication terminal.

23. (Previously Presented) The communication system according to claim 16, wherein,

for the permission, the first communication terminal transmits, to the second communication terminal, connection information necessary for a connection through short range communication with the second communication terminal, and the second communication terminal transmits address information on the second communication terminal to the first communication terminal, the first communication terminal registers the address information on the second communication terminal into a permission list, the second communication terminal connects to the communication device by using the connection information, upon confirming the permission is to be terminated, the first communication terminal causes the communication device to deletes the address information on the second communication terminal from the

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permission list, and the communication device performs communication for confirmation with the first communication terminal and, upon the address information on the second communication terminal being not registered in the permission list of the communication device, terminates the connection with the second communication terminal.

24. (Previously Presented) The communication system according to claim 16, wherein,

for the permission, the first communication terminal requests a one-time password from the communication device, and the communication device responds with the one-time password, the first communication terminal transmits, to the second communication terminal, connection information including the one-time password necessary for a connection through short range communication with the second communication terminal, and the second communication terminal connects to the communication device by using the connection information including the one-time password.

25. (Previously Presented) The communication system according to claim 16, wherein,

for the permission, the second communication terminal performs short range communication with the communication device, the communication device transmits, to the second communication terminal, connection information necessary for a

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connection, and the second communication terminal transmits address information on the second communication terminal to the communication device, the communication device registers the address information on the second communication terminal into a permission list, the second communication terminal connects to the communication device by using the connection information, upon confirming the permission is to be terminated, the first communication terminal causes the communication device to deletes the address information on the second communication terminal from the permission list of the communication device, and, upon the address information on the second communication terminal being not registered in the permission list, the communication device terminates the connection with the second communication terminal.

26. (Previously Presented) The communication system according to claim 16, wherein,

for the permission, the second communication terminal requests a one-time password from the communication device through short range communication with the communication device, and the communication device transmits connection information including the one-time password necessary for a connection to the second communication terminal, and the second communication terminal connects to the communication device by using the connection information including the one-time password.

27. (Previously Presented) The communication system according to claim 16, wherein,

for the permission, the first communication terminal transmits, to the second communication terminal, connection information necessary for a connection through short range communication with the second communication terminal, the second communication terminal connects to the communication device by using the connection information, and in the short range communication, the first communication terminal displays a bar code representing the connection information on a display screen thereof and the second communication terminal captures an image of the bar code with a camera to read the connection information.

28. (Previously Presented) A communication terminal comprising:

a wireless connection interface configured to connect to a communication device via an access point device; and

a controller configured to control the wireless connection interface and to transmit a command to remotely control a display operation on the communication device connected with the communication terminal,

wherein the controller is configured to transmit permission to establish a connection for the communication device and another communication terminal,

wherein, while the communication device outputs data received from the another communication terminal that has established the connection with the communication device, the controller is configured to transmit the command to

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control how to display the data while the communication device and the another communication terminal are connected, and

wherein, when the controller transmits information to terminate the permission from the communication terminal, the controller is configured to transmit the information to terminate the connection with the another communication terminal to the communication device.

29. (Previously Presented) A communication device comprising:

a wireless connection interface configured to connect to a communication terminal and another communication terminal; and

a controller configured to control the wireless connection interface,

wherein the wireless connection interface is configured to connect to the communication terminal via an access point device,

wherein the controller is configured to control to establish a connection with the another communication terminal, if having permission from the communication terminal, and control data received from the another communication terminal,

wherein, while the controller controls the data received from the another communication terminal and upon receiving at the wireless communication interface, from the communication terminal, a command to remotely control how the data received from the another communication terminal is displayed, the controller is configured to control the data received from the another communication terminal in

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accordance with the command from the communication terminal while maintaining the connection with the another communication terminal, and

wherein, when the wireless communication interface receives information to terminate the permission from the communication terminal, the controller is configured to terminate the connection with the another communication terminal.

30. (Previously Presented) The communication system according to claim 16, wherein,

the second communication terminal controls the communication device while maintaining the connection with the communication device, and the first communication terminal controls the communication device while maintaining the connection with the communication device via the access point.

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REMARKS

This paper is subsequent to the Notice of Allowance having a USPTO mailing date of February 1, 2021.

The foregoing minor amendment is believed to be necessary in order to improve the clarity of the allowed claims, and accordingly, consideration and entry of the amendment is respectfully requested. It is believed that this minor amendment do not affect the allowability of the claims.

Respectfully submitted,

MATTINGLY & MALUR, PC

/Shrinath Malur/
Shrinath Malur, Reg. No. 34,663
(703) 684-1120

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UNITED STATES PATENT AND TRADEMARK OFFICE

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/504,668	02/17/2017	Nobuo MASUOKA	T&A-10860	8696

24956 7590 05/06/2021

MATTINGLY & MALUR, PC
1800 DIAGONAL ROAD
SUITE 210
ALEXANDRIA, VA 22314

EXAMINER
MOORTHY, ARAVIND K

ART UNIT	PAPER NUMBER
2492	

NOTIFICATION DATE	DELIVERY MODE
05/06/2021	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):

ptomail@mmiplaw.com

Response to Rule 312 Communication	Application No.	Applicant(s)	
	15/504,668	MASUOKA et al.	
	Examiner	Art Unit	AIA (FITF) Status
	ARAVIND K MOORTHY	2492	Yes

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

1. ☑ The amendment filed on 29 April 2021 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.

/ARAVIND K MOORTHY/
Primary Examiner, Art Unit 2492

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APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/504,668	06/01/2021	11026088	T&A-10860	8696

24956 7590 05/12/2021

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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 Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site http://pair.uspto.gov for additional applicants):

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