

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

R-PAC INTERNATIONAL CORP.,
Petitioner

v.

ADASA INC.,
Patent Owner

Case IPR2024-01416
U.S. Patent No. 9,798,967 C1

PATENT OWNER'S PRELIMINARY RESPONSE

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<i>Google LLC v. Valtrus Innovations Ltd.</i> , IPR2022-01197, Paper 18 at 29 (June 13, 2023)	23

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35 U.S.C. § 314	6, 24, 42
35 U.S.C. § 325	20, 23
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LIST OF PATENT OWNER'S EXHIBITS

Exhibit No.	Description
2001	Declaration of Jonathan T. Suder in Support of Motion for <i>Pro Hac Vice</i> Admission
2002	Excerpts from Transcript of Proceedings for Day 3 (July 13, 2023) of <i>ADASA Inc. v. Avery Dennison Corp.</i> , Case No. 6:17-CV-01685-MK, in the District of Oregon
2003	Excerpts from Transcript of Proceedings for Day 4 (July 14, 2023) of <i>ADASA Inc. v. Avery Dennison Corp.</i> , Case No. 6:17-CV-01685-MK, in the District of Oregon
2004	Excerpts from Transcript of Proceedings for Day 5 (July 17, 2023) of <i>ADASA Inc. v. Avery Dennison Corp.</i> , Case No. 6:17-CV-01685-MK, in the District of Oregon
2005	Order on Motions for Summary Judgment [Dkt. 167] entered in <i>ADASA Inc. v. Avery Dennison Corp.</i> , Case No. 6:17-CV-01685-MK, in the District of Oregon
2006	Complaint filed in <i>ADASA Inc. v. Avery Dennison Corp.</i> , Case No. 6:17-CV-00287-AA, in the District of Oregon
2007	U.S. Patent No. 9,272,805
2008	Letter dated May 22, 2017, from counsel for Avery Dennison Corp. identifying <i>RFID for Dummies</i> and Tag Data Standard Version 1.23, with annotations
2009	USPTO Assignment Record for Patent Assignment 024928/0656 accessible via assignment.uspto.gov website
2010	Article: "BEA Systems Acquires ConnecTerra," RFID Journal, October 11, 2005, with annotations

2011	U.S. Provisional Patent Application No. 60/763,781
2012	U.S. Provisional Patent Application No. 60/821,643
2013	U.S. Provisional Patent Application No. 60/864,759
2014	“WebLogic RFID Enterprise Server Product Overview, Version 2.0,” BEA Systems, Inc., October 2006, with annotations
2015	“WebLogic RFID Enterprise Server: Using the Serial Number Assignment Service, Version 2.0,” BEA Systems, Inc., October 12, 2006, with annotations
2016	“About Us” webpage of Ken Traub Consulting LLC website, with annotations, accessible at URL: www.kentraub.com/about.html
2017	Tanaka, Wendy, Article: “BEA Waited and Reaped,” Forbes, January 16, 2008
2018	Assignment from BEA Sys. to Oracle, Reel: 025192, Frame: 0244
2019	Traub, Ken, Article: “Identifying Items,” RFID Journal, January 3, 2012, with annotations
2020	Traub, Ken, Article: “Serialization Roadmap,” RFID Journal, June 25, 2012, with annotations
2021	Traub, Ken, Article: “RFID-Labeling Apparel Items,” RFID Journal, March 11, 2013, with annotations
2022	GS1 US Guideline document entitled “EPC-enabled RFID Serialization Management for SGTIN-96,” copyright 2012, with annotations

2023	Walmart document entitled "Walmart Private Label Item Level Encoding Standard," dated March 12, 2010, with annotations
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I. INTRODUCTION

Petitioner R-Pac International Corp. (“RPac”) petitions for *inter partes* review challenging the validity of all claims of U.S. Patent No. 9,798,967 (“the ‘967 Patent”), owned by ADASA Inc. (“PO” or “Adasa”) by assignment.

RPac presents two purported grounds for invalidity both of which rely exclusively on prior art that has been previously considered and distinguished during original prosecution before the USPTO, in an *ex parte* reexamination, and throughout a district court litigation, appeal, and remand. At every turn, the validity of the claims of the ‘967 Patent has been upheld. Nonetheless, RPac presses forward with this latest serial and redundant challenge, asking the Board to consider the disclosures of *RFID for Dummies* (Ex. 1009 or “*RFID4D*”), U.S. Patent No. 8,373,545 (Ex. 1010 or “Traub”), and the EPC Tag Data Standard (Ex. 1011 or “TDS”), respectively, for a third, or even a fourth time.

RFID4D and the TDS were submitted to the USPTO and considered during original prosecution of the application issuing as the ‘967 Patent. *RFID4D* was also asserted as invalidating prior art in a district court litigation under both anticipation and obviousness theories. Indeed, the same disclosures from *RFID4D* relied upon in the Petition were cited during the district court litigation, and were considered by the Examiner during original prosecution. In both instances, the teachings of *RFID4D*

were found insufficient to anticipate or render obvious any claim of the '967 Patent. Ex. 1001 at face; Ex. 1034 at 2-3.

Likewise, the validity of the challenged claims over the teachings of Traub has previously been determined. Specifically, Traub was asserted as invalidating art in combination with several references, including a version of the TDS¹ in an *ex parte* reexamination. Ex. 1004 at 950, 965-993. The reexam proceedings concluded with findings that all challenged claims were patentably distinct over the art raised in the *ex parte* proceeding as well as all other known prior art. Ex. 1004 at 6. More specifically, it was found that the respective disclosures of *RFID4D*, Traub, and the TDS failed to disclose or suggest use of a data structure comprising most significant bits that define an allocated block of serial numbers within the unique serial number space for an encoded RFID tag. *Id.* These requirements are included within each of the independent claims of the '967 Patent at Limitations 1[e]-[f], 13[e]-[f], and 16[e]-[f], respectively.

The Petition relies entirely on art and argument that have already been considered by the USPTO and rejected. Thereafter, the USPTO's findings of validity were affirmed in a district court litigation proceeding through trial. The Board should

¹ The 2006 version of the Tag Data Standard asserted during reexamination comprises substantially identical disclosure to that of the 2004 version of the same document that RPac cites in its Petition.

exercise its discretion to deny institution of RPac's Petition rather than entertain this latest regurgitation of the same challenges to the claims of the '967 Patent that have already been found unavailing multiple times.

Should the Board elect to conduct the duplicative effort of reconsidering these same references, it will find each ground of invalidity presented in the Petition meritless. Each of the prior proceedings affirmed validity of the claims of the '967 Patent because all asserted prior art has been found repeatedly to not teach, suggest, or disclose the particular data structure required under every claim of the '967 Patent. This data structure is set forth in Limitations 1[e]-[f], 13[e]-[f], and 16[e]-[f], which require 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 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." Ex. 1001 at Claim 1; Ex. 1004 at 6; Ex. 1034 at 2-3.

Practice of these limitations yields a data structure within the serial number memory space of an encoded RFID tag comprising a first limited sequence of pre-defined MSBs to which a second sequence of bits of lesser significance is appended. These two sequences, together, form one complete serial number instance. None of

the prior art teaches or suggests this data structure. Instead, each contemplates ensuring unique serialization through batch allocation of complete serial numbers as *discrete ranges and subranges of values* for use at different encoding facilities, production lines, and/or devices. Ex. 2002 at 763:9-764:3, 765: 1-7; Ex. 2004 at 1040:21-1041:23, 1044:1-1049:19. This type of serialization merely uses the entire serial number memory space to store a single identifier value comprising the next available decimal number within an allocated range. This practice does not result in binary encodings comprising a static MSB sequence followed by bits of lesser significance, as claimed.

In the district court proceedings, testimony was received from Dr. Dan Engels, a pioneer in RFID technology who is credited with developing the electronic product code (EPC) as part of his work with the Auto-ID Center at M.I.T. Ex. 1011 at 65. Dr. Engels testified that the inventions claimed in the '967 Patent ran counter to the guidance from industry leaders and standards organizations, and represented a novel approach to solving serialization-related problems that were first being encountered in real-world settings in the years after the priority date of the '967 Patent. Ex. 2003 at 956:6-12 ("I thought it was a very novel approach to solving the problem."); see, also, Ex. 2003 at 854:15-20, 955:14-956:1, 968:9-969:7, 993:11-994:2, 994:20-995:22, and 996:13-997:20. Dr. Engels also explained the precise meaning of the teachings of *RFID4D*, about which Dr. Engels is the unquestioned authority given

that Dr. Engels is the author of the allegedly invalidating passages from *RFID4D*. Ex. 1009 at vi-vii (acknowledging Dr. Engels as contributing author), 44 (“Birth of a revolution: The MIT Auto-ID Laboratory” discussion). Dr. Engels explained his thinking when writing the passages of *RFID4D* cited by Avery Denison, which are the same cited now by RPac. He affirmed that *RFID4D* does not disclose the data structure comprising most significant bits (MSBs) within the serial number space as claimed in the ‘967 Patent. Ex. 2002 at 764:21-765:7; Ex. 2003 at 856:14-23, 994:20-995:22; Ex. 2004 at 1040:21-1041:23, 1049:22-1050:19.

Traub likewise is devoid of any disclosure teaching or suggesting the data structure claimed by the ‘967 Patent. Ex. 2004 at 1071:6-1073:6, 1074:5-20. The Petition cannot point to any specific disclosure therein suggesting serialization via use of an “allocated block being assigned a limited number of most significant bits.” In the place of citation to the actual disclosure of Traub, RPac provides conclusory argument supported by hypothetical scenarios imagined by its expert for how a POSITA might use the EPC Provisioning Service taught by Traub. Ex. 1005 at ¶¶121-122. These hypotheticals are inconsistent with the disclosure of Traub, however, which provides no mechanism for effecting the hypothetical serialization schemes dreamt up by RPac’s expert. They can be given no weight. *TQ Delta, LLC v. Cisco Sys.*, 942 F.3d 1352, 1361 (Fed. Cir. 2019) (rejecting

obviousness determinations based on conclusory and unsupported expert testimony; the challenged patent as a roadmap to reconstruct the claimed invention).

All such argument and opinion are motivated entirely by hindsight bias and are legally deficient for making a *prima facie* showing of obviousness. *Sensonics, Inc. v. Aerosonic Corp.*, 81 F.3d 1566, 1570 (Fed. Cir. 1996). These established omissions from the respective disclosures of each prior art reference now relied upon by RPac are fatal to its invalidity challenges. The Petition fails to meet the threshold requirement under 35 U.S.C. § 314(a) of a “reasonable likelihood that the petitioner would prevail” under either asserted ground. Institution should be denied.

II. BACKGROUND

A. The ‘967 Patent

The application issuing as the ‘967 Patent was filed on February 12, 2016, and proceeded to issuance on October 24, 2017. Ex. 1001 at face. The ‘967 Patent claims priority through parent applications back to the filing date for Application Ser. No. 12/124,768, which was filed on May 21, 2008. Ex. 1001 at 1:4-21. During the Avery Litigation², the claims of the ‘967 Patent were found to be entitled to claim of priority going back to at least the filing date of the ‘768 Application. Ex. 2005 at 6-16.

² *ADASA Inc. v. Avery Dennison Corporation*, Case No. 6:17-cv-01685-MK, District of Oregon, Eugene Division.

The '967 Patent is directed to “novel systems, devices, and methods for commissioning RFID transponders with unique object class instance numbers without requiring a real time connection to a serialization database.” Ex. 1001 at Abstract. Encoding systems and commissioned wireless radio frequency identification (RFID) transponders, or tags, are disclosed.

RFID tags are wireless devices that use electromagnetic or electrostatic coupling in the radio frequency portion of the electromagnetic spectrum for communication. Ex. 1001 at 1:50-53, 2:11-20. RFID tags are used “to identify and track objects by encoding data electronically in a compact label” that do not require “external, machine-or human-readable labels and can communicate the data they encode over a distance using radio-frequency transmission.” Ex. 1012 at 5 (citing '967 Pat. at 1:32–53, 3:27-32, 6:28-59).

RFID tags comprise each of an antenna, an integrated circuit, and a substrate. Ex. 1001 at 1:40-45. These are combined to form an inlay. In commercial applications, the inlay may be incorporated into a label or sticker that is affixed to consumer goods for use in inventory management and item-level tracking. Ex. 1001 at 6:1-12; Ex. 1012 at 5 (citing '967 Pat. at 1:40-53). In this setting, an RFID tag is encoded with a globally unique data sequence that is stored in the RFID tag memory. This data sequence is globally unique and, as such, accommodates item-level

identification of the item to which the RFID is affixed. Ex. 1001 at 1:32-34, 1:45-50, 2:21-22, 2:48-50.

Global uniqueness of the encoded data is critical for proper function of inventory management and item-level tracking using RFID. Ex. 1001 at 2:21-25, 2:48-50, 7:60-61; Ex. 1012 at 5 (“Regardless of the specific categories included, to ensure accurate tracking, it is critical that the data uniquely identify the tagged object.”). Accordingly, industry tag data standards have been developed to standardize characteristics of encoded data sequences used for RFID tagging, including the EPC Tag Data Standard cited by the ‘967 Patent. Ex. 1012 at 6 (citing ‘967 Pat. at 9:7-15). This standard relates to the Electronic Product Code (EPC) that was first developed by engineers at MIT’s Auto-ID Center, including Dr. Dan Engels. Ex. 1011 at 65-66.

An EPC comprises object class information identifying the brand owner or manufacturer associated with the consumer goods being tagged. Ex. 1012 at 6 (citing ‘967 Pat. at 9:7-15). This information is referred to as a “company prefix” within the TDS. Ex. 1011 at 12. Unique company prefix data is issued to requesting brand owners by GS1, which operates as a central issuing authority for GS1 members that ensures each company prefix is unique. Ex. 1001 at 7:61-66; Ex. 1011 at 12; Ex. 1012 at 6 (citing ‘967 Pat. at 7:61-8:3).

The Serialized Global Trade Identification Number (SGTIN) is a specific EPC data structure. Ex. 1001 at 9:7-15. Object class information within a SGTIN additionally includes an item reference identifier to identify the type of goods being tagged. Ex. 1011 at 12. This combination of object class information is further combined with a third identifier value, a unique serial number instance, to specifically identify the item being tagged. Accordingly, by implementing this combination of object class information identifying the manufacturer and item along with a unique serial number, as the EPC data structure does, a globally unique identifier can be derived and allocated for every individual item tagged. Ex. 1001 at 2:23-29, 7:65-8:3.

The '967 Patent describes the SGTIN structure as implementing "a set of hierarchies" under which data comprising aspects of an SGTIN is generated at different levels of issuing authority. *Id.* A first level of authority is GS1, which issues object class information to its members. The member brand owners represent a second level of authority that manages serialization for EPCs throughout its various facilities performing RFID tagging operations. Ex. 1001 at 2:23-29, 7:65-8:3; Ex. 1011 at 12.

The '967 Patent recognized that ensuring global uniqueness of encoded RFID tag data remained a difficult task, even when implementing a standardized, hierarchical data structure like that of the SGTIN type EPC. Ex. 1001 at 2:21-32,

2:48-50, 3:13-23; Ex. 1012 at 6. Difficulties arose in the context of management of serialization for EPC encodings to avoid duplicate use of any serial number instance. These difficulties are greatly exacerbated as large manufacturers implemented item-level RFID tagging, which could be proceeding simultaneously at multiple remote production facilities and product lines. To ensure global uniqueness, prior art systems adhered to strict reliance on a central database issuing authority for serialization management that maintained continuous control of EPC allocation across all RFID tagging operations. Ex. 1012 at 6 (citing '967 Pat. at 2:23-32). For this architecture to function properly, each RFID tag encoding location or device was "generally require[d] to maintain a continuous network connection with the database so that new serial numbers can be retrieved when an RFID tag is commissioned." Ex. 1012 at 6 (citing '967 Pat. at 3:27-4:4). The '967 Patent explains that such "[c]ontinuous connection is not always possible" both within large manufacturing facilities and for facilities located in remote areas of the world. Ex. 1012 at 6 (citing '967 Pat. at 3:64-4:4). Further, even when it is, the connection may be plagued by network delays that slow down the commissioning process." *Id.*

The '967 Patent discloses and claims improved system for ensuring global uniqueness across a brand owner's RFID operations to overcome this and other shortcomings of the prior art. It discloses systems "that enable point-of-use and on-demand commissioning of RFID transponder-equipped wireless sensors" which

solved problems faced in the industry while accommodating improvements in RFID tag commissioning efficiency. Ex. 1001 at 1:27-31; Ex. 1012 at 6 (“The ‘967 patent seeks to ‘overcome[] these shortcomings’ using systems and methods for commissioning RFID tags ‘on-demand’ and ‘with no external authorizations or queries required on a transponder-by-transponder basis,’ enabling commissioning to proceed without the need for continuous connectivity to a central database.”) (citing ‘967 Pat. at 3:27–35, 3:64–67).

The solutions disclosed address the problem from the perspective of the individual RFID tag. For example, systems and methods implementing “quasi-autonomous RFID encoding authority” are disclosed as advantageously circumventing a need for “continuous wireless connection to a host database.” Ex. 1001 at 7:57-59, 8:4-39; Ex. 1012 at 6. Certain embodiments are disclosed which involve “an external number issuance authority [that] allocates to the encoder blocks of numbers for specific object classes.” Ex. 1001 at 8:4-7. Among these, embodiments in which “large pre-authorized blocks of serial numbers are made available to [an] encoder” are identified as preferred. Ex. 1001 at 8:4-7. The ‘967 Patent discloses a specific manner for implementing preferred large pre-authorized blocks implementing the novel use of “most significant bits” for defining allocated blocks, stating:

A preferred method of providing pre-authorized blocks of object class serial numbers is to ***subdivide 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...

Again using the SGTIN-96 as an example, there are a total of 38 bits used to define the entire serial number space which contains 2^{38} unique numbers. For example ***the upper 14 bits could be designated as the most significant bits for a particular embodiment. In that case the object class serial number space would be comprised of 16,384 sectors.*** Since in this example there are 14 most significant bits within a 38 bit serial number field, there must be 38 minus 14 bits of lesser significance, which equals 24 bits. Therefore, the lower 24 bits represent 16,777,216 unique serial number values. ***Once a sector is allocated to a lower level within an authority hierarchy, it is referred to as a block.*** Each 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.

In a preferred embodiment serial number block sizes are sufficient to operate encoder 175 or 30 for extended periods of time without any further external authorization steps.

...

Block allocations are preferably assigned with reference to how many encoders 175 or 30 are authorized to operate within the facilities of the owner of certain object class numbers.” Ex. 1001 at 8:11-51 (emphasis added); Ex. 1012 at 6.

This stood apart from prior art systems which employed “batch mode” serialization under which a central encoding authority allocated to facilities, lines, or encoding devices large, decimal ranges of serial numbers comprising the next

hundred, or thousand, or million unused serial numbers, for example. This methodology was done without any consideration of the binary representation of those values when encoded. Ex. 2003 at 955:9-956:1, 958:11-959:3. Conversely, the solution taught by the '967 Patent was entirely focused on the binary representation within the unique serial number space of an EPC and the physical memory location within an RFID tag.

Use of MSBs is a hardware-based approach that uses the available physical memory of the RFID tag to define large pre-authorized blocks for delegating encoding authority and permit quasi-autonomous encoding operation. Ex. 1012 at 6. In view of the foregoing disclosure, the Federal Circuit acknowledged:

“Critically, once a block is allocated to an encoder, there is no need to reconnect to a central database until the unique numbers within the block have been exhausted. *See id.* at 8:37–51. Thus, in the previous example, 2^{24} , or approximately 16.8 million, RFID tags could be commissioned before reconnection to a central database is required. And by eliminating the need for a continuous connection to the database, the attendant delays are reduced and the commissioning process is improved. ***The '967 patent refers to such a system, where only intermittent connection to a central database is necessary, as quasi-autonomous encoding authority.***” Ex. 1012 at 6 (citing '967 Patent at 8:4–7) (emphasis added).

The '967 Patent additionally presents an exemplary serial number allocation system in which the entire object class serial number space is subdivided into sectors, each of which being defined by a sequence of MSBs in the serial number space. Ex.

1001 at 33:14-24. A block of serial numbers of a desired size (*i.e.*, bit length) is generated and allocated to an encoder or other lower-level authority upon request for use to perform tag encoding operations. Ex. 1001 at 33:34-58.

B. Challenged Claims

Petitioners challenge the validity of all claims of the '967 Patent (claims 1-20), to include independent claims 1, 13, 16, and each of their respective dependent claims. Independent Claim 1 is presented below, and it is representative of the limitations present within each of the claims of the '967 Patent.

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***; 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.***

Ex. 1001 ['967 Patent] at Claim 1 (emphasis added).

Independent Claims 13 and 16 comprise limitations that mirror those of Claim 1, along with certain additional requirements on the amount of memory afforded for each of the object class information space (at least 50 bits), the unique serial number space (at least 38 bits), and the limited number of most significant bits (at least 3 bits). Importantly, the emphasized limitations of Claim 1, shown above, are present within Claims 13 and 16 in substantially identical form. Accordingly, all distinguishing arguments and evidence presented herein with respect to Claim 1 are equally applicable and compelling to show validity of Claims 13, 16, and each dependent claim depending therefrom over the asserted art.

The Federal Circuit characterized the inventions claimed in the '967 Patent as being "directed to a specific, hardware-based RFID serial number data structure designed to enable technological improvements to the commissioning process." Ex. 1012 at 7. The '967 Patent claims are "focuse[d] on the data structure of the serial number space." Ex. 1012 at 9. The Federal Circuit opinion highlighted the importance of the limitations directed to use of MSBs within the claims:

"In essence, the claimed MSBs function as an additional data field within the serial number space that uniquely identifies the allocated block from which it came.

This one-to-one correspondence has important technological consequences. Because the predefined sequence of MSBs in a given serial number uniquely corresponds to an allocated block, and vice versa, serial numbers drawn from different blocks are guaranteed to be

unique. It is *this central feature of the claim* that enables improvements in the commissioning process. Ex. 1012 at 9 (emphasis added).

C. Prior USPTO Examination of '967 Patent Claims

1. Original Prosecution

The '967 Patent issued from U.S. Patent Application Ser. No. 15/042,993, filed on February 12, 2016 as a continuation application claiming priority through string of earlier filed parent applications. Ex. 1001 at face. The originally examined claims were subject to a double-patenting rejection in view of the issued claims in parent Patent No. 9,272,805, but were otherwise found allowable in the first Office Action dated February 14, 2017. Ex. 1003 at 147-149.

One of the parent applications to the '967 Patent is Appl. Ser. No. 13/526,520, which issued as U.S. Patent No. 9,272,805 B2 on March 1, 2016. Like the '967 Patent, the '805 Patent presents claims directed to use of a hardware-based data structure within the unique serial number space of an encoded RFID tag. Ex. 2007 at Claims. Following issuance of the '805 Patent, and during prosecution of the application that would later issue as the '967 Patent, PO initiated a lawsuit against Avery Denison Corp. ("ADC") alleging infringement of the '805 Patent on February 21, 2017. Ex. 2006. In defense, ADC alleged that certain disclosure within the EPC Tag Data Standard Version 1.1, Rev. 1.23 and within *RFID4D* comprised prior,

invalidating disclosure of the subject matter claimed in the '805 Patent. Ex. 2008 at 1-2, 4, 8-12.

Despite issuance of a Notice of Allowance on June 7, 2017, during the prosecution of the application issuing as the '967 Patent, PO elected not to pay the issue fee and instead amended the claims of the application while concurrently submitting an IDS identifying only two references – the EPC Tag Data Standard Version 1.1, Rev. 1.23 and the portions of *RFID4D* referenced by ADC in its invalidity defense. Ex. 1003 at 233-238, 239-24. These references were considered by the Examiner in connection with examining the newly amended claims, which were subsequently found allowable over the disclosures of the TDS, *RFID4D*, and all other known prior art. Ex. 1003 at 262, 272-277, 287-294.

2. *Ex Parte* Reexamination

Upon issuance of the '967 Patent on Oct. 24, 2017, PO filed a complaint for patent infringement asserting its claims against Avery Denison Corp. Ex. 2006. ADC petitioned for *ex parte* reexamination challenging the validity of all claims of the '967 Patent a month later. Ex. 1004 at 949. The reexam proceedings were purportedly addressed to a “new question of patentability” couched in assertions of obviousness in view of the teachings of prior art patents and publications that were not considered during original prosecution, including U.S. Patent No. 8,373,545 (Ex.

1010 or “Traub”) and a 2006 version of the EPC Tag Data Standard (“2006 Standard”), among other references. Ex. 1004 at 950-51.

The reexam focused on the disclosure of Traub at Figs. 4A-B and associated description thereof. Ex. 1004 at 965-971 (excerpting Figs. 4A-B, 13D-G, and associated text descriptions at 3:34-4:16 and 40:21-32), 975-993 (same). In particular, these disclosures from Traub were alleged to disclose, teach, or suggest the Limitations 1[e]-[g], 13[e]-[f], and 16[e]-[f] of the ‘967 Patent. Ex. 1004 at 977-984, 989-992. These are the very same disclosures now relied on for the same purpose by RPac.

Regarding the 2006 Standard, the reexam focused on its disclosure detailing the data format for an SGTIN-96 encoding. Ex. 1004 at 971-975. Importantly, the 2006 Standard is directly referenced in the specification of the ‘967 Patent. Ex. 1001 at 1:32-39; Ex. 1004 at 972. Additionally, the disclosure within the 2006 Standard relied upon is substantially identical to that of Version 1.1, Rev. 1.23 of the TDS considered by the USPTO during original prosecution, which is likewise virtually identical to the discloser of Rev. 1.24 of the TDS asserted in this IPR with respect to all disclosure relied upon to support allegations of invalidity in each respective proceeding.

Following an initial rejection, clarifying and non-substantive amendments were made within independent claims 1, 13, and 16. Thereafter, PO persuasively

demonstrated that all challenged claims remained patentably distinct from the prior art raised in the reexam and all other known prior art, leading to issuance of a reexamination certification. Ex. 1004 at 5. The three-examiner panel for the reexam affirmed the validity of all claims over all “prior art of record,” including Traub, the 2006 Standard, and art previously known to the USPTO, including *RFID4D* and version 1.23 of the TDS, among other references. Ex. 1004 at 6-7.

D. Petitioners' Grounds of Challenge

The Petition presents the following two prior art combinations as its respective grounds for invalidating claims of the '967 Patent:

Ground	Claims	Basis	Reference(s)
1	1, 6-12, 16, 20	Obviousness	<i>RFID4D</i> (Ex. 1009) and Traub (Ex. 1010)
2	2-5, 13-15, 17-19	Obviousness	<i>RFID4D</i> (Ex. 1009) and Traub (Ex. 1010) and TDS (Ex. 1011)

Throughout this Preliminary Response, for ease of understanding, PO will refer to the prior art reference by the name indicated above. The prior art references are described below in conjunction with the arguments presented in this Preliminary Response. PO does not purport to present all of its rebuttal arguments herein and reserves its right to present further argument and evidence related to these prior art references, the combinations thereof, and the content of the Petition later in this proceeding, consistent with the Board's Rules and practice. No waiver is intended by any argument withheld by PO at this stage of the proceeding.

III. DISCRETIONARY DENIAL UNDER 35 U.S.C. §325(d)

By statute, the Board is authorized to exercise discretion to deny institution where the Petition presents “the same or substantially the same prior art or arguments previously were presented to the Office.” 35 U.S.C. §325(d). The Board applies the two-part test set forth in *Advanced Bionics, LLC v. Med-El Elektromedizinische Geräte GmbH* to determine if discretionary denial under 325(d) is appropriate. 2020 Pat. App. LEXIS 1476, *7; IPR2019-01469, Paper 6, 8 (Feb. 13, 2020) (precedential).

The *Advanced Bionics* test first considers whether the same or substantially the same art or argument were previously presented to the USPTO. *Id.* If so, discretionary denial under 325(d) is appropriate unless the Petition demonstrates that the USPTO committed error material to its determination(s) of patentability when previously presented with the repeated art and/or argument raised in the Petition. *Id.* This requires the Petition to identify a specific error in the analysis of the previously presented art.

Here, the Petition relies on the same prior art references that have not only been submitted to the USPTO during original prosecution, but also again during a subsequent *ex parte* reexamination. In both instances, the claims of the ‘967 Patent were found patentable over the teachings present in each of these references.

RPac attempts to minimize these substantial findings by alleging only five pages of *RFID4D* were previously considered, implying that the remainder of its disclosure was both material to patentability and ignored. This is misleading and incorrect. The portions of *RFID4D* submitted to the USPTO comprised the entirety of the excerpts identified to PO by ADC in its invalidity assertions for related claims. These same passages from *RFID4D* are referenced in the Petition. Ex. 2008 at 8-12; Pet. at 38-47 (addressed to Limitations 1[e]-[f]).

Any reference to additional disclosure from *RFID4D* in the Petition is addressed to known and duplicative background information that is presented in the hopes of reviving this reference as material prior art. Those citations are directed toward subject matter well known in the RFID industry that is entirely redundant of information within the TDS references, and other art. Pet. at 23 (“Dummies discloses the components of an RFID system...” and “discloses a tag ‘consists of three components’”); Ex. 1005 at ¶57 (citing to *RFID4D* for disclosing aspects of the EPC, which is admitted to be “a known standard identifier for use in RFID tags”), at ¶75 (“Dummies discloses the well-known basic components of an RFID system.”); Ex. 2002 at 733:8-15. Even as RPac points to *RFID4D* to “describe[] a system for ‘allocation unique numbers across many lines and locations’ as a range of serial number, RPac and its expert admit that “Dummies, however, does not provide a detailed explanation for how that allocation is done.” Pet. at 31. The invalidity

contentions presented for Limitations 1[e]-[f], 13[e]-[f], 16 [e]-[f] make only passing reference to *RFID4D* before pivoting to Traub as purportedly teaching these limitations. Pet. at 38-47, 57, 63. R-Pac's exclusive reliance on only previously asserted art unquestionably satisfies the first *Adv. Bionics* prong.

The Petition presents a second, equally unavailing argument addressed to step one of the *Adv. Bionics* test, alleging that the combination of *RFID4D* and Traub has never been considered. This is patently false. RPac ignores that Traub was presented during the *ex parte* reexamination in connection with obviousness challenges in combination with the 2006 version of the TDS as well as other prior art. Ex. 1004 at 950. As discussed, *RFID4D* is relied upon for only subject matter redundant to that presented in the TDS and generally known in the art. This is evidenced by disclosure from *RFID4D* that is cited by RPac, and previously submitted in an IDS, that presents a brief summary of the EPC through reference to and excerpt from disclosure of the TDS. Ex. 1009 at 46-47 (describing EPC format). Again, these disclosures do not actually teach the inventive portions of the challenged claims of the '967 Patent and R-Pac makes no supported argument to the contrary.

Step two of *Adv. Bionics* also supports discretionary denial. The Petition fails to identify any error in the prior consideration of the art and argument re-raised in the Petition, let alone material error. RPac merely restates its assertion that Traub and *RFID4D* have not been previously considered in combination. It then presents

unfounded criticism of the examiner during original prosecution for allowing the '967 Patent claims over *RFID4D*, and of the examiners in the reexam proceeding for not discussing Fig. 4B of Traub. These criticisms are meritless as they amount to allegations of error purely because the examiners do not agree with RPac. No rejection was issued in view of *RFID4D* upon consideration of its teachings because it was found to not disclose or render obvious the subject matter claimed. This is the same conclusion was affirmed by the jury in the Avery Litigation and cannot be the source of error. *Google LLC v. Valtrus Innovations Ltd.*, IPR2022-01197, Paper 18 at 29 (June 13, 2023) (denying petition under 325(d) in view of art previously considered during examination which was not the basis for any rejection).

Regarding consideration of Traub during the reexam proceedings, RPac intentionally ignores that the exact portions of Traub that the Petition relies upon, and more, were previously presented during the reexam and rejected. Specifically, those very same disclosures were considered and found to be insufficient to invalidate any claim, even when considered in combination with Version 1.3 of the TDS. No error exists that would support institution given RPac merely revisits previously rejected arguments on the same art.

Finally, the Petition asserts unsupported allegations of error by the USPTO in each instance simply because RPac does not like the outcomes reached. No specific basis for error is presented because none exists. Instead, RPac asserts unsupported

attorney argument can fill in where merit is required. This is not the law and materially fails to satisfy RPac's burden. The findings accord with the subsequent jury verdict affirming validity, and with the opinions of Dr. Engels, a prominent figure in the RFID industry and author of the very passages of *RFID4D* on which the Petition relies. Discretionary denial under *Adv. Bionics* is therefore appropriate and no further inquiry is necessary.

IV. CLAIM CONSTRUCTION

Claim terms are “generally given their ordinary and customary meaning” which is “the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention.” 37 CFR § 42.100(b); *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312-13 (Fed. Cir. 2005) (*en banc*). In interpreting the meaning of words in a claim, intrinsic evidence of record including the claims, the specification, and the prosecution history are considered. *Phillips* at 1312-17. Claims are “read in view of the specification, of which they are a part ... [but] particular embodiments and examples appearing in the specification will not generally be read into the claims.” *Id.* at 1314-15, 1323. “[T]he Board’s construction ‘cannot be divorced from the specification and the record evidence,’ and ‘must be consistent with the one that those skilled in the art would reach.’” *Microsoft Corp. v. Proxyconn, Inc.*, 789 F.3d 1292, 1298 (Fed. Cir. 2015) (internal citations omitted). A construction that is “unreasonably broad” and which does not “reasonably reflect

the plain language and disclosure” will not pass muster. *In re Suitco Surface, Inc.*, 603 F.3d 1255, 1260 (Fed. Cir. 2010).

If a patentee gives a term a different meaning than would otherwise be the customary meaning in the field, however, then that meaning applies. *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002); *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994). *See also Digital-Vending Servs. Int'l, LLC v. Univ. of Phoenix, Inc.*, 672 F.3d 1270, 1280 (Fed. Cir. 2012). Further, when the patentee distinguishes an invention over the prior art in an unmistakable disavowal of features of the prior art within the specification, the claim is interpreted more narrowly than it otherwise would to give effect to the patentee's explicit intent to disavow a broader claim scope. *Phillips*, 415 F.3d at 1316.

Several of the claims at issue in this proceeding were previously litigated through a first jury trial, appeal to the Federal Circuit, and a remand jury trial. In connection therewith, constructions for several claim terms were entered by the District Court which were applied in both jury trials and by the Federal Circuit on appeal. Ex. 1007; Ex. 1012 at 9, 11 15 (at fn1). PO applies the claim language in this Preliminary Response in accordance with the following constructions entered during the Avery Litigation:

1. “object class information space” shall mean “data field within the memory of the RFID integrated circuit chip for information identifying the class of an

- object, such as a company prefix, item reference code, partition value, and/or filter value;"
2. "unique serial number space" shall mean "data field within the memory of the RFID integrated circuit for information identifying a unique serial number;"
 3. "being assigned a limited number of most significant bits" shall mean "includes a limited, predefined sequence at the leading end;"
 4. "remaining bits of lesser significance" shall mean "the remaining lower order bits at the trailing end;"
 5. "is encoded with one serial number instance" shall mean "has stored within it one serial number instance;"
 6. "an allocated block of serial numbers" shall mean "a pre-authorized range of serial numbers;" and,
 7. "uniquely corresponding" shall be applied in accordance with its plain and ordinary meaning.

V. DISCUSSION OF THE ALLEGED PRIOR ART

A. *RFID for Dummies* (Ex. 1009)

RFID4D is a 2005 publication within the "For Dummies" series comprising publications that in this instance describes itself as "a reference for the rest of us," to include those who "know nothing about RFID." Ex. 1009 at cover, 1. *RFID4D* aims to "walk you through the basics of RFID from a business perspective." Ex.

1009 at 1. Basic concepts and simplified explanations of the components of an RFID system, how they operate, and how they can be implemented by businesses are presented. *Id.* (“It’s easy to understand how things work after you get your arms around the basics.”), 3; Ex. 1005 at ¶75 (“Dummies discloses the well-known basic components of an RFID system.”); Ex. 2004 at 1033:10-23.

For example, Part I of *RFID4D* discloses basic concepts including: potential benefits of RFID tagging and serialized encoding over predecessor systems (10-13, 42-43); “two basic parts” of an RFID tag (20, 51-52); and, development of the EPC by the MIT Auto-ID Center and standards bodies (44-47), among other preliminary RFID concepts. Accordingly, *RFID4D* is not a publication that one would expect a person of ordinary skill in the art – whom Petitioner contends would “have had at least a bachelor’s degree in electrical engineering or computer science and 2 to 3 years of work experience developing RFID tags and systems in the RFID industry”³ – to consult for the information disclosed therein. Ex. 1005 at ¶36; Ex. 2004 at

³ PO maintains its identification of education and work experience that would be possessed by a person of ordinary skill in the art with respect to the technology disclosed and claimed in the ‘967 Patent presented during the Avery Litigation, as reproduced in the Clare Declaration. *See*, Ex. 1005 at ¶37. To the extent the proposed qualifications differ from RPac’s proposal, PO reserves the right present further argument on the requisite level of skill, if necessary, as this IPR proceeds.

1033:10-23. Simply put, this reference is self-admittedly not one for those with experience and education in the field, but instead those without it.

RFID4D rightfully credits the M.I.T. Auto-ID Lab with “[leading] the way in testing and design of RFID systems” to morph RFID into “a viable technology in the supply chain.” Ex. 1009 at 44, 169; Pet. at 18. The Auto-ID Lab was founded in 1999 by “large retailers and consumer packaged good (CPG) manufacturers.” Id. As *RFID4D* states, Dr. Dan Engels was a “big forehead” who served as director of the Auto-ID Lab and was tasked with addressing issues hindering adoption of RFID. Id, at 44, 169. His work included development of the EPC. Pet. at 18; Ex. 2002 at 709:16-20; Ex. 2003 at 981:14-982:3. Dr. Engels is one of several “first-class industry experts” acknowledged in *RFID4D* for “contribut[ing] an entire chapter to [*RFID4D*].” Id. at viii-ix.

Of particular importance in this proceeding, the chapter of *RFID4D* authored by Dr. Engels is Chapter 13, which includes the subsection “Getting the Digits,” upon which the invalidity grounds of the Petition rely. Ex. 1009 at 238-240; Ex. 2003 at 856:14-16; 863:20-25.

B. U.S. Patent No. 8,373,545 (Traub) (Ex. 1010)

Traub is directed, in part, to an “EPC Provisioning System” operable to “dynamically provide EPC code blocks for one product to multiple client sites” using “business rules.” Ex. 1010 at Abstract. The application issuing as the Traub patent

was filed on January 29, 2007, claiming priority to the earlier filing dates of Provisional application No. 60/763,781, filed on Jan.31, 2006, provisional application No. 60/821,643, filed on Aug. 7, 2006, and provisional application No. 60/864,759, filed on Nov. 7, 2006. Ex. 1010 at 1:6-12.

Traub discloses systems for operating an RFID edge server to configure or reconfigure one or more RFID readers in accordance with input received through user interfaces executing middleware software applications. Ex. 1010 at 2:19-25, 2:40-47. The software applications may use metadata describing an RFID reader to generate a software interface console through which system users may input configuration information. Id. at 3:1-10.

In connection with the foregoing, Traub discloses:

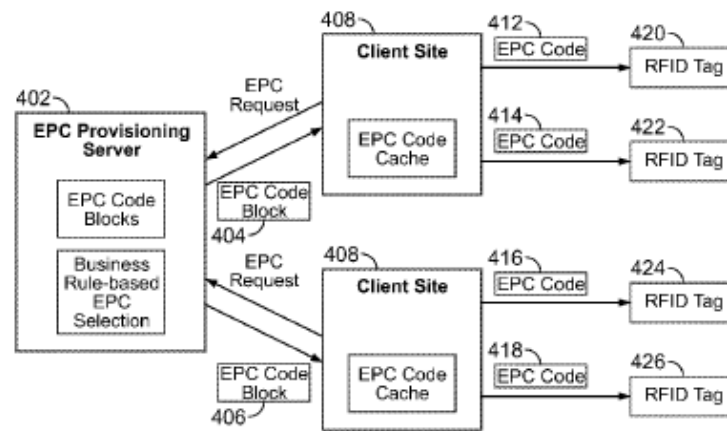
A system of one embodiment comprising an EPC server 402 to dynamically provide EPC code blocks 404 and 406 for one product to multiple client sites 408 and 410. The client sites 408 and 410 can use the EPC codes 412, 414, 416 and 418 of the EPC code block for RFID tags 402, 422, 424 and 426.

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.

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. Ex. 1010 at 3:34-54 (emphasis added).

This system is shown in Fig. 4A:



Ex. 1010 at Fig. 4A

Corresponding methods and computer readable mediums operable to “us[e] **business rules to determine EPC code blocks** for multiple client sites and providing the EPC code blocks to the multiple client sites” are identified. Ex. 1010 at 3:55-4:19 (emphasis added). Aside from identifying these generalized embodiments, there is no further mention of “business rule,” “business rules,” or even any “rule” anywhere in the “Details of Exemplary Embodiments” of Traub. Likewise, there is no further mention of “EPC code,” “EPC code block,” or “code block.” Nor is there any discussion of any particular encoded data format implemented using Traub, apart from adherence to SGTIN and SSCC type EPCs in accordance with known tag data standards guidance.

The “EPC Provisioning Service” disclosed by Traub is described in reference to Figs. 4A-B (“illustrat[ing] a dynamic EPC providing system”), Figs. 12A-12I (“illustrat[ing] an exemplary EPC provisioning system design”, and Figs. 13A-G (“illustrating an exemplary EPC provisioning system interface”). Ex. 1010 at 1:67-2:15; 35:1-40:31. The EPC Provisioning Service “can be a web service that will provide generic provisioning related operations like administering EPC pools, checkout or check-in from EPC pools.” Ex. 1010 at 35:54-57. EPC pools are defined as “named list[s] of EPCs maintained in the provisioning system” from which EPC are allocated for encoding RFID tags. Ex. 1010 at 35:4-6, 13-22. The service is implemented through “a central authority” to provide unique EPC data in accordance with TDS identity types, including SGTIN and SSCC types. Id.

Traub teaches that system administrators may input certain parameters for use in creating EPC pools. These parameters are limited to specifying the type and length of EPC (SGTIN-96, for example), and identifying a specific GTIN value for which the pool is created. Ex. 1010 at 36:52-57. A “pool allocation configuration” is provided for receiving parameters used to determine which pool is used to fulfill a request for EPCs. Ex. 1010 at 36:61-37:14.

Fig. 13C, shown below, depicts “Define Pool Configuration” screen for receiving user input to configure or edit an EPC pool:

Define Pool Configuration

Identity Type

Range start end

Pool Parameters

	Name	Value
☒	Location_id	picking01
☒		
☒		

Delete row Add row Delete all

Cancel Save

Ex. 1010 at Fig 13C

It provides fields for selecting an Identity Type from a pull-down menu (GTIN or SSCC, for example), for inputting Range start and end values for the pool, and for inputting Name/Value pairs of pool parameters such as a Location_id. Ex. 1010 at 40:2-9. Fig. 13D, shown below, shows a screen presenting information for existing EPC pools:

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

Ex. 1010 at Fig. 13D

Screens showing the ranges of EPCs that have been “checked out” from EPC Pools for encoding RFID tags (Fig. 13E), for adding more EPCs to an existing pool (Fig. 13F), and for “checking in” allocated EPCs that were not used to encode an RFID tag (Fig. 13G) are also provided. Ex. 1010 at 40:21-31.

The screenshot shows a window titled "View Pools". Inside, there is a label "Pool 'PoolName'". Below this, there are two main sections: "Available EPCs" and "Checked Out EPCs".

Available EPCs: This section contains a table with columns for "range" and "allocation time". There are two rows of data, each with a checkbox in the first column.

	range	allocation time
☒	urn:epc:idpat:sgtin:0037000.130804.[0-9999999]	06-05-05 10:35:06
☒	urn:epc:idpat:sgtin:0037000.130804.[20000000-29999999]	06-03-05 12:04:05

Below the table are two buttons: "Delete EPCs" and "Add EPCs".

Checked Out EPCs: This section contains a table with columns for "range", "requested by", and "Date". There are two rows of data.

	range	requested by	Date
	urn:epc:idpat:sgtin:003000.130804.[10000000-19999999]		06-05-05
	urn:epc:idpat:sgtin:0037000.130804.[30000000-30500000]		06-07-05

Below the table is a button labeled "Check in EPCs".

Ex. 1010 at Fig. 13E

The screenshot shows a dialog box titled "Add EPCs". It contains the following fields and buttons:

- Type:** A text field containing the value "urn:epc:idpat:sgtin:0037000.130604".
- Range:** A section with two text fields: "start" containing "30000000" and "end" containing "40000000".
- At the bottom are two buttons: "Add" and "Cancel".

Ex. 1010 at Fig. 13F

The image shows a graphical user interface window titled "Check In EPCs". Inside the window, there are three input fields and two buttons. The first field is labeled "Type:" and contains the text "urn:epc:idpat:sgtin:0037000.130604". Below it, there is a "Range:" label followed by two sub-fields: "start:" containing "10000000" and "end:" containing "15000000". At the bottom of the window, there are two buttons labeled "Check" and "Cancel".

Ex. 1010 at Fig. 13G

Consistently within every administrator interface of the EPC Provisioning Service disclosed by Traub, the only inputs used for configuring or allocating serial number values of the EPCs are text fields for receiving decimal values defining a range start and end values. No other mechanism is described or shown for configuring the data used to populate the serial number portion of EPCs generated and used in connection with the system disclosed in Traub.

The specification and figures of Traub describe a real-world product made by BEA Systems, the WebLogic RFID Enterprise Server, which comprised a WebLogic server implemented with RFTagAware middleware developed by ConnecTerra, Inc. *See*, Ex. 1010 at Figs. 5A-C, 11A-H; 35:1-40:31 (disclosing “exemplary EPC Provisioning Service” in connection with executing ConnecTerra APIs); Ex. 2009 (USPTO record of assignment from inventors of Traub to BEA Sys.); Ex. 2010 (BEA Sys. acquires ConnecTerra); Ex. 2011 (‘781 Provisional filing comprising RFTagAware product literature of ConnecTerra); Ex. 2012 at 31-33, 43, 51-52 (‘643 Provisional filing disclosing operation of ConnecTerra software); Ex. 2013 at 31-33,

43, 51-52 ('759 Provisional filing disclosing operation of ConnecTerra software); Ex. 2014 at 7 [1-3] ("This product builds on the ConnecTerra RFTagAware Enterprise Server 1.1"); Ex. 2015 at 15-18 (ConnecTerra API software used).

The development of these systems began at ConnecTerra, an RFID middleware solutions company founded by Mr. Ken Traub, its CTO. Ex. 2016 at 1. BEA Systems acquired ConnecTerra, along with its "RFTagAware" RFID software platform and Mr. Traub's services, in October 2005 for the purpose of incorporating ConnecTerra's RFTagAware software into BEA Systems' WebLogic server platform. Ex. 2010 at 1-2 ("According to the announcement, the acquisition is designed to immediately extend the range of BEA infrastructure to integrate RFID" ... "by absorbing the functionality of ConnecTerra's software platform"); Ex. 2009. Ken Traub continued working at BEA Systems thereafter until it was acquired by Oracle in early 2008, around the time Ken Traub founded his consulting company performing consulting work in the RFID space. Ex. 2017 at 1 (Oracle acquires BEA Sys. in 2008); Ex. 2018 (Traub patent and others assigned to Oracle). This background is necessary to fully understand the context and teachings of the ultimate Traub reference.

Product literature published in October 2006 describes the functionality of the WebLogic RFID Enterprise Server which importantly aligns precisely with the

disclosure in Traub. Ex. 2014 at 7, 10, 15, 25-26; Ex. 2015 at 5, 6, 9-13, 18-21. For example, the Product Overview states:

“WebLogic RFID Enterprise Server 2.0 is the first release of RFID Enterprise Server from BEA Systems. This product builds on the ConnecTerra RFTagAware Enterprise Server 1.1, including the following new Web-based features:

...

The Edge Server Administration Console, including the Telemetry Console Extension, for monitoring and managing RFID Edge Servers and RFID devices at the edge. Ex. 2014 at 7.

The “WebLogic RFID Enterprise Server provides services, resources, and APIs for managing and coordinating large, multi-location RFID deployments” including providing means to “[a]ssign blocks of serial numbers from a central location for distributed EPC tagging operations.” Ex. 2014 at 10. This functionality is accommodated by the “Serial Number Assignment Service and the Serial Number Assignment Console [which] provides centralized management for allocating blocks of EPC codes to tag writing systems at the edge, so consecutive codes can be assigned to items in the supply chain at that location.” Ex. 2014 at 11, 15. The Serial Number Assignment Service operates as follows:

“Tagging applications running at the edge can request a block of unique object identities, and the RFID Enterprise Server responds, *using a centralized database to insure that no serial number is assigned twice*. RFID Enterprise Server can *assign serial numbers in large blocks*, which allows tagging operations to proceed at the edge with only infrequent communication with the enterprise server, *or in small blocks*, as needed. You can set up business rules that govern how serial numbers are assigned, such as *reserving certain ranges of numbers for*

certain locations, applying different rules based on which product is being tagged, and so on.

For EPC-based applications, RFID Enterprise Server can assign SGTIN- and SSCC-type EPCs. The administration console provides a full history of past assignments, providing a centralized view of serial number consumption by product, by location, and so on.”
Ex. 2014 at 25-26 (emphasis added).

The document entitled “Using the Serial Number Assignment Service” published by BEA Systems in 2006 provides more detailed explanation on “how to configure the Serial Number Assignment Service and use the Serial Number Assignment Service Console.” Ex. 2015 at 6. It explains that “EPC allocation for all your tag writing systems is accomplished by connecting to the Serial Number Assignment Console, a Web interface to create selection rules and monitor EPC pools, as well as an API to check in and check out EPCs, and database tables for data persistence.” Ex. 2015 at 9.

The Console is used to enter criteria (“selection rule”) that define a subset of an EPC pool, which comprises all available EPCs for a particular GTIN or company prefix. Ex. 2015 at 10. Selection rules are applied to allocate ranges of serial numbers from within a pool in response to requests for EPCs from an encoding device. Ex. 2015 at 11. The Console screen is excerpted below:

Welcome, weblogic Logout Help AskBEA

Serial Number Selection Rules Pools

Add Serial Number Selection Rule

Identity Type Tag Length

Select Range By

Range Start
(minimum = 0)

Range End
(maximum = 2748277866943)

Criteria

Action	Name	Value
Delete		

Add

Save Cancel

Ex. 2015 at 12 (annotations added)

Data fields are provided for specifying an identity type and length for the EPCs, and for entering “Range” information, described as:

“The range of serial numbers affected by this rule. You can specify the range *by start and end numbers, by number of EPCs needed, or by using the maximum range possible*. After making your choice from the drop-down list, fill in the range fields.” Ex. 2015 at 16 (emphasis added).

Of particular note, the range start and end text fields of the Console screen permit only entry of decimal values and accommodated a range of values spanning the entirety of those that may be encoded with 38-bits of memory. This Console screen provides no explicit means for imparting a data structure within the serial number space. It is configured to only receive input to defining a range of

permissible values, and then to use all of the memory space within the RFID tag⁴ to store a value within the permissible serial number range entered.

The “Criteria” section receives Name/Value pairs that can “identify a tagging station, a work unit, a specific GTIN or company prefix, or an area of a warehouse, among other things.” Ex. 2015 at 16. Any criteria information entered cannot impart any information or structure into EPC encoding data because the entire serial number memory space is already accounted for by the preceding decimal range value inputs, and because these fields are configured to receive information as “string” variables comprising text, rather than numerical values. See, Ex. 1010 at Figs. 13C-D.

The operation and functionality provided by the Serial Number Assignment Service and Console match the EPC Provisioning System described in Traub. In each document, every means disclosed for configuring or selecting values for use in the serial number space of EPCs generated permitted input of decimal values for defining a range of permitted serial number values. No further functionality is disclosed for imparting any further formatting or data structure for defining or selecting serial numbers.

⁴ The maximum decimal value that can be stored using the 38-bits of memory reserved for storing a serial number in an SGTIN-96 encoding is 274,877,906,943. The Console screen identifies this exact value as the maximum permissible entry for the range end. Accordingly, the range start and range end entries are the only inputs available to a user for configuring the serial number space.

C. EPC Tag Data Standard Version 1.1, Rev. 1.24 (Ex. 1011)

The TDS document cited in the Petition was published on April 1, 2004 by EPCglobal. Ex. 1011 at 1. The TDS presents standards applicable to EPC data that “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), as well as how it is encoded for use in the information systems layers of the EPC Systems Network (i.e. the EPC URI or Uniform Resource Identifier Encodings).”

“The Electronic Product Code (EPC) is an identification scheme for universally identifying physical objects via Radio Frequency Identification (RFID) tags and other means.” Ex. 1011 at 8. It consists of fields for storing data identifying the company or manufacturer, identifying the product type, and a unique serial number. Ex. 1011 at 10-11.

The TDS defines and describes the data format for SGTIN type encoding:

“To create a unique identifier for individual objects, the GTIN is augmented with a serial number, which the managing entity is responsible for assigning uniquely to individual object classes. The combination of GTIN and a unique serial number is called a Serialized GTIN (SGTIN).

The SGTIN consists of the following information elements:

The *Company Prefix*, assigned by EAN or UCC to a managing entity. The Company Prefix is the same as the Company Prefix digits within an EAN.UCC GTIN decimal code.

The *Item Reference*, assigned by the managing entity to a particular object class. The Item Reference for the purposes of EPC encoding is derived from the GTIN by concatenating the Indicator Digit of the GTIN and the Item Reference digits, and treating the result as a single integer.

The *Serial Number*, assigned by the managing entity to an individual object. The serial number is not part of the GTIN code, but is formally a part of the SGTIN.” Ex. 1011 at 12.

The fields comprising an SGTIN-96 encoding and their corresponding memory allocations are shown in the following Table:

	Header	Filter Value	Partition	Company Prefix	Item Reference	Serial Number
SGTIN-96	8	3	3	20-40	24-4	38
	0011 0000 (Binary value)	8 (Decimal capacity)	8 (Decimal capacity)	999,999 – 999,999,9 99,999 (Decimal capacity*)	9,999,999 – 9 (Decimal capacity*)	274,877,906 ,943 (Decimal capacity)

Ex. 1011 at 23 (Table 6)

Unique company prefix values are assigned by GS1 to companies and manufacturers upon request (“managing entity”). Item reference numbers are maintained by the managing entity for each of their product types. “[T]he managing entity is responsible for assigning unique, non-repeating serial numbers for every instance within each object class.” Ex. 1011 at 11.

The TDS acknowledges that it “draws from the previous work at the Auto-ID Center, and we recognize the contribution of the following individuals: David Brock (MIT), Joe Foley (MIT), Sunny Siu (MIT), Sanjay Sarma (MIT), and ***Dan Engels*** (MIT).” Ex. 1011 at 65.

**VI. THE PETITION FAILS TO DEMONSTRATE A REASONABLE
LIKELIHOOD OF PREVAILING UNDER ANY ASSERTED
GROUND**

Institution is only permissible when the Petition establishes a “reasonable likelihood that the petitioner would prevail with respect to at least one of the claims challenged in the petition.” 35 U.S.C. § 314(a). RPac fails to meet this threshold requirement because every prior art reference relied upon fails to disclose, teach, or suggest at least Limitations 1[e]-[f], 13[e]-[f], and 16[e]-[f], which are present within all claims of the ‘967 Patent. The Board must deny institution. *Par Pharm., Inc. v. TWi Pharms., Inc.*, 773 F.3d 1186, 1194 (Fed. Cir. 2014) (petitioner bears burden of proving every claim limitation is disclosed in the prior art); *Medichem, S.A. v. Rolabo, S.L.*, 437 F.3d 1157, 1164 (Fed. Cir. 2006) (consideration of any motivation to combine and reasonable expectation of success is only reached “if all the elements of an invention are found in a combination of prior art references”).

**A. None of the Art Relied Upon Discloses, Teaches, or Suggests the
Data Structure Comprising MSBs Claimed**

Limitations [e] – [f] of independent claim 1 of the ‘967 Patent state:

“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.” Ex. 1001 at Claim 1.

These limitations are directed to the data structure within the unique serial number space of the encoded RFID transponder claimed.⁵ They specifically require that the one serial number stored therein comprise a limited number of MSBs and remaining bits of lesser significance. Further, these limitations require that the MSBs of the one serial instance uniquely correspond to those of an allocated block of serial numbers. Ex. 2003 at 1009:5-21. Independent claims 13 and 16 each comprise limitations addressed to these same requirements of the RFID transponder and integrated circuit claimed, respectively.

With respect to each challenged claim of the ‘967 Patent, the Petition asserts the combination of *RFID4D* and Traub render obvious the claimed data structure implementing MSBs.⁶ Because neither of these references teach, suggest, or disclose an allocated block using MSBs as claimed, however, they cannot render obvious any claim of the ‘967 Patent.

⁵ The Petition purports to address these limitations separately, but in truth merely presents the same citations and argument for Limitation 1[f] as was previously presented in regard to Limitation 1[e]. Accordingly, these limitations will be addressed in concert in this Response.

⁶ The Petition does not assert the disclosure of the TDS to disclose, teach, or suggest either of these Limitations for any of Claim 1, 13, or 16. Pet. at 38-47, 57, 63.

1. *RFID4D* Does Not Disclose, Teach, or Suggest a Data Structure Comprising MSBs, As Claimed

Regarding Limitations 1[e] and 1[f]⁷, the Petition cites to only the following disclosure from *RFID4D* in support of its allegation that these limitations are taught by *RFID4D*:

“A tag’s embedded EPC number is unique to that tag.”
Ex. 1009 at 10.

“Serial number: Lastly (and most importantly) is a serial number, which is the specific instance of the object class being tagged.”
Ex. 1009 at 47.

“Here's a simple example of a decentralized, hierarchical approach to allocating serial numbers. A range of serial numbers for each product is allocated to each manufacturing facility. Within a facility, a range of numbers from those allocated to the facility is allocated to each line producing a particular product. In this way, the serial number is effectively subdivided into a facility number, line number, and subserial number, in which the allocation hierarchy is maintained between facility number and line number.”
Ex. 1009 at 240.

None of these excerpts from *RFID4D* are addressed to defining an allocated block of serial numbers using MSBs in the manner claimed. Rather, these passages teach batch allocation of serial numbers as discrete ranges and sub-ranges of values to different facilities and production lines. The Petition admits that this disclosure

⁷ This same evidence and argument is referenced in the portions of the Petition addressed to Limitations 13[e], 13[f], 16[e], and 16[f].

“does not provide a detailed explanation for how that allocation is done.” Pet. at 31. Because no such detail is provided, the Petition improperly resorts wholesale to the alleged understanding of a POSITA to provide the missing disclosure. *DSS Tech. Mgmt. v. Apple Inc.*, 885 F.3d 1367, 1374, 1377 (Fed. Cir. 2018) (Board may not rely on alleged common knowledge to fill in missing limitations or as a wholesale substitute for evidence and analysis); *Arendi S.A.R.L. v. Apple Inc.*, 832 F.3d 1355, 1361-62 (Fed. Cir. 2016) (assertions that a central limitation of a claim is within the common knowledge of those skilled in the art must be evident and indisputable).

This passage and the paragraphs preceding it are relied upon exclusively within the Petition to purportedly evidence widespread knowledge of the data structure claimed at Limitations 1[e]-[f], 13[e]-[f], and 16[e]-[f] of the challenged claims. Pet. at 21-22, 24-26, 38-39, 45, 57, 63. Yet, the actual author of the chapter from which this passage is excerpted, Dr. Engels, affirms that it merely discloses the commonplace approach to serialization employed in the RFID industry at that time. Ex. 1009 at 238 (“The following sections explain proven methods for managing numbers.”); Ex. 2003 at 955:14-956:1 (“It was my experience that assigning a range of numbers to different manufacturing facilities or lines was, in fact, very popular, very common prior to 2008.”); Ex. 2003 at 993:11-994:2; 994:20-995:22; 996:13-997:20; Ex. 2004 at 1071:6-1073:6; 1074:5-20. The approach involved allocating batches of serial numbers as *large, discrete ranges of decimal values* to each

manufacturing facility, which could then be broken down into smaller, discrete sub-ranges of values allocated to individual product lines or RFID tag encoding devices. Ex. 2002 at 763:9-764:3; 765: 1-7; Ex. 2004 at 1040:21-1041:23; 1044:1-1049:19.

Assigning serial numbers in batches as a range of decimal values in the manner suggested by *RFID4D* does not result in binary encodings comprising a static MSB sequence followed by bits of lesser significance, as claimed. Ex. 2003 at 958:14-25 (“because we're counting in decimal and giving allocated ranges in decimal, and those all get converted into binary. The binary representations do not respect bit boundaries. If you're assigning decimal numbers that are human ranges, and then when you do the conversion to binary, there's no fixed most significant bits values”).

The Petition omits any acknowledgement of Dr. Engels' testimony and glosses over *RFID4D* being devoid of any specific discussion of any data structure or any mention whatsoever of use of MSBs within the serial number space. It fails to even allege that any disclosure it relies upon from *RFID4D* teaches or suggests the requirements of Limitations 1[e]-[f], as claimed. Regarding Limitation 1[e], for example, the Petition alleges the following:

- the disclosure “[a] range of serial numbers for each product is allocated to each manufacturing facility” of *RFID4D* teaches “a pre-authorized range of serial numbers;

- these serial numbers may be encoded in binary form to commission an RFID tag; and,
- that a POSITA would understand that all “multi-digit binary numbers have higher order bits at the leading end.” Pet at 38-39.

None of the foregoing allegations contend that *RFID4D* teaches an “allocated block being assigned a limited number of most significant bits” which has been construed to mean “includes a limited, predefined sequence of higher order bits at the leading end.” Ex. 1007 at 3. This deficiency in the Petition is fatal to any purported reliance on *RFID4D* to disclose, teach, or suggest Limitations 1[e]-[f], and incurable. *SAS Inst. Inc. v. Iancu*, 138 S. Ct. 1348, 1357 (2018) (the petition defines the metes and bounds of an inter partes review).

Accordingly, *RFID4D* does not teach at least Limitations 1[e]-[f], or the corresponding limitations in claims 13 and 16, of the ‘967 Patent. This accords with the prior determinations of the original examiner, the jury at trial in the Avery Litigation, and with the opinions of the author of the cited passages from *RFID4D*. Ex. 1003 at 294; Ex. 1034; Ex. 2004 at 1050:5-7 (“Based on my review of ‘RFID For Dummies’, it does not teach Claim Elements E or F of Claim 1 of the ‘967 Patent and, therefore, does not anticipate Claim 1 of the ‘967 Patent.”); Ex. 2004 at 1050:18-19 (“‘RFID For Dummies’ does not render Claim 1 of the ‘967 Patent obvious.”).

2. Traub Does Not Disclose, Teach, or Suggest a Data Structure Comprising MSBs, As Claimed

Regarding Limitation 1[e], the Petition posits that “[i]f Dummies does not disclose or suggest the higher order bits in the serial number are ‘a limited, predefined sequence,’ as the term was previously construed, Traub does.” Pet. at 39. The Petition then wrongly alleges that that Traub “discloses creating ‘blocks’ (also referred to as ‘pools’) of EPCs with ‘business information’ encoded into the EPC.” Pet. at 40. The Petition makes this assertion in view of scant disclosure in Traub to generally identify certain embodiments of an EPC provisioning system along with heavy reliance on the graphic shown in Fig. 4B, despite there being *no discussion of Fig. 4B anywhere in Traub*. Pet. at 40-42.

In truth, even if Traub discloses that business information is encoded into an EPC, which it does not, this would still be insufficient to show practice of the data structure comprising MSBs claimed. Inclusion of business information within an EPC is not synonymous with practicing the requirements of Limitations 1[e]-[f], and Traub provides no discussion regarding how a serial number incorporating business information would be formatted or encoded. The disclosure of Traub does not support a POSITA understanding the generic term “business information” or the remark, “[t]he EPC code blocks can *be assigned so as to indicate business information* such as lot number and/or location” as teaching the novel data structure

claimed in the '967 Patent. In view of the remainder of Traub, and of the common serialization practices adopted in the RFID industry at that time, this disclosure would be understood to teach ***associating*** batch allocations of serial number values made to an encoding location, for example, within the software system managing RFID serialization. This is precisely what Traub depicts in Figures demonstrating operation of the EPC Provisioning Service disclosed therein:

Define Pool Configurations View Pool Configurations View Pools

Define Pool Configuration

Identity Type

Range start end

Pool Parameters

	Name	Value
☒	Location_id	picking01
☒		
☒		

Delete row Add row Delete all

Cancel Save

Ex. 1010 at Fig 13C

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

Ex. 1010 at Fig. 13D

Notably, the location information entered in the “Define Pool Configuration” screen of Fig. 13C (“picking01”) is a text string. There is no indication in the corresponding EPC pool list shown in Fig. 13D that this information is incorporated into the range of available or checked out EPCs shown. Rather, the information shown suggests that the database software executing the EPC Provisioning Service separately maintains tabled data for associating “business information” entered by a user to EPCs allocated or available to it. Neither its Petition or expert provide any basis for thier failure to consider this readily apparent interpretation of Traub while, instead, making an unsupportable leap to the contention that Traub teaches a novel data structure never expressly discussed.

By way of example, serial numbers could be allocated according to a scheme that causes values from 1,000,000 to 1,999,999 to only be usable at a first encoding

location, while values from 2,000,000 to 2,999,999 are only usable at a second location. Under this scenario, the decimal value of the serial number would be indicative of the encoding location (1 vs. 2), yet no allocated block of serial numbers comprising MSBs, as claimed, has been created. This is precisely what is shown in the Figures of Traub. Ex. 1010 at 13E-G (showing use of EPCs comprising serial number ranges in blocks of 10 million values).

RPac and its expert ignore this serialization methodology, which was widely adopted and used throughout the RFID industry in the 2000s, when interpreting Traub. Ex. 2003 at 955:14-956:1 (“It was my experience that assigning a range of numbers to different manufacturing facilities or lines was, in fact, very popular, very common prior to 2008.”); Ex. 2003 at 993:11-994:2; 994:20-995:22; 996:13-997:20; Ex. 2004 at 1071:6-1073:6; 1074:5-20. Indeed, several articles written by Mr. Kenneth Traub, the first named inventor, promoted and taught serialization using large decimal ranges. For example, in a 2012 article, Mr. Traub teaches:

“When the same product is tagged on two or more lines, or by two or more third parties, the supplier must ensure the same number isn’t used more than once. One method statically assigns large ranges to a tagging station or party—for example, it might reserve serial numbers 0 through 99,999,999,999 for plant ‘A,’ and 100,000,000,000 through 199,999,999,999 for plant ‘B.’

...

Another option is to use number-management software that communicates with the tagging lines to assign small ranges on demand. A tagging line requests, say, 1,000 serial numbers for a given GTIN, and the software responds with numbers 5,000 through 5,999. When a

second line requests numbers for the same GTIN, it gets a different range.” Ex. 2019 at 3.

Additional articles authored by Mr. Traub from 2010-2012 also encourage serialization in this manner. Ex. 2020 at 3 (“Supplier X writes a plan that says products tagged in-house will be assigned numbers one at a time, and the range of serial numbers will be 0 through 137 billion—half the available range in 96-bit tags. The plan assigns the service bureau a smaller range of serial numbers, 138 billion through 206 billion.”). Not until 2013 does Mr. Traub mention the use of MSBs to allocation serial numbers, which he does in connection with referencing certain guidance published by GS1 presenting serialization management techniques then known. Ex. 2021 (referencing GS1 guidance); Ex. 2022.

Version 1 of the GS1 Guideline was created on May 9, 2012. Ex. 2022 at 4. It acknowledged difficulty in ensuring unique serialization was an issue being faced by the RFID industry at that time, stating:

“[i]n principle, assigning unique serial numbers is a straightforward as using a counter 1, 2, 3, ..., for each GTIN to assign the next unused serial number to each instance of that GTIN as it is manufactured. However, this becomes more complicated when serial numbers for the same product may be assigned in more than one physical location. Examples of situations in which this occurs are:

- The same product is manufactured on multiple manufacturing lines in the same building.
- The same product is manufactured in different manufacturing plants.
- One or more contract manufacturers are used

- 3rd Product labels (including RFID tags) are affixed to products by one or more party service bureaus
- Pre-programmed labels (including RFID tags) are obtained from one or more label service providers and affixed to the products later
- Downstream supply chain parties (e.g., retailers) need to assign new serial numbers in exception situations; e.g., where the original tag is missing, or a product returned by a customer with the label removed is to be restocked.

Ex. 2022 at 7-8. The Guideline provides a detailed explanation of serialization schemes for grappling with these complicated, real-world scenarios, including adoption of structured serial numbers in binary which is described in text and graphically depicted:

Here is an example of a structured approach, expressed in binary:

- Each manufacturing line is assigned a three-bit binary code 000, 001, 010, etc.
- The serial number assigned on a given manufacturing line is composed of the line's 3-bit code, followed by 35 bits assigned by the line, resulting in a 38-bit serial number.

The following table illustrates the ranges that result from the above rule:

Manufacturing Line	Line Code	Serial Number Pattern (binary)	Minimum Serial Number (decimal)	Maximum Serial Number (decimal)
Line #1	000	000bbbb...bbb	0	34359738367
Line #2	001	001bbbb...bbb	34359738368	68719476735
Line #3	010	010bbbb...bbb	68719476736	103079215103

In the "serial number pattern" column above, the actual serial number is 38 bits – in the table, several bits are omitted for reasons of space. The size of each range is $2^{35} = 34,359,738,368$ serial numbers in each range.

Ex. 2022 at 12-13 (annotations added)

The Guideline details precisely how to implement a binary structure within the serial number space of an EPC encoding for all 38-bits of the serial number space, demonstrating that its use was not commonly adopted and understood in the

RFID industry before that time. This level of detail is mimicked in a 2010 Walmart document detailing its providers about its newly adopted binary data structure comprising “a Walmart assigned supplier serial site key embedded within the serial number.” Ex. 2023 at 1. Again, detail is provided for showing precisely how the site key is to be implemented, accounting for all 38-bits of the serial number space:

Header	Filter Value	Partition	Company Prefix	Item Reference	Serial Number
8	1	5	24	20	38
48	Table 1	Table 2	GTIN (-check digit)		8 bit Site Key 30 bit serial
00110000	001	101	GTIN (-indicator digit)	Indicator digit	ssssnnnnnnnnnn

Note: n = serial number (over 1 billion unique serial numbers per product)
s = site serial key number (up to 255 unique suppliers using same sku)

SERIAL NUMBER BITS (38 total = max 274,877,906,944)
First 8 bits (256) Remaining 30 bits (1,073,741,824)

Site ID #	Binary Site ID	Starting Serial #	Ending Serial #	Range of Serial #'s
0	00000000	0	1,073,741,823	1,073,741,824
1	00000001	1,073,741,824	2,147,483,647	1,073,741,824
2	00000010	2,147,483,648	3,221,225,471	1,073,741,824
3	00000011	3,221,225,472	4,294,967,295	1,073,741,824
255	11111111	273,804,165,120	274,877,906,943	1,073,741,824

Ex. 2023 at 4 (annotations added)

The difference in the level of discussion provided in these publications issued many years after the priority date of the ‘967 Patent by RFID industry leaders when compared to that of Traub is stark. Each provides explicit instruction detailing the number and location of memory space to be utilized for storing a predefined sequence comprising a “line code” or “site key,” respectively, and identify the number of remaining memory bits available for storing a serial value. *Id.*

Clearly, the Petition is infected by improper hindsight bias to reach the conclusions and hypotheticals it presents. *Sensonics, Inc. v. Aerosonic Corp.*, 81 F.3d 1566, 1570 (Fed. Cir. 1996) (“To draw on hindsight knowledge of the patented invention, when the prior art does not contain or suggest that knowledge, is to use the invention as a template for its own reconstruction—an illogical and inappropriate process by which to determine patentability.”) Ex. 1005 at ¶121.

RPac and its expert ignore the entirety of its discussion of the “EPC Provisioning System” as well as the corresponding Figures. This is unsurprising. Had RPac consulted those significant portions of the disclosure, it would have found that every discussion regarding the creation of EPC pools and allocation of EPCs contemplates use of ***only decimal values for start and end points to define ranges of EPCs***. Ex. 1010 at 38:32-33, 44-45, 55-56; 39:18-19; 40:2-9; Figs. 13B-G. No other mechanism is provided to users of the provisioning system for inputting additional information to be used in creating serial number values of an EPC pool. Certainly, the Petition fails to identify any. RPac ignores the consistent presentation of serial numbers as only large, decimal ranges throughout Traub just as it fails to consider that the real-world embodiment of the provisioning system of Traub is also configured to receive only decimal value endpoint inputs to fully define permissible serial number ranges without any further configuration of the serial number space. Ex. 1010 at 37:1-5 (“allows you to make associations between an

EPCPoolDefinitionParameters, identity type, and a serial number range”), 38:21-57 (using serial_range_start and serial_range_end variables to define serial number range), Figs. 13B-G (only “range start” and “end” inputs for configuring serial number space; all examples present allocation as blocks of thousands or millions of decimal values); *see, generally*, Ex. 2014; Ex. 2015.

RPac's allegations regarding Traub apply improper hindsight bias to manufacture disclosure that simply is not there, and wrongly hides behind the purported understanding of a POSITA derived from certain buzzwords like “hierarchical” as a band-aid over its deficient invalidity allegations. At bottom, no amount of argument can excuse that there is no mention of use of MSBs whatsoever, much less any mention of using MSBs to define an allocated block of serial numbers within an encoded RFID tag. Accordingly, like *RFID4D*, Traub fails to teach, suggest, or disclose Limitations 1[e]-[f], and related Limitations 13[e]-[f] and 16[e]-[f] of the challenged claims. Even when combined, therefore, these references cannot render any claim of the '967 Patent obvious.

VII. CONCLUSION

For the many reasons discussed above, the Petition should be denied and no review instituted. None of the art relied upon by Petitioners in support of its proffered grounds for invalidation disclose, teach, or suggest at least the limitations present in all challenged claims directed to a data structure comprising MSBs. This

data structure goes to the heart of the subject matter claimed. Accordingly, RPac's reliance on purported background knowledge and alleged understanding of a POSITA to fill gaps in the teachings of the prior art it asserts is improper. The Petition fails to present any disclosure from Traub, *RFID4D*, or the TDS that teaches or suggests allocation of serial numbers in any manner beyond the commonplace practice of batch allocation of large decimal ranges of values. This prior art methodology does not implicate the use of the MSB data structure claimed at Limitations 1[e]-[f], 13[e]-[f], and 16[e]-[f].

PO therefore respectfully requests that the Board deny institution of RPac's Petition with respect to all grounds asserted and all challenged claims.

Date: December 30, 2024

Respectfully submitted,

By: /Richard A. Wojcio, Jr./

Richard A. Wojcio, Jr.
Reg. No. 76,640

Lead Counsel:

Richard A. Wojcio, Jr.
(Reg. No. 71,640)
Friedman, Suder & Cooke
604 E. Fourth Street, Suite 200
Fort Worth, TX 76102
Phone: (817) 334-0400
Fax: (817) 334-0401
wojcio@fsclaw.com

Back-up Counsel:

Jonathan T. Suder
Friedman, Suder & Cooke
604 E. Fourth Street, Suite 200
Fort Worth, TX 76102
Phone: (817) 334-0400
Fax: (817) 334-0401
jts@fsclaw.com

CERTIFICATION UNDER 37 C.F.R. §42.24(d)

I hereby certify that the word count for the foregoing Patent Owner's Preliminary Response is 12,764 words, which is within the limit set in 37 C.F.R. §42.24(b)(1).

Dated: December 30, 2024

By: /Richard A. Wojcio, Jr./

Richard A. Wojcio, Jr.
Registration No. 71,640

CERTIFICATE OF SERVICE

I hereby certify that on December 30, 2024, a true and correct copy of the foregoing *Patent Owner's Preliminary Response* was served via electronic mail upon counsel of record for Petitioners at the following addresses:

Jessica Kaiser – kaiser-ptab@perkinscoie.com

Ramsey M. Al-Salam – ralsalam@perkinscoie.com

Stevan R. Stark – sstark@perkinscoie.com

Dated: December 30, 2024

By: /Richard A. Wojcio, Jr./

Richard A. Wojcio, Jr.
Registration No. 76,640