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(Also referred to as FORM PTO-1465)

REQUEST FOR *EX PARTE* REEXAMINATION TRANSMITTAL FORM

Address to:
Mail Stop *Ex Parte* Reexam
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Attorney Docket No.: 029101.6

Date: 11/29/2017

1. ☒ This is a request for *ex parte* reexamination pursuant to 37 CFR 1.510 of patent number 9,798,967 issued October 24, 2017. The request is made by:

☐ patent owner.
☒ third party requester.
2. ☒ The name and address of the person requesting reexamination is:

Avery Dennison, Inc.
8080 Norton Parkway, Mentor, OH 44060
3. Requester asserts ☐ small entity status (37 CFR 1.27) or ☐ certifies micro entity status (37 CFR 1.29). Only a patent owner requester can certify micro entity status. Form PTO/SB/15A or B must be attached to certify micro entity status.
4. ☐ a. A check in the amount of \$_____ is enclosed to cover the reexamination fee, 37 CFR 1.20(c)(1);
☒ b. The Director is hereby authorized to charge the fee as set forth in 37 CFR 1.20(c)(1) to Deposit Account No. 50-1349;
☐ c. Payment by credit card. Form PTO-2038 is attached; or
☐ d. Payment made via EFS-Web.
5. ☒ Any refund should be made by ☐ check or ☒ credit to Deposit Account No. 50-1439. 37 CFR 1.26(c). If payment is made by credit card, refund must be to credit card account.
6. ☒ A copy of the patent to be reexamined having a double column format on one side of a separate paper is enclosed. 37 CFR 1.510(b)(4).
7. ☐ CD-ROM or CD-R in duplicate, Computer Program (Appendix) or large table
☐ Landscape Table on CD
8. ☐ Nucleotide and/or Amino Acid Sequence Submission
If applicable, items a. – c. are required.
 - a. ☐ Computer Readable Form (CRF)
 - b. Specification Sequence Listing on:
 - i. ☐ CD-ROM (2 copies) or CD-R (2 copies); or
 - ii. ☐ paper
 - c. ☐ Statements verifying identity of above copies
9. ☐ A copy of any disclaimer, certificate of correction or reexamination certificate issued in the patent is included.
10. ☒ Reexamination of claim(s) 1-20 is requested.
11. ☒ A copy of every patent or printed publication relied upon is submitted herewith including a listing thereof on Form PTO/SB/08, PTO-1449, or equivalent.
12. ☐ An English language translation of all necessary and pertinent non-English language patents and/or printed publications is included

[Page 1 of 2]

This collection of information is required by 37 CFR 1.510. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) a request for reexamination. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 18 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 *Ex Parte* Reexam, 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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13. ☒ The attached detailed request includes at least the following items:
- a. A statement identifying each substantial new question of patentability based on prior patents and printed publications. 37 CFR 1.510(b)(1).
 - b. An identification of every claim for which reexamination is requested, and a detailed explanation of the pertinency and manner of applying the cited art to every claim for which reexamination is requested. 37 CFR 1.510(b)(2).
14. ☐ A proposed amendment is included (only where the patent owner is the requester). 37 CFR 1.510(e).
15. ☒ It is certified that the statutory estoppel provisions of 35 U.S.C. 315(e)(1) or 35 U.S.C. 325(e)(1) do not prohibit requester from filing this *ex parte* reexamination request. 37 CFR 1.510(b)(6).
16. ☒ a. It is certified that a copy of this request (if filed by other than the patent owner) has been served in its entirety on the patent owner as provided in 37 CFR 1.33(c).
The name and address of the party served and the date of service are:
Michael J. Marcin FAY KAPLUN & MARCIN, LLP 150 Broadway, Suite 702 New York, NY 10038
- Date of Service: 11/28/17; or
- ☐ b. A duplicate copy is enclosed since service on patent owner was not possible. An explanation of the efforts made to serve patent owner is **attached**. See MPEP 2220.

17. Correspondence Address: Direct all communication about the reexamination to:



The address associated with Customer Number:

24633

OR

Firm or
Individual Name _____

Address _____

City _____

State _____

Zip _____

Country _____

Telephone _____

Email _____

18. ☐ The patent is currently the subject of the following concurrent proceeding(s):

- ☐ a. Copending reissue Application No. _____
- ☐ b. Copending reexamination Control No. _____
- ☐ c. Copending Interference No. _____
- ☒ d. Copending litigation styled: _____

Adasa Inc. v. Avery Dennison Corporation (6:17-cv-01685-TC) filed on October 24, 2017 in the United States District Court for the District of Oregon**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.**/Theodore J. Mlynar/11/29/2017

Authorized Signature

Date

Theodore J. Mlynar40.096

Typed/Printed Name

Registration No.

☐ For Patent Owner Requester☒ For Third Party Requester

Docket No. 029101.6

**REQUEST FOR EX PARTE REEXAMINATION
OF U.S. PATENT 9,798,967**

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I. Identification Of Claims For Which Reexamination Is Requested

In accordance with 37 CFR 1.510, Requester Avery Dennison, Inc. (“**Requester**”) submits that there is a substantial new question of patentability for Claims 1-20 of U.S. Patent 9,798,967 (the “**’967 patent**”) (Exhibit 1) under 35 U.S.C. §103 in view of the following prior art patents and printed publications not considered by the U.S.P.T.O. during prosecution of the ‘967 patent:

U.S. 2007/0040684 published February 22, 2007 (“**’684 publication**”) (Exhibit 2)
 U.S. Patent 7,827,200 (the “**’200 patent**”) (Exhibit 3)
 U.S. Patent 8,373,545 (the “**’545 patent**”) (Exhibit 4)
 EPCglobal Tag Data Standards Version 1.3 – March 8, 2006
 (“**2006 EPC Standard**”) (Exhibit 5)

Reexamination of claims 1, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, and 20 is requested in view of the ‘684 publication and the ‘200 patent or the ‘545 patent under 35 U.S.C. §103, and reexamination of claims 2, 3, 4, 5, 17, 18, and 19 is requested further in view of the 2006 EPC Standard under 35 U.S.C. §103.

The ‘967 patent is the subject of a patent litigation between the patent owner and the Requester in an action entitled *Adasa Inc. v. Avery Dennison Corporation* (6:17-cv-01685-TC) filed on October 24, 2017 in the United States District Court for the District of Oregon.

Requester certifies that the statutory estoppel provisions of 35 U.S.C. §315(e)(1) or 35 U.S.C. §325(e)(1) do not prohibit the Requester from filing this *ex parte* reexamination request.

II. Statement Pointing Out Each Substantial New Question Of Patentability

The '967 patent relates to a radio frequency identification (RFID) device (sometimes referred to as a “tag” or “transponder”), the integrated circuit used in the RFID device, and specifically to the provisioning of unique serial numbers in such devices. '967 patent at 1:25-31 and 40-45. As will be explained in more detail hereinafter, there are substantial new questions of patentability under 35 U.S.C. §103 over U.S. 2007/0040684 (published 2/22/2007 and prior art under 35 U.S.C. §102(b)) and either U.S. 7,827,200 (filed 7/16/2006 and prior art under 35 U.S.C. 102(e)) or U.S. 8,373,545 (filed 8/7/2006 and prior art under 35 U.S.C. §102(e)), and for some claims further in view of the 2006 EPC Standard (published 5/2006 and prior art under 35 U.S.C. §102(b)).

The '967 patent issued from an application that claimed priority under 35 U.S.C. §120 to a number of provisional and non-provisional parent applications. *See* '967 patent, cover page. In order for a patent claim to receive the benefit of the filing date of a parent non-provisional application under 35 U.S.C. §120, the parent application must meet all of the requirements of 35 U.S.C. §112 for that patent claim, including the written description requirement under ¶1. *Eiselstein v. Frank*, 52 F.3d 1035, 1038 (Fed. Cir. 1995). In the analysis below, Requester demonstrates that because the specifications in the parent applications of the '967 patent do not satisfy the written description requirement of 35 U.S.C. §112 ¶1 any

earlier than May 21, 2008, the effective filing date of claims 1-20 of the '967 patent is no earlier than May 21, 2008.

A. The BRI Of “Limited Number” and “At Least 3”

Claims 1-20 of the '967 patent recite the limitation: “the allocated block being assigned a limited number of most significant bits” (the “**Limited Number**” limitation). In addition, claims 6 and 13-15 recite that “at least 3 most significant bits” define or correspond to the allocated block (the “**At Least 3**” limitation).

The claim term “limited number” is not defined in the '967 patent. “Limited number” is used to refer to a number of bits in a serial number space that itself has a fixed number of bits. '967 patent at 8:4-36 and 33:14-24. The only example provided is at 8:21-31, where the number of bits in the serial number space is 38 bits and the “limited number” of bits are the 14 most significant bits. Obviously, the “limited number” of bits cannot be zero bits, because then there would be no allocated blocks at all. Similarly, the “limited number” of bits cannot be all of the bits, because then the number of bits would be not “limited” and there would only be one serial number in the serial number space while the claims require multiple serial numbers. “Limited” is defined in the dictionary as “restricted.” Exhibit 6.

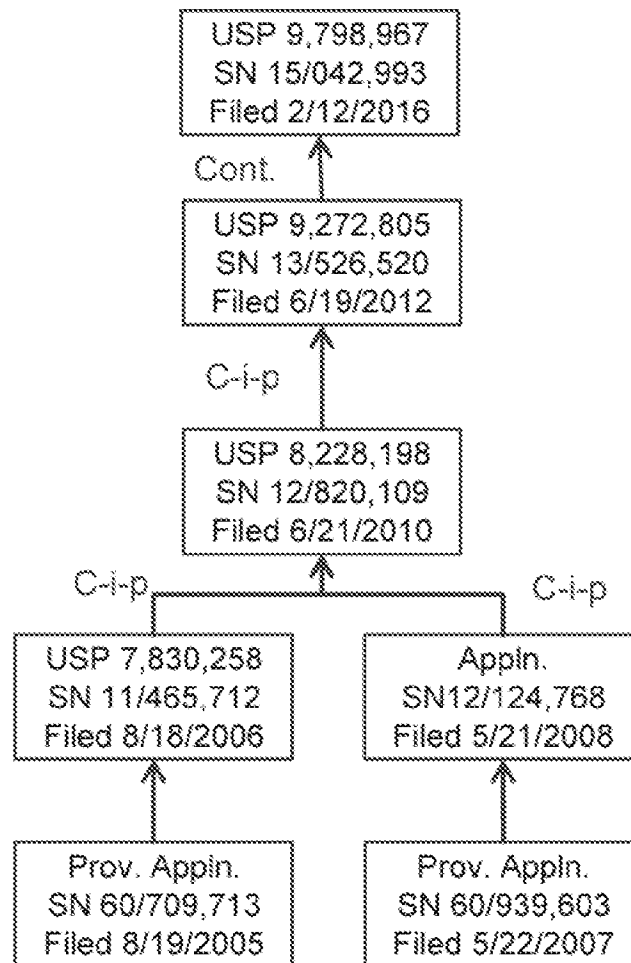
Since the example provided in the '967 patent is consistent with the ordinary meaning of “limited number,” the broadest reasonable interpretation for “limited number of most significant bits” is “a fixed number of most significant bits that is

more than zero bits and less than all of the bits.”

The ordinary meaning of “at least three” is “three or more” and there is nothing in the ’967 patent that contradicts that ordinary meaning.

1. The Prosecution File History Of The ’967 Patent

The ’967 patent issued from a chain of provisional and non-provisional applications as shown below in graphical form:



A word search of the two provisional applications 60/709,713 and 60/939,603 and the non-provisional application 11/465,712 for the terms “limited

number” and “most significant bits” confirms there is no disclosure of the unique serial number space having an allocated block defined by a limited number of most significant bits. Although the written description requirement does not require an *ipsis verbis* recitation, a further review of those applications does not reveal any disclosure of the concept of the unique serial number space having an allocated block defined by a limited number of most significant bits. Copies of those applications are attached hereto as Exhibits 7, 8, and 9, respectively.

The first instance in the chain of applications of a disclosure of the Limited Number limitation is in Application 12/124,768 filed on May 21, 2008 (the “**’768 application**”). That disclosure can be found at page 15 of the application at lines 3-14. A copy of the file history of the ’768 application is attached as Exhibit 10. There is no evidence of any earlier disclosure of the Limited Number limitation and, therefore, the earliest effective filing date of claims 1-20 is May 21, 2008.

A careful review of the ’768 application and the predecessor applications reveals no disclosure of the At Least 3 limitation at all. Application 12/820,109 was filed on June 21, 2010 and issued as U.S. 8,228,198 (the “**’198 patent**”). The ’198 patent is attached as Exhibit 11. Although the ’198 patent discloses an example of 14 most significant bits as the “limited number” of most significant bits, at 18:34-38 and 45-53, there is no disclosure of the At Least 3 limitation.

Continuation-in-part Application 13/526,520 was filed on June 19, 2012 (the

“**’520 application**”) and issued as U.S. 9,272,805 (the “**’805 patent**”). As originally filed, the ’520 application, did not include any disclosure of the At Least 3 limitation. That limitation was not included in the original claims as filed. The At Least 3 limitation first appeared in an amendment dated July 29, 2015 in claims 23 and 30, which correspond to issued claims 7 and 14 of the ’805 patent. *See* Exhibit 12.

2. Lack of Written Description for At Least 3 Limitation

The ’967 patent issued from application serial number 15/042,993 filed on February 12, 2016 (the “**’993 application**”) which is a continuation of the ’520 application. The fact that there was no written description of the At Least 3 limitation in the original specification and claims of the ’520 application means that claims incorporating the At Least 3 limitation in the ’967 patent cannot claim priority under 35 U.S.C. §120. Claims added during prosecution that were not part of the original disclosure cannot be relied upon for written description support under 35 U.S.C. §112, ¶ 1. *Cisco v. Cirrex*, Nos. 2016-1143, 2016-1144, *slip op.* at 16 (Fed. Cir. May 10, 2017).

Moreover, the simple disclosure of the words “a limited number” or the example of a limited number being “14,” is not a written description of “at least three.” “To fulfill the written description requirement, the patent specification

‘must clearly allow persons of ordinary skill in the art to recognize that [the inventor] invented what is claimed.’” *In re Gosteli*, 872 F.2d 1008, 1012 (Fed.Cir. 1989)(citation omitted). An applicant complies with the written description requirement “by describing the invention, with all its claimed limitations.” *Gentry Gallery, Inc. v. Berkline Corp.*, 134 F.3d 1473, 1479 (Fed. Cir. 1998).

There is no disclosure of the limitation “at least 3” from the more general expression “limited number” nor from the single specific number 14. *See Eiselstein* at 1040 (disclosure of 45-55% does not provide a written description for 50-60%); *Appl. of MacLean*, 454 F.2d 756, 759 (CCPA 1972) (disclosing 93% by weight of water does not provide a written description of “preponderance of water (above 50%)”); and *Appl. of Lukach*, 442 F.2d 967, 969 (CCPA 1971) (disclosing 2.6 does not provide a written description for the range 2.0 to 3.0).

Since rejection under 35 U.S.C. §112, ¶1 for lack of written description cannot be raised in reexamination (MPEP 2217), it is assumed for the purposes of this request, that claims 6 and 13-15 have a priority date of February 12, 2016 (the filing date of the ‘993 application).

B. The BRI of “Allocated Block”

An “allocated block” is defined in the ’967 patent in column 8, lines 5-20. In the example given, the serial number space has 38 bits and the limited number of most significant bits is 14 which constitutes 16,384 sectors. The lesser 24 bits

represent 16,777,216 serial number values in each sector. Once a sector is allocated to an encoder, “it is referred to as a block.” ’967 patent 8:29-32. “Each allocated block of serial numbers ... can be used by an encoder for encoding transponders” ’967 patent 8:32-36. In Figure 14, allocated block 141c includes “serial numbers from within the range of numbers that are defined by that allocate [sic] block 141c.” ’967 patent 34:18-23.

Accordingly, the term "allocated block" is used in the ’967 patent to mean “a defined range of serial numbers.”

C. The BRI Of Other Claim Terms

Claims 1-15 are directed to an “RFID transponder.” The ’967 patent defines “transponder” at 5:64-6:1:

Some terms are used interchangeably as a convenience and, accordingly, are not intended as a limitation. For example, transponders is a term for wireless sensors that is often used interchangeably with the term tags and the term inlay, which is used interchangeably with inlet.

RFID transponders are described in the “Background” section of the specification as “typically thin transceivers that include an integrated circuit chip having radio frequency circuits, control logic, memory and an antenna structure mounted on a supporting substrate, enable vast amounts of information to be encoded and stored and have unique identification.” ’967 patent at 1:40-45.

Claims 16-20 are directed to an “integrated circuit” for backscattering a

signal to be processed by an RFID interrogator. The claimed “integrated circuit” is the “integrated circuit chip” of an RFID transponder referred to in the ’967 patent at 1:40-45.

Aside from the limitations discussed above, all of the remaining claim language should be construed with their plain and ordinary meanings.

D. The Prior Art

1. U.S. 2007/0040684

The ’684 publication corresponds to application 11/465,712 in the ’967 patent family tree. Because it was published on February 22, 2007, more than one year before the earliest effective filing date of the ’967 patent claims, it is prior art under pre-AIA 35 U.S.C. §102(b).

The ’684 publication discloses all of the RFID transponder and integrated circuit limitations of claims 1-20 of the ’967 patent. The ’684 publication also discloses that such tags are suitable for encoding the EPC. ’684 publication at [0002]. The ’684 publication was not considered by the Examiner during prosecution of the ’967 patent.

The ’684 publication describes prior art RFID tags in paragraph [0003]:

Radio-frequency identification (RFID) transponders, typically thin transceivers that include an integrated circuit chip having radio frequency

circuits, control logic, memory and an antenna structure mounted on a supporting substrate, enable vast amounts of information to be encoded and stored and have unique identification. Commissioning, the process of encoding specific information (for example, data representing an object identifier, the date-code, batch, customer name, origin, destination, quantity, and items) associated with an object (for example, a shipping container), associates a specific object with a unique RFID transponder. The commissioned transponder responds to coded RF signals and, therefore, readily can be interrogated by external devices to reveal the data associated with the transponder.

Id. at [0003] (emphasis added). The reference describes a RFID transponder in paragraph [0041] in connection with Figure 2 (excerpted below):

FIG. 2 shows a possible RFID transponder 50. RFID transponders, essentially, comprise an RFID integrated circuit (IC) device (or "chip") bonded to an antenna apparatus, formed on a substrate that is often plastic such as Mylar. RTM., polyester, or PET. One way to form an antenna structure is to etch copper from a substrate. An alternate way includes printing multiple layers of conductive ink onto a substrate. One additional method includes stamping UHF antennae from thin sheets of aluminum. In certain embodiments, RFID transponders and wireless sensors are recovered from waste streams for reconditioning, reprogramming, and reuse.”

FIG. 2

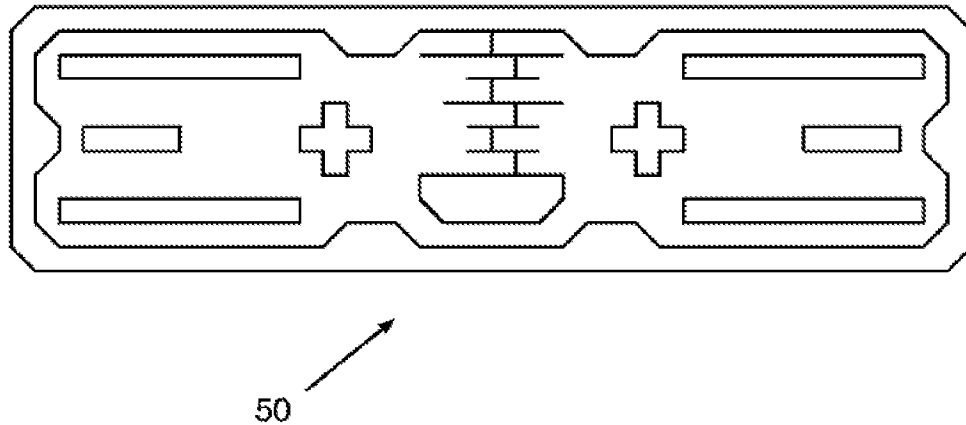


Figure 3 (excerpted below) of the '684 publication shows one embodiment of the transponder 50 and is described in paragraph [0049] as follows:

FIG. 3 shows a possible embodiment of an RFID transponder 50 that does not include an encapsulation layer comprising a separate tape. In this example, an adhesive layer 52 bonds with antenna layer 54 that is bonded to inlay substrate layer 58 and integrated circuit 56. Inlay substrate layer 58 and face-stock layer 51 provide resistance against electrostatic discharge (ESD) into antenna layer 54 or chip 56.

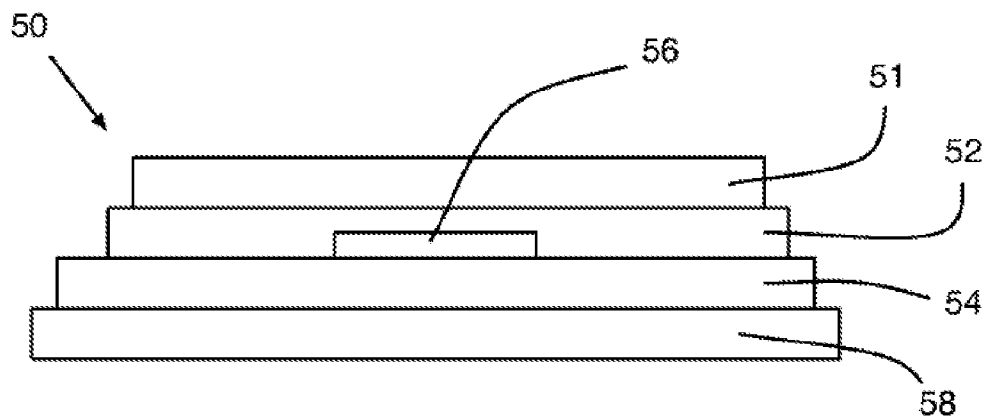


FIG. 3

The '684 publication also discloses that a transponder RFID chip can comprise silicon or a polymer:

[0005] Combining the benefits of the latest technology in RFID transponders with sensing devices, a broader class of devices called wireless sensors is emerging. Wireless sensors have a unique identity, sense one or more attributes within its environment, and report its identity and data corresponding to the sensed attributes. For example, a wireless sensor interprets environmental conditions such as temperature, moisture, sunlight, seismic activity, biological, chemical or nuclear materials, specific molecules, shock, vibration, location, or other environmental parameters. Wireless sensors are distributed nodes of computing networks that are interconnected by wired and wireless interfaces.

[0006] Wireless sensors, made using silicon circuits, polymer circuits, optical modulation indicia, an encoded quartz crystal diode, or Surface Acoustic Wave communicate wirelessly to other devices. For example, certain embodiments of wireless sensors communicate on a peer-to-peer basis to an interrogator or a mobile computer. Communication methods include narrow band, wide band, ultra wide band, or other means of radio or signal propagation methods.”¹

Id. at [0005-6] (emphasis added).

2. U.S. Patent 7,827,200

The '200 patent was filed on July 14, 2006, issued on November 2, 2010, and is, therefore, prior art under 35 U.S.C. §102(e). The '200 patent was not considered by the U.S.P.T.O. during prosecution of the '967 patent.

The '200 patent discloses a unique serial number space that includes an allocated block defined by a limited number of most significant bits (2 bits or 5

¹ It should be noted that the disclosure at paragraphs [0005]-[0006] is identical to the disclosure of the '967 patent at 1:65-2:20, which is the only support for claim 9 in the '967 patent.

bits). Because the '200 patent is directed to the encoding and provisioning of Electronic Product Code ("EPC") RFID tags, it would have been obvious to a person of ordinary skill in the art ("POSITA") to combine it with the '684 publication under 35 U.S.C. §103 as will be explained below.

The '200 patent is entitled "Solution for Managing Serialization of EPC Identifiers For Use With RFID Tags." The '200 patent explains:

RFID tag 104 is typically a small object that can be attached or incorporated into object 102 that includes a transponder, silicon chips, and/or an antenna. An RFID tag 104 is able to respond to radio frequency queries from an RFID transceiver. RFID tags 104 can store data that is selectively transmitted to authorized RFID transceivers. RFID tags 104 can be passive devices having no internal power supply ..."

'200 patent at 3:19-25. The '200 patent also describes different types of EPCs, including the SGTIN (at 3:46-47) and that it includes a non-serialized portion and a serialized portion to uniquely identify an object (at 3:56-64). The non-serialized object space includes a company prefix and object classification. *Id.* at 3:65-4:7. The serialized portion includes a serial number space. *Id.* at 4:8-12.

The '200 patent describes a number of embodiments for assigning serial numbers, including one where "different manufacturer divisions that produce objects having the same object classification can be assigned a subset of numbers from a number pool of unassigned numbers to ensure that unique serial numbers are always generated." *Id.* at 5:5-11. In that embodiment:

a serial number generation function used by ... a first division can assign

serial numbers in the range of one to a million and the second division can assign serial numbers in a range of three to four million. It should be appreciated that the different divisions can be communicatively linked to a centralized system that assigns serial numbers, which would ensure that serial numbers are uniquely assigned per object classification.”

Id. at 5:11-22.

A POSITA understands that a block of 1 million serial numbers is represented with 20 bits ($2^{20} = 1,048,576$). Therefore, the disclosed “first division” has serial numbers from one to one million nominally expressed in binary as:²

000000000000000000000001- 0011111111111111111111

The disclosed “second division” assigns serial numbers from three million to four million nominally expressed in binary as:³

110000000000000000000000- 1111111111111111111111

The first two digits of each number are in red because they differentiate between the numbers assigned to the “first division” and the “second division.” As can be seen from the above, the two most significant bits 00 represent the “first division” and the two most significant bits 11 represent the “second division” as assigned by the “centralized system.”⁴

The ’200 patent explains that this numbering scheme can be used for SGTIN-64 where the serial number space has 25 bits. *Id.* at 6:3-8. In that example, the assignment of serial numbers to the first and second divisions would

² One million is precisely 0011110100001001000000.

³ Three million is precisely 1011011100011011000000. Four million is precisely 1111010000100100000000.

⁴ Or, more precisely, the two most significant bits 10 and 11 represent the “second division.”

have been obvious for a POSITA to use the serial number assignment method of the '200 patent with the RFID transponders and integrated circuits of the '684 publication in view of the fact that they are both directed to implementing EPC with RFID devices.

Because the teachings of the '684 publication and the '200 patent disclose the subject matter of claims 1, 6-16 and 20 not taught in any prior art cited during prosecution of the '967 patent, the combined teachings of the '684 publication and the '200 patent raise a substantial new question of patentability.

3. U.S. Patent 8,373,545

The '545 patent was filed on January 29, 2007, issued on February 12, 2013, and is, therefore, prior art under 35 U.S.C. §102(e). The '545 patent claims priority to provisional application 60/864,759 filed November 7, 2006 (attached as Exhibit 13)(the “ '759 provisional”). The disclosures of the '545 patent relied upon herein were fully disclosed in that provisional application.

The '545 patent discloses a unique serial number space having an allocated block defined by the six (6) most significant bits. Because the '545 patent is directed to the encoding and provisioning of EPC RFID tags, it would have been obvious to a POSITA to combine it with the '684 publication under 35 U.S.C. §103. The '545 patent was not considered by the U.S.P.T.O. during prosecution of the '967 patent.

The '545 patent is entitled "EPC Provisioning System Using Business Rules." In relation to RFID tags, the '545 patent explains:

The RFID tag can include a unique electronic product code (EPC). The RFID transceiver can emit a signal activating the RFID tag which then can reply with the EPC code. The EPCs currently can have either a 64- or 96-bit code numbering scheme, but additional versions can be supported in the future. The EPC includes sections that indicate the product and manufacturer of a given item as well as a section to uniquely identify an object. Currently, an EPC number can contain:

A Header, identifying the length, type, structure, version and generation of EPC

The Manager Number, which identifies the company or company entity
Object Class, similar to a Stock Keeping Unit or (SKU)

'545 patent at 1:25-38.

Figure 4B of the '545 patent shows the serial number space as part of the EPC code:

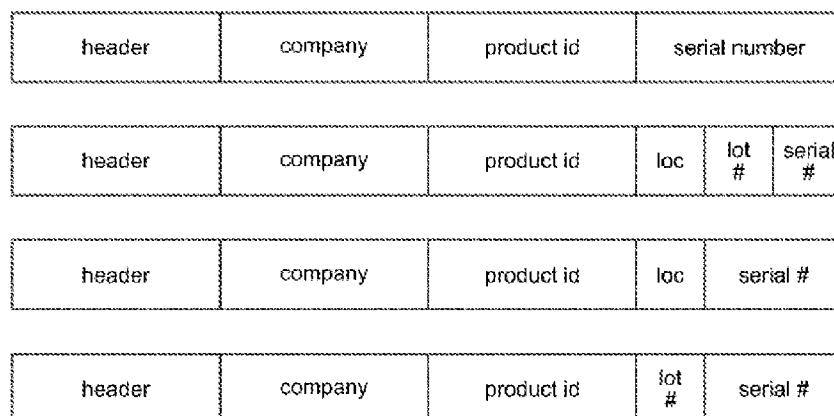


FIG. 4B

In connection with Figure 4A below, the '545 patent describes a system for provisioning RFID tags with serial numbers.

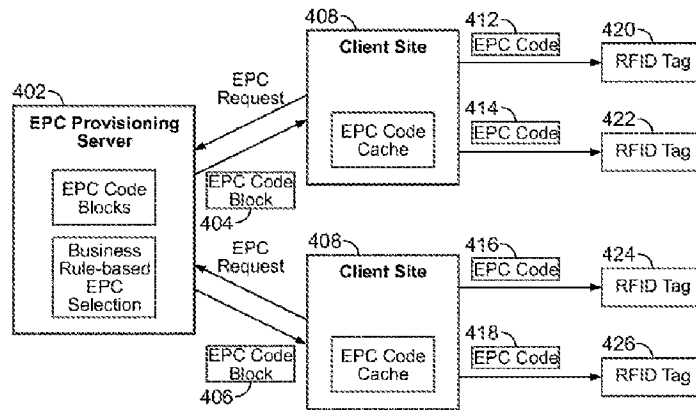


FIG. 4A

EPC server 402 functions to allocate EPC code blocks to correspond to an encoder that encodes the RFID transponder or integrated circuit memory:

A system of one embodiment comprises using an EPC server 402 to dynamically provide EPC code blocks 404 and 406 for one product to multiple client sites 408 and 410. The client sites 408 and 410 can use the EPC codes 412, 414, 416 and 418 of the EPC code block for RFID tags 402, 422, 424 and 426.”

’545 patent at 3:34-39.

The ’545 patent teaches that the client sites 408 and 410 are assigned blocks of serial numbers based upon, for example, location and that the client sites use the serial numbers to create RFID tags.

The client sites 408 and 410 can be, or can include, RFID edge servers. The EPC server can use business rules to assign the EPC code blocks. The EPC code blocks can be assigned so as to indicate business information such as lot number and/or location. The client sites 408 and 410 can cache EPC codes for later use. The client sites can request EPC code blocks 404 and 406.

The client sites 408 and 410 can be RFID edge servers. The client sites can use the EPC codes 412, 414, 416 and 418 for RFID tags 420, 422, 424 and

426. The EPC code blocks can be assigned [s]o as to indicate lot number.
The EPC code blocks can be assigned so as to indicate location. The client sites 408 and 410 can cache EPC codes for later use. The client sites 408 and 410 can request the EPC code blocks 404 and 406.

'545 patent at 3:48-54 and 4:5-12 (emphasis added).

The client sites “print” the serial numbers into the tags, which a POSITA understands to mean encoding.

In one embodiment, the EPC server can create pools of EPC codes. The EPC codes can be created based on business policies that can be used to indicate business information in the EPC code. The RFID edge servers can obtain EPC codes from the pool, store these EPC codes into a local cache and then use these EPC codes in the construction of RFID tags, such as with an RFID tag printer. Unused RFID tags can be returned from the cache to the pool.

'545 patent at 3:40-47.

The '545 patent explains how blocks of EPC codes are assigned to different locations by EPC server 402. Figure 13D, excerpted below, indicates that a pool of 45 million EPC serial number codes are available. *Id.* at 40:12-16. A POSITA knows that the number 45,000,000 is represented in binary by 26 bits.

Pool Name	Creation Date	Pool Attributes		Checked out EPCs count	Available EPCs count	Actions
		Name	Value			
Name_1	06-01-05 12:00 PM	location_id	picking01	24000000	45000000	View
		GTIN __value				
Name_2						View

FIG. 13D

A POSITA would understand that given the required 26 bits for 45 million serial numbers, the six (6) most significant bits are used to identify the lot number, or location of the edge server, and the 20 least significant bits define blocks of one million serial numbers for each lot number or location. The binary notation for this is illustrated below with the 6 most significant bits in red.

Ranges for the blocks of serial numbers are disclosed in the figures of the '545 patent. In Figure 13E, reproduced below, the range of 0-9999999 and the range of 20000000-29999999 are allocated as "available." *Id.* at 40:21-27. Those ranges are nominally expressed in binary as:

00000000-9999999 00000000000000000000000000000000-001001111111111111111111⁶

20000000-29999999 01010000000000000000000000000000-011101111111111111111111

By contrast, the range of 10000000-19999999 and the range of 30000000-30500000 are allocated as "checked out." *Id.* Those ranges are nominally expressed in binary as:⁷

10000000-19999999 00101000000000000000000000000000-010011111111111111111111

30000000-30500000 01111000000000000000000000000000-01111001111111111111111111⁸

⁶ More precisely, 9999999 is 00100110001001011001111111; 20000000 is 01001100010010110100000000; and 29999999 is 01110010011100001101111111.

⁷ More precisely, 10,000,000 is 00100110001001011010000000; 19,999,999 is 01001100010010110011111111; 30,000,000 is 01110010011100001110000000; and 30,500,000 is 01110100010110010010100000.

⁸ Only 500,000 serial numbers are allocated which are not distinguished by the six most-significant bits.

View Pools

Pool "PoolName"

Available EPCs

range	allocation time
urn:spec:pat:sgbn:0037000:130604	09-05-08 10:55:08
urn:spec:pat:sgbn:0037000:130604	09-05-08 12:24:08

Checked Out EPCs

range	requested by	date
urn:spec:pat:sgbn:0037000:130604		09-05-08
urn:spec:pat:sgbn:0037000:130604		09-05-08

FIG. 13E

In Figure 13F, the range of 30000000-40000000 is allocated and in Figure 13G, the range of 10000000-15000000 is allocated. *Id.* at 40:28-32. Those ranges are nominally expressed in binary as:⁹

10000000-15000000 00101000000000000000000000000000-00111100000000000000000000000000

30000000-40000000 01111000000000000000000000000000-10100000000000000000000000000000

Add EPCs

Type: urn:spec:pat:sgbn:0037000:130604

Range: start: 30000000 end: 40000000

Add Cancel

FIG. 13F

Check In EPCs

Type: urn:spec:pat:sgbn:0037000:130604

Range: start: 10000000 end: 15000000

Check Cancel

FIG. 13G

⁹ More precisely, 10,000,000 is 00100110001001011010000000; 15,000,000 is 00111001001110000111000000; 30,000,000 is 01110010011100001110000000; and 40,000,000 is 10011000100101101000000000.

For the SGTIN-96 format with a serial number space of 38 bits, a POSITA would understand that the same block assignments would provide an additional 12 bits (18 total) for identifying even more lot numbers or locations.

The '684 publication teaches all of the limitations in claims 1, 8-11, 13 and 16 relating to RFID transponders and RFID integrated circuits, whereas the '545 patent discloses that the unique serial number space has an allocated block stored therein defined by a limited number (6 bits) of most significant bits of the unique serial number space as designated by an external numbering authority. It would have been obvious for a POSITA to use the commissioning method of the '545 patent with the RFID transponders and integrated circuits of the '684 publication in view of the fact that they are both directed to the EPC coding scheme.

Because the teachings of the '684 publication and the '545 patent disclose the subject matter of claims 1, 6-12, 16, and 20 not taught in any prior art cited during prosecution of the '967 patent, the combined teachings of the '684 publication and the '545 patent raise a substantial new question of patentability.

4. EPCglobal Tag Data Standards Version 1.3 – March 8, 2006

The EPCglobal Tag Data Standards Version 1.3 is dated November 21, 2005, was ratified on March 8, 2006, and was published March 8, 2006. *See Ex parte Schenecker*, No. 2015-002348 at 3 (PTAB 2016). It is therefore prior art under 35 U.S.C. §102(b). The 2006 EPC Standard was not considered by the

Examiner during the prosecution of the '967 patent.

The 2006 EPC Standard is directed to the details of the SGTIN-96 coding scheme recited in a number of claims of the '967 Patent. Since the 2006 EPC Standard is directed to the same EPC subject matter as the '684 publication, the '200 patent, and the '545 patent, it would have been obvious to a POSITA to combine the 2006 EPC Standard with the '684 publication, the '200 patent, and the '545 patent under 35 U.S.C. §103.

EPCglobal is a consortium of companies whose aim was to establish standards for RFID tags that would incorporate the Electronic Product Code (EPC). By design, the 2006 EPC Standard:

... applies to RFID tags conforming to “EPC Radio-Frequency Identity Protocols Class-1 Generation-2 UHF RFID Protocol for Communications at 860 MHz-960MHz Version 1.0.9” (“Gen2 Specification”). Such tags will be referred to as “Gen 2 Tags” in the remainder of this document. These standards define completely that portion of EPC tag data that is standardized, including how that data is encoded on the EPC tag itself (i.e. the EPC Tag Encodings)

2006 EPC Standard at 3.

The 2006 EPC Standard is the standard referred to in the '967 patent at 1:32-39. In particular, the standard provides that “[t]he EPC Tag Encodings include a Header field followed by one or more Value Fields. The Header field defines the overall length and format of the Value[] Fields. The Value Fields contain a unique EPC Identifier and a required Filter Value when the latter is judged to be important

to encode on the tag itself.” 2006 EPC Standard at 3.

Since the EPC is used on a variety of goods, the 2006 EPC Standard provides for a number of formats tailored to different industries. For example, the Serialized Global Trade Identification Number (SGTIN) is defined to include a company prefix assigned to a particular company, an item reference assigned to a particular object class, and a serial number space. *Id.* at 12 (section 2.1.2.1). The SGTIN-64 scheme is further defined to include 96 bits. *Id.* at 25-29 (section 3.5). The format for the scheme is excerpted below:

688 **3.5.1 SGTIN-96**

689 In addition to a Header, the SGTIN-96 is composed of five fields: the *Filter Value*, *Partition*,
690 *Company Prefix*, *Item Reference*, and *Serial Number*, as shown in Table 4.

	Header	Filter Value	Partition	Company Prefix	Item Reference	Serial Number
SGTIN-96	8	3	3	20-40	24-4	38
	0011 0000 (Binary value)	(Refer to Table 5 for values)	(Refer to Table 6 for values)	999,999 – 999,999,999,999 (Max. decimal range*)	9,999,999 – 9 (Max. decimal range*)	274,877,906,943 (Max. decimal value)

Id. at 25 (section 3.5.1).

As shown above, the fields for the SGTIN-96 scheme include a Header, a Filter Value, a Partition, a Company Prefix, an Item Reference, and a Serial Number that includes 38 bits.

Importantly, the 2006 EPC Standard also confirms the use of nominal decimal values in binary ranges in the relevant time frame. In the “Item

Reference” column, the decimal value “9,999,999” corresponds to 24 bits even though the precise maximum value of 24 bits is actually 16,777,215, and the decimal value “9” corresponds to 4 bits even though the precise maximum value of 4 bits is actually 15. Similarly, in the “Company Prefix” column, the decimal value “999,999” corresponds to 20 bits even though the precise maximum value of 20 bits is actually 1,048,575, and the decimal value “999,999,999,999” corresponds to 40 bits even though the precise maximum value of 40 bits is nearly 1.1 trillion.

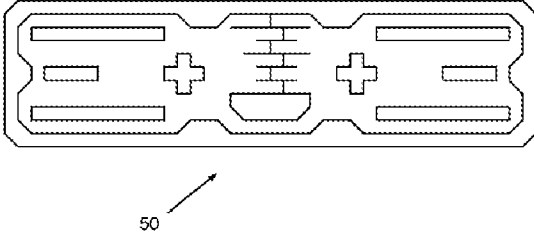
The 2006 EPC Standard discloses all of the details of the SGTIN-96 scheme recited in claims 2-5, 13-15, and 17-19. A POSITA would have combined the disclosures of the 2006 EPC Standard with the combination of the ’684 publication and the ’200 patent or the combination of the ’684 publication and the ’545 patent, both of which are directed to encoding RFID tags and integrated circuits with the EPC coding scheme.

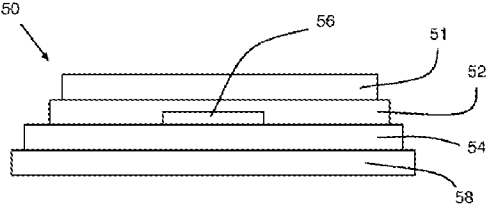
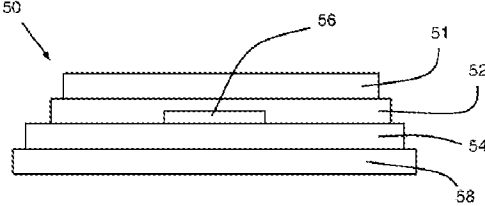
Because the teachings of the ’684 publication and the ’200 patent in view of the 2006 EPC Standard disclose the subject matter claimed by claims 2-5, 13-15, and 17-19, that was not taught in any prior art cited during prosecution of the ’967 patent, the combined teachings of the ’684 publication, the ’200 patent, and the 2006 EPC Standard raise a substantial new question of patentability. Similarly, because the teachings of the ’684 publication and the ’545 patent in view of the

2006 EPC Standard disclose the subject matter claimed by claims 2-5, 13, and 17-19, that was not taught in any prior art cited during prosecution of the '967 patent, the combined teaches of the '684 publication, the '545 patent, and the 2006 EPC Standard raise a substantial new question of patentability.

III. Detailed Explanation Under 37 CFR 1.510(b)

Requester has set forth below a chart of claims 1-20 along with the application of the references to all of the claims to show invalidity under 35 U.S.C. §103.

U.S. 9,798,967 (effective filing date no earlier than 5/21/2008)	Claim 1 is obvious under 35 U.S.C. §103 over: '684 publication (published 2/22/2007 - 35 U.S.C. §102(b) prior art) and either (A) U.S. 7,827,200 (filed 7/16/2006 - 35 U.S.C. §102(e) prior art) or (B) U.S. 8,373,545 (filed 8/7/2006 - 35 U.S.C. §102(e) prior art)
1[P]. An RFID transponder comprising:	<p>'684 publication discloses transponder 50.</p> <p>"FIG. 2 shows a possible RFID transponder 50. RFID transponders, essentially, comprise an RFID integrated circuit (IC) device (or "chip") bonded to an antenna apparatus, formed on a substrate that is often plastic such as Mylar.RTM., polyester, or PET. One way to form an antenna structure is to etch copper from a substrate. An alternate way includes printing multiple layers of conductive ink onto a substrate. One additional method includes stamping UHF antennae from thin sheets of aluminum. In certain embodiments, RFID transponders and wireless sensors are recovered from waste streams for reconditioning, reprogramming, and reuse." '684 publication at [0041].</p> <p style="text-align: center;">FIG. 2</p> 

<p>[1A] a substrate;</p>	<p>'684 publication discloses substrate 58.</p> <p>"FIG. 3 shows a possible embodiment of an RFID transponder 50 that does not include an encapsulation layer comprising a separate tape. In this example, an adhesive layer 52 bonds with antenna layer 54 that is bonded to inlay substrate layer 58 and integrated circuit 56. Inlay substrate layer 58 and face-stock layer 51 provide resistance against electrostatic discharge (ESD) into antenna layer 54 or chip 56." '684 publication at [0049].</p>  <p style="text-align: center;">FIG. 3</p>
<p>[1B] an antenna structure formed on the substrate; and</p>	<p>'684 publication discloses antenna layer 54.</p> <p>"FIG. 3 shows a possible embodiment of an RFID transponder 50 that does not include an encapsulation layer comprising a separate tape. In this example, an adhesive layer 52 bonds with antenna layer 54 that is bonded to inlay substrate layer 58 and integrated circuit 56. Inlay substrate layer 58 and face-stock layer 51 provide resistance against electrostatic discharge (ESD) into antenna layer 54 or chip 56." '684 publication at [0049].</p>  <p style="text-align: center;">FIG. 3</p>
<p>[1C] an RFID integrated circuit chip which is electrically coupled to the antenna structure,</p>	<p>'684 publication discloses integrated circuit 56.</p> <p>"FIG. 3 shows a possible embodiment of an RFID transponder 50 that does not include an encapsulation layer comprising a separate tape. In this example, an adhesive layer 52 bonds with antenna layer 54 that is bonded to inlay substrate layer 58 and integrated circuit 56. Inlay substrate layer 58 and face-stock layer 51 provide resistance against electrostatic discharge (ESD) into antenna layer 54 or chip 56." '684 publication at [0049].</p>

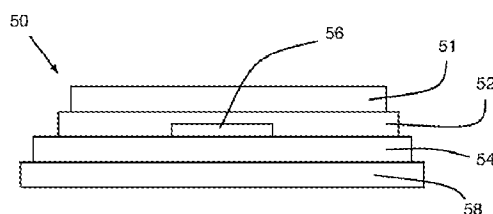


FIG. 3

The antenna is coupled to the integrated circuit chip.
 “For example, transponders are used interchangeably with the term tags and the term inlay is used interchangeably with inlet. This document generally uses the term tag to refer to passive inlay transponders, which do not include a battery, but include an antenna structure coupled to an RFID chip which are generally a thin and flat and substantially coplanar and located on a substrate.” ’684 publication at [0033].

[1D] wherein the RFID integrated circuit chip is encoded with a unique object number,

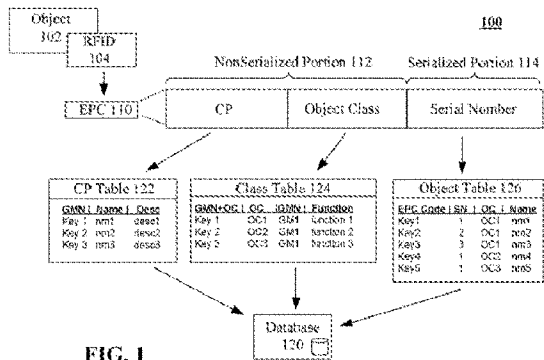
’684 publication discloses that the RFID integrated circuit chip has a unique object number.

“Radio-frequency identification (RFID) transponders, typically thin transceivers that include an integrated circuit chip having radio frequency circuits, control logic, memory and an antenna structure mounted on a supporting substrate, enable vast amounts of information to be encoded and stored and have unique identification. Commissioning, the process of encoding specific information (for example, data representing an object identifier, the date-code, batch, customer name, origin, destination, quantity, and items) associated with an object (for example, a shipping container), associates a specific object with a unique RFID transponder.” ’684 publication at [0003].

[1E] the unique object number comprising an object class information space and a unique serial number space,

’200 patent discloses the non-serialized portion 112 and serialized portion 114 of EPC 110. Because the ’200 patent is directed to the encoding and provisioning of Electronic Product Code (“EPC”) RFID tags, it would have been obvious to a person of ordinary skill in the art (“POSITA”) to combine it with the ’684 publication under 35 U.S.C. §103.

“Regardless of the EPC type, each EPC 110 has a pure identity that includes a nonserialized portion 112 and a serialized portion 114.” ’200 patent at 3:56-58.



'545 patent discloses Object Class comprising an object class (product id) and a serial number. Because the '545 patent is directed to the encoding and provisioning of EPC RFID tags, it would have been obvious to a POSITA to combine it with the '684 publication under 35 U.S.C. §103.

"The RFID tag can include a unique electronic product code (EPC). The RFID transceiver can emit a signal activating the RFID tag which then can reply with the EPC code. The EPCs currently can have either a 64- or 96-bit code numbering scheme, but additional versions can be supported in the future. The EPC includes sections that indicate the product and manufacturer of a given item as well as a section to uniquely identify an object. Currently, an EPC number can contain: A Header, identifying the length, type, structure, version and generation of EPC

The Manager Number, which identifies the company or company entity

Object Class, similar to a Stock Keeping Unit or (SKU)"

'545 patent at 1:25-38.

Figure 4B of the '545 patent shows the Serial Number space as part of the EPC code:

The first two digits of each number are in red because they differentiate between the numbers assigned to the first division and the second division. As can be seen from the above, the two most significant bits 00 represent the first division and the two most significant bits 11 represent the second division as assigned by the “centralized system.” In the alternative, for precise values, see footnotes 2, 3, and 4 *infra*.

The ’200 patent explains that this numbering scheme can be used for SGTIN-64 where the serial number space has 25 bits. ’200 patent at 6:3-8. In that example, the assignments of serial numbers to the first and second divisions would be expressed in binary numbers as follows:

00000000000000000000000001- 000001111111111111111111
00011000000000000000000000- 000111111111111111111111

For SGTIN-64, the serial number space of 25 bits includes the 5 most significant bits (in red) for identifying different manufacturing divisions that produce objects having the same object classification and the 20 lesser significant bits define the assigned blocks of one million serial numbers for each division. In the alternative, for precise values, see footnote 5 *infra*.

’545 patent discloses that EPC server 402 allocates blocks of serial numbers stored therein defined by a limited number of most significant bits (6) of the unique serial number space to encoders that encode each transponder or integrated circuit memory with a single unique serial number.

“A system of one embodiment comprises using an EPC server 402 to dynamically provide EPC code blocks 404 and 406 for one product to multiple client sites 408 and 410. The client sites 408 and 410 can use the EPC codes 412, 414, 416 and 418 of the EPC code block for RFID tags 402, 422, 424 and 426.” ’545 patent at 3:34-39.

The EPC server 402 can create blocks of EPC codes for RFID edge servers at client sites 408, based upon location:
“The client sites 408 and 410 can be, or can include, RFID edge servers. The EPC server can use business rules to assign the EPC code blocks. The EPC code blocks can be assigned so as to indicate business information such as lot number and/or location. The client sites 408 and 410 can cache EPC codes for later use. The client sites can request EPC code blocks 404 and 406.” ’545 patent at 3:48-54.
“The client sites 408 and 410 can be RFID edge servers. The client sites can use the EPC codes 412, 414, 416 and 418 for RFID tags 420, 422, 424 and 426. The EPC code blocks can be assigned to as to indicate lot number. The EPC code blocks can be assigned so as to indicate location. The client sites 408 and 410 can cache EPC codes for later use. The client sites 408 and 410 can request the EPC code

blocks 404 and 406.” ’545 patent at 4:5-12

The client sites “print” the serial numbers into the tags, which a POSITA understands to mean encoding. “In one embodiment, the EPC server can create pools of EPC codes. The EPC codes can be created based on business policies that can be used to indicate business information in the EPC code. The RFID edge servers can obtain EPC codes from the pool, store these EPC codes into a local cache and then use these EPC codes in the construction of RFID tags, such as with an RFID tag printer. Unused RFID tags can be returned from the cache to the pool.” ’545 patent at 3:40-47.

The ’545 patent explains how blocks of EPC codes are assigned to different locations by the EPC server 402. Figure 13D excerpted below indicates that a pool of 45 million EPC serial number codes are available. ’545 patent at 40:12-16. The number 45 million requires 26 bits of serial number to represent.

Pool Name	Creation Date	Pool Attributes		Checked out EPCs count	Available EPCs count	Actions
		Name	Value			
Name_1	06-01-05 12:00 PM	location_id	picking01	24000000	45000000	View
		GTIN_value				
Name_2						View

FIG. 13D

The different ranges of the blocks of serial numbers are illustrated in other figures of the ’545 patent. In Figure 13E below, the range of 0-9999999, the range of 10000000-19999999, and the range of 20000000-29999999 are allocated. ’545 patent at 40:21-27.

FIG. 13E

In Figure 13F, the range of from 300000000-400000000 is allocated and in Figure 13G, the range of 100000000-150000000 is allocated. '545 patent at 40:28-32.

Add EPCs

Type: urn:epc:id:sgtin:0637080.120604

Ranges: start 30500000 end 40000000

Add Cancel

FIG. 13F

Check in EPCs

Type: urn:epc:id:sgtin:00370006.1500004

Range: start: 109000000 end: 150000000

FIG. 13G

A POSITA would understand that given the required 26 bits for 45 million serial numbers, the serial number space would have 6 of the most significant bits identify the lot number, or location of the edge server, and the 20 least significant bits for defining blocks of one million serial numbers for each lot number or location. The corresponding nominal binary values are illustrated below with the 6 most significant bits in red:

```
00000000-99999999 000000000000000000000000-001001111111111111111111
10000000-15000000 00101000000000000000000000-001110000000000000000000
20000000-29999999 01010000000000000000000000-011110111111111111111111
```

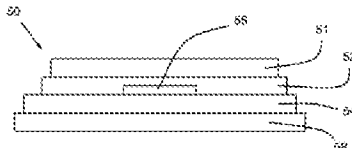
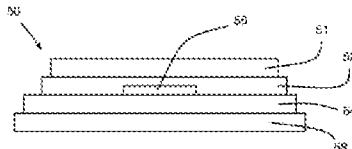
	<p>30000000-4000000 011110000000000000000000-1010000000000000000000</p> <p>For the SGTIN-96 format with a serial number space of 38 bits, a POSITA would understand that the same block assignments would use an additional 12 bits (a total of 18 bits) for identifying more lot numbers or locations.</p>
<p>[1G] wherein the unique serial number space comprises the limited number of most significant bits corresponding to the allocated block and remaining bits of lesser significance that together comprise the one serial number instance.</p>	<p>'200 patent discloses the 20 lesser significant bits are part of the unique serial number along with the limited number of most significant bits.</p> <p>"In one embodiment, different manufacturer divisions that produce objects having the same object classification can be assigned a subset of numbers from a number pool of unassigned numbers to ensure that unique serial numbers are always generated. ... In another example, a first division can assign serial numbers in the range of one to a million and the second division can assign serial numbers in a range of three to four million. It should be appreciated that the different divisions can be communicatively linked to a centralized system that assigns serial numbers, which would ensure that serial numbers are uniquely assigned per object classification." '200 patent at 5:7-22.</p> <p>A POSITA understands that a block of 1 million serial numbers corresponds to 2^{20} or 20 bits. Therefore the first division has serial numbers from one to one million which is nominally expressed in binary numbers as follows:</p> <p>0000000000000000000000001- 001111111111111111111111</p> <p>The second division can assign serial numbers from three million to four million which is nominally expressed in binary numbers as follows:</p> <p>110000000000000000000000-111111111111111111111111</p> <p>The first two digits of each number are in red because they differentiate between the numbers assigned to the first division and the second division. As can be seen from the above, the two most significant bits 00 represent the first division and the two most significant bits 11 represent the second division as assigned by the "centralized system."</p> <p>The '200 patent explains that this numbering scheme can be used for SGTIN-64 where the serial number space has 25 bits. '200 patent at 6:3-8. In that example, the assignments of serial numbers to the first and second divisions would be nominally expressed in binary numbers as follows:</p> <p>0000000000000000000000001- 0000111111111111111111111111</p> <p>001100000000000000000000- 0011111111111111111111111111</p> <p>For SGTIN-64, the serial number space of 25 bits includes the 5 most significant bits (in red) for identifying different manufacturing divisions that produce objects having the same object classification and the 20 lesser significant bits define the assigned blocks of one million serial numbers for each division.</p>

	<p>'545 patent discloses 26 lesser significant bits are part of the unique serial number along with the limited number of most significant bits. A POSITA would understand that given the required 26 bits for 45 million serial numbers, the serial number space would have 6 of the most significant bits identify the lot number, or location of the edge server, and the 20 least significant bits for defining blocks of one million serial numbers for each location. The corresponding nominal binary representation for this is illustrated below with the 6 most significant bits in red:</p> <pre> 00000000-99999999 000000000000000000000000-001001111111111111111111 10000000-15000000 001010000000000000000000-001111000000000000000000 20000000-29999999 010100000000000000000000-011101111111111111111111 30000000-40000000 011110000000000000000000-101000000000000000000000 </pre> <p>For the SGTIN-96 format with a serial number space of 38 bits, a POSITA would understand that the same block assignments would use an additional 12 bits (a total of 18 bits) for identifying more lot numbers and locations.</p>
	<p>Claims 2-5 are obvious under 35 U.S.C. §103 over: the '684 publication (published 2/22/2007 and prior art under 35 U.S.C. §102(b)) and either (A) U.S. 7,827,200 (filed 7/16/2006 and prior art under 35 U.S.C. 102(e)) or (B) U.S. 8,373,545 (filed 8/7/2006 and prior art under 35 U.S.C. §102(e)), each in view of the 2006 EPC Standard (published 5/2006 and prior art under 35 U.S.C. §102(b))</p>
<p>2. The RFID transponder of claim 1, wherein the object class information space is encoded with information comprising a company prefix, an item reference, a partition value, and a filter value.</p>	<p>The '200 patent relates to the EPC coding of RFID tags. "An ELECTRONIC PRODUCT CODE (EPC) is an identification scheme for universally identifying physical objects via Radio Frequency Identification (RFID) tags and other means. EPC was the creation of the MIT Auto-ID Center that is currently managed by EPCglobal Inc. The EPC scheme is designed to meet the needs of various industries, while guaranteeing uniqueness for all EPC-compliant tags. The format and contents of an EPC-compliant tag are governed by the EPCglobal Tag Data Specification (TDS)." '200 patent at 1:12-20.</p> <p>The '545 patent relates to the EPC coding of RFID tags. "The RFID tag can include a unique electronic product code (EPC). The RFID transceiver can emit a signal activating the RFID tag which then can reply with the EPC code." '545 patent at 1:25-27.</p> <p>The 2006 EPC Standard includes object class information space is encoded with information comprising a company prefix, an item reference, a partition value, and a filter value.</p>

	<p>688 3.5.1 SGTIN-96</p> <p>689 In addition to a Header, the SGTIN-96 is composed of five fields, the <i>Filter Value</i>, <i>Partition</i>,</p> <p>690 <i>Company Prefix</i>, <i>Item Reference</i>, and <i>Serial Number</i>, as shown in Table 4.</p> <table><tr><td></td><td>Header</td><td>Filter Value</td><td>Partition</td><td>Company Prefix</td><td>Item Reference</td><td>Serial Number</td></tr><tr><td>SGTIN-96</td><td>8</td><td>3</td><td>3</td><td>20-40</td><td>24-4</td><td>38</td></tr><tr><td></td><td>0011 0000 (Binary value)</td><td>(Refer to Table 5 for values)</td><td>(Refer to Table 6 for values)</td><td>999,999 -- 999,999,9 99,999 (Max. decimal range*)</td><td>9,999,999 -- 9 (Max. decimal range*)</td><td>274,877,906 ,943 (Max. decimal value)</td></tr></table> <p>2006 EPC Standard at 25.</p> <p>The 2006 EPC Standard is directed to the details of the SGTIN-96 coding scheme recited in a number of claims of the '967 Patent. Since the 2006 EPC Standard is directed to the same EPC subject matter as the '684 publication, the '200 patent, and the '545 patent, it would have been obvious to a POSITA to combine the 2006 EPC Standard with the '684 publication, the '200 patent, and the '545 patent under 35 U.S.C. §103.</p>		Header	Filter Value	Partition	Company Prefix	Item Reference	Serial Number	SGTIN-96	8	3	3	20-40	24-4	38		0011 0000 (Binary value)	(Refer to Table 5 for values)	(Refer to Table 6 for values)	999,999 -- 999,999,9 99,999 (Max. decimal range*)	9,999,999 -- 9 (Max. decimal range*)	274,877,906 ,943 (Max. decimal value)
	Header	Filter Value	Partition	Company Prefix	Item Reference	Serial Number																
SGTIN-96	8	3	3	20-40	24-4	38																
	0011 0000 (Binary value)	(Refer to Table 5 for values)	(Refer to Table 6 for values)	999,999 -- 999,999,9 99,999 (Max. decimal range*)	9,999,999 -- 9 (Max. decimal range*)	274,877,906 ,943 (Max. decimal value)																
3. The RFID transponder of claim 1, wherein the unique object number is a portion of a serialized global trade item number.	The 2006 EPC Standard unique object number is a portion of a serialized global trade item number (SGTIN-96). See Claim [2].																					
4. The RFID transponder of claim 4, wherein the serialized global trade item number is an EPC SGTIN-96 encoding.	The 2006 EPC Standard serialized global trade item number is SGTIN-96. See Claim [2].																					
5. The RFID transponder of claim 1, wherein the unique serial number space is at least 38 bits.	The 2006 EPC Standard serialized global trade item number SGTIN-96 has a 38 bit serial number space. See Claim [2].																					
	Claims 6-12 are obvious under 35 U.S.C. §103 over: the '684 publication and U.S. 7,827,200 or U.S. 8,373,545																					
6. The RFID transponder of claim 1, wherein the allocated block is defined by at least 3 most significant bits.	'200 patent discloses that the allocated block is defined by the 5 most significant bits. See Claim [1F]. '545 patent discloses that the allocated block is defined by the 6 most significant bits. See Claim [1F].																					

<p>7. The RFID transponder of claim 1, wherein the allocated block is one of a plurality of allocations intermittently received by an encoder.</p>	<p>The '200 patent teaches a plurality of allocations intermittently received by an encoder.</p> <p>"FIG. 3 is a flow chart of a method 300 for serializing EPCs in accordance with an embodiment of the inventive arrangements disclosed herein. Method 300 can begin in step 305, where multiple pools of numbers and/or number assignment functions can be associated with values for nonserialized portions of EPCs. In step 310, a new taggable object can be identified that needs an EPC. In step 315, a classification for the new object can be determined. In step 320, an unserialized portion of the EPC can be constructed from the classification information, in step 325, a pool of numbers and/or a number assignment function associated with the unserialized portion can be identified. In step 330, a last previously allocated serial number in the identified pool can be located. In step 335, the next unallocated serial number can be extracted from the pool and used as the serialized portion of the EPC. In step 340, the new EPC can be assigned to the new taggable object. In step 345, variables associated with the pool or function used to generate the assigned number can be updated to ensure that the assigned serial number is not reassigned to a different object having the same unserialized portion of an EPC. In step 350, the assigned EPC can be encoded into an RFID tag that can be physically linked to the object." '200 patent at 6:37-58.</p> <p>The centralized system that assigns subsets of serial numbers to different manufacturing divisions sends the allocations intermittently. "In one embodiment, different manufacturer divisions that produce objects having the same object classification can be assigned a subset of numbers from a number pool of unassigned numbers to ensure that unique serial numbers are always generated. ... In another example, a first division can assign serial numbers in the range of one to a million and the second division can assign serial numbers in a range of three to four million. It should be appreciated that the different divisions can be communicatively linked to a centralized system that assigns serial numbers, which would ensure that serial numbers are uniquely assigned per object classification." '200 patent at 5:7-22.</p> <p>'545 patent teaches an encoder requesting and caching a plurality of allocated blocks which would be understood by a POSITA to include an inherently intermittent reception of the blocks by the encoder.</p> <p>"A system of one embodiment comprises using an EPC server 402 to dynamically provide EPC code blocks 404 and 406 for one product to multiple client sites 408 and 410. The client sites 408 and 410 can use the EPC codes 412, 414, 416 and 418 of the EPC code block for RFID tags 402, 422, 424 and 426.</p>
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	<p>In one embodiment, the EPC server can create pools of EPC codes. The EPC codes can be created based on business policies that can be used to indicate business information in the EPC code. The RFID edge servers can obtain EPC codes from the pool, store these EPC codes into a local cache and then use these EPC codes in the construction of RFID tags, such as with an RFID tag printer. Unused RFID tags can be returned from the cache to the pool.</p> <p>The client sites 408 and 410 can be, or can include, RFID edge servers. The EPC server can use business rules to assign the EPC code blocks. The EPC code blocks can be assigned so as to indicate business information such as lot number and/or location. The client sites 408 and 410 can cache EPC codes for later use. The client sites can request EPC code blocks 404 and 406.” ’545 patent at 3:34-54.</p>
<p>8. The RFID transponder of claim 1, wherein the RFID integrated circuit chip is comprised of silicon.</p>	<p>’684 publication discloses the RFID integrated circuit chip is comprised of silicon:</p> <p>“[0005] Combining the benefits of the latest technology in RFID transponders with sensing devices, a broader class of devices called wireless sensors is emerging. Wireless sensors have a unique identity, sense one or more attributes within its environment, and report its identity and data corresponding to the sensed attributes. For example, a wireless sensor interprets environmental conditions such as temperature, moisture, sunlight, seismic activity, biological, chemical or nuclear materials, specific molecules, shock, vibration, location, or other environmental parameters. Wireless sensors are distributed nodes of computing networks that are interconnected by wired and wireless interfaces.</p> <p>[0006] Wireless sensors, made using silicon circuits, polymer circuits, optical modulation indicia, an encoded quartz crystal diode, or Surface Acoustic Wave communicate wirelessly to other devices. For example, certain embodiments of wireless sensors communicate on a peer-to-peer basis to an interrogator or a mobile computer. Communication methods include narrow band, wide band, ultra wide band, or other means of radio or signal propagation methods.” ’684 publication at [0005]-[0006] (emphasis added).</p>
<p>9. The RFID transponder of claim 1, wherein the RFID integrated circuit chip is comprised of polymer.</p>	<p>’684 publication discloses the RFID integrated circuit chip is comprised of polymer:</p> <p>“[0005] Combining the benefits of the latest technology in RFID transponders with sensing devices, a broader class of devices called wireless sensors is emerging. Wireless sensors have a unique identity, sense one or more attributes within its environment, and report its identity and data corresponding to the sensed attributes. For example, a wireless sensor interprets environmental conditions such as temperature, moisture, sunlight, seismic activity, biological, chemical</p>

	<p>or nuclear materials, specific molecules, shock, vibration, location, or other environmental parameters. Wireless sensors are distributed nodes of computing networks that are interconnected by wired and wireless interfaces.</p> <p>[0006] Wireless sensors, made using silicon circuits, polymer circuits, optical modulation indicia, an encoded quartz crystal diode, or Surface Acoustic Wave communicate wirelessly to other devices. For example, certain embodiments of wireless sensors communicate on a peer-to-peer basis to an interrogator or a mobile computer. Communication methods include narrow band, wide band, ultra wide band, or other means of radio or signal propagation methods.” ’684 publication at [0005]-[0006] (emphasis added).</p>
<p>10. The RFID transponder of claim 1, wherein the substrate, antenna structure, and RFID integrated circuit chip are covered by a face stock material.</p>	<p>’684 publication discloses the substrate 58, antenna structure 54, and RFID integrated circuit chip 56 are covered by a face stock material 51.</p> <p>“FIG. 3 shows a possible embodiment of an RFID transponder 50 that does not include an encapsulation layer comprising a separate tape. In this example, an adhesive layer 52 bonds with antenna layer 54 that is bonded to inlay substrate layer 58 and integrated circuit 56. Inlay substrate layer 58 and face-stock layer 51 provide resistance against electrostatic discharge (ESD) into antenna layer 54 or chip 56.” ’684 publication at [0049] and Fig. 3.</p>  <p style="text-align: center;">FIG. 3</p>
<p>11. The RFID transponder of claim 1, wherein the RFID integrated circuit chip is disposed on the substrate.</p>	<p>’684 publication discloses an RFID integrated circuit chip 56 disposed on substrate 58. The substrate 58, antenna structure 54, and RFID integrated circuit chip 56 are covered by a face stock material 51.</p> <p>“FIG. 3 shows a possible embodiment of an RFID transponder 50 that does not include an encapsulation layer comprising a separate tape. In this example, an adhesive layer 52 bonds with antenna layer 54 that is bonded to inlay substrate layer 58 and integrated circuit 56. Inlay substrate layer 58 and face-stock layer 51 provide resistance against electrostatic discharge (ESD) into antenna layer 54 or chip 56.” ’684</p>  <p style="text-align: center;">FIG. 3</p>

	publication at [0049] and Fig. 3.
12. The RFID transponder of claim 1, wherein the limited number of most significant bits that correspond to the allocated block further correspond to an encoder that encodes the RFID transponder.	'200 patent discloses that the limited number of most significant bits that correspond to the allocated block further correspond to an encoder that encodes the RFID transponder or integrated circuit memory. See Claim [1F]. '545 patent discloses that the limited number of most significant bits that correspond to the allocated block further correspond to an encoder that encodes the RFID transponder or integrated circuit memory. See Claim [1F].
	Claims 13-15 are obvious under 35 U.S.C. §103 over: the '684 publication and either U.S. 7,827,200 or U.S. 8,373,545, or both, in view of the 2006 EPC Standard
13[P]. A RFID transponder comprising:	See Claim [1P].
[13A] a substrate;	See Claim [1A].
[13B] an antenna structure formed on the substrate; and	See Claim [1B].
[13C] an RFID integrated circuit chip which is electrically coupled to the antenna structure,	See Claim [1C].
[13D] wherein the RFID integrated circuit chip is encoded with a global trade item number including a unique object number, the unique object number comprising an object class information space including a block of at least 50 bits and a unique serial number space including a block of at least 38 bits, and	See Claim [1D], 1[E] and Claims [2]-[5].
[13E] wherein the unique serial number space has one serial number instance from	See Claim [1F]

an allocated block of serial numbers, the allocated block being assigned a limited number of most significant bits, and	
[13F] wherein the unique serial number space comprises at least 3 most significant bits corresponding to the allocated block.	See Claim [6] .
14. The RFID transponder of claim 13, wherein the unique serial number space further comprises remaining bits of lesser significance that together with the at least 3 most significant bits comprise the one serial number instance.	See Claim 1[G] .
15. The RFID transponder of claim 13, wherein the at least 3 most significant bits that correspond to the allocated block further correspond to an encoder that encodes the RFID transponder.	See Claim [12]
	Claim 16 is obvious under 35 U.S.C. §103 over the '684 publication and U.S. 7,827,200 or U.S. 8,373,545
16[P]. An integrated circuit, comprising:	See Claim [1C] .
[16A] a radio frequency circuit configured to backscatter a return link signal for processing by an RFID interrogator;	'684 publication discloses a radio frequency circuit configured to backscatter a return link signal for processing by an RFID interrogator: "Current classes of RFID transponders rank into two primary categories: active RFID transponders and passive RFID transponders. Active RFID transponders include an integrated power source capable of self-generating signals, which may be used by other, remote reading devices to interpret the data associated with the transponder. Active transponders include batteries and, historically, are considered considerably more expensive than passive RFID transponders. Passive RFID transponders backscatter incident RF energy to specially

	designed remote devices such as interrogators.” ’684 publication at [0004].
[16B] control logic; and	’684 publication discloses control logic in the integrated circuit. “Radio-frequency identification (RFID) transponders, typically thin transceivers that include an integrated circuit chip having radio frequency circuits, control logic , memory and an antenna structure mounted on a supporting substrate, enable vast amounts of information to be encoded and stored and have unique identification. Commissioning, the process of encoding specific information (for example, data representing an object identifier, the date-code, batch, customer name, origin, destination, quantity, and items) associated with an object (for example, a shipping container), associates a specific object with a unique RFID transponder. The commissioned transponder responds to coded RF signals and, therefore, readily can be interrogated by external devices to reveal the data associated with the transponder.” ’684 publication at [0003] (emphasis added).
[16C] a memory,	’684 publication: discloses a memory in the integrated circuit. “Radio-frequency identification (RFID) transponders, typically thin transceivers that include an integrated circuit chip having radio frequency circuits, control logic, memory and an antenna structure mounted on a supporting substrate, enable vast amounts of information to be encoded and stored and have unique identification. Commissioning, the process of encoding specific information (for example, data representing an object identifier, the date-code, batch, customer name, origin, destination, quantity, and items) associated with an object (for example, a shipping container), associates a specific object with a unique RFID transponder. The commissioned transponder responds to coded RF signals and, therefore, readily can be interrogated by external devices to reveal the data associated with the transponder.” ’684 publication at [0003] (emphasis added).
[16D] wherein the memory is configured with a unique object number space, the unique object number space comprising an object class information space and a unique serial number space, and	See Claim [1E] .
[16E] wherein the unique serial number space is encoded with one serial number instance from an allocated block of serial	See Claim [1F] .

numbers, the allocated block being assigned a limited number of most significant bits, and	
[16F] wherein the unique serial number space comprises the limited number of most significant bits corresponding to the allocated block and remaining bits of lesser significance that together comprise the one serial number instance.	See Claim [1G] .
	Claims 17-19 are obvious under 35 U.S.C. §103 over: the '684 publication and either U.S. 7,827,200 or U.S. 8,373,545, or both, in view of the 2006 EPC Standard
17. The integrated circuit of claim 16, wherein the object class information space is encoded with information comprising a company prefix, an item reference, a partition value, and a filter value.	See Claim [2] .
18. The integrated circuit of claim 16, wherein the unique object number is a portion of a serialized global trade item number.	See Claim [3] .
19. The integrated circuit of claim 19, wherein the serialized global trade item number is an EPC SGTIN-96 encoding.	See Claim [4] .
	Claim 20 is obvious under 35 U.S.C. §103 over the '684 publication and U.S. 7,827,200 or U.S. 8,373,545
20. The integrated circuit of claim 16,	See Claim [12] .

wherein the limited number of most significant bits that correspond to the allocated block further correspond to an encoder that encodes the memory of the integrated circuit.	
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IV. Conclusion

For the reasons set forth above, reexamination of claims 1-20 of U.S. patent 9,798,967 is requested.

Fees

The requisite fees are submitted herewith. If any additional fees are due at any time during the proceeding, the undersigned authorizes the Office to charge such fees to Deposit Account No. 50-1349.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I certify that on November 29, 2017, a copy of this REQUEST FOR EX PARTE REEXAMINATION OF U.S. PATENT 9,798,967 was served on the patent owner via FedEx at the following address:

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EXAMINER

LEUNG, CHRISTINA Y

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02/01/2018

PAPER

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.



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***EX PARTE* REEXAMINATION COMMUNICATION TRANSMITTAL FORM**

REEXAMINATION CONTROL NO. 90/014,052.

PATENT NO. 9798967.

ART UNIT 3992.

Enclosed is a copy of the latest communication from the United States Patent and Trademark Office in the above identified *ex parte* reexamination proceeding (37 CFR 1.550(f)).

Where this copy is supplied after the reply by requester, 37 CFR 1.535, or the time for filing a reply has passed, no submission on behalf of the *ex parte* reexamination requester will be acknowledged or considered (37 CFR 1.550(g)).

Office Action in Ex Parte Reexamination	Control No. 90/014,052	Patent Under Reexamination 9798967	
	Examiner Christina Y. Leung	Art Unit 3992	AIA (First Inventor to File) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

- a. ☒ Responsive to the communication(s) filed on November 29, 2017.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on ____.
- b. ☐ This action is made FINAL.
- c. ☒ A statement under 37 CFR 1.530 has not been received from the patent owner.

A shortened statutory period for response to this action is set to expire 2 month(s) from the mailing date of this letter. Failure to respond within the period for response will result in termination of the proceeding and issuance of an *ex parte* reexamination certificate in accordance with this action. 37 CFR 1.550(d). **EXTENSIONS OF TIME ARE GOVERNED BY 37 CFR 1.550(c)**. If the period for response specified above is less than thirty (30) days, a response within the statutory minimum of thirty (30) days will be considered timely.

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

- | | |
|--|--|
| 1. ☐ Notice of References Cited by Examiner, PTO-892. | 3. ☒ Interview Summary, PTO-474. |
| 2. ☐ Information Disclosure Statement, PTO/SB/08. | 4. ☐ ____. |

Part II SUMMARY OF ACTION

- 1a. ☒ Claims 1-20 are subject to reexamination.
- 1b. ☐ Claims ____ are not subject to reexamination.
2. ☐ Claims ____ have been canceled in the present reexamination proceeding.
3. ☐ Claims ____ are patentable and/or confirmed.
4. ☒ Claims 1-20 are rejected.
5. ☐ Claims ____ are objected to.
6. ☐ The drawings, filed on ____ are acceptable.
7. ☐ The proposed drawing correction, filed on ____ has been (7a) ☐ approved (7b) ☐ disapproved.
8. ☐ Acknowledgment is made of the priority claim under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the certified copies have
- 1 ☐ been received.
- 2 ☐ not been received.
- 3 ☐ been filed in Application No. ____.
- 4 ☐ been filed in reexamination Control No. ____.
- 5 ☐ been received by the International Bureau in PCT application No. ____.
- * See the attached detailed Office action for a list of the certified copies not received.
9. ☐ Since the proceeding appears to be in condition for issuance of an *ex parte* reexamination certificate 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.
10. ☐ Other: ____

cc: Requester (if third party requester)

DETAILED ACTION

Reexamination

1. On December 20, 2017, *ex parte* reexamination was ordered for claims 1-20 (all claims) of US 9,798,967 B2 (“967 Patent”). **Claims 1-20** (all claims) of 967 Patent are being reexamined in this proceeding.
2. On January 16, 2018, Patent Owner (PO) informed Examiner that PO waives the right to file a PO Statement under 37 CFR 1.530 in response to the Order.

References and Documents Cited in this Action

967 Patent (US 9,798,967 B2)

684 Publication (US 2007/0040684 A1 to McAllister)

200 Patent (US 7,827,200 B2 to Rowe)

545 Patent (US 8,373,545 B2 to Traub)

2006 EPC Standard (EPCglobal Tag Data Standards, Version 1.3, March 8, 2006)

3PR Request (request for *ex parte* reexamination filed by Third-Party Requester [3PR] on November 29, 2017)

Parent Applications and Effective Filing Date

3. 967 Patent issued on October 24, 2017 from application 15/042,993 filed on February 12, 2016, which is a continuation of parent application 13/526,520 filed on June 19, 2012. 13/526,520 is a continuation-in-part of 12/820,109, filed on June 21, 2010, which is a continuation-in-part of 11/465,712, filed on August 18, 2006, and a continuation-in-part of 12/124,768, filed on May 21, 2008. 967 Patent also claims priority to two provisional applications: 60/709,713, filed on August 19, 2005; and 60/939,603, filed on May 22, 2007.

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4. A review of the specifications of these applications indicates that 12/124,768, filed on May 21, 2008, appears to be the earliest disclosure that contains support for the claimed limitations directed to a unique object number (e.g., including a unique serial number space encoded with one serial number instance from an allocated block of serial numbers that is assigned a limited number of most significant bits). Therefore, the effective filing date of claims 1-20 (all claims) in 967 Patent is May 21, 2008.

5. Furthermore, the present application is being examined under the pre-AIA first to invent provisions.

Summary of Rejections

6. Claims 1-20 are each rejected twice under 35 U.S.C. 103 as follows.

Claims 1, 6-12, 16, and 20 are rejected under 35 U.S.C. 103 as being unpatentable over 684 Publication in view of 200 Patent.

Claims 2-5, 13-15, and 17-19 are rejected under 35 U.S.C. 103 as being unpatentable over 684 Publication in view of 200 Patent and 2006 EPC Standard.

Claims 1, 6-12, 16, and 20 are rejected under 35 U.S.C. 103 as being unpatentable over 684 Publication in view of 545 Patent.

Claims 2-5, 13-15, and 17-19 are rejected under 35 U.S.C. 103 as being unpatentable over 684 Publication in view of 545 Patent and 2006 EPC Standard.

Claim Rejections - 35 USC § 103

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

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made

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to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. **Claims 1, 6-12, 16, and 20** are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over **684 Publication** in view of **200 Patent**.

Regarding **claim 1**, 684 Publication discloses an RFID transponder 50 (Figures 2 and 3; paragraphs [0003]-[0004], [0041], and [0049]) comprising:

a substrate 58 (paragraph [0049]);

an antenna structure formed on the substrate (i.e., antenna layer 54; paragraph [0049]);

and

an RFID integrated circuit chip 56, which is electrically coupled to the antenna structure (paragraph [0049]),

wherein the RFID integrated circuit chip is encoded with a unique object number (e.g., specific information associated with a specific object so that the specific object is associated with a unique RFID transponder; paragraph [0003]).

684 Publication generally discloses a unique object number but does not specifically disclose that the unique object number comprises an object class information space and a unique serial number space, wherein the unique serial number space is encoded with one serial number instance from an allocated block of serial numbers, the allocated block being assigned a limited number of most significant bits, and wherein the unique serial number space comprises the limited number of most significant bits corresponding to the allocated block and remaining bits of lesser significance that together comprise the one serial number instance.

However, 200 Patent teaches a system that is related to the one disclosed by 684 Publication, including an RFID tag 104 with a unique object number (i.e., an Electronic Product

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Code [EPC] identifier 110; Figure 1; column 1, lines 12-46; and column 3, lines 19-29). 200

Patent further teaches that the unique object number comprises an object class information space (i.e., Object Class in Non Serialized Portion 112) and a unique serial number space (i.e., Serial Number in Serialized Portion 114; Figure 1; column 3, lines 56-67; and column 4, lines 1-12).

200 Patent further teaches that the unique serial number space is encoded with one serial number instance from an allocated block of serial numbers, the allocated block being assigned a limited number of most significant bits, and wherein the unique serial number space comprises the limited number of most significant bits corresponding to the allocated block and remaining bits of lesser significance that together comprise the one serial number instance. More specifically, 200 Patent teaches that for example, 25 bits can be allocated to the serial number (column 6, lines 3-8) and that

“In one embodiment, different manufacturer divisions that produce objects having the same object classification can be assigned a subset of numbers from a number pool of unassigned numbers to ensure that unique serial numbers are always generated....In another example, a first division can assign serial numbers in the range of one to a million and a second division can assign serial numbers in a range of three to four million.”

See column 5, lines 7-22. It would be well understood in the art that a block of one million serial numbers would require 20 bits in binary, and that in a serial number space having a total of 25 bits (such as taught by 200 Patent), a first block of numbers from 0 to about 1,000,000 (decimal) would be expressed as binary numbers 000000000000000000000000 to about 000001111111111111111111. Another block of a million serial numbers can be expressed as binary numbers 000110000000000000000000 to 000111111111111111111111. Therefore, 200 Patent teaches that an allocated block or range of serial numbers is assigned a limited number of most significant bits (e.g., when the serial number space has 25 bits in all, the five

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most significant bits, e.g., “00000,” “00011,” etc., correspond to a particular block containing about a million serial numbers and therefore correspond to a particular manufacturer division as taught by 200 Patent). 200 Patent further teaches that the limited number of most significant bits (e.g., the five most significant bits) and the remaining bits of lesser significance (e.g., the 20 least significant bits) comprise the one serial number instance having 25 bits in all.

Regarding claim 1, it would have been obvious to a person of ordinary skill in the art to provide a unique serial number space encoded with one serial number instance from an allocated block of serial numbers as taught by 200 Patent, in the RFID transponder disclosed by 684 Publication, in order to advantageously ensure that unique serial numbers are generated even for objects that have the same object classification but are produced by different manufacturer divisions as taught by 200 Patent.

Regarding **claim 6**, in the system suggested by 684 Publication in view of 200 Patent, 200 Patent further teaches that the allocated block is defined by at least 3 most significant bits (e.g., five most significant bits, in the example discussed above with regard to claim 1).

Regarding **claim 7**, in the system suggested by 684 Publication in view of 200 Patent, 684 Publication further discloses an encoder 30 (684 Publication, Figure 3; paragraphs [0038]-[0039]), and 200 Patent teaches a plurality of allocations associated with different manufacturer divisions as discussed above with regard to claim 1. 200 Patent further teaches that the allocated block is one of a plurality of allocations intermittently received by an encoder at least in the sense that 200 Patent teaches that encoders in different manufacturing divisions are “linked to a centralized system that assigns serial numbers” (200 Patent, column 5, lines 18-22) and each

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encoder identifies its corresponding pool or block of allocated numbers, then encodes serial numbers from that pool (i.e., steps 325, 335, and 350 in Figure 3; column 6, lines 37-58).

Regarding **claim 8**, in the system suggested by 684 Publication in view of 200 Patent, 684 Publication further discloses that the RFID integrated circuit chip is comprised of silicon (paragraphs [0005]-[0006]).

Regarding **claim 9**, in the system suggested by 684 Publication in view of 200 Patent, 684 Publication further discloses that the RFID integrated circuit chip is comprised of polymer (paragraphs [0005]-[0006]).

Regarding **claim 10**, in the system suggested by 684 Publication in view of 200 Patent, 684 Publication further discloses that the substrate 58, antenna structure 54, and RFID integrated circuit chip 56 are covered by a face stock material 51 (Figure 3; paragraph [0049]).

Regarding **claim 11**, in the system suggested by 684 Publication in view of 200 Patent, 684 Publication further discloses that the RFID integrated circuit chip 56 is disposed on the substrate 58 (Figure 3; paragraph [0049]).

Regarding **claim 12**, in the system suggested by 684 Publication in view of 200 Patent, 684 Publication further discloses an encoder 30 (684 Publication, Figure 3; paragraphs [0038]-[0039]), and 200 Patent teaches a plurality of allocations associated with different manufacturer divisions as discussed above with regard to claim 1. 200 Patent further teaches that the limited number of most significant bits that correspond to the allocated block further correspond to an encoder that encodes the RFID transponder at least in the sense that 200 Patent teaches that encoders in different manufacturing divisions are “linked to a centralized system that assigns serial numbers” (200 Patent, column 5, lines 18-22) and each encoder identifies its

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corresponding pool or block of allocated numbers, then encodes serial numbers from that pool (i.e., steps 325, 335, and 350 in Figure 3; column 6, lines 37-58). As discussed above with regard to claim 1, the limited number of most significant bits taught by 200 Patent correspond to blocks of allocated numbers, which in turn correspond to the encoders in the different manufacturer divisions that use the particular blocks of numbers. It would have been obvious to a person of ordinary skill in the art to provide allocated blocks further corresponding to encoders as taught by 200 Patent, in the system disclosed by 684 Publication, in order to advantageously ensure that unique serial numbers are generated even for objects that have the same object classification but are produced by different manufacturer divisions as taught by 200 Patent.

Regarding **claim 16**, 684 Publication discloses an integrated circuit (Figures 2 and 3, paragraphs [0003]-[0004], [0041], and [0049]), comprising:

a radio frequency circuit configured to backscatter a return link signal for processing by an RFID interrogator; control logic; and a memory (i.e., 684 Publication discloses passive RFID transponders that backscatter a return link signal including a radio frequency circuit, control logic, and memory; paragraphs [0003]-[0004]);

wherein the memory is configured with a unique object number (e.g., specific information associated with a specific object so that the specific object is associated with a unique RFID transponder; paragraph [0003]).

684 Publication generally discloses a unique object number but does not specifically disclose that the unique object number comprises an object class information space and a unique serial number space, wherein the unique serial number space is encoded with one serial number instance from an allocated block of serial numbers, the allocated block being assigned a limited

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number of most significant bits, and wherein the unique serial number space comprises the limited number of most significant bits corresponding to the allocated block and remaining bits of lesser significance that together comprise the one serial number instance.

However, 200 Patent teaches a system that is related to the one disclosed by 684 Publication, including an RFID tag 104 with a unique object number (i.e., an Electronic Product Code [EPC] identifier 110; Figure 1; column 1, lines 12-46; and column 3, lines 19-29). 200 Patent further teaches that the unique object number comprises an object class information space (i.e., Object Class in Non Serialized Portion 112) and a unique serial number space (i.e., Serial Number in Serialized Portion 114; Figure 1; column 3, lines 56-67; and column 4, lines 1-12).

200 Patent further teaches that the unique serial number space is encoded with one serial number instance from an allocated block of serial numbers, the allocated block being assigned a limited number of most significant bits, and wherein the unique serial number space comprises the limited number of most significant bits corresponding to the allocated block and remaining bits of lesser significance that together comprise the one serial number instance. More specifically, 200 Patent teaches that for example, 25 bits can be allocated to the serial number (column 6, lines 3-8) and that

“In one embodiment, different manufacturer divisions that produce objects having the same object classification can be assigned a subset of numbers from a number pool of unassigned numbers to ensure that unique serial numbers are always generated....In another example, a first division can assign serial numbers in the range of one to a million and a second division can assign serial numbers in a range of three to four million.”

See column 5, lines 7-22. It would be well understood in the art that a block of one million serial numbers would require 20 bits in binary, and that in a serial number space having a total of 25 bits (such as taught by 200 Patent), a first block of numbers from 0 to about 1,000,000

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(decimal) would be expressed as binary numbers 000000000000000000000000 to about 000001111111111111111111. Another block of a million serial numbers can be expressed as binary numbers 000110000000000000000000 to 000111111111111111111111. Therefore, 200 Patent teaches that an allocated block or range of serial numbers is assigned a limited number of most significant bits (e.g., when the serial number space has 25 bits in all, the five most significant bits, e.g., “00000,” “00011,” etc., correspond to a particular block containing about a million serial numbers and therefore correspond to a particular manufacturer division as taught by 200 Patent). 200 Patent further teaches that the limited number of most significant bits (e.g., the five most significant bits) and the remaining bits of lesser significance (e.g., the 20 least significant bits) comprise the one serial number instance having 25 bits in all.

Regarding claim 16, it would have been obvious to a person of ordinary skill in the art to provide a unique serial number space encoded with one serial number instance from an allocated block of serial numbers as taught by 200 Patent, in the RFID transponder disclosed by 684 Publication, in order to advantageously ensure that unique serial numbers are generated even for objects that have the same object classification but are produced by different manufacturer divisions as taught by 200 Patent.

Regarding **claim 20**, in the system suggested by 684 Publication in view of 200 Patent, 684 Publication further discloses an encoder 30 (684 Publication, Figure 3; paragraphs [0038]-[0039]), and 200 Patent teaches a plurality of allocations associated with different manufacturer divisions as discussed above with regard to claim 1. 200 Patent further teaches that the limited number of most significant bits that correspond to the allocated block further correspond to an encoder that encodes the RFID transponder at least in the sense that 200 Patent teaches that

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encoders in different manufacturing divisions are “linked to a centralized system that assigns serial numbers” (200 Patent, column 5, lines 18-22) and each encoder identifies its corresponding pool or block of allocated numbers, then encodes serial numbers from that pool (i.e., steps 325, 335, and 350 in Figure 3; column 6, lines 37-58). As discussed above with regard to claim 16, the limited number of most significant bits taught by 200 Patent correspond to blocks of allocated numbers, which in turn correspond to the encoders in the different manufacturer divisions that use the particular blocks of numbers. It would have been obvious to a person of ordinary skill in the art to provide allocated blocks further corresponding to encoders as taught by 200 Patent, in the system disclosed by 684 Publication, in order to advantageously ensure that unique serial numbers are generated even for objects that have the same object classification but are produced by different manufacturer divisions as taught by 200 Patent.

9. **Claims 2-5, 13-15, and 17-19** are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over **684 Publication** in view of **200 Patent** and **2006 EPC Standard**.

Regarding **claims 2-5 and 17-19**, 684 Publication in view of 200 Patent suggests a system as discussed above with regard to claim 1 or claim 16, including a unique object number comprising an Electronic Product Codes (EPC) identifier 100 with an object class information space (i.e., Object Class in Non Serialized Portion 112) as taught by 200 Patent (Figure 1; column 1, lines 12-46; and column 3, lines 19-29).

684 Publication in view of 200 Patent does not specifically teach that the object class information space is encoded with information comprising a company prefix, an item reference, a partition value, and a filter value; that the unique object number is a portion of a serialized

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global trade item number, wherein the serialized global trade item number is an EPC SGTIN-96 encoding; or that the unique serial number space is at least 38 bits.

However, 2006 EPC Standard teaches a system that is related to the one described by 684 Publication in view of 200 Patent, including RFID tags having associated EPCs (2006 EPC Standard, page 8). 2006 EPC Standard further teaches that the object class information space is encoded with information comprising a company prefix, an item reference, a partition value, and a filter value; that the unique object number is a portion of a serialized global trade item number, wherein the serialized global trade item number is an EPC SGTIN-96 encoding; and that the unique serial number space is at least 38 bits. (2006 EPC Standard, pages 25-26). Regarding claims 2-5 and 17-19, it would have been obvious to provide an object class information space and a serialized global trade item number as taught by 2006 EPC Standard, in the RFID transponder suggested by 684 Publication in view of 200 Patent, in order to provide standardized identification information about the tagged object that can be universally read and understood.

Regarding **claim 13**, 684 Publication discloses an RFID transponder 50 (Figures 2 and 3; paragraph [0041]) comprising:

a substrate 58 (paragraph [0049]);

an antenna structure formed on the substrate (i.e., antenna layer 54; paragraph [0049]);

and

an RFID integrated circuit chip 56, which is electrically coupled to the antenna structure (paragraph [0049]),

wherein the RFID integrated circuit chip is encoded with a unique object number (e.g., specific information associated with a specific object so that the specific object is associated with a unique RFID transponder; paragraph [0003]).

684 Publication generally discloses a unique object number but does not specifically disclose that the unique object number comprises an object class information space and a unique serial number space, wherein the unique serial number space has one serial number instance from an allocated block of serial numbers, the allocated block being assigned a limited number of most significant bits, and wherein the unique serial number space comprises at least 3 most significant bits corresponding to the allocated block.

However, 200 Patent teaches a system that is related to the one disclosed by 684 Publication, including an RFID tag 104 with a unique object number (i.e., an Electronic Product Code [EPC] identifier 110; Figure 1; column 1, lines 12-46; and column 3, lines 19-29). 200 Patent further teaches that the unique object number comprises an object class information space (i.e., Object Class in Non Serialized Portion 112) and a unique serial number space (i.e., Serial Number in Serialized Portion 114; Figure 1; column 3, lines 56-67; and column 4, lines 1-12).

200 Patent further teaches that the unique serial number space is encoded with one serial number instance from an allocated block of serial numbers, the allocated block being assigned a limited number of most significant bits, and wherein the unique serial number space comprises at least 3 most significant bits corresponding to the allocated block. More specifically, 200 Patent teaches that for example, 25 bits can be allocated to the serial number (column 6, lines 3-8) and that

“In one embodiment, different manufacturer divisions that produce objects having the same object classification can be assigned a subset of numbers from a number pool of

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unassigned numbers to ensure that unique serial numbers are always generated....In another example, a first division can assign serial numbers in the range of one to a million and a second division can assign serial numbers in a range of three to four million.”

See column 5, lines 7-22. It would be well understood in the art that a block of one million serial numbers would require 20 bits in binary, and that in a serial number space having a total of 25 bits (such as taught by 200 Patent), a first block of numbers from 0 to about 1,000,000 (decimal) would be expressed as binary numbers 000000000000000000000000 to about 00000111111111111111111111111111. Another block of a million serial numbers can be expressed as binary numbers 0001100000000000000000000000 to 00011111111111111111111111111111. Therefore, 200 Patent teaches that an allocated block or range of serial numbers is assigned a limited number of most significant bits (e.g., when the serial number space has 25 bits in all, the five most significant bits, e.g., “00000,” “00011,” etc., correspond to a particular block containing about a million serial numbers and therefore correspond to a particular manufacturer division as taught by 200 Patent). 200 Patent further teaches that wherein the unique serial number space comprises at least 3 most significant bits corresponding to the allocated block (e.g., five most significant bits in the example above).

Regarding claim 13, it would have been obvious to a person of ordinary skill in the art to provide a unique serial number space encoded with one serial number instance from an allocated block of serial numbers as taught by 200 Patent, in the RFID transponder disclosed by 684 Publication, in order to advantageously ensure that unique serial numbers are generated even for objects that have the same object classification but are produced by different manufacturer divisions as taught by 200 Patent.

Further regarding claim 13, 684 Publication in view of 200 Patent does not further suggest a global trade item number or that the object class information space includes a block of at least 50 bits and the unique serial number space includes a block of at least 38 bits.

However, 2006 EPC Standard teaches a system that is related to the one described by 684 Publication in view of 200 Patent, including RFID tags having associated EPCs (2006 EPC Standard, page 8). 2006 EPC Standard further teaches a global trade item number or that the object class information space includes a block of at least 50 bits and the unique serial number space includes a block of at least 38 bits (2006 EPC Standard, pages 25-26). Regarding claims 13, it would have been obvious to provide a global trade item number, an object class information space of at least 50 bits, and a unique serial number space of at least 38 bits as taught by 2006 EPC Standard, in the RFID transponder suggested by 684 Publication in view of 200 Patent, in order to provide standardized identification information about the tagged object that can be universally read and understood.

Regarding **claim 14**, in the system suggested by 684 Publication in view of 200 Patent and 2006 EDC Standard, 200 Patent further teaches that the unique serial number space further comprises remaining bits of lesser significance (e.g., the 20 least significant bits) that together with the at least 3 most significant bits (e.g., the five most significant bits) comprise the one serial number instance (having 25 bits in all in the example discussed above with regard to claim 13).

Regarding **claim 15**, in the system suggested by 684 Publication in view of 200 Patent, 684 Publication further discloses an encoder 30 (684 Publication, Figure 3; paragraphs [0038]-[0039]), and 200 Patent teaches a plurality of allocations associated with different manufacturer

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divisions as discussed above with regard to claim 13. 200 Patent further teaches that the at least 3 most significant bits that correspond to the allocated block further correspond to an encoder that encodes the RFID transponder at least in the sense that 200 Patent teaches that encoders in different manufacturing divisions are “linked to a centralized system that assigns serial numbers” (200 Patent, column 5, lines 18-22) and each encoder identifies its corresponding pool or block of allocated numbers, then encodes serial numbers from that pool (i.e., steps 325, 335, and 350 in Figure 3; column 6, lines 37-58). As discussed above with regard to claim 13, the at least 3 most significant bits taught by 200 Patent correspond to blocks of allocated numbers, which in turn correspond to the encoders in the different manufacturer divisions that use the particular blocks of numbers. It would have been obvious to a person of ordinary skill in the art to provide allocated blocks further corresponding to encoders as taught by 200 Patent, in the system disclosed by 684 Publication, in order to advantageously ensure that unique serial numbers are generated even for objects that have the same object classification but are produced by different manufacturer divisions as taught by 200 Patent.

10. **Claims 1, 6-12, 16, and 20** are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over **684 Publication** in view of **545 Patent**.

Regarding **claim 1**, 684 Publication discloses an RFID transponder 50 (Figures 2 and 3; paragraphs [0003]-[0004], [0041], and [0049]) comprising:

a substrate 58 (paragraph [0049]);

an antenna structure formed on the substrate (i.e., antenna layer 54; paragraph [0049]);

and

an RFID integrated circuit chip 56, which is electrically coupled to the antenna structure (paragraph [0049]),

wherein the RFID integrated circuit chip is encoded with a unique object number (e.g., specific information associated with a specific object so that the specific object is associated with a unique RFID transponder; paragraph [0003]).

684 Publication generally discloses a unique object number but does not specifically disclose that the unique object number comprises an object class information space and a unique serial number space, wherein the unique serial number space is encoded with one serial number instance from an allocated block of serial numbers, the allocated block being assigned a limited number of most significant bits, and wherein the unique serial number space comprises the limited number of most significant bits corresponding to the allocated block and remaining bits of lesser significance that together comprise the one serial number instance.

However, 545 Patent teaches a system that is related to the one disclosed by 684 Publication, including an RFID tag with a unique object number (i.e., RFID tags 420-426 with EPC codes 412-418; Figure 4A; column 1, lines 20-38; column 3, lines 34-39). 545 Patent further teaches that the unique object number comprises an object class information space (including a Stock Keeping Unit [SKU] or “product id” in an EPC code as shown in Figure 4B; column 1, lines 32-38) and a unique serial number space (i.e., “serial number” in an EPC code as shown in Figure 4B).

545 Patent further teaches that the unique serial number space is encoded with one serial number instance from an allocated block of serial numbers, the allocated block being assigned a limited number of most significant bits, and wherein the unique serial number space comprises

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the limited number of most significant bits corresponding to the allocated block and remaining bits of lesser significance that together comprise the one serial number instance. More specifically, 545 Patent teaches that EPC server 402 dynamically provides EPC code blocks 404 and 406 to multiple client sites 408 that encode EPC codes from the blocks onto the RFID tags (Figure 4A; column 3, lines 34-39; and column 4, lines 5-12). 545 Patent further teaches that for example, 45 million total available EPC codes can be divided into blocks or pools of about five or ten million EPC codes (e.g., from ten to fifteen million or from 30 to 40 million; Figures 13E-G).

It would be well understood in the art that a 45 million serial numbers would require 26 bits in binary and a block of one million serial numbers would require 20 bits in binary. In a serial number space having a total of 26 bits (such as taught by 545 Patent), a block of numbers from 0 to about 1,000,000 (decimal) would be expressed as binary numbers 00000000000000000000000000 to about 00000011111111111111111111. An exemplary block of numbers from about 10,000,000 to about 15,000,000 (decimal) would be expressed as binary numbers from about 001010000000000000000000000000 to about 001111000000000000000000000000. Another exemplary block of numbers from about 30,000,000 to about 40,000,000 (decimal) would be expressed as binary numbers from about 011110000000000000000000000000 to about 101000000000000000000000000000. Therefore, 545 Patent teaches that an allocated block or range of serial numbers is assigned a limited number of most significant bits (e.g., when the serial number space has 26 bits in all, the six most significant bits, e.g., “000000,” “001010,” etc., correspond to a particular block containing over a million serial numbers and therefore correspond to a particular client site as taught by 545 Patent). 545 Patent further teaches that the

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limited number of most significant bits (e.g., the six most significant bits) and the remaining bits of lesser significance (e.g., the 20 least significant bits) comprise the one serial number instance having 26 bits in all.

Regarding claim 1, it would have been obvious to a person of ordinary skill in the art to provide a unique serial number space encoded with one serial number instance from an allocated block of serial numbers as taught by 545 Patent, in the RFID transponder disclosed by 684 Publication, in order to advantageously ensure that unique serial numbers are generated even for objects that have the same object classification but are produced at different client sites as taught by 545 Patent.

Regarding **claim 6**, in the system suggested by 684 Publication in view of 545 Patent, 545 Patent further teaches that the allocated block is defined by at least 3 most significant bits (e.g., six most significant bits, in the example discussed above with regard to claim 1).

Regarding **claim 7**, in the system suggested by 684 Publication in view of 545 Patent, 684 Publication further discloses an encoder 30 (684 Publication, Figure 3; paragraphs [0038]-[0039]), and 545 Patent teaches a plurality of allocations associated with different client sites as discussed above with regard to claim 1. 545 Patent further teaches that the allocated block is one of a plurality of allocations intermittently received by an encoder at least in the sense that 545 Patent teaches that encoders in different client sites receive corresponding pools of allocated numbers from an EPC provisioning server 402, then encode serial numbers from that pool (Figure 4A; column 3, lines 34-67; column 4, lines 1-19).

Regarding **claim 8**, in the system suggested by 684 Publication in view of 545 Patent, 684 Publication further discloses that the RFID integrated circuit chip is comprised of silicon (paragraphs [0005]-[0006]).

Regarding **claim 9**, in the system suggested by 684 Publication in view of 545 Patent, 684 Publication further discloses that the RFID integrated circuit chip is comprised of polymer (paragraphs [0005]-[0006]).

Regarding **claim 10**, in the system suggested by 684 Publication in view of 545 Patent, 684 Publication further discloses that the substrate 58, antenna structure 54, and RFID integrated circuit chip 56 are covered by a face stock material 51 (Figure 3; paragraph [0049]).

Regarding **claim 11**, in the system suggested by 684 Publication in view of 545 Patent, 684 Publication further discloses that the RFID integrated circuit chip 56 is disposed on the substrate 58 (Figure 3; paragraph [0049]).

Regarding **claim 12**, in the system suggested by 684 Publication in view of 545 Patent, 684 Publication further discloses an encoder 30 (684 Publication, Figure 3; paragraphs [0038]-[0039]), and 545 Patent teaches a plurality of allocations associated with different client sites as discussed above with regard to claim 1. 545 Patent further teaches that the limited number of most significant bits that correspond to the allocated block further correspond to an encoder that encodes the RFID transponder at least in the sense that 545 Patent teaches that encoders in different client sites receive corresponding pools of allocated numbers from an EPC provisioning server 402, then encode serial numbers from that pool (Figure 4A; column 3, lines 34-67; column 4, lines 1-19). As discussed above with regard to claim 1, the limited number of most significant bits taught by 545 Patent correspond to blocks of allocated numbers, which in turn

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correspond to the encoders in the different client sites that use the particular blocks of numbers. It would have been obvious to a person of ordinary skill in the art to provide allocated blocks further corresponding to encoders as taught by 545 Patent, in the system disclosed by 684 Publication, in order to advantageously ensure that unique serial numbers are generated even for objects that have the same object classification but are produced at different client sites as taught by 545 Patent.

Regarding **claim 16**, 684 Publication discloses an integrated circuit (Figures 2 and 3, paragraphs [0003]-[0004], [0041], and [0049]), comprising:

a radio frequency circuit configured to backscatter a return link signal for processing by an RFID interrogator; control logic; and a memory (i.e., 684 Publication discloses passive RFID transponders that backscatter a return link signal including a radio frequency circuit, control logic, and memory; paragraphs [0003]-[0004]);

wherein the memory is configured with a unique object number (e.g., specific information associated with a specific object so that the specific object is associated with a unique RFID transponder; paragraph [0003]).

684 Publication generally discloses a unique object number but does not specifically disclose that the unique object number comprises an object class information space and a unique serial number space, wherein the unique serial number space is encoded with one serial number instance from an allocated block of serial numbers, the allocated block being assigned a limited number of most significant bits, and wherein the unique serial number space comprises the limited number of most significant bits corresponding to the allocated block and remaining bits of lesser significance that together comprise the one serial number instance.

However, 545 Patent teaches a system that is related to the one disclosed by 684 Publication, including an RFID tag with a unique object number (i.e., RFID tags 420-426 with EPC codes 412-418; Figure 4A; column 1, lines 20-38; column 3, lines 34-39). 545 Patent further teaches that the unique object number comprises an object class information space (including a Stock Keeping Unit [SKU] or “product id” in an EPC code as shown in Figure 4B; column 1, lines 32-38) and a unique serial number space (i.e., “serial number” in an EPC code as shown in Figure 4B).

545 Patent further teaches that the unique serial number space is encoded with one serial number instance from an allocated block of serial numbers, the allocated block being assigned a limited number of most significant bits, and wherein the unique serial number space comprises the limited number of most significant bits corresponding to the allocated block and remaining bits of lesser significance that together comprise the one serial number instance. More specifically, 545 Patent teaches that EPC server 402 dynamically provides EPC code blocks 404 and 406 to multiple client sites 408 that encode EPC codes from the blocks onto the RFID tags (Figure 4A; column 3, lines 34-39; and column 4, lines 5-12). 545 Patent further teaches that for example, 45 million total available EPC codes can be divided into blocks or pools of about five or ten million EPC codes (e.g., from ten to fifteen million or from 30 to 40 million; Figures 13E-G).

It would be well understood in the art that a 45 million serial numbers would require 26 bits in binary and a block of one million serial numbers would require 20 bits in binary. In a serial number space having a total of 26 bits (such as taught by 545 Patent), a block of numbers from 0 to about 1,000,000 (decimal) would be expressed as binary numbers

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00000000000000000000000000000000 to about 00000011111111111111111111111111. An exemplary block of numbers from about 10,000,000 to about 15,000,000 (decimal) would be expressed as binary numbers from about 00101000000000000000000000000000 to about 00111100000000000000000000000000. Another exemplary block of numbers from about 30,000,000 to about 40,000,000 (decimal) would be expressed as binary numbers from about 01111000000000000000000000000000 to about 10100000000000000000000000000000. Therefore, 545 Patent teaches that an allocated block or range of serial numbers is assigned a limited number of most significant bits (e.g., when the serial number space has 26 bits in all, the six most significant bits, e.g., “000000,” “001010,” etc., correspond to a particular block containing over a million serial numbers and therefore correspond to a particular client site as taught by 545 Patent). 545 Patent further teaches that the limited number of most significant bits (e.g., the six most significant bits) and the remaining bits of lesser significance (e.g., the 20 least significant bits) comprise the one serial number instance having 26 bits in all.

Regarding claim 16, it would have been obvious to a person of ordinary skill in the art to provide a unique serial number space encoded with one serial number instance from an allocated block of serial numbers as taught by 545 Patent, in the RFID transponder disclosed by 684 Publication, in order to advantageously ensure that unique serial numbers are generated even for objects that have the same object classification but are produced at different client sites as taught by 545 Patent.

Regarding **claim 20**, in the system suggested by 684 Publication in view of 545 Patent, 684 Publication further discloses an encoder 30 (684 Publication, Figure 3; paragraphs [0038]-[0039]), and 545 Patent teaches a plurality of allocations associated with different client sites as

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discussed above with regard to claim 16. 545 Patent further teaches that the limited number of most significant bits that correspond to the allocated block further correspond to an encoder that encodes the RFID transponder at least in the sense that 545 Patent teaches that encoders in different client sites receive corresponding pools of allocated numbers from an EPC provisioning server 402, then encode serial numbers from that pool (Figure 4A; column 3, lines 34-67; column 4, lines 1-19). As discussed above with regard to claim 16, the limited number of most significant bits taught by 545 Patent correspond to blocks of allocated numbers, which in turn correspond to the encoders in the different client sites that use the particular blocks of numbers. It would have been obvious to a person of ordinary skill in the art to provide allocated blocks further corresponding to encoders as taught by 545 Patent, in the system disclosed by 684 Publication, in order to advantageously ensure that unique serial numbers are generated even for objects that have the same object classification but are produced at different client sites as taught by 545 Patent.

11. **Claims 2-5, 13-15, and 17-19** are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over **684 Publication** in view of **200 Patent** and **2006 EPC Standard**.

Regarding **claims 2-5 and 17-19**, 684 Publication in view of 545 Patent suggests a system as discussed above with regard to claim 1 or claim 16, including a unique object number comprising an Electronic Product Codes (EPC) identifier 100 with an object class information space as taught by 545 Patent (including a Stock Keeping Unit [SKU] or “product id” in an EPC code as shown in Figure 4B; column 1, lines 32-38).

684 Publication in view of 545 Patent does not specifically teach that the object class information space is encoded with information comprising a company prefix, an item reference,

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a partition value, and a filter value; that the unique object number is a portion of a serialized global trade item number, wherein the serialized global trade item number is an EPC SGTIN-96 encoding; or that the unique serial number space is at least 38 bits.

However, 2006 EPC Standard teaches a system that is related to the one described by 684 Publication in view of 545 Patent, including RFID tags having associated EPCs (2006 EPC Standard, page 8). 2006 EPC Standard further teaches that the object class information space is encoded with information comprising a company prefix, an item reference, a partition value, and a filter value; that the unique object number is a portion of a serialized global trade item number, wherein the serialized global trade item number is an EPC SGTIN-96 encoding; and that the unique serial number space is at least 38 bits. (2006 EPC Standard, pages 25-26). Regarding claims 2-5 and 17-19, it would have been obvious to provide an object class information space and a serialized global trade item number as taught by 2006 EPC Standard, in the RFID transponder suggested by 684 Publication in view of 545 Patent, in order to provide standardized identification information about the tagged object that can be universally read and understood.

Regarding **claim 13**, 684 Publication discloses an RFID transponder 50 (Figures 2 and 3; paragraph [0041]) comprising:

a substrate 58 (paragraph [0049]);

an antenna structure formed on the substrate (i.e., antenna layer 54; paragraph [0049]);

and

an RFID integrated circuit chip 56, which is electrically coupled to the antenna structure (paragraph [0049]),

wherein the RFID integrated circuit chip is encoded with a unique object number (e.g., specific information associated with a specific object so that the specific object is associated with a unique RFID transponder; paragraph [0003]).

684 Publication generally discloses a unique object number but does not specifically disclose that the unique object number comprises an object class information space and a unique serial number space, wherein the unique serial number space has one serial number instance from an allocated block of serial numbers, the allocated block being assigned a limited number of most significant bits, and wherein the unique serial number space comprises at least 3 most significant bits corresponding to the allocated block.

However, 545 Patent teaches a system that is related to the one disclosed by 684 Publication, including an RFID tag with a unique object number (i.e., RFID tags 420-426 with EPC codes 412-418; Figure 4A; column 1, lines 20-38; column 3, lines 34-39). 545 Patent further teaches that the unique object number comprises an object class information space (including a Stock Keeping Unit [SKU] or “product id” in an EPC code as shown in Figure 4B; column 1, lines 32-38) and a unique serial number space (i.e., “serial number” in an EPC code as shown in Figure 4B).

545 Patent further teaches that the unique serial number space is encoded with one serial number instance from an allocated block of serial numbers, the allocated block being assigned a limited number of most significant bits, and wherein the unique serial number space comprises at least 3 most significant bits corresponding to the allocated block. More specifically, 545 Patent teaches that EPC server 402 dynamically provides EPC code blocks 404 and 406 to multiple client sites 408 that encode EPC codes from the blocks onto the RFID tags (Figure 4A; column

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3, lines 34-39; and column 4, lines 5-12). 545 Patent further teaches that for example, 45 million total available EPC codes can be divided into blocks or pools of about five or ten million EPC codes (e.g., from ten to fifteen million or from 30 to 40 million; Figures 13E-G).

It would be well understood in the art that a 45 million serial numbers would require 26 bits in binary and a block of one million serial numbers would require 20 bits in binary. In a serial number space having a total of 26 bits (such as taught by 545 Patent), a block of numbers from 0 to about 1,000,000 (decimal) would be expressed as binary numbers 000000000000000000000000000000 to about 00000011111111111111111111. An exemplary block of numbers from about 10,000,000 to about 15,000,000 (decimal) would be expressed as binary numbers from about 001010000000000000000000000000 to about 0011110000000000000000000000. Another exemplary block of numbers from about 30,000,000 to about 40,000,000 (decimal) would be expressed as binary numbers from about 011110000000000000000000000000 to about 101000000000000000000000000000. Therefore, 545 Patent teaches that an allocated block or range of serial numbers is assigned a limited number of most significant bits (e.g., when the serial number space has 26 bits in all, the six most significant bits, e.g., “000000,” “001010,” etc., correspond to a particular block containing over a million serial numbers and therefore correspond to a particular client site as taught by 545 Patent). 545 Patent further teaches that wherein the unique serial number space comprises at least 3 most significant bits corresponding to the allocated block (e.g., six most significant bits in the example above).

Regarding claim 13, it would have been obvious to a person of ordinary skill in the art to provide a unique serial number space encoded with one serial number instance from an allocated block of serial numbers as taught by 545 Patent, in the RFID transponder disclosed by 684

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Publication, in order to advantageously ensure that unique serial numbers are generated even for objects that have the same object classification but are produced at different client sites as taught by 545 Patent.

Further regarding claim 13, 684 Publication in view of 545 Patent does not further suggest a global trade item number or that the object class information space includes a block of at least 50 bits and the unique serial number space includes a block of at least 38 bits.

However, 2006 EPC Standard teaches a system that is related to the one described by 684 Publication in view of 545 Patent, including RFID tags having associated EPCs (2006 EPC Standard, page 8). 2006 EPC Standard further teaches a global trade item number or that the object class information space includes a block of at least 50 bits and the unique serial number space includes a block of at least 38 bits (2006 EPC Standard, pages 25-26). Regarding claims 13, it would have been obvious to provide a global trade item number, an object class information space of at least 50 bits, and a unique serial number space of at least 38 bits as taught by 2006 EPC Standard, in the RFID transponder suggested by 684 Publication in view of 545 Patent, in order to provide standardized identification information about the tagged object that can be universally read and understood.

Regarding **claim 14**, in the system suggested by 684 Publication in view of 545 Patent and 2006 EDC Standard, 545 Patent further teaches that the unique serial number space further comprises remaining bits of lesser significance (e.g., the 20 least significant bits) that together with the at least 3 most significant bits (e.g., the six most significant bits) comprise the one serial number instance (having 26 bits in all in the example discussed above with regard to claim 13).

Art Unit: 3992

Regarding **claim 15**, in the system suggested by 684 Publication in view of 200 Patent, 684 Publication further discloses an encoder 30 (684 Publication, Figure 3; paragraphs [0038]-[0039]), and 545 Patent teaches a plurality of allocations associated with different client sites as discussed above with regard to claim 13. 545 Patent further teaches that the at least 3 most significant bits that correspond to the allocated block further correspond to an encoder that encodes the RFID transponder at least in the sense that 545 Patent teaches that encoders in different client sites receive corresponding pools of allocated numbers from an EPC provisioning server 402, then encode serial numbers from that pool (Figure 4A; column 3, lines 34-67; column 4, lines 1-19). As discussed above with regard to claim 13, the at least 3 most significant bits taught by 545 Patent correspond to blocks of allocated numbers, which in turn correspond to the encoders in the different client sites that use the particular blocks of numbers. It would have been obvious to a person of ordinary skill in the art to provide allocated blocks further corresponding to encoders as taught by 545 Patent, in the system disclosed by 684 Publication, in order to advantageously ensure that unique serial numbers are generated even for objects that have the same object classification but are produced at different client sites as taught by 545 Patent.

Conclusion

12. In order to ensure full consideration of any amendments, affidavits or declarations, or other documents as evidence of patentability, such documents must be submitted in response to this Office action. Submissions after the next Office action, which is intended to be a final action, will be governed by the requirements of 37 CFR 1.116, after final rejection and 37 CFR 41.33 after appeal, which will be strictly enforced.

Art Unit: 3992

13. The patent owner is reminded of the continuing responsibility under 37 CFR 1.565(a) to apprise the Office of any litigation activity, or other prior or concurrent proceeding, involving US 9,798,967 B2 throughout the course of this reexamination proceeding. The third party requester is also reminded of the ability to similarly apprise the Office of any such activity or proceeding throughout the course of this reexamination proceeding. See MPEP §§ 2207, 2282 and 2286.

14. **All** correspondence relating to this ex parte reexamination proceeding should be directed:

By mail to: Mail Stop *Ex Parte* Reexam
Central Reexamination Unit
Commissioner for Patents
United States Patent & Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

By fax to: (571) 273-9900
Central Reexamination Unit

By hand to: Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

Any inquiry concerning this communication should be directed to the Central Reexamination Unit at telephone number (571) 272-7705.

/Christina Y. Leung/

Primary Examiner, Art Unit 3992

Conferees:

/Albert J Gagliardi/
Primary Examiner, Art Unit 3992

/Timothy M. Speer/
SPRS, AU 3992

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re <i>Ex Parte</i> Reexamination of:	)	
	)	
U.S. Patent No. 9,798,967	)	
	)	
Control No.: 90/014,052	)	Group Art Unit: 3992
	)	
Filed: November 29, 2017	)	Examiner: Christina Y. Leung
	)	
For: SYSTEMS, METHODS, AND	)	
DEVICES FOR COMMISSIONING	)	
WIRELESS SENSORS	)	
	)	
Confirmation No.: 4770	)	

Mail Stop: *Ex Parte* Reexamination
Central Reexamination Unit
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

RESPONSE TO NON-FINAL OFFICE ACTION DATED FEBRUARY 1, 2018

In response to the Non-Final Office Action mailed February 1, 2018 in the above-referenced reexamination, please consider the following remarks.

REMARKS

Original patent claims 1 – 20 remain unchanged and are now pending in the above-referenced *ex parte* reexamination. Based on the arguments presented below, the patent owner respectfully submits that all pending claims are allowable over the prior art relied on in the non-final office action.

The patent under reexamination, U.S. Patent No. 9,798,967 (“the ‘967 patent”) has been asserted in a proceeding captioned *Adasa Inc. v. Avery Dennison Corporation*, 6:17-cv-01685 (D. OR).

The Examiner’s Rejections

Claims 1-20 are each rejected twice under 35 U.S.C. 103 as follows:

Claims 1, 6-12, 16, and 20 stand rejected under 35 U.S.C. 103 as being unpatentable over US 2007/0040684 A1 to McAllister (“the ‘684 publication”) in view of US 7,827,200 B2 to Rowe (“the ‘200 patent”). *See* Office Action, p. 3.

Claims 2-5, 13-15, and 17-19 stand rejected under 35 U.S.C. 103 as being unpatentable over the ‘684 publication in view of the ‘200 patent and EPCglobal Tag Data Standards, Version 1.3, March 8, 2006 (“the 2006 EPC Standard”). *See* Office Action, p. 3.

Claims 1, 6-12, 16, and 20 stand rejected under 35 U.S.C. 103 as being unpatentable over the ‘684 publication in view of US 8,373,545 B2 to Traub (“the ‘545 patent”). *See* Office Action, p. 3.

Claims 2-5, 13-15, and 17-19 stand rejected under 35 U.S.C. 103 as being unpatentable over the '684 publication in view of the '545 patent and the 2006 EPC Standard. *See* Office Action, p. 3.

Summary of the Arguments

The primary focus of the patent owner's arguments is based on the asserted teachings of the '200 patent and the '545 patent. Both the '200 patent and the '545 patent require a fully connected central database to ensure that the EPCs that are assigned by encoder are unique. Without such a connection to a central database, the systems and methods disclosed by the '200 patent and the '545 patent cannot ensure that each of the assigned EPCs are unique. In contrast, the claims of the '967 patent provide a hardware-based numbering scheme ensuring the assigned EPCs are unique without requiring a continuous connection to a central database. Thus, contrary to the Examiner's assertions, the central database schemes disclosed in both the '200 patent and the '545 patent do not disclose or suggest the hardware-based numbering scheme of the '967 Patent as recited in, for example, claim 1 as "wherein the unique serial number space is encoded with one serial number instance from an allocated block of serial numbers, the allocated block being assigned a limited number of most significant bits," and "wherein the unique serial number space comprises the limited number of most significant bits corresponding to the allocated block and remaining bits of lesser significance that together comprise the one serial number instance."

Furthermore, the patent owner will also demonstrate that the Examiner's use of a decimal numbering system assigned by central databases as taught by the '200 patent and the '545 patent

are not analogous to the binary bit-based numbering system recited in the claims of the '967 patent. Specifically, the allocation approach disclosed in the prior art references is for the encoders to obtain each decimal (corresponding to the EPC or serial number) from the central database and convert it for encoding the object. This centralized approach is exactly what the invention of the '967 Patent avoids by partitioning the serial number at the bit level and allocating the most significant bits to allow unique encoding by the encoders without being connected to a database. Thus, the decimal examples provided by the Examiner do not meet the Examiner's *prima facie* burden of demonstrating why such a conversion from decimal to binary is obvious within the context of the subject matter recited in the '967 patent.

The Independent Claims of the '967 Patent

Independent Claim 1 of the '967 patent recites:

An RFID transponder comprising:

a substrate;

an antenna structure formed on the substrate; and

an RFID integrated circuit chip which is electrically coupled to the antenna structure,

wherein the RFID integrated circuit chip is encoded with a unique object number, the unique object number comprising an object class information space and a unique serial number space,

wherein the unique serial number space is encoded with one serial number instance from an allocated block of serial numbers, the allocated block being assigned a limited number of most significant bits, and

wherein the unique serial number space comprises the limited number of most significant bits corresponding to the allocated

block and remaining bits of lesser significance that together comprise the one serial number instance.

Independent Claim 13 of the '967 patent recites:

A RFID transponder comprising:

a substrate;

an antenna structure formed on the substrate; and

an RFID integrated circuit chip which is electrically coupled to the antenna structure,

wherein the RFID integrated circuit chip is encoded with a global trade item number including a unique object number, the unique object number comprising an object class information space including a block of at least 50 bits and a unique serial number space including a block of at least 38 bits,

wherein the unique serial number space has one serial number instance from an allocated block of serial numbers, the allocated block being assigned a limited number of most significant bits, and

wherein the unique serial number space comprises at least 3 most significant bits corresponding to the allocated block.

Independent Claim 16 of the '967 patent recites:

An integrated circuit, comprising:

a radio frequency circuit configured to backscatter a return link signal for processing by an RFID interrogator;

control logic; and

a memory,

wherein the memory is configured with a unique object number space, the unique object number space comprising an object class information space and a unique serial number space,

wherein the unique serial number space is encoded with one serial number instance from an allocated block of serial numbers, the allocated block being assigned a limited number of most significant bits, and

wherein the unique serial number space comprises the limited number of most significant bits corresponding to the allocated block and remaining bits of lesser significance that together comprise the one serial number instance.

While the independent claims are not identical, the highlighted claim language as shown above is similar enough that the arguments presented below with reference to claim 1, are equally applicable to claims 13 and 16.

General Background for Encoding an EPC within an RFID Tag

For merchandise tracking applications, the memory bank of an RFID tag is encoded with an Electronic Product Code (“EPC”), which is an identifier for an item in the supply chain to uniquely identify that particular item. The EPC can be encoded in accordance with one of various EPC tag data standards set by GS1 for a serialized identifier, such as a Serialized Global Trade Item Number (SGTIN) number, includes a combination of object class information and a serial number. *See*, DECLARATION OF CHARLES B. WILLIAMS UNDER 37 C.F.R. §1.132, ¶¶ 13-16, (hereinafter Williams Decl., attached hereto as Exhibit A)

Within the object class information of the EPC, each brand owner is provided with a company prefix to identify the brand owner and an item reference code to identify the class of the items being tagged. As such, all the EPCs within a particular class for a particular brand owner will have the same object class information but will be different from other classes of

items provided by that same brand owner or other classes of items from other companies. This information correlates to that of a GTIN as would be contained within a barcode. For RFID applications, this information would be written in decimal form and referred to as an unserialized identity Uniform Resource Identifier (“URI”) for an EPC. For example, the unserialized identity URI of the EPC may read as:

EPC Pure URI
urn:epc:id:sgtin:012345.67890

See, Williams Decl. ¶ 17.

A serial number is then issued for a particular item within the class of items for that brand owner as an integer in decimal form. By issuing a unique serial number for each item, the serialized EPC of each item within the class for that brand owner will be unique. However, the EPC is only truly unique if the brand owner ensures that the serial number of the EPC is unique within all of the tags encoded for the class of items. The GS1 serialization guideline states that it is the brand owner's responsibility to make ensure that each serial number, and therefore each EPC, is unique. *See, Williams Decl. ¶ 18.*

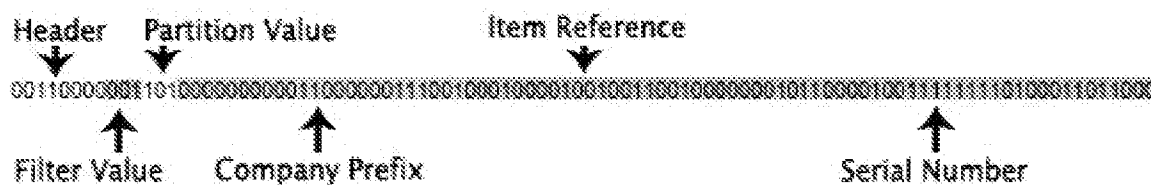
The serial number is then combined with the object class information from the unserialized URI to provide a serialized identity URI of an EPC. The serialized identity URI of the EPC may read as:

EPC Pure URI
urn:epc:id:sgtin:012345.67890.10479832

See, Williams Decl. ¶ 19.

This serialized identity of the EPC is provided from the database to the encoder either in decimal or hexadecimal form, and the encoder then converts the EPC to its binary format for encoding to the RFID tag. The binary format of the EPC may be SGTIN-96, which includes 8 bits for the header identifying the EPC format, 50 bits for object class information including a filter value, partition value, company prefix, and item reference number, and 38 bits for a serial number.

Header	Filter / Object Type	Partition	Company Prefix	Item Ref and Indicator	Serial
8 bits	3 bits	3 bits	20- 40 bits	24 - 4 bits	38 bits



Conventional/Prior Art Management of Encoding Unique EPCs

the fields is a serial number. The serial numbers are typically stored and tracked in the database in decimal form and can be retrieved individually or in blocks by the software that generates the tag IDs that need to be encoded into a collection of RFID tags. *See*, Williams Decl. ¶ 21.

In most cases, one serial number or a set of serial numbers is retrieved from the database at any given time, and in most cases an encoder is only encoding tags for one specific product (identified by a GTIN, which is also encoded in the object class information of the tag ID.) *See*, Williams Decl. ¶ 22. A second process to encode RFID tags involves using a barcode scan to read a UPC, software to convert the UPC to a GTIN, use the GTIN to lookup the next serial number in the database and use those two values to encode the RFID tag. This process involves fetching one serial number at a time from the database and then updating the database with the resulting RFID tag ID. *See*, Williams Decl. ¶ 23. However, neither of these conventional processes for assigning EPCs or serial numbers provide for a disconnected or semiautonomous operation. Rather, all components of the ecosystem (reader/encoder, software application and database) must be running and connected for the encoding of the RFID tags to take place. *See*, Williams Decl. ¶ 24.

As will be described in greater detail below, both the '200 patent and the '545 patent describe systems that operate in this generally conventional manner of encoding unique EPCs. That is, the entire EPC itself (as in the '545 patent) and/or serial number of the EPC (as in the '200 patent) is issued directly from a database which manages assignment of the EPCs. Both references disclose dividing the EPCs or the serial numbers into pools or blocks that are assigned different sites and these divisions are managed by a central database. *See*, Williams Decl. ¶ 37.

Under each of these conventional approaches, unless all encoders receive the EPC or serial number for each tag from the same database, there is no way to fully ensure uniqueness of the EPC. In real-world situations, the encoding of tags is performed by encoders from different assembly lines, different facilities, and different parties at different levels within the stream of commerce (*i.e.*, manufacturer, distributor, retail warehouse, retail store, or third-party encoder). Using the conventional or prior art systems and methods, including those disclosed in the ‘200 patent and the ‘545 patent, unless all of these encoders are all linked to the same centralized database to receive the EPCs, it is possible that different encoders may encode duplicate EPCs or serial numbers. The use of the central database to control the EPCs is crucial in the prior art systems.

The ‘200 Patent

The ‘200 patent describes a method for managing serialization of Electronic Product Codes (EPCs). ‘200 Patent, Abstract. The EPCs are described as including a nonserialized portion 112 and a serialized portion 114. ‘200 Patent 3/56-58. The nonserialized portion 112 is described as specifying, for example, a manufacturer and an object classification. ‘200 Patent 3/65-66. The serialized portion 114 is specifically associated with an object. ‘200 Patent 4/8-9. The combination of the serialized portion 114 and the nonserialized portion 112 results in a unique identifier for an object. ‘200 Patent 4/9-11. The ‘200 patent states that “[t]he serialized values can be stored in [a] database table 126. ‘200 Patent 4/11-12.

A method of managing the EPCs is described with respect to Fig. 3. The method is described as follows:

Method 300 can begin in step 305, where multiple pools of numbers and/or number assignment functions can be associated with values for nonserialized portions of EPCs. In step 310, a new taggable object can be identified that needs an EPC. In step 315, a classification for the new object can be determined. In step 320, an unserialized portion of the EPC can be constructed from the classification information, in step 325, a pool of numbers and/or a number assignment function associated with the unserialized portion can be identified. In step 330, a last previously allocated serial number in the identified pool can be located. In step 335, the next unallocated serial number can be extracted from the pool and used as the serialized portion of the EPC. In step 340, the new EPC can be assigned to the new taggable object. In step 345, variables associated with the pool or function used to generate the assigned number can be updated to ensure that the assigned serial number is not reassigned to a different object having the same unserialized portion of an EPC. In step 350, the assigned EPC can be encoded into an RFID tag that can be physically linked to the object.

‘200 patent, 6/37-58.

The pool of numbers referred to in the above method of the ‘200 patent is described as follows:

[D]ifferent manufacturer divisions that produce objects having the same object classification can be assigned a subset of numbers from a number pool of unassigned numbers to ensure that unique serial numbers are always generated. For example, a serial number generation function used by a first division can sequentially assign odd serial numbers, while a different serial number generation function used by a second division can sequentially assign even serial numbers. In another example, a first division can assign serial numbers in the range of one to a million and the second division can assign serial numbers in a range of three to four million. *It should be appreciated that the different divisions can be communicatively linked to a centralized system that assigns serial numbers, which would ensure that serial numbers are uniquely assigned per object classification.*

‘200 patent, 5/7-22 (emphasis added).

Thus, the ‘200 patent describes that the serialized portion of the EPC number is assigned by central database to which the “the different divisions can be communicatively linked to a centralized system that assigns serial numbers, which would ensure that serial numbers are uniquely assigned per object classification.” ‘200 Patent, 5/18-22. That is, without the communication to the database of the centralized system, there is no manner of ensuring that the serial numbers are unique. *See*, Williams Decl. ¶¶ 38-41.

The ‘545 Patent

The ‘545 patent describes an “EPC provisioning system comprising a EPC server [that] dynamically provide[s] EPC code blocks for one product to multiple client sites. The EPC server can use business rules to determine the EPC codes for the multiple client sites.” ‘545 patent, Abstract. The entire thrust of the ‘545 patent is directed at a centralized server system to manage the EPC codes. For example, the ‘545 patent states, “an EPC server 402 [is] adapted to dynamically provide EPC code blocks 404 and 406 for one product to multiple client sites. The EPC server 402 can use business rules to determine the EPC codes for the multiple client sites 408 and 410.” ‘545 patent, 3/67 – 4/4. This centralized control over the EPC codes is implemented via “a computer implemented method using business rules to determine EPC code blocks for multiple client sites and providing the EPC code blocks to the multiple client sites.” ‘545 patent, 4/12-15.

The '545 patent describes the provisioning service for controlling EPCs. '545 patent, 35/1-67. First, the EPC Pool is defined as "[a] named list of EPCs maintained in the provisioning system." '545 patent, 35/4-5. The EPCs may be checked out or checked in to the pool by outside applications. '545 patent, 35/5-6. Using this paradigm, the '545 patent states:

Tag writing systems can use a central authority from which they can receive unique EPCs. The EPC Provisioning Service is designed to satisfy this need. In addition to providing a service to give out unique EPCs, a design goal is also to make it easy for administrators to define and maintain pools.

'545 patent, 35/14-18.

The EPC Provisioning Service described in the '545 patent is implemented by the central EPC server 402 because it is the central authority for distributing the unique EPCs. The Provisioning Service is described as "a web service that will provide generic provisioning related operations like administering EPC pools, checkout or check-in from EPC pools, etc." '545 patent 35/54-57. Thus, the EPC Provisioning Service described in the '545 patent is a central EPC server that controls all assignments of the EPCs to ensure that the assigned EPCs are unique. *See*, Williams Decl. ¶¶ 45-48.

Hardware-Based Encoding of the '967 Patent

The claimed invention of the '967 Patent provides a distinct hardware-based approach within the greater context of managing the encoding of EPCs. While the conventional approaches will result in an RFID tag encoded with a binary encoding in the SGTIN-96 format as would be the case with the '967 Patent, the way such a result is achieved by the claimed subject matter of the '967 Patent is decidedly different. *See*, Williams Decl. ¶¶ 26-27.

The '967 Patent focuses on the binary bits of the serial number of the EPC to impart information that provides for control of the assignment of serial numbers into each encoder and the memory structure of the RFID tag. This hardware-based approach of the '967 Patent manages assignment of the serial number at the binary bit level by partitioning the bits of the serial number space into a limited number of most significant bits ("MSB") and a remaining number of least significant bits ("LSB"). '967 Patent, 8/4-51 and 33/14-58. *See also*, Williams Decl. ¶ 28.

As described in the specification of the '967 Patent, pre-authorized blocks of object class serial numbers are provided by subdividing the entire object class serial number space into sectors that are defined by a limited number of MSB's (Most Significant Bits) of the serial number field. '967 Patent, 8/12-15. The remaining bits, the least significant bits, may then be used to represent unique serial number values. '967 Patent, 8/21-31. Thus, as described in the '967 Patent, "[e]ach allocated block of serial numbers represents authority for encoding objects of an object class that can either be used by an encoder for encoding transponders, or allocated to a lower level in the authority hierarchy." '967 Patent, 8/32-36. The '967 Patent describes that the result of using this hardware-based encoding method is that a ***"[c]ontinuous wireless connection to a host database is not required*** for ongoing tag commissioning process." '967 Patent 7/57-59 (emphasis added). *See also*, Williams Decl. ¶ 29.

Thus, using the claimed invention of the '967 patent, each encoder may be assigned a set of MSBs to use for a particular class of item for a particular brand owner. The encoder encodes the assigned MSBs for each item of that particular class into the leading bits of the serial number

space and generates a serial number that is encoded in the in the remaining bits of the serial number space. The technical expert, Charles B. Williams, provides an example of how the binary bit-based encoding according to the claims of the '967 Patent would be positioned within a SGTIN-96 format EPC:



See, Williams Decl. ¶ 34.

Generally, at its core, the tag encoding process is the same from the point of when the RFID tag data reaches the encoder. That is: Tag ID to encoder => encoder to chip in RFID tag. However, the way the tag ID itself is created differs greatly from system to system and this is where the hardware-based system of the claimed invention of the '967 Patent differentiates itself from the conventional methods. The partitioned serial number approach in the '967 Patent manages assignment of the serial number at the binary bit level, rather than sequential allocation of decimal or hexadecimal number strings from a database. *See, Williams Decl. ¶ 35.*

By partitioning the leading bits of the serial number and assigning fixed MSBs for an object class to encoders from different assembly lines, facilities, or parties, the brand owner can enable each of the encoders to operate semi-autonomously to encode tags for items of a particular class without being connected to the same EPC issuing database, the uniqueness of the serial number is ensured within and across the ranges of numbers that are assigned to each

encoder throughout the stream of commerce.

The Differences Between the Claims of the '967 Patent and the Cited References

As described above, the '967 Patent is directed to a hardware-based encoding at the bit level. This is recited in claim 1 as:

wherein the unique serial number space is encoded with one serial number instance from an allocated block of serial numbers, the allocated block being assigned a limited number of most significant bits, and

wherein the unique serial number space comprises the limited number of most significant bits corresponding to the allocated block and remaining bits of lesser significance that together comprise the one serial number instance.

Thus, as described above, the allocated block of serial numbers is “assigned a limited number of most significant bits” and the serial number space then comprises “the limited number of most significant bits ... and remaining bits of lesser significance.” This formulation of the hardware-based encoding allows for discontinuous connection to any database or central server, while still ensuring unique EPCs.

The Examiner has admitted that the '684 publication does not disclose the above recited claim elements. *See* Office Action, pp. 4 and 17. However, the Examiner has asserted that both the '200 patent and the '545 patent cure these deficiencies of the '684 publication. *See* Office Action, pp. 4-6 and 17-19. The patent owner respectfully disagrees.

With respect to the '200 patent, the Examiner asserts that the above-recited claim language is disclosed because 25 bits can be allocated to the serial number and because the '200

patent states,

In one embodiment, different manufacturer divisions that produce objects having the same object classification can be assigned a subset of numbers from a number pool of unassigned numbers to ensure that unique serial numbers are always generated. ... In another example, a first division can assign serial numbers in the range of one to a million and the second division can assign serial numbers in a range of three to four million.

See Office Action, p. 5 (internal citations omitted).

The patent owner respectfully disagrees with the Examiner's interpretation of this disclosure. This disclosure merely states that the serial number space may be 25 bits and that a division of sequential decimal serial numbers can be assigned. However, the claim language states, "*the allocated block being assigned a limited number of most significant bits.*" There is no assignment of a limited number of significant bits disclosed in the '200 patent. There is a disclosure of sequential decimal serial numbers (or in another example, sequential odd or even decimal serial numbers). The Examiner provides a purported example of how this relates to the bit level by converting the sequential decimal serial numbers to binary, but this is irrelevant to the claim language. In a subsequent section, the patent owner will describe in detail why the Examiner's example is incorrect and unworkable within the context of the '967 patent, but at this point, the fact that the conversion is performed by the prior art systems including the system of the '200 patent is irrelevant. The relevant question is whether the '200 patent discloses or suggests "*the allocated block being assigned a limited number of most significant bits.*" It does not.

The '200 patent is unconcerned with the bit level assigning of serial numbers. It is concerned with the assignment of sequential decimal serial numbers. There is no discussion of significant bits within the serial number of '200 patent, whether most significant or least significant. There is no discussion of a limited number of most significant bits. The only number mentioned for the serial number space is 25 bits as asserted by the Examiner. There is no hint or suggestion that these 25 bits could be split into "a limited number of most significant bits" and "remaining bits of lesser significance." The reason is simple, the system of the '200 patent assigns the of sequential decimal serial numbers under the continuous control of the central database and the conversion to the binary for storage in the tag is an inconsequential operation because it has no function in ensuring that the serial numbers are unique, that function is fulfilled by the central database. The serial number contains no information to give it any meaning outside of relationships associated with it in a database. Thus, there is no suggestion within the '200 patent, that allocated blocks should be assigned on the bit level.

The fact that one could pick some subset of blocks of serial numbers with common MSBs after the sequential decimal serial numbers are converted to binary is of no consequence. This is a backdoor analysis looking only at the end result. The claim language does not state that the allocated block "comprises" or "includes" a limited number of MSBs. The claim language is "the allocated block being *assigned* a limited number of most significant bits." That is, the limited number of MSBs is not happenstance or random like it would be when converting decimal serial numbers to binary. Rather, as recited in claim 1, the limited number of MSBs are specifically assigned. This assignment is important within the context of the '967 Patent because

the active management and assignment of the MSBs of the binary encoding of the serial number ensures uniqueness on the front end. Thus, it is the way the serial number that is created and managed by assigning MSBs at the binary level that distinguishes the claimed invention of the '967 Patent over the '200 patent.

In contrast, in the system disclosed in the '200 patent, unless all encoders receive the serial number for each tag from the same database, there is no way to fully ensure uniqueness of the EPC. The encoding of tags performed by encoders from different assembly lines, different facilities, and different parties at different levels within the stream of commerce could not be performed unless all of these encoders were all linked to the same centralized database to receive the serial numbers. *See*, Williams Decl. ¶¶ 42-44.

Thus, the patent owner respectfully submits that the '200 patent neither discloses nor suggests the above-highlighted language of claim 1.

With respect to the '545 patent, the Examiner asserts that the above-recited claim language is disclosed because "45 million total available EPC codes can be divided into blocks or pools of about five or ten million EPC codes." *See* Office Action, p. 18.

The patent owner respectfully disagrees with the Examiner's interpretation of this disclosure of the '545 patent for the same reasons as described above with reference to the '200 patent. Specifically, this disclosure merely states that EPC codes can be divided into blocks of sequential decimal numbers. There is no disclosure related to an assignment of a limited number of significant bits, either most or least significant. Again, there is no hint or suggestion that the EPC codes could be split into "a limited number of most significant bits" and "remaining bits of

lesser significance,” as recited in claim 1. Just like for the ‘200 patent, the reason is simple, the system of the ‘545 patent assigns the sequential decimal serial numbers under the continuous control of the central EPC server 402 acting as the EPC Provisioning Service and the conversion to the binary for storage in the tag is an inconsequential operation because it has no function in ensuring that the serial numbers are unique, that function is fulfilled by the EPC server. The serial number contains no information to give it any meaning outside of relationships associated with it in a database. Also, for the same reasons as described above for the ‘200 patent, the fact that one could pick some subset of blocks of serial numbers with common MSBs after the sequential decimal EPC codes are converted to binary is of no consequence. Thus, there is also no suggestion within the ‘545 patent, that allocated blocks should be assigned on the bit level.

In the ‘545 patent, unless all encoders receive the EPC directly from the central EPC server, there is no way to fully ensure uniqueness of the EPC. The encoding of tags performed by encoders from different assembly lines, different facilities, and different parties at different levels within the stream of commerce could not be performed unless all of these encoders were all linked to the same centralized database to receive the serial numbers. *See*, Williams Decl. ¶¶ 49-51.

Accordingly, for at least the reasons described above, neither the ‘200 patent nor the ‘545 patent disclose or suggest “wherein the unique serial number space is encoded with one serial number instance from an allocated block of serial numbers, the allocated block being assigned a limited number of most significant bits, and wherein the unique serial number space comprises the limited number of most significant bits corresponding to the allocated block and remaining

bits of lesser significance that together comprise the one serial number instance,” as recited in claim 1. Neither the ‘684 publication nor the 2006 EPC Standard cure these deficiencies of the ‘200 patent and the ‘545 patent.

Thus, the patent owner respectfully requests that the 35 U.S.C. § 103(a) rejections of claim 1 and its dependent claims 2-12 be withdrawn.

As described above, the independent claims 13 and 16 recite substantially similar subject matter as independent claim 1, thus, the 35 U.S.C. § 103(a) rejections of claim 13, its dependent claims 14-15, and claim 16, its dependent claims 17-20 should also be withdrawn.

Sequential Decimal Generated Blocks of Serial Numbers Do Not Align with Blocks of MSBs at Binary Level

On pages 5 and 18 of the Office Action, the Examiner provides several examples that purportedly show that it would be obvious to convert a block of decimal numbers to binary. Office Action, p. 5 and 18. The patent owner’s expert has described in detail why these examples are incorrect in the context of the claimed subject matter of the ‘967 Patent. *See*, Williams Decl. ¶¶ 54-60. In summary, the expert has demonstrated that the examples provided by the Examiner are essentially a *post hoc* example that is attempting to shoehorn a random selection of decimal numbers into the assignment of binary bits as recited in the claims of the ‘967 Patent.

Thus, the examples illustrate the fallacy of the Examiner’s rejection. That is, there is no suggestion within either the ‘200 patent or the ‘545 patent that serial numbers or EPC codes should be assigned at the bit level. Attempting to shoehorn various decimal numbers to fit a

binary level numbering scheme is practically the definition of impermissible hindsight. The Examiner is engaging in the faulty examples because of the teachings of the '967 Patent. This is illustrated by the fact that the examples fall apart because of the misalignment as shown by the expert. That is, if one were to use the examples of the serial numbers in decimal form as disclosed in the prior art, it simply would not work within the scheme of the claims of the '967 Patent. The entire point of the hardware-based solution provided by the '967 patent is that the assignment of the MSBs eliminates the need to be concerned with the decimal versions of the serial numbers. Neither the '200 patent nor the '545 patent disclose or suggest such a binary assignment method.

While the patent owner does not wish to engage in hyperbole, the patent owner can see no reason why one skilled in the art would take the disclosure of the sequential decimal serial numbers in the asserted references to suggest that the allocated block should be “*assigned* a limited number of most significant bits” and “wherein the unique serial number space comprises the limited number of most significant bits corresponding to the allocated block and remaining bits of lesser significance that together comprise the one serial number instance,” as recited in claim 1. If the Examiner were to maintain the rejection, the patent owner respectfully requests the Examiner to elaborate on the purported suggestion with the cited references concerning this issue.

Accordingly, for these additional reasons, the that the 35 U.S.C. § 103(a) rejections of claim 1, its dependent claims 2-12, claim 13, its dependent claims 14-15, and claim 16, its dependent claims 17-20, should also be withdrawn.

CONCLUSION

For the reasons set forth above, the patent owner respectfully requests that the Patent Office withdraw all the rejections of the claims and allow claims 1- 20.

Respectfully submitted,

Date: April 2 2018

By: /Michael J. Marcin/
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EXHIBIT A

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Ex Parte Reexamination of:	)	
	)	
U.S. Patent No. 9,798,967	)	
	)	
Control No.: 90/014,052	)	Group Art Unit: 3992
	)	
Filed: November 29, 2017	)	Examiner: Christina Y. Leung
	)	
For: SYSTEMS, METHODS, AND	)	
DEVICES FOR COMMISSIONING	)	
WIRELESS SENSORS	)	
	)	
Confirmation No.: 4770	)	

DECLARATION OF CHARLES B. WILLIAMS UNDER 37 C.F.R. §1.132

I, Charles B. Williams, hereby declare as follows:

1. I have been retained by ADASA, INC. (“ADASA”) as a technical expert for the above captioned reexamination. I am over twenty-one years of age and of sound mind. The facts stated herein are known to me of my own personal knowledge. If called upon, I would to testify to as to the matters stated herein and I am competent to do so.

2. I understand that this reexamination involves U.S. Patent No. 9,798,967 (“the ‘967 Patent” which resulted from Application 15/042,993, filed on February 12, 2016 and names Clarke W. McAllister as the sole inventor. I understand that each of the claims 1-20 of the ‘967 Patent is subject to reexamination. I further understand that the ‘967 Patent is currently assigned to ADASA.

3. I have reviewed the Office Action dated February 1, 2018 issued by the United States Patent and Trademark Office (“USPTO”) in this reexamination. I understand that each of the claims of the ‘967 Patent is subject to two separate rejections under pre-AIA 35 U.S.C. §

103(a). The rejections are as follows:

- a. Claims 1, 6-12, 16, and 20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over US 2007/0040684 A1 to McAllister (“the ‘684 publication”) in view of US 7,827,200 B2 to Rowe (“the ‘200 patent”).
 - b. Claims 2-5, 13-15, and 17-19 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the ‘684 publication in view of the ‘200 patent and EPCglobal Tag Data Standards, Version 1.3, March 8, 2006 (“the 2006 EPC Standard”).
 - c. Claims 1, 6-12, 16, and 20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the ‘684 publication in view of US 8,373,545 B2 to Traub (“the ‘545 patent”).
 - d. Claims 2-5, 13-15, and 17-19 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the ‘684 publication in view of the ‘545 patent and the 2006 EPC Standard.
4. I have reviewed each of the references cited above.
 5. I am familiar with the provisions of pre-AIA 35 U.S.C. § 103(a), which states:
 - (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 , if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
 6. I have been asked to provide my opinion regarding whether or not a person of ordinary skill in the art at the time of invention defined by claims 1-20 of the ‘967 Patent would understand the various combinations of the above references to render these claims obvious. For the reasons set forth below, it is my opinion that a person of ordinary skill in the art would not

have found claims 1-20 of the '967 Patent to be obvious over the above combinations of references.

7. I understand that the priority date of the subject matter of claims 1-20 of the '967 Patent is May 21, 2008 and my analysis considers this date the time of invention.

QUALIFICATIONS

8. My curriculum vitae ("CV") is attached hereto as Exhibit 1 and is incorporated by reference. It sets forth the details of my educational history, work history, patents, and other related experience. A brief summary of some of my relevant background is provided below.

9. I have a BS from Dickinson College (1984), some advanced degree work at George Mason University (not completed) and numerous professional courses. I have been employed as a software engineer, holding various titles and responsibilities since 1984. I was a co-founder and CTO of epcSolutions in 2003. epcSolutions developed a RFID application and platform that I designed and architected and largely implemented. epcSolutions sold over 300 copies of our RFIDTagManager software and worked on over 50 custom RFID projects. The RFID application grew into a complete RFID platform capable of managing any type of asset with a RFID tag. In 2008, I authored a Patent Application that combined RFID with Biometric Facial Recognition for identification purposes that was granted but never issued due to non-payment of fees required to issue the patent. In 2010, epcSolutions became the sole RFID provider for iGPS and built the largest RFID track/trace system managing over 15 million reusable black plastic pallets. I have remained active in the RFID industry and I am currently building a new RFID platform based on the work I did at epcSolutions.

MY UNDERSTANDING OF OBVIOUSNESS

10. It is my understanding that a claimed invention is unpatentable if the differences between the claimed invention and the prior art are such that the subject matter as a whole would

have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains.

11. It is my understanding that “obviousness” is a question of law based on underlying factual issues including the content of the prior art and the level of skill in the art. I understand that for a combination of references to render the claimed invention obvious, there must be some reason why a person of ordinary skill in the art would have arrived at the claims by modifying, combining or otherwise applying the teachings of the applied references.

12. I also understand that when considering the obviousness of a patent claim, one should consider whether a teaching, suggesting or motivation to combine the references exists so as to avoid impermissibly applying hindsight when considering the prior art. I understand that this test should not be rigidly applied, but that the test can be important to avoiding such hindsight.

BACKGROUND OF RFID TECHNOLOGY

13. RFID technology has been in use since World War II where it was first used as Friend or Foe identification technology. The first consumer uses of RFID happened in the 1990’s, where Mobile’s Speedpass technology initially utilized near-field RFID. The first uses of the Electronic Product Code (“EPC”) Gen2 RFID for item tracking, inventorying, warehousing, and other applications occurred in the early 2000’s and began to take off when Walmart and the U.S. Department of Defense mandated their use around 2003.

14. RFID tags, or transponders, are affixed to items to identify and track those items as they move through the stream of commerce. RFID has become preferable and is slowly augmenting the prior art tagging systems, such as bar codes, because RFID can accommodate specific identification of the item to which it is affixed, rather than merely identifying items by class or type. Due to the item-specific nature of RFID tagging, a critical aspect to proper function

of RFID systems, therefore, is ensuring that every RFID transponder, throughout the entirety of the stream of commerce, is assigned a unique EPC.

15. EPC Gen2 RFID tags have a memory bank that is encoded with a tag ID of either 96 or 128 binary bits (0's and 1's) that are represented as 24 or 32 hexadecimal characters to enable humans to read them and compare with other values. The pattern of bits encoded into tags is specified in RFID tag encoding standards written and maintained by EPCGlobal under the auspices of GS1.

16. For merchandise tracking applications, the memory bank of an RFID tag is encoded with a tag ID known as an EPC, which is an identifier for an item in the supply chain to uniquely identify that particular item. The EPC can be encoded in accordance with one of various EPC tag data standards set by GS1 for a serialized identifier, such as a Serialized Global Trade Item Number ("SGTIN") number, which includes a combination of object class information and a serial number.

17. Within the object class information of the EPC, each brand owner is provided with a company prefix to identify the brand owner and an item reference code to identify the class of the items being tagged. As such, all the EPCs within a particular class for a particular brand owner will have the same object class information but will be different from other classes of items provided by that same brand owner or other classes of items from other companies. This information correlates to that of a Global Trade Item Number ("GTIN") as would be contained within a barcode. For RFID applications, this information would be written in decimal form and referred to as an unserialized identity Uniform Resource Identifier ("URI") for an EPC. For example, the unserialized identity URI of the EPC may read as:

EPC Pure URI
urn:epc:id:sgtin:012345.67890

18. A serial number is then issued for a particular item within the class of items for that brand owner as an integer in decimal form. By issuing a unique serial number for each item, the serialized EPC of each item within the class for that brand owner will be unique. However, the EPC is only truly unique if the brand owner ensures that the serial number of the EPC is unique within all the tags encoded for the class of items. The GS1 serialization guideline states that it is the brand owner's responsibility to ensure that each serial number, and therefore each EPC, is unique.

19. The serial number is then combined with the object class information from the unserialized URI to provide a serialized identity URI of an EPC (e.g., the SGTIN). The serialized identity URI of the EPC may read as:

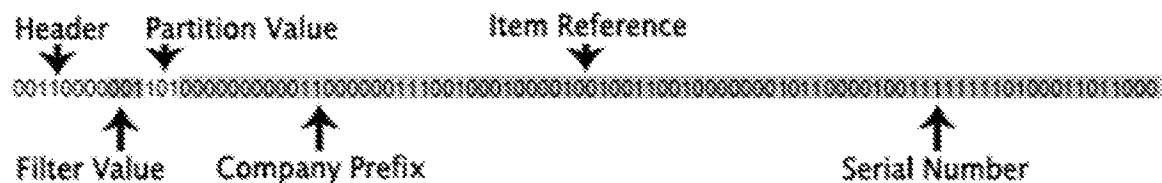
EPC Pure URI
urn:epc:id:sgtin:012345.67890.10479832

20. This serialized identity of the EPC is provided from the database to the encoder, which converts the EPC to binary format in which the bits of each field are concatenated in the proper order for the chosen format of the EPC for encoding to the RFID tag. The binary format of the EPC may be SGTIN-96, which includes 8 bits for the header identifying the EPC format, 50 bits for object class information including a filter value, partition value, company prefix, and item reference number, and 38 bits for a serial number.

A typical EPC SGTIN-96 Structure:

Header	Filter / Object Type	Partition	Company Prefix	Item Ref and Indicator	Serial
8 bits	3 bits	3 bits	20- 40 bits	24 - 4 bits	38 bits

EPC SGTIN-96 Binary



21. Typically, the process of providing the EPC to the encoder is performed by a software application that uses a database to retrieve the base values required to encode a RFID tag as well as saving the values of the generated RFID tag IDs. For some of the encoding standards, one of the fields is a serial number. The serial numbers are typically stored and tracked in the database in decimal form and can be retrieved individually or in blocks by the software that generates the tag IDs that need to be encoded into a collection of RFID tags.

22. In most cases, one serial number or a set of serial numbers is retrieved from the database at any given time, and in most cases an encoder is only encoding tags for one specific product (identified by a GTIN, which is also encoded in the object class information of the tag ID.)

23. A second process to encode RFID tags involves using a barcode scan to read a UPC, software to convert the UPC to a GTIN, use the GTIN to lookup the next serial number in the database and use those two values to encode the RFID tag. This process involves fetching one serial number at a time from the database and then updating the database with the resulting RFID tag ID.

24. Neither of these scenarios provide for disconnected or semiautonomous operation.

This means that all components of the ecosystem (reader/encoder, software application and database) must be running and connected for the encoding RFID tags to take place.

25. One of the larger challenges to using RFID to track inventory in the supply chain is item level tagging. The initial Walmart and U.S. Department of Defense RFID mandate focused on using RFID tags on cases and pallets of goods being shipped to either entity. Item level tagging places an RFID tag on every individual item, not just the cases and pallets. The benefit of item level tagging is that it allows front-of-store inventory to be done much faster as the shelves would only need to be scanned with an RFID reader and not have each item hand counted.

THE SUBJECT MATTER OF THE '967 PATENT

26. In the mid 2000's, epcSolutions and ADASA worked together on an Item Level Tagging project for Walmart Canada. The project would use epcSolutions' RFID Tag Manager software and ADASA's RFID printer encoder to achieve an item level tagging solution for Walmart Canada.

27. One of the requirements for this project was the ability to print/encode RFID item tags while disconnected from the network. To meet this requirement, ADASA developed the capability for the ADASA printer/encoder to store a block of serial numbers for multiple different products (Batch mode), as well the capability to encode independently for ad hoc items that did not have a block of reserved serial numbers (Ad Hoc mode). This Ad Hoc mode is the essence of the '967 Patent as I understand it. *See e.g.*, '967 Patent. Col. 8, lines 4-51 (hereinafter 8/4-51).

28. For Ad Hoc mode, as in accordance with the '967 Patent, the printer/encoder may be assigned a binary number having "a limited number of MSB's (Most Significant Bits)" that was unique to that printer/encoder within a company, enterprise, or location. '967 Patent 8/9-15. For items that were not the type of one of the selected classes for which blocks of serial numbers were

stored, the printer/encoder can then self-generate an EPC in SGTIN-96 format, which includes object class information read from the bar code and a serial number in which the most significant bits are assigned the unique number of that printer/encoder. '967 Patent 8/16-25. The trailing bits of the serial number utilize a first serial number of the block allocated for that printer/encoder. The count of the serial numbers of this block may then be incremented and stored in the printer/encoder's memory. For additional items of that same type that are encountered, the printer/encoder can generate an SGTIN-96 utilizing the next stored serial number in the allocated block. '967 Patent 8/27-31.

29. The benefit of Ad Hoc mode, as described in '967 Patent, is that a "[c]ontinuous wireless connection to a host database is not required for ongoing tag commissioning process." '967 Patent 7/57-59. For example, using the Ad Hoc mode, the items of unselected classes could be tagged in the front of the store or in the back of the store and the encoding would still be ensured to be unique due to the unique number assigned to the printer/encoder. If there was not an available means to uniquely encode/print tags, the items would need to be removed from the shelf and taken to a different location to be tagged or the people tagging the items would need to be able to properly place pre-printed/encoded tags on the proper items. This is time consuming and fraught with risk, as there would not be any checks and balances to ensure the correct tags were placed on the proper items.

30. Independent Claim 1 of the '967 patent recites:

An RFID transponder comprising:

a substrate;

an antenna structure formed on the substrate; and

an RFID integrated circuit chip which is electrically coupled to the antenna structure,

wherein the RFID integrated circuit chip is encoded with a unique object number, the unique object number comprising an object class information space and a unique serial number space,

wherein the unique serial number space is encoded with one serial number instance from an allocated block of serial numbers, the allocated block being assigned a limited number of most significant bits, and

wherein the unique serial number space comprises the limited number of most significant bits corresponding to the allocated block and remaining bits of lesser significance that together comprise the one serial number instance.

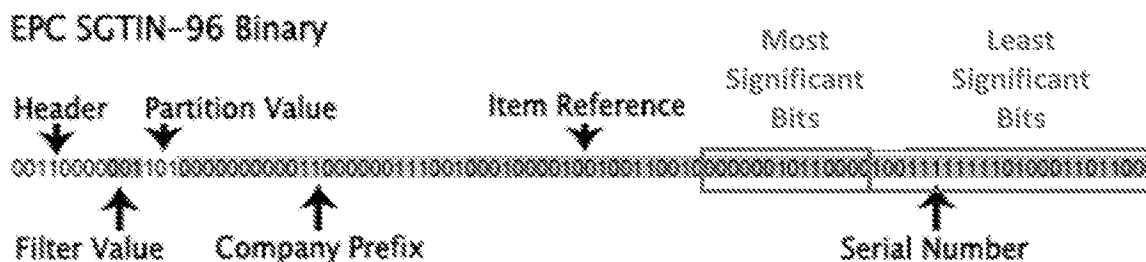
31. The other independent claims 13 and 16 of the '967 Patent recite substantially the same subject matter as recited above for claim 1.

32. Thus, as reflected in the '967 Patent and with Ad Hoc mode, the claimed invention is directed to RFID tags which are commissioned using a partitioned serial number portion of a binary representation of the EPC to ensure uniqueness of the EPC encoded in the tag without the need to maintain constant communication with a database. The partitioned serial number portion includes a first section of a limited number of most significant bits and a second section of bits of lesser significance. The most significant bits are assigned a unique string of binary bits to define a block of serial numbers to be used for a particular encoder and the second section of bits of lesser significance are generated by the encoder to complete a unique serial number. I understand this to be specifically claimed in the '967 Patent based on the above highlighted portion of claim 1.

33. This concept described in the '967 Patent of assigning the most significant bits of the serial number space for ensuring uniqueness can be applied to in-store encoding equipment (such as with Ad Hoc mode) but can also be implemented for encoders of different manufacturing lines, manufacturing facilities, distribution facilities, retail stores, and by third party encoders

across the stream of commerce.

34. An example of a partitioned serial number of an EPC comprising 14 “most significant bits” and the remaining 24 comprising the “least significant bits” according to the ‘967 Patent is shown below:



35. Generally, at its core, the tag encoding process is the same from the point of when the RFID tag data reaches the encoder. That is: Tag ID to encoder => encoder to chip in RFID tag. However, the way the tag ID itself is created differs greatly from system to system and this is where the hardware-based system of the claimed invention of the ‘967 Patent differentiates itself from the conventional methods. The partitioned serial number approach in the ‘967 Patent manages assignment of the serial number *at the binary bit* level, rather than sequential allocation of decimal or hexadecimal number strings from a database.

THE REFERENCES PROVIDED BY THE EXAMINER

36. I have reviewed all of the references cited by the Examiner, but the following discussion will focus on the ‘200 patent and the ‘545 patent as it is my understanding that the Examiner has asserted that these references teach the above highlighted claim language of claim 1 and the corresponding language of claims 13 and 16.

37. Prior to discussing the references individually, it may be generally stated that at the time of invention of the ‘967 Patent, the ‘200 patent and the ‘545 patent would have been considered the conventional manner of approaching the assignment of EPCs. Specifically, both

references divide the EPCs or the serial numbers into pools or blocks that are assigned different sites and these divisions are managed by a central database.

38. The '200 patent describes a method for managing serialization of ELECTRONIC PRODUCT CODES (EPCs). '200 Patent, Abstract.

39. Fig. 3 shows a method 300 for managing the EPCs and is described as follows:

Method 300 can begin in step 305, where multiple pools of numbers and/or number assignment functions can be associated with values for nonserialized portions of EPCs. In step 310, a new taggable object can be identified that needs an EPC. In step 315, a classification for the new object can be determined. In step 320, an unserialized portion of the EPC can be constructed from the classification information, in step 325, a pool of numbers and/or a number assignment function associated with the unserialized portion can be identified. In step 330, a last previously allocated serial number in the identified pool can be located. In step 335, the next unallocated serial number can be extracted from the pool and used as the serialized portion of the EPC. In step 340, the new EPC can be assigned to the new taggable object. In step 345, variables associated with the pool or function used to generate the assigned number can be updated to ensure that the assigned serial number is not reassigned to a different object having the same unserialized portion of an EPC. In step 350, the assigned EPC can be encoded into an RFID tag that can be physically linked to the object.

'200 patent, 6/37-58.

40. The pool of numbers referred to in the above method of the '200 patent is described as follows:

[D]ifferent manufacturer divisions that produce objects having the same object classification can be assigned a subset of numbers from a number pool of unassigned numbers to ensure that unique serial numbers are always generated. For example, a serial number generation function used by a first division can sequentially assign odd serial numbers, while a different serial number generation function used by a second division can sequentially assign even serial numbers. In another example, a first division can assign serial numbers in the range of one to a million and the second division can assign serial numbers in a range of three to four million. It should be appreciated that the different divisions can be communicatively

linked to a centralized system that assigns serial numbers, which would ensure that serial numbers are uniquely assigned per object classification.

‘200 patent, 5/7-22.

41. Thus, the ‘200 patent requires that “the different divisions can be communicatively linked to a centralized system that assigns serial numbers, which would ensure that serial numbers are uniquely assigned per object classification.” ‘200 Patent, 5/18-22.

42. This method of having to communicate with a central database to ensure that serial numbers are uniquely assigned is wholly different from the Ad Hoc method described and claimed by the ‘967 Patent. In the ‘200 patent, unless all encoders receive the serial number for each tag from the same database, there is no way to fully ensure uniqueness of the EPC. The encoding of tags performed by encoders from different assembly lines, different facilities, different parties at different levels within the stream of commerce could not be performed unless all of these encoders were all linked to the same centralized database to receive the serial numbers.

43. As described above, the claimed subject matter of the ‘967 Patent allows the encoder to be disconnected from the host database. In direct contrast, the ‘200 patent requires there to be a continuous connection so that serial numbers are not repeated. Thus, it is my opinion that the ‘200 patent does not disclose the above recited claim language of the ‘967 Patent.

44. Further, it is my opinion that combining the subject matter of the ‘200 patent with the other references provided by the Examiner, the ‘684 publication and the 2006 EPC Standard would not result in the claimed subject matter of the ‘967 Patent because any such combination of the references would still result in the system having to remain connected to a central database to ensure that unique serial numbers were being assigned.

45. The '545 patent describes an "EPC provisioning system comprising a EPC server [that] dynamically provide[s] EPC code blocks for one product to multiple client sites. The EPC server can use business rules to determine the EPC codes for the multiple client sites." '545 patent, Abstract.

46. The entirety of the '545 patent is directed to "an EPC server 402 adapted to dynamically provide EPC code blocks 404 and 406 for one product to multiple client sites. The EPC server 402 can use business rules to determine the EPC codes for the multiple client sites 408 and 410." '545 patent, 3/67 – 4/4.

47. The manner of controlling the EPC codes is "a computer implemented method using business rules to determine EPC code blocks for multiple client sites and providing the EPC code blocks to the multiple client sites." '545 patent, 4/12-15.

48. Thus, the '545 patent uses a central server that implements business rules to determine the entire EPC and issue these EPCs as a manner of managing the assignment of the EPC. In fact, the '545 patent specifically states:

Tag writing systems can use a central authority from which they can receive unique EPCs. The EPC Provisioning Service is designed to satisfy this need. In addition to providing a service to give out unique EPCs, a design goal is also to make it easy for administrators to define and maintain pools.

'545 patent, 35/14-18.

49. Similar to the '200 patent, this method of having to communicate with a central server to ensure that EPCs are uniquely assigned is wholly different from the Ad Hoc method described and claimed by the '967 Patent. In the '545 patent, unless all encoders receive the EPC directly from the central server, there is no way to fully ensure uniqueness of the EPC. The encoding of tags performed by encoders from different assembly lines, different facilities, different

parties at different levels within the stream of commerce could not be performed unless all of these encoders were all linked to the same centralized database to receive the serial numbers.

50. As described above, the claimed subject matter of the '967 Patent allows the encoder to be disconnected from the host database. In direct contrast, the '545 patent requires the central server to assign each unique EPC. Thus, it is my opinion that the '545 patent does not disclose the above recited claim language of the '967 Patent.

51. Further, it is my opinion that combining the subject matter of the '545 patent with the other references provided by the Examiner, the '684 publication and the 2006 EPC Standard would not result in the claimed subject matter of the '967 Patent because any such combination of the references would still result in the system having to remain connected to a central server to ensure that unique serial numbers were being assigned.

52. In summary, each of the references used by the Examiner require all encoders receive the EPC or serial number for each tag from the same database, as there is no other way to fully ensure uniqueness of the EPC. This is completely different from the Ad Hoc method that is described and claimed in the '967 Patent. Thus, it is my opinion that the combination of references used by the Examiner does not render the claims of the '967 Patent obvious.

53. In conclusion, none of the references cited by the Examiner disclose or suggest, “wherein the unique serial number space is encoded with one serial number instance from an allocated block of serial numbers, the allocated block being assigned a limited number of most significant bits” and “wherein the unique serial number space comprises the limited number of most significant bits corresponding to the allocated block and remaining bits of lesser significance that together comprise the one serial number instance,” as recited in each of the independent claims of the '967 Patent.

TECHNICAL ERROR IN THE OFFICE ACTION

54. In reviewing the Office Action, the Examiner provides several examples that purportedly show that it would be obvious to convert a block of decimal numbers to binary. Office Action, p. 5 and 18. In one specific example, a block of one million serial numbers in decimal form is asserted to require 20 bits in binary form. Office Action, p. 5. However, it is my opinion that the examples provided by the Examiner are technically incorrect because they do not provide a proper correlation between binary numbers and decimal numbers. Specifically, the decimal numbers in such blocks would not properly align with the bits when doing such a conversion and would not solve the problem at hand when assigning numbers according to the claims of the '967 Patent.

55. The example provided on page 5 of the Office Action and expanded upon is as follows:

Decimal: 0 to 1 million

Hexadecimal: FFFFF (hex), which is 0 to 1,048,575 (decimal)

Binary: FFFFF (hex) converts to 11111111111111111111 (binary)

56. This misalignment between decimal and binary would be reflected in the inability to assign a single set of binary MSBs to set off a block of decimal serial number blocks. The decimal serial number may have overlapping binary MSBs. For example, the blocks 0 to 1 million and 1 to 2 million overlap into the binary MSB space called 00001. Overlaps would also occur at each other higher boundary between decimal blocks that are divisible by 1 million, as follows:

0 to 999,999 (decimal): 0x00000 to 0xF423F (hex) MSB's: 00000
1,000,000 to 1,999,999 (decimal): 0xF4240 to 0x1E847F (hex) MSB's: 00000 and 00001
2,000,000 to 2,999,999 (decimal): 0x1E8480 to 0x2DC6BF (hex) MSB's 00001 and 00010
3,000,000 to 3,999,999 (decimal): 0x2DC6C0 to 0x3D08FF (hex) MSB's: 00010 and 00011

57. These examples illustrate that the Examiner's example falls apart when subsequent blocks are assigned based on even increments 1 million (decimal). The above number blocks show that the 5-bit MSB's sometimes require more than one value to allocate numbering space to accommodate the decimal-based blocks. Therefore, mixing binary MSB block allocations with decimal numbers is like mixing apples with oranges.

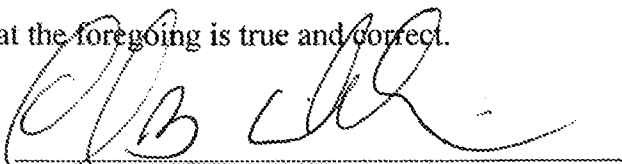
58. It is my understanding that the Examiner has provided these examples because neither the '200 patent nor the '545 patent disclose the binary bit-based number assignment as recited in the claims of the '967 Patent and the Examiner is using these examples to assert that it would be obvious to make such a conversion.

59. In my opinion, this is not correct as the decimal numbers disclosed by the references do not lend themselves to the binary bit-based number assignment recited in the claims of the '967 Patent for the reasons described above. The entire point of the hardware based solution provided by the '967 patent is that it eliminates the need for such a conversion as all assignments are based on the MSBs. Neither the '200 patent nor the '545 patent disclose or suggest such a binary assignment method or the fact that MSBs solve the conversion issue.

60. Thus, in addition to the reasons described above, it is also my opinion that the prior art references used by the Examiner that rely on generating serial numbers in decimal form and presenting the EPC to the encoder in hexadecimal form as the pure identity URI of the EPC do not render the claims of the '967 Patent obvious.

I declare under penalty of perjury that the foregoing is true and correct.

Executed: March 30, 2018.


Charles B. Williams



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05/14/2018

PAPER

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***EX PARTE* REEXAMINATION COMMUNICATION TRANSMITTAL FORM**

REEXAMINATION CONTROL NO. 90/014,052.

PATENT NO. 9,798,967.

ART UNIT 3992.

Enclosed is a copy of the latest communication from the United States Patent and Trademark Office in the above identified *ex parte* reexamination proceeding (37 CFR 1.550(f)).

Where this copy is supplied after the reply by requester, 37 CFR 1.535, or the time for filing a reply has passed, no submission on behalf of the *ex parte* reexamination requester will be acknowledged or considered (37 CFR 1.550(g)).

DETAILED ACTION

Reexamination

1. On December 20, 2017, *ex parte* reexamination was ordered for claims 1-20 (all claims) of US 9,798,967 B2 (“967 Patent”). **Claims 1-20** (all claims) of 967 Patent are being reexamined in this proceeding.

References and Documents Cited in this Action

967 Patent (US 9,798,967 B2)

684 Publication (US 2007/0040684 A1 to McAllister)

200 Patent (US 7,827,200 B2 to Rowe)

545 Patent (US 8,373,545 B2 to Traub)

2006 EPC Standard (EPCglobal Tag Data Standards, Version 1.3, March 8, 2006)

PO Response (response filed by Patent Owner [PO] on April 2, 2018)

Williams Declaration (declaration of Charles B. Williams filed by PO on April 2, 2018)

3PR Request (request for *ex parte* reexamination filed by Third-Party Requester [3PR] on November 29, 2017)

Parent Applications and Effective Filing Date

2. 967 Patent issued on October 24, 2017 from application 15/042,993 filed on February 12, 2016, which is a continuation of parent application 13/526,520 filed on June 19, 2012. 13/526,520 is a continuation-in-part of 12/820,109, filed on June 21, 2010, which is a continuation-in-part of 11/465,712, filed on August 18, 2006, and a continuation-in-part of 12/124,768, filed on May 21, 2008. 967 Patent also claims priority to two provisional applications: 60/709,713, filed on August 19, 2005; and 60/939,603, filed on May 22, 2007.

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3. A review of the specifications of these applications indicates that 12/124,768, filed on May 21, 2008, appears to be the earliest disclosure that contains support for the claim limitations directed to a unique object number (e.g., including a unique serial number space encoded with one serial number instance from an allocated block of serial numbers that is assigned a limited number of most significant bits). Therefore, the effective filing date of claims 1-20 (all claims) in 967 Patent is May 21, 2008.

4. Furthermore, the present application is being examined under the pre-AIA first to invent provisions.

Summary of Rejections

5. Claims 1-20 are each rejected twice under 35 U.S.C. 103 as follows.

Claims 1, 6-12, 16, and 20 are rejected under 35 U.S.C. 103 as being unpatentable over 684 Publication in view of 200 Patent.

Claims 2-5, 13-15, and 17-19 are rejected under 35 U.S.C. 103 as being unpatentable over 684 Publication in view of 200 Patent and 2006 EPC Standard.

Claims 1, 6-12, 16, and 20 are rejected under 35 U.S.C. 103 as being unpatentable over 684 Publication in view of 545 Patent.

Claims 2-5, 13-15, and 17-19 are rejected under 35 U.S.C. 103 as being unpatentable over 684 Publication in view of 545 Patent and 2006 EPC Standard.

Claim Rejections - 35 USC § 103

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

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made

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to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

35 USC § 103 Rejections based on 200 Patent

7. **Claims 1, 6-12, 16, and 20** are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over **684 Publication** in view of **200 Patent**.

Regarding **claim 1**, 684 Publication discloses an RFID transponder 50 (Figures 2 and 3; paragraphs [0003]-[0004], [0041], and [0049]) comprising:

a substrate 58 (paragraph [0049]);

an antenna structure formed on the substrate (i.e., antenna layer 54; paragraph [0049]);

and

an RFID integrated circuit chip 56, which is electrically coupled to the antenna structure (paragraph [0049]),

wherein the RFID integrated circuit chip is encoded with a unique object number (e.g., specific information associated with a specific object so that the specific object is associated with a unique RFID transponder; paragraph [0003]).

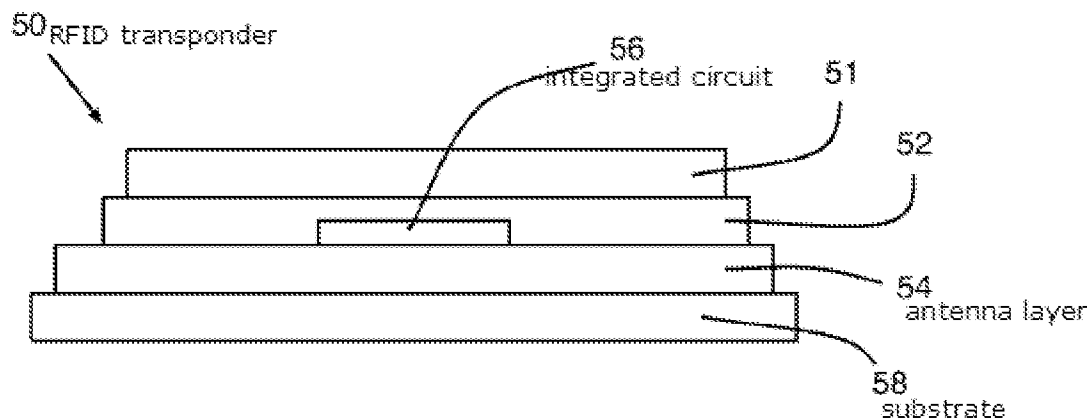


FIG. 3

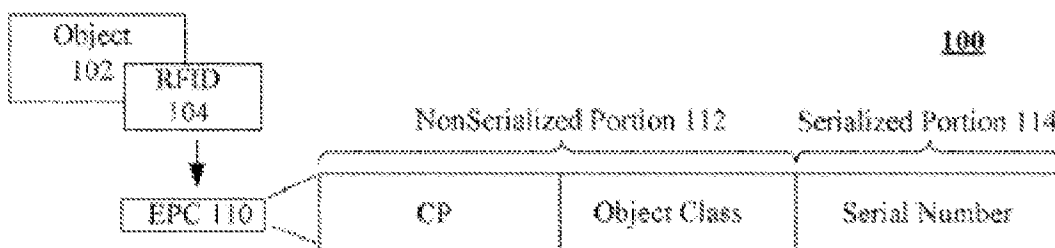
(684 Publication, annotated)

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684 Publication generally discloses a unique object number but does not specifically disclose that the unique object number comprises an object class information space and a unique serial number space, wherein the unique serial number space is encoded with one serial number instance from an allocated block of serial numbers, the allocated block being assigned a limited number of most significant bits, and wherein the unique serial number space comprises the limited number of most significant bits corresponding to the allocated block and remaining bits of lesser significance that together comprise the one serial number instance.

However, 200 Patent teaches a system that is related to the one disclosed by 684 Publication, including an RFID tag 104 with a unique object number (i.e., an Electronic Product Code [EPC] identifier 110; Figure 1; column 1, lines 12-46; and column 3, lines 19-29). 200 Patent further teaches that the unique object number comprises an object class information space (i.e., Object Class in Non Serialized Portion 112) and a unique serial number space (i.e., Serial Number in Serialized Portion 114; Figure 1; column 3, lines 56-67; and column 4, lines 1-12).

(portion of **FIG. 1** of 200 Patent)



200 Patent further teaches that the unique serial number space is encoded with one serial number instance from an allocated block of serial numbers, the allocated block being assigned a limited number of most significant bits, and wherein the unique serial number space comprises the limited number of most significant bits corresponding to the allocated block and remaining

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bits of lesser significance that together comprise the one serial number instance. More specifically, 200 Patent teaches that for example, 25 bits can be allocated to the serial number (column 6, lines 3-8) and that

“In one embodiment, different manufacturer divisions that produce objects having the same object classification can be assigned a subset of numbers from a number pool of unassigned numbers to ensure that unique serial numbers are always generated....In another example, a first division can assign serial numbers in the range of one to a million and a second division can assign serial numbers in a range of three to four million.”

See column 5, lines 7-22. It would be well understood in the art that a block of one million serial numbers would require at least 20 bits in binary, and that in a serial number space having a total of 25 bits (such as taught by 200 Patent), a first block of numbers from “one to a million” would be expressed as 25-bit binary numbers 000000000000000000000000001 to about 000001111111111111111111111. A different block of numbers in a range of about “three to four million” can be expressed as binary numbers 000110000000000000000000000 to 000111111111111111111111111, for example¹.

Thus 200 Patent teaches that an allocated block of serial numbers is assigned a limited number of most significant bits because in a 25-bit serial number, the five most significant bits (e.g., “00000,” “00011,” etc.) correspond to a particular block containing about a million serial numbers and therefore also correspond to a particular manufacturer division as taught by 200 Patent. 200 Patent further teaches that the limited number of most significant bits (e.g., the five most significant bits) and the remaining bits of lesser significance (e.g., the 20 least significant bits) comprise the one serial number instance having 25 bits in all.

¹ More precisely, 00000111111111111111111111111111 (binary) is 1,048,575 (decimal). 00011000000000000000000000000000 is 3,145,728. 00011111111111111111111111111111 is 4,194,303.

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Regarding claim 1, it would have been obvious to a person of ordinary skill in the art to provide a unique serial number space encoded with one serial number instance from an allocated block of serial numbers as taught by 200 Patent, in the RFID transponder disclosed by 684 Publication, in order to advantageously ensure that unique serial numbers are generated even for objects that have the same object classification but are produced by different manufacturer divisions as taught by 200 Patent.

Regarding **claim 6**, in the system suggested by 684 Publication in view of 200 Patent, 200 Patent further teaches that the allocated block is defined by at least three most significant bits (e.g., five most significant bits, in the example discussed above with regard to claim 1).

Regarding **claim 7**, in the system suggested by 684 Publication in view of 200 Patent, 684 Publication further discloses an encoder 30 (684 Publication, Figure 3; paragraphs [0038]-[0039]), and 200 Patent teaches a plurality of allocations associated with different manufacturer divisions as discussed above with regard to claim 1. 200 Patent further teaches that the allocated block is one of a plurality of allocations intermittently received by an encoder at least in the sense that 200 Patent teaches that encoders in different manufacturing divisions are “linked to a centralized system that assigns serial numbers” (200 Patent, column 5, lines 18-22) and each encoder identifies its corresponding pool or block of allocated numbers, then encodes serial numbers from that pool (i.e., steps 325, 335, and 350 in Figure 3; column 6, lines 37-58).

Regarding **claim 8**, in the system suggested by 684 Publication in view of 200 Patent, 684 Publication further discloses that the RFID integrated circuit chip is comprised of silicon (paragraphs [0005]-[0006]).

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Regarding **claim 9**, in the system suggested by 684 Publication in view of 200 Patent, 684 Publication further discloses that the RFID integrated circuit chip is comprised of polymer (paragraphs [0005]-[0006]).

Regarding **claim 10**, in the system suggested by 684 Publication in view of 200 Patent, 684 Publication further discloses that the substrate 58, antenna structure 54, and RFID integrated circuit chip 56 are covered by a face stock material 51 (Figure 3; paragraph [0049]).

Regarding **claim 11**, in the system suggested by 684 Publication in view of 200 Patent, 684 Publication further discloses that the RFID integrated circuit chip 56 is disposed on the substrate 58 (Figure 3; paragraph [0049]).

Regarding **claim 12**, in the system suggested by 684 Publication in view of 200 Patent, 684 Publication further discloses an encoder 30 (684 Publication, Figure 3; paragraphs [0038]-[0039]), and 200 Patent teaches a plurality of allocations associated with different manufacturer divisions as discussed above with regard to claim 1. 200 Patent further teaches that the limited number of most significant bits that correspond to the allocated block further correspond to an encoder that encodes the RFID transponder at least in the sense that 200 Patent teaches that encoders in different manufacturing divisions are “linked to a centralized system that assigns serial numbers” (200 Patent, column 5, lines 18-22) and each encoder identifies its corresponding pool or block of allocated numbers, then encodes serial numbers from that pool (i.e., steps 325, 335, and 350 in Figure 3; column 6, lines 37-58). As discussed above with regard to claim 1, the limited number of most significant bits taught by 200 Patent correspond to blocks of allocated numbers, which in turn correspond to the encoders in the different manufacturer divisions that use the particular blocks of numbers. It would have been obvious to a person of

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ordinary skill in the art to provide allocated blocks further corresponding to encoders as taught by 200 Patent, in the system disclosed by 684 Publication, in order to advantageously ensure that unique serial numbers are generated even for objects that have the same object classification but are produced by different manufacturer divisions as taught by 200 Patent.

Regarding **claim 16**, 684 Publication discloses an integrated circuit (Figures 2 and 3, paragraphs [0003]-[0004], [0041], and [0049]), comprising:

a radio frequency circuit configured to backscatter a return link signal for processing by an RFID interrogator; control logic; and a memory (i.e., 684 Publication discloses passive RFID transponders that backscatter a return link signal including a radio frequency circuit, control logic, and memory; paragraphs [0003]-[0004]);

wherein the memory is configured with a unique object number (e.g., specific information associated with a specific object so that the specific object is associated with a unique RFID transponder; paragraph [0003]).

684 Publication generally discloses a unique object number but does not specifically disclose that the unique object number comprises an object class information space and a unique serial number space, wherein the unique serial number space is encoded with one serial number instance from an allocated block of serial numbers, the allocated block being assigned a limited number of most significant bits, and wherein the unique serial number space comprises the limited number of most significant bits corresponding to the allocated block and remaining bits of lesser significance that together comprise the one serial number instance.

However, 200 Patent teaches a system that is related to the one disclosed by 684 Publication, including an RFID tag 104 with a unique object number (i.e., an Electronic Product

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million” can be expressed as binary numbers 0001100000000000000000000 to 0001111111111111111111111, for example².

Thus 200 Patent teaches that an allocated block of serial numbers is assigned a limited number of most significant bits because in a 25-bit serial number, the five most significant bits (e.g., “00000,” “00011,” etc.) correspond to a particular block containing about a million serial numbers and therefore also correspond to a particular manufacturer division as taught by 200 Patent. 200 Patent further teaches that the limited number of most significant bits (e.g., the five most significant bits) and the remaining bits of lesser significance (e.g., the 20 least significant bits) comprise the one serial number instance having 25 bits in all.

Regarding claim 16, it would have been obvious to a person of ordinary skill in the art to provide a unique serial number space encoded with one serial number instance from an allocated block of serial numbers as taught by 200 Patent, in the RFID transponder disclosed by 684 Publication, in order to advantageously ensure that unique serial numbers are generated even for objects that have the same object classification but are produced by different manufacturer divisions as taught by 200 Patent.

Regarding **claim 20**, in the system suggested by 684 Publication in view of 200 Patent, 684 Publication further discloses an encoder 30 (684 Publication, Figure 3; paragraphs [0038]-[0039]), and 200 Patent teaches a plurality of allocations associated with different manufacturer divisions as discussed above with regard to claim 1. 200 Patent further teaches that the limited number of most significant bits that correspond to the allocated block further correspond to an encoder that encodes the RFID transponder at least in the sense that 200 Patent teaches that

² Again, more precisely, 00000111111111111111111111 (binary) is 1,048,575 (decimal). 00011000000000000000000000 is 3,145,728. 00011111111111111111111111 is 4,194,303.

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encoders in different manufacturing divisions are “linked to a centralized system that assigns serial numbers” (200 Patent, column 5, lines 18-22) and each encoder identifies its corresponding pool or block of allocated numbers, then encodes serial numbers from that pool (i.e., steps 325, 335, and 350 in Figure 3; column 6, lines 37-58). As discussed above with regard to claim 16, the limited number of most significant bits taught by 200 Patent correspond to blocks of allocated numbers, which in turn correspond to the encoders in the different manufacturer divisions that use the particular blocks of numbers. It would have been obvious to a person of ordinary skill in the art to provide allocated blocks further corresponding to encoders as taught by 200 Patent, in the system disclosed by 684 Publication, in order to advantageously ensure that unique serial numbers are generated even for objects that have the same object classification but are produced by different manufacturer divisions as taught by 200 Patent.

8. **Claims 2-5, 13-15, and 17-19** are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over **684 Publication** in view of **200 Patent** and **2006 EPC Standard**.

Regarding **claims 2-5 and 17-19**, 684 Publication in view of 200 Patent suggests a system as discussed above with regard to claim 1 or claim 16, including a unique object number comprising an Electronic Product Code (EPC) identifier 100 with an object class information space (i.e., Object Class in Non Serialized Portion 112) as taught by 200 Patent (Figure 1; column 1, lines 12-46; and column 3, lines 19-29).

684 Publication in view of 200 Patent does not specifically teach that the object class information space is encoded with information comprising a company prefix, an item reference, a partition value, and a filter value; that the unique object number is a portion of a serialized

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global trade item number, wherein the serialized global trade item number is an EPC SGTIN-96 encoding; or that the unique serial number space is at least 38 bits.

However, 2006 EPC Standard teaches a system that is related to the one described by 684 Publication in view of 200 Patent, including RFID tags having associated EPCs (2006 EPC Standard, page 8). 2006 EPC Standard further teaches that the object class information space is encoded with information comprising a company prefix, an item reference, a partition value, and a filter value; that the unique object number is a portion of a serialized global trade item number, wherein the serialized global trade item number is an EPC SGTIN-96 encoding; and that the unique serial number space is at least 38 bits (2006 EPC Standard, pages 25-26). Regarding claims 2-5 and 17-19, it would have been obvious to provide an object class information space and a serialized global trade item number as taught by 2006 EPC Standard, in the RFID transponder suggested by 684 Publication in view of 200 Patent, in order to provide standardized identification information about the tagged object that can be universally read and understood.

Regarding **claim 13**, as similarly discussed above with regard to claim 1, 684 Publication discloses an RFID transponder 50 (Figures 2 and 3; paragraph [0041]) comprising:

a substrate 58 (paragraph [0049]);

an antenna structure formed on the substrate (i.e., antenna layer 54; paragraph [0049]);

and

an RFID integrated circuit chip 56, which is electrically coupled to the antenna structure (paragraph [0049]),

wherein the RFID integrated circuit chip is encoded with a unique object number (e.g., specific information associated with a specific object so that the specific object is associated with a unique RFID transponder; paragraph [0003]).

684 Publication generally discloses a unique object number but does not specifically disclose that the unique object number comprises an object class information space and a unique serial number space, wherein the unique serial number space has one serial number instance from an allocated block of serial numbers, the allocated block being assigned a limited number of most significant bits, and wherein the unique serial number space comprises at least three most significant bits corresponding to the allocated block.

However, 200 Patent teaches a system that is related to the one disclosed by 684 Publication, including an RFID tag 104 with a unique object number (i.e., an Electronic Product Code [EPC] identifier 110; Figure 1; column 1, lines 12-46; and column 3, lines 19-29). 200 Patent further teaches that the unique object number comprises an object class information space (i.e., Object Class in Non Serialized Portion 112) and a unique serial number space (i.e., Serial Number in Serialized Portion 114; Figure 1; column 3, lines 56-67; and column 4, lines 1-12).

200 Patent further teaches that the unique serial number space is encoded with one serial number instance from an allocated block of serial numbers, the allocated block being assigned a limited number of most significant bits, and wherein the unique serial number space comprises at least three most significant bits corresponding to the allocated block. More specifically, 200 Patent teaches that for example, 25 bits can be allocated to the serial number (column 6, lines 3-8) and that

“In one embodiment, different manufacturer divisions that produce objects having the same object classification can be assigned a subset of numbers from a number pool of

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unassigned numbers to ensure that unique serial numbers are always generated....In another example, a first division can assign serial numbers in the range of one to a million and a second division can assign serial numbers in a range of three to four million.”

See column 5, lines 7-22. It would be well understood in the art that a block of one million serial numbers would require at least 20 bits in binary, and that in a serial number space having a total of 25 bits (such as taught by 200 Patent), a first block of numbers from “one to a million” would be expressed as 25-bit binary numbers 000000000000000000000001 to about 00000111111111111111111111111111. A different block of numbers in a range of about “three to four million” can be expressed as binary numbers 0001100000000000000000000000 to 00011111111111111111111111111111, for example³.

Thus 200 Patent teaches that an allocated block of serial numbers is assigned a limited number of most significant bits because in a 25-bit serial number, the five most significant bits (e.g., “00000,” “00011,” etc.) correspond to a particular block containing about a million serial numbers and therefore also correspond to a particular manufacturer division as taught by 200 Patent. 200 Patent further teaches that wherein the unique serial number space comprises at least three most significant bits corresponding to the allocated block (e.g., five most significant bits in the example above).

Regarding claim 13, it would have been obvious to a person of ordinary skill in the art to provide a unique serial number space encoded with one serial number instance from an allocated block of serial numbers as taught by 200 Patent, in the RFID transponder disclosed by 684 Publication, in order to advantageously ensure that unique serial numbers are generated even for

³ Again, more precisely, 00000111111111111111111111111111 (binary) is 1,048,575 (decimal). 0001100000000000000000000000 is 3,145,728. 00011111111111111111111111111111 is 4,194,303.

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objects that have the same object classification but are produced by different manufacturer divisions as taught by 200 Patent.

Further regarding claim 13, 684 Publication in view of 200 Patent does not further suggest a global trade item number or that the object class information space includes a block of at least 50 bits and the unique serial number space includes a block of at least 38 bits.

However, 2006 EPC Standard teaches a system that is related to the one described by 684 Publication in view of 200 Patent, including RFID tags having associated EPCs (2006 EPC Standard, page 8). 2006 EPC Standard further teaches a global trade item number and that the object class information space includes a block of at least 50 bits and the unique serial number space includes a block of at least 38 bits (2006 EPC Standard, pages 25-26). Regarding claims 13, it would have been obvious to provide a global trade item number, an object class information space of at least 50 bits, and a unique serial number space of at least 38 bits as taught by 2006 EPC Standard, in the RFID transponder suggested by 684 Publication in view of 200 Patent, in order to provide standardized identification information about the tagged object that can be universally read and understood.

Regarding **claim 14**, in the system suggested by 684 Publication in view of 200 Patent and 2006 EPC Standard, 200 Patent further teaches that the unique serial number space further comprises remaining bits of lesser significance (e.g., the 20 least significant bits) that together with the at least three most significant bits (e.g., the five most significant bits) comprise the one serial number instance (having 25 bits in all in the example discussed above with regard to claim 13).

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Regarding **claim 15**, in the system suggested by 684 Publication in view of 200 Patent and 2006 EPC Standard, 684 Publication further discloses an encoder 30 (684 Publication, Figure 3; paragraphs [0038]-[0039]), and 200 Patent teaches a plurality of allocations associated with different manufacturer divisions as discussed above with regard to claim 13. 200 Patent further teaches that the at least three most significant bits that correspond to the allocated block further correspond to an encoder that encodes the RFID transponder at least in the sense that 200 Patent teaches that encoders in different manufacturing divisions are “linked to a centralized system that assigns serial numbers” (200 Patent, column 5, lines 18-22) and each encoder identifies its corresponding pool or block of allocated numbers, then encodes serial numbers from that pool (i.e., steps 325, 335, and 350 in Figure 3; column 6, lines 37-58). As discussed above with regard to claim 13, the at least three most significant bits taught by 200 Patent correspond to blocks of allocated numbers, which in turn correspond to the encoders in the different manufacturer divisions that use the particular blocks of numbers. It would have been obvious to a person of ordinary skill in the art to provide allocated blocks further corresponding to encoders as taught by 200 Patent, in the system disclosed by 684 Publication, in order to advantageously ensure that unique serial numbers are generated even for objects that have the same object classification but are produced by different manufacturer divisions as taught by 200 Patent.

35 USC § 103 Rejections Based on 545 Patent

9. **Claims 1, 6-12, 16, and 20** are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over **684 Publication** in view of **545 Patent**.

Regarding **claim 1**, 684 Publication discloses an RFID transponder 50 (Figures 2 and 3; paragraphs [0003]-[0004], [0041], and [0049]) comprising:

a substrate 58 (paragraph [0049]);

an antenna structure formed on the substrate (i.e., antenna layer 54; paragraph [0049]);

and

an RFID integrated circuit chip 56, which is electrically coupled to the antenna structure (paragraph [0049]),

wherein the RFID integrated circuit chip is encoded with a unique object number (e.g., specific information associated with a specific object so that the specific object is associated with a unique RFID transponder; paragraph [0003]).

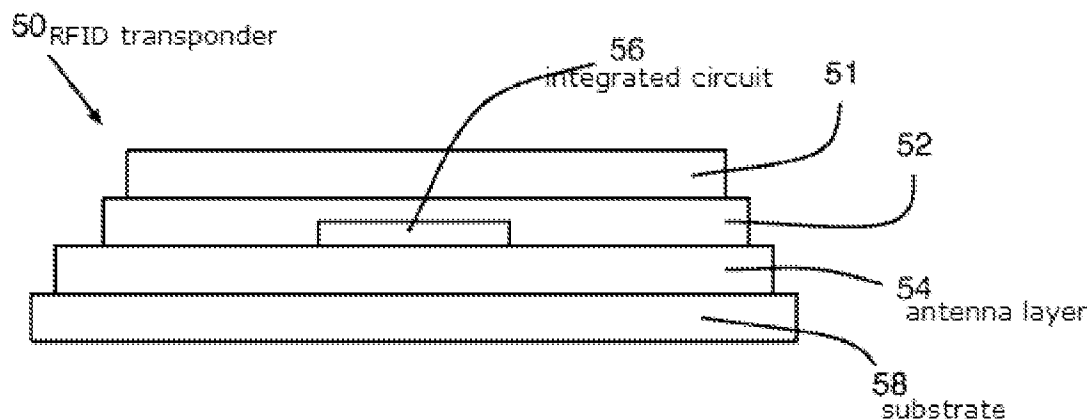


FIG. 3

(684 Publication, annotated)

684 Publication generally discloses a unique object number but does not specifically disclose that the unique object number comprises an object class information space and a unique serial number space, wherein the unique serial number space is encoded with one serial number instance from an allocated block of serial numbers, the allocated block being assigned a limited

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number of most significant bits, and wherein the unique serial number space comprises the limited number of most significant bits corresponding to the allocated block and remaining bits of lesser significance that together comprise the one serial number instance.

However, 545 Patent teaches a system that is related to the one disclosed by 684 Publication, including an RFID tag with a unique object number (i.e., RFID tags 420-426 with EPC codes 412-418; Figure 4A; column 1, lines 20-38; column 3, lines 34-39). 545 Patent further teaches that the unique object number comprises an object class information space (including a Stock Keeping Unit [SKU] or “product id” in an EPC code as shown in Figure 4B; column 1, lines 32-38) and a unique serial number space (i.e., “serial number” in an EPC code as shown in Figure 4B).

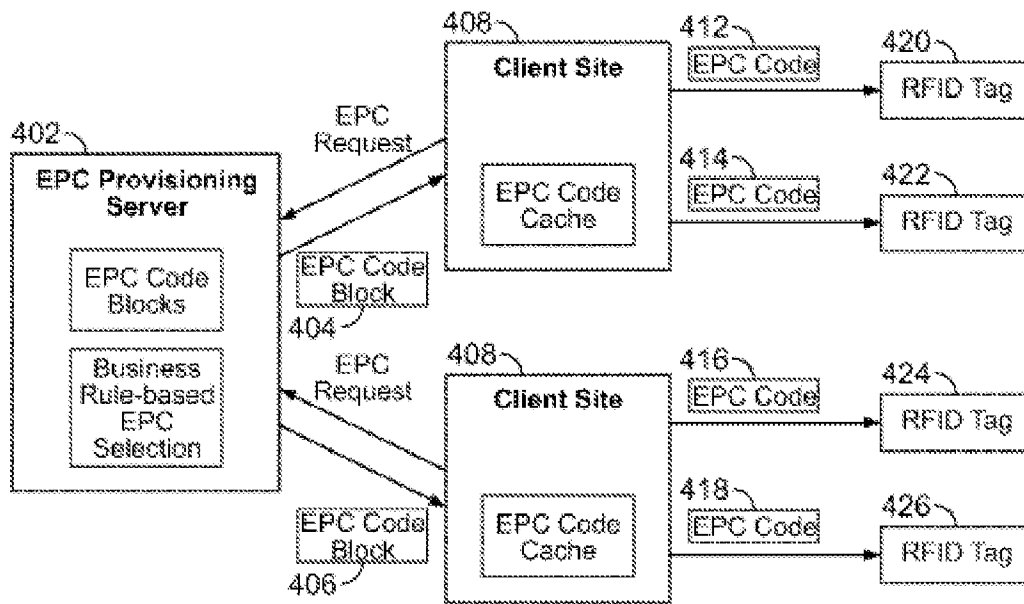


FIG. 4A (545 Patent)

(and portion of **FIG. 4B**)

header	company	product id	serial number
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545 Patent further teaches that the unique serial number space is encoded with one serial number instance from an allocated block of serial numbers, the allocated block being assigned a limited number of most significant bits, and wherein the unique serial number space comprises the limited number of most significant bits corresponding to the allocated block and remaining bits of lesser significance that together comprise the one serial number instance. More specifically, 545 Patent teaches that EPC server 402 dynamically provides EPC code blocks 404 and 406 to multiple client sites 408 that encode EPC codes from the blocks onto the RFID tags (Figure 4A; column 3, lines 34-39; and column 4, lines 5-12). 545 Patent further teaches that for

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example, 45 million total available EPC codes can be divided into blocks or pools of about five or ten million EPC codes (e.g., from 10 to 15 million, or from 30 to 40 million; Figures 13E-G).

It would be well understood in the art that a total of 45 million serial numbers (such as taught by 545 Patent) would require at least 26 bits in binary. In a serial number space having 26 bits, a block of numbers from one to about one million would be expressed as 26-bit binary numbers 0000000000000000000000000000001 to about 000000111111111111111111111111. Another exemplary block of numbers from about 10 to 15 million would be expressed as binary numbers from about 001010000000000000000000000000 to about 001111100000000000000000000000. Yet another exemplary block of numbers from about 30 to 40 million would be expressed as binary numbers from about 011110000000000000000000000000 to about 101000000000000000000000000000⁴.

Thus 545 Patent teaches that an allocated block or range of serial numbers is assigned a limited number of most significant bits because in a 26-bit serial number, the six most significant bits (e.g., “000000,” “001010,” etc.) correspond to a particular block containing over a million serial numbers and therefore also correspond to a particular client site as taught by 545 Patent. 545 Patent further teaches that the limited number of most significant bits (e.g., the six most significant bits) and the remaining bits of lesser significance (e.g., the 20 least significant bits) comprise the one serial number instance having 26 bits in all.

Regarding claim 1, it would have been obvious to a person of ordinary skill in the art to provide a unique serial number space encoded with one serial number instance from an allocated block of serial numbers as taught by 545 Patent, in the RFID transponder disclosed by 684 Publication, in order to advantageously ensure that unique serial numbers are generated even for

⁴ More precisely, 00000011111111111111111111111111 (binary) is 1,048,575 (decimal). 00101000000000000000000000000000 is 10,485,760. 00111100000000000000000000000000 is 15,728,640. 01111000000000000000000000000000 is 31,457,280. 1010000000000000000000000000000000 is 41,943,040.

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objects that have the same object classification but are produced at different client sites as taught by 545 Patent.

Regarding **claim 6**, in the system suggested by 684 Publication in view of 545 Patent, 545 Patent further teaches that the allocated block is defined by at least three most significant bits (e.g., six most significant bits, in the example discussed above with regard to claim 1).

Regarding **claim 7**, in the system suggested by 684 Publication in view of 545 Patent, 684 Publication further discloses an encoder 30 (684 Publication, Figure 3; paragraphs [0038]-[0039]), and 545 Patent teaches a plurality of allocations associated with different client sites as discussed above with regard to claim 1. 545 Patent further teaches that the allocated block is one of a plurality of allocations intermittently received by an encoder at least in the sense that 545 Patent teaches that encoders in different client sites receive corresponding pools of allocated numbers from an EPC provisioning server 402, then encode serial numbers from that pool (Figure 4A; column 3, lines 34-67; column 4, lines 1-19).

Regarding **claim 8**, in the system suggested by 684 Publication in view of 545 Patent, 684 Publication further discloses that the RFID integrated circuit chip is comprised of silicon (paragraphs [0005]-[0006]).

Regarding **claim 9**, in the system suggested by 684 Publication in view of 545 Patent, 684 Publication further discloses that the RFID integrated circuit chip is comprised of polymer (paragraphs [0005]-[0006]).

Regarding **claim 10**, in the system suggested by 684 Publication in view of 545 Patent, 684 Publication further discloses that the substrate 58, antenna structure 54, and RFID integrated circuit chip 56 are covered by a face stock material 51 (Figure 3; paragraph [0049]).

Regarding **claim 11**, in the system suggested by 684 Publication in view of 545 Patent, 684 Publication further discloses that the RFID integrated circuit chip 56 is disposed on the substrate 58 (Figure 3; paragraph [0049]).

Regarding **claim 12**, in the system suggested by 684 Publication in view of 545 Patent, 684 Publication further discloses an encoder 30 (684 Publication, Figure 3; paragraphs [0038]-[0039]), and 545 Patent teaches a plurality of allocations associated with different client sites as discussed above with regard to claim 1. 545 Patent further teaches that the limited number of most significant bits that correspond to the allocated block further correspond to an encoder that encodes the RFID transponder at least in the sense that 545 Patent teaches that encoders in different client sites receive corresponding pools of allocated numbers from an EPC provisioning server 402, then encode serial numbers from that pool (Figure 4A; column 3, lines 34-67; column 4, lines 1-19). As discussed above with regard to claim 1, the limited number of most significant bits taught by 545 Patent correspond to blocks of allocated numbers, which in turn correspond to the encoders in the different client sites that use the particular blocks of numbers. It would have been obvious to a person of ordinary skill in the art to provide allocated blocks further corresponding to encoders as taught by 545 Patent, in the system disclosed by 684 Publication, in order to advantageously ensure that unique serial numbers are generated even for objects that have the same object classification but are produced at different client sites as taught by 545 Patent.

Regarding **claim 16**, 684 Publication discloses an integrated circuit (Figures 2 and 3, paragraphs [0003]-[0004], [0041], and [0049]), comprising:

a radio frequency circuit configured to backscatter a return link signal for processing by an RFID interrogator; control logic; and a memory (i.e., 684 Publication discloses passive RFID transponders that backscatter a return link signal including a radio frequency circuit, control logic, and memory; paragraphs [0003]-[0004]);

wherein the memory is configured with a unique object number (e.g., specific information associated with a specific object so that the specific object is associated with a unique RFID transponder; paragraph [0003]).

684 Publication generally discloses a unique object number but does not specifically disclose that the unique object number comprises an object class information space and a unique serial number space, wherein the unique serial number space is encoded with one serial number instance from an allocated block of serial numbers, the allocated block being assigned a limited number of most significant bits, and wherein the unique serial number space comprises the limited number of most significant bits corresponding to the allocated block and remaining bits of lesser significance that together comprise the one serial number instance.

However, 545 Patent teaches a system that is related to the one disclosed by 684 Publication, including an RFID tag with a unique object number (i.e., RFID tags 420-426 with EPC codes 412-418; Figure 4A; column 1, lines 20-38; column 3, lines 34-39). 545 Patent further teaches that the unique object number comprises an object class information space (including a Stock Keeping Unit [SKU] or “product id” in an EPC code as shown in Figure 4B; column 1, lines 32-38) and a unique serial number space (i.e., “serial number” in an EPC code as shown in Figure 4B).

545 Patent further teaches that the unique serial number space is encoded with one serial number instance from an allocated block of serial numbers, the allocated block being assigned a limited number of most significant bits, and wherein the unique serial number space comprises the limited number of most significant bits corresponding to the allocated block and remaining bits of lesser significance that together comprise the one serial number instance. More specifically, 545 Patent teaches that EPC server 402 dynamically provides EPC code blocks 404 and 406 to multiple client sites 408 that encode EPC codes from the blocks onto the RFID tags (Figure 4A; column 3, lines 34-39; and column 4, lines 5-12). 545 Patent further teaches that for example, 45 million total available EPC codes can be divided into blocks or pools of about five or ten million EPC codes (e.g., from 10 to 15 million, or from 30 to 40 million; Figures 13E-G).

It would be well understood in the art that a total of 45 million serial numbers (such as taught by 545 Patent) would require at least 26 bits in binary. In a serial number space having 26 bits, a block of numbers from one to about one million would be expressed as 26-bit binary numbers 00000000000000000000000000000001 to about 00000011111111111111111111111111. Another exemplary block of numbers from about 10 to 15 million would be expressed as binary numbers from about 00101000000000000000000000000000 to about 00111110000000000000000000000000. Yet another exemplary block of numbers from about 30 to 40 million would be expressed as binary numbers from about 01111100000000000000000000000000 to about 10100000000000000000000000000000⁵.

Thus 545 Patent teaches that an allocated block or range of serial numbers is assigned a limited number of most significant bits because in a 26-bit serial number, the six most significant bits (e.g., “000000,” “001010,” etc.) correspond to a particular block containing over a million

⁵ Again, more precisely, 00000011111111111111111111111111 (binary) is 1,048,575 (decimal).
00101000000000000000000000000000 is 10,485,760. 00111100000000000000000000000000 is 15,728,640.
01111000000000000000000000000000 is 31,457,280. 10100000000000000000000000000000 is 41,943,040.

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serial numbers and therefore also correspond to a particular client site as taught by 545 Patent. 545 Patent further teaches that the limited number of most significant bits (e.g., the six most significant bits) and the remaining bits of lesser significance (e.g., the 20 least significant bits) comprise the one serial number instance having 26 bits in all.

Regarding claim 16, it would have been obvious to a person of ordinary skill in the art to provide a unique serial number space encoded with one serial number instance from an allocated block of serial numbers as taught by 545 Patent, in the RFID transponder disclosed by 684 Publication, in order to advantageously ensure that unique serial numbers are generated even for objects that have the same object classification but are produced at different client sites as taught by 545 Patent.

Regarding **claim 20**, in the system suggested by 684 Publication in view of 545 Patent, 684 Publication further discloses an encoder 30 (684 Publication, Figure 3; paragraphs [0038]-[0039]), and 545 Patent teaches a plurality of allocations associated with different client sites as discussed above with regard to claim 16. 545 Patent further teaches that the limited number of most significant bits that correspond to the allocated block further correspond to an encoder that encodes the RFID transponder at least in the sense that 545 Patent teaches that encoders in different client sites receive corresponding pools of allocated numbers from an EPC provisioning server 402, then encode serial numbers from that pool (Figure 4A; column 3, lines 34-67; column 4, lines 1-19). As discussed above with regard to claim 16, the limited number of most significant bits taught by 545 Patent correspond to blocks of allocated numbers, which in turn correspond to the encoders in the different client sites that use the particular blocks of numbers. It would have been obvious to a person of ordinary skill in the art to provide allocated blocks

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further corresponding to encoders as taught by 545 Patent, in the system disclosed by 684

Publication, in order to advantageously ensure that unique serial numbers are generated even for objects that have the same object classification but are produced at different client sites as taught by 545 Patent.

10. **Claims 2-5, 13-15, and 17-19** are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over **684 Publication** in view of **200 Patent** and **2006 EPC Standard**.

Regarding **claims 2-5 and 17-19**, 684 Publication in view of 545 Patent suggests a system as discussed above with regard to claim 1 or claim 16, including a unique object number comprising an Electronic Product Code (EPC) identifier 100 with an object class information space as taught by 545 Patent (including a Stock Keeping Unit [SKU] or “product id” in an EPC code as shown in Figure 4B; column 1, lines 32-38).

684 Publication in view of 545 Patent does not specifically teach that the object class information space is encoded with information comprising a company prefix, an item reference, a partition value, and a filter value; that the unique object number is a portion of a serialized global trade item number, wherein the serialized global trade item number is an EPC SGTIN-96 encoding; or that the unique serial number space is at least 38 bits.

However, 2006 EPC Standard teaches a system that is related to the one described by 684 Publication in view of 545 Patent, including RFID tags having associated EPCs (2006 EPC Standard, page 8). 2006 EPC Standard further teaches that the object class information space is encoded with information comprising a company prefix, an item reference, a partition value, and a filter value; that the unique object number is a portion of a serialized global trade item number, wherein the serialized global trade item number is an EPC SGTIN-96 encoding; and that the

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unique serial number space is at least 38 bits. (2006 EPC Standard, pages 25-26). Regarding claims 2-5 and 17-19, it would have been obvious to provide an object class information space and a serialized global trade item number as taught by 2006 EPC Standard, in the RFID transponder suggested by 684 Publication in view of 545 Patent, in order to provide standardized identification information about the tagged object that can be universally read and understood.

Regarding **claim 13**, as similarly discussed above with regard to claim 1, 684 Publication discloses an RFID transponder 50 (Figures 2 and 3; paragraph [0041]) comprising:

a substrate 58 (paragraph [0049]);

an antenna structure formed on the substrate (i.e., antenna layer 54; paragraph [0049]);

and

an RFID integrated circuit chip 56, which is electrically coupled to the antenna structure (paragraph [0049]),

wherein the RFID integrated circuit chip is encoded with a unique object number (e.g., specific information associated with a specific object so that the specific object is associated with a unique RFID transponder; paragraph [0003]).

684 Publication generally discloses a unique object number but does not specifically disclose that the unique object number comprises an object class information space and a unique serial number space, wherein the unique serial number space has one serial number instance from an allocated block of serial numbers, the allocated block being assigned a limited number of most significant bits, and wherein the unique serial number space comprises at least three most significant bits corresponding to the allocated block.

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from about 00101000000000000000000000000000 to about 00111100000000000000000000000000. Yet another exemplary block of numbers from about 30 to 40 million would be expressed as binary numbers from about 01111000000000000000000000000000 to about 10100000000000000000000000000000⁶.

Thus 545 Patent teaches that an allocated block or range of serial numbers is assigned a limited number of most significant bits because in a 26-bit serial number, the six most significant bits (e.g., “000000,” “001010,” etc.) correspond to a particular block containing over a million serial numbers and therefore also correspond to a particular client site as taught by 545 Patent. 545 Patent further teaches that wherein the unique serial number space comprises at least three most significant bits corresponding to the allocated block (e.g., six most significant bits in the example above).

Regarding claim 13, it would have been obvious to a person of ordinary skill in the art to provide a unique serial number space encoded with one serial number instance from an allocated block of serial numbers as taught by 545 Patent, in the RFID transponder disclosed by 684 Publication, in order to advantageously ensure that unique serial numbers are generated even for objects that have the same object classification but are produced at different client sites as taught by 545 Patent.

Further regarding claim 13, 684 Publication in view of 545 Patent does not further suggest a global trade item number or that the object class information space includes a block of at least 50 bits and the unique serial number space includes a block of at least 38 bits.

However, 2006 EPC Standard teaches a system that is related to the one described by 684 Publication in view of 545 Patent, including RFID tags having associated EPCs (2006 EPC

⁶ More precisely, 00000011111111111111111111111111 (binary) is 1,048,575 (decimal). 00101000000000000000000000000000 is 10,485,760. 00111100000000000000000000000000 is 15,728,640. 01111000000000000000000000000000 is 31,457,280. 10100000000000000000000000000000 is 41,943,040.

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Standard, page 8). 2006 EPC Standard further teaches a global trade item number and that the object class information space includes a block of at least 50 bits and the unique serial number space includes a block of at least 38 bits (2006 EPC Standard, pages 25-26). Regarding claims 13, it would have been obvious to provide a global trade item number, an object class information space of at least 50 bits, and a unique serial number space of at least 38 bits as taught by 2006 EPC Standard, in the RFID transponder suggested by 684 Publication in view of 545 Patent, in order to provide standardized identification information about the tagged object that can be universally read and understood.

Regarding **claim 14**, in the system suggested by 684 Publication in view of 545 Patent and 2006 EPC Standard, 545 Patent further teaches that the unique serial number space further comprises remaining bits of lesser significance (e.g., the 20 least significant bits) that together with the at least three most significant bits (e.g., the six most significant bits) comprise the one serial number instance (having 26 bits in all in the example discussed above with regard to claim 13).

Regarding **claim 15**, in the system suggested by 684 Publication in view of 545 Patent and 2006 EPC Standard, 684 Publication further discloses an encoder 30 (684 Publication, Figure 3; paragraphs [0038]-[0039]), and 545 Patent teaches a plurality of allocations associated with different client sites as discussed above with regard to claim 13. 545 Patent further teaches that the at least three most significant bits that correspond to the allocated block further correspond to an encoder that encodes the RFID transponder at least in the sense that 545 Patent teaches that encoders in different client sites receive corresponding pools of allocated numbers from an EPC provisioning server 402, then encode serial numbers from that pool (Figure 4A;

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column 3, lines 34-67; column 4, lines 1-19). As discussed above with regard to claim 13, the at least three most significant bits taught by 545 Patent correspond to blocks of allocated numbers, which in turn correspond to the encoders in the different client sites that use the particular blocks of numbers. It would have been obvious to a person of ordinary skill in the art to provide allocated blocks further corresponding to encoders as taught by 545 Patent, in the system disclosed by 684 Publication, in order to advantageously ensure that unique serial numbers are generated even for objects that have the same object classification but are produced at different client sites as taught by 545 Patent.

Response to Arguments

11. PO Response and Williams Declaration have been fully considered but are not persuasive. Examiner maintains all of the rejections of the previous Office action.
12. PO does not appear to dispute the teachings of 684 Publication and 2006 EPC Standard that are relied upon in the rejections and acknowledges that “The primary focus of the patent owner’s arguments is based on the asserted teachings of the ’200 patent and the ’545 patent” (PO Response, page 3). In brief, 684 Publication teaches the physical components of the RFID transponder recited in independent claims 1 and 13 including a substrate, an antenna, and RFID integrated circuit chip; and the integrated circuit recited in independent claim 16 including a radio frequency circuit, control logic, and a memory. 2006 EPC Standard teaches a system including RFID tags having associated Electronic Product Codes (EPC) with standardized identification information about the tagged objects as discussed above with regard to claims 2-5, 13-15, and 17-19.

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13. Regarding 200 Patent and 545 Patent, PO argues that the methods for encoding serial numbers taught by 200 Patent and 545 Patent differ from the invention in 967 Patent. PO asserts that in 200 Patent, “without the communication to the database of the centralized system, there is no manner of ensuring that the serial numbers are unique,” and that 545 Patent similarly teaches “a central EPC server that controls all assignments of the EPCs to ensure that the assigned EPCs are unique.” PO Response, pages 12-13. PO further asserts that unlike 200 Patent and 545 Patent, the invention in 967 Patent provides a “hardware-based encoding method” without requiring “a continuous wireless connection to a host database.” PO Response, page 13. See also Williams Declaration, paragraphs 37-53.

Examiner acknowledges that 200 Patent and 545 Patent include a database and/or a server. However, Examiner disagrees with PO’s assertion that 200 Patent and 545 Patent do not disclose or suggest the limitations recited by the claims.

In response to PO’s argument that the references fail to show certain features of PO’s invention, it is noted that the features upon which PO relies (i.e., “a distinct hardware-based approach” that includes “active management and assignment of the MSBs [most significant bits] of the binary encoding of the serial number” and does not require continuous wireless connection to a host database; PO Response, pages 13-14 and 19) are not recited in the rejected claims. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Not only do the claims omit any details with respect to hardware-based, “active” management of the MSBs or the serial numbers, but none of the claims are even directed to a

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method for encoding RFID transponders. The claims are also not directed to an RFID printer or an apparatus for encoding transponders. Instead, all of the claims are directed to an RFID transponder itself. The claims recite an RFID transponder encoded with a serial number. 200 Patent and 545 Patent are each relied upon to teach, among other things, an RFID transponder encoded with a serial number from an allocated block of serial numbers.

Furthermore, in response to PO's assertion that "While the conventional approaches will result in an RFID tag encoded with a binary encoding in the SGTIN-96 format as would be the case with the '967 Patent, the way such a result is achieved by the claimed subject matter of the '967 Patent is decidedly different" (PO Response, page 13), Examiner notes that the patentability of a product does not depend on its method of production. Insofar as the claims recite "the allocated block being assigned a limited number of most significant bits," the allocation of the block of numbers is merely a part of the process by which the individual serial number instance is encoded onto the RFID transponder. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 777 F.2d 695,698, 227 USPQ 964, 966 (Fed. Cir. 1985). See also MPEP 2113.

Examiner disagrees with PO's assertion that 200 Patent and 545 Patent do not suggest that EPC codes could be split into "a limited number of most significant bits" and "remaining bits of lesser significance" (PO Response, pages 18-20). On the contrary, Examiner notes that the 25-bit or 26-bit numbers disclosed by 200 Patent and 545 Patent inherently include bits that are most significant and bits that are of lesser significance. This is simply an inherent quality of a

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multi-bit binary number regardless of whether the binary number was converted from decimal or not.

Examiner also disagrees with PO's assertion that the rejections attempt "to shoehorn a random selection of decimal numbers into the assignment of binary bits as recited in the claims" (PO Response, page 21) or that "mixing binary MSB block allocations with decimal numbers is like mixing apples with oranges" (Williams Declaration, paragraph 57).

Examiner acknowledges that the decimal number range one to one million (for example) does not directly correspond to binary numbers 0000000000000000000000001 to 000001111111111111111111. However, the claims do not recite particular number ranges or a method for allocating particular numbers. Instead, the claims are directed to an RFID transponder with a serial number from a block of numbers, which is what 200 Patent and 545 Patent each teach.

More specifically, 200 Patent and 545 Patent each teach RFID transponders encoded with serial numbers from different large number ranges of more than a million numbers. The individual serial numbers that fall in different large number ranges inherently have different most significant bits. Therefore, 200 Patent and 545 Patent each also disclose blocks of serial numbers that have different most significant bits.

One of ordinary skill in the art would understand that 200 Patent and 545 Patent provide specific numbers only as examples, and that other numbers can be used. However, to use the particular example in 200 Patent, column 5, lines 7-22, one serial number from a block assigned to a first manufacturing division can be 123,456 (i.e., a number "in the range of one to a million") and another serial number from another block assigned to a second manufacturing

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division can be 3,456,789 (i.e., “a number in a range of three to four million”). 123,456 (decimal) represented as a 25-bit binary number is 00000000011110001001000000. 3,456,789 (decimal) represented as a 25-bit binary number is 000110100101111100010101. These numbers have different most significant bits.

In the example given in 545 Patent, Figures 13F-13G, one serial number from a block assigned to one client site can be 12,345,678 (i.e., a number between 10 and 15 million) and another serial number from a block assigned to a different client site can be 34,567,890 (i.e., a number between 30 and 40 million). 12,345,678 (decimal) represented as a 26-bit binary number is 00101111000110000101001110. 34,567,890 (decimal) represented as a 26-bit binary number is 10000011110111011011010010. These numbers in binary also have different most significant bits.

More importantly, in the context of the actual claim language, 200 Patent and 545 Patent each teach an RFID transponder that has a serial number from a block that can be “assigned” one group of numbers that has different most significant bits from some other group of numbers. Examiner disagrees with PO’s assertion that “The fact that one could pick some subset of blocks of serial numbers with common MSBs after the sequential decimal serial numbers are converted to binary is of no consequence.” PO Response, pages 18 and 20. On the contrary, because the claims are all directed to an RFID transponder having a number, instead of a method or apparatus for encoding RFID transponders, Examiner maintains that 200 Patent and 545 Patent each teach the recited claim limitations.

Conclusion

14. **THIS ACTION IS MADE FINAL.**

A shortened statutory period for response to this action is set to expire two months from the mailing date of this action.

Extensions of time under 37 CFR 1.136(a) do not apply in reexamination proceedings. The provisions of 37 CFR 1.136 apply only to “an applicant” and not to parties in a reexamination proceeding. Further, in 35 U.S.C. 305 and in 37 CFR 1.550(a), it is required that reexamination proceedings “will be conducted with special dispatch within the Office.”

Extensions of time in reexamination proceedings are provided for in 37 CFR 1.550(c). A request for extension of time must specify the requested period of extension and it must be accompanied by the petition fee set forth in 37 CFR 1.17(g). Any request for an extension in a third party requested ex parte reexamination must be filed on or before the day on which action by the patent owner is due, and the mere filing of a request will not effect any extension of time. A request for an extension of time in a third party requested ex parte reexamination will be granted only for sufficient cause, and for a reasonable time specified.

The filing of a timely first response to this final rejection will be construed as including a request to extend the shortened statutory period for an additional two months. In no event, however, will the statutory period for response expire later than SIX MONTHS from the mailing date of the final action. See MPEP § 2265.

15. **All** correspondence relating to this ex parte reexamination proceeding should be directed:

By mail to: Mail Stop *Ex Parte* Reexam
 Central Reexamination Unit
 Commissioner for Patents
 United States Patent & Trademark Office
 P.O. Box 1450
 Alexandria, VA 22313-1450

By fax to: (571) 273-9900

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Central Reexamination Unit

By hand to: Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

Any inquiry concerning this communication should be directed to the Central
Reexamination Unit at telephone number (571) 272-7705.

/Christina Y. Leung/

Primary Examiner, Art Unit 3992

Conferees:

/Albert J Gagliardi/

Primary Examiner, Art Unit 3992

/James Menefee/

Acting SPE, Art Unit 3992

Office Action in Ex Parte Reexamination	Control No. 90/014,052	Patent Under Reexamination 9798967	
	Examiner Christina Y. Leung	Art Unit 3992	AIA (First Inventor to File) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

- a. ☒ Responsive to the communication(s) filed on April 2, 2018.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on ____.
- b. ☒ This action is made FINAL.
- c. ☐ A statement under 37 CFR 1.530 has not been received from the patent owner.

A shortened statutory period for response to this action is set to expire 2 month(s) from the mailing date of this letter. Failure to respond within the period for response will result in termination of the proceeding and issuance of an *ex parte* reexamination certificate in accordance with this action. 37 CFR 1.550(d). **EXTENSIONS OF TIME ARE GOVERNED BY 37 CFR 1.550(c)**. If the period for response specified above is less than thirty (30) days, a response within the statutory minimum of thirty (30) days will be considered timely.

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

- | | |
|--|---|
| 1. ☐ Notice of References Cited by Examiner, PTO-892. | 3. ☐ Interview Summary, PTO-474. |
| 2. ☐ Information Disclosure Statement, PTO/SB/08. | 4. ☐ ____. |

Part II SUMMARY OF ACTION

- 1a. ☒ Claims 1-20 are subject to reexamination.
- 1b. ☐ Claims ____ are not subject to reexamination.
2. ☐ Claims ____ have been canceled in the present reexamination proceeding.
3. ☐ Claims ____ are patentable and/or confirmed.
4. ☒ Claims 1-20 are rejected.
5. ☐ Claims ____ are objected to.
6. ☐ The drawings, filed on ____ are acceptable.
7. ☐ The proposed drawing correction, filed on ____ has been (7a) ☐ approved (7b) ☐ disapproved.
8. ☐ Acknowledgment is made of the priority claim under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of the certified copies have
1 ☐ been received.
2 ☐ not been received.
3 ☐ been filed in Application No. ____.
4 ☐ been filed in reexamination Control No. ____.
5 ☐ been received by the International Bureau in PCT application No. ____.
- * See the attached detailed Office action for a list of the certified copies not received.
9. ☐ Since the proceeding appears to be in condition for issuance of an *ex parte* reexamination certificate 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.
10. ☐ Other: ____

cc: Requester (if third party requester)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re <i>Ex Parte</i> Reexamination of:	)	
	)	
U.S. Patent No. 9,798,967	)	
	)	
Control No.: 90/014,052	)	Group Art Unit: 3992
	)	
Filed: November 29, 2017	)	Examiner: Christina Y. Leung
	)	
For: SYSTEMS, METHODS, AND	)	
DEVICES FOR COMMISSIONING)	)	
WIRELESS SENSORS	)	
	)	
Confirmation No.: 4770	)	

Mail Stop: *Ex Parte* Reexamination
Central Reexamination Unit
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

AMENDMENT IN RESPONSE TO FINAL OFFICE ACTION

DATED MAY 14, 2018

In response to the Final Office Action mailed May 14, 2018 in the above-referenced reexamination, please enter the following amendments and consider the following remarks.

IN THE CLAIMS

1. (Amended) An RFID transponder comprising:
 - a substrate;
 - an antenna structure formed on the substrate; and
 - an RFID integrated circuit chip which is electrically coupled to the antenna structure,
 - wherein the RFID integrated circuit chip is encoded with a unique object number, the unique object number comprising an object class information space and a unique serial number space,
 - wherein the unique serial number space is encoded with one serial number instance from an allocated block of serial numbers, the allocated block being assigned a limited number of most significant bits,
 - wherein the unique serial number space comprises the limited number of most significant bits uniquely corresponding to the limited number of most significant bits of the allocated block and of remaining bits of lesser significance that together comprise the one serial number instance.
2. The RFID transponder of claim 1, wherein the object class information space is encoded with information comprising a company prefix, an item reference, a partition value, and a filter value.
3. The RFID transponder of claim 1, wherein the unique object number is a portion of a serialized global trade item number.
4. The RFID transponder of claim 3, wherein the serialized global trade item number is an EPC SGTIN-96 encoding.
5. The RFID transponder of claim 1, wherein the unique serial number space is at least 38 bits.

6. The RFID transponder of claim 1, wherein the allocated block is defined by at least 3 most significant bits.
7. The RFID transponder of claim 1, wherein the allocated block is one of a plurality of allocations intermittently received by an encoder.
8. The RFID transponder of claim 1, wherein the RFID integrated circuit chip is comprised of silicon.
9. The RFID transponder of claim 1, wherein the RFID integrated circuit chip is comprised of polymer.
10. The RFID transponder of claim 1, wherein the substrate, antenna structure, and RFID integrated circuit chip are covered by a face stock material.
11. The RFID transponder of claim 1, wherein the RFID integrated circuit chip is disposed on the substrate.
12. The RFID transponder of claim 1, wherein the limited number of most significant bits that correspond to the allocated block further correspond to an encoder that encodes the RFID transponder.
13. (Amended) A RFID transponder comprising:
 - a substrate;
 - an antenna structure formed on the substrate; and
 - an RFID integrated circuit chip which is electrically coupled to the antenna structure,wherein the RFID integrated circuit chip is encoded with a global trade item number including a unique object number, the unique object number comprising an object class information space including a block of at least 50 bits and a unique serial number space including a block of at least 38 bits,

wherein the unique serial number space has one serial number instance from an allocated block of serial numbers, the allocated block being assigned a limited number of most significant bits, and

wherein the unique serial number space comprises at least 3 most significant bits uniquely corresponding to the limited number of most significant bits of the allocated block.

14. The RFID transponder of claim 13, wherein the unique serial number space further comprises remaining bits of lesser significance that together with the at least 3 most significant bits comprise the one serial number instance.

15. The RFID transponder of claim 13, wherein the at least 3 most significant bits that correspond to the allocated block further correspond to an encoder that encodes the RFID transponder.

16. (Amended) An integrated circuit, comprising:

a radio frequency circuit configured to backscatter a return link signal for processing by an RFID interrogator;

control logic; and

a memory,

wherein the memory is configured with a unique object number space, the unique object number space comprising an object class information space and a unique serial number space,

wherein the unique serial number space is encoded with one serial number instance from an allocated block of serial numbers, the allocated block being assigned a limited number of most significant bits,

wherein the unique serial number space comprises the limited number of most significant bits uniquely corresponding to the limited number of most significant bits of the allocated block and of remaining bits of lesser significance that together comprise the one serial number instance.

17. The integrated circuit of claim 16, wherein the object class information space is encoded with information comprising a company prefix, an item reference, a partition value, and a filter value.
18. The integrated circuit of claim 16, wherein the unique object number is a portion of a serialized global trade item number.
19. The integrated circuit of claim 18, wherein the serialized global trade item number is an EPC SGTIN-96 encoding.
20. The integrated circuit of claim 16, wherein the limited number of most significant bits that correspond to the allocated block further correspond to an encoder that encodes the memory of the integrated circuit.

REMARKS

Claims 1, 13 and 16 have been amended to more accurately recite the claimed subject matter. The claim amendments are supported by at least column 8, lines 4-36 of the '967 patent. No new matter has been added. Claims 1-20 are currently pending in this application. Based on the arguments presented below, the patent owner respectfully submits that all pending claims are allowable over the prior art relied on in the Final Office Action.

The patent under reexamination, U.S. Patent No. 9,798,967 ("the '967 patent") has been asserted in a proceeding captioned *Adasa Inc. v. Avery Dennison Corporation*, 6:17-cv-01685 (D. OR).

The patent owner thanks the Examiner for the productive interview on June 12, 2018. A summary of the interview is being submitted with this Response according to the rules governing *ex parte* reexaminations. This Response is in accordance with the statements and arguments presented by the patent owner during the interview.

The Examiner's Rejections

Claims 1-20 are each rejected twice under 35 U.S.C. 103 as follows:

Claims 1, 6-12, 16, and 20 stand rejected under 35 U.S.C. 103 as being unpatentable over US 2007/0040684 A1 to McAllister ("the '684 publication") in view of US 7,827,200 B2 to Rowe ("the '200 patent"). *See* Office Action, p. 3.

Claims 2-5, 13-15, and 17-19 stand rejected under 35 U.S.C. 103 as being unpatentable over the '684 publication in view of the '200 patent and EPCglobal Tag Data Standards, Version 1.3, March 8, 2006 ("the 2006 EPC Standard"). *See* Office Action, p. 3.

Claims 1, 6-12, 16, and 20 stand rejected under 35 U.S.C. 103 as being unpatentable over the '684 publication in view of US 8,373,545 B2 to Traub ("the '545 patent). *See* Office Action, p. 3.

Claims 2-5, 13-15, and 17-19 stand rejected under 35 U.S.C. 103 as being unpatentable over the '684 publication in view of the '545 patent and the 2006 EPC Standard. *See* Office Action, p. 3.

Summary of the Arguments

In response to the Examiner's assertions in the Final Office Action, the patent owner will demonstrate: (1) that the encoding of the limited number of most significant bits in the recited RFID transponder should be considered a structural limitation of the claims; and (2) the encoded limited number of most significant bits in binary is neither disclosed nor suggested by the prior art's teaching that serial numbers may be assigned based on a series of decimal numbers.

The Independent Claims of the '967 Patent

Independent Claim 1 of the '967 patent recites:

An RFID transponder comprising:

a substrate;

an antenna structure formed on the substrate; and

an RFID integrated circuit chip which is electrically coupled to the antenna structure,

wherein the RFID integrated circuit chip is encoded with a unique object number, the unique object number comprising an object class information space and a unique serial number space,

wherein the unique serial number space is encoded with one serial number instance from an allocated block of serial numbers, the allocated block being assigned a limited number of most significant bits, and

wherein the unique serial number space comprises the limited number of most significant bits uniquely corresponding to the limited number of most significant bits of the allocated block and remaining bits of lesser significance that together comprise the one serial number instance.

Independent Claim 13 of the '967 patent recites:

A RFID transponder comprising:

a substrate;

an antenna structure formed on the substrate; and

an RFID integrated circuit chip which is electrically coupled to the antenna structure,

wherein the RFID integrated circuit chip is encoded with a global trade item number including a unique object number, the unique object number comprising an object class information space including a block of at least 50 bits and a unique serial number space including a block of at least 38 bits,

wherein the unique serial number space has one serial number instance from an allocated block of serial numbers, the allocated block being assigned a limited number of most significant bits, and

wherein the unique serial number space comprises at least 3 most significant bits uniquely corresponding to the limited number of most significant bits of the allocated block.

Independent Claim 16 of the '967 patent recites:

An integrated circuit, comprising:

a radio frequency circuit configured to backscatter a return link

signal for processing by an RFID interrogator;

control logic; and

a memory,

wherein the memory is configured with a unique object number space, the unique object number space comprising an object class information space and a unique serial number space,

wherein the unique serial number space is encoded with one serial number instance from an allocated block of serial numbers, the allocated block being assigned a limited number of most significant bits, and

wherein the unique serial number space comprises the limited number of most significant bits uniquely corresponding to the limited number of most significant bits of the allocated block and of remaining bits of lesser significance that together comprise the one serial number instance.

While the independent claims are not identical, the highlighted claim language as shown above is similar enough that the arguments presented below with reference to claim 1, are equally applicable to claims 13 and 16.

The Proper Construction of Claim 1 of the '967 Patent

In the Final Office Action, the Examiner has asserted that “none of the claims are even directed to a method for encoding RFID transponders.” *See* Office Action, pp. 33-34. The patent owner generally disagrees with the Examiner’s statement. While the claims are not directed to a method, the patent owner asserts that certain recitations in the claims include process limitations that connote structure, and, as such, that structure should be considered when examining the claims. As will be described below, this assertion is based on the plain meaning of the claim recitations and the guidance of the Federal Circuit with respect to process limitations that connote

structure.

Specifically, claim 1 recites an RFID transponder that includes an RFID integrated circuit chip that includes a unique object number having an object class information space and a unique serial number space. Further, “the unique serial number space is encoded with one serial number instance from an allocated block of serial numbers, the allocated block being assigned a limited number of most significant bits.” That is, the serial number space of the recited RFID integrated circuit is encoded with a serial number. However, the serial number is not any random number, but is rather “one serial number instance” from an allocated block of serial numbers. Moreover, the allocated block is also not just any block, but has a specific form that is recited in the claim. That form is that the allocated block is “assigned a limited number of most significant bits.” Thus, the patent owner asserts that claim 1 should be interpreted to include the structural limitation that the encoded serial number space must include a serial number instance that was selected from an allocated block that was specifically assigned (or allocated) based on a limited number of most significant bits.

This interpretation is further supported by the next element of claim 1 that recites “wherein the unique serial number space comprises the limited number of most significant bits uniquely corresponding to the limited number of most significant bits of the allocated block and remaining bits of lesser significance that together comprise the one serial number instance.” The patent owner has amended this element to make it clear that the limited number of most significant bits that are encoded in the serial number space *uniquely* correspond to the limited number of most significant bits of the allocated block. That is, there is a direct correlation between the encoded bits and the allocated bits.

The first implication of this recitation is that the unique serial number space is specifically partitioned into two portions, a first portion that is the most significant bits and a second portion that are the bits of lesser significance. This partitioning is again, not a random selection of bits, but an intentional partition between most significant bits and bits of lesser significance. The second implication of this recitation is this intentional partitioning is based on the allocated block because the “unique serial number space comprises the limited number of most significant bits uniquely corresponding to the limited number of most significant bits of the allocated block.” As stated above, this partitioning of the unique serial number space is based on the limited number of most significant bits of the allocated block. The amendment makes it clear that the encoded limited number of most significant bits are the allocated limited number of most significant bits. That is, without the specific form of the allocated block (*i.e.*, the limited number of most significant bits assigned to the allocated block), there could be no meaningful partition of the unique serial number space as recited in the claims. The process limitation of allocating the limited number of most significant bits is a structural limitation of the RFID transponder because the representation of those allocated limited number of most significant bits is exactly what is encoded on the RFID transponder in the unique serial number space. Within the context of the claim, this unique correspondence between the allocated bits and the encoded bits is a meaningful structural limitation. Therefore, the patent owner asserts that the process limitation of the allocated block being assigned a limited number of most significant bits is, in fact, a structural limitation on the RFID transponder because the unique serial number space must uniquely correspond to this allocated block assignment as recited in claim 1.

The patent owner refers the Examiner to *In re Nordt Dev. Co., LLC*, 881 F.3d 1371, 1374 (Fed. Cir. 2018) where the court stated, “[i]f the process limitation connotes specific structure and

may be considered a structural limitation, however, that structure should be considered.” The court went on to state, “words of limitation that can connote with equal force a structural characteristic of the product or a process of manufacture are commonly and by default interpreted in their structural sense, unless the patentee has demonstrated otherwise.” *Id.* at 1375, *citing*, *3M Innovative Props. Co. v. Avery Dennison Corp.*, 350 F.3d 1365, 1371-72 (Fed. Cir. 2003). Thus, the court interpreted the term “injection molded” to be a structural limitation rather than a product by process limitation. Similarly, the court has held the same for multiple other process type limitations. *See e.g.*, *Hazani v. U.S. Int’l Trade Comm’n*, 126 F.3d 1473, 1479 (Fed. Cir. 1997) (“chemically engraved surface” is not a process term because it describes the structure of the surface rather than the process used to obtain it); *3M Innovative Props. Co. v. Avery Dennison Corp.*, 350 F.3d 1365, 1371-72 (Fed. Cir. 2003) (“multiple embossed patterns” that are “superimposed” was improperly construed to convert to a product by process claim requiring the first and second patterns being created sequentially, rather this describes only the structural relationship of the embossing patterns); and *Gemtron Corp. v. Saint-Gobain Corp.*, 572 F.3d 1371, 1379 (Fed. Cir. 2009) (“snap-secure[d]” describes the structural relationship between the glass panel and the frame, which is possessed by the claimed shelf because of the structural characteristics of the individual components).

The common thread in each of these cases is that the structural element connoted by these process-type limitations show a structural difference between the recited product and the prior art. As will be described in greater detail below, the RFID transponder of claim 1, when properly construed exhibits this same structural difference between it and the prior art. Specifically, none of the prior art includes a unique serial number space that is partitioned into most significant bits and bits of lesser significance such that it is encoded with “the limited number of most significant

bits uniquely corresponding to the limited number of most significant bits of the allocated block.”

Accordingly, the proper interpretation of claim 1 requires that the serial number space must include a serial number instance that was selected from an allocated block that was specifically assigned (or allocated) based on a limited number of most significant bits and the serial number space is encoded with this data such that the limited number of most significant bits *uniquely* corresponds to the limited number of most significant bits of the allocated block.

The Differences Between the Claims of the ‘967 Patent and the Cited References

Initially, the Examiner has admitted that the ‘684 publication does not disclose the above highlighted claim elements of the ‘967 patent. *See* Office Action, pp. 5 and 18-19. However, the Examiner has asserted that both the ‘200 patent and the ‘545 patent cure these deficiencies of the ‘684 publication. *See* Office Action, pp. 5-6 and 19-22. The patent owner respectfully disagrees.

The patent owner will discuss each of the references individually below. However, the patent owner can summarize the teachings of the ‘200 patent and the ‘545 patent as the selection of a series of decimal ranges to be used for the serial numbers. Further, from the Examiner’s rejection and the discussion held with the Examiner, it appears to the patent owner that the Examiner’s argument is that one could select a decimal range that corresponds to the most significant bits recited in the claim and therefore, it would be obvious, to encode the most significant bits as recited in the claims.

The patent owner disagrees with this analysis. As described above, the properly interpreted claims of the ‘967 patent require a serial number instance that was selected from an allocated block that was specifically assigned (or allocated) based on a limited number of most significant bits. Selecting a series of decimal numbers is not the same as assigning an allocated block based on a

limited number of most significant bits. In the prior art, a range of decimal numbers is selected and then the decimal numbers in the range are converted from decimal to binary for storage on the RFID tag. However, the only consideration of the binary numbers is the conversion from the decimal. The patent owner asserts that assigning a range of decimal numbers in no way discloses or suggests assigning an allocated block based on a limited number of most significant bits. With respect to the prior art, there would be no reason to assign a series of sequential serial numbers based on a binary system. It would not provide any different outcome from the decimal range. Whereas, in contrast, the entire point of claim 1 is to require a serial number instance that was selected from an allocated block that was specifically assigned (or allocated) based on a limited number of most significant bits and the serial number space is encoded with this data such that the limited number of most significant bits *uniquely* corresponds to the limited number of most significant bits of the allocated block.

The mere fact that a highly unlikely scenario exists where one could randomly pick a series of decimal numbers that corresponds to some number of most significant bits in binary is irrelevant. The question is why would such numbers be picked. What would be the motivation for selecting numbers in such a way. The patent owner cannot think of any motivation within the prior art that suggests such a selection method. As described above, the recitations of the '967 patent are nonobvious because of the unique manner of partitioning the serial number space into most significant bits and bits of lesser significance. Once this is done, as recited in the claims, then allocating blocks based on the most significant bits becomes useful. The prior art neither teaches nor suggests such a scheme of having RFID transponders encoded.

The Specific Differences Between the ‘200 Patent and the Recited Claims

The ‘200 patent describes a method for managing serialization of Electronic Product Codes (EPCs). ‘200 Patent, Abstract. The EPCs are described as including a nonserialized portion 112 and a serialized portion 114. ‘200 Patent 3/56-58. The nonserialized portion 112 is described as specifying, for example, a manufacturer and an object classification. ‘200 Patent 3/65-66. The serialized portion 114 is specifically associated with an object. ‘200 Patent 4/8-9. The combination of the serialized portion 114 and the nonserialized portion 112 results in a unique identifier for an object. ‘200 Patent 4/9-11. The ‘200 patent states that “[t]he serialized values can be stored in [a] database table 126. ‘200 Patent 4/11-12. The assignment of the serialized values is described as follows:

[D]ifferent manufacturer divisions that produce objects having the same object classification can be assigned a subset of numbers from a number pool of unassigned numbers to ensure that unique serial numbers are always generated. *For example, a serial number generation function used by a first division can sequentially assign odd serial numbers, while a different serial number generation function used by a second division can sequentially assign even serial numbers. In another example, a first division can assign serial numbers in the range of one to a million and the second division can assign serial numbers in a range of three to four million.* It should be appreciated that the different divisions can be communicatively linked to a centralized system that assigns serial numbers, which would ensure that serial numbers are uniquely assigned per object classification.

‘200 patent, 5/7-22 (emphasis added).

Thus, the ‘200 patent describes various examples of ranges of decimal serial numbers, *e.g.*, even and odd numbers; 1 – 1,000,000; 3,000,000 – 4,000,000. There is no hint or suggestion within the ‘200 patent to allocate blocks based on the most significant bits, or even that the serial numbers from the allocated block and the correspondingly encoded serial numbers in the RFID transponder should be partitioned in any manner. Again, as described above, until the present

patent taught that the serial number space could be partitioned into most significant bits and bits of lesser significance, there was no advantage of allocating blocks based on most significant bits.

Accordingly, the '200 patent neither teaches nor discloses "wherein the unique serial number space is encoded with one serial number instance from an allocated block of serial numbers, the allocated block being assigned a limited number of most significant bits, and wherein the unique serial number space comprises the limited number of most significant bits uniquely corresponding to the limited number of most significant bits of the allocated block and remaining bits of lesser significance that together comprise the one serial number instance," as recited in claim 1.

Moreover, neither the '684 publication nor the 2006 EPC Standard cures these deficiencies of the '200 patent. Thus, the patent owner respectfully requests the Examiner withdraw the rejections under 35 U.S.C. 103 of claims 1-12 based on these references.

Claim 13 recites, *inter alia*, "wherein the unique serial number space has one serial number instance from an allocated block of serial numbers, the allocated block being assigned a limited number of most significant bits, and wherein the unique serial number space comprises at least 3 most significant bits uniquely corresponding to the limited number of most significant bits of the allocated block." Accordingly, for the same reasons described above with reference to claim 1, the patent owner respectfully requests the withdrawal of the 35 U.S.C. 103 rejections of claims 13-15 based on the '200 patent, the '684 publication and the 2006 EPC Standard.

Claim 16 recites, *inter alia*, "wherein the unique serial number space is encoded with one serial number instance from an allocated block of serial numbers, the allocated block being assigned a limited number of most significant bits, and wherein the unique serial number space comprises the limited number of most significant bits uniquely corresponding to the limited

number of most significant bits of the allocated block and of remaining bits of lesser significance that together comprise the one serial number instance.” Accordingly, for the same reasons described above with reference to claim 1, the patent owner respectfully requests the withdrawal of the 35 U.S.C. 103 rejections of claims 16-20 based on the ‘200 patent, the ‘684 publication and the 2006 EPC Standard references.

The Specific Differences Between the ‘545 Patent and the Recited Claims

The ‘545 patent describes an “EPC provisioning system comprising a EPC server [that] dynamically provide[s] EPC code blocks for one product to multiple client sites. The EPC server can use business rules to determine the EPC codes for the multiple client sites.” ‘545 patent, Abstract. The entire thrust of the ‘545 patent is directed at a centralized server system to manage the EPC codes. For example, the ‘545 patent states, “an EPC server 402 [is] adapted to dynamically provide EPC code blocks 404 and 406 for one product to multiple client sites. The EPC server 402 can use business rules to determine the EPC codes for the multiple client sites 408 and 410.” ‘545 patent, 3/67 – 4/4. This centralized control over the EPC codes is implemented via “a computer implemented method using business rules to determine EPC code blocks for multiple client sites and providing the EPC code blocks to the multiple client sites.” ‘545 patent, 4/12-15.

As the Examiner asserts, the ‘545 patent shows in Figs 13E-G that EPC codes can be divided into blocks of about five or ten million. *See* Office Action, pp. 20-21 and ‘545 patent, Figs 13E-G. These are ranges of decimal numbers. In fact, Figs. 13E-G show a standard decimal entry GUI for entering the EPC code ranges. Again, there is no hint or suggestion in the ‘545 patent that the EPC code ranges can or should be entered in binary or that one should select decimal numbers

that correspond to specific significant bits in binary. As described extensively above, the motivation for allocating blocks based on a limited number of most significant bits is the realization by the inventor of the present patent that the unique serial number field can be partitioned into the most significant bits and the bits of lesser significance.

Accordingly, the '545 patent neither teaches nor discloses "wherein the unique serial number space is encoded with one serial number instance from an allocated block of serial numbers, the allocated block being assigned a limited number of most significant bits, and wherein the unique serial number space comprises the limited number of most significant bits uniquely corresponding to the limited number of most significant bits of the allocated block and remaining bits of lesser significance that together comprise the one serial number instance," as recited in claim 1.

Moreover, neither the '684 publication nor the 2006 EPC Standard cures these deficiencies of the '545 patent. Thus, the patent owner respectfully requests the Examiner withdraw the rejections under 35 U.S.C. 103 of claims 1-12 based on these references.

Claim 13 recites, *inter alia*, "wherein the unique serial number space has one serial number instance from an allocated block of serial numbers, the allocated block being assigned a limited number of most significant bits, and wherein the unique serial number space comprises at least 3 most significant bits uniquely corresponding to the limited number of most significant bits of the allocated block." Accordingly, for the same reasons described above with reference to claim 1, the patent owner respectfully requests the withdrawal of the 35 U.S.C. 103 rejections of claims 13-15 based on the '545 patent, the '684 publication and the 2006 EPC Standard.

Claim 16 recites, *inter alia*, "wherein the unique serial number space is encoded with one serial number instance from an allocated block of serial numbers, the allocated block being

assigned a limited number of most significant bits, and wherein the unique serial number space comprises the limited number of most significant bits uniquely corresponding to the limited number of most significant bits of the allocated block and of remaining bits of lesser significance that together comprise the one serial number instance.” Accordingly, for the same reasons described above with reference to claim 1, the patent owner respectfully requests the withdrawal of the 35 U.S.C. 103 rejections of claims 16-20 based on the ‘545 patent, the ‘684 publication and the 2006 EPC Standard references.

It is respectfully submitted that the presently pending claims are novel, nonobvious and useful and that the present application is in condition for allowance. A prompt and favorable action on the merits is earnestly solicited. The Examiner is invited to contact the undersigned to discuss any matter concerning this application.

Respectfully submitted,

Dated: June 15, 2018

By: /Michael J. Marcin/
Michael J. Marcin (Reg. No. 48,198)

Fay Kaplun & Marcin, LLP
150 Broadway, Suite 702
New York, NY 10038
Phone: 212-619-6000
Fax: 212-619-0276

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re <i>Ex Parte</i> Reexamination of:	)	
	)	
U.S. Patent No. 9,798,967	)	
	)	
Control No.: 90/014,052	)	Group Art Unit: 3992
	)	
Filed: November 29, 2017	)	Examiner: Christina Y. Leung
	)	
For: SYSTEMS, METHODS, AND	)	
DEVICES FOR COMMISSIONING)	)	
WIRELESS SENSORS	)	
	)	
Confirmation No.: 4770	)	

Mail Stop: *Ex Parte* Reexamination
Central Reexamination Unit
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

PATENT OWNER'S INTERVIEW SUMMARY IN
EX PARTE REEXAMINATION PURSUANT TO 37 CFR 1.560

Dear Sir:

The patent owner conducted an Examiner Interview in the above-referenced *ex parte* reexamination on June 12, 2018. The following is the patent owner's statement of the interview as required by 37 CFR 1.560.

REMARKS

The patent under reexamination, U.S. Patent No. 9,798,967 (“the ‘967 patent”) has been asserted in a proceeding captioned *Adasa Inc. v. Avery Dennison Corporation*, 6:17-cv-01685 (D. OR).

The interview was conducted telephonically on June 12, 2018 and the participants were as follows:

Christina Y. Leung – USPTO and Examiner in this proceeding

James A. Menefee -- USPTO

Michael Marcin (48,198) – Patent Owner Representative

Clarke McAllister-- Inventor

The patent owner asserted two arguments to counter the Examiner’s rejection. First, the recitations of the independent claim connote structure of the tag and should be examined as such. Second, the examples of decimal numbers provided by the Examiner do not teach the general principle of encoding the most significant bits in a tag as recited in the claims. No agreement was reached.

The Examiner suggested filing the response to the Office Action by Friday, June 15, 2018 so the Examiner can review the response and provide feedback to the patent owner prior to the July 14, 2018 date for filing an appeal. The patent owner agreed to this course of action.

Respectfully submitted,

Date: June 15, 2018

By: /Michael J. Marcin/
Michael J. Marcin (Reg. No 48,198)
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<i>Ex Parte Reexamination Interview Summary</i>	Control No. 90/014,052	Patent Under Reexamination 9798967
	Examiner Christina Y. Leung	Art Unit 3992

All participants (USPTO personnel, patent owner, patent owner's representative):

(1) <u>Christina Y. Leung</u> (2) <u>Michael Marcin</u>	(3) <u>Clarke McAllister</u> (4) <u>James Menefee</u>
--	--

Date of Interview: 12 June 2018

Type: a) ☒ Telephonic b) ☐ Video Conference
 c) ☐ Personal (copy given to: 1) ☐ patent owner 2) ☐ patent owner's representative)

Exhibit shown or demonstration conducted: d) ☐ Yes e) ☒ No.
 If Yes, brief description: _____

Agreement with respect to the claims f) ☐ was reached. g) ☒ was not reached. h) ☐ N/A.
 Any other agreement(s) are set forth below under "Description of the general nature of what was agreed to..."

Claim(s) discussed: 1-20.

Identification of prior art discussed: US 7,827,200 B2 and US 8,373,545 B2.

Description of the general nature of what was agreed to if an agreement was reached, or any other comments:
See Continuation Sheet.

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims patentable, if available, must be attached. Also, where no copy of the amendments that would render the claims patentable is available, a summary thereof must be attached.)

A FORMAL WRITTEN RESPONSE TO THE LAST OFFICE ACTION MUST INCLUDE PATENT OWNER'S STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. (See MPEP § 2281). IF A RESPONSE TO THE LAST OFFICE ACTION HAS ALREADY BEEN FILED, THEN PATENT OWNER IS GIVEN **ONE MONTH FROM THIS INTERVIEW DATE TO PROVIDE THE MANDATORY STATEMENT OF THE SUBSTANCE OF THE INTERVIEW (37 CFR 1.560(b)). THE REQUIREMENT FOR PATENT OWNER'S STATEMENT CAN NOT BE WAIVED. **EXTENSIONS OF TIME ARE GOVERNED BY 37 CFR 1.550(c).****

/Christina Y. Leung/ Primary Examiner, Art Unit 3992		
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cc: Requester (if third party requester)

Continuation of Description of the general nature of what was agreed to if an agreement was reached, or any other comments:

Patent Owner (PO) and Examiners discussed the arguments in the final Office action. PO asserted that the recited serial number's structure comes from the recited allocated block and that the limitations in the claims are structural. PO also asserted that the allocated block in the invention is based on the binary numbers in the range having the same MSBs while the cited prior art's allocation is based on decimal numbers without regard to the resulting MSBs after decimal-to-binary conversion. Although PO acknowledged that the cited prior art also generally discloses an RFID tag with a binary serial number (wherein the serial number also necessarily has some MSBs), PO asserted that the allocated decimal ranges taught by the cited prior art result in arbitrary binary number ranges and therefore do not suggest the clean binary number ranges with MSBs uniquely corresponding to blocks of numbers.

PO suggested amending the claims to clarify that the MSB of the serial number uniquely corresponds to the allocated block and/or that all of the serial numbers in the recited allocated block share the same MSBs. No agreement was reached during the interview, but Examiner agreed to fully consider PO's arguments in view of such an amendment..

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FACSIMILE COVER SHEET

FAX NO : 571-273-3023

TO : Commissioner for Patents
Attn: Examiner Leung

FROM : Michael J. Marcin, Esq. of Fay Kaplun & Marcin, LLP

DATE : June 11, 2018

SUBJECT : U.S. Patent No. 9,798,967
Control No. 90/014,052
*for Systems, Methods, and Devices for
Commissioning Wireless Sensors*
Inventor(s): McAllister et al.
Our Ref.: 30139/00105

NUMBER OF PAGES INCLUDING COVER : 3

MESSAGE:

Please see attached.

Thank you.

IF ANY PAGES WERE NOT RECEIVED OR ARE ILLEGIBLE, PLEASE CALL (212) 619-6000 AS SOON AS POSSIBLE

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AGENDA FOR 90/014,052 INTERVIEW

Date/Time:

Tuesday, June 12 3:00 pm (Eastern)

Participants for Patentee:

Michael Marcin (48198) – 212-619-6000 x204

Clarke McAllister (Inventor) -- 541-359-1677 x102

Discussion Topics:

1. The Examiner asserted that “none of the claims are even directed to a method for encoding an RFID transponder.”

The patentee would like to discuss cases such as *In re Nordt Dev. Co., LLC*, 881 F.3d 1371 (Fed. Cir. 2018), *Hazani v. U.S. Int'l Trade Comm'n*, 126 F.3d 1473, 1479 (Fed. Cir. 1997), *3M Innovative Props. Co. v. Avery Dennison Corp.*, and *Gemtron Corp. v. Saint-Gobain Corp.*, 572 F.3d 1371, 1379 (Fed. Cir. 2009) that generally stand for the proposition that if a process limitation connotes structure, that structure should be considered.

The Patentee asserts that the recitation of “the unique serial number space is encoded with one serial number instance from an allocated block of serial numbers, the allocated block being assigned a limited number of most significant bits” connotes a structure of the tag and should be examined as such.

2. The Examiner provided an example of numbers that can be used as most significant bits.

The Patentee would like to demonstrate that the examples do not teach the general principle of using the most significant bits in a tag.

Example used: another block assigned to a second manufacturing division can be 3,456,789 (i.e., “a number in the range three to four million”), represented as 0001101001011111100010101.

Now instead, choose a second number from the same range three to four million 3,056,789 represented as 0001011101010010010010101 having a different value for the

five MSBs. This would produce an invalid outcome for a brand owner using the most significant bits to allocate blocks, so therefore it would not have been obvious to use MSBs to allocate blocks of serial numbers.

Furthermore, a third number 4,056,789, a number in the range four to five million represented as 0001111011110011011010101 has 00011 as its most significant bits. This 5-bit number exactly matches the five MSB's from the Examiner's first example above (i.e. 3,456,789). Therefore using the MSBs to allocate blocks would result in duplication of serial numbers, which violates the requirements for uniquely numbered EPC RFID tags as set for in the EPCglobal Tag Data Standard. It would therefore have been obvious to one having ordinary skill in the art to NOT mix binary block allocation with decimal block allocation. This is what our expert, in speaking to others skilled in the art, correctly describes as mixing apples with oranges (Williams Declaration, paragraph 57).

To this end, the patentee would like to propose the following amendments to claim 1 to show this difference:

Option 1:

wherein the unique serial number space comprises the limited number of most significant bits uniquely corresponding to the allocated block and remaining bits of lesser significance that together comprise the one serial number instance

Option 2:

wherein the unique serial number space is encoded with one serial number instance from an allocated block of serial numbers, the allocated block ~~being~~ having been assigned a limited number of most significant bits to ensure uniqueness of the serial numbers in the allocated block, and



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
90/014,052	11/29/2017	9798967	029101.6	4770

30636 7590 07/05/2018
FAY KAPLUN & MARCIN, LLP
150 BROADWAY, SUITE 702
NEW YORK, NY 10038

EXAMINER

LEUNG, CHRISTINA Y

ART UNIT	PAPER NUMBER
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3992

MAIL DATE	DELIVERY MODE
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07/05/2018

PAPER

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.



DO NOT USE IN PALM PRINTER

(THIRD PARTY REQUESTER'S CORRESPONDENCE ADDRESS)

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WASHINGTON, DC 20004

***EX PARTE* REEXAMINATION COMMUNICATION TRANSMITTAL FORM**

REEXAMINATION CONTROL NO. 90/014,052.

PATENT NO. 9,789,967.

ART UNIT 3992.

Enclosed is a copy of the latest communication from the United States Patent and Trademark Office in the above identified *ex parte* reexamination proceeding (37 CFR 1.550(f)).

Where this copy is supplied after the reply by requester, 37 CFR 1.535, or the time for filing a reply has passed, no submission on behalf of the *ex parte* reexamination requester will be acknowledged or considered (37 CFR 1.550(g)).

Notice of Intent to Issue Ex Parte Reexamination Certificate	Control No.	Patent Under Reexamination	
	90/014,052	9798967	
	Examiner	Art Unit	AIA (First Inventor to File) Status
	Christina Y. Leung	3992	No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

1. ☒ Prosecution on the merits is (or remains) closed in this *ex parte* reexamination proceeding. This proceeding is subject to reopening at the initiative of the Office or upon petition. *Cf.* 37 CFR 1.313(a). A Certificate will be issued in view of
 - (a) ☒ Patent owner's communication(s) filed: 15 June 2018.
 - (b) ☐ Patent owner's failure to file an appropriate timely response to the Office action mailed: _____.
 - (c) ☐ Patent owner's failure to timely file an Appeal Brief (37 CFR 41.31).
 - (d) ☐ The decision on appeal by the ☐ Board of Patent Appeals and Interferences ☐ Court dated _____
 - (e) ☐ Other: _____.
 2. The Reexamination Certificate will indicate the following:
 - (a) Change in the Specification: ☐ Yes ☒ No
 - (b) Change in the Drawing(s): ☐ Yes ☒ No
 - (c) Status of the Claim(s):
 - (1) Patent claim(s) confirmed: _____.
 - (2) Patent claim(s) amended (including dependent on amended claim(s)): 1-20
 - (3) Patent claim(s) canceled: _____.
 - (4) Newly presented claim(s) patentable: _____.
 - (5) Newly presented canceled claims: _____.
 - (6) Patent claim(s) ☐ previously ☐ currently disclaimed: _____
 - (7) Patent claim(s) not subject to reexamination: _____.
 3. ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.
 4. ☒ Note the attached statement of reasons for patentability and/or confirmation. Any comments considered necessary by patent owner regarding reasons for patentability and/or confirmation must be submitted promptly to avoid processing delays. Such submission(s) should be labeled: "Comments On Statement of Reasons for Patentability and/or Confirmation."
 5. ☐ Note attached NOTICE OF REFERENCES CITED (PTO-892).
 6. ☐ Note attached LIST OF REFERENCES CITED (PTO/SB/08 or PTO/SB/08 substitute).
 7. ☐ The drawing correction request filed on _____ is: ☐ approved ☐ disapproved.
 8. ☐ Acknowledgment is made of the priority claim under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the certified copies have
 - ☐ been received.
 - ☐ not been received.
 - ☐ been filed in Application No. _____.
 - ☐ been filed in reexamination Control No. _____.
 - ☐ been received by the International Bureau in PCT Application No. _____.
- * Certified copies not received: _____.
9. ☐ Note attached Examiner's Amendment.
 10. ☒ Note attached Interview Summary (PTO-474).
 11. ☐ Other: _____.

All correspondence relating to this reexamination proceeding should be directed to the **Central Reexamination Unit** at the mail, FAX, or hand-carry addresses given at the end of this Office action.

	/Christina Y. Leung/ Primary Examiner, Art Unit 3992
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cc: Requester (if third party requester)

STATEMENT OF REASONS FOR PATENTABILITY AND/OR CONFIRMATION

Claims 1-20 (all claims) of US 9,798,967 B2 (“967 Patent”) are being reexamined in this proceeding.

Claims 1-20 are patentable.

The following is an examiner’s statement of reasons for patentability and/or confirmation of the claims found patentable in this reexamination proceeding:

The claim amendment filed on June 15, 2018 has been entered. The response filed by Patent Owner on June 15, 2018 has been fully considered and is persuasive in view of the claim amendment.

The prior art of record, including 684 Publication, 200 Patent, 545 Patent, and 2006 EPC Standard, does not specifically disclose or fairly teach an RFID transponder (or an integrated circuit with an RF circuit) including all of the elements and limitations recited in claims 1-20 (and including all of the limitations of any respective parent claims), particularly including:

a unique serial number space encoded with one serial number instance from an allocated block of serial numbers,

the allocated block being assigned a limited number of most significant bits,

wherein the unique serial number space comprises the limited number of most significant bits uniquely corresponding to the limited number of most significant bits of the allocated block.

Any comments considered necessary by PATENT OWNER regarding the above statement must be submitted promptly to avoid processing delays. Such submission by the patent owner should be labeled: “Comments on Statement of Reasons for Patentability and/or Confirmation” and will be placed in the reexamination file.

Art Unit: 3992

All correspondence relating to this ex parte reexamination proceeding should be directed:

By mail to: Mail Stop *Ex Parte* Reexam
 Central Reexamination Unit
 Commissioner for Patents
 United States Patent & Trademark Office
 P.O. Box 1450
 Alexandria, VA 22313-1450

By fax to: (571) 273-9900
 Central Reexamination Unit

By hand to: Customer Service Window
 Randolph Building
 401 Dulany Street
 Alexandria, VA 22314

Any inquiry concerning this communication should be directed to the Central
Reexamination Unit at telephone number (571) 272-7705.

/Christina Y. Leung/

Primary Examiner, Art Unit 3992

Conferees:

/Albert J Gagliardi/

Primary Examiner, Art Unit 3992

/James Menefee/

Primary Examiner, Art Unit 3992



US009798967C1

(12) **EX PARTE REEXAMINATION CERTIFICATE** (11358th)
United States Patent
McAllister

(10) **Number:** **US 9,798,967 C1**(45) **Certificate Issued:** ***Jul. 30, 2018**(54) **SYSTEMS, METHODS, AND DEVICES FOR COMMISSIONING WIRELESS SENSORS**(71) Applicant: **ADASA INC.**, Eugene, OR (US)(72) Inventor: **Clarke W. McAllister**, Eugene, OR (US)(73) Assignee: **ADASA INC.**, Eugene, OR (US)**Reexamination Request:**

No. 90/014,052, Nov. 29, 2017

Reexamination Certificate for:Patent No.: **9,798,967**Issued: **Oct. 24, 2017**Appl. No.: **15/042,993**Filed: **Feb. 12, 2016**

(*) Notice: This patent is subject to a terminal disclaimer.

Related U.S. Application Data

- (63) Continuation of application No. 13/526,520, filed on Jun. 19, 2012, now Pat. No. 9,272,805, which is a continuation-in-part of application No. 12/820,109, filed on Jun. 21, 2010, now Pat. No. 8,228,198, which is a continuation-in-part of application No. 11/465,712, filed on Aug. 18, 2006, now Pat. No. 7,830,258, said application No. 12/820,109 is a continuation-in-part of application No. 12/124,768, filed on May 21, 2008, now abandoned.
- (60) Provisional application No. 60/709,713, filed on Aug. 19, 2005, provisional application No. 60/939,603, filed on May 22, 2007.

(51) **Int. Cl.****H04Q 5/22** (2006.01)**G06K 19/077** (2006.01)**B65C 9/18** (2006.01)**B65C 11/00** (2006.01)**B65C 9/40** (2006.01)**B65C 9/00** (2006.01)**G06K 17/00** (2006.01)(52) **U.S. Cl.**CPC **G06K 19/07716** (2013.01); **B65C 9/1865** (2013.01); **B65C 11/006** (2013.01); **G06K 19/077** (2013.01); **B65C 2009/0003** (2013.01); **B65C 2009/404** (2013.01); **G06K 2017/0041** (2013.01)(58) **Field of Classification Search**

None

See application file for complete search history.

(56)

References Cited

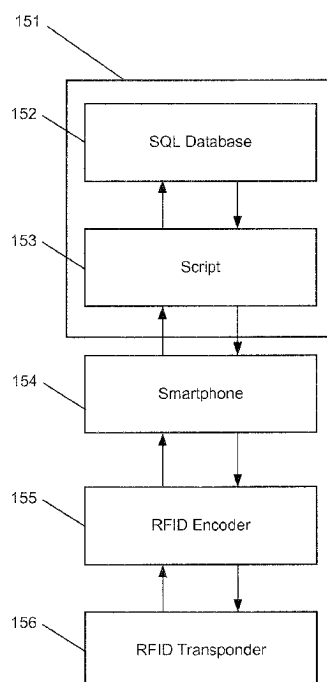
To view the complete listing of prior art documents cited during the proceeding for Reexamination Control Number 90/014,052, please refer to the USPTO's public Patent Application Information Retrieval (PAIR) system under the Display References tab.

Primary Examiner — Christina Y Leung

(57)

ABSTRACT

In one embodiment the present invention comprises a smart-phone and encoders for commissioning RFID transponders. The present invention further includes novel systems, devices, and methods for commissioning RFID transponders with unique object class instance numbers without requiring a realtime connection to a serialization database.



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EX PARTE REEXAMINATION CERTIFICATE

THE PATENT IS HEREBY AMENDED AS
INDICATED BELOW.

Matter enclosed in heavy brackets [] appeared in the patent, but has been deleted and is no longer a part of the patent; matter printed in italics indicates additions made to the patent.

AS A RESULT OF REEXAMINATION, IT HAS BEEN
DETERMINED THAT:

Claims 1, 13 and 16 are determined to be patentable as amended.

Claims 2-12, 14, 15 and 17-20, dependent on an amended claim, are determined to be patentable.

1. An RFID transponder comprising:
a substrate;
an antenna structure formed on the substrate; and
an RFID integrated circuit chip which is electrically coupled to the antenna structure,
wherein the RFID integrated circuit chip is encoded with a unique object number, the unique object number comprising an object class information space and a unique serial number space,
wherein the unique serial number space is encoded with one serial number instance from an allocated block of serial numbers, the allocated block being assigned a limited number of most significant bits,
wherein the unique serial number space comprises the limited number of most significant bits *uniquely* corresponding to *the limited number of most significant bits* of the allocated block and of remaining bits of lesser significance that together comprise the one serial number instance.

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13. A RFID transponder comprising:
a substrate;
an antenna structure formed on the substrate; and
an RFID integrated circuit chip which is electrically coupled to the antenna structure,
wherein the RFID integrated circuit chip is encoded with a global trade item number including a unique object number, the unique object number comprising an object class information space including a block of at least 50 bits and a unique serial number space including a block of at least 38 bits,
wherein the unique serial number space has one serial number instance from an allocated block of serial numbers, the allocated block being assigned a limited number of most significant bits, and
wherein the unique serial number space comprises at least 3 most significant bits *uniquely* corresponding to *the limited number of most significant bits* of the allocated block.

16. An integrated circuit, comprising:
a radio frequency circuit configured to backscatter a return link signal for processing by an RFID interrogator;
control logic; and
a memory,
wherein the memory is configured with a unique object number space, the unique object number space comprising an object class information space and a unique serial number space,
wherein the unique serial number space is encoded with one serial number instance from an allocated block of serial numbers, the allocated block being assigned a limited number of most significant bits,
wherein the unique serial number space comprises the limited number of most significant bits *uniquely* corresponding to *the limited number of most significant bits* of the allocated block and of remaining bits of lesser significance that together comprise the one serial number instance.

* * * * *