

IPR2026-00134
U.S. Pat. No. RE47,835

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

WESTINGHOUSE AIR BRAKE TECHNOLOGIES CORPORATION,
Petitioner,

v.

RAILWARE, INC.,
Patent Owner.

Case IPR2026-00134
U.S. Patent No. RE47,835

PATENT OWNER'S PRELIMINARY RESPONSE

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37 C.F.R. § 42.107	1, 2

PATENT OWNER'S EXHIBIT LIST

Ex. 2001	Railware's First Subpoena to Westinghouse Air Brake Technologies Corporation (d/b/a Wabtec) 4 Warehouse Ln, Elmsford, NY 10523 (October 10, 2024)
Ex. 2002	<i>National Railroad Passenger Corporation d/b/a Amtrak v. Railware, Inc.</i> , IPR2023-01179, Paper 8
Ex. 2003	<i>National Railroad Passenger Corporation d/b/a Amtrak v. Railware, Inc.</i> , IPR2023-01180, Paper 8
Ex. 2004	<i>National Railroad Passenger Corporation d/b/a Amtrak v. Railware, Inc.</i> , IPR2023-01181, Paper 8
Ex. 2005	Press Release: Wabtec Acquires Collins Aerospace's ARINC Rail Solutions Business to Extend Rail Optimization Portfolio, Wabtec (June 16, 2022)
Ex. 2006	<i>Railware, Inc. v. National Railroad Passenger Corporation d/b/a Amtrak</i> , No. 1:22-cv-5013 (S.D.N.Y.), Dkt. 1
Ex. 2007	Docket Printout: <i>Railware, Inc. v. National Railroad Passenger Corporation d/b/a Amtrak</i> , No. 1:22-cv-5013 (S.D.N.Y.)
Ex. 2008	<i>Railware, Inc. v. National Railroad Passenger Corporation d/b/a Amtrak</i> , No. 1:22-cv-5013 (S.D.N.Y.), Dkt. 139
Ex. 2009	<i>Railware, Inc. v. Southeastern Pennsylvania Transportation Authority</i> , No. 2:24-cv-02963 (E.D. Pa.), Dkt. 1
Ex. 2010	Docket Printout: <i>Railware, Inc. v. Southeastern Pennsylvania Transportation Authority</i> , Misc. Case No. 2:24-mc-01283-MRH (W.D. Pa.)
Ex. 2011	<i>Railware, Inc. v. Southeastern Pennsylvania Transportation Authority</i> , No. 2:24-cv-02963 (E.D. Pa.), Dkt. 46
Ex. 2012	<i>Railware, Inc. v. New Jersey Transit Corporation</i> , No. 1:24-cv-05537 (S.D.N.Y.), Dkt. 1
Ex. 2013	<i>Railware, Inc. v. New Jersey Transit Corporation</i> , No. 1:24-cv-05537 (S.D.N.Y.), Dkt. 42
Ex. 2014	<i>Railware, Inc. v. Peninsula Corridor Joint Powers Board d/b/a Caltrain</i> , No. 5:25-cv-05725 (N.D. Cal.), Dkt. 1
Ex. 2015	Docket Printout: <i>Railware, Inc. v. Peninsula Corridor Joint Powers Board d/b/a Caltrain</i> , No. 5:25-cv-05725 (N.D. Cal.)

Ex. 2016	<i>Railware, Inc. v. Peninsula Corridor Joint Powers Board d/b/a Caltrain</i> , No. 5:25-cv-05725 (N.D. Cal.), Dkt. 61
Ex. 2017	Excerpted File History for U.S. Patent Application No. 15/726,446
Ex. 2018	Defendant Southeastern Pennsylvania Transportation Authority's Initial Disclosures, <i>Railware, Inc. v. Southeastern Pennsylvania Transportation Authority</i> , No. 2:24-cv-02963 (E.D. Pa.)
Ex. 2019	Web Printout: http://railware.net/dispatchx.html (January 22, 2026)
Ex. 2020	Web Printout: http://railware.net/grandcentral.html (January 22, 2026)
Ex. 2021	Web Printout: http://railware.net/eeeps.html (January 22, 2026)
Ex. 2022	Press Release: Wabtec Units Awarded Contract to Provide Components for Amtrak Passenger Cars, Wabtec (March 8, 2012)
Ex. 2023	U.S. Patent Publication No. 2011/0278401
Ex. 2024	U.S. Patent Publication No. 2012/0176217
Ex. 2025	<i>Railware, Inc. v. Peninsula Corridor Joint Powers Board d/b/a Caltrain</i> , No. 5:25-cv-05725 (N.D. Cal.), Dkt. 66
Ex. 2026	Revisions to Rules Regarding Railroad Workplace Safety; Roadway Worker Protection, 81 Fed. Reg. 112 (May 26, 2016) (amending 49 C.F.R. Pt. 214)
Ex. 2027	NORAC Operating Rules, 6th. Ed. (Jan. 1, 1997)
Ex. 2028	NORAC Operating Rules, 4th. Ed. (Jan. 1, 1993)

I. PRELIMINARY STATEMENT

Pursuant to 37 C.F.R. § 42.107, Patent Owner Railware, Inc. (“Patent Owner”) submits this Preliminary Response to the Petition for *Inter Partes* Review (“IPR”) of U.S. Pat. No. RE47,835 (the “’835 patent”). Paper 1 (“Petition”). Petitioner Westinghouse Air Brake Technologies Corporation (“Wabtec” or “Petitioner”) challenges the validity of claims 1-7, 9-16, 18-41 of the ’835 patent (“Challenged Claims”).

As the ’835 patent notes, “even with all the[] safety features present in a railway system, railway accidents occur, with many of them being fatal There remains a need for further safety measures to protect the lives of railway workers.” EX1001 at 2:33-43. The Federal Railroad Administration (FRA) agreed. EX2026 at 75-76. According to the FRA, railroads should “ensure appropriate safety redundancies are in place in the event of miscommunication or error,” including “where working limits were no longer protected due to dispatcher error.” EX2026 at 82.

In response, Patent Owner developed the inventions of the ’835 patent, which introduced a new, distributed network architecture that changed the operation of centralized railway control systems by implementing an unconventional network architecture for generating, transmitting, receiving, and

using a secret “removal code”/“secret release code”/“secret code” as a form of redundant signal protection to prevent the errant unblocking of railway tracks. EX1001 at 6:3-10, Cls. 1, 10, 19, 20, 30, and 40. By keeping the “removal code”/“secret release code”/“secret code” secret, particularly from the dispatcher, the ’835 patent prevents the errant unblocking of railway tracks and ultimately saves lives, prevents injury, and prevents damage to equipment/property. Given its successes, Patent Owner’s inventions won the Federal Railroad Administration (“FRA”) President’s Award, and the FRA has recommended Patent Owner’s Enhanced Employee Protection System or EEPS®, which embodies one or more claims of the ’835 patent. *Id.* Patent Owner’s EEPS® has also been implemented into nation-leading railroads, including Metro-North Railroad and Long Island Railroad.

The Petition has not established a reasonable likelihood that any of the Challenged Claims are obvious. Amtrak, a long-time customer of Wabtec, previously tried and failed to invalidate the ’835 patent in IPR2023-01180, which the Board rightly denied institution of on the merits. Petitioner now attempts to use the Board’s prior denial of institution as a roadmap to try to fix the infirmities in Amtrak’s failed petition. The Petition, however, relies on the same primary art as Amtrak’s petition (called the “FRA-Report” by Wabtec and “Oriol” and

“Masquelier” by Amtrak). In the -01180 IPR, the Board rejected this art and determined that, *inter alia*, none of the art, including neither Oriol nor Masquelier (*i.e.*, the FRA-Report), disclose any of the aspects of the claimed “removal code”/“secret release code”/“secret code,” nor any related claim elements, in the Challenged Claims. The Petition fails no better. Petitioner, represented by the same counsel as Amtrak, fails to satisfy its burden for a number of reasons.

As a first reason to deny institution, the Petition’s claim construction positions are internally inconsistent and legally impermissible. Indeed, the Petition asserts that the claimed “removal code”/“secret release code”/“secret code” is both indefinite and obvious. This is internally inconsistent. A claim cannot be both indefinite (*i.e.*, does not inform a POSITA with reasonable certainty about the scope of the claim) **and** obvious. Further, the Petition fails to commit to a single claim construction in violation of 37 C.F.R. § 42.104(b). *Revvo Techs., Inc. v Cerebrum Sensor Techs., Inc.*, IPR2025-00632, paper 36 at 3 (PTAB Jan. 26, 2026) (interpreting § 42.104(b) to require a petitioner to choose ““a single claim construction that best captures the true meaning of the patent claim””). This failure is despite the Petition’s recognition of concrete disputes as to the meanings of claim terms that arose in the context of both the -01180 IPR and district court litigation. These failures alone are fatal to the Petition.

As a second reason to deny institution, at least one of the references in each of the Petition's four grounds is non-analogous art. In Grounds 1 and 2, Kruijswijk (EX1005) is non-analogous art because it is not from the same field of endeavor as the '835 patent (or the FRA-Report). Nor is Kruijswijk or Macey (Ground 2) reasonably pertinent to the problem facing the inventor of the '835 patent. Similarly, in Grounds 3 and 4, Schmitz, Byford, and Macey are non-analogous art for the same reasons. Because "a skilled artisan would only have been motivated to combine analogous art," *Polygroup Ltd. MCO v. Willis Elec. Co., Ltd.*, 759 F. App'x 934, 942 (Fed. Cir. 2019), the inclusion of non-analogous art in each of the four asserted grounds is fatal to the Petition.

As a third reason to deny institution, even setting aside its reliance on non-analogous art, the Petition fails to demonstrate that the Challenged Claims as a whole would have been obvious to a person of ordinary skill in the art ("POSITA"). Specifically, none of the art discloses or renders obvious, alone or in combination, the generating, transmitting, receiving, and using the claimed "removal code"/"secret release code"/"secret code" as a form of redundant signal protection to prevent the errant unblocking of railway tracks. Similarly, the Petition fails to identify any art (or combinations thereof) that releases a track block only upon receiving the claimed "removal code"/"secret release code"/"secret code" in

return. Instead, the Petition improperly relies on unsupported assertions, mischaracterizations of the art, and impermissible hindsight.

As a final reason to deny institution, the Petition fails to demonstrate that a POSITA would have been motivated to combine the art with a reasonable expectation of success. The Petition's "motivation to combine" arguments are generic, vague, and based on numerous unsupported assertions, mischaracterizations of the art, and impermissible hindsight, rendering them insufficient as a matter of law.

Accordingly, Patent Owner respectfully requests that the Director deny institution.

II. FACTUAL BACKGROUND OF THE '835 PATENT

When railway tracks require maintenance, railway field workers must physically enter the track area to perform the necessary maintenance. *See* EX1001 at 2:33-43, 11:40-42. Entering an active track area poses grave risks to the railway field workers, who are defenseless against train traffic. *See* EX1001 at 2:33-43. Over time, various safety systems were developed, such as alarm systems that alerted railway workers to incoming train traffic, ideally allowing them time to vacate the track area before the train approached. These systems proved inadequate in protecting railway field workers.

Other examples of inadequate safety precautions include NORAC's Operating Rules, including the "Form D" control system. *See, e.g.*, EX2027, EX2028. NORAC's Operating Rules have existed since the mid-1980's and "Form D" has been an integral part of NORAC's Operating Rules since at least the early 1990's. *See e.g.*, EX2028. A "Form D" contains "written authorization(s), restriction(s), or instruction(s) issued by the Dispatcher to specified individuals." EX2028 at 6. These instructions can include a "Form D Line 4," which is used when "removing a track from service for maintenance." *Id.* at 48. The Operating Rules require the dispatcher to determine that "controlled signals leading to the affected track are in Stop position" prior to issuing a "Form D Line 4." *Id.* Similarly, prior to releasing a "Form D," the dispatcher ostensibly must take certain actions, including "contact the addressee(s) and state his intent to cancel the Form D . . . , state the Form D number and date, the cancellation time and date, and his initials, [and] ensure that all cancellation information is repeated [by the addressee] correctly." *Id.* at 62-63. Despite these protections, human errors and accidents continued to occur, such as those recognized in the FRA's Final Rule (EX2026) and in the '835 patent. *See* EX1001 at 2:11-43. Such errors included mistakes such as where "the train dispatchers did not maintain the required blocking devices." EX2026 at 75.

The birth of centralized train control or centralized traffic control (“CTC”) systems provided another option. *See* EX1001 at 1:47-54. A remote dispatcher could remotely control the tracks used by trains. *See id.* This remote control enabled the remote dispatcher to “block” sections of track and to temporarily reroute trains away from blocked track sections that were being worked on by railway field workers. But these systems too suffered from certain drawbacks. *See id.* 2:33-43. Specifically, the blocking of track sections was controlled entirely by the remote dispatcher. *See id.* at 1:47-54. Human error could and did lead to blocks being removed prematurely or mistakenly by the dispatcher, such as either because the dispatcher falsely believed that the work was complete, or because the dispatcher intended to remove a different block and mistakenly removed a block on a track section where railway field workers were still working. *See id.* at 2:33-43.

To overcome these inadequacies, Patent Owner developed the inventions of ’835 patent. Patent Owner’s owner and inventor of the ’835 patent, Ross Pirtle, spent years developing the inventions of the ’835 patent and its commercial embodiment, Dispatch X with EEPS®. As a result of his years of effort and investment, Mr. Pirtle was awarded a number of U.S. Patents, including the ’835 patent.

The '835 patent is directed to a new and unique design for centralized railway control systems. This new system mitigates the potential for human error by restructuring the systems used to protect railway workers to place the power to remove the block in the hands of the railway field worker(s) under the block's protection. Instead of placing the power to remove blocks solely in the hands of remote dispatchers, the '835 patent introduced a new, distributed network architecture that uses unconventional components, operations and communications in an unconventional way to achieve new functionality previously unknown. *See id.* at 2:53-3:6. The operation of centralized railway control systems changed by implementing an unconventional network architecture for generating a unique, secret code for each block placed by the dispatcher, sending that unique, secret code to a railway worker, and permitting a block to be removed only upon receiving the unique, secret code from the railway worker. *Id.* For example, the '835 patent forestalls errant block removal by requiring railway traffic controllers or dispatchers and railway field workers on the tracks to cooperate to lift a block. *See id.* at 2:53-3:6. Every time a block is placed, a "removal code"/"secret release code"/"secret code" is generated and automatically sent to the railway field worker. *See id.* at 8:1-19. The "removal code"/"secret release code"/"secret code" is "secret" in the sense that it is not

readily available to the dispatcher. *See id.* at 6:5. The “removal code”/“secret release code”/“secret code” is “save[d] to an internal storage” and “automatically transmitted, by a code generation part, to the electronic contact address of the railway field worker.” *Id.* at 2:67-3:1, 7:17-19. By automatically sending the “removal code”/“secret release code”/“secret code” to the railway field worker, the dispatcher is unaware of the “removal code”/“secret release code”/“secret code” until it is provided by the railway field worker to release the block. *See id.* at 8:40-46. For a block to be removed, its corresponding “removal code”/“secret release code”/“secret code” must be returned to the railway control apparatus. *See id.* at 2:64-3:6. By putting the power to lift a block with the “removal code”/“secret release code”/“secret code” in the hands of the railway field worker operating under the block’s protection, and not the dispatcher, the ’835 patent prevents errant block removal and ultimately saves lives, prevents injury, and prevents damage to equipment/property.

In placing the power to remove blocks in the hands of the railway field worker, the ’835 patent recognized that there may be some times where the railway field worker is unable to provide the “removal code”/“secret release code”/“secret code.” Recognizing this possible pitfall, as a failsafe, the ’835 patent contemplates having the “removal code”/“secret release code”/“secret

code” also stored in the internal storage of the railway traffic control terminal from which it could be retrieved, for example, in event of emergency. EX1001 at 8:48-50. This failsafe, however, does not change the fact that, while the block is in place, the dispatcher remains ignorant of the “removal code”/“secret release code”/“secret code” needed to remove the block.

As a result of Patent Owner’s hard work and innovations, the commercial embodiment of the ’835 patent, Patent Owner’s EEPS®, won the FRA President’s Award and is recommended by the FRA for use in every railroad in the country. *See* EX2026 at 82. Patent Owner’s EEPS® has also been implemented into nation-leading railroads, including Metro-North Railroad and Long Island Railroad.

III. LEGAL STANDARD

The obviousness inquiry requires determining “the scope and content of the prior art,” the “differences between the prior art and the claims at issue,” and “the level of ordinary skill in the pertinent art.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). Obviousness determinations must be made without “any hint of hindsight.” *Star Sci., Inc. v. R.J. Reynolds Tobacco Co.*, 655 F.3d 1364, 1375 (Fed. Cir. 2011).

Petitioner has the “burden to demonstrate both that a skilled artisan would have been motivated to combine the teachings of the prior art references to achieve the claimed invention, and that the skilled artisan would have had a reasonable expectation of success in doing so.” *In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1381 (Fed. Cir. 2016) (internal citation and quotation omitted). Petitioner cannot satisfy its burden through “mere conclusory statements,” but “must instead articulate specific reasoning, based on evidence of record” that supports an obviousness determination. *Id.* at 1380. The factual inquiry whether to combine references must be “thorough and searching.” *Palo Alto Networks, Inc. v. Centripetal Networks, LLC*, 122 F.4th 1378, 1384 (Fed. Cir. 2024) (citation omitted). “The need for specificity pervades” the motivation to combine analysis. *Id.* Petitioner cannot satisfy its burden with unsupported and conclusory expert testimony. *See* 37 C.F.R. § 42.65(a).

IV. PERSON OF ORDINARY SKILL IN THE ART

A person of ordinary skill in the art of the ’835 patent would have (i) at least a bachelor’s degree in electrical, mechanical, industrial or related engineering, and (ii) would have had at least two (2) years of experience in railway safety, railway operations, and/or railway control systems. A higher level of education or specific skill might make up for less experience, and vice-versa.

V. CLAIM CONSTRUCTION

37 C.F.R. § 42.104(b) requires that the Petition state “how the challenged claim is to be construed.” Petitioners may not take a “wait and see” approach to construing claims in the Petition that allows them to offer different claim constructions before the Office and in district court. *Revvo*, IPR2025-00632, paper 36 at 4. The Director has made clear that a petitioner must choose “a single claim construction that best captures the true meaning of the patent claim.” *Id.* at 3 (quoting Claim Construction Standard, 83 Fed. Reg. at 51,350).

“Claim terms are generally given their plain and ordinary meanings to one of skill in the art when read in the context of the specification and prosecution history.” *Hill-Rom Servs., Inc. v. Stryker Corp.*, 755 F.3d 1367, 1371 (Fed. Cir. 2014) (citing *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312-13 (Fed. Cir. 2005) (*en banc*)); *see also* 37 C.F.R. § 42.100(b). “Importantly, the person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification.” *Id.* at 1313.

A. The Petition Adopts Internally Inconsistent and Legally Impermissible Claim Constructions.

The Petition asserts that the claim terms do not “require express construction for the purposes of this IPR given the prior art disclosure.” Pet. at 9. Nonetheless,

the Petition asserts that it analyzes the prior art under Patent Owner's and SEPTA's proposed constructions in *Railware, Inc. v. Southeastern Pennsylvania Transportation Authority*, Case No. 2:24-cv-02963-JMY (E.D. Pa.) ("SEPTA litigation") and the Board's discussion of the "removal code"/"secret release code"/"secret code" in IPR2023-01180 institution denial. Pet. at 9. The Petition's non-committal approach to claim construction is fatal to the Petition for at least two reasons.

First, the Petition adopts internally inconsistent and legally impermissible claim constructions by asserting that a claim term is ***both*** indefinite ***and*** obvious. Petitioner acknowledges Patent Owner's construction for "removal code"/"secret release code"/"secret code," and claims to be applying that construction in the asserted grounds. Pet. at 9-11. At the same time, however, Petitioner recognizes and endorses SEPTA's assertion that the claimed "secret code," which is present in all Challenged Claims, is indefinite. *Id.* at 9-11. This is internally inconsistent. Petitioner cannot contend that the Challenged Claims are ***both*** indefinite ***and*** obvious. *See Enzo Biochem, Inc. v. Applera Corp.*, 599 F.3d 1325, 1332 (Fed. Cir. 2010). A determination that a claim is invalid over prior art requires first construing the claim. *Id.* If a claim is indefinite, the claim, by definition, cannot be construed. *Id.* Without a discernable claim construction, an anticipation/obviousness analysis

cannot be performed. *See id.*; *Sys. Div., Inc. v. Teknek LLC*, 59 F. App'x 333, 338 (Fed. Cir. 2003) (“The first step in an obviousness analysis is to construe the language of the claims.”). This alone is fatal to the Petition.

The Petition further fails to satisfy § 42.104(b) because it fails to commit to a single claim construction. The Petition acknowledges a number of disputed claim terms in the *SEPTA* litigation, including Patent Owner and SEPTA disputing the claimed “removal code”/“secret release code”/“secret code.” Pet. at 8-11. Despite these disputed constructions, Petitioner confusingly asserts that “Petitioner does not believe any claim terms require construction.” *Id.* And, as stated above, Petitioner asserts that “Petitioner has explained herein how the prior art satisfies even [Patent Owner]’s (and SEPTA’s) proposed constructions in the SEPTA litigation.” *Id.* at 8. Petitioner has not made—and cannot make—such an explanation, particularly in view of its indefiniteness construction. Further, this is improper under § 42.104(b) because, rather than committing to a single claim construction, Petitioner (including real-party-in-interest Caltrain) adopts a legally impermissible “wait and see” approach. *Revvo*, IPR2025-00632, paper 36 at 4. Given Patent Owner’s active litigation with Caltrain, Petitioner’s tactics are particularly improper.

B. Patent Owner's Constructions

For the purposes of this Petition only, Patent Owner believes that the claimed “removal code”/“secret release code”/“secret code” and “user terminal” require construction, as explained below. The remaining terms each carries its “plain and ordinary meaning[] to one of skill in the art.” *Hill-Rom Servs., Inc.* 755 F.3d at 1371.

- 1. “removal code”/“secret release code”/“secret code”¹ means “a code that is not readily available to the user of the railway [traffic]² control apparatus (*i.e.*, the dispatcher).”**

A POSITA would have understood the claimed Secret Code Terms to mean “a code that is not readily available to the user of the railway [traffic] control apparatus (*i.e.*, the dispatcher).” The intrinsic evidence of the '835 patent supports this construction.

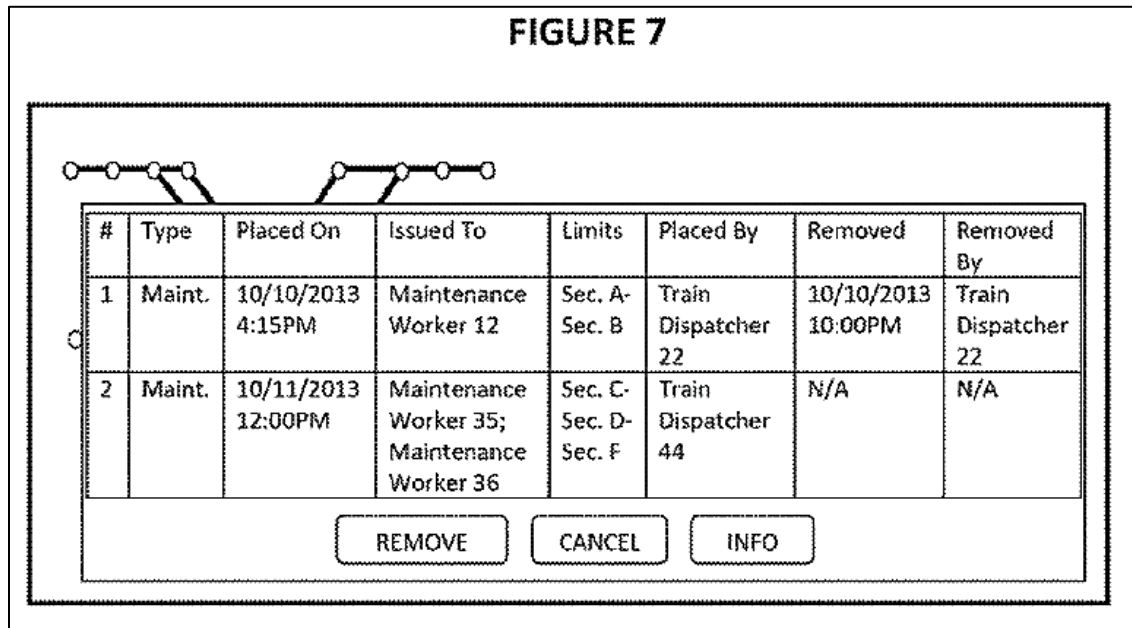
¹ For simplicity, Patent Owner, refers to the claimed “removal code”/“secret release code”/“secret code” collectively as the “Secret Code Terms.”

² The claims of the '835 patent refer to both a “railway control apparatus” and a “railway traffic control apparatus” in different claims. Railware submits that these terms refer to the same apparatus, despite the minor differences in terminology.

a. The specification of the '835 patent supports Patent Owner's construction.

The '835 patent specification consistently and repeatedly describes the Secret Code Terms as “secret,” “automatically” generated and transmitted, and saved to “internal storage.” Taken together, a POSITA would understand the Secret Code Terms to mean “a code that is not readily available to the user of the railway [traffic] control apparatus (*i.e.*, the dispatcher).” EX1024 at 18-24.

First, the '835 patent repeatedly and consistently refers to the Secret Code Terms as “secret.” The '835 patent states “[t]he code generator 101B is configured to produce a removal code, such as a cipher which is . . . **secret**.” EX1001 at 6:3-5 (emphasis added). The specification also states “the railway traffic control apparatus 105 generates and saves a random secret code.” *Id.* at 9:54-56. Once a block is placed and the code is generated and sent to the railway field worker, the dispatcher can view certain information about the placed block, but not the code, as illustrated in Figure 7.



Notably absent from Figure 7 is any code that is associated with the blocks on the tracks. In contrast, Figure 10, which shows the railway field worker's terminal, shows the Secret Code Terms (called a "random code" in Figure 10) displayed to the railway field worker.

FIGURE 10

Terminal

Railway Traffic Controller

Sec. A - Sec. B

BLOCKED on 10/10/2013
4:15PM

By Train Dispatcher 22

Random Code: 912478

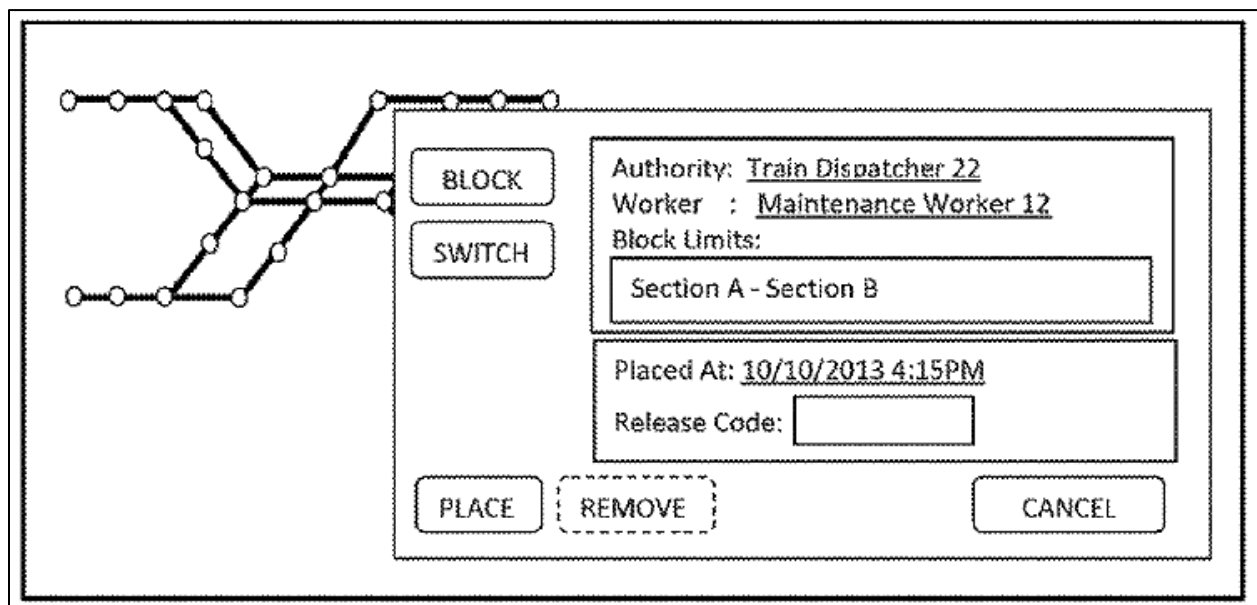
CALL UNBLOCK LINK

MESSAGE UNBLOCK LINK

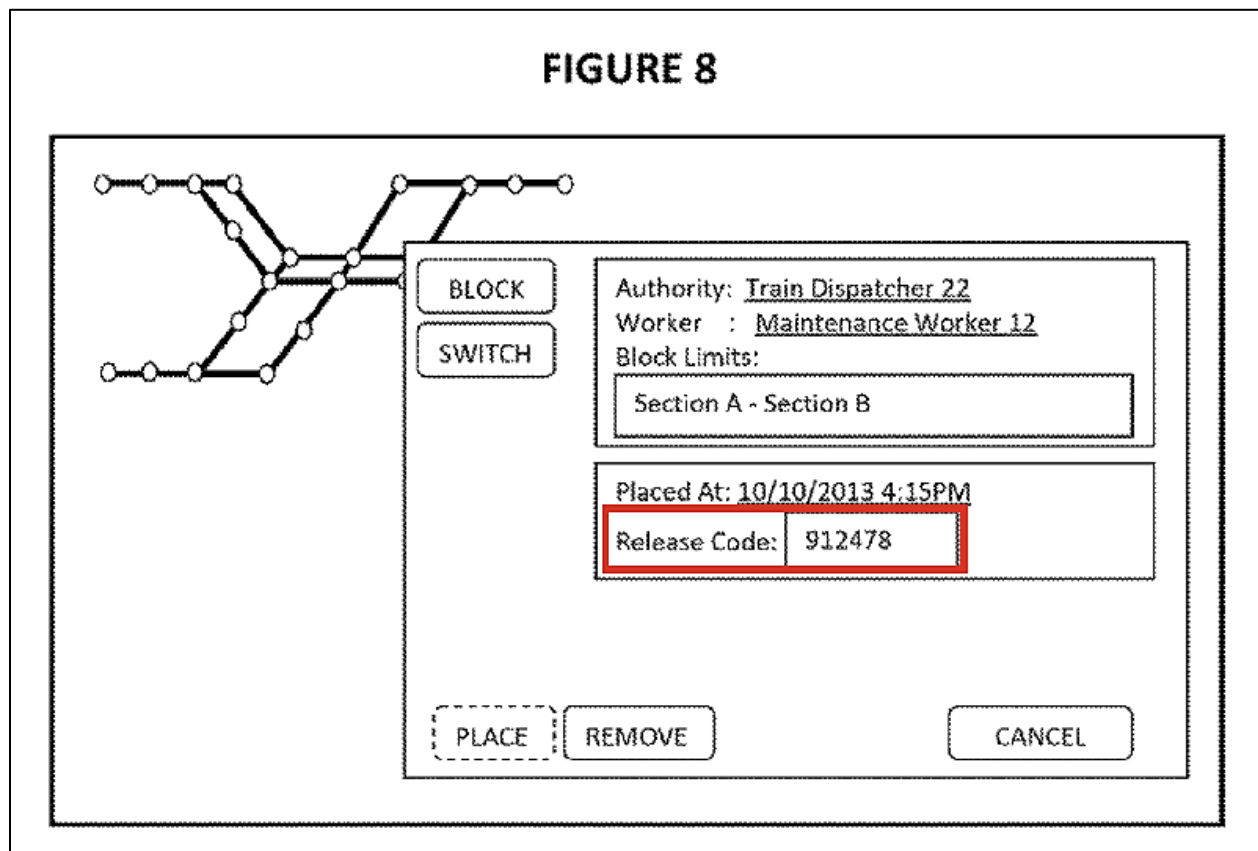
OK

It is not until the railway field worker seeks to remove a block that the dispatcher may, in some embodiments, receive the code for the first time from the railway field worker. *Id.* at 7:31-37. Specifically, the specification of the '835 patent explains that “[i]n order for a block on a certain track to be lifted, the release code has to be input into the railway traffic control apparatus.” *Id.* Along these lines, the

specification of the '835 patent explains that the “remove” button through which the dispatcher can remove a block “is disabled without the input of the secret code.” *Id.* at 10:35-38. This is illustrated in, for example, Figure 6 (shown below), where the dispatcher has not yet received the code from the railway field worker, and the “remove” button is disabled or “dashed out.” *Id.* at 7:57-8:19.



“After the maintenance worker finishes the assigned work and is clear of the train tracks, he/she may then supply the interlock control system with the release code, and the interlock control system in turn can release the interlock over the block.” EX1001 at 11:35-39. This is shown below in Fig. 8:



Second, the '835 patent describes the generation and transmission of the code as “largely automated” by the railway control apparatus to maintain the secrecy of the code from the dispatcher. *Id.* at 2:64-3:6. According to the '835 patent, after the dispatcher initiates a block, “the railway traffic control apparatus 105 generates a release code . . . and sends the code to the maintenance worker designated for track work, *i.e.* maintenance worker 12.” *Id.* at 8:3-6. The code is “automatically transmitted” by the railway control apparatus to the railway field worker after the dispatcher places a block. *Id.* at 2:64-3:6. Indeed, each of these specific operations (generating and transmitting the secret code) is performed automatically by the

railway control apparatus after the dispatcher places the block. *See Id.* at 2:64-3:6, 2:59-61, 6:3-10, 7:24-33, 7:49-8:12, 9:7-12, 10:26-30. No further involvement by the dispatcher is required. *See id.* By “automatically” generating and transmitting (*e.g.*, without the intervention of the dispatcher) the code to the railway field worker(s) when a block is placed by the dispatcher, the code is not displayed to the dispatcher. *See id.* Indeed, a POSITA would understand from the specification of the ’835 patent that the code is not readily available to the dispatcher because the described operations explicitly do not involve displaying the code to the dispatcher.

Third, the ’835 patent describes that the code is saved to “internal storage” of the railway control apparatus, further maintaining the secrecy of the code from the dispatcher. *See* EX1001 at 7:17-19; 8:47-50. The fact that the code is saved in “internal” storage indicates to a POSITA that the code is not displayed or readily available to the dispatcher. As discussed above with respect to Figure 7, once a block is placed, the dispatcher can view certain information about a block, such as the type of block, when it was placed, who it was issued to, the geographic limits of the block, and who placed it. *See* EX1001 at Figure 7. The dispatcher cannot view, however, the code itself, which is, again, secret and confined to “internal storage” and, therefore, not readily available to the dispatcher. *Id.*

Finally, as discussed above in Section II, the specification’s description of what happens when the railway field worker cannot provide the code to the dispatcher supports Patent Owner’s proposed constructions. Specifically, the specification discloses a “back door” or “failsafe” in which the code may be “retrieved” from the internal storage, for example, by the Chief Traffic Controller. *Id.* at 10:44-48; *id.* at Figure 13, step S1306. The combination of saving the code to “internal storage” and forcing the code to be “retrieved from the train traffic control apparatus” (as opposed to simply displaying the code in full view of the dispatcher), makes clear to a POSITA that the claimed code is not “readily” available to the dispatcher.

Taken together, the specification’s description of the Secret Code Terms as “secret,” being “automatically” generated and transmitted, and being stored in “internal storage”—in addition to providing a “back door” or “failsafe” to retrieve the code from internal storage—convey to a POSITA that the Secret Code Terms mean “a code that is not readily available to the user of the railway [traffic] control apparatus (*i.e.*, the dispatcher).”

b. The claim language supports Patent Owner’s construction.

Consistent with the specification, the claims of the ’835 patent itself support this construction. Specifically, independent claims 1, 20, 30, and 40 each specify

that the Secret Code Terms are generated and transmitted “to an electronic contact address accessible by the railway field worker via operation of the user interface of the user terminal.” EX1001 at Cls. 1, 20, 30, 40, and 41. The claims specifically do not say that the Secret Code Terms are displayed to the dispatcher.

c. The express goals of the ’835 patent support Patent Owner’s construction.

The ’835 patent states that one goal of the described and claimed inventions is to give “the railway worker [] more control over the traffic through the rail block in which the worker is working, and fatal on-track accidents can be reduced.” EX1001 at 11:40-43. A POSITA would understand that, by providing the railway field worker(s) with a code that is not readily available to the user of the railway [traffic] control apparatus (*i.e.*, the dispatcher), and requiring the railway field worker to provide that code before lifting a block, the ’835 patent prevents the mistakes that led to the death and injury of railway field workers.

d. The Board’s prior decision supports Patent Owner’s construction.

While the Board concluded that it need not adopt a construction for the claimed Secret Code Terms in order to deny institution, EX2002 at 21, n.12, it concluded that the claimed Secret Code Terms require “limitations on the accessibility to the code by, for example, the dispatcher prior to a release of a track block.” *Id.* at 20. The Board further noted that the “’835 patent makes clear that the

[Secret Code Terms are] ‘only’ received by the relevant railway field worker and an internal storage.” *Id.* “Although the ’835 patent describes alternative means for retrieving the code from internal storage when the field worker is unavailable, accessibility to the code is limited and this alternative access is only provided where no maintenance worker is available to transmit the random secret code.” *Id.* at 21 (cleaned up). In other words, the Board concluded that the claimed Secret Code Terms are not readily available to the dispatcher for purposes of releasing a block prior to the release of a block on a track.

2. “user terminal” means “user terminal of the railway field worker.”

“User terminal” as used in the ’835 patent means the user terminal of the railway field worker. *See* EX1001 at Cls. 1, 20, 23, 27, 28, 30, 33, 37, 38, 40, and 41, *see also* Figs. 4 and 10, 7:20-24 (“This terminal...is the contact associated with the designated worker”), 9:7-12 (“Fig 10. shows an exemplary illustration of a message sent by the railway traffic control apparatus 105 to a terminal 103 at a corresponding address of a maintenance worker The message is meant to deliver the release code to the maintenance worker”).

Wabtec does not dispute this term. Wabtec, however, recognizes SEPTA’s assertion that the claimed “user terminal” should be construed to mean “mobile user device.” But neither the claims nor the specification support such narrowing. *See*,

e.g., 9:23-25 (the terminal 103 could be *any communication device* such as *but not limited to*, mobile phone or smartphone, tablet, pager, PDA, etc.) (emphasis added). Accordingly, “user terminal” simply means “user terminal of the railway field worker.”

VI. THE PETITION FAILS BECAUSE EACH GROUND RELIES ON NON-ANALOGOUS ART.

“Generally, a skilled artisan would only have been motivated to combine analogous art.” *Polygroup*, 759 F. App’x at 942. “Prior art is analogous where either (1) the art is from the same field of endeavor, regardless of the problem addressed or (2) even if the reference is not within the same field of endeavor, the reference still is reasonably pertinent to the particular problem with which the inventor is involved.” *In re Ethicon, Inc.*, 844 F.3d 1344, 1349 (Fed. Cir. 2017). Each of the Petition’s Grounds relies on non-analogous art. This is fatal to the Petition.

A. Overview of the FRA-Report

Each of the Grounds 1-4 rely on the FRA-Report as the primary reference. Pet. at 12. The FRA-Report consists of two volumes. Volume I of the FRA-Report (EX1004 Vol. I) is entitled “Supporting Railroad Roadway Worker Communications with a Wireless Handheld Computer.” Volume I was previously considered by the Board in IPR2023-01180 as “Oriol.” Volume II of the FRA-

Report (EX1004 Vol. II) is entitled “Supporting Railroad Roadway Worker Communications with a Wireless Handheld Computer.” Volume II was previously considered by the Board in IPR2023-01180 as “Masquelier.” Volume I of the FRA-Report focuses on the usability for the railway field worker, while Volume II of the FRA-Report focuses on the impact on dispatcher performance. EX1004 Vol. I at Title; EX1004 Vol. II at Title.

Both volumes of the FRA-Report describe “[a] prototype communications device [] developed for roadway workers to request train and territory information and to request track protection from the dispatcher” via a wireless data link that sends and receives information. EX1004 Vol. I at Abstract; EX1004 Vol. II at Abstract.

More specifically, railway field workers who wish to work on a work site request authorization from the dispatcher. EX1004 Vol. I at 38³; *see also* EX1004 Vol. II at 5-6. If the request is granted, the dispatcher will send information that includes, *inter alia*, a “Form D number (automatically assigned by system), Form

³ Petitioner did not uniquely number each page of its exhibits as required by 37 C.F.R. § 42.63(d)(2). Unless otherwise indicated, Patent Owner’s citations are to the native numbering of Petitioner’s exhibits.

D recipient, date, track number, track location, and foreman in charge of the track out of service.” EX1004 Vol. I at 38; *see also* EX1004 Vol. II at 2, 6, 15-17.

As discussed above, *supra* Section II, a Form D number is well-known in the railway industry. *See, e.g.*, EX2027 at 61-67. Form D numbers were originally designated using paper forms filled out by the dispatcher. *See, e.g.*, EX1004 Vol. I at 55; EX1004 Vol. II at 53; EX2027 at 61. The Form D number is distributed broadly to the dispatcher, locomotive engineers, railway field workers, and managers located outside the dispatcher’s location. The Form D number is not secret from anyone. The FRA-Report states “[t]he device parameters should allow the PDA user to view all work permissions in effect for each track section on screens indicating the track that is out of service. ***It would also be beneficial to include work permissions under the authority of other roadway workers.***”

EX1004 Vol. I at 27 (emphasis added); *see also* EX1004 Vol. II at 27 (explaining that dispatchers seeing the Form Ds in effect by others as beneficial). Fig. A-5 of Volume I and Figure 18 of Volume II show the Dispatcher Interface, which shows that the dispatcher is aware of the Form D number from the time that the railway worker requests Form D protection:

Requested Active Rejected and cancelled	
Requested Form Ds 0003, Oriol - Read 0002, Oriol - Read	Requested Foul Time 10.00a-10.30a, Oriol - Read
Form Ds waiting for time effective 0004, Oriol - Read	

Form D 0003 is Requested

Foreman **Oriol** would like to work in 1 track at/between **Branford** and **Guilford**
Desired starting time: **11.00a**
Expected duration of work: **1 hour**

Form D #: **0003**
Delivered to: **Oriol**
Date: **01/28/2000**
Line 4: **1** track out of service between/at **81.5 Branford** and **90.4 Guilford** in charge of **Oriol**

Train **North East Corridor**
Dispatcher:

Please select 'Confirm' to grant permission to work or 'Deny' to disregard this form D request and then press 'Send Response'

☒ Confirm
☐ Deny Reason:

EX1004 Vol I., Fig. A-5.

Active Form Ds

- [HMSL1, New Haven-Fair St, Trk 1](#)

Active Foul Time

- [Volpe3, Branford-Pine, Trk 1, 1.10p-1.40p](#)

Cancelled Form Ds

None

Cancelled Foul Time

- [Volpe1, Shore Line Jct., Trk 2, 1.00p-1.25p](#)

Figure 18. Work Authorization Status Display

EX1004 Vol. II, Fig. 18.

Notably, Volume II of the FRA-Report tested for dispatcher errors, including “[r]eleasing the track section before the work authorization is cancelled.” EX1004 Vol. II at 30. In other words, the FRA-Report was testing for situations in which a dispatcher releases a block prematurely, *i.e.*, “before the work authorization is cancelled” by the railway field worker. *Id.* The fact that the authors of the FRA-Report believed this possibility warranted collecting data indicates that the dispatcher has all of the information necessary to release the track block at any time, including prematurely or erroneously.

B. Grounds 1 and 2 Fail Because Kruijswijk And Macey Are Not Analogous Art.

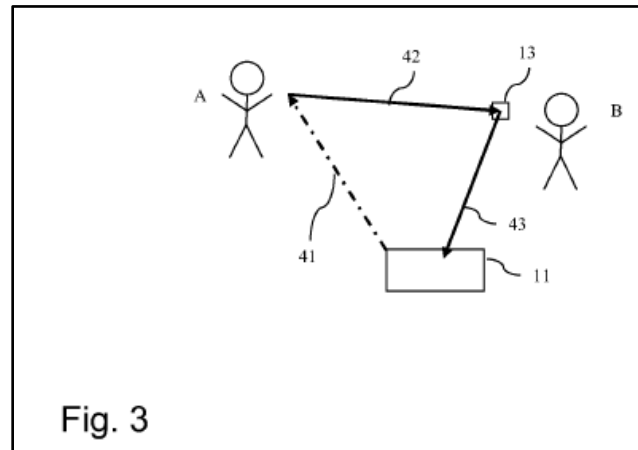
1. Overview of Kruijswijk

Kruijswijk (EX1005) is entitled “Communications System for Controlling Users.” Kruijswijk “controls users” by “providing proof that [two or more] persons are at the same physical location.” *Id.* at 10:27-11:17.

Surprisingly, the Petition ignores Kruijswijk’s own description of the alleged invention. *See* Pet. at 17-18. Contrary to the Petition, Kruijswijk does not relate to railway traffic control, nor does it discuss railway traffic controllers or dispatchers. *See, generally*, EX1005. Further, Kruijswijk does not discuss using the “personal secret code” (discussed below in more detail) to communicate with a centralized train control system in conjunction with placing or removing track blocks. *Id.*

Kruijswijk's only reference to "railroad" relates to a single statement that Kruijswijk's alleged invention may be employed to ensure that "the technicians were at least in the same physical position" "for safety checks that must be performed by two technicians." *Id.* at 12:13-20. The Petition ignores all of this. Pet. at 17-18.

Kruijswijk achieves its alleged "goal" of proving that two individuals are in the same location by giving one individual a "personal secret code" that must be entered into a mobile device of the second user. Kruijswijk teaches "[p]erson A communicates via [a] network for acquiring a personal secret code." EX1005. at 11:10-11. To prove that person A and person B are in the same physical location, "[p]erson A enters the personal secret code into the communication device 13 of person B." *Id.* at 11:12-13. Then, "the communication device 13 transfers the personal secret code in a message to the server." *Id.* at 11:13-14. Finally, "the server verifies the personal secret code . . . provid[ing] proof of the physical presence of person A." *Id.* at 11:15-18. Again, the Petition ignores all of this. Pet. at 17-18.



Ex1005, Fig. 3.

Kruijswijk makes clear that the “personal secret code” only needs to be secret from person B (*i.e.*, the person with whom they need to be in the same physical location). Kruijswijk further “provides the option for a penalty action, if person B knows the secret code.” *Id.* at 11:22-23. “For example, certain access rights of the second user are revoked, a service level is downgraded, or the personal secret code of the second user is invalidated.” *Id.* at 8:5-11. This “penalty action” is intended to discourage person A from simply sharing their code with person B from a physically distant location, thereby further emphasizing the need for physical proximity. *Id.* at 11:19-22. Again, the Petition ignores all of this. Pet. at 17.

2. Kruijswijk is not analogous art.

Grounds 1 and 2 fail because Kruijswijk is not analogous art. The '835 patent is related to systems and methods for railway traffic control and addresses

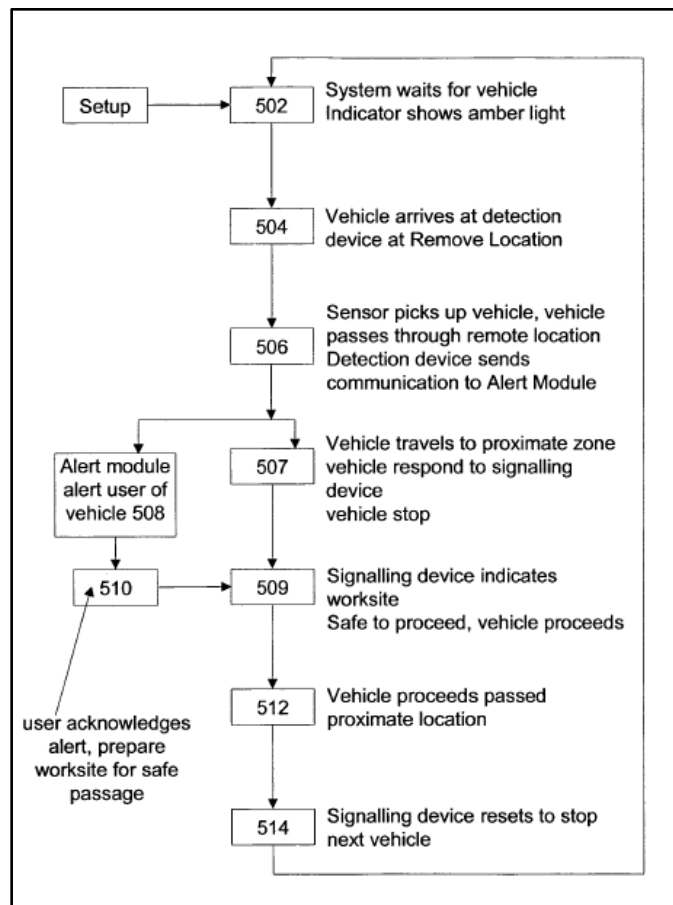
the problem of erroneous or mistaken block removal by dispatchers. *See, e.g.*, EX1001 at Abstract; 11:40-43. The FRA-Report relates to a prototype communications device developed for roadway workers to request track protection from the dispatcher. EX1004 Vol. I at Abstract; EX1004 Vol. II at Abstract. In contrast, Kruijswijk describes controlling users to provide “proof that persons are at the same physical location.” EX1005 at 2:1-2; 10:27-28; *see also supra*, Section VI.B.1. Kruijswijk has nothing to do with railway traffic control systems, let alone the problem of erroneous or mistaken block removal by dispatchers. As discussed above, the only mention of “railroads” in Kruijswijk concerns proving that two “technicians” are in the same physical location. *Id.* at 12:9-21. Accordingly, Kruijswijk is not analogous art, and Grounds 1 and 2 fail. *In re Ethicon, Inc.*, 844 F.3d at 1349.

3. Overview of Macey

Macey (EX1007) is entitled “A System and Method For Providing an Alert.” Macey’s disclosure relates “to a system and method of providing an alert . . . or warning to a work site located in the path of an approaching train or heavy vehicle.” EX1007 at 1:5-9. Notably, and in contrast with the ’835 patent’s “block” on track sections, Macey’s disclosure is directed to “situations where closure of the path [track] is not viable.” *Id.* at 1:16-17. Stated differently, Macey is not directed

to blocking or unblocking of railway tracks at all, but rather to an alert system requiring sensors and alarms to warn workers of incoming train traffic, but still allows dispatchers to route trains on tracks through work zones. The Petition ignores this. Pet. at 19.

Macey's system entails "detecting the vehicle . . . communicating the detection to the user . . . [and] the user transmit[ting] a status to the vehicle . . . providing an indication to the vehicle to proceed." EX1007 at 2:12-20. The Petition ignores all of this. Pet. at 19.



EX1007, Fig. 5.

According to Macey, the “alert module” comprises an interface for a user that is arranged for a user to enter an acknowledgment code, indicating that the target zone is now safe for a vehicle to proceed. *Id.* at 15:23-31 (“the acknowledgement 406 can be entered into the interface 402 by entering a specific code such as a PIN (personal identification number) or password”); *see also id.* 13:35-14:4; 6:10-14. Macey is silent as to how the code is generated or transmitted to the worker. Macey discloses only that the code can be “previously set-up by a senior user such as a foreman or site manager.” *Id.* at 20:29-31. Macey is further silent as to whether a dispatcher or anyone else has access to the code because Macey does not discuss dispatchers at all. The Petition ignores all of this. Pet. at 19.

4. Macey is not analogous art.

Ground 2 further fails because Macey is not analogous art. Unlike the ’835 patent, Macey describes a form of advanced warning system where traffic is active on a track, requiring sensors and alarms to warn workers of incoming train traffic, but still allows dispatchers to route trains on tracks through work zones. EX1007 at 3:12-20. In contrast, the ’835 patent places blocks on a track that ***block or prevent*** trains from being routed onto tracks and addresses the problem of erroneous or

mistaken block removal by dispatchers. *See, e.g.*, EX1001 at Abstract; 11:40-43.

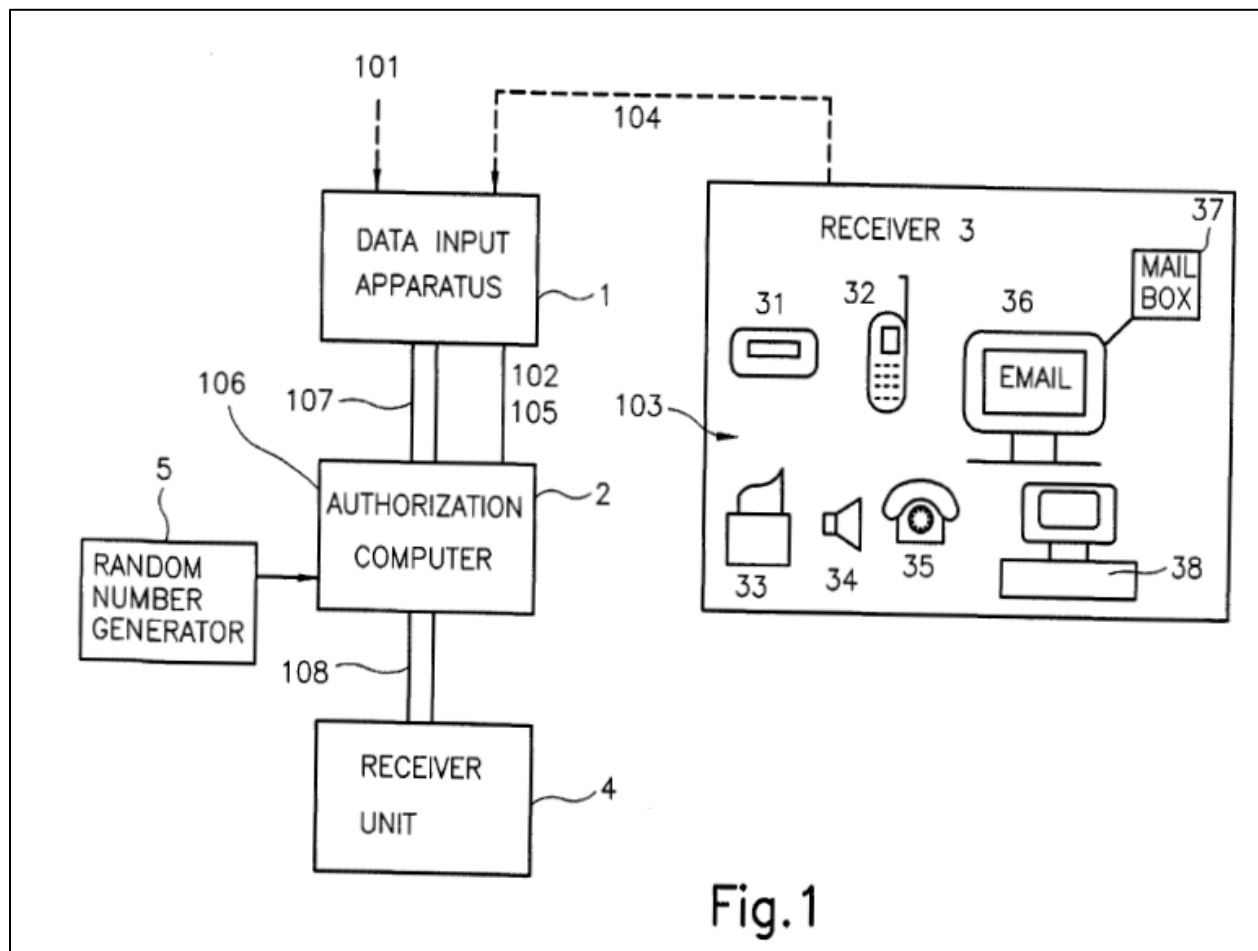
Accordingly, Macey is not analogous art, and Ground 3 fails for this additional reason. *In re Ethicon, Inc.*, 844 F.3d at 1349.

C. Ground 3 Fails Because Schmitz Is Not Analogous Art.

1. Overview of Schmitz

Schmitz (EX1006) is entitled “Method for Authorizing in Data Transmission Systems.” Schmitz discloses “a method for authorizing and an authorization process in combination with data transmission and data communication.” EX1006 at 1:37-40. Schmitz contemplates two potential applications: (1) “obtain[ing] full access to or access limited to specific regions of [a receiver unit]” in the context of “telebanking” or “remote terminal banking.” (EX1006 at 1:11-15; 9:23-24) and (2) with “physical access controls” to access a space (such as a door lock) (*Id.* at 5:7-9; 2:39; 5:23-30).

Figure 1 of Schmitz illustrates the described system:



According to Schmitz, in the first step, a user “sends . . . qualifying identification through a data input apparatus 1, together with a request for generating . . . a transaction authorization number . . . to an authorization computer 2.” *Id.* at 6:58-63; 8:10-15. This transmission occurs along transmission path 102 in Figure 1. *Id.* In the second step, “the authorization computer 2 generates the . . . TAN.” *Id.* at 6:63-67. In the third step, “the authorization computer 2 sends the . . . TAN . . . through a different transmission path as compared to the transmission path of the first step to a receiver 3.” *Id.* at 6:67-7:4; 8:24-28. This transmission of

the “TAN” occurs along transmission path 103 in Figure 1. *Id.* In the fourth step, “the user takes this . . . TAN . . . from the receiver 3 and enters [it] into the data input apparatus 1.” *Id.* at 7:4-8; 8:43-47. In the fifth step, “this . . . TAN . . . is transmitted again to the authorization computer 2.” *Id.* at 7:8-11; 8:47-51. In the sixth step, “the authorization computer 2 verifies the validity of the . . . TAN.” *Id.* at 7:11-13; 8:51-53. In the seventh step, if the “TAN” is verified, the authorization computer “establish[es] a connection between data input apparatus 1 and a receiver unit 4.” *Id.* at 7:11-15; 8:59-62. This connection allows “the user . . . to transmit and/or to receive data from the data input apparatus 1 to the receiver unit 4.” *Id.* at 8:62-65.

2. Schmitz is not analogous art.

Ground 3 fails because Schmitz is not analogous art to the ’835 patent or to the FRA-Report. Schmitz describes “a method for authorizing in data transmission and communication systems.” EX1006 at 1:7-8. Schmitz contemplates obtaining full or limited access to specific regions of a computer in the context of “telebanking” or “remote terminal banking.” *Id.* at 1:11-15; 9:23-24. Additionally, Schmitz applies its discussion to “physical access controls” to access a physical space (such as a door lock). *Id.* at 5:7-9; 2:39; 5:23-30. Schmitz states that the alleged invention could make it “possible to construct a system where different

persons have different authorizations for accessing different rooms.” *Id.* at 5:31-48. Schmitz does not describe or address railway traffic control systems at all. Nor does Schmitz address the same problem as the ’835 patent, namely the problem of erroneous or mistaken block removal by dispatchers. Accordingly, Schmitz is not analogous art, and Ground 3 fails. *In re Ethicon, Inc.*, 844 F.3d at 1349.

D. Ground 4 Fails Because Byford and Macey Are Not Analogous Art.

As discussed above with respect to Ground 2, Macey is not analogous art. *Supra*, Section VI.B.4. The same rationale applies to Ground 4.

Additionally, Ground 4 fails because Byford is not analogous art.

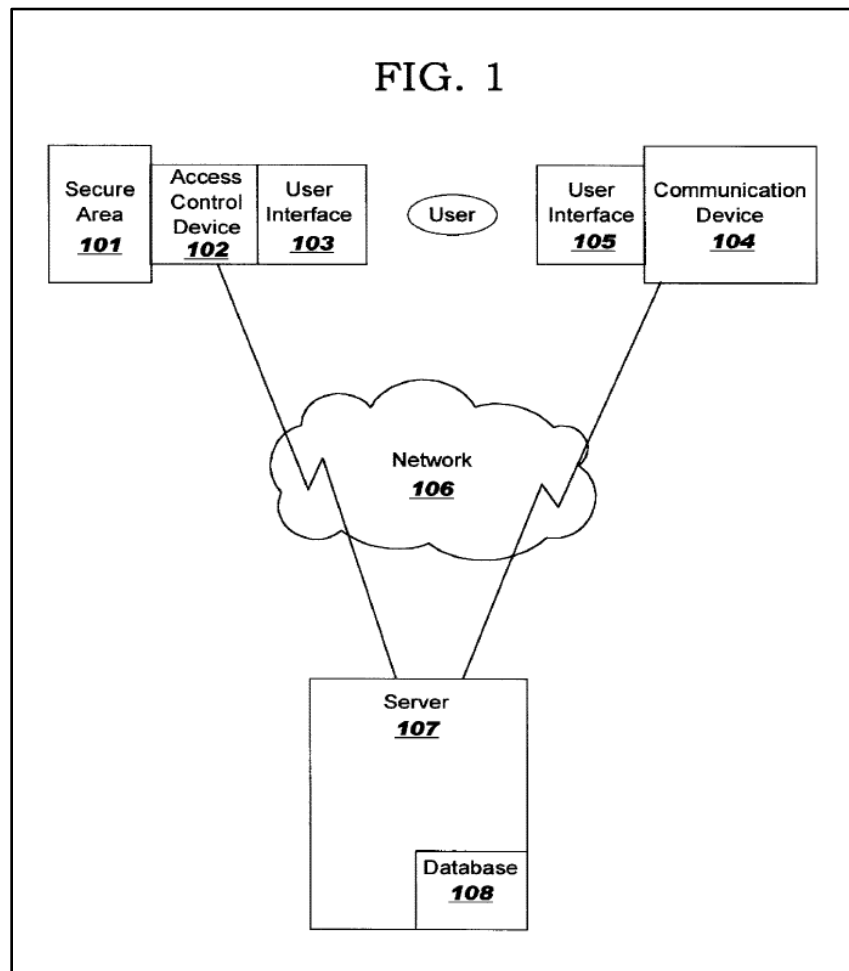
1. Overview of Byford

Byford (EX1011) is entitled “System, Apparatus and Method for Controlling Access.” Byford describes a method “for controlling access to a secure location or container, or for controlling access to selected television programs or classes of programs.” EX1011 at Abstract; *id.* at 1:65-2:12. Byford simply removes the need for “encoded badges, static passwords and the like, and also removes the need for users to present themselves at a particular location, such as a security control office, before they can be granted access rights to a facility.” *Id.* at 4:62-67.

In Byford, a user has a communication device (*e.g.*, a PDA) and is seeking access to a secure area or container that is protected by an access control device

(e.g., a lock) with a user interface 103 (e.g., a cipher lock). EX1011 at 3:61-65.

Both the communication device and the access control device can communicate with a server via a network, as shown in Figure 1.



EX1011, Fig. 1; *id.* at 3:65-4:2.

To gain access to the secure location, the user must first provide identifying information about themselves and the access control device to the server. *Id.* at 4:32-34. Next, the server sends the access code to the user's communication device, which is displayed on the user interface of the communication device. *Id.* at

4:34-35. The user may then enter the access code into the user interface of the access control device to unlock the secure area. *Id.* at 4:38-40. Byford is not analogous art.

2. Byford is not analogous art.

Byford is concerned with “[1] controlling access to a secure location or container, or [2] for controlling access to selected television programs or classes of programs.” EX1011 at Abstract; *id.* at 1:65-2:12. The Petition ignores the discussion of “television programs,” and instead focuses on Byford’s “cipher lock code” being used as a verification mechanism that allows a user “access to a facility.” EX1011 at 1:65-66. Neither of these two applications relates in any way to railway traffic control systems or to the ’835 patent’s goal of preventing erroneous or mistaken block removal by dispatchers. Accordingly, Byford is not analogous art, and Ground 4 fails. *In re Ethicon, Inc.*, 844 F.3d at 1349.

VII. THE PETITION FAILS TO ESTABLISH A REASONABLE LIKELIHOOD THAT THE CHALLENGED CLAMS ARE OBVIOUS.⁴

Even assuming that the art in Grounds 1-4 are all analogous art (they are not), the Petition still fails to establish a reasonable likelihood that any

⁴ While Patent Owner focuses on deficiencies in the Petition as to specific claim elements discussed herein, Patent Owner does not concede that other claim

Challenged Claim would have been obvious because each proposed combination of art, alone or in combination, fails to disclose all of the elements of the Challenged Claims. Further, the Petition fails to establish that a POSITA would be motivated to combine the references as asserted in the Petition.

A. The Petition Does Not Establish a Reasonable Likelihood that the Combination of the FRA-Report and Kruijswijk Renders Unpatentable Claims 1-7, 9-16, 18-41 (Ground 1).

“The petition must specify where each element of the claim is found in the prior art patents or printed publications relied upon.” 37 C.F.R. § 42.104(d); *see also* 37 C.F.R. § 42.22(a)(2) (requiring “a detailed explanation of the significance of the evidence”). The Board is “not tasked with divining where the prior art might possibly disclose the claim element at issue.” *webinar.net, Inc. v. ON24, Inc.*, IPR2022-00826, Paper 10 at 15-16 (PTAB Sep. 23, 2022); *see also Nearmap US, Inc. v. Pictometry Int’l Corp.*, IPR2024-00729, Paper 9 at 21 (PTAB Oct. 10, 2024).

elements are disclosed or rendered obvious by the art, or waive the right to challenge the sufficiency of the art as to other claim elements.

- 1. The combination of the FRA-Report and Kruijswijk does not render obvious generating the Secret Code Terms as recited in Elements 1[D]/10[B]/19[B]/20[B]/30[B]/40[C].**
 - a. The FRA-Report does not disclose Elements 1[D]/10[B]/19[B]/20[B]/30[B]/40[C].**

The Board has already found that the FRA-Report does not disclose any aspects of the claimed Secret Code Terms. EX2002 at 26-27. And the Petition does not identify any disclosure in the FRA-Report that allegedly discloses the aspects of the claimed Secret Code Terms. *See* Pet. at 35-38, 53, 55. Nor could it. The FRA-Report discloses only a “Form-D number,” which is widely disseminated, including to the dispatcher. EX1004 Vol. II at 27 (explaining that dispatchers seeing the Form Ds in effect by others as beneficial). Fig. A-5 of Volume I and Figure 18 of Volume II show the Dispatcher Interface, which shows that the dispatcher is aware of the Form D number from the time that the railway worker requests Form D protection, and can release a block at any time:

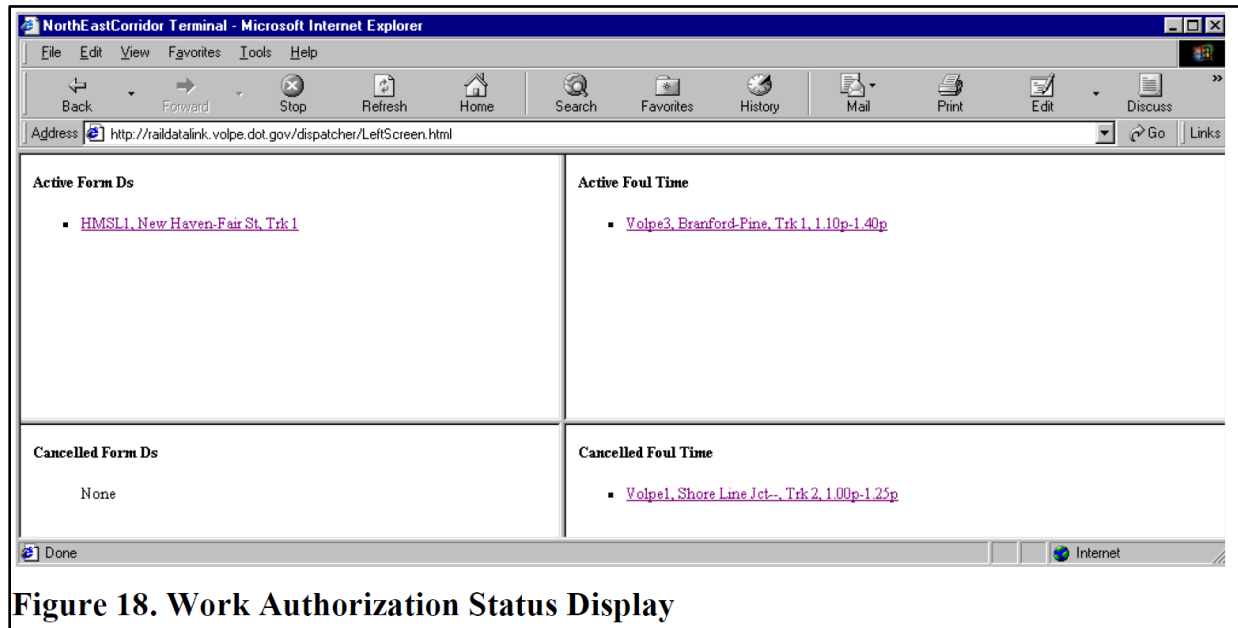


Figure 18. Work Authorization Status Display

**b. Kruijswijk does not disclose Elements
1[D]/10[B]/19[B]/20[B]/30[B]/40[C].**

The Petition contends that Kruijswijk’s “personal secret code” “supplies” the claimed Secret Code Terms. Pet. at 38-44, 53, 55. The Petition is incorrect for at least two reasons.

First, Kruijswijk does not disclose the claimed Secret Code Terms because the “personal secret code” of Kruijswijk is not used to “remove” or “release” *anything*, let alone a block on a railway track only after receiving the claimed Secret Code Terms. The claimed Secret Code Terms permit the “release” or “removal” of a block from a track. EX1001 at 6:14-16 (“a block cannot be removed without the input of the removal or release code.”); *see also id.* at 3:61-63; 3:2-6, 7:31-33. In contrast, Kruijswijk is clear that the purpose of the “personal

secret code” is “providing proof that [two or more] persons are at the same physical location.” EX1005 at 10:27-11:17. Indeed, in the sole paragraph in which Kruijswijk discusses “technicians” performing “safety checks” on a railroad track, Kruijswijk reiterates that the alleged invention is simply used to confirm that the two technicians are in the same location. EX1005 at 12:14-17 (“Regulations (by the company or the government) may require some kind of proof that the safety checks were really performed by the technicians. With this invention, it can be proved that the technicians were at least at the same physical position.”). Simply put, the “personal secret code” serves a different purpose than the claimed Secret Code Terms of the ’835 patent. The Petition ignores this crucial distinction, and thereby fails to meet its burden to demonstrate that any Challenged Claim is likely to be found unpatentable under Ground 1.

Second, the Petition fails to demonstrate that the “personal secret code” of Kruijswijk is “not readily available to the user of the railway [traffic] control apparatus (*i.e.*, the dispatcher).” The Petition relies on unsupported assertions, misrepresentations of the art, and impermissible hindsight. Specifically, the Petition does not cite anything in Kruijswijk that discusses the “personal secret code” in the context of a train dispatcher or whether or not a train dispatcher (or anyone else) has access to the “personal secret code.” *See* Pet. at 38-44. Nor could

it. Kruijswijk does not discuss train dispatchers at all, let alone who has access to the “personal secret code.” *See, generally*, EX1005. Further, while the Petition asserts that the “personal secret code” is “only received by the relevant worker,” none of the citations provided in the Petition support that proposition, and the Petition is devoid of any explanation of how the cited portions of Kruijswijk support that proposition. *See* Pet. at 39 (citing EX1005 at 12:13-21, 4:3-8, 9:8-10, 6:1-9, 7:1-17). They do not. The only person that Kruijswijk discloses person A’s “personal secret code” being secret from is “person B.” *See* EX1005 at 11:19-24. And in the sole example of Kruijswijk discussing railroad safety checks, person A and B are both technicians located on the tracks. *Id.* Neither of them is a dispatcher. *Id.* Kruijswijk cannot disclose that the “personal secret code” is not readily available to the dispatcher because Kruijswijk does not discuss train dispatchers at all.

2. **The combination of the FRA-Report and Kruijswijk does not disclose “a block removal part to remove only upon receiving the removal code . . . the block” as recited in Elements 1[E]/10[C], “permitting the block to said one or more track sections to be removed by the railway control apparatus only upon entry of the removal code” as recited in Element 19[C], or “responsive to receiving the secret release code, from the terminal remove the block from the one or more sections” as recited in Elements 20[E]/30[E].**

- a. **The FRA-Report does not disclose Elements 1[E]/10[C]/19[C]/20[E]/30[E].**

As discussed above, the Board has already found that the FRA-Report does not disclose any aspect of the claimed Secret Code Terms, and the Petition does not identify any disclosure in the FRA-Report that allegedly discloses any aspect of the claimed Secret Code Terms. *Supra*, Section VII.A.1.a.

- b. **Kruijswijk does not disclose Elements 1[E]/10[C]/19[C]/20[E]/30[E].**

The Petition contends that Kruijswijk’s “personal secret code” “supplies” the claimed Secret Code Terms and its usage to remove a block. Pet. at 47-50. The Petition is incorrect for at least three reasons.

First, as noted above, the “personal secret code” taught in Kruijswijk is not the claimed Secret Code Terms. *Supra*, Section VII.A.1.b. Accordingly, Kruijswijk does not disclose Elements 1[E]/10[C]/19[C]/20[E]/30[E] for the same reasons it fails to disclose Elements 1[D]/10[B]/19[B]/20[B]/30[B]/40[C].

Second, even if combined, the FRA-Report and Kruijswijk fail to render obvious Elements 1[E]/10[C]/19[C]/20[E]/30[E] because Kruijswijk's "personal secret code" is not used to remove or release *anything*, let alone for the purpose of removing a block on a track only after receiving or in response to receiving the claimed Secret Code Terms. The Petition ignores this distinction. As discussed above, Kruijswijk only provides a method to "verify that at least [two] technicians are on the same place." EX1005 at 12:18-21. Nothing more. Accordingly, even if combined, the FRA-Report and Kruijswijk would only provide a system to confirm that two workers are in the same physical location.

Third, the combination of Kruijswijk's "personal secret code" with the FRA-Report's "cancel/fulfill" feature fails to render obvious that the block is released "*only* upon receiving the removal code" (Elements 1[E]/10[C]/19[C]) or "*responsive to* receiving the secret release code" (Elements 20[E]/30[E]). (emphasis added). The Petition's "analysis" on this point is unsupported, mischaracterizes the art, and impermissible hindsight. *See* Pet. at 49. This is yet another reason to deny the Petition.

3. The Petition does not establish that a POSITA would have been motivated to combine the FRA-Report and Kruijswijk.

The Petition alleges six motivations to combine the art. All of them fail.

As an initial matter, a POSITA would not have combined the FRA-Report and Kruijswijk because Kruijswijk is non-analogous art. *Supra*, Section VI.B.

The Petition's alleged motivations to combine are without merit for additional reasons. *First*, the Petition attempts to present an unsubstantiated "obvious to try" argument. Pet. at 42, 49, 51-52. "To prove obviousness under an obvious to try theory, [Petitioner] must show (1) a design or market need to solve a particular problem, and (2) that 'there are a finite number of identified, predictable solutions' that would lead to an expectation of success." *Grunenthal GMBH v. Alkem Lab 'ys Ltd.*, 919 F.3d 1333, 1345 (Fed. Cir. 2019) (quoting *KSR*, 550 U.S. at 421). The Petition does not even attempt to meet either of these required showings.

Second, the Petition asserts that there were "known problems and motivations in the art" that would have made it obvious to combine the FRA-Report and Kruijswijk. Pet. at 41-42, 48-49. Despite claiming that the problems were "known . . . in the art," the Petition does not provide a single citation to anything (even Petitioner's expert) to demonstrate such knowledge. *See id.* Such a bare assertion is rife with impermissible hindsight bias. *ActiveVideo Networks, Inc. v. Verizon Commc 'ns, Inc.*, 694 F.3d 1312, 1327 (Fed. Cir. 2012). The Director should, therefore, disregard such assertions. 37 C.F.R. § 42.104(b)(5).

Third, the Petition asserts that “[a] POSITA would have had a motivation to combine and reasonable expectation of success because they involve railway technology and worker safety.” Pet. at 42. This argument fails because it is insufficient to “merely allege[] the references came from the same field of study and address the same problem.” *Comcast Cable Commc’ns, LLC v. Promptu Sys. Corp.*, 838 F. App’x 555, 557 (Fed. Cir. 2021).

Fourth, the Petition asserts that “[g]iven CTC systems and secret-code verification systems were known, modifying FRA-Report with Kruijswijk would have been simply ‘the application of a known technique to a known device ready for improvement to yield predictable results.’” Pet. at 42. This rationale fails for at least two reasons. First, the Petition fails to explain how general knowledge of “CTC systems” and “secret-code verification systems” would have led a POSITA to specifically combine those allegedly known systems to achieve the claimed inventions of the ’835 patent. Second, this argument fails as a matter of law because “[a] patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art.” *KSR*, 550 U.S. 398, 418.

Fifth, the Petition asserts that a POSITA would have had motivation to combine the FRA-Report and Kruijswijk primarily because of “safety and

security” and a “verification system.” Pet. at 40, 42-43, 51. The Petition fails to recognize the purpose of the claimed Secret Code Terms, which is to place the power to remove a track block in the hands of a railway field worker to prevent mistaken or erroneous block removal by a dispatcher. Further, the Petition does not explain what it means by “safety and security” or “verification system.” Those terms are vague, and the Petition’s generic invocation of them does not support its alleged motivation to combine. As the “master of the [Petition], Petitioner cannot offer unexplained citations and quotes to support the Petition.” *NearMap US, Inc. v. Eagle View Techs.*, IPR2024-00716, Paper 9 at 13 (PTAB Oct. 9, 2024) (denying institution because “[t]he Petition does not make clear Petitioner’s theory of the case”).

Finally, citing to the FRA-Report, the Petition identifies a desire to “positively identify the person communicating with the PDA” as an alleged known problem. Pet. at 51. This rationale fails as well. Simply “*identify[ing]*” the railway field worker would not solve the problem of erroneous or mistaken block removal by a dispatcher because it does not place the power in the hands of the railway field worker to lift a block. The Petition does not explain how simply verifying the railway field worker’s “identity” would provide any motivation to combine the

FRA-Report and Kruijswijk, let alone address the problem of mistaken or erroneous block removal by a dispatcher.

“In the absence of a colorable reason to combine, [the Director is] left with the conclusion that the combination . . . is a prohibited hindsight reconstruction.”

Cisco Sys., Inc. v. Centripetal Networks, Inc., IPR2018-01655, Paper 7 at 19-20 (PTAB May 6, 2019). The Petition should, therefore, be denied.

B. The Petition Does Not Establish a Reasonable Likelihood that the Combination of the FRA-Report, Kruijswijk, and Macey Renders Unpatentable Claims 1-7, 9-16, 18-41 (Ground 2).

1. The combination of the FRA-Report, Kruijswijk, and Macey does not render obvious generating or transmitting the Secret Code Terms as recited in Elements 1[D]/10[B]/19[B]/20[B]/30[B]/40[C].

The Petition cites exclusively to Ground 1 (the FRA-Report and Kruijswijk) for Elements 1[D]/10[B]/19[B]/20[B]/30[B]/40[C] under Ground 2. Pet. at 63, 66. The Petition does not cite to or contend that Macey remedies the shortcomings of the FRA-Report and Kruijswijk. *See* Pet. at 63, 66. Accordingly, for the same reasons as Ground 1, the Petition fails to establish that the combination of the FRA-Report, Kruijswijk, and Macey under Ground 2 discloses Elements 1[D]/10[B]/19[B]/20[B]/30[B]/40[C]. *Supra*, Section VII.A.1.

2. **The combination of the FRA-Report and Kruijswijk, and Macey does not disclose “a block removal part to remove only upon receiving the removal code . . . the block” (Elements 1[E]/10[C]), “permitting the block to said one or more track sections to be removed by the railway control apparatus only upon entry of the removal code” (Element 19[C]), or “responsive to receiving the secret release code, from the terminal remove the block from the one or more sections” (Elements 20[E]/30[E]).**

The Petition asserts that Elements 1[E]/10[C]/19[C]/20[E]/30[E] would have been obvious in view of the FRA-Report, Kruijswijk, and Macey. Pet. at 63-65, 66. Specifically, the Petition asserts that the FRA-Report teaches a “cancel/fulfill” link to unblock the track, that Kruijswijk teaches “the claimed code,” and that Macey teaches “the implementation of unblocking the track only based on the worker transmitting a secret code to a central system.” Pet. at 63-65. The Petition, however, does not cite to Macey *at all*—let alone provide any support for these alleged “teachings”—with respect to Elements 1[E]/10[C]/19[C]/20[E]/30[E], and, therefore, fails to meet its burden to demonstrate where Elements 1[E]/10[C]/19[C]/20[E]/30[E] are allegedly found in the art.

- a. **The Petition fails to specify where each element of the claims is found in the FRA-Report, Kruijswijk, and Macey.**

The Petition fails to satisfy §§ 42.104(d) and 42.22(a)(2) because the discussion of Elements 1[E]/10[C]/19[C]/20[E]/30[E] under the Petition’s “FRA-Report, Kruijswijk, and Macey Combination” section does not cite to Macey *at all*,

let alone demonstrate where Macey allegedly discloses “unblocking the track only based on the worker transmitting a secret code to a central system,” as Petitioner contends. *See* Pet. at 63-64. This failure is fatal to the Petition. *webinar.net, Inc.*, IPR2022-00826, Paper 10 at 15-16; *Nearmap*, IPR2024-00729, Paper 9 at 21.

The Petition asserts—without any citation to Macey (or anything else)—“following Macey’s implementation, the worker would transmit the claimed code as taught in Kruijswijk to the railway control apparatus, which will only unblock the track once the transmitted code is entered by the dispatcher or automatically.” Pet. at 64. The Petition does not state which “implementation” of Macey it is referring to. *See id.* The only citation provided in support of this conclusory assertion is to Elements 1[E] of **Ground 1**, which does not include Macey as part of the Ground. *Id.* As such, Patent Owner and the Board are left to “divin[e] where [Macey] might possibly disclose the claim element at issue.” *webinar.net, Inc.*, IPR2022-00826, Paper 10 at 15-16. This is precisely what the Board’s rules and cases proscribe is fatal to the Petition. *See id.*; *Nearmap*, IPR2024-00729, Paper 9 at 21.

Instead of explaining with specificity how the Ground 2 art allegedly discloses Elements 1[E]/10[C]/19[C]/20[E]/30[E], the Petition simply includes an unexplained citation to its “overview” of Macey. Pet at 64 (citing Section VI.D).

This citation, however, also fails to meet the requirements of 37 C.F.R.

§§ 42.104(d) and 42.22(a)(2). For instance, the “overview” of Macey does not compare any particular disclosure in Macey to any claim element language. This too is fatal to the Petition. *Fieldpiece Instruments, Inc. v. Twin Rivers Eng’g, Inc.*, IPR2017-00362, Paper 16 at 4 (PTAB Sep. 25, 2017) (denying request for rehearing on denial of institution where petitioner cited only to overviews of the references and “none of these overviews *explain* why the ordinarily skilled artisan would have understood the references to teach or suggest the . . . limitation.” (emphasis in original)).

3. The Petition does not establish that a POSITA would have been motivated to combine the FRA-Report, Kruijswijk, and Macey.

A POSITA would not have been motivated to combine the FRA-Report, Kruijswijk, and Macey for the same reasons that a POSITA would not have been motivated to combine the FRA-Report and Kruijswijk, including because Kruijswijk and Macey are not analogous art. *Supra*, Sections VI.B, VII.A.3. The same reasoning applies to Ground 2.

C. The Petition Does Not Establish a Reasonable Likelihood that the Combination of the FRA-Report and Schmitz Renders Unpatentable Claims 1-7, 9-16, 18-41 (Ground 3).

1. The combination of the FRA-Report and Schmitz does not render obvious generating or transmitting the Secret Code Terms as recited in Elements 1[D]/10[B]/19[B]/20[B]/30[B]/40[C].

a. The FRA-Report does not disclose Elements 1[D]/10[B]/19[B]/20[B]/30[B]/40[C].

As discussed above, the Board has already found that the FRA-Report does not disclose any aspect of the claimed Secret Code Terms, and the Petition does not identify any disclosure in the FRA-Report that allegedly discloses any aspect of the claimed Secret Code Terms. *Supra*, Section VII.A.1.a.

b. Schmitz does not disclose Elements 1[D]/10[B]/19[B]/20[B]/30[B]/40[C].

The Petition relies solely on Schmitz's "TAN" to "suppl[y]" the claimed Secret Code Terms. Pet. at 69. The Petition fails for at least two reasons.

First, Schmitz does not disclose the claimed Secret Code Terms because the "TAN" of Schmitz is not used to "remove" or "release" **anything**, let alone a block on a railway track only after receiving the claimed Secret Code Terms. The claimed Secret Code Terms permit the "release" or "removal" of a block from a track. EX1001 at 6:18-20; *see also id.* at 3:1-4; 3:9-13, 7:34-36. In contrast, Schmitz's "TAN" is used as a verification mechanism that allows a user to access a

“receiver unit.” EX1006 at 7:11-15; 8:59-62. Schmitz discloses that the “receiver unit” could be “a door-locking mechanism.” *id.* at 8:5. Schmitz also states that the receiver unit can generically be a “computer.” *Id.* at 9:9-10. Nowhere does Schmitz disclose or imply anything related to the claimed Secret Code Terms, particularly its association with a blocked track. In light of the vast differences between Schmitz and the claimed Secret Code Terms, the Petition cannot and does not meet its burden to *explain* its citations to Schmitz. In essence, the Petition simply provides a list of unexplained quotations to Schmitz and asserts obviousness, leaving the Board and Patent Owner to “divin[e] where [Schmitz] might possibly disclose the claim element at issue.” *webinar.net, Inc.*, IPR2022-00826, Paper 10 at 15-16. This is plainly insufficient. *See id.*; *NearMap*, IPR2024-00716, Paper 9 at 13.

Second, the Petition fails to demonstrate that Schmitz’s “TAN” is “not readily available to the user of the railway [traffic] control apparatus (*i.e.*, the dispatcher).” The Petition does not cite any portion of Schmitz that discusses the “TAN” in the context of a train dispatcher or whether or not a train dispatcher would be aware of the “TAN.” *See* Pet. at 68-71. Nor could it. Schmitz does not relate to railway traffic control at all, let alone discuss train dispatchers. *See, generally*, EX1006. While the Petition asserts that the “TAN” is “secret or only

known to the relevant person,” none of the citations provided in the Petition support that proposition. *See* Pet. at 64 (citing EX1006, 6:63-7:4, 8:19-21, 5:58, 2:57-3:5, Abstract 3:29-33).

2. **The combination of the FRA-Report and Schmitz does not disclose “a block removal part to remove only upon receiving the removal code . . . the block” (Elements 1[E]/10[C]), “permitting the block to said one or more track sections to be removed by the railway control apparatus only upon entry of the removal code” (Element 19[C]), or “responsive to receiving the secret release code, from the terminal remove the block from the one or more sections” (Elements 20[E]/30[E]).**

- a. **The FRA-Report does not disclose Elements 1[E]/10[C]/19[C]/20[E]/30[E].**

As discussed above, the Board has already found that the FRA-Report does not disclose any aspect of the claimed Secret Code Terms, and the Petition does not identify any disclosure in the FRA-Report that allegedly discloses any aspect of the claimed Secret Code Terms. *Supra*, Section VII.A.1.a.

- b. **Schmitz does not disclose 1[E]/10[C]/19[C]/20[E]/30[E].**

The Petition relies on Schmitz’s “TAN” as allegedly teaching the claimed Secret Code Terms and its usage to remove a block. Pet. at 72. The Petition fails for at least three reasons.

First, as noted above, Schmitz’s “TAN” does not disclose the Secret Code Terms. *Supra*, Section VII.C.1.b. Accordingly, Schmitz does not disclose Elements

1[E]/10[C]/19[C]/20[E]/30[E] for the same reasons it fails to disclose Elements 1[D]/10[B]/19[B]/20[B]/30[B]/40[C].

Second, even if combined, the FRA-Report and Schmitz fail to render obvious Elements 1[E]/10[C]/19[C]/20[E]/30[E] because the combination of the FRA-Report and Schmitz’s “TAN” would not be used for the purpose of removing a block on a track, let alone for the purpose of removing a block on a track only after receiving or in response to receiving the claimed Secret Code Terms. Problematic to the Petition, Schmitz discloses only two uses for the “TAN.” First, by entering the “TAN,” the user can “*obtain*” full access to or access limited to specific regions of [the receiver unit].” EX1006 at 9:23-24. (emphasis added). Second, the user may use the “TAN” in connection with “physical access controls” to *access* a space (such as a door lock). *Id.* at 5:7-9; 2:39; 5:23-30. In each of these examples, it is the “user” (which the Petition seemingly equates with the railway field worker) who *gains access* to resources by entering the “TAN” into the system. Accordingly, implementing Schmitz’s “TAN” into the FRA-Report’s “cancel/fulfill” feature, as the Petition argues, would change the “cancel/fulfill” feature’s operation from *canceled* a block to *granting access* to the worker on the track to some resource (which the Petition does not define or explain). Stated differently, this change would undermine and is contrary to Elements

1[E]/10[C]/19[C]/20[E]/30[E]. Indeed, the return of the claimed Secret Code Terms in Elements 1[E]/10[C]/19[C]/20[E]/30[E] does ***not grant access*** to the railway field worker to anything. Rather, the return of the claimed Secret Code Terms ***revokes*** access to the railway field worker to the portion of track that is being unblocked. *See* EX1001 at 11:5-11.

Finally, the combination of Schmitz’s “TAN” with the FRA-Report’s “cancel/fulfill” feature fails to render obvious that the block is released “***only*** upon receiving the removal code” (Elements 1[E]/10[C]/19[C]) or “***responsive to*** receiving the secret release code” (Elements 20[E]/30[E]). The Petition’s “analysis” on this point is conclusory and unsupported and therefore fails. *See* Pet. at 72. This is yet another reason to deny the Petition.

3. The Petition does not establish that a POSITA would have been motivated to combine the FRA-Report and Schmitz.

None of the Petition’s arguments regarding motivation to combine has merit.

As an initial matter, a POSITA would not have combined the FRA-Report and Schmitz because Schmitz is non-analogous art. *Supra*, Section VI.C.

The Petition’s alleged motivations to combine are without merit for additional reasons. *First*, multiple of the Petition’s statements regarding motivation to combine are supported only by citations to Ground 1. *See, e.g.*, Pet. at 69-71, 73-74. For example, the Petition states:

a POSITA would have had a motivation to combine and reasonable expectation of success to implement Schmitz as the claimed code or secret code in FRA-Report because it was obvious to try given it was known to generate and transmit a secret code, e.g., for safety and security, only received by the relevant worker before the Priority Date.

See supra, pp.40-41.

Pet. at 69. The Petition does not explain how this citation (to Ground 1), discussing the FRA-Report and *Kruijswijk*, supports its assertion regarding an alleged motivation to combine the FRA-Report and *Schmitz*. This further underscores the confusing and cursory “analysis” provided by the Petition. Similarly flawed and unexplained citations pervade the Petition’s discussion of motivation to combine the FRA-Report and Schmitz. Pet. at 69-71, 73-74. These failures are fatal to the Petition.

Second, the Petition argues that a POSITA would have been motivated to combine the FRA-Report and Schmitz based on a similar “obvious to try” argument to that advanced with respect to Ground 1. *Supra*, Section VII.A.3. The Petition’s argument with respect to Ground 3 fails for the same reasons. Specifically, the Petition does not even attempt, let alone demonstrate (1) a design or market need to solve a particular problem, or (2) that there are a finite number of identified, predictable solutions that would lead to an expectation of success.

Grunenthal, 919 F.3d at 1345; *KSR*, 550 U.S. at 421.

Third, the Petition asserts that “the FRA-Report and Schmitz discuss controlling access.” Pet. at 70. Even assuming that the Petition is correct (it is not), the Petition fails to explain how a generic discussion of “controlling access” would specifically lead a POSITA to combine the FRA-Report and Schmitz. *See id.* The Petition’s argument is conclusory and unsupported and therefore fails. *See id.* Further, it is insufficient to “merely allege[] the references came from the same field of study and address the same problem.” *Comcast Cable Commc’ns*, 838 F. App’x at 557.

Fourth, the Petition argues that it would have been “predictable” to combine the FRA-Report and Schmitz “because secret-code systems were known and FRA-Report recognized that a secret-code system would have been implemented.” *Id.* at 70, 73. The FRA-Report contains no such recognition, and the Petition points to none. The Petition confusingly attempts to equate, without explanation, a “secret code system” with the FRA-Report’s discussion of the need to verify the “identity” of the person using a PDA. Pet. at 70. These are not the same because, *inter alia*, the verification system identifies a **user** whereas the claimed Secret Code Terms are associated with a particular **block(s)**. The Petition adds that “the FRA-Report urges a need to implement verification measures . . . to effectively verify roadway worker identities.” Pet. at 70, 79. Again, this is not a proper analogy. Simply

“*identify[ing]*” the railway field worker would not solve the problem of erroneous or mistaken block removal by a dispatcher because it does not place the power in the hands of the railway field worker to lift a block. The Petition does not explain how simply verifying the railway field worker’s “identity” would provide any motivation to combine the FRA-Report and Schmitz, let alone address the problem of mistaken or erroneous block removal by a dispatcher. Further, such allegations are conclusory and lack the “thorough and searching” analysis required to establish a motivation to combine. *Palo Alto Networks, Inc.*, 122 F.4th at 1384. For example, such a generic “need” fails to account for the fact that Schmitz is entirely unrelated to this alleged “need.” As discussed above, Schmitz does not discuss railway control systems or railway worker safety at all.

Finally, the Petition asserts the same three “known problems and motivations in the art” that it identified in Ground 1. Pet. at 70, 73. Again, the Petition does not provide a cite to anything (except Ground 1) to demonstrate such knowledge. *See id.* For the same reasons discussed above in Section VII.A.3, the Director should disregard such assertions. 37 C.F.R. § 42.104(b)(5).

“In the absence of a colorable reason to combine, [the Director is] left with the conclusion that the combination . . . is a prohibited hindsight reconstruction.”

Cisco Sys., IPR2018-01655, Paper 7 at 19-20. The Petition should, therefore, be denied.

D. The Petition Does Not Establish a Reasonable Likelihood that the Combination of the FRA-Report, Byford, and Macey Renders Unpatentable Claims 1-7, 9-16, 18-41 (Ground 4).

1. The combination of the FRA-Report, Byford, and Macey does not render obvious generating or transmitting the Secret Code Terms as recited in Elements 1[D]/10[B]/19[B]/20[B]/30[B]/40[C].

a. The FRA-Report does not disclose Elements 1[D]/10[B]/19[B]/20[B]/30[B]/40[C].

As discussed above, the Board has already found that the FRA-Report does not disclose any aspects of the claimed Secret Code Terms, and the Petition does not identify any disclosure in the FRA-Report that allegedly discloses any aspects of the claimed Secret Code Terms. *Supra*, Section VII.A.1.a.

b. Byford does not disclose Elements 1[D]/10[B]/19[B]/20[B]/30[B]/40[C].

The Petition relies solely on Byford's "cipher lock code" to "suppl[y]" the claimed Secret Code Terms. Pet. at 77-78. The Petition fails for at least three reasons.

First, Byford does not disclose the claimed Secret Code Terms because the "cipher lock code" of Byford is not used to "remove" or "release" *anything*, let alone a block on a railway track only after receiving the claimed Secret Code

Terms. The claimed Secret Code Terms permit the “release” or “removal” of a block from a track. EX1001 at 6:15-16 (“a block cannot be removed without the input of the removal or release code.”); *see also id.* at 8:6-9; 8:47-50; 10:22-25; 10:35-38. In contrast, Byford’s “cipher lock code” is used as a verification mechanism that allows a user “access to a facility.” EX1011 at 1:65-66. Nowhere does Byford disclose or imply anything related to the claimed Secret Code Terms, particularly its association with a blocked track. Thus, Byford does not disclose the claimed Secret Code Terms. The Petition vaguely refers to snippets of Byford as preventing “unauthorized access” or providing “one-time access.” *See, e.g.,* Pet. at 78. But the Petition never explains *what* is being accessed or prevented from being accessed. *See id.* The answer is a door. EX1011 at 2:23-24 (“a preferred feature is that said facility is a ***cipher locked door*** and said access criteria include a ***cipher lock code*** . . .”). (emphasis added). The Petition never addresses this distinction or explains why a code to a door lock is the same as the claimed Secret Code Terms used to release a block on a railway track. This is fatal to the Petition.

Second, the Petition does not explain its citations to Byford or explain how the “cipher lock code” described in Byford is allegedly the same as releasing a block on a railway track only after receiving the claimed Secret Code Terms. In essence, the Petition simply provides a list of unexplained quotations to Byford and

asserts obviousness, leaving the Board and Patent Owner to “divin[e] where [Byford] might possibly disclose the claim element at issue.” *webinar.net, Inc.*, IPR2022-00826, Paper 10 at 15-16. This is plainly insufficient. *See id.*; *NearMap*, IPR2024-00716, Paper 9 at 13.

Finally, the Petition fails to demonstrate that the “cipher lock code” of Byford is “not readily available to the user of the railway [traffic] control apparatus (*i.e.*, the dispatcher).” The Petition does not cite any portion of Byford that discusses the “cipher lock code” in the context of a train dispatcher or whether or not a train dispatcher would have access to the “cipher lock code.” *See* Pet. at 77-80. Nor could it. Byford does not discuss train dispatchers at all, let alone who has access to the “cipher lock code.” *See, generally*, EX1006. While the Petition asserts that the “cipher lock code” is a “secret code: encrypted (‘cipher’ code) for ‘one-time access’ by the relevant person,” the Petition fails to cite anything in support of that proposition. *See* Pet. at 78. Accordingly, Byford does not teach that the “cipher lock code” “is not readily available to the user of the railway [traffic] control apparatus (*i.e.*, a dispatcher).” This is also fatal to the Petition.

c. The Petition does not rely on Macey with respect to Elements 1[D]/10[B]/19[B]/20[B]/30[B]/40[C].

Because the Petition does not rely on Macey in support of its arguments regarding Elements 1[D]/10[B]/19[B]/20[B]/30[B]/40[C], the Petition fails to establish that Macey discloses these elements. *See* Pet. at 77-79.

2. The combination of the FRA-Report, Byford, and Macey does not disclose “a block removal part to remove only upon receiving the removal code . . . the block” as recited in Elements 1[E]/10[C], “permitting the block to said one or more track sections to be removed by the railway control apparatus only upon entry of the removal code” as recited in Element 19[C], or “responsive to receiving the secret release code, from the terminal remove the block from the one or more sections” as recited in Elements 20[E]/30[E].

a. The Petition fails to specify where each element of the claims is found in the FRA-Report, Byford, and Macey.

As with Ground 2 (*supra*, Section VII.B.2), the Petition contends that Macey allegedly discloses “unblocking the track only based on the worker transmitting a secret code to a central system.” Pet. at 80. The Petition does not rely on the FRA-Report or Byford at all for these Elements, only Macey. The Petition, however, fails to cite to Macey *at all*, let alone demonstrate where Macey allegedly discloses “unblocking the track only based on the worker transmitting a secret code to a central system,” as Petitioner contends. *See* Pet. at 80-81. As with Ground 2, the Petition relies on citations to its *Ground 1* analysis, which does not include Macey

as part of the Ground, and improperly cites to the “overview” of Macey. *Id.* at 80.

This is fatal to the Petition for the same reasons as Ground 2. *Supra*, Section VII.B.2.

3. The Petition does not establish that a POSITA would have been motivated to combine the FRA-Report, Byford, and Macey.

None of the Petition’s arguments regarding motivation to combine has merit.

As an initial matter, a POSITA would not have combined the FRA-Report, Byford, and Macey because Byford and Macey are non-analogous art. *Supra*, Section VI.D.

The Petition’s arguments regarding motivation to combine fail for additional reasons. *First*, the Petition argues that a POSITA would have been motivated to combine the FRA-Report, Byford, and Macey based on a similar “obvious to try” argument it advances with respect to Ground 1. Pet. at 78-79, 82. The Petition’s argument with respect to Ground 4 fails for the same reasons as Ground 1. *Supra*, Section VII.A.3.

Second, the Petition asserts that it would have been obvious to combine the FRA-Report and Byford because they “discuss controlling access,” and to combine the FRA-Report, Byford and Macey because they “involve controlling access to a location or secured area.” Pet. at 82. Even assuming that the Petition is correct (it is

not), the Petition fails to explain how a generic discussion of “controlling access” would specifically lead a POSITA to combine the FRA-Report, Byford, and Macey. *See id.* The Petition’s argument is impermissibly conclusory and unsupported and therefore fails. *ActiveVideo*, 694 F.3d at 1327. Further, it is insufficient to “merely allege[] the references came from the same field of study and address the same problem.” *Comcast Cable Commc’ns*, 838 F. App’x at 557.

Third, the Petition asserts that “[a] POSITA would have been motivated with a reasonable expectation of success by the FRA-Report’s goals to ‘improve roadway worker safety and productivity’ (EX1004, Vol. I: Preface) and implement a ‘verification system.’” Pet. at 79, 821. Again, the Petition provides no further analysis or explanation and therefore fails. For example, the Petition does not explain why a POSITA would have looked to Byford, which is completely unrelated to “improving roadworker safety and productivity” to implement Byford’s “verification system” into the FRA-Report’s or Macey’s systems. And even if it had, as explained above (*Supra*, Section VII.D.1.b), Byford’s “verification system” is entirely different than the claimed Secret Code Terms used to prevent erroneous or mistaken block removal by dispatchers.

Fourth, the Petition argues that it would have been “predictable” to combine the FRA-Report with Byford and Macey “given secret-code systems were known

and FRA-Report recognized that a secret-code system would have been implemented.” *Id.* at 81. As discussed above, the FRA-Report does not include any such recognition, and the Petition points to none. *Supra*, Section VII.C.3. Further, the Petition identifies a desire to “positively identify the person communicating with the PDA” as an alleged known problem. Pet. at 82. Similarly, the Petition adds that “the FRA-Report urges a need to implement robust verification measures...to effectively verify roadway worker identities.” These rationales fail as well. Simply “*identify/ing*” the railway field worker would not solve the problem of erroneous or mistaken block removal by a dispatcher because it does not place the power in the hands of the railway field worker to lift a block. The Petition does not explain how simply verifying the railway field worker’s “identity” would provide any motivation to combine the FRA-Report, Byford, and Macey, let alone address the problem of mistaken or erroneous block removal by a dispatcher. Pet. at 79. Further, such allegations are conclusory and lack the “thorough and searching” analysis required to establish a motivation to combine. *Palo Alto Networks, Inc.*, 122 F.4th at 1384. For example, such a generic “need” fails to account for the fact that Byford and Macey are entirely unrelated to this alleged “need.” As discussed above, Byford does not discuss railway control systems or railway worker safety at all.

Fifth, the Petition asserts the same three “known problems and motivations in the art” that it identified in Ground 1. Pet. at 78, 81. Again, the Petition does not provide a cite to anything (except Ground 1) to demonstrate such knowledge. *See id.* For the same reasons discussed above in Ground 1, Section VII.A.3, the Director should disregard such assertions. 37 C.F.R. § 42.104(b)(5).

“In the absence of a colorable reason to combine, [the Director is] left with the conclusion that the combination . . . is a prohibited hindsight reconstruction.” *Cisco Sys.*, IPR2018-01655, Paper 7 at 19-20. The Petition should, therefore, be denied.

E. The Petition fails to establish a reasonable likelihood that any of the dependent claims are obvious.

Dependent claims 2-9 each depend from claim 1, dependent claims 11-18 each depend from claim 10, dependent claims 21-29 each depend from claim 20, dependent claims 31-39 each depend from claim 30, and dependent claim 41 depends from claim 40. Accordingly, the Petition fails on the dependent claims for the same reasons as their respective independent claims. *Supra*, Sections VII.A; VII.B; VII.C; VII.D.

Additionally, for at least claims 5-6, 14-15, 21-24, 31-34, and 41, the Petition relies exclusively on its arguments under the respective independent claims. This is plainly insufficient given that dependent claims are presumed to be

narrower than the independent claims from which they depend. *AK Steel Corp. v. Sollac & Ugine*, 344 F.3d 1234, 1242 (Fed. Cir. 2003). For example, dependent claims 6 and 15 requires “a block removal user interface to permit a user to enter the removal code.” Claims 7 and 16 further define the “block removal user interface.” The Petition does not address these additional limitation that are not present in the independent claims.

VIII. CONCLUSION

For the foregoing reasons, the Petition fails to establish a reasonable likelihood of rendering the Challenged Claims obvious. Accordingly, Patent Owner respectfully requests that the Director deny institution.

Date: March 2, 2026

Respectfully submitted,

ROBINS KAPLAN LLP

/Bryan J. Vogel/

Bryan J. Vogel

Registration No. 44,389

BVogel@robinskaplan.com

Derrick J. Carman

Registration No. 68,935

DCarman@robinskaplan.com

ROBINS KAPLAN LLP

1325 Avenue of the Americas

Suite 2601

New York, New York 10019

212-980-7400

IPR2026-00134
U.S. Pat. No. RE47,835

*Attorneys for Patent Owner Railware,
Inc.*

WORD COUNT CERTIFICATION

Pursuant to 37 C.F.R. § 42.24(d), Patent Owner certifies that this Patent Owner Preliminary Response has a total of 13,935 words as counted by Microsoft Word, exclusive of the cover page, table of contents, table of authorities, mandatory notices under § 42.8, certificate of service, word count, appendix of exhibits or claim listing, and signature block (37 C.F.R. § 42.24(a)). The word count includes all other text, including headings, footnotes, and quotations. This is within the 14,000-word limit allowed under § 42.24(a)(1)(i).

Date: March 2, 2026

Respectfully submitted,

ROBINS KAPLAN LLP

/Bryan J. Vogel/

Bryan J. Vogel

Registration No. 44,389

BVogel@robinskaplan.com

Derrick J. Carman

Registration No. 68,935

DCarman@robinskaplan.com

1325 Avenue of the Americas

Suite 2601

New York, New York 10019

212-980-7400

*Attorneys for Patent Owner Railware,
Inc.*

CERTIFICATE OF SERVICE

I hereby certify that on March 2, 2026, I caused a true and correct copy of this Patent Owner Preliminary Response, including all accompanying attachments, appendices, and exhibits, has been served in its entirety via e-mail on Attorneys for the Petitioner at the following e-mail addresses:

Stephen K. Yam (Reg. No. 64,927)
syam@venable.com

José A. González López (Reg. No. 79,268)
jagonzalezlopez@venable.com

Date: March 2, 2026

Respectfully submitted,

ROBINS KAPLAN LLP

/Bryan J. Vogel/

Bryan J. Vogel