No. 25-

IN THE

Supreme Court of the United States

RIDESHARE DISPLAYS, INC.,

Petitioner,

v.

LYFT, INC., AND JOHN A. SQUIRES, UNDER SECRETARY OF COMMERCE FOR INTELLECTUAL PROPERTY AND DIRECTOR OF THE UNITED STATES PATENT AND TRADEMARK OFFICE,

Respondents.

ON PETITION FOR A WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

PETITION FOR A WRIT OF CERTIORARI

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QUESTIONS PRESENTED

1. Whether the Federal Circuit has wrongly applied this Court's and its own precedent in disregarding key functional limitations of the claims that implement the improvement to the claimed invention over the prior art in conducting a patent eligibility analysis under 35 U.S.C. §101.

2. Whether the Federal Circuit has wrongly usurped the factfinder role and disregarded the requirement to review the Patent Trial and Appeal Board's factual findings on written description for substantial evidence by sua sponte raising and ruling on a new argument at the appellate hearing that was not raised below and overrule the Board without the Patent Owner or Board ever having an opportunity to address it.

PARTIES TO THE PROCEEDING

The following are the parties to the proceeding in the United States Court of Appeals for the Federal Circuit, whose judgment is sought to be reviewed, along with their respective stock ticker symbols, if any:

- Rideshare Displays, Inc., Petitioner before this Court and Appellant below;
- Lyft, Inc. (NasdaqGS: LYFT), Respondent before this Court and Cross-Appellant below; and
- John A. Squires, Under Secretary of Commerce for Intellectual Property and Director of the United States Patent and Trademark Office, Respondent before this Court and Intervenor below.

RULE 29.6 STATEMENT

Petitioner Rideshare Displays, Inc. has no parent company and no publicly held company owns 10% or more of its stock.

RELATED PROCEEDINGS

The following proceedings are directly related to this case within the meaning of Rule 14.1(b)(iii);

- *Rideshare Displays, Inc. v. Lyft, Inc.*, Nos. 23-2033, 23-2034, 23-2035, 23-2036, 23-2037, 23-2038, and 23-2039, U.S. Court of Appeals for the Federal Circuit. Judgment entered September 29, 2025. *Reh'g denied* (December 22, 2025). This consolidated case includes Nos. 23-2033, 23-2036, 23-2038, and 23-2039 at issue before this Court,[1] in addition to three other cases not at issue before this Court.

- *Rideshare Displays, Inc. v. Lyft, Inc.*, Case No. 20-1629, U.S. District Court for the District of Delaware. No Judgment entered; stayed pending IPRs, Dkt. 103 (April 18, 2022).

1. References to "this case" or the lead case "No. 23-2033" refer to the cases (Nos. 23-2033, 23-2036, 23-2038, and 23-2039) at issue before this Court.

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Petitioner Rideshare Displays, Inc. ("Rideshare" or "Patent Owner") respectfully petitions for a writ of certiorari to review the judgment of the United States Court of Appeals for the Federal Circuit in cases 23-2033, 23-2036, 23-2038, and 23-2039, which were consolidated in the Federal Circuit's Order, Pet.App.1a-19a[2] (September 29, 2025), and its denial of rehearing, Pet.App.202a-203a (December 22, 2025).

OPINIONS BELOW

The nonprecedential opinion of the Court of Appeals (App. Nos. 23-2033, 23-2034, 23-2035, 23-2036, 23-2037, 23-2038, and 23-2039) is not reported in the Federal Reporter but can be located at *Rideshare Displays, Inc. v. Lyft, Inc.*, 2025 WL 2751580 (Fed. Cir. 2025). Pet.App.1a-19a. *See* note 1 *supra*.

The opinions of the Patent Trial and Appeal Board in the *inter partes* review proceedings are unreported but can be located on the website of the United States Patent and Trademark Office ("USPTO") at *Rideshare Displays, Inc. v. Lyft, Inc.*, No. IPR2021-01598 (P.T.A.B. April 10, 2023) (Pet.App.20a-102a); and *Rideshare Displays, Inc. v. Lyft, Inc.*, No. IPR2021-01601 (P.T.A.B. April 10, 2023) (Pet.App.103a-177a).

JURISDICTION

The judgment of the Court of Appeals in the consolidated cases was entered on September 29, 2025.

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2. References to "Pet.App." refer to the appendix filed with this petition to the Court.

Rideshare's combined petition for panel rehearing and rehearing *en banc* was denied on December 22, 2025 (Pet. App.202a-203a). The jurisdiction of this Court is invoked under 28 U.S.C. § 1254(1).

STATUTORY PROVISIONS

35 U.S.C. § 101 provides: "Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title."

5 U.S.C. § 706 appears in Pet.App.204a, pursuant to this Court's Rule 14.1(f).

STATEMENT OF THE CASE

Following allegations by Rideshare that its systems and methods infringed U.S. Patent Nos. 9,892,637 ("the '637 patent"), 10,169,987, 10,395,525, 10,559,199 ("the '199 patent"), and 10,748,417, (the "Asserted Patents"), Respondent Lyft, Inc. ("Lyft") filed an *inter partes* review proceeding ("IPR") challenging claims of each of the Asserted Patents. The Patent Trial and Appeal Board ("PTAB" or "Board") held all of the challenged claims of the Asserted Patents unpatentable. However, the PTAB held substitute claims 29, 31, and 32 of '637 patent and claims 1 and 4 of the '199 patent (collectively the "Substitute Claims") patentable. Rejecting Lyft's contentions, the PTAB found that the Substitute Claims were patent-eligible under 35 U.S.C. § 101, and that the written description adequately supported the Substitute Claims for creating an indicator after a notification signal

is sent to the driver's mobile communication device, in addition to other arguments Lyft made that are not at issue here.

The statutory grant of patent eligibility is large, but subject to important judicially created exceptions. Section 101 of the Patent Act permits anyone who "invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof" to obtain a patent. 35 U.S.C. § 101. Notwithstanding the broad sweep of this text, this Court "[has] long held that this provision contains an important implicit exception: Laws of nature, natural phenomena, and abstract ideas are not patentable." *Alice Corp. v. CLS Bank Int'l*, 573 U.S. 208, 216 (2014) ("*Alice*"). *Alice* provides this Court's controlling two-step framework for determining what is not an abstract idea and therefore is a patent-eligible invention: 1. "[D]etermine whether the claims at issue are directed to one of those patent-ineligible concepts." and 2. "If so, ask, 'what else is there in the claims before us?' . . . considering the elements of each claim both individually and as an ordered combination to determine whether the additional elements transform the nature of the claim into a patent-eligible application[,] . . . [what we] have described . . . as a search for an 'inventive concept[.]'" *Id.* at 217 (quotations and citations omitted).

Rideshare's '637 patent and '199 patent, which share a common specification, describe a technological solution rooted in computer or network technology that enable rideshare drivers and riders to quickly and safely identify and validate one another. The specification acknowledges the rise of on-demand transportation services, such

as UBER and LYFT, and notes that a "continuing need exists for systems and methods adapted for use by transportation services to ensure rider and driver security." C.A.App.245[3][4] at 1:56-58. To meet such a need, the specification describes systems and processes in which the controller generates and transmits a first signal, via a transceiver, to the mobile device of the driver when a driver and rider are within a pre-determined distance, and then the driver's mobile device creates a second signal (a unique indicator) that is displayed on the rider's and driver's mobile devices, as well as on an externally visible display on the driver's vehicle, which allows the rider to identify a vehicle prior to boarding it and further allows the driver to verify that they are picking up the person who actually requested the ride service. *See e.g.*, C.A.App.240 at Abstract, C.A.App.245 at 1:20–25; C.A.App.246 at 3:5–50; C.A.App.247 at 5:35–65. In keeping with this disclosure, the Substitute Claims recite the generation of an indicator only after the notification signal is generated.

The PTAB specifically held that the Substitute Claims were patent eligible under step 1 of this Court's *Alice* test[5], which corresponds to Revised Step 2A, Prong Two

3. References to "C.A.App." refer to the appendix filed in No. 23-2033 below.

4. Citations to the patent are to the '637 patent, which shares a specification with the '199 patent.

5. This understanding is confirmed in the intervenor's brief to the Federal Circuit, where the Under Secretary of Commerce for Intellectual Property and Director of the USPTO ("Director of USPTO") explained that the "Board determined that the claims, as a whole, integrate the abstract idea into a practical application and thus, are not directed to an abstract idea." Pet.App.222a.

of the 2019 Revised Patent Subject Matter Eligibility Guidance, 84 Fed. Reg. 50, 54 (Jan. 7, 2019) and updated in October 2019 cited by the PTAB. Pet.App.95a; Pet. App.170a. In determining that the Substitute Claims were not directed to an abstract idea, the Board found that the Substitute Claims "recite technological features that enable communication and coordination between multiple devices that are not co-located and are moving with respect to each other (i.e., a customer's/user' s mobile communication device, a vehicle's display, and a driver's mobile communication device and a controller of a vehicle identification system communicating therebetween [sic] and generating notifications and indicators based on the vehicle's location and the distance to the user) . . . [t]hus, proposed substitute claims 21 and 29 [of the '637 patent] provide a technological solution rooted in computer and network technologies." Pet.App.95a; Pet.App.170a (with respect to "proposed substitute claim 3 (and its dependent claim 4)" for the '199 patent) (both decisions citing *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245, 1257-58 (Fed. Cir. 2014), and *Visual Memory LLC v. NVIDIA Corp.*, 867 F.3d 1253, 1259-60 (Fed. Cir. 2017) (emphasis added). Accordingly, because the PTAB held the Substitute Claims patent eligible at *Alice* step 1, the PTAB did not conduct an *Alice* Step 2 analysis.

Rideshare appealed the PTAB's ruling of unpatentability of the original claims of the Asserted Patents (not at issue here), and Lyft cross-appealed the PTAB's determination of patentability of the Substitute Claims. The Director of the USPTO intervened in the appeal on behalf of Rideshare to uphold the PTAB's determination that the Substitute Claims were patent eligible under 35 U.S.C. § 101, and specifically under step

1 of *Alice*. The Director urged that the PTAB's holding of eligibility is "consistent with the best understanding of the precedents of [this Court] and [the Federal Circuit] and should be affirmed. Rideshare has not claimed the abstract process of having rideshare drivers and riders identify each other, but rather, a technologically implemented means for facilitating and improving that recognition process through the generation and transmission of unique identifiers on mobile devices and vehicle displays. Under [the Federal Circuit's] precedents, this technological solution is patent eligible. Indeed, when properly understood, § 101 will seldom imperil innovations within patent law's traditional bailiwick of the scientific, technological, and industrial arts – like the ones at issue here. [The Federal Circuit] should help restore clarity to the law in this area and affirm the Board's decision." Pet. App.212a.

Specifically referencing *Alice* step 1, the Director of the USPTO stated in the intervenor brief that the "substitute claims are directed to a process that uses a combination of hardware and software technology, not to an abstract idea, and are thus patent eligible under *Alice* step one. The claimed process provides a technological solution rooted in networks and computers that solves the problem of rideshare drivers and riders safety and quickly identifying each other, using a combination of technological components (two mobile devices and a display on a vehicle), the automatic signaling between them, and the automatic generation of a unique indicator." Pet.App.226a. The Director of the USPTO further noted in its intervenor brief to the Federal Circuit that "though the [Federal Circuit] need not reach *Alice* step two, the substitute claims are eligible under step two because the

additional limitations, considered both individually and as an ordered combination, transform the abstract idea into a patent-eligible application." Pet.App.227a. *See also* Pet. App.239a-241a (arguing that for the same reasons that support patent eligibility under *Alice* step 1, the Substitute Claims are also patent eligible under *Alice* step 2).

The Federal Circuit failed to recognize that the Board had found the Substitute Claims patent-eligible under step 1 of *Alice* and reversed the PTAB's finding of patentability of the Substitute Claims, stating incorrectly that the "Board concluded that the substitute claims were directed to an abstract idea, a patent-ineligible concept, under step one of the Alice framework, namely a method of organizing human activity . . . But under step two, the Board concluded that the claims provided a technological solution to a technological problem in computer and network technologies, which rendered the claims patent eligible." Pet.App.16a-17a. In failing to understand the PTAB's actual holding, the Federal Circuit failed in its own analysis. The Federal Circuit erroneously failed to conduct a step 1 inquiry at all, which was the PTAB's analytical basis for conferring eligibility on the Substitute Claims, and instead only conducted an *Alice* step 2 analysis, wherein it decided that "the claims are directed to improving a user's experience in using a ridesharing app and identifying a driver" and that "nothing in the claims themselves is directed to an improvement to the mobile device environment itself – the technological improvement more easily enables and facilitates human interactions, but it does not fundamentally alter or improve the way the technology itself functions." Pet.App.17a.

Notably, the step 2 analysis under *Alice* requires a factual determination of whether "a claim element or

combination of elements is well-understood, routine and conventional to a skilled artisan in the relevant field." *Berkheimer v. HP Inc.*, 881 F.3d 1360, 1367-69 (Fed. Cir. 2018) (emphasis added). The Federal Circuit did not have these factual findings before it because the PTAB ruled exclusively under step 1 that the Substitute Claims were patent eligible. For example, both parties supplied expert declarations related to the Substitute Claims in the IPR proceedings, which the Federal Circuit did not review in holding the Substitute Claims patent ineligible under step 2.

Lyft also cross-appealed the PTAB's determination that the Substitute Claims were supported by written description for the limitation that a new indicator is generated after a notification signal is generated. The PTAB provided a thorough analysis of the original disclosure of the Substitute Claims, i.e., U.S. Application No. 16/514,492 ("the '492 application"), including but not limited to paragraph 30 thereof, and determined that there is written description for the Substitute Claims. Pet.App.86a-88a; Pet.App.163a-165a.

At the Appellate hearing, instead of reviewing the PTAB's determination for substantial evidence, the court raised a new factual argument for why there was allegedly no written description to support the limitation at issue that was never made by Lyft before the Board, i.e., was not an argument of record. Nonetheless, based on the court's newly raised *sua sponte* argument, the Federal Circuit, rather than properly remanding to the Board to consider the court's new argument, usurped the role of fact finder and held in a footnote that because the court concluded the Substitute Claims do not recite patent-eligible subject

matter, it may reverse on that ground alone, but that the court also concludes "that the substitute claims are unsupported by the original disclosure" based on its own newly raised argument at the hearing, thereby usurping the role of fact-finder. Pet.App.18a n.3.

REASONS FOR GRANTING THE PETITION

This Court should grant review because this case provides an excellent opportunity to address a significant area of confusion for the Federal Circuit in applying *Alice* to determine § 101 patent eligibility subject to this Court's abstract-idea exception. In the proceedings below, the PTAB found that Rideshare's Substitute Claims were not directed to an abstract idea at step 1 of *Alice* because they "provide a technological solution rooted in computer and network technologies" and, thus, were patent eligible. Pet.App.95a; Pet.App.170a (citations omitted from both decisions). The USPTO Intervenor stated that "[t]he Board's conclusion [of § 101 patent eligibility for Rideshare's substitute claims] is . . . consistent with the best understanding of the precedents of [this Court] and [the Federal Circuit] and should be affirmed." Pet. App.212a.

The Federal Circuit erred in failing to conduct an analysis at all under *Alice* step 1, the step under which the PTAB held the Substitute Claims patent eligible, and instead only conducted an analysis under step 2, without factual findings provided by the Parties on that issue in the IPRs, and where the PTAB did not reach step 2 because it held the Substitute Claims eligible under step 1. The Federal Circuit also failed to adhere to its own precedent applicable under either step 1 or step 2,

by abstracting away the technological limitations that are the focus of the claims; limitations that are not only recited in the claim language, but expressly tied to the invention's stated improvement over the prior art. These errors violate the Supreme Court's two-step framework in *Alice*, and the Federal Circuit's controlling precedent in at least *TecSec, Inc. v. Adobe Inc.*, 978 F.3d 1278, 1292-94 (including collected cases) (Fed. Cir. 2020) ("*TecSec*").

Under *Alice* step 1, it is not enough to determine that the claims recite an abstract idea, instead the trier of fact must determine what the claims are "directed to." The inquiry must consider what the claims themselves are focused on and what the specification discloses to be the improvement over the prior art. *TecSec*, 978 F.3d at 1292. The Federal Circuit did neither because it did not do a step 1 analysis at all. Under its step 2 analysis that the Federal Circuit did conduct, the court mischaracterized the claims as merely "streamlin[ing] the process of what is normally accomplished by creating hand-printed cards with names to help identify ride pickups at crowded locations." Pet.App.17a-18a. Contrary to the precedent of this Court and the Federal Circuit's own precedent, such a trivialization ignores the actual claim language and the specification's stated goal of improving safety and security for both riders and drivers in the rideshare environment. The specification of the Substitute Claims is unequivocal:

> "Public transportation use, for example, is often limited by perceptions of personal safety in public transportation travel. Rider safety is fundamental to the continued success of transportation services, but driver safety has also become an issue. A continuing need exists

> for systems and methods adapted for use by transportation services, to ensure rider and driver security." C.A.App.245 at 1:50-58.

As determined by the Board, the Substitute Claims implement this goal through a specific sequence of technological steps, including transmitting a notification signal to the driver's device when the driver's vehicle reaches a predetermined distance from the user's device; in response to the receipt of the notification signal, the driver's device generates an indicator that is then displayed on the vehicle display and the user's mobile device. Pet. App.3a. While understanding this aspect of the claims generally, the Federal Circuit failed to even mention this key aspect of the claims in its § 101 analysis. Doing so runs afoul of this Court's and the Federal Circuit's precedent that prohibit a tribunal from abstracting the claims at too high a level, such that every invention is reduced to an abstract idea. *Alice*, 573 U.S. at 217 ("At some level, all inventions . . . embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas.") (internal quotations and citations omitted); *TecSec*, 978 F.3d at 1293 ("And we have reiterated the Supreme Court's caution against overgeneralizing claims in the § 101 analysis, explaining that characterizing the claims at a high level of abstraction that is untethered from the language of the claims all but ensures that the exceptions to § 101 swallow the rule.") (internal quotations and citations omitted).

Properly considered, including addressing all the claim limitations, the Substitute Claims provide a technological improvement to rideshare technology. The claimed network system improves authentication, proximity

signaling, and secure matching in a rideshare environment and is not an abstract idea or business method under Federal Circuit precedents. *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1339 (Fed. Cir. 2016) ("the claims are directed to a specific implementation of a solution to a problem in the software arts."); *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245, 1257-58 (Fed. Cir. 2014) ("claims include 'additional features' that ensure the claims are 'more than a drafting effort designed to monopolize the [abstract idea]'"); *Visual Memory LLC v. NVIDIA Corp.*, 867 F.3d 1253, 1259-60 (Fed. Cir. 2017) ("the claims here are directed to a technological improvement, . . . and the specification discusses the advantages offered by the technological improvement."); *Bascom Glob. Internet Servs., Inc. v. AT&T Mobility LLC*, 827 F.3d 1341, 1352 (Fed. Cir. 2016) ("an inventive concept can be found in the ordered combination of claim limitations that transform the abstract idea . . . into a particular, practical application of that abstract idea").

Some panels of the Federal Circuit might have properly applied its own precedent and those of this Court, but the panel drawn by Rideshare did not, which directly puts before this Court the question of how an abstract idea is to be determined, and specifically whether the court may disregard specific technological/functional limitations that implement the claimed invention. Although the Federal Circuit was created in 1982 to achieve consistency in developing and adjudicating the body of patent law,[6] the Federal Circuit itself is divided on this question and requires clear direction from this Court.

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6. https://www.fjc.gov/history/legislation/landmark-legislation-federal-circuit

Additionally, this Court should grant review to reaffirm standards of appellate review for the Federal Circuit. The Federal Circuit has improperly usurped the role of factfinder in this case and others. Also in this case, the Federal Circuit introduced factual determinations *sua sponte* that were not raised below, which it proceeded to rule on. This Court serves as the highest source of authority for the federal court system and manages the system's orderly functioning largely through the Court's opinions. This Court's reaffirmation of its standards of appellate review on these issues will promote procedural integrity and faith in the federal court system, while preventing injustice in individual cases such as this one.

By further clarifying and structuring the framework for determining the "abstract idea" exception to patent eligibility under § 101 and reaffirming standards of appellate review, the Court will strengthen the U.S. patent system by increasing the USPTO's capability to administer patent law and the Federal Circuit's capability to develop and adjudicate patent law. Rooted in our country's original constitution, the U.S. patent system has been critical to the U.S. economy since our country's founding, and both deserves and requires readily cognizable standards of review.

I. To End Overgeneralization and Achieve More Consistent Results, the Federal Circuit Requires Clear Standards for Determining an "Abstract Idea"

In *Alice*, this Court specifically cautioned against overgeneralization in determining whether the claims are

directed to an abstract idea that would render the claims patent-ineligible:

> "At the same time, we tread carefully in construing this exclusionary principle lest it swallow all of patent law. *Mayo*, 566 U.S., at __, 132 S.Ct., at 1293–1294. At some level, "all inventions . . . embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas." *Id.*, at __, 132 S.Ct., at 1293. Thus, an invention is not rendered ineligible for patent simply because it involves an abstract concept. See *Diamond v. Diehr*, 450 U.S. 175, 187, 101 S.Ct. 1048, 67 L.Ed.2d 155 (1981). "[A] pplication[s]" of such concepts "'to a new and useful end,'" we have said, remain eligible for patent protection. *Gottschalk v. Benson*, 409 U.S. 63, 67, 93 S.Ct. 253, 34 L.Ed.2d 273 (1972)." *Alice*, 573 U.S. at 217.

This case cleanly presents an important question to this Court about how a patent-ineligible abstract idea is to be determined: whether a court may disregard key functional limitations that implement the improvement to the claimed invention over the prior art.

A. The Federal Circuit should not be able to disregard technical limitations that are central to the claims.

The Federal Circuit erred by abstracting away the technological limitations that are the focus of the claims; limitations that are not only recited in the claim language, but expressly tied to the invention's stated improvement

over the prior art. This error violates this Court's two-step framework in *Alice*, and the Federal Circuit's controlling precedent in *TecSec*.[7] *See also Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1335 (Fed. Cir. 2016) ("…the "directed to" inquiry applies a stage-one filter to claims, considered in light of the specification, based on whether "their character as a whole is directed to excluded subject matter . . . inquiring into "the focus of the claimed advance over the prior art"); *McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299, 1313 (Fed. Cir. 2016) ("We have previously cautioned that courts 'must be careful to avoid oversimplifying the claims' by looking at them generally and failing to account for the specific requirements of the claims").

By misapprehending the focus of the claims in its analysis, the Federal Circuit stated that "the claims are directed to improving a user's experience in using a rideshare app and identifying a driver . . . the technological improvement more easily enables and facilitates human interactions." Pet.App.17a (citing *Simio, LLC v. FlexSim Software Prods., Inc.*, 983 F.3d 1353, 1361 (Fed. Cir. 2020) ("*Simio*")). The Federal Circuit then stated that "the claims use technology as a tool to streamline" what it considered mere driver identification. Pet.App.17a-18a.

The Federal Circuit erred in reading out key functional limitations under either step 1 or step 2 of *Alice*. The claims recite a specific sequence of steps to improve the likelihood that the driver and rider only engage in a ride where they are a correct and intended match. The

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7. *See also* more recently *Contour IP Holding LLC v. GoPro, Inc.*, 113 F.4th 1373, 1379-80 (Fed. Cir. 2024).

claims do this by reciting a method that first determines when the driver comes to a predetermined distance of the rider's device. Only once that distance has been reached is a notification signal sent to the driver's phone. In response to the notification signal being received, only then is an indicator created. The indicator is then sent to the vehicle display and the rider's phone, allowing the rider to compare the indicator the rider received with the indicator displayed on the vehicle. These limitations significantly improve security for rideshare by creating the indicator specific to a rider/driver match only when it is determined that the driver is as close as the predetermined distance from the rider, thereby reducing the time that any tampering, hacking, or other malicious activity could occur by a would-be bad actor intercepting the indicator to dupe either the rider or driver into sharing an unintended ride. None of these limitations is accounted for in the Federal Circuit's abstraction of the claims to merely "improving a user's experience in using a rideshare app and identifying a driver."

As the USPTO Intervenor explained: "As the Board correctly concluded, the claimed process seeks to solve a problem in ridesharing technology (the need for drivers and riders to safely and efficiently identify each other) with a solution grounded in technology (signal generation between devices when they come within a certain distance from each other, and display of an indicator on the devices and on the exterior of the vehicle)." PetApp.234a. This Court should grant cert to prevent the Federal Circuit from abstracting the claims at too high a level by reading out key functional limitations as the court did in this case.

B. Neither § 101 nor *Alice* requires that a technological improvement "fundamentally alter or improve the way the technology itself functions."

Following its errors in failing to do a step 1 analysis, and reading out key functional limitations of the claims in its step 2 analysis, the Federal Circuit based its reversal of the Board's finding of § 101 patent eligibility on the absence of "an improvement in computer functionality." Pet.App.17a (quoting and citing *Simio*, 983 F.3d at 1361). The Federal Circuit said that "nothing in the claims themselves is directed to an improvement to the mobile device environment itself – the technological improvement more easily enables and facilitates human interactions, but it does not fundamentally alter or improve the way the technology itself functions." Pet.App.17a (emphasis added).

Having been reversed by this same categorical rule applied to its claims, United Services Automobile Association ("USAA") asserted that "the Federal Circuit has introduced a spurious distinction between 'an improvement to the functionality of the computer or network platform itself' as opposed to merely 'improving a user's experience while using a computer' – treating the latter kind of invention as abstract. *Customedia Techs., LLC v. Dish Network Corp.*, 951 F.3d 1359,1365 (2020) (emphases added); *see also Simio*, 983 F.3d at 1361 (patent owner did 'not explain how the computer's functionality is improved beyond the inherent improvement of the experience of a user')." *United Services Automobile Association v. PNC Bank N.A.*, __ S. Ct. __, 25 (2026) (No. 25-853) ("USAA petition").

The Federal Circuit's requirement of improved computer functionality is not required by the plain text of § 101 or *Alice*. *Alice* does not prescribe which types of technological improvements shall be patent-eligible but merely offers some examples. In finding the claims at issue in *Alice* patent-ineligible, the Court simply noted that the claims did "not, for example, purport to improve the functioning of the computer itself." *Alice*, 573 U.S. at 225 (emphasis added). The Court then went on to give another example of what might render an invention patent-eligible: "Nor do they effect an improvement in any other technology or technical field." *Id.* (emphasis added). As established in the prior sub-section *supra*, Rideshare's substitute claims are an improvement in ridesharing technology, and thus merit patent eligibility irrespective of any lack of improvement to computer functionality or improvement in user experience.

The Federal Circuit should not reach to create categorical rules for patent eligibility, outside of which even new and useful technological improvements will be excluded. "This Court has "more than once cautioned that courts 'should not read into the patent laws limitations and conditions which the legislature has not expressed.'" *Diamond v. Diehr,* 450 U.S. 175, 182, 101 S.Ct. 1048, 67 L.Ed.2d 155 (1981) (quoting [*Diamond v.*] *Chakrabarty,* [447 U.S. 303,] 308, 100 S.Ct. 2204; some internal quotation marks omitted [(1980) ("*Chakrabarty*")])." *Bilski v. Kappos*, 561 U.S. 593, 602–03 (2010) ("*Bilski*"). "In patent law, as in all statutory construction, "[u]nless otherwise defined, 'words will be interpreted as taking their ordinary, contemporary, common meaning.'" *Diehr, supra,* at 182, 101 S.Ct. 1048 (quoting *Perrin v. United States,* 444 U.S. 37, 42, 100 S.Ct. 311, 62 L.Ed.2d 199 (1979))." *Id.*

at 603. The Federal Circuit's categorical rule requiring improvement to computer functionality conflicts with this Court's warning that "[a] categorical rule denying patent protection for 'inventions in areas not contemplated by Congress . . . would frustrate the purposes of the patent law.'" *Bilski*, 561 U.S. at 605 (plurality opinion) (quoting *Chakrabarty*, 447 U.S. at 315).

In this case and others, the Federal Circuit is improperly using this categorical rule to convert the factual inquiry of *Alice* step 2 into a legal issue that it can determine for itself without having to remand to the factfinder. *See* the penultimate paragraph in the "Statement of the Case" *supra*. As USAA argued, "patent owners have the right to put these essential questions to a factfinder. "[E]conomy supplies no license for ignoring these – often vitally inefficient – protections." *Oil States Energy Servs., LLC v. Greene's Energy Grp.*, 30 LLC, 584 U.S. 325, 347 (2018) (Gorsuch, J., dissenting)." USAA petition at 29-30.

C. The Federal Circuit construes "abstract idea" inconsistently.

"As the USPTO has recently and repeatedly explained in Supreme Court filings, the current state of the law concerning patent eligibility under § 101 would benefit from further clarification. *See* Brief of Amicus Curiae U.S., *Interactive Wearables, LLC v. Polar Electro Oy et al,*, No. 21-1281, 2023 WL 2817859; Brief of Amicus Curiae U.S, *American Axle & Mfg. Inc. v. Neapco Holdings LLC*, No. 20-891, 2022 WL 1670811." Pet.App.209a. "Neither [this Court] nor [the Federal Circuit] have [sic] articulated readily administrable limits on the exclusions from patent eligibility recognized in recent case law." *Id.*

Unable to consistently determine an abstract idea, "the Federal Circuit regularly finds seemingly indistinguishable patent claims both patentable and unpatentable in different cases." Patentable Subject Matter Reform: Hearings Before the Senate Judiciary Committee 2 (June 4, 2019) (statement of Mark A. Lemley), https://www.judiciary.senate.gov/imo/media/doc/Lemley%20Testimony.pdf. Regarding the abstract-idea exception, "unfortunately the Federal Circuit precedent seems to be getting less, not more, certain over time." *Id.*

With respect to the consistency of patent-eligibility decisions across the Federal Circuit, an exhaustive academic study and at least one Federal Circuit judge have identified the dependence of patent eligibility on the composition of the Federal Circuit panel deciding the matter. "Analysis of [all § 101 decisions made by the Federal Circuit up to 2023, hand-coded on a claim-by-claim basis] indicates that which judges are assigned to a panel bears an especially strong relationship to whether the subject matter will be found eligible on appeal. In particular, even after controlling for other critical case characteristics, panels with a majority of § 101-strict judges are roughly twice as likely to find a given patent ineligible compared to panels with a majority of § 101-lenient judges." Matthew G. Sipe, *Patent Law 101: I Know It When I See It*, 37 Harv. J.L. & Tech. 447 (2024) ("Sipe"). "[N]ow-Chief Judge Moore has noted that 'we have struggled to consistently apply the judicially created exceptions . . . , slowly creating a panel-dependent body of law and destroying the ability of American businesses to invest with predictability.' *Am. Axle & Mfg., Inc. v. Neapco Holdings LLC*, 977 F.3d 1379, 1382 (Fed. Cir. 2020) (Moore, J., concurring)." USAA petition at 30 (emphasis

added). "Where it exists, panel dependency naturally implicates a host of issues like notice and fairness" and in the patent context, "reduces incentives to innovate by unpredictably upsetting investment-backed efforts." Sipe at 456. This Court should grant cert to address and oversee this very type of intra-court split that creates inconsistency, uncertainty and unfairness. "This kind of intra-circuit split – at the unitary, specialized, and expert patent appeals court – indicates that § 101 reform is urgently needed." Sipe at 447.

"Ambiguity in the governing legal framework has made it difficult for "inventors, businesses, and other patent stakeholders to reliably and predictably determine what subject matter is patent eligible," and creates "unique challenges for the USPTO." USPTO's 2019 Revised Patent Subject Matter Eligibility Guidance, 84 Fed. Reg. 50 (Jan. 7, 2019), and as updated by the October 2019 Patent Eligibility Guidance Update, 84 Fed. Reg. 55942 (Oct. 18, 2019)." Pet.App.209a. "The USPTO revised its Manual of Patent Examining Procedure to better track Alice/Mayo and subsequent caselaw, including exemplary § 101 analyses, but did not (and could not) change the substantive law that must actually be applied." Sipe at 455.

Within the Federal Circuit, there are multiple (and often incompatible) frameworks for determining what claims are a patent-ineligible abstract idea. In just this case, we have seen two frameworks: 1. Before the PTAB, a framework based on *Alice* that was similar to that determined to be proper in *TecSec* and other cases, where all limitations of the claim must be considered, particularly those reciting key functional limitations overcoming stated shortcomings in the prior art, was used

to determine that the claims were patent-eligible under step 1 as a "technological solution rooted in computer and network technologies;" and 2. On appellate review, the Federal Circuit reversed the Board's determination by using a categorical rule requiring an improvement in computer functionality for patent eligibility as a shortcut to specifically ignore key functional limitations overcoming stated shortcomings in the prior art. Each approach has some following within the Federal Circuit and district courts, but these varying approaches are often at odds, leading to unpredictable results.

This Court's intervention is necessary to clarify and structure the process by which the Federal Circuit and district courts determine what an abstract idea is. Such a process would at least include consideration of all the limitations of a patent claim, and in particular the technological limitations that implement the invention and overcome the stated problems with the prior art. Review by this Court could prevent the type of intra-court split currently occurring in the Federal Circuit.

D. The Federal Circuit's § 101 Jurisprudence Undermines the U.S. Patent System as Envisioned in the U.S. Constitution

Rooted in the U.S. Constitution, the U.S. patent system was designed from our nation's founding to occupy an important role in our economy. U.S. Const., Art. I, § 8, cl. 8 (Congress "shall have Power . . . To promote the Progress of Science and useful Arts"). Congress passed the first patent statute in U.S. history shortly after ratification of the U.S. Constitution. Patent Act of 1790, Ch. 7, 1 Stat. 109-112 (April 10, 1790).

Recently, the United States re-confirmed its interest in a strong patent system: "Broadly, the United States seeks to advance consistent and correct application and enforcement of the intellectual property laws, including the Patent Act, to safeguard patents, fuel economic growth, and spur innovation to advance American freedoms." *Statement of Interest of the United States of America*, Case 2:23-cv-00587-JRG, Dkt. 386 at 1 (February 27, 2026). "The United States has an interest in ensuring this incentive system functions effectively to encourage innovation not only from large firms, but also from small business and innovators." *Id.* at 2. As the executive-branch agency charged with examining patent applications, issuing patents, and advising the President on intellectual property policy through the Department of Commerce, the USPTO administers the patent system with a mission "to drive U.S. innovation and global competitiveness for the benefit of all Americans." https://www.uspto.gov/about-us.

By altering the law on § 101 patent eligibility, *Alice* introduced major change for the U.S. patent system. Through *Alice*, "the Court effectively broadened the scope of ineligible subject matter. Moreover, the decision created uncertainty in the business and legal communities. Ambiguity in the language of the *Alice* standard and in the scope of technologies involving 'abstract ideas' made it difficult to predict how and where the standard would be applied." USPTO, Office of the Chief Economist (Andrew A. Toole, PhD, Chief Economist, and Nicholas A. Pairolero, PhD, Economist), *Adjusting to Alice USPTO patent examination outcomes after Alice Corp. v. CLS Bank International*, IP DATA HIGHLIGHTS Number 3 at 2 (April 2020) ("USPTO Report on Adjusting to *Alice*").

The Court's framework in *Alice* is designed to maximize innovation by balancing the breadth of § 101's grant of patent eligibility to encourage innovation against "not inhibit[ing] further discovery by improperly tying up the future use of the[] building blocks of human ingenuity." *Alice*, 573 U.S. at 216 (quotations and citations omitted). As shown in this case and others discussed *supra*, the Federal Circuit's precedent since *Alice* has shifted the balance toward less patent eligibility, with more uncertainty, even when the "building blocks of human ingenuity" are not at stake. Reduced patent eligibility in these circumstances reduces innovation by reducing both the incentive to produce innovation (the patent) and also the information that would flow from patents to spur further innovation – all of which undermines the patent system's goal of encouraging innovation.

In response to the uncertainty of the boundaries of patent eligibility, it has been reported that "companies and universities are turning from U.S. patents to other forms of protection, including trade secrets and copyright." *See* Philip Hawkyard, *The Collapse of Alice's Wonderland: Mayo's Faulty Two-Step Framework and a Possible Solution to Patent-Eligibility Jurisprudence*, 74 HASTINGS L.J. 1221, 1224-25 (2023). As one example, IBM has stated that continued uncertainty about patent eligibility would lead it to "rely more on trade secret and copyright protection." *Id*. These forms of intellectual property protection, unlike with patents, do not increase the public base of knowledge that will spark future innovation. According to a coalition of high-tech companies that provided public comments to the USPTO, "[w]here secrecy is encouraged, iterative and incremental progress of established technology is made difficult to

impossible." PTO, Report to Congress, *Patent eligible subject matter: Public views on the current jurisprudence in the United States* at 27 (2022) ("2022 PTO Report"), https://bit.ly/4pc9max. A national intellectual property bar association noted that "[p]atent protection has always been essential to encouraging earlier and broader disclosure of innovations, which not only helps to accelerate innovation by incentivizing alternatives but also makes it easier to commercialize innovation through investment and business transactions." *Id.*

Moreover, "economic theory and evidence show that greater uncertainty tends to reduce investments. Higher levels of uncertainty may also negatively impact previously issued patents by lowering their expected value, reducing patent purchases and licensing transactions, and limiting opportunities to obtain entrepreneurial financing." USPTO Report on Adjusting to *Alice* at 2.

Calls for this Court to intervene to clarify and structure § 101 jurisprudence have come often since *Alice* from a variety of stakeholders in government, business, legal, academic, and technology domains. Sipe at 453-54. As discussed in subsection I.C. *supra*, the USPTO has requested this Court to provide guidance on multiple occasions. At one point within the past handful of years, all twelve active judges on the Federal Circuit were asking for guidance from this Court. Sipe at 448. *See Am. Axle & Mfg., Inc. v. Neapco Holdings LLC*, 977 F.3d 1379, 1382 (Fed. Cir. 2020) (Moore, J., concurring). Even among a wide variety of stakeholders[8] expressing differing views

8. The stakeholders surveyed include legal associations, industry organizations, advocacy groups, nonprofit entities, businesses, law firms, practitioners, academics, and inventors.

in public comments to the USPTO on the impacts of the current jurisprudence for determining patent subject matter eligibility, "respondents nonetheless agreed that whatever the standard for determining whether an invention is eligible for patenting, it should be clear, predictable, and consistently applied by the USPTO and the courts." 2022 PTO Report at 16 (emphasis added).

This case presents the Court with the opportunity to implement clear and predictable standards that the Federal Circuit and federal court system can apply to more consistently reach decisions that are in accord with § 101, this Court's precedents, the Constitutional goal of "promot[ing] the progress of science and useful arts," and the USPTO's mission of furthering innovation. This Court should not permit the Federal Circuit to disregard key functional limitations of the claims that implement the improvement to the claimed invention over the prior art in conducting a patent eligibility analysis under 35 U.S.C. 101.

II. This Court Should Reaffirm Limits of Appellate Review to Ensure Procedural Integrity in the Federal Circuit and Throughout the Federal Court System

Application of binding appellate review standards, including enforcement of those standards is necessary to maintain the integrity of the federal court system. This Court serves as the highest source of authority for the federal court system and it should take the opportunity provided by this case to make clear the high standards for appellate review.

As described in the Statement of the Case *supra*, the Federal Circuit failed to review the Board's factual findings on written description for substantial evidence, and instead itself provided a new argument at the hearing that was neither raised by Lyft before the Board (and thus was never addressed by the Board) nor ever briefed; and then, in a footnote to its opinion, the Federal Circuit overruled the Board's factual findings based on the Federal Circuit's newly raised argument. The Federal Circuit did not identify any exceptional circumstances that caused it to deviate in this case from established standards of appellate review, which in this case required the Federal Circuit to review the Board's finding that the Substitute Claims were supported by written description for substantial evidence.

The Federal Circuit's analysis of the sufficiency of written description for Rideshare's substitute claims was not in accord with three standards of appellate review, for which this Court should reaffirm the following limits: A) the Federal Circuit may not usurp the role of factfinder; B) issues that have not been raised or passed upon below may not be raised on appellate review absent exceptional circumstances; and C) the Federal Circuit should not raise factual issues *sua sponte*.

A. The Federal Circuit May Not Usurp the Role of Fact Finder

As the Federal Circuit stated in this case, quoting *Medytox, Inc. v. Galderma S.A.*, 71 F.4th 990, 996 (Fed. Cir. 2023): "Whether a claim amendment satisfies the written description requirement or improperly adds new matter are both questions of fact reviewed for substantial

evidence." Pet.App.11a (emphasis added). The required substantial evidence standard was not applied; instead, the Federal Circuit did its own analysis and decided the issue itself on an argument that was never before the Board. The Federal Circuit should have remanded any questions about written description back to the Board – the factfinder.

B. Issues That Have not Been Raised or Passed Upon Below May Not Be Raised on Appellate Review Absent Exceptional Circumstances

The Federal Circuit's *sua sponte* theory that the use of the word "alternatively" in paragraph 30[9] of the specification precludes the generation of a notification signal in the second alternative was never advanced by Lyft before the Board. It was never briefed. RSDI never had an opportunity to address it below. And most importantly, the Board – the factfinder – never had an opportunity to address it. Nonetheless, the Federal Circuit unveiled this theory for the first time at oral argument, pressed it on counsel, and reversed the Board's findings based on this newly unveiled theory.

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9. Paragraph 30 of the specification had been the focus of the Board and parties regarding the sufficiency of the written description for the limitation at issue. Ultimately, by "[r]eferring mainly to ¶ 30," the Board found no new matter. Pet.App.86a-88a; Pet.App.163a-165a. Despite the Board's thorough analysis of ¶ 30, Lyft never raised the argument below that the Federal Circuit *sua sponte* raised at the hearing. Thus, the Federal Circuit impermissibly took over the role of fact finder. The factual question raised by the Federal Circuit however could have been addressed on remand. Alternatively, the Federal Circuit need not have passed on it at all given that it had already held the Substitute Claims unpatentable under § 101.

The Federal Circuit has held that the appellate court role does not include deciding cases on grounds neither passed upon below nor briefed, absent exceptional circumstances, such as a change in law. *See, e.g.*, *In re Watts*, 354 F.3d 1362, 1367 (Fed. Cir. 2004) ("Our review of the Board's decision is confined to the 'four corners' of that record."); *In re Google Tech. Holdings LLC*, 980 F.3d 858, 864 (Fed. Cir. 2020) ("In sum: we are, as an appellate court, charged in this instance with *reviewing* the Board's conclusions. The very word 'review' presupposes that a litigant's arguments have been raised and considered in the tribunal of first instance." (internal quotations omitted)).

C. The Federal Circuit Should Not Raise Factual Issues *Sua Sponte*

As stated, the Federal Circuit unveiled its *sua sponte* theory of insufficient written description for the first time at oral argument, pressed it on counsel, and reversed the Board's findings based on this newly unveiled theory. The Federal Circuit's Opinion at footnote 3 confirms that the "alternative" argument is its own, not the Board's. The Federal Circuit stated that "we do not find support for the scenario described in the substitute claims . . . " Pet. App.18a n. 3.

This violates the precedent of this Court: "In our adversarial system of adjudication, we follow the principle of party presentation. As this Court stated in *Greenlaw v. United States*, 554 U.S. 237 (2008), 'in both civil and criminal cases, in the first instance and on appeal . . . , we rely on the parties to frame the issues for decision and assign to courts the role of neutral arbiter of matters the

parties present.'" *United States v. Sineneng-Smith*, 590 U.S. 371, 375 (2020). Further, the Federal Circuit itself has held that the appellate court role does not include taking action *sua sponte*. *See, e.g.*, *Dell Inc. v. Acceleron, LLC*, 818 F.3d 1293, 1301 (Fed. Cir. 2016) (holding the Board cannot raise new arguments at the hearing and rule based thereon); *In re Magnum Oil Tools Int'l, Ltd.*, 829 F.3d 1364, 1380 (Fed. Cir. 2016) (holding the Board improperly shifted the burden to the patentee to prove patentability). The Court should grant cert in this case to address and enforce the limits of the Federal Circuit's appellate role.

CONCLUSION

For the reasons set forth herein, Petitioner respectfully requests the Court grant its Petition.

Dated: March 23, 2026

Respectfully submitted,

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UNITED STATES COURT OF APPEALS
FOR THE FEDERAL CIRCUIT

2023-2033, 2023-2034, 2023-2035, 2023-2036,
2023-2037, 2023-2038, 2023-2039

RIDESHARE DISPLAYS, INC.,

Appellant,

JOHN A. SQUIRES, UNDER SECRETARY OF COMMERCE FOR INTELLECTUAL PROPERTY AND DIRECTOR OF THE UNITED STATES PATENT AND TRADEMARK OFFICE,

Intervenor,

v.

LYFT, INC.,

Cross-Appellant.

Appeals from the United States Patent and Trademark Office, Patent Trial and Appeal Board in Nos. IPR2021-01598, IPR2021-01599, IPR2021-01600, IPR2021-01601, IPR2021-01602.

Decided September 29, 2025

Before TARANTO, CHEN, and HUGHES, *Circuit Judges.*

Appendix A

HUGHES, *Circuit Judge*.

Rideshare Displays, Inc. appeals five decisions of the Patent Trial and Appeal Board determining that claims 1-9 and 11-20 of U.S. Patent No. 9,892,637; claims 1, 2, 4, and 6-8 of U.S. Patent No. 10,169,987; claim 1 of U.S. Patent No. 10,395,525; claims 1 and 2 of U.S. Patent No. 10,599,199; and claims 1-5 of U.S. Patent No. 10,748,417 are unpatentable for obviousness. Lyft, Inc. cross-appeals the Board's partial grant of Rideshare's motions to amend claims 29, 31, and 32 of the '637 patent and claims 1 and 4 of the '199 patent. For the lead appeal, we affirm the Board's holding that all challenged claims are unpatentable. For the cross-appeal, we reverse the Board's partial grant of the motions to amend.

I

A

The challenged patents, U.S. Patent Nos. 9,892,637; 10,169,987; 10,395,525; 10,559,199; and 10,748,417, are all directed to "a system and method for vehicle identification" that allows users of ridesharing apps to verify that they are getting in the correct cars, and for drivers to verify that they are picking up the correct riders.[1] J.A. 245. The patent states that the invention's goal is to address safety concerns for both drivers and riders. J.A. 245

1. All five patents at issue share a specification, so all citations are to the '637 patent specification.

Appendix A

The patents presume that both rider and driver are using mobile communication devices. J.A. 246. The system works by having the driver's device receive a notification signal that triggers an indicator that is visible from outside the car. The specification states that the indicator could be on an article of clothing or on a tablet held by the driver. The indicator can be a code, like a text or alphanumeric string, or an icon on a display that allows the rider to locate the driver and her car. J.A. 246.

Some embodiments involve transmission of a "notification signal" to the driver's device when the driver's vehicle reaches a predetermined distance away from the user's device. J.A. 247. In response to receiving the notification signal, the driver's device generates an indicatory signal. J.A. 247. The indicatory signal then triggers the display to show the indicator. J.A. 247. In another embodiment, the driver's device generates a second signal representing an indicator that is transmitted to the user's mobile device. J.A. 247.

The below claims are illustrative of the claimed subject matter.

1. A vehicle identification system, comprising:

a display associated with a vehicle, wherein the display is located to be visible from an exterior of the vehicle by a rider;

a controller communicatively coupled to a network and configured to, in response to

receipt of a signal from a user, generate and transmit a first signal representing an indicator via the network to a mobile communication device associated with a driver of the vehicle; and

wherein, in response to receiving the first signal, the mobile communication device associated with the driver of the vehicle generates and transmits a second signal representing the indicator to the display, the indicator identifies the vehicle.

'987 patent , 7:32-46.

1. A vehicle identification system, comprising:

a display associated with a front windshield of a vehicle, wherein the display is movable so as to be visible from an exterior of the vehicle by a rider;

a controller communicatively coupled to mobile communication devices, wherein the controller generates a first signal representing an indicator which is transmitted to a mobile communication device associated with a driver of the vehicle and a second signal representing the indicator which is transmitted to a mobile communication device associated with the rider; and

> wherein the mobile communication device associated with the driver of the vehicle generates a third signal representing the indicator, which is transmitted to the display, the third signal representing the indicator identifies the vehicle.

'525 patent, 8:8-23.

> 1. A vehicle identification system for mobile communication device users, comprising:
>
> a display associated with a vehicle, wherein the display is located to be visible from an exterior of the vehicle by mobile communication device users; a controller communicatively coupled to a network and configured to, in response to receipt of a ride request signal from a mobile communication device of a user in a pickup area, generate and transmit a notification signal via the network to a mobile communication device associated with a driver of the vehicle, and in response to the mobile communication device associated with the driver of the vehicle receiving the notification signal an indicatory signal representing a visual indicator is generated and transmitted to the display and the mobile communication device of the user, wherein the visual indicator is not duplicated in the same pickup area.

'417 patent, 7:31-8:13.

Appendix A

B

There are four pieces of prior art relevant to this appeal. The first is U.S. Patent Publication No. US2012/0137256 (Lalancette). The Lalancette reference is entitled "Human Readable Iconic Display Server" and discloses a cross-platform target identification system for "identify[ing] a target in a target-rich environment." J.A. 342. The patent application is directed to a system that uses icons to provide a "more discreet but publicly visible means of alerting a target." J.A. 342. One embodiment comprises a taxi service where, in response to receiving a user's request for the service, the system generates an icon that is sent to the user and displayed on the taxi's electronic roof display to provide confirmation to the user that they are getting in the right taxi. J.A. 342.

The second is U.S. Patent Publication No. US2015/0332425 (Kalanick). The Kalanick reference is entitled "User-Configurable Indication Device for Use with an On-Demand Service" and discloses a vehicle identification system that involves a display either positioned on or fastened to the vehicle. J.A. 304. The display can output "color(s), [ ] pattern(s), illumination sequence(s), text, visual content, video, and/or audio." J.A. 304. The user can specify the configuration for the display or let the system set a default indicator. J.A. 307. When the system determines that the driver is arriving at the pickup location, the system displays the selected configuration. J.A. 307-08.

The third is U.S. Patent No. 9,494,938 (Kemler). The Kemler reference is entitled "Unique Signaling for

Autonomous Vehicles To Preserve User Privacy" and discloses systems and methods to provide a user with a way to identify and confirm that they are interacting with the correct requested driverless vehicle. J.A. 317. One contemplated embodiment involves the vehicle displaying a signal on an external device that is also provided to the user's device. J.A. 329.

The final relevant piece of prior art is U.S. Patent No. 9,442,888 (Stanfield). The Stanfield reference is entitled "Apparatus And Methods For Renting And Controlling Occupancy Of A Vehicle" and discloses systems and methods to determine whether a vehicle is available for rent. J.A. 1668. One contemplated embodiment involves the vehicle displaying a signal on a visual indicator that shows that the vehicle is available for rent. J.A. 1677.

C

In November 2021, Lyft filed five petitions for *inter partes* review of the challenged patents. The five IPR proceedings were consolidated for the purposes of this appeal. The Board found all the challenged claims unpatentable as obvious or anticipated over the prior art references of Kalanick, Lalancette, and Kemler, either alone or in combination. J.A. 1-72, 73-119, 120-47, 148-211, 212-39.

In the IPR proceedings involving the '637 patent and the '199 patent, Rideshare moved to amend the claims and add proposed substitute claims 21-32 for the '637 patent and proposed substitute claims 3-4 for the '199 patent. The Board allowed substitute claims 29 and 31-32 for the

'637 patent and claims 3-4 for the '199 patent and either denied or did not reach the remaining proposed substitute claims. J.A. 70-71, 210. The below claims are illustrative of the substitute claims.

> '637 patent, Substitute Claim 29. A method of identifying a vehicle being dispatched to a location of a user having requested a ride from a transportation service, comprising:
>
> when it is determined that the vehicle is within a predetermined distance of the location of the user, generating a notification signal to a mobile communication device associated with the driver;
>
> generating, by creating an indicator, an indicatory signal representing ~~an~~ the indicator in response to receiving the notification signal;
>
> displaying, on a display associated with the vehicle, the indicator based on the notification and indicatory signals, the display being located to be visible on the exterior of the vehicle;
>
> displaying the indicator on a mobile communication device associated with the user; and
>
> identifying the vehicle based on appearance of a match, by visual observation of the user, between the indicator being displayed on the

mobile communication device associated with the user and the indicator being displayed on the display associated with the vehicle.

J.A. 56-57.

'199 patent, Substitute Claim 3. A vehicle identification method implemented as an Application on mobile communication devices over a wireless communication network, comprising:

requesting a ride from a transportation service from a mobile communication device of a user;

determining that a vehicle is within a predetermined distance of the location of the user;

generating a notification signal to a mobile communication device associated with a driver of the vehicle;

generating, by creating an indicator that is specific to a user and driver match, an indicatory signal representing ~~an~~ the indicator;

displaying the indicator based on the notification signal on a display associated with the vehicle, the mobile communication device associated with the driver, and the user's mobile communication device, wherein the display associated with the

> vehicle is located to be visible from the exterior of the vehicle; and
>
> identifying the vehicle based on appearance of a match, by visual observation of the user, between the indicator being displayed on the user's mobile communication device and the indicator being displayed on the display associated with the vehicle.

J.A. 197.

Rideshare appeals the Board's unpatentability conclusions for claims 1-9 and 11-20 of the '637 patent; claims 1, 2, 4, 6-8 of the '987 patent; claim 1 of the '525 patent; claims 1 and 2 of the '199 patent; and claims 1-5 of the '417 patent. Lyft cross-appeals the Board's partial grant of Rideshare's motions to amend claims 29, 31, and 32 of the '637 patent and claims 3 and 4 of the '199 patent. The U.S. Patent and Trademark Office intervened in the appeals for the limited purpose of addressing patent eligibility under 35 U.S.C. § 101. We have jurisdiction under 28 U.S.C. § 1295(a)(4)(A).

II

We review the Board's legal conclusions de novo and factual findings for substantial evidence. *Almirall, LLC v. Amneal Pharms. LLC*, 28 F.4th 265, 271-72 (Fed. Cir. 2022). Substantial evidence means "such relevant evidence as a reasonable mind might accept as adequate to support

a conclusion." *In re Gartside*, 203 F.3d 1305, 1312 (Fed. Cir. 2000) (citation omitted). We review the Board's "claim construction and any supporting determinations based on intrinsic evidence de novo." *Seabed Geosolutions (US) Inc. v. Magseis FF LLC*, 8 F.4th 1285, 1287 (Fed. Cir. 2021). The factual findings underpinning the use of extrinsic evidence are reviewed for substantial evidence. *Knowles Elecs. LLC v. Cirrus Logic, Inc.*, 883 F.3d 1358, 1362 (Fed. Cir. 2018). Obviousness is a question of law based on underlying findings of fact. *Graham v. John Deere Co.*, 383 U.S. 1, 17-18, 86 S. Ct. 684, 15 L. Ed. 2d 545 (1966). "The determination of what a reference teaches is one of fact, as is the existence of a reason for a person of ordinary skill to combine references." *In re Constr. Equip. Co.*, 665 F.3d 1254, 1255 (Fed. Cir. 2011).

We review the Board's decision to grant a motion to amend under the APA and can set aside the Board's action if it is "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." *Am. Nat'l Mfg. Inc. v. Sleep No. Corp.*, 52 F.4th 1371, 1382-83 (Fed. Cir. 2022) (quoting 5 U.S.C. § 706(2)(A)). We review the Board's patent-eligibility determination de novo. *cxLoyalty, Inc. v. Maritz Holdings Inc.*, 986 F.3d 1367, 1376 (Fed. Cir. 2021). "Whether a claim amendment satisfies the written description requirement or improperly adds new matter are both questions of fact reviewed for substantial evidence." *Medytox, Inc. v. Galderma S.A.*, 71 F.4th 990, 996 (Fed. Cir. 2023).

III

On appeal, Rideshare raises four issues with respect to the Board's unpatentability determinations. We address each in turn.

First, Rideshare contends that the Board erred in its claim construction of the term "generate" in the claim phrase "generate a signal representing an indicator." The Board construed "generate" to have its plain and ordinary meaning, "which is to originate or produce the signal." J.A. 19. Rideshare argues that the term "generate" needs to modify both the "signal" and the "indicator/code" because the signal contains indicator information, such that a new indicator is created whenever the signal is generated. We disagree; the Board did not err in its construction. The plain meaning of the claim, and a proper grammatical construction, is that a signal is generated, and said signal represents an indicator—not that the indicator is also generated. We find no error in the Board's construction of this claim term. Because we do not adopt Rideshare's proposed construction of the term, we need not address the obviousness arguments that are predicated on reversing the Board's construction. *See* Appellant's Opening Br. 28-32.

Second, Rideshare argues that there is not substantial evidence to support the Board's determination that Lalancette discloses a "communication device associated with the driver of a vehicle." The Board concluded that Lalancette discloses a "mobile computer" in a taxi that receives dispatch information, the signal containing

the rider's indicator, and displays the icon on the rooftop display. J.A. 142-43. The Board noted that "mobile computer" can include a smartphone, and Lalancette does not describe a specific form that the mobile computer must take. J.A. 142. Rideshare argues that the "patents[] make clear that a 'mobile communication device' must be both portable and personal to the driver," Appellant's Opening Br. 33, and that Lalancette does not disclose a system that includes a mobile communication device associated with the driver because Lalancette discloses a taxi service, so the devices are associated with the taxis, not the drivers. We disagree. The specification states that examples of mobile communication devices include cell phones, smart phones, mobile email devices, and digital personal assistants, and nothing in the specification supports limiting the definition of a mobile communication device in the way Rideshare suggests. J.A. 246. Moreover, the Board had substantial evidence in finding that Lalancette's computer is "associated with the driver": the mobile computer connects to a dashboard, which in turn provides the driver with helpful information. *See* J.A. 343 ¶ 32. Rideshare does not resist that understanding of Lalancette, *see* Appellant's Br. 47-48, and we see no reason why that disclosed relation between mobile computer and the driver would fail to "associate" the mobile computer with the driver. Accordingly, we conclude that substantial evidence supports the Board's determination that Lalancette discloses a "communication device associated with the driver of a vehicle."

Third, Rideshare argues that there is not substantial evidence to support the Board's determination that

Kalanick in combination with Kemler discloses sending a "[notification] signal . . . when [a] vehicle is within a predetermined distance from a specific location." J.A. 40-41. The Board relied on expert testimony to conclude that Kalanick teaches a notification signal being sent from the controller to user and driver devices, and that the system can determine if the driver's position is within a predetermined distance from the user's current location. The Board also found that Kemler teaches sending a notification to a server when the driver reaches a particular location. J.A. 42. The Board found that a skilled artisan would have been motivated to combine the two references to "tie transmission of the first signal to a distance at which the user would be in range to visually observe and identify the vehicle, thereby resulting in improved accuracy, efficiency, and privacy of the user identification system." J.A. 42. Rideshare argues that the patent discloses two signals, a notification signal and a signal that represents an indicator, and that Kalanick and Kemler do not teach a notification signal. Yet Kalanick's system transmits a "first signal"/"notification signal" too: because the centralized controller can determine whether the driver arrives at a predetermined position, it must necessarily exchange a signal premised on location data, i.e., the first/notification signal, alongside any other indicatory signals. The specification of Kemler, moreover, discloses that the centralized system may send a signal when the vehicle is within a certain distance from the user, J.A. 330, and the first signal is referred to as a "notification signal" in the '637 patent, J.A. 245. This supports the Board's conclusion that Kemler, in combination with

Kalanick, teaches sending a notification signal when a vehicle is within a predetermined distance from a specified location.

Fourth, Rideshare argues that there is not substantial evidence to support the Board's determination that the combination of Kalanick and Kemler discloses the system "in response to receipt of a signal from the user, generate and transmit a first signal representing an indicator" because Kalanick teaches the user sending a signal, and Kemler teaches a central controller sending a signal representing the indicator to the driver's device. J.A. 94-98. Rideshare argues that Kalanick does not disclose generating and transmitting a first signal in response to the user, but instead the signal is transmitted in response to determining that the user has specified an output configuration because that is an intermediary step that occurs in the claim language. Rideshare's argument supposes that there must be a direct relationship between the user's request and transmitting the signal. We disagree that the claims require a direct link and exclude a causal chain. We agree with the Board that the intermediary step does not disrupt the causal chain. We conclude that substantial evidence supports the Board's conclusion.

We find no reversible error on appeal and affirm the Board's conclusions that the challenged claims are unpatentable.

IV

Lyft's cross-appeal challenges the Board's grant of Rideshare's motion to amend on three independent grounds: patent eligibility under 35 U.S.C. § 101, written description support in the original disclosures, and unpatentability due to obviousness.

Section 101 provides that a patent may be obtained for "any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof." 35 U.S.C. § 101. But "[l]aws of nature, natural phenomena, and abstract ideas are not patentable." *Alice Corp. v. CLS Bank Int'l*, 573 U.S. 208, 216, 134 S. Ct. 2347, 189 L. Ed. 2d 296 (2014) (internal quotations and citation omitted). In *Alice*, the Supreme Court laid out a two-step inquiry to determine whether a patent is directed to eligible subject matter under § 101. We first consider "whether the claims at issue are directed to a patent-ineligible concept." *Id.* at 218. If the claims are directed to a patent-ineligible concept, we then "consider the elements of each claim both individually and 'as an ordered combination' to determine whether the additional elements 'transform the nature of the claim' into a patenteligible application." *Id.* at 217 (quoting *Mayo Collaborative Servs. v. Prometheus Lab'ys, Inc.*, 566 U.S. 66, 78-79, 132 S. Ct. 1289, 182 L. Ed. 2d 321 (2012)).

The Board concluded that the substitute claims were directed to an abstract idea, a patent-ineligible concept, under step one of the *Alice* framework, namely a method

of organizing human activity.[2] J.A. 64-65, 204, 2019, 2042. But under step two, the Board concluded that the claims provided a technological solution to a technological problem in computer and network technologies, which rendered the claims patent eligible. J.A. 64-66, 204-05.

We disagree with the Board's conclusion at step two that the claims are directed to a technological solution. "[I]mproving a user's experience while using a computer application is not, without more, sufficient to render the claims directed to an improvement in computer functionality." *Simio, LLC v. FlexSim Software Prods., Inc.*, 983 F.3d 1353, 1361 (Fed. Cir. 2020) (citation omitted). Here, the claims are directed to improving a user's experience in using a ridesharing app and identifying a driver. But nothing in the claims themselves is directed to an improvement to the mobile device environment itself—the technological improvement more easily enables and facilitates human interactions, but it does not fundamentally alter or improve the way the technology itself functions. The claims use technology as a tool to streamline the process of what is normally accomplished

2. The Board used the USPTO's 2019 Revised Patent Subject Matter Eligibility Guidance and the October 2019 Update, which uses a three-pronged framework. The Guidance is available at: https://www.federalregister.gov/documents/2019/01/07/2018-28282/2019-revised-patent-subject-matter-eligibility-guidance ; https://www.uspto.gov/sites/default/files/documents/peg_oct_2019_update.pdf . We decline to adopt this framework, which is not binding on this Court, and instead evaluate the Board's decision under our precedent, which follows the two-step test set out in *Alice*. *See Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1334 (Fed. Cir. 2016).

by creating hand-printed cards with names to help identify ride pickups at crowded locations, such as an airport. "[I]nvoking a computer merely as a tool" to "improve a fundamental practice or abstract process" does not make an otherwise abstract claim non-abstract. *Customedia Techs., LLC v. Dish Network Corp.*, 951 F.3d 1359, 1364 (Fed. Cir. 2020). We thus conclude that the Board's determination that the substitute claims were directed to patent-eligible subject matter was legal error warranting reversal.[3]

V

We have considered the parties' remaining arguments and find them unpersuasive. For the reasons provided above, we affirm the Board's determination that claims 1-9 and 11-20 of the '637 patent, claims 1, 2, 4, and 6-8 of the '987 patent, claim 1 of the '525 patent, claims 1 and 2 of the '199 patent, and claims 1-5 of the '417 patent are

3. Because we conclude that the substitute claims are not directed to patent eligible subject matter, we may reverse the Board's grant of Rideshare's motion to amend on that independent ground. We also conclude that the substitute claims are unsupported by the original disclosure, because we do not find support for the scenario described in the substitute claims, where a new *indicator* is generated in response to a notification signal when the vehicle is within a predetermined distance of a particular location. The original disclosure merely identifies two alternative scenarios: one where the system generates another indicatory signal when the driver approaches a location, and a second scenario when the driver manually generates another indicator. *See* J.A. 1809, ¶ 30. For that reason, too, the Board's grant of Rideshare's motion to amend was improper.

unpatentable. Because substitute claims 29, 31, and 32 of the '637 patent and claims 3 and 4 of the '199 patent are directed to patent-ineligible subject matter and lack written description support, we reverse the Board's partial grant of Rideshare's motion to amend.

AFFIRMED-IN-PART AND REVERSED-IN-PART

COSTS

Costs to Cross-Appellant.

APPENDIX B — OPINION OF THE PATENT TRIAL AND APPEAL BOARD, DATED APRIL 10, 2023 (IPR2021-01598)

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

LYFT, INC.,

Petitioner,

v.

RIDESHARE DISPLAYS, INC.,

Patent Owner.

IPR2021-01598
Patent 9,892,637 B2

Before THOMAS L. GIANNETTI, LYNNE E. PETTIGREW, and JOHN D. HAMANN, *Administrative Patent Judges.*

GIANNETTI, *Administrative Patent Judge.*

JUDGMENT
Final Written Decision
Determining All Challenged Claims Unpatentable
35 U.S.C. § 318(a)

Appendix B

ORDER
Granting In Part Motion to Amend
37 C.F.R. § 42.121
Denying Motion to Exclude
37 C.F.R § 4.64

I. INTRODUCTION

Lyft, Inc. ("Petitioner") filed a Petition (Paper 1, "Pet.") requesting *inter partes* review of claims 1–9 and 11–20 (the "challenged claims") of U.S. Patent No. 9,892,637 B2 (Ex. 1001, "the '637 patent"). Patent Owner, Rideshare Displays, Inc., filed a Preliminary Response (Paper 6, "Prelim. Resp."). We determined that Petitioner has established a reasonable likelihood that it would prevail with respect to at least one claim. We, therefore, instituted *inter partes* review as to all of the challenged claims of the '637 patent and all of the asserted grounds of unpatentability in the Petition. Paper 7 ("Institution Dec.").

Following institution, Patent Owner filed a Response. Paper 13 ("PO Resp."). Subsequently, Petitioner filed a Reply (Paper 18, "Pet. Reply"), and Patent Owner filed a Sur-reply (Paper 22, "PO Sur-reply").

After institution, Petitioner filed a contingent Motion to Amend (Paper 12, "Mot. Amend") and requested that we provide preliminary guidance in accordance with the Board's pilot program concerning motion to amend practice and procedures. Mot. Amend 1; *see* Notice Regarding a New Pilot Program Concerning Motion to Amend Practice

and Procedures in Trial Proceedings under the America Invents Act before the Patent Trial and Appeal Board, 84 Fed. Reg. 9,497 (Mar. 15, 2019) ("Notice"). *See* Section IV, *infra.* In addition, Patent Owner filed a Motion to Exclude Evidence (Paper 27) and Petitioner filed an Opposition (Paper 28). *See infra*, Section V.

On January 10, 2023, we held a consolidated oral hearing with four related cases.[1] A transcript of the hearing is included in the record. Paper 31 ("Hearing Tr.").

We have jurisdiction under 35 U.S.C. § 6. This decision is a Final Written Decision issued pursuant to 35 U.S.C. § 318(a). For the reasons we discuss below, we determine that Petitioner has proven by a preponderance of the evidence that claims 1–9 and 11–20 of the '637 patent are unpatentable.

In addition, because we determine that Petitioner has failed to establish by a preponderance of the evidence that proposed substitute claims 29, 31, and 32 of Patent Owner's contingent Motion to Amend are unpatentable, we grant the Motion to Amend as to those claims.

II. BACKGROUND

A. Related Matters

The parties identify the following district court proceeding involving the '637 patent: *Rideshare Displays,*

1. Those cases are IPR2021-01599, IPR2021-01600, IPR2021-00691, and IPR2021-01602.

Inc. v. Lyft, Inc., 20-cv-01629-RGAJLH (D. Del.). Pet. 1; Paper 5, 2.

The parties also identify several petitions for *inter partes* review of patents related to the '637 patent: IPR2021-01599, IPR2021-01600, IPR2021-01601, and IPR2021-01602. Pet. 1; Paper 5, 2.

B. Real Parties-in-Interest

Petitioner identifies Lyft, Inc. as the only real party-in-interest. Pet. 1. Patent Owner identifies Rideshare Displays, Inc. as the only real party-in-interest. Paper 5, 2.

C. The '637 Patent (Ex. 1001)

The '637 patent is titled "Vehicle Identification System." Ex. 1001, (54). The patent describes a system for providing an indicator on a mobile communication device of a user having requested a ride service to allow the user to identify a vehicle prior to boarding the vehicle. *Id.* at 1:21–25. According to the patent, "[a] continuing need exists for systems and methods adapted for use by transportation services to ensure rider and driver security." *Id.* at 1:56–58.

Two separate embodiments of the invention are shown in Figures 1A and 1B, following:

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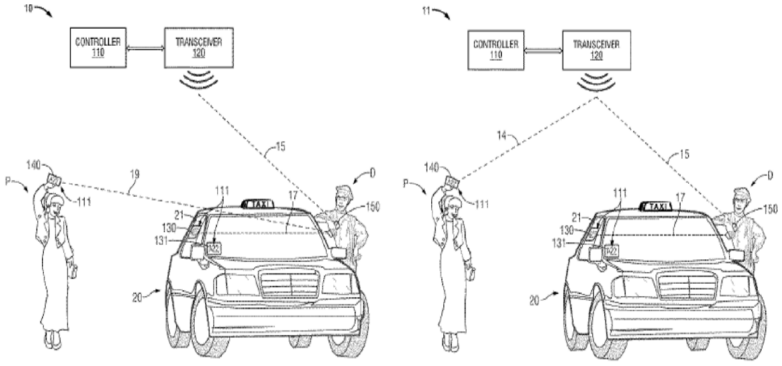

Fig. 1A Fig. 1B

Figures 1A and 1B illustrate two embodiments of a vehicle identification system in accordance with the '637 patent. *Id.* at 2:35–40. Referring first to Figure 1A, vehicle identification system 10 includes controller 110, transceiver 120, and one or more displays associated with motor vehicle 20. *Id.* at 3:54–56. First display 130 is associated with passenger side rear window 21 of motor vehicle 20, and second display 131 is associated with the front windshield of motor vehicle 20. *Id.* at 3:57–60. Vehicle identification system 10 can generate one or more signals representing an indicator, which may be displayable as a "code" (e.g., a text string or an alphanumeric string), an icon, or other identifier, on display 130 and on mobile communication device 140 associated with user P to enable the user to identify the vehicle that he or she has requested for a ride service. *Id.* at 4:4–10.

Figure 3 is a flowchart illustrating a method of identifying a vehicle in accordance with the '637 patent. Ex. 1001, 2:44–46. Figure 3 follows:

Appendix B

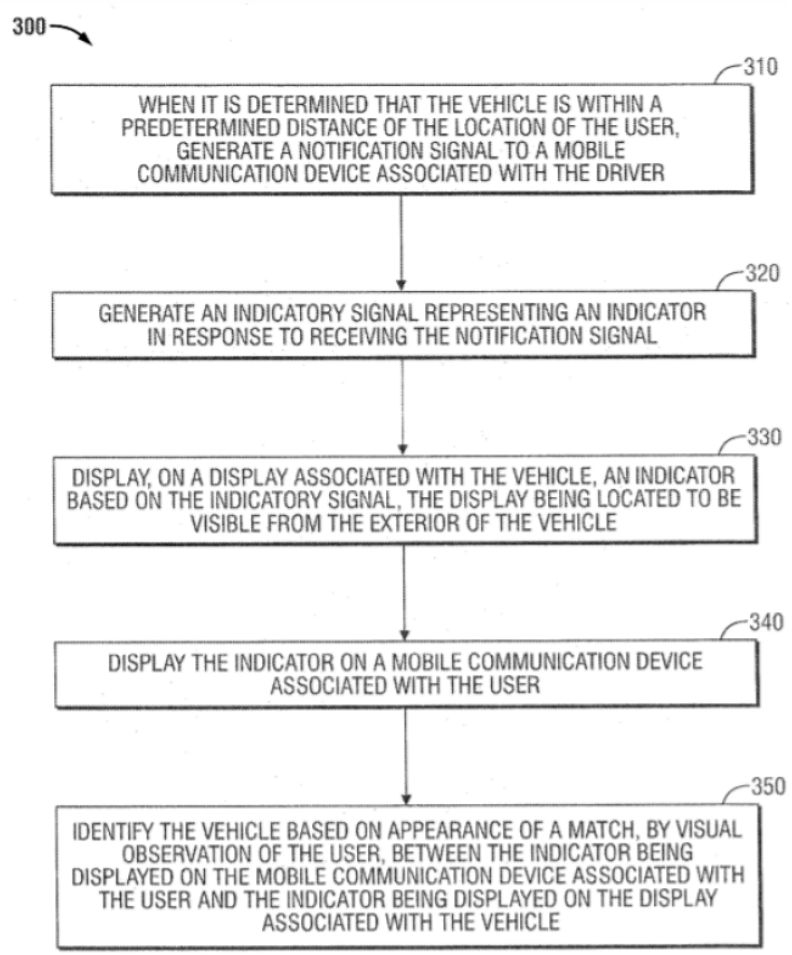

Figure 3 illustrates a method of identifying a vehicle being dispatched to a location of a user having requested a ride from a transportation service. *Id.* at 6:62–6:64. When it is determined that motor vehicle 20 is within a predetermined distance of the location of user P, notification signal 15 is generated to mobile communication

device 150 associated with driver D. *Id.* at Fig 3, block 310. Indicatory signal 17 representing indicator 111 is generated in response to receiving notification signal 15. *Id.* at Fig. 3, block 320. Indicator 111 based on indicatory signal 17 is displayed on display 130 associated with vehicle 20. *Id.* at Fig. 3, block 330. Display 130 is located to be visible on the exterior of vehicle 20. *Id.* at 7:8–9.

Indicator 111 is also displayed on mobile communication device 140 associated with user P. *Id.* at Fig. 3, block 340. Motor vehicle 20 is identified based on appearance of a match, by visual observation of user P, comparing the indicator being displayed on the mobile communication device associated with user P and the indicator being displayed on the display associated with vehicle 20. *Id.* at Fig. 3, block 350.

In the embodiment of Figure 1A, the mobile communication device associated with driver D generates a second signal representing an indicator that is transmitted to mobile communication device 140 associated with user P. *Id.* at 5:28–33. In the embodiment of Figure 1B, vehicle identification system 11 generates indicatory signal 14 transmitted to the mobile communication device associated with user P and notification signal 15 to be transmitted to the mobile communication device associated with driver D. *Id.* at 5:40–45. In this embodiment, the driver's mobile communication device does not communicate with the user's mobile communication device. *Id.* at 5:45–50.

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D. Illustrative Claim

The '637 patent has 20 claims. As noted, claims 1–9 and 11–20 are challenged in the Petition. Pet. 7. Claims 1, 9, and 13 are independent claims. Claim 1 is illustrative of the claimed subject matter and is reproduced below:[2]

> 1. [Preamble] A vehicle identification system, comprising:
>
> [1A] at least one display associated with a vehicle, wherein the at least one display is located to be visible from an exterior of the vehicle by a rider;
>
> [1B] a transceiver, and
>
> [1C] a controller communicatively coupled to the transceiver,
>
> [1D] wherein the controller is adapted to generate a first signal to be transmitted by the transceiver to a mobile communication device associated with a driver of the vehicle when it is determined that the vehicle is within a predetermined distance of a specific location,
>
> [1E] wherein the mobile communication device associated with the driver is adapted

2. Paragraph references in brackets were added tracking Petitioner's analysis.

> to generate a second signal to be transmitted to the at least one display, the second signal representing an indicator.

Ex. 1001, 7:28–42.

E. Prior Art References and Other Evidence

Petitioner relies on the following references (Pet. 7):

1. U.S. Patent Pub. 2015/0332425 A1 (Jan. 23, 2015) (Ex. 1006, "Kalanick");

2. U.S. Patent No. 9,494,938 B1 (Apr. 3, 2014) (Ex. 1008, "Kemler");

3. U.S. Patent Pub. 2012/0137256 A1 (May 31, 2012) (Ex. 1009, "Lalancette").

In addition to these references, Petitioner relies on three Declarations of David Hilliard Williams. Ex. 1003 ("Williams I Decl."); Ex. 1027 ("Williams II Decl."); Ex. 1030 ("Williams III Decl."). Patent Owner has submitted a first Declaration of Dr. Matthew Valenti with the Preliminary Response (Ex. 2001 "Valenti I Decl."), and thereafter, second and third declarations of Dr. Valenti (Ex. 2021, "Valenti II Decl."; Ex. 2023, "Valenti III Decl."). In addition, the parties have submitted deposition transcripts for those witnesses.[3]

3. Ex. 1029 ("Valenti Dep."); Ex. 2022 ("Williams Dep."),

E. The Asserted Grounds of Unpatentability

Petitioner asserts the following grounds of unpatentability. Pet. 7.

Claim(s) Challenged	35 U.S.C. §	Reference(s)/ Basis[4]
1–9, 11–20	103	Kalanick, Kemler
1–9, 11–20	103	Lalancette, Kemler

III. ANALYSIS OF THE CHALLENGED CLAIMS

A. Obviousness

A claim is unpatentable as obvious under 35 U.S.C. § 103 "if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains." 35 U.S.C. § 103 (2011). The question of obviousness is resolved on the

4. Petitioner's obviousness challenges additionally refer to the "knowledge of a [person of ordinary skill in the art]." Pet. 7. While we do not list such knowledge separately, we consider it as part of our obviousness analysis. *See Randall Mfg. v. Rea*, 733 F.3d 1355, 1362 (Fed. Cir. 2013) ("As *KSR* established, the knowledge of such an artisan is part of the store of public knowledge that must be consulted when considering whether a claimed invention would have been obvious.").

basis of underlying factual determinations, including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) so-called "secondary considerations," including commercial success, long-felt but unsolved needs, failure of others, and unexpected results. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). Neither party has presented any evidence on the fourth *Graham* factor and we therefore do not consider it in our analysis.

B. Level of Ordinary Skill in the Art

According to Petitioner, a person of ordinary skill in the pertinent art "would have had at least a bachelor's degree in electrical or computer engineering, or a similar field with at least two years of experience in the field of vehicle location and tracking systems or related technologies." Pet. 11. Petitioner adds that "[a] person with less education but more relevant practical experience may also meet this standard. The prior art also evidences the level of skill in the art." *Id.* (citing Williams I Decl. ¶ 44).

Patent Owner provided a slightly different formulation. According to Patent Owner, a person of ordinary skill at the relevant time would have:

> i) at least a bachelor's degree in electrical or computer engineering, or a similar field;
>
> ii) at least two years of experience in wireless cellular network protocols, including

> location and tracking/positioning, and having an understanding of signal timing and reliability issues in such wireless cellular network protocols; and
>
> iii) knowledge of issues with respect to data privacy and database storage systems. Regarding data privacy, the [person of ordinary skill] need not have extensive knowledge in, e.g. data encryption methodologies, but would have experience with data privacy policies and protection models.

Prelim. Resp. 5. At the institution stage, we adopted Petitioner's more general formulation, with a qualification. We stated "[w]e would also expect a person of ordinary skill to also have at least some experience in wireless cellular network protocols, as suggested by Patent Owner." Institution Dec. 16. We reasoned that our review of the '637 patent and the cited prior art does not suggest that specific experience with data privacy policies and protection models would be required, given the focus of the '637 patent on more general principles of cellular communications and signaling. *Id.* However, we observed that the arguments presented by the parties did not depend on the definition of the person or ordinary skill, and, therefore, our decision would be the same under either formulation. *Id.* at 16–17.

Patent Owner responds that it "disagrees" with our formulation because "the ['637] patent is not directed to a vehicle tracking system." PO Resp. 4. Patent Owner

explains that "[i]t is directed to a communication system between a rider and driver, albeit using location based services in some aspects of this system, and thus a [person of ordinary skill] would be a person who is skilled in the field of communication systems along cellular networks." *Id.*

We agree that the patented technology involves cellular communications, and this is adequately reflected in our formulation, where we stated "[w]e would also expect a person of ordinary skill to also have at least some experience in wireless cellular network protocols, as suggested by Patent Owner." Institution Dec. 16. But Patent Owner continues that "a [person of ordinary skill] should have knowledge of wireless communications protocols and some general experience with data privacy issues and protection models, in addition to the education level in electrical or computer engineering identified by the parties." PO Resp. 4–5. Patent Owner cites no authority for this proposal, which we rejected in our Institution Decision based on our review of the patent and the prior art. Institution Dec. 16. We, therefore, maintain our formulation of the person of ordinary skill from our Institution Decision.

Patent Owner segues from discussing the scope of knowledge of a person of ordinary skill to an attack on Mr. Williams's testimony. PO Resp. 5–6. We are not persuaded by Patent Owner's citations to Mr. Williams's testimony, or by Patent Owner's attempt to discredit Mr. Williams's opinions on the pertinent art as "overreach." *Id.* None of the testimony cited by Patent Owner relates

to the Kalanick, Lalancette, or Kemler references. Nor do we agree that Mr. Williams's testimony concerning background technology "infects each argument that Petitioner makes with respect to the knowledge of a [person of ordinary skill]," as Patent Owner alleges. *Id.* at 6. Patent Owner does not point to any specific arguments that would be so "infected." We find, instead, as we stated in our Institution Decision, that "the arguments presented by the parties do not depend on the definition of the person or ordinary skill, and therefore, our decision would be the same under either formulation." *See* Institution Dec. 16–17.

C. Claim Construction

For this *inter partes* review, the Board applies the same claim construction standard as that applied in federal courts. *See* 37 C.F.R. § 42.100(b) (2019). Under this standard, claim terms "are generally given their ordinary and customary meaning" as understood by a person of ordinary skill in the art in question at the time of the invention. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (en banc). "In determining the meaning of the disputed claim limitation, we look principally to the intrinsic evidence of record, examining the claim language itself, the written description, and the prosecution history, if in evidence." *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 469 F.3d 1005, 1014 (Fed. Cir. 2006) (citing *Phillips*, 415 F.3d at 1312–17). Extrinsic evidence is "less significant than the intrinsic record in determining 'the legally operative meaning of claim language.'" *Phillips*, 415 F.3d at 1317.

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Petitioner prefaced its claim construction discussion by stating "Petitioner interprets all claim terms in accordance with their ordinary and customary meaning *unless otherwise stated below*." Pet. 12 (emphasis added). Petitioner then proceeded to criticize three constructions proposed by Patent Owner in district court: "first signal/indicatory signal," "indicator," and "indicatory signal." *Id.* at 12–13. Petitioner claimed that Patent Owner's proposed construction of these terms "requires something to be 'actively formulated' by the controller." *Id.* at 13. Petitioner disagreed with those constructions, observing that "[t]he term 'actively formulated' is not used anywhere in the patent specification and does not add clarity to the meaning of these claim terms." Instead, Petitioner asserted the terms should be given "their respective ordinary and customary meanings." *Id.*

Patent Owner responded that three terms, in context, required construction and addressed each in the Preliminary Response. Prelim. Resp. 6–12.

In our Institution Decision, we addressed the parties' proposed constructions of "indicator" and "indicatory signal" as well as the construction of "generate," which we identified as an additional term requiring construction. Institution Dec. 18–24. We further address the construction of these terms below.

1. First Signal/Indicatory Signal Terms

According to Patent Owner, "Petitioner is both incorrect in presenting the terms 'First Signal' and

'Indicatory Signal' as the same for all three [independent] claims and in asserting that they do not require construction." Prelim. Resp. 9. Patent Owner explained that "the two signals are very different– one indicates when a driver/vehicle is near a specific location and the other relates to what is displayed so the rider and driver can be matched." *Id.* at. 7.

Patent Owner asserted that "a controller in a vehicle identification system actively formulates an indicator (or code/indicatory symbol which represents an indicator) that is sent to the rider, and driver, which is ultimately displayed for each ride." *Id.* at 9. The controller "generates a signal sent by the transceiver to the driver's 'mobile communication device' when the driver is within a predetermined distance to a location." *Id.* Patent Owner continued, "the location signal is very different from the signal that indicates what code should be on the display." *Id.* at 10. Thus, Patent Owner proposed separate constructions for "location signal" and "indicatory signal." *Id.*

For "location signal," Patent Owner proposed "a notification signal for activating a driver's mobile communication device." *Id.* at 10. As Patent Owner's analysis acknowledged, however, the term "location signal" does not appear in the claims. Instead, claim 1 refers to "a first signal to be transmitted by the transceiver to a mobile communication device associated with a driver of the vehicle when it is determined that the vehicle is within a predetermined distance of a specific location." Ex. 1001, 7:33–37. Claim 9 recites the step of "when it is determined

that the vehicle is within a predetermined distance of the location of the user, generating a notification signal to a mobile communication device associated with the driver." *Id.* at 8:1–4. And although claim 13 makes no reference to location, its dependent claim 15 specifies that "the first, second and third signals are transmitted when it is determined that the vehicle is within a predetermined distance of a specific location of the user." *Id.* at 8:45–47.

We did not agree with Patent Owner's assertion that the term "location signal" requires a special construction. Institution Dec. 19. We observed that the claims themselves adequately describe the signals that Patent Owner equates to "location signals." *Id.* For example, claim 1 recites "a first signal to be transmitted by the transceiver to a mobile communication device associated with a driver of the vehicle when it is determined that the vehicle is within a predetermined distance of a specific location." *Id.* at 7:33–37.

Similarly, we saw no need to adopt a special construction for "indicatory signal." Institution Dec. 19; *see* Section III.C.3, *infra*.

For the reasons given, therefore, we did not adopt Patent Owner's construction for these terms, as the terms do not require special constructions beyond plain meaning. Institution Dec. 19. Patent Owner's Response does not address the construction of these terms. Therefore, for the reasons given, we maintain our decision that no special construction is necessary for these terms.

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2. Indicator

For the term "indicator" (as in "indicatory signal representing an indicator"), Patent Owner proposed the following construction: "any code (e.g., text, alphanumeric, icon, or other symbol), color, etc., or combination thereof, which displays and enables a match between user/rider and driver that preferably is not duplicated in the same pickup location." Prelim. Resp. 11.

The '637 patent describes an indicator as "a 'code' (e.g., a text string or an alphanumeric string), an icon, or other identifier, on the display 130 and on a mobile communication device 140 associated with the user P to enable the user P to identify the vehicle that he/she has requested for a ride service." Ex. 1001, 4:6–10. Consistent with this description in the specification, we construed the term "indicator" as a code (e.g., a text string or an alphanumeric string), an icon, or other identifier, for display to enable a match between a user/rider and a driver. Institution Dec. 20.

We did not see a basis in the claims or specification for Patent Owner's contention that a "new unique indicator" must be "actively formulate[d] . . . for each rider-driver trip while the driver is in transit." *Id.* at 20 (citing Prelim. Resp. 29).

Patent Owner does not address the construction of "indicator" in its Response. For the reasons given, therefore, we maintain our construction of this term. We

discuss Patent Owner's contention that a new indicator must be "actively formulated" further in connection with our consideration of the claim term "generate," *infra*.

3. Indicatory Signal

Patent Owner contended that the term "indicatory signal" is not the "'indicator'– . . . it is the signal that tells the display what 'indicator' to display." Prelim. Resp. 11. As in the case of the term "indicator," we did not see a basis for construing this term as requiring that the signal be "actively formulated," in the sense described by Patent Owner. Institution Dec. 20–21. We, therefore, did not adopt Patent Owner's construction. *Id.* at 21.

The claims themselves adequately describe the signals identified as indicatory signals by Patent Owner. For example, claim 9 recites the step of "generating an indicatory signal representing an indicator in response to receiving the notification signal." Ex, 1001, 8:5–6.

Patent Owner does not address this construction in its Response. Therefore, for the reasons given, we maintain our construction of this term.

4. Generate

Based on the arguments presented and on Patent Owner's analysis of the prior art in the Preliminary Response, we identified "generate" as an additional term appearing in the challenged claims that required construction, as it relates to the controller in such phrases

as "generate a second signal to be transmitted to the at least one display, the second signal representing an indicator." Institution Dec. 10 (citing Ex. 1001, 7:39–42 (claim element 1E)).

Referring to the specification, Patent Owner explained that "a controller in a vehicle identification system actively 'formulates an indicator . . . that is sent to the rider and driver, which is ultimately displayed for each ride." Prelim. Resp. 9 (emphasis added). Patent Owner's analysis of the claims equated the claim term "generate" a signal with "actively formulate" an indicator. *See id.* at 29 ("[T]he present invention actively formulates a new unique indicator for each rider-trip while the driver is in transit"). In discussing claim limitation 1E, which recites "generate a second signal . . . representing an indicator," Patent Owner asserts that "[t]he claims require that a new signal [i.e., not 'pre-associated with a particular rider or a particular driver'] be actively formulated each time a ride is dispatched." *Id.* at 32.

We declined to adopt this implicit construction (and the related construction "actively generate"). Institution Dec. 22. The claims themselves do not require the controller to "actively formulate" a new indicator for the same rider requesting a subsequent trip for that second trip, or that "a new signal be actively formulated each time a ride is dispatched" as Patent Owner's analysis asserts. *See infra*.

Nor is it clear how this construction is supported by the '637 patent specification. The '637 patent describes the controller as "communicatively coupled to the

transceiver." Ex. 1001, 1:65–66. Further, "[t]he controller is adapted to generate a first signal to be transmitted by the transceiver to a mobile communication device." *Id.* at 1:67–2:2. Elsewhere in the patent, "controller" is defined as "any type of computing device, computational circuit, or any type of processor or processing circuit capable of executing a series of instructions that are stored in a memory associated with a with the controller." *Id.* at 2:60–64. The operation of the controller is also described as follows: "The controller 110 may generate a first signal (also referred to herein as a 'notification signal') that is transmitted via the transceiver 120 to the mobile communication device 150 associated with the driver D." *Id.* at 5:1–4.

Still further, "[t]he controller 110 generates four different notification signals, NOTIFICATION-A, NOTIFICATION-B, NOTIFICATION-C, and NOTIFICATION-D, to be transmitted by the transceiver 120 to a first DRIVER'S MOBILE DEVICE 150A, a second DRIVER'S MOBILE DEVICE 150B, a third DRIVER'S MOBILE DEVICE 150C, and a fourth DRIVER'S MOBILE DEVICE 150D, respectively." *Id.* at 6:26–33. And further, "[i]n other embodiments, wherein the vehicle identification system 11 is utilized, an indicatory signal to the rider's mobile communication device may be generated by the controller 110." *Id.* at 6:58–61.

In none of these descriptions of the controller's operation is there mention of "actively formulates," or a disclosure that the controller "actively formulates" a

new indicator for the same rider requesting a subsequent trip for that second trip, or that "a new signal be actively formulated each time a ride is dispatched." *See infra*. Instead, as discussed *supra*, the specification describes the indicator, for example, as "a 'code' (e.g., a text string or an alphanumeric string), an icon, or other identifier, on the display 130 and on a mobile communication device 140 associated with the user P to enable the user P to identify the vehicle that he/she has requested for a ride service." Ex. 1001, 4:6–10.

Because the specification and prosecution history do not explicitly provide a definition for the term "generate," we looked to extrinsic sources to determine its plain meaning. Institution Dec. 23–24. The Federal Circuit has approved the use of dictionaries for guidance in claim construction, "so long as the extrinsic evidence does not contradict the meaning otherwise apparent from the intrinsic record." *Helmsderfer v. Bobrick Washroom Equip., Inc.*, 527 F.3d 1379, 1382 (Fed. Cir. 2008); *see also Comaper Corp. v. Antec, Inc.*, 596 F.3d 1343, 1348 (Fed. Cir. 2010) (approving of "consult[ing] a general dictionary definition of [a] word for guidance" in determining ordinary meaning); *Praxair, Inc. v. ATMI, Inc.*, 543 F.3d 1306, 1325 (Fed. Cir. 2008) ("[O]ur decisions, including *Phillips*, do not preclude the use of general dictionary definitions as an aid to claim construction.") (citation omitted).

One dictionary definition of "generate" is "to bring into existence: such as: . . . to originate by a vital, chemical, or physical process**:** PRODUCE." *See* https://www.merriam-webster.com/dictionary/generate. We,

therefore, construed the term "generate" as it relates to the controller in reference to a signal in accordance with its plain and ordinary meaning, which is to originate or produce the signal. Institution Dec. 23–24.

Patent Owner's Response does not directly respond to this construction. PO Resp. 7. Instead, Patent Owner asserts that "at institution, the Board determined that the term 'generating should be construed according to its ordinary meaning. . . . Applying ordinary meaning should still lead to the conclusion that the prior art does not render the claims of the patent unpatentable." *Id.*

For the foregoing reasons, we maintain our construction of "generate" a signal as "to originate or produce the signal." Institution Dec. 24.

5. Other Terms

To the extent we need to interpret any other terms, we will do so in the context of the analysis of the prior art that follows.

D. Description of the Prior Art References

1. Kalanick (Ex. 1006)

Kalanick discloses a system for arranging an on-demand service to be provided by a transport service provider to a requesting user. Ex. 1006 ¶ 2. Kalanick describes a dynamically configured and personalized

display that is positioned on or fastened to a vehicle. The display is easily visible to a user outside of the vehicle and informs the user which vehicle has been assigned to the user for the on-demand service. *Id.* ¶ 10.

The on-demand service system can arrange a transport service for a user by receiving a request for transport from the user's device, selecting a driver from a plurality of available drivers to perform the transport service for that user, sending an invitation to the selected driver's device, and receiving an acceptance of the invitation by the selected driver. *Id.* ¶ 11.

The on-demand service system described by Kalanick can associate an identifier of the user and an identifier of the driver with an entry for that transport service. Once the on-demand service system arranges the transport service for the user and the driver, the transport personalization system can access a user database to determine whether that user has specified an output configuration for an indication device (e.g., determine whether the user has personalized at least one aspect of the transport service). *Id.*

This operation is illustrated in Figure 1 of Kalanick, following:

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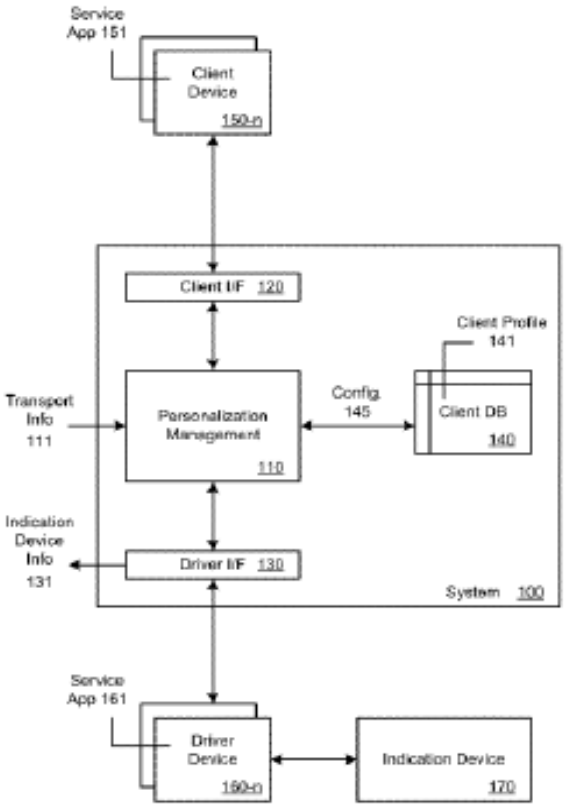


FIG. 1

Figure 1 of Kalanick illustrates a system to provide configuration information for controlling an indication device for use with an on-demand service. *Id.* ¶ 3. System 100 can communicate, over one or more networks via a network interface (e.g., wirelessly or using a wire), with client devices 150 (e.g., mobile computing devices operated

by clients or users/customers) and driver devices 160 (e.g., mobile computing devices operated by drivers) using client device interface 120 and driver device interface 130, respectively. *Id.* ¶ 25. System 100 can receive transport information 111 about the transport service from the on-demand service system and determine whether to transmit user-specified configuration data to the driver device of the driver selected to provide the transport service. *Id.* ¶ 26.

Client database 140 stores a plurality of client profiles 141 for each user that has an account with the on-demand service system. A client profile 141 can include a user identifier. *Id.* ¶ 29. When personalization management 110 receives transport information 111, the personalization management can use the user ID to access client database 140. *Id.*

Personalization management 110 can perform a lookup of client profile 141 (e.g., using the user's ID or user's device ID) and determine if the user has specified an output configuration for an indication device. If the user has specified the output configuration, the personalization management can determine and/or retrieve configuration data 145 corresponding to the specified configuration for that user. *Id.* ¶ 30. If the user does not provide indication preferences, however, the personalization management can store or maintain default indication preferences in the user's profile 141. *Id.*

The personalization management can transmit the user's configuration data 145 corresponding to the user's

indication preferences (or default configuration data if the user has not specified indication preferences) to the driver device. *Id.* ¶ 31.

In one example, the on-demand service system can use location information from driver's device 160 and/or transport information 111 to automatically determine the driver's state, and based on the state of the transport service or the driver, system 100 and/or the service application 161 can control the operation of the indication device 170. *Id.* ¶¶ 35–36.

The state of the transport service can correspond to the driver "arriving now." *Id.* ¶ 37. When service application 161 determines that the transport service is to change states from "en route" to "arriving now," the service application can trigger or control the indication device to output the user's specified color, e.g., blue, (and/or other preferred output content, patterns, or sequences) so that the user can see which vehicle is approaching and will provide the service for the user. *Id.* The service application can also control the indication device to output the user's specified display/output preferences in a specific configuration that is based on the transport state. *Id.*

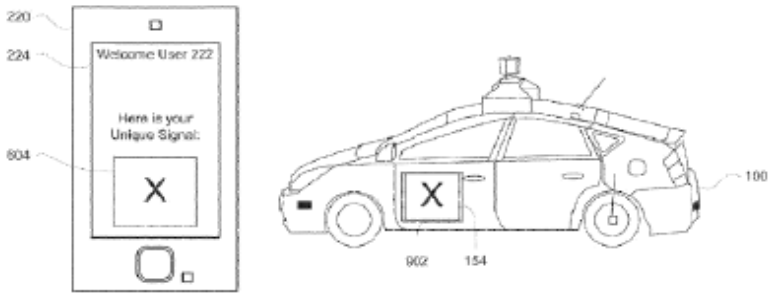
2. Kemler (Ex. 1008)

Kemler discloses providing a user with a way to identify or verify a driverless vehicle dispatched to pick up the user. Ex. 1008, 3:38–41. Once the vehicle is within a certain distance of the user, the vehicle may signal to the user in order to identify the vehicle to the user and avoid

confusion. This signaling could include a display or audio including a unique string of text. *Id.* at 3:43–47.

Kemler describes the dispatched vehicle as having an external electronic display mounted on the vehicle and an internal electronic display. *Id.* at 5:22–24. Kemler explains that as the dispatched vehicle approaches the user's client device, a unique signal may be displayed on the vehicle's external display and the user's client device so the user can identify the vehicle without compromising the user's privacy. *Id.* at 4:1–19.

This operation is illustrated in Figure 9 of Kemler, following:



900
FIGURE 9

Figure 9 is a diagram 900 of a client computing device and a computing device of a vehicle displaying unique signal "X" around the same time. *Id.* at 12:45–47. By comparing unique signal 604 of display 224 to unique signal 902 of external electronic display 154, a user may

recognize that vehicle 100 was dispatched for that user. *Id.* at 12:47–51. If the signals are the same, the user can easily identify the vehicle, and if not, the user may continue to look for the vehicle dispatched for that user. *Id.* at 12:51–53.

3. Lalancette (Ex. 1009)

In its most relevant embodiment, Lalancette describes an electronic display mounted to be visible from outside a taxi, a mobile computing device in the taxi that manages a dash-mounted driver display and the mounted electronic display, and a smart phone of a user. Ex. 1009 ¶¶ 27–33.

The taxi is equipped with an electronic display mounted outside of the taxi car or at least visible from outside the taxi car as well as a dash-mounted driver display. The displays are configured to display information received from the taxi dispatch service. *Id.* ¶ 27.

In one scenario described by Lalancette, a user orders a taxi using a handset to request taxi service from a taxi dispatch service. *Id.* ¶ 29. The user device (the handset) conveys user identification (user ID) to the service provider. *Id.* The service provider validates the request to ensure the request can be accommodated. *Id.* ¶ 30. An automated dispatch system uses the user's location to select the most suitable taxi car to respond to the request for service from the user. *Id.*

The service provider then requests a personal human-readable icon for the user from an icon server by sending a message carrying a user ID for the user. The icon server

uses the user ID to retrieve a personal icon corresponding to the user from an icon database. *Id.* ¶ 31.

The icon server sends the retrieved icon to the service provider. *Id.* ¶ 32. The service provider dispatches the selected taxi car to the location of user and displays the user's icon on the taxi's roof-top electronic display and the driver's dashboard display. *Id.* The service provider also transmits a copy of the icon to the user device for confirmation to the user. *Id.*

In one embodiment, as part of the dispatch procedure, the service provider transmits the dispatch information and the user's icon to a mobile computer in the taxi car, and the mobile computer manages the taxi roof-top electronic display 122 and the driver's dashboard display. *Id.*

When then taxi car approaches the user's location, the user can view the rooftop display to identify the taxi car as the taxi responding to the user's request. *Id.* ¶ 33. The user can compare the display of the icon on rooftop display to the copy of the icon on the user's device 104 to confirm the identity of the taxi. *Id.*

E. Motivation to Combine Kemler with Kalanick and Lalancette

1. Introduction

Petitioner asserts that a person of ordinary skill would have been motivated to combine the teachings of Kalanick and Kemler with a reasonable expectation of success. Pet. 21–27; Williams I Decl. ¶¶ 113–125.

Petitioner asserts that both Kalanick and Kemler address similar problems related to vehicle identification. Pet. 21–22. Furthermore, Petitioner asserts that "[b]oth teach similar solutions involving generating, transmitting, and displaying unique, easily distinguishable visual indicators on multiple displays such that users can visually match the unique indicators to efficiently identify their assigned vehicle." *Id.* at 22. Further, "[b]oth also utilize vehicle mounted displays which are visible from the outside of the vehicle." Pet. 22; Williams I Decl. ¶ 113. Petitioner asserts "a [person of ordinary skill] would have a reasonable expectation of success as this would require nothing more than modifying the software of *Kalanick's* system to permit the central controller to create and assign unique indicators, using the technique taught in *Kemler*." Pet. 26; Williams I Decl. ¶ 122.

Similarly, Petitioner contends a person of ordinary skill would have been motivated to combine the teachings of Lalancette and Kemler. Pet. 53– 56; Williams I Decl. ¶¶ 218–226. Petitioner asserts that "*Lalancette* and *Kemler* address similar problems related to vehicle identification and share the common objective of enabling riders to visually locate a requested vehicle while protecting the rider's privacy, safety, and security." Pet. 53. Further, "[b]oth teach similar solutions involving generating, transmitting, and displaying unique visual indicators on multiple displays such that users can visually match the unique indicators to efficiently identify their assigned vehicle." *Id.*

Finally, Petitioner explains that a person of ordinary skill would have had a reasonable expectation of success

in making the combination. *Id.* at 56. "Because both of the systems utilize the same basic display technologies and similar techniques for generating, transmitting, and displaying unique privacy-protected visual indicators, it would have been well within a [person of ordinary skill's] level of skill to implement Lalancette's taxi identification system with the additional technical details taught for Kemler's substantially similar vehicle identification system." *Id.* (citing Williams I Decl. ¶ 225).

2. Patent Owner's Contentions

Patent Owner responds that the Petition fails to provide a sufficient motivation to combine Kemler with either Kalanick or Lalancette. PO Resp. 8 (Kemler), 41 (Lalancette). For example, Patent Owner contends that Petitioner assertion that Kalanick and Kemler "teach similar solutions" is insufficient proof of a motivation to combine "as a matter of law." *Id.* at 10– 11. Patent Owner asserts that Kalanick "already mitigates" the potential "duplication" problem created when riders from the same area select the same or similar indicators. *Id.* at 12– 14. Patent Owner argues that "combining known technologies" is not sufficient to establish a motivation to combine Kemler and Kalanick. *Id.* at 14–18. Patent Owner contends Petitioner fails to "substantiate" its assertion that modifying Kalanick based on Kemler to tie transmission of the first signal [from the central system to the driver's mobile device] to a distance at which the user would be in range will result in "improved accuracy, efficiency, and privacy of the user." *Id.* at 18–22 (internal quotation marks omitted; alterations in original). Patent Owner asserts that "Petitioner fails to show that there

are only two ways to generate a signal when a vehicle is within a predetermined distance." *Id.* at 21–24. And Patent Owner contends there is no "evidence of a reasonable expectation of success in combining Kemler to make up the deficiencies of Kalanick." *Id.* at 24–25. Patent Owner asserts that "[t]he immense expense and complexity of operating a server 'farm' would be a reason to *avoid* Kemler's teachings." *Id.* at 24.

Patent Owner makes similar arguments asserting an insufficiency of evidence of a motivation to combine Kemler with Lalancette. PO Resp. 41– 47. For example, in addition to the arguments discussed above in connection with Kalanick, Patent Owner asserts that "Kemler is no better at protecting privacy than Lalancette." *Id.* at 43–45. Patent Owner also argues that "Petitioner has failed to substantiate that the combination [of Kemler and Lalancette] would improve efficiency." *Id.* at 46. Patent Owner expands on this latter argument as follows: "Petitioner provides no support for the claim that combining the system of Kemler to Lalancette would make Lalancette more efficient by virtue of turning the icon indicator light on when the vehicle was in a predetermined distance to the location of the user." *Id.* at 46.

Patent Owner argues also that "there is no reasonable expectation of success in combining Kemler with Lalancette." *Id.* at 34–35. Patent Owner explains that "[t]he relatively simplicity of the configuration of Lalancette – an icon server and icon database in a network, contrasts with the complexity of operating the server farm of Kemler." *Id.* at 47.

3. Discussion

For the reasons that follow, we find that Petitioner has established a sufficient motivation to combine the teachings of Kemler and Kalanick and of Kemler and Lalancette. We further find, for the reasons given here and in Section III.E.1, *supra*, that Petitioner has demonstrated that there was a reasonable expectation of success in making those combinations. *See id.*

The Federal Circuit has recently reminded us that "[t]he motivation-to-combine analysis is a flexible one. *Any* need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed." *Intel Corp. v. PACT XPP Schweiz AG*, 61 F.4th 1373, 1379 (Fed. Cir. 2023) ("*Intel Corp.*") (citing *KSR Int'l' Co. v.Teleflex*, 550 U.S. 398, 420 (2007)) (alterations and internal quotation marks omitted). Reversing a Board decision finding insufficient motivation to combine references, the Federal Circuit further reminded us that "a person of ordinary skill is also a person of ordinary creativity, not an automaton." *Id.* (quoting *KSR*, 550 U.S. at 421) (alterations omitted).

The Federal Circuit further observed that "in many cases[,] a person of ordinary skill will be able to fit the teachings of multiple patents together like pieces of a puzzle." *Id.* at 1379–80 (alteration in original, internal quotation marks omitted). The court continued, "[t]hat's why the motivation-to-combine analysis need not seek out precise teachings directed to the specific subject

matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ." *Id.* at 1380 (internal quotation marks omitted). The Federal Circuit also recognized what it termed "universal motivation," i.e., motivation "known in a particular field to improve technology," commenting that such motivations "provide a motivation to combine prior art references *even absent any hint of suggestion* in the references themselves." *Id.* (citing *Intel Corp. v. Qualcomm Inc.*, 21 F.4th 784, 797-99 (Fed. Cir. 2021) (internal quotation marks omitted).

a) Kalanick and Kemler

We find that Petitioner demonstrates that Kalanick and Kemler address "similar problems related to vehicle identification." Pet. 21–22; Williams I Decl. ¶ 113. Furthermore, as Petitioner asserts, we find that "[b]oth teach similar solutions involving generating, transmitting, and displaying unique, easily distinguishable visual indicators on multiple displays such that users can visually match the unique indicators to identify their assigned vehicle." Pet. 22; Williams I Decl. ¶ 113. Further, "[b]oth also utilize vehicle mounted displays which are visible from the outside of the vehicle." Pet. 22; Williams I Decl. ¶ 113.

We do not agree with Patent Owner that the Petition "failed to establish a motivation" to combine Kemler with Kalnick." PO Resp. 8. As noted above, the Federal Circuit does not require Petitioner to identify "precise teachings directed to the specific subject matter of the challenged claim." *See Intel Corp*, 61 F.4th at 1380.

Appendix B

We find that the Petition and supporting expert testimony sufficiently demonstrate that a person of ordinary skill would have combined the teachings of Kemler and Kalanick with a reasonable expectation of success. Pet. 21–27; Williams I Decl. ¶¶ 113–125; Williams III Decl. ¶¶ 5–17. In addition to the reasons given *supra*, Petitioner explains that Kalanick's "on- demand service system can also use location information from the driver's device and/or transport information . . . to automatically determine the driver's state or state of the transport service." Pet. 22 (citing Ex. 1006 ¶¶ 29, 35). Petitioner explains that in Kalanick, "[w]hen a service application on the driver's device determines that the transport service is 'arriving now,' based on a determination that the driver is within a predetermined distance, the service application can trigger the indication device to output the user's specific color." *Id.* at 23 (citing Ex. 1006 ¶ 37). Thus, Kalanick's system can "control the indication device to output the user's color or other unique distinctive indicator based on the transport state." *Id.* (citing Ex. 1006 ¶ 38).

Petitioner explains that Kemler describes a central dispatching system in which one or more server computing devices of the centralized dispatching system may select a vehicle to be dispatched based upon the location of the client computing device. *Id.* (citing Ex. 1008, 10:3–33). Thus, Petitioner explains that Kemler, like Kalanick, "discloses ride-matching based on proximity and distance to match requesting riders with drivers based at least in part on the proximity of their respective locations." *Id.*

Petitioner demonstrates that "a [person of ordinary skill] would find it obvious to modify *Kalanick's* vehicle

identification system in view of *Kemler*, at least because both systems disclose substantially similar ride-matching techniques based on proximity and distance to match requesting riders with drivers based at least in part on the proximity of their respective locations." *Id.* at 23–24. As Mr. Williams testifies, "[a person of ordinary skill] would find it obvious to modify Kalanick's vehicle identification system to have the controller generate and transmit the signal based on a 'predetermined distance' from the user's location, as disclosed in Kemler." Williams I Decl. ¶ 118 (cited at Pet. 24). Mr. Williams testifies that "[a person of ordinary skill] would have considered this a well-known way to indicate a vehicle is at a predetermined location. Thus, this proposed modification would have been well within the skill of a person of ordinary skill." Williams I Decl. ¶ 119.

Petitioner also explains that a person of ordinary skill would "anticipate success of such a modification." *Id.* at 25. Petitioner explains that "the controller in *Kalanick* is already in communication with the car and could easily send a signal to activate the display with the unique code." *Id.* (citing Williams I Decl. ¶ 120).

Petitioner recognizes that although both Kalanick and Kemler "focus on vehicle identification by utilizing indicators, . . . the disclosures approach indicator selection in slightly different ways." *Id.* Kemler approaches indicator selection through a "centralized dispatching system," while Kalanick allows the user to specify the "output configuration" of the identification information. *Id.*

We do not find Patent Owner's responsive arguments persuasive. *See* Section III.E.2, *supra*. For example, we disagree with Patent Owner's argument that Petitioner's demonstration that Kalanick and Kemler provide similar solutions is "insufficient as a matter of law." PO Resp. 10–11. The assertion that Kalanick and Kemler are analogous art to the '637 patent, which Patent Owner no longer disputes (*see* Hearing Tr. 58:11–15), is entitled to consideration as one factor in Petitioner's argument. *See* Pet. 21– 27; Pet. Reply 3–10. Moreover, Patent Owner's argument that it is "insufficient as a matter of law" that Kalanick and Kemler "teach similar solutions" (PO Resp. 10) is contrary to *Intel*'s approval of the "known-technique" rationale for combining the teachings of references: "[I]f there's a known technique to address a known problem using 'prior art elements according to their established functions,' then there is a motivation to combine." *Intel Corp.*, 61 F.4th at 138 (citation omitted).

We disagree, also, with Patent Owner's "duplication" argument. PO Resp. 12–14. The fact that Kalanick may not "disclose any problem" arising from the possibility of two passengers in the same area having the same signal does not prove a problem did not exist or that a person of ordinary skill would not be motivated to improve upon the solution for it. *See* Pet. Reply 5–6. Similarly, we are not persuaded by Patent Owner's argument that there would be no reasonable expectation of success based on Kemler's disclosure of a server farm. PO Resp. 24 ("The immense expense and complexity of operating a server 'farm' would be a reason to *avoid* Kemler's teachings."). Testimony from Mr. Williams establishes the advantages

of such systems. Pet. Reply 7 (citing Williams I Decl. ¶¶ 124); Williams Dep. 82:1–88:25, 92:13–93:1; Williams III Decl. ¶¶ 34–35.[5]

Petitioner demonstrates that a person of ordinary skill would have expected success in combining the teachings of the references, because it would require modifications to Kalanick's controller that is "already in communication with the car and could easily send a signal to activate the display with the unique code." Pet. 25 (citing Williams I Decl. ¶ 120); *see also* Williams III Decl. ¶ 15 (expressing the opinion that the expense of operating a server farm would not lead to unexpected results). We find that for the reasons given, the necessary modifications to Kalanick are "nothing more than combining known display technologies and visual identification techniques described in these references to perform their intended functions with described benefits and predictable results." Pet. Reply 11; Williams III Decl. ¶ 17.

We find for the reasons given that "[a person of ordinary skill] would have been motivated to use Kemler's controller to generate and transmit the signal based on a 'predetermined distance' from the user's location – a well-known way to indicate a vehicle is at a predetermined location. Pet. 24 (citing Williams I Decl. ¶ 119). Further, "[a person of ordinary skill] would be motivated to implement Kemler's indicator selection system, which provides for

5. We find Mr. Williams's testimony credible on this issue. On cross-examination by Patent Owner's counsel, Mr. Williams testified to his experience in designing, implementing, and setting up server farms. *See* Williams Dep. 82:17–88:7; 91:11–93:1.

automatic selection of the indicator, in Kalanick because it would eliminate instances where riders within a similar area select the same or similar indicators, or are provided the same default indicator, making them less unique." *Id.* at 25; Williams I Decl. ¶ 122. Petitioner explains also that Kemler teaches the benefits of using rules requiring "unique" signals. Pet. 25–26 (citing Ex. 1008, 8:54–9:2).

Petitioner demonstrates also that "[a person of ordinary skill] would have a reasonable expectation of success as this would require nothing more than modifying the software of *Kalanick's* system to permit the central controller to create and assign unique indicators, using the technique taught in Kemler." *Id.* at 26; Williams I Decl. ¶ 122.

b) Lalancette and Kemler

Similarly, we find that Petitioner demonstrates that a person of ordinary skill would have combined the teachings of Lalancette and Kemler with a reasonable expectation of success. Pet. 53–56; Pet. Reply 18–23; Williams I Decl. ¶¶ 218–226. Petitioner explains that "*Lalancette* and *Kemler* address similar problems related to vehicle identification and share the common objective of enabling riders to visually locate a requested vehicle while protecting the rider's privacy." Pet. 53; Williams I Decl . ¶ 218. Further, "[b]oth teach similar solutions involving generating, transmitting, and displaying unique visual indicators on multiple displays such that users can visually match the unique indicators to efficiently identify their assigned vehicle." Pet. 53; Williams I Decl. ¶ 218.

Petitioner explains that "*Lalancette* discloses a system, which includes a vehicle dispatch controller to generate and transmit unique, personalized, privacy-protected indicators, to provide more efficient and effective identification of dispatched vehicles." Pet. 54 (citing Williams I Decl. ¶ 220). Petitioner also relies on the disclosure in Kemler that "[t]he signal may include a unique, distinct, and/or easily distinguishable string of text or image, and may further include, for example, a series of nonsensical letters, a sequence of colors, and/or a barcode." *Id.* (citing Ex. 1008, 3:60–67, 10:62–11:14).

Petitioner shows also that "*Kemler* explains that a centralized dispatching system may generate a signal to identify [a] vehicle to the user, and that [o]nce the vehicle is within a certain distance of the user's client device, the vehicle's computing device may display the signal on an external display of the vehicle such that the signal should be visible to the user as the vehicle approaches the user's client device." *Id.* at 54 (quoting Ex. 1008, 3:48–4:11 (alterations in original, internal quotation marks omitted)).

Still further, Petitioner explains "[r]eceiving and displaying signal as disclosed in *Kemler* provides a more efficient and effective system for identifying dispatched vehicles." *Id.* at 55 (citing Williams I Decl. ¶ 222). Petitioner reasons that "[t]his is so at least because the system is more efficient by only displaying the signal once the vehicle [is] within a threshold distance of the rider and thus conserves energy." *Id.*

Finally, as Petitioner explains, we find that a person of ordinary skill would have had a reasonable expectation

of success in making the combination. *Id.* at 56 (citing Williams I Decl. 225). "Because both of the systems utilize the same basic display technologies and similar techniques for generating, transmitting, and displaying unique privacy-protected visual indicators, it would have been well within a [person of ordinary skill's] level of skill to implement *Lalancette's* taxi identification system with the additional technical details taught for *Kemler's* substantially similar vehicle identification system." *Id.* (citing Williams I Decl. ¶ 225). Furthermore, as Petitioner explains, we find that "combining *Lalancette* and *Kemler* would have been well within the skill of a [person of ordinary skill in the art] and doing so is a suitable option because it is nothing more than combining known display technologies and visual identification techniques described in these references to perform their intended functions with described benefits and predictable results." *Id.* (citing Williams I Decl. ¶ 226).

We do not agree with Patent Owner's arguments in response. *See supra*, Section III.E.2. For example, Patent Owner reprises the argument that "showing the references are analogous art" is insufficient to show a motivation to combine references, which is similar to the argument discussed *infra* in connection with Kalanick and Kemler, and is unavailing for similar reasons. PO Resp. 43; s*ee supra*, Section III.E.3.a. Similarly unavailing is Patent Owner's argument that "Lalancette is a complete and finished method of facilitating the connection of users and drivers, allowing users to select icons that do not allow an association with the user, thus protecting privacy." PO Resp. 44. This argument is similar to the "duplication" argument discussed *supra* in connection

with Kalanick, and is unavailing for similar reasons. The fact that Lalancette is allegedly "complete" does not prevent a person of ordinary skill from being motivated to improve upon it.

Finally, we credit Petitioner's argument that combining Kemler and Lalancette would make Lalancette more efficient. Pet. 55 ("This is so at least because the system is more efficient by only displaying the signal once the vehicle within a threshold distance of the rider and thus conserves energy.") (citing Williams I Decl. ¶ 222). This argument is persuasive because it is supported by the testimony of Mr. Williams and by common sense. *See* Pet. Reply 22. Mr. Williams testified credibly that a person of ordinary skill would understand that by virtue of turning Lalancette's indicator light on only when the vehicle was in a predetermined distance to the location of the user as disclosed in Kemler, the vehicle indicator display system would conserve energy and thus be more energy efficient. *Id.* (citing Williams I Decl. ¶¶ 222; Williams III Decl. ¶ 36; Williams Dep. 97:5–21). Moreover, Mr. Williams backed up his testimony on the power requirements of server farms with several years of experience designing, implementing, and operating a server farm. *See* discussion *supra*. We find that this experience lends credibility to his testimony that the server farm in Kemler would improve efficiency of the system, even without specific test data. *See* Pet. 55–56; Pet. Reply 22; Williams I Decl. ¶ 224; Williams Dep. 82:1–88:25; 92:20–93:1.

c) Conclusion

We are persuaded and find for the reasons given by Petitioner's showing that a person of ordinary skill would have combined the teachings of the references as proposed by Petitioner with a reasonable expectation of success. As Mr. Williams testifies, the necessary modifications to Kalanick and Lalancette are "nothing more than combining known display technologies and visual identification techniques described in these references to perform their intended functions with described benefits and predictable results." Williams I Decl. ¶¶ 125, 226.

F. Obviousness Based on Kalanick and Kemler

Petitioner asserts that claims 1–9 and 11–20 would have been obvious in light of Kalanick and Kemler. Pet. 21–53. Petitioner provides an element-by-element claim analysis, supported by expert testimony. *Id.*; Williams I Decl. ¶¶ 126–216.

1. Claim 1

(Preamble) A vehicle identification system, comprising:

Petitioner contends that the preamble of claim 1 is disclosed by Kalanick. Pet. 26–27; Williams I Decl. ¶¶ 126–127. Petitioner explains that Kalanick discloses a "system that can automatically configure an indication

device (or a display device) for use with an on-demand service." Pet. 27 (quoting Ex. 1006 ¶ 10). Patent Owner does not address this contention.

We find, for the reasons given, that the preamble of claim 1 is taught or suggested by Kalanick.[6]

> *(1A) at least one display associated with a vehicle, wherein the at least one display is located to be visible from an exterior of the vehicle*

Petitioner contends this limitation is disclosed by Kalanick. Pet. 28–29; Williams I Decl. ¶¶ 130–131. Petitioner contends Kalanick discloses an indication device that can be positioned to be easily visible to the user. Pet. 28–29 (citing Ex. 1006 ¶ 10). Patent Owner does not address this contention.

We find, for the reasons given, that claim element 1A is taught or suggested by Kalanick.

(1B) a transceiver

Petitioner contends this limitation is disclosed by Kalanick. Pet. 29; Williams I Decl. ¶¶ 132–133. Petitioner contends that a person of ordinary skill would recognize Kalanick's "network interface" to include the claimed transceiver. Pet. 29 (citing Williams I Decl. ¶ 133). Patent Owner does not address this contention.

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6. We express no opinion on whether the preambles of the challenged claims are limiting.

We find, for the reasons given, that claim element 1B is taught or suggested by Kalanick.

> *(1C) a controller communicatively coupled to the transceiver*

Petitioner contends that this limitation is disclosed by Kalanick. *Id.* at 29 (citing Williams I Decl. ¶¶ 134–137). Petitioner refers to Figure 1 of Kalanick, reproduced *supra*, in Section III.D.1. *Id.* at 31. Petitioner contends a person of ordinary skill "would recognize *Kalanick's* system 100 to be a 'controller' (i.e., a 'computing device , , , capable of executing a series of instructions')." *Id.* at 31 (alteration in original). Further, a person of ordinary skill would recognize that Kalanick's system 100 "is communicatively coupled' to the network interface (i.e., 'transceiver'), as claimed." *Id.* (citing Williams I Decl. ¶ 137). Patent Owner does not address this contention.

We find, for the reasons given, that claim element 1C is taught or suggested by Kalanick.

> *(1D) wherein the controller is adapted to generate a first signal to be transmitted by the transceiver to a mobile communication device associated with a driver of the vehicle when it is determined that the vehicle is within a predetermined distance of a specific location*

Petitioner contends that this limitation is disclosed by Kalanick and Kemler. Pet. 32–34; Williams I Decl. ¶¶ 138–144. Petitioner contends that "Kalanick's 'controller' (i.e., its 'system 100') can communicate, over one or more

networks via a network interface [i.e., transceiver] (e.g., wirelessly or using a wire), with the client devices 150 (e.g., mobile computing devices operated by clients or users/customers) and the driver devices 160 (e.g., mobile computing devices operated by drivers) using a client device interface 120 and a driver device interface 130, respectively." Pet. 32–33 (alteration in original) (citing Ex. 1006 ¶25).

Further, addressing the "predetermined distance" recitation in the claim, Petitioner contends that "*Kemler* discloses that the system determines when the vehicle reaches a particular location that is a threshold distance from the vehicle's location and when the vehicle reaches the particular location, sends a notification to one or more server computing devices." *Id.* at 33 (citing Ex. 1008, claim 10). Thus, the combination of Kalanick and Kemler "would include having the controller generate and transmit the signal containing the unique display information when the vehicle is within a 'predetermined distance' from the user's location." *Id.* at 34 (citing Williams I Decl. ¶ 143). Furthermore, Petitioner explains that a person of ordinary skill would have been motivated to combine these teachings. *Id.* at 34 (citing Williams I Decl. ¶ 143).

Patent Owner responds to this challenge by again asserting that "Petitioner fails to establish that the claimed combination generates a first signal when it is determined that the vehicle is within a predetermined distance of a specific location, or that there is a generation of a first signal, as the term is understood from its ordinary meaning. It also fails to demonstrate a motivation to combine Kemler with Kalanick." PO Resp. 26.

We disagree. Petitioner explains that the "first signal" is referred to as the "notification signal" in the '637 patent. Pet. Reply 12. The Petition explains that Kalanick's controller communicates with client devices 150 and driver devices 160 "over one or more networks via a network interface." Pet. 32–33 (citing Ex. 1006 ¶ 25). Kalanick also discloses that the system can determine "if the driver's position is within a predetermined distance of the user's current location or the pickup location." *Id.* at 33 (quoting Ex. 1006 ¶ 36). Mr. Williams testifies that a person of ordinary skill would understand that "Kalanick discloses a signal that is transmitted by the transceiver when it is determined that the vehicle is within a predetermined distance of a specific location." Williams I Decl. ¶ 141. We, therefore, find that Kalanick teaches or suggests the claimed "first signal."

We find also that Kemler teaches determining when the vehicle reaches a particular location that is a threshold distance from the vehicle's location and when the vehicle reaches the particular location, sending a notification to one or more server computing devices. Pet. 33 (citing Ex. 1008, claim 10). We find that the combination of Kalanick and Kemler "would include having the controller generate and transmit the signal containing the unique display information when the vehicle is within a 'predetermined distance' from the user's location." *Id.* at 34 (citing Williams I Decl. ¶ 143).

As discussed *supra*, we find that a person of ordinary skill would have been motivated to combine the teachings of Kalanick and Kemler with a reasonable expectation of success. *See* Section III.E.3. Among other reasons,

a person of ordinary skill would be motivated to tie transmission of the first signal to a distance at which the user would be in range to visually observe and identify the vehicle, thereby resulting in improved accuracy, efficiency, and privacy of the user of the identification system. Pet. 34 (citing Williams I Decl. ¶ 143).

Patent Owner's other arguments are unavailing. For example, Patent Owner argues that Kemler cannot be combined with Kalanick because Kemler does not have a mobile communication device associated with the driver. PO Resp. 28–30. This argument fails because it does not address the teachings of Kalanick, which includes mobile communications devices. Pet. Reply 13–14. One cannot show non-obviousness by attacking references individually where the challenge is based on combinations of references. *See In re Keller*, 642 F.2d 413, 426 (CCPA 1981); *In re Merck & Co., Inc.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986). Instead, the test for obviousness is what the combined teachings of the references would have suggested to those having ordinary skill in the art. *In re Mouttet*, 686 F.3d 1322, 1333 (Fed. Cir. 2012).

Nor do we agree with Patent Owner's argument that "Kemler does not fill Kalanick's gaps" because Kemler describes a driverless vehicle. PO Resp. 29. Patent Owner does not acknowledge that Kalanick discloses a vehicle with a driver. *See, e.g.*, Ex. 1006, (57) ("An on-demand service system arranges a transport service for a user to be provided by a driver."). Therefore, Patent Owner's argument directed to Kemler is unavailing because it fails to address the combination of Kemler with Kalanick.

Also lacking in merit is Patent Owner's argument that "Kalanick does not satisfy the 'generate' requirement." PO Resp. 30. According to Patent Owner, "[t]he claims require that a new signal be generated each time a ride is dispatched." *Id.* We disagree. This argument is not supported by the claims and is a variation on the "active formulation" requirement we have rejected in our discussion of claim construction. *See supra*, Section III.C.4.

We have addressed Patent Owner's argument disputing the motivation to combine Kemler with Kalanick above and in Section III.E, and find the argument unavailing for the reasons stated.

For the reasons summarized above and given by Petitioner, we find that Kalanick and Kemler teach or suggest claim element 1D.

> *(1E) wherein the mobile communication device associated with the driver is adapted to generate a second signal transmitted to the at least one display, the second signal representing the indicator*

Petitioner demonstrates that this limitation is met by Kalanick and Kemler. Pet. 34–35; Williams I Decl. ¶¶ 145–147. Petitioner contends that a person of ordinary skill "would be motivated to combine the controller generated signal/indicator of Kemler's driverless vehicle identification system with Kalanick's driver oriented vehicle identification system to permit the driver's device

to send the signal to the display on the vehicle after the driver's device receives the signal from the controller." Pet. 35 (citing Williams I Decl. ¶ 146).

Patent Owner does not challenge this contention directly. However, in connection with other limitations, Patent Owner contends that Kalanick does not satisfy the "generate" requirement because "[t]he claims require that a new signal be generated each time a ride is dispatched." PO Resp. 30. As discussed, we do not agree as this argument is based on Patent Owner's rejected construction of "generate." *See supra*, Section III.C. Similarly, for the reasons given, we do not agree with Patent Owner's argument based on the lack of a driver in Kemler's autonomous vehicle, as it does not address the combination of Kemler with Kalanick.

For the reasons given by Petitioner and those summarized above, we find that Kalanick and Kemler teach or suggest limitation 1E.

We find that for the reasons given, that Petitioner has demonstrated by a preponderance of the evidence that Kalanick and Kemler teach or suggest each limitation of claim 1 and that it would have been obvious to combine the references with a reasonable expectation of success. We therefore determine that Petitioner has shown by a preponderance of the evidence that claim 1 would have been obvious over Kalanick and Kemler.

Appendix B

2. Claims 9 and 13

Petitioner's analysis of independent claims 9 and 13 in relation to Kalanick and Kemler relies heavily on its analysis of claim 1. Pet. 44–47 (claim 9), 47–50 (claim 13).

Patent Owner specifically addresses two limitations in claim 9, namely, the limitations identified as 9A ("when it is determined that the vehicle is within a predetermined distance of the location of the user generating a notification signal to a mobile communication device associated with the driver") and 9D ("displaying the indicator on a mobile communication device associated with the user")." PO Resp 36–39.

Patent Owner's arguments for claim 9 largely repeat the arguments already discussed in connection with claim 1. For example, addressing limitation 9A, Patent Owner contends that "Kalanick describes a system that can track the driver's position using location data . . . but it does not use this location data to generate a notification signal when the driver is within a predetermined location." PO Resp. 36. This argument fails because it is not directed to the combination of Kalanick and Kemler. *See* discussion *supra*, Section III.F.1. As Petitioner demonstrates, Kemler discloses using the location of the vehicle to generate a notification signal when the driver is within a predetermined location. *See* Pet. 33 (citing Ex. 1008, claim 13).

Similarly, Patent Owner addresses claim element 9D by referring to its discussion of claim 2. PO Resp. 39.

Petitioner's challenge to claim 2 relies on the combination of Kalanick and Kemler. *See* Pet. 36–38. As discussed *infra*, Patent Owner's response is not persuasive because it does not address the combination of Kalanick and Kemler. Pet. Reply 17.

Similarly, for claim 13, Patent Owner's refers back to limitation 1D, *supra*. PO Resp 40. For the reasons stated in our discussion of claim 1, *supra*, we do not agree with these arguments. *See* Section III.F.1.

We find that for the reasons given, Petitioner has demonstrated by a preponderance of the evidence that the Kalanick and Kemler teach or suggest each limitation of claims 9 and 13 and that it would have been obvious to combine the references with a reasonable expectation of success. We therefore determine that Petitioner has shown by a preponderance of the evidence that claims 9 and 13 would have been obvious over Kalanick and Kemler.

3. Claims 2–8, 11, 12, and 14–20

Claims 2–8 depend, directly or indirectly, from claim 1. Petitioner provides an analysis for each of these claims in relation to Kalanick and Kemler. Pet. 36–44; Williams I Decl. ¶¶ 148–175, 186–188, 200–216. For the reasons given, Petitioner's analysis demonstrates that Kalanick and Kemler disclose the additional limitations of these claims.

For example, claim 2 recites that "the second signal representing the indicator is receivable by a mobile communication device associated with a rider." Ex. 1001

7:43–45. Petitioner contends that "a [person of ordinary skill] would find it obvious to modify *Kalanick's* vehicle identification system in view of the . . . teachings of *Kemler* to send and display the second signal on the rider's mobile device. The [person of ordinary skill] may be motivated to do so to assist the rider with ensuring it has located the correct vehicle." Pet. 38 (citing Williams I Decl. ¶ 153). Patent Owner responds by referring to its analysis of claim 1, discussed *supra*. PO Resp. 34.

Additionally, Patent Owner argues that "the system of Kalanick does not disclose that a 'signal representing the indicator is receivable by a mobile communication device associated with a rider.' Kalanick's users already have the icon that they previously configured or a default is assigned." *Id.* (citations omitted).

We do not agree with this argument as it fails to address Petitioner's reliance on the combination of Kalanick and Kemler to meet this limitation. *See* Pet. Reply 16 ("*Kemler* discloses the user's mobile communication device receiving the indicator."). Patent Owner does not provide any additional arguments directed to Petitioner's analysis of the dependent claims 3–8. We find for the reasons given that Kalanick and Kemler teach or suggest the limitations of claims 2–8.

Petitioner provides similar analyses for claims 11 and 12 (depending from claim 9) and 14–20 (depending from claim 13). Pet. 47–48, 50–53.

For claim 15, Patent Owner refers back to its analysis of claim 13, which in turn refers back to claim 1. PO Resp.

40. In addition, Patent Owner argues that "Kalanick does not tie the transmission of any signals to when a vehicle is within a predetermined distance and does not send signals to a mobile communication device associated with the rider, and Kemler does not send signals to a mobile communication device associated with the driver." PO Resp. 40–41. These arguments are similar to arguments addressed in connection with claim 1. *See* Section III.F.1, *supra*. We do not agree for the reasons stated there. As Petitioner demonstrates, Kalanick discloses transmitting signals and predetermined distances and a device associated with the driver. Pet. Reply 17 (citing Pet. 22–24, 33–34).

Patent Owner does not respond separately to Petitioner's analysis of the other dependent claims. We find that for the reasons given, Petitioner has demonstrated by a preponderance of the evidence that the Kalanick and Kemler teach or suggest each limitation of claims 2–8, 11, 12, and 14–20, and it would have been obvious to combine the references with a reasonable expectation of success. We therefore determine that Petitioner has shown by a preponderance of the evidence that claim 2–8, 11, 12, and 14–20 would have been obvious over Kalanick and Kemler.

G. Obviousness Based on Lalancette and Kemler

Petitioner contends also that claim 1–9 and 11–20 would have been obvious in light of Lalancette and Kemler and provides an element-by-element analysis. Pet. 53–80. Petitioner provides supporting testimony from Mr. Williams. Williams I Decl. ¶¶ 217–307.

Appendix B

Petitioner's analysis for claim 1 demonstrates that each element of the claim is met by Lalancette and Kemler. Pet. 56–66; Williams I Decl. ¶¶ 227–244. For example, Petitioner demonstrates that the preamble is met by Lalancette's disclosure of "a cross-platform target identification system" for use with a taxi dispatch service. Pet. 57. Similarly, the display limitation (1A) is met by Lalancette's disclosure of an electronic display mounted outside of a taxi car and a dash-mounted driver display. *Id.* at 58 (citing Ex. 1009 ¶ 27). These contentions are not addressed by Patent Owner.

Petitioner demonstrates that the "generate" element of limitation 1D is met by Lalancette and Kemler. Pet. 63–65; Williams I Decl. ¶¶ 238–241. Petitioner explains that "*Lalancette* discloses that the taxi service provider server generates and transmits a signal including the icon to the driver's mobile computer which is also displayed on the roof-top display of the taxi." Pet. 64 (citing Williams I Decl. ¶ 239).

Petitioner further demonstrates that Lalancette and Kemler meet the "predetermined distance" requirement. *Id.* at 65–66; Williams I Decl. ¶¶ 240–242. Petitioner explains that "*Kemler* teaches that 'the centralized dispatching system may send the signal . . . when the vehicle is within the certain distance or time relative to the user.'" Pet. 65 (alteration in original) (citing Ex. 1008, 4:12–19). Petitioner demonstrates that "[a person of ordinary skill] would find it obvious to modify *Lalancette's* taxi identification system to have the controller generate and transmit the claimed first signal when the vehicle is

within a 'predetermined distance' from the user's location, as disclosed in *Kemler*." *Id.* at 66 (citing Williams I Decl. ¶ 242).

Patent Owner's responses largely repeat its arguments directed to the combination of Kemler and Kalanick discussed *supra*, and are unavailing for many of the same reasons previously given,

For example, Patent Owner responds that Lalancette fails to meet the "generate" requirement in limitation 1D. PO Resp. 48–52. Patent Owner again argues that "[t]he claims of the invention require that a new signal be actively formulated each time there is a ride dispatched. No signal is pre-associated with a particular rider or a particular driver." *Id.* at 50. Patent Owner continues, "Lalancette, in contrast, relies on pre-selection – a permanent signal icon stored in a server 112 associated with a user – in a manner similar to Kalanick." *Id.* Patent Owner makes a similar argument for claims 9 and 13. *Id.* at 53–54.

As in the case of Patent Owner's argument directed to Kalanick, we do not agree with this argument because it is based on Patent Owner's proposed construction of "generate" which we do not adopt. *See supra*, Section III.C. Petitioner demonstrates that Lalancette meets this limitation because it specifically discloses generating and transmitting a signal including an icon to the driver's mobile computer and display of the icon on the roof-top display. Ex. 1009 ¶ 32; Williams I Decl. ¶¶ 238–239. Moreover, Petitioner relies also on Kemler to meet this limitation. Pet. 65– 66. We do not agree with Patent Owner's argument that the Petition fails to provide a

motivation to combine Kemler with Lalancette. PO Resp. 41. Our reasoning is discussed in Section III.E., *supra*.

Similarly, Patent Owner contends that "Lalancette does not describe any embodiments that generate a notification signal when a driver is within a predetermined distance of the location." PO Resp. 49. This argument is unavailing for its failure to address the combination of Kemler with Lalancette. *See* Pet. 65 ("Kemler teaches that the 'the centralized dispatching system may send the signal . . . when the vehicle is within the certain distance or time relative to the user.'").

Patent Owner's analysis of this claim element is not persuasive because it avoids addressing the combined teachings of Lalancette and Kemler. Instead, it addresses the references separately. For example, Patent Owner's argument that "Kemler does not have a driver, hence it does not generate a signal to a mobile communication associated with a driver" (PO Resp. 49) ignores the fact that Lalancette discloses a mobile communication device associated with a driver. Pet. Reply 24 (citing Williams III Decl. ¶ 39). Similarly, Patent Owner's argument that Lalancette does not disclose generating or transmitting a signal "when it is determined that the vehicle is within a predetermined distance of a specific location." (PO Resp. 49) does not address Petitioner's reliance on the combination of Lanalcette and Kemler to meet this limitation. Pet. Reply 24.

For the reasons previously given, we find that Petitioner has demonstrated by a preponderance of the evidence that a person of ordinary skill would have

combined those teachings with a reasonable expectation of success. *See supra*, Section III.E.3. We find in addition that for the reasons given, including those summarized above and in the Petition, that Petitioner has demonstrated by a preponderance of the evidence that the combination of Lalancette and Kemler would teach or suggest the limitations of claim 1.

Petitioner's analyses of independent claims 9 and 13 for this challenge track closely its analysis of claim 1 for the elements common to the claims. Pet. 72–77. Claim 9 additionally calls for "identifying the vehicle based on appearance of a match, by visual observation of the user." Ex. 1001, 7:63– 65. Petitioner demonstrates that Lalancette discloses this limitation. Pet. 74. Claim 13 introduces a new limitation: "a third signal to be transmitted to the at least one display, the third signal providing the code and representing an indicator to identify the vehicle.'" Ex. 1001, 8:39–41. Petitioner shows that Lalancette and Kemler meet this limitation. Pet. 77.

Patent Owner's response does not separately address the limitations in claim 9, referring back to its analysis of claim 1. PO Resp. 53. For claim 13, Patent Owner additionally asserts that "Petitioner fails to establish that Lalancette generates a signal including a code." *Id.* at 53. Patent Owner asserts "Lalancette instead uses an icon server that stores icons associated with users." *Id.* at 54. We do not agree as this argument is based on Patent Owner's construction of "generate," which we have not adopted. *See supra*, Section III.C.4. For claim 15, Patent Owner repeats its argument that Lalancette and Kemler

fail to meet the "predetermined distance" requirement. For the reasons discussed, we find that Kalanick teaches or suggests transmitting signals and predetermining distances as claimed. Pet Reply 17 (citing Pet. 22–24, 33–34); *see also* Section III.F.1, *supra*.

We find that for the reasons given above and by Petitioner, that Petitioner has demonstrated by a preponderance of the evidence that Lalancette and Kemler teach or suggest the limitations of claims 9, 13, and 15.

Patent Owner provides no separate response to Petitioner's analysis of dependent claims 2–8, 11, 12, 14, and 16–20. *See* Pet. 66–72, 74, 77–80. We find that for the reasons given above and by Petitioner, Lalancette and Kemler teach or suggest the limitations of those dependent claims.

We find that for the reasons given, Lalancette and Kemler teach or suggest each limitation of claim 1–9 and 11–20, and it would have been obvious to combine the references with a reasonable expectation of success. We therefore determine that Petitioner has shown by a preponderance of the evidence that claims 1–9 and 11–20 would have been obvious over Lalancette and Kemler.

H. Conclusion

For the foregoing reasons, we have determined that Petitioner has demonstrated by a preponderance of the evidence that claims 1–9 and 11–20 of the '637 patent would have been obvious (1) over Kalanick and Kemler and (2) over Lalancette and Kemler.

Appendix B

IV. MOTION TO AMEND

A. Introduction

As discussed *supra,* after institution, Petitioner filed a contingent Motion to Amend. The Motion requests that, "[t]o the extent the Board finds either of original independent claims 1 or 9 unpatentable in this proceeding, Patent Owner respectfully requests that the Board consider this Contingent Motion and grant entry of corresponding substitute claims 21–32." Mot. Amend 1.

Patent Owner submitted the second Declaration of Dr. Matthew Valenti ("Valenti II Decl.") in support of the Motion. *See supra*, Section I. Petitioner filed an Opposition to the Motion to Amend. Paper 16 ("Pet. MTA Opp."). Petitioner submitted the second Declaration of David Williams ("Williams II Decl.) in support of the Opposition.

Patent Owner requested that we provide preliminary guidance in accordance with the Board's pilot program concerning motion to amend practice and procedures. Mot. Amend 1. After considering Patent Owner's Motion to Amend and Petitioner's Opposition, we provided Preliminary Guidance. Paper 20 ("Prelim. Guidance").

In this Preliminary Guidance, we provided information indicating our initial, preliminary, and non-binding views on whether Patent Owner had shown a reasonable likelihood that it has satisfied the statutory and regulatory requirements associated with filing a motion to amend

in an *inter partes* review and whether Petitioner (or the record) established a reasonable likelihood that the substitute claims are unpatentable. *See* Notice, 84 Fed. Reg. at 9,497; *see also* 35 U.S.C. § 316(d) (providing statutory requirements for a motion to amend); 37 C.F.R. § 42.121 (providing regulatory requirements and burdens for a motion to amend); *Lectrosonics, Inc. v Zaxcom, Inc.*, IPR2018-01129, Paper 15 (PTAB Feb. 25, 2019) (precedential) (providing information and guidance regarding motions to amend).

In the Preliminary Guidance, we concluded that at that preliminary stage of the proceeding, and based on the record at that time, Patent Owner had shown a reasonable likelihood that its Motion satisfied the statutory and regulatory requirements associated with filing a motion to amend with respect to proposed substitute claims 29, 31, and 32, but not proposed substitute claims 21–28. Prelim. Guidance 4.

Subsequently, Patent Owner filed a Reply to Petitioner's Opposition to the Preliminary Guidance (Paper 21, "PO MTA Reply"), and Petitioner filed a Sur-reply (Paper 24, "Pet. MTA Sur-reply").

For the reasons that follow, we grant Patent Owner's Motion to Amend as to proposed substitute claims 29, 31, and 32, and deny the Motion as to proposed substitute claims 21–28.

Appendix B

B. Legal Standard

In an *inter partes* review, amended claims are not added to a patent as a matter of right, but rather must be proposed as a part of a motion to amend. 35 U.S.C. § 316(d). "Before considering the patentability of any substitute claims, . . . the Board first must determine whether the motion to amend meets the statutory and regulatory requirements set forth in 35 U.S.C. § 316(d) and 37 C.F.R. § 42.121." *Lectrosonics, Inc.*, Paper 15 at 4. Accordingly, we consider whether: (1) the amendment proposes a reasonable number of substitute claims; (2) the proposed claims are supported in the original disclosure (and any earlier filed disclosure for which the benefit of filing date is sought); (3) the amendment responds to a ground of unpatentability involved in the trial; and (4) the amendment does not seek to enlarge the scope of the claims of the patent or introduce new subject matter. *See* 35 U.S.C. § 316(d); 37 C.F.R. § 42.121.

The Board assesses the patentability of proposed substitute claims "without placing the burden of persuasion on the patent owner" for issues of patentability. *Aqua Prods., Inc. v. Matal*, 872 F.3d 1290, 1328 (Fed. Cir. 2017) (en banc); *see also Lectrosonics, Inc.*, Paper 15 at 3–4.

In accordance with *Aqua Products* and *Lectrosonics*, Patent Owner does not bear the burden of persuasion to demonstrate the patentability of the substitute claims presented in the motion to amend. To the contrary, ordinarily, "the petitioner bears the burden of proving

that the proposed amended claims are unpatentable by a preponderance of the evidence." *Bosch Auto. Serv. Sols., LLC v. Matal*, 878 F.3d 1027, 1040 (Fed. Cir. 2017), *as amended on reh'g in part* (Mar. 15, 2018); *see Lectrosonics*, Paper 15 at 3–4. In determining whether a petitioner has proven unpatentability of the substitute claims, the Board focuses on "arguments and theories raised by the petitioner in its petition or opposition to the motion to amend." *Nike, Inc. v. Adidas AG*, 955 F.3d 45, 51 (Fed. Cir. 2020).

C. Patent Owner's Proposed Substitute Claims

Patent Owner proposes to substitute claims 21–32 for original claims 1–12, respectively. Mot. Amend 2. Proposed substitute claims 21 (replacing claim 1) and 29 (replacing claim 9) are the independent claims. Proposed substitute claims 22–28 depend from claim 21 and proposed substitute claims 30–32 depend from claim 29.

Proposed substitute claim 21[7] provides:

> [21(Preamble)] A vehicle identification system, comprising:
>
> [21(a)] at least one display associated with a vehicle, wherein the at least one display is located to be visible from an exterior of the vehicle;

7. Material added to the claims is indicated by underlining.

[21(b)] a transceiver; and

[21(c)] a controller communicatively coupled to the transceiver, wherein the controller is adapted to generate a first signal to be transmitted by the transceiver to a mobile communication device associated with a driver of the vehicle, wherein said first signal is generated by creating an indicator when it is determined that the vehicle is within a predetermined distance of a specific location,

[21(d)] wherein the mobile communication device associated with the driver is adapted to generate a second signal to be transmitted to the at least one display, the second signal representing an the indicator.

Mot. Amend, App. A, 1.

Proposed substitute claim 29 provides:

[29(pre)] A method of identifying a vehicle being dispatched to a location of a user having requested a ride from a transportation service, comprising:

[29(a)] when it is determined that the vehicle is within a predetermined distance of the location of the user, generating a notification signal to a mobile communication device associated with the driver;

> [29(b)] generating, by creating an indicator, an indicatory signal representing an the indicator in response to receiving the notification signal;
>
> [29(c)] displaying, on a display associated with the vehicle, the indicator based on the notification and indicatory signals, the display being located to be visible on the exterior of the vehicle;
>
> [29(d)] displaying the indicator on a mobile communication device associated with the user; and
>
> [29(e)] identifying the vehicle based on appearance of a match, by visual observation of the user, between the indicator being displayed on the mobile communication device associated with the user and the indicator being displayed on the display associated with the vehicle.

Id. at App. A, 1–2. The remaining claims are amended to change their dependency. *Id.* at App. A, 2–5.

D. Requirements for Amendment

1. Claim Listing

Patent Owner provides a claim listing showing the proposed changes. *See* Mot. Amend 2, App. A (Claim Listing).

2. Reasonable Number of Substitute Claims

Patent Owner proposes no more than one substitute claim for each of challenged claims 1–9, 11, and 12. We determine that the requirement for a reasonable number of substitute claims has been met.[8]

3. Responsive to Ground of Patentability

The proposed substitute claims recite new limitations that are responsive to a ground of unpatentability on which we instituted trial, namely, the timing of the generation of an indicator that is unique to a user and driver. *See supra*, Sections III.F, III.G.

4. Scope of Amended Claims

The proposed substitute claims do not broaden the scope of the amended claims. Proposed substitute independent claims 21 and 29 include narrowing limitations as compared to corresponding original claims 1 and 9. Proposed substitute claims 22–28, 31, and 32 depend from narrowed claims.

5. New Matter

a) Claim 29

Proposed substitute claim 29 amends original independent claim 9 to further recite "generating, by

8. We do not consider proposed substitute claim 30 because it seeks to amend original claim 10 that is not challenged in this proceeding. *See* Prelim. Guidance 3.

creating an indicator, an indicatory signal representing the indicator in response to receiving the notification signal" and "displaying, on a display associated with the vehicle, ..." Prelim. Guidance 6. Petitioner contends the proposed amendment is not supported by the specification. Pet. MTA Opp. 10. Referring to the most pertinent paragraphs of the '049 application for the '637 patent, Petitioner contends that "nothing in those paragraphs suggest [sic] that the indicator is generated after dispatch or during transmission." *Id.*

We disagree with Petitioner. In our Preliminary Guidance, we pointed out that the '049 application does not support Petitioner's argument. Prelim. Guidance 7–8. Referring mainly to paragraph 30 of the application, we reasoned that "[b]ecause the '049 application discloses that (i) a notification signal is generated for a new rider/user, (ii) the notification signal is generated when it is determined that the vehicle is within a predetermined distance of the user's location, and (iii) a new indicator is generated for the new user after the notification signal is generated (i.e., after it has been determined that the vehicle is within a predetermined distance of the user's location), we agree with Patent Owner that the '049 application (and the '637 patent) provides written description support for *creating an indicator when it is determined that the vehicle is within a predetermined distance of the location of the user, as recited in proposed substitute claim 29*." *Id.* at 8–9.

As we explained in the Preliminary Guidance, "paragraph 30 [of the '049 application] explicitly discloses

that *a new indicator is generated for a new rider*, with previously-used indicators being "*deleted*" and "*not . . . duplicated*." *Id.* at 7–8 (alteration in original). Further, "paragraph 34 of the '049 application discloses that the notification signal is generated 'when it is determined that the vehicle 20 is *within a predetermined distance of the location of the user P*.'" *Id.* at 8. Finally, "paragraphs 12, 21, 27, and 35 disclose that the indicator is generated *after* the notification signal is generated, as the notification signal *activates* the driver's mobile communication device to generate the indicator, and the indicator is created *in response to* receiving the notification signal." *Id.*

For the reasons summarized above and those given in our Preliminary Guidance, we find that Patent Owner's proposed substitute claim 29 does not introduce new matter.

b) Claim 21

In the Preliminary Guidance, we observed that "[p]roposed substitute claim 21 requires two features: (i) 'creating an indicator when it is determined that the vehicle is within a predetermined distance of a specific location,' . . . and (ii) 'said first signal [transmitted by the transceiver to a mobile communication device associated with a driver of the vehicle] is generated by creating an indicator.'" Prelim. Guidance 9. We determined that the first feature "is a feature similar to the indicator creation feature discussed *supra* for claim 29, and for which there is adequate support in the original disclosure of the '637 patent." *Id.* As to the second feature, we determined that

"*it does not appear that there is adequate support* in the original disclosure of the '637 patent." *Id.* We reasoned that "[t]he '049 application does not disclose that the first signal (notification signal) is *generated by creating the indicator* (as claim 21 recites)." *Id*. We explained that "the '049 application discloses throughout that the first signal (the notification signal) is created *before* the second signal (the indicator signal), the first signal *activates* the driver's mobile communication device to generate the indicator, and the first signal is different from the indicator." *Id.* (citing Ex. 1002, 115–116 (¶¶ 11–12), 117 (¶ 21), 118 (¶ 23), 119–120 (¶¶ 26–27), 122 (¶¶ 34–36).

Patent Owner responds by referring us to the description of the Figure 1B embodiment of the '637 patent (reproduced *supra*, in Section II.C), and the flowchart of Figure 3. According to Patent Owner, "[r]ead together, these passages describe a system where a first (notification) signal that is sent to the driver D includes an indicator." PO MTA Reply 4.

Petitioner responds by asserting that "[t]he '492 Application does not disclose creating an indicator once the vehicle is determined to be within a predetermined distance of the user's location. Instead, the '492 application only discloses the creation of an indicatory signal in response to a notification signal once the vehicle is within a predetermined distance of the user." Pet. MTA Sur-reply 1–2 (citing Williams II Decl. ¶¶ 29–31).

We agree with Petitioner and for the reasons stated in our Preliminary Guidance, we find that the disclosure

of the '049 application does not disclose that the first (notification) signal is generated by creating the indicator, as claim 21 recites. We, therefore, find that there is no written description support for the proposed amendment to claim 21. Prelim. Guidance 9–10.

6. Patentability of the Proposed Claims

a) Obviousness

Petitioner contends the proposed substitute claims would have been obvious over: (1) Kalanick and Kemler, (2) Kalanick, Kemler, and Stanfield[9]; (3) Lalancette and Kemler; and (4) Lalancette, Kemler, and Stanfield. Pet. MTA Opp. 11–25.

The Preliminary Guidance concludes that "each of Petitioner's challenges (or the record) fails to show a reasonable likelihood that the respective proposed substitute claims are unpatentable." Prelim, Guidance 11. According to the Preliminary Guidance, "both claims 21 and 29 require creating the indicator when, or after it is determined that the vehicle is within a predetermined distance of a particular location." *Id.* The Preliminary Guidance concludes that Kemler and Kalanick "do not teach (and do not provide an underlying factual basis for the contention that it would be obvious to add) creating the indicator when (or after) it is determined that the vehicle is within a predetermined distance of a particular location." *Id.* at 13.

9. U.S. Patent No. 9,442,888 (Ex. 1026).

Petitioner asserts in its Sur-reply that "the Preliminary Guidance limits Kemler's disclosure to where a unique signal is created when the user requests a vehicle from a dispatching service." Pet. MTA Sur-reply. 6. Petitioner disagrees with this conclusion, asserting that "a [person of ordinary skill] would understand Kemler to also disclose that the unique signal may be generated *after* the user requests a vehicle from a dispatching service." *Id.* Petitioner relies on an "alternative" embodiment of Kemler, depicted in Figures 7 and 8. *Id.* at 6–7. According to Petitioner, in Figures 7 and 8, "the vehicle is already assigned to the user but the unique signal is not yet generated or sent." *Id.* at 7. Alternatively, Petitioner asserts that "it would also have been an obvious implementation choice to only create and send the indicator to the vehicle once the vehicle and the user were within a certain distance to efficiently allocate resources and protect the user's privacy." *Id.* (citing Williams II Decl. ¶¶ 39–41).

We do not find these arguments persuasive. Petitioner's argument is contradicted by Figure 10 of Kemler, a flowchart that shows the relationship of the signal generation step to dispatch. Further, it is inconsistent with the Kemler specification. *See* Ex. 1008, 3:52–59 ("The request [for a vehicle] may be sent to a centralized dispatching system which selects or assigns a vehicle to the requesting user. At the same time, the centralized dispatching system may generate a signal to identify the vehicle to the user."). For the reasons summarized above and given in the Preliminary Guidance, we find that Kemler and Kalanick fail to teach or suggest the

limitation of "creating an indicator" as recited in proposed substitute claims 21 and 29.

Similarly, the Preliminary Guidance states that "we disagree with Petitioner's contentions that Lalancette's taxi service provider 108 generates a user's icon when or after the user requests a taxi." Prelim. Guidance 18. We explain that "Lalancette actually discloses that an icon is generated by the user in advance of using a taxi service, such that the taxi service (service provider 108) merely retrieves (e.g., from a server) the user's existing icon at the time the user requests a taxi." *Id.* (citing Ex. 1009 ¶¶ 31–32, 34, 36, 39). We further conclude that "[n]either has Petitioner provided persuasive support for its position that an ordinarily skilled artisan would have found it obvious to modify Lalancette to create an indicator when (or after) it is determined that a vehicle is within a predetermined distance of a particular location." *Id.* For the reasons summarized above and given in the Preliminary Guidance, we find that Lalancette fails to teach or suggest the limitation of "creating an indicator" as recited in proposed substitute claims 21 and 29.

b) Stanfield

In the Preliminary Guidance, we did not find supported Petitioner's contention that Stanfield "discloses the indicator creation features in contingent claims 21 and 29." Prelim. Guidance 14. We concluded that "Petitioner's contention does not establish that Stanfield creates the indicator when (or after) it is determined that the vehicle is within a predetermined distance of a particular location

(as required by claims 21 and 29)." *Id.* at 15 (emphasis omitted). We reasoned that "[i]n Stanfield, the signal's (indicator's) creation is not prompted by the vehicle being within a predetermined distance of a particular location or user." *Id.* at 15 (emphasis omitted). We explained that "[b]ecause Stanfield's indicator is *created* when the vehicle's availability becomes known to the fleet manager (or is set by the fleet manager), and *not when* a potential customer approaches (or is within a certain distance of) a vehicle, we are unpersuaded by Petitioner's contentions that 'Stanfield discloses the indicator creation features in contingent claims 21 and 29,' or that 'a [person of ordinary skill] would have considered the creation of an indicator for the first time when a vehicle reaches a certain distance obvious.'" *Id.* at 15–16.

We also found Petitioner's arguments and evidence "insufficient to demonstrate that a skilled artisan would have been prompted by Stanfield to modify Kalanick and/or Kemler to create an indicator when (or after) it is determined that a vehicle is within a predetermined distance of a particular location [of a user] (as required by claims 21 and 29)." *Id.* at 16.

In reaching these preliminary conclusions, we considered and discussed Petitioner's arguments. *See id.* at 14–17. The arguments Petitioner presents in its Sur-reply are repetitive and no more persuasive than those already considered. Pet Sur-reply 8–9. For example, the argument that "Stanfield along with the other references address similar problems as the '637 Patent involving vehicle identification in an on-demand transport system"

was previously considered and was rejected. *See* Prelim. Guidance 16 ("We are unpersuaded by Petitioner's argument because Stanfield does not address the same problem as the '637 patent.").

Petitioner does not convince us that Stanfield addresses a "security problem," as opposed to an information retrieving problem. *See* discussion at Prelim. Guidance 16–17. For the reasons given in our Preliminary Guidance and summarized *supra*, we find that Stanfield does not teach or suggest the indicator creation limitation, nor would a person of ordinary skill have combined Stanfield with the other references relied on by Petitioner.

c) Patent Eligibility of the Proposed Claims

The Preliminary Guidance concluded that Petitioner failed to show "a reasonable likelihood that proposed substitute claims 21–29, 31, and 32 are patent-ineligible" under 35 U.S.C. § 101. Prelim. Guidance 20. We first determined under the 2019 Revised Patent Subject Matter Eligibility Guidance and the October 2019 Update,[10] that the proposed claims recite a judicial exception in Revised Step 2A, Prong One. *See* 2019 Revised Patent Subject Matter Eligibility Guidance, 84 Fed. Reg. 50, 54 (Jan. 7, 2019) (hereinafter "Guidance") updated by USPTO, October 2019 Update: Subject Matter Eligibility ("October 2019 Guidance Update"). Prelim. Guidance 20.

10. Available at https://www.uspto.gov/sites/default/files/documents/peg_oct_2019_update.pdf.

We next determined that in accordance with Prong Two of Step 2A of the Guidance, "proposed substitute claims 21 and 29 (and their dependent claims) recite technological features that enable communication and coordination between multiple devices that are not co-located and are moving with respect to each other (i.e., a customer's/user's mobile communication device, a vehicle's display, and a driver's mobile communication device and a controller of a vehicle identification system communicating therebetween and generating notifications and indicators based on the vehicle's location and the distance to the user)." *Id.* at 22. We concluded that "[t]hus, proposed substitute claims 21 and 29 provide a technological solution rooted in computer and network technologies." *Id.* at 22–23 (citing *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245, 1257–58 (Fed. Cir. 2014); *Visual Memory LLC v. NVIDIA Corp.*, 867 F.3d 1253, 1259–60 (Fed. Cir. 2017)).

We concluded, therefore, that Petitioner had not shown that proposed substitute claims 21–29, 31, and 32 are patent-ineligible. *Id.* at 23.

Petitioner responds that "[t]he limitations in steps 21a–3d and 29a–28e of determining that a dispatched vehicle is within a predetermined distance of the location of a user, generating a notification signal, creating an indicator, and displaying the indicator based on the notification signal on an external display are merely computer implementations of the abstract idea of enabling a user to identify a dispatched cab." Pet. MTA Sur-reply 10. Petitioner continues, "[s]uch limitations do not result

in an improvement in the functioning of a computer or other technical improvement." *Id.*

We disagree with Petitioner. Petitioner does not address the rationale of our preliminary decision, but only expresses disagreement with the outcome. Petitioner does not persuasively address our conclusion that the proposed substitute claims "recite technological features that enable communication and coordination between multiple devices that are not co-located and are moving with respect to each other." Prelim. Guidance 22,

Therefore, for the reasons set forth in our Preliminary Guidance and summarized above, we find that Petitioner fails to prove that the proposed substitute claims are not patent-eligible.

7. Conclusion

For the reasons given, we find that Patent Owner's Motion to Amend has met the statutory and regulatory requirements as to claim 29, 31, and 32, but not as to claim 21 or dependent claims 22–28, and Petitioner has failed to demonstrate that proposed substitute claims 29, 31, and 32 are unpatentable as obvious over Kalanick and Kemler or Lalancatte and Kemler, with or without Stanfield. Therefore, Patent Owner's Motion to Amend is *granted* as to proposed substitute claims 29, 31, and 32 and *denied* as to proposed substitute claims 21–28.

V. PATENT OWNER'S MOTION TO EXCLUDE

Patent Owner's Motion to Exclude seeks to exclude three categories of evidence relating to Petitioner's expert, David Williams: (1) certain paragraphs of Mr. Williams's second declaration (Ex. 1027)[11] for allegedly expressing "legal opinions"; (2) Exhibits 1027 and 1030 (Mr. Williams's third declaration) as "[n]on-expert and unreliable under FRE 702" and "[p]rejudicial under FRE 703"; and (3) Exhibit 1030 under 37 C.F.R for presenting "new evidence or argument that could have been presented in the Petition." Paper 27, 1–2. Petitioner opposes the Motion. Paper 28. For the reasons that follow, Patent Owner's Motion is *denied*.

A. Mr. Williams's Second Declaration (Exhibit 1027)

Patent Owner moves to exclude paragraphs 5–19, 20–32, 34, 36, 38–41, 43, 45, 46, 54, 55, 57, 59–64, 66–69, and 71–78 of Exhibit 1027, the Second Declaration of Mr. Williams. Paper 27, 1. Patent Owner complains that Mr. Williams's testimony is "unreliable" and Mr. Williams is "not qualified." *Id.* Patent Owner contrasts Mr. Williams's qualifications to those of its own expert, Dr. Valenti. *Id.* at 2. Patent Owner refers specifically to the discussion of "server farms" in connection with Kemler. *See supra*, Section III.E.3.

Patent Owner's attack on Mr. Williams's qualifications and credibility is unfounded. As discussed *supra*, in

11. The Motion incorrectly identifies this declaration as Exhibit 2027.

Section III.E.3, we found Mr, Williams's testimony on server farms and other matters to be reliable and highly credible, especially his responses to Patent Owner's counsel on cross-examination. *See, e.g.*, Williams Dep. 82:17–94:22. As we noted, Mr. Williams backed up his testimony on the power requirements of server farms with several years of experience designing, implementing, and operating a server farm. We found this experience lends credibility to his testimony that the server farms in Kemler would improve efficiency of the system, even without specific test data. *See id.*

We found the declaration testimony in Mr. Williams's Second Declaration in connection with the Motion to Amend to be helpful. Patent Owner had the opportunity to challenge the testimony given in Mr. Williams's Second Declaration on cross-examination, but did not take up that opportunity. We find that these challenges to Mr. Williams's Second Declaration, at most, go to the credibility, and not to the admissibility, of his testimony. We agree with Petitioner that the challenged testimony provided by Mr. Williams relates to technical matters commonly addressed by experts testifying in patent cases, and not to conclusions of law. Paper 28, 2–4. We therefore deny the Motion as to Mr. Williams's Second Declaration.

B. Mr. Williams's Third Declaration (Ex. 1030)

Patent Owner moves to exclude paragraphs 5–45 (i.e., essentially all) of Mr. Williams's Third Declaration (Ex. 1030). Paper 27, 2. Again, Patent Owner alleges that the declaration is "unreliable" and "[p]rejudicial." *Id.*

Petitioner responds that Patent Owner had a chance to challenge the testimony on cross-examination, but failed to do so. Paper 28, 1. Petitioner asserts that Patent Owner's arguments go to the weight of the testimony, not its admissibility, and that the Board is "well positioned" to assess the weight. *Id.* Petitioner argues that the testimony should not be excluded under Federal Evidence Rule 703. We agree with these arguments by Petitioner.

As Petitioner points out, Patent Owner "ignores large sections" of the testimony of Mr. Williams demonstrating the basis for his opinions that meets the reliability standard of Rule 703. *See* Paper 28, 5–7. This would include the "server farm" testimony cited by Patent Owner as an example. *See id.* at 6–7. As discussed *infra*, we found Mr. Williams's testimony helpful on that and other issues.

For the reasons given, including those summarized above, we deny the Motion as to Mr. Williams's Third Declaration.

C. Alleged New Evidence or Argument (Exhibit 1030)

Patent Owner alleges that "Exhibit 1030 is inadmissible under 37 CFR 42.23 because it is new evidence that could have been provided in the Petition." Paper 27, 8. Patent Owner gives, as an example, testimony presented by Mr. Williams that it Patent Owner itself describes as "*in response to* Patent Owner pointing out that Kalanick does not disclose the 'first signal' of Claim 1[D]." *Id.* (emphasis added).

Petitioner responds that "[t]he Federal Circuit has repeatedly made clear that Petitioners may introduce new evidence after the petition stage, when such evidence responds to arguments made and evidence introduced by patent owner." Paper 28, 9 (citing *Apple Inc. v. Andrea Elecs. Corp.*, 949 F. 3d 697, 705-707 (Fed. Cir. 2020); *Chamberlain Grp., Inc. v. One World Techs., Inc.*, 944 F.3d 919, 925 (Fed. Cir. 2019)). We agree with Petitioner that Patent Owner seeks to exclude testimony that admittedly was properly presented by Petitioner "in response to" Patent Owner's arguments, such as in the examples cited by Patent Owner. *Id.* at 9–11. Furthermore, we see no undue prejudice to Patent Owner, who passed up the opportunity to cross-examine Mr. Williams on this testimony.

For the reasons given, including those summarized above, we deny the Motion to Exclude Mr. Williams's Third Declaration as untimely.

VI. CONCLUSION

For the foregoing reasons we determine that Petitioner has demonstrated by a preponderance of the evidence that claims 1–9 and 11–20 of the '637 patent are unpatentable.

In summary:

Appendix B

Claim(s)	35 U.S.C. §	Reference(s)/ Basis	Claim(s) Shown Unpat-entable	Claim(s) Not shown Unpatent-able
1–9, 11–20	103	Kalanick, Kemler	1–9, 11–20	
1–9, 11–20	103	Lalancette, Kemler	1–9, 11–20	
Overall Out-come			1–9, 11–20	

Furthermore, we grant in part Patent Owner's contingent Motion to Amend, which proposed cancelling original claims 1–12 and replacing them with substitute claims 21–32.

In summary:

Motion to Amend Outcome	Claim(s)
Original Claims Cancelled by Amendment	9, 11, 12
Substitute Claims Proposed in the Amendment	21–32
Substitute Claims: Motion to Amend Granted	29, 31, 32
Substitute Claims: Motion to Amend Denied	21–28
Substitute Claims: Not Reached	30

Appendix B

VII. ORDER

Upon consideration of the record before us, it is:

ORDERED that claims 1–9 and 11–20 of the '637 patent are not patentable;

ORDERED that Patent Owner's Motion to Amend is *granted in part;*

ORDERED that claims 9, 11, and 12 of the '637 patent are *cancelled* and replaced by substitute claims 29, 31, and 32, respectively;

ORDERED that Patent Owner's Motion to Exclude is *denied*; and

FURTHER ORDERED that because this is a Final Written Decision, parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

APPENDIX C — OPINION OF THE PATENT TRIAL AND APPEAL BOARD DATED APRIL 10, 2023 (IPR2021-01601)

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

LYFT, INC.,

Petitioner,

v.

RIDESHARE DISPLAYS, INC.,

Patent Owner.

IPR2021-01601
Patent 10,559,199 B1

Before THOMAS L. GIANNETTI, LYNNE E. PETTIGREW, and JOHN D. HAMANN, *Administrative Patent Judges.*

GIANNETTI, *Administrative Patent Judge.*

JUDGMENT
Final Written Decision
Determining All Challenged Claims Unpatentable
35 U.S.C. § 318(a)

Appendix C

ORDER
Granting Motion to Amend
37 C.F.R. § 42.121
Denying Motion to Exclude
37 C.F.R § 42.64

I. INTRODUCTION

Lyft, Inc. ("Petitioner") filed a Petition (Paper 1, "Pet.") requesting *inter partes* review of claims 1 and 2 (the "challenged claims") of U.S. Patent No. 10,558,199 B1 (Ex. 1001, "the '199 patent"). Patent Owner, Rideshare Displays, Inc., filed a Preliminary Response (Paper 6, "Prelim. Resp."). We determined that Petitioner had established a reasonable likelihood that it would prevail with respect to at least one claim. We, therefore, instituted *inter partes* review as to all of the challenged claims of the '199 patent and all of the asserted grounds of unpatentability in the Petition. Paper 7 ("Institution Dec.").

Following institution, Patent Owner filed a Response. Paper 13 ("PO Resp."). Subsequently, Petitioner filed a Reply (Paper 18, "Pet. Reply"), and Patent Owner filed a Sur-reply (Paper 21, "PO Sur-reply").

After institution, Petitioner filed a contingent Motion to Amend (Paper 12, "Mot. Amend") and requested that we provide preliminary guidance in accordance with the Board's pilot program concerning motion to amend practice and procedures. Mot. Amend 1; *see* Notice Regarding a New Pilot Program Concerning Motion to Amend Practice

and Procedures in Trial Proceedings under the America Invents Act before the Patent Trial and Appeal Board, 84 Fed. Reg. 9,497 (Mar. 15, 2019) ("Notice"). *See* Section IV, *infra.* In addition, Patent Owner filed a Motion to Exclude Evidence (Paper 26) and Petitioner filed an Opposition (Paper 28). *See* Section V, *infra*. On January 10, 2023, we held a consolidated oral hearing with four related cases.[1] A transcript of the hearing is included in the record. Paper 31 ("Hearing Tr.").

We have jurisdiction under 35 U.S.C. § 6. This decision is a Final Written Decision issued pursuant to 35 U.S.C. § 318(a). For the reasons we discuss below, we determine that Petitioner has proven by a preponderance of the evidence that claims 1 and 2 of the '199 patent are unpatentable.

In addition, because we determine that Petitioner has failed to establish by a preponderance of the evidence that proposed substitute claims 3 and 4 of Patent Owner's contingent Motion to Amend are unpatentable, we grant the Motion to Amend.

II. BACKGROUND

A. Related Matters

The parties identify the following district court proceedings involving the '199 patent: *Rideshare*

1. Those cases are IPR2021-01598, IPR2021-01599, IPR2021-01600, and IPR2021-01602.

Displays, Inc. v. Lyft, Inc., 20-cv-01629-RGAJLH (D. Del.). Pet. 1; Paper 5, 2. The parties also identify several petitions for *inter partes* review of patents related to the '199 patent: IPR2021-01598, IPR2021-01599, IPR2021-01600, and IPR2021-01602. Pet. 1; Paper 5, 2.

B. Real Parties-in-Interest

Petitioner identifies Lyft, Inc. as the only real party-in-interest. Pet. 1. Patent Owner identifies Rideshare Displays, Inc. as the only real party-in-interest. Paper 5, 2. Neither party challenges those identifications.

C. The '199 Patent (Ex. 1001)

The '199 patent is titled "Vehicle Identification System." Ex. 1001, (54). The '199 patent is a continuation (through intermediate continuations) of U.S. Patent 9,892,637 ("the '637 patent"). *Id.* at (63). The patent describes a system for providing an indicator on a mobile communication device of a user having requested a ride service to allow the user to identify a vehicle prior to boarding the vehicle. *Id.* at 1:31–35. According to the patent, "[a] continuing need exists for systems and methods adapted for use by transportation services to ensure rider and driver security." *Id.* at 2:1–3.

Two separate embodiments of the invention are shown, in Figures 1A and 1B, following:

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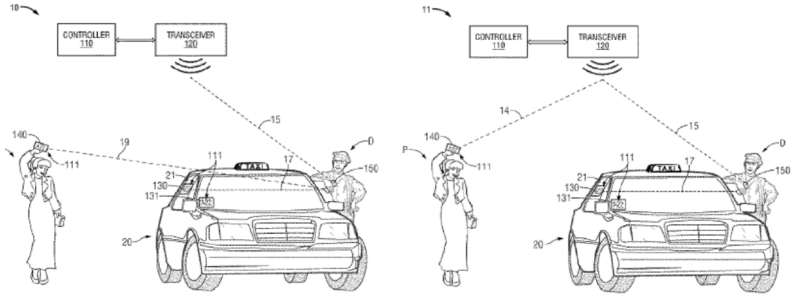

Fig. 1A Fig. 1B

Figures 1A and 1B illustrate two embodiments of a vehicle identification system in accordance with the '199 patent. *Id.* at 2:48–53. Referring first to Figure 1A, vehicle identification system 10 includes controller 110, transceiver 120, and one or more displays associated with motor vehicle 20. *Id.* at 3:67–4:2. First display 130 is associated with passenger side rear window 21 of motor vehicle 20, and second display 131 is associated with the front windshield of motor vehicle 20. *Id.* at 4:2–6. Vehicle identification system 10 can generate one or more signals representing an indicator, which may be displayable as a "code" (e.g., a text string or an alphanumeric string), an icon, or other identifier, on display 130 and on mobile communication device 140 associated with user P to enable the user to identify the vehicle that he or she has requested for a ride service. *Id.* at 4:17–23.

Figure 3 is a flowchart illustrating a method of identifying a vehicle in accordance with the '199 patent. *Id.* at 2:57–59. Figure 3 follows:

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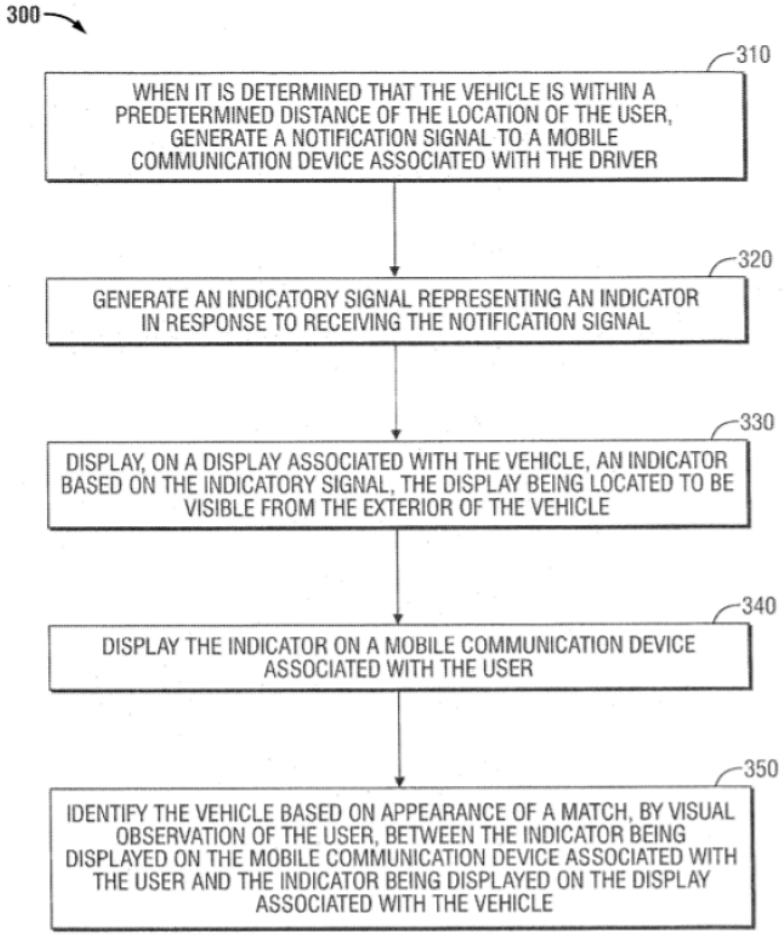

Figure 3 illustrates a method of identifying a vehicle being dispatched to a location of a user having requested a ride from a transportation service. Ex. 1001, 7:8–10. When it is determined that motor vehicle 20 is within a predetermined distance of the location of user P, notification signal 15 is

generated to mobile communication device 150 associated with driver D. *Id.* at Fig 3, block 310. Indicatory signal 17 representing indicator 111 is generated in response to receiving notification signal 15. *Id.* at Fig. 3, block 320. Indicator 111 based on indicatory signal 17 is displayed on display 130 associated with vehicle 20. *Id.* at Fig. 3, block 330. Display 130 is located to be visible on the exterior of vehicle 20. *Id.* at 7:21–22.

Indicator 111 is also displayed on mobile communication device 140 associated with user P. *Id.* at Fig. 3, block 340. Motor vehicle 20 is identified based on appearance of a match, by visual observation of user P, comparing the indicator being displayed on the mobile communication device associated with user P and the indicator being displayed on the display associated with vehicle 20. *Id.* at Fig. 3, block 350.

In the embodiment of Figure 1A, the mobile communication device associated with driver D generates a second signal representing an indicator that is transmitted to mobile communication device 140 associated with user P. *Id.* at 5:41–46. In the embodiment of Figure 1B, vehicle identification system 11 generates indicatory signal 14 transmitted to the mobile communication device associated with user P and notification signal 15 to be transmitted to the mobile communication device associated with driver D. *Id.* at 5:53–58. In this embodiment, the driver's mobile communication device does not communicate with the user's mobile communication device. *Id.* at 5:58–61.

D. Illustrative Claim

The '199 patent has two claims. As noted, both claims 1 and 2 are challenged in the Petition. Pet. 4. Claim 1 is the only independent claim. Claim 1 is illustrative of the claimed subject matter and is reproduced below:[2]

> 1. [Preamble] A vehicle identification method implemented as an Application on mobile communication devices over a wireless communication network, comprising:
>
> [1A] requesting a ride from a transportation service from a mobile communication device of a user;
>
> [1B] determining that a vehicle is within a predetermined distance of the location of the user;
>
> [1C] generating a notification signal to a mobile communication device associated with a driver of the vehicle;
>
> [1D] generating an indicatory signal representing an indicator;
>
> [1E] displaying the indicator based on the notification signal on a display associated

2. Paragraph references in brackets were added tracking Petitioner's analysis.

> with the vehicle, the mobile communication device associated with the driver, and the user's mobile communication device, wherein the display associated with the vehicle is located to be visible from the exterior of the vehicle; and
>
> [1F] identifying the vehicle based on appearance of a match, by visual observation of the user, between the indicator being displayed on the user's mobile communication device and the indicator being displayed on the display associated with the vehicle.

Ex. 1001, 8:7–27.

E. Prior Art References and Other Evidence

Petitioner relies on the following references (Pet. 4):

> 1. U.S. Patent Pub. 2015/0332425 A1 (Jan. 23, 2015) (Ex. 1006, "Kalanick");
>
> 2. U.S. Patent No. 9,494,938 B1 (Apr. 3, 2014) (Ex. 1008, "Kemler");
>
> 3. U.S. Patent Pub. 2012/0137256 A1 (May 31, 2012) (Ex. 1009, "Lalancette").

In addition to these references, Petitioner relies on three Declarations of David Hilliard Williams. Ex. 1003 ("Williams I Decl."), Ex. 1027 ("Williams II Decl."), Ex. 1030 ("Williams III Decl."). Patent Owner submitted

a first Declaration of Dr. Matthew Valenti with the Preliminary Response (Ex. 2001 "Valenti I Decl."), and thereafter, second and third declarations of Dr. Valenti (Ex. 2021, "Valenti II Decl."; Ex. 2023, "Valenti III Decl."). In addition, the parties have submitted deposition transcripts for those witnesses.[3]

F. The Asserted Grounds of Unpatentability

Petitioner asserts the following grounds of unpatentability. Pet. 4.

Claim(s) Challenged	35 U.S.C. §	Reference(s)/ Basis[4]
1	103	Kalanick, Kemler
1, 2	103	Lalancette, Kemler

3. Ex. 1029 ("Valenti Dep."); Ex. 2022 ("Williams Dep."),

4. Petitioner's obviousness challenges additionally refer to the "[k]knowledge of [a person of ordinary skill in the art]." Pet. 4. While we do not list such knowledge separately, we consider it as part of our obviousness analysis. *See Randall Mfg. v. Rea*, 733 F.3d 1355, 1362 (Fed. Cir. 2013) ("As *KSR* established, the knowledge of such an artisan is part of the store of public knowledge that must be consulted when considering whether a claimed invention would have been obvious.").

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III. ANALYSIS OF THE CHALLENGED CLAIMS

A. Obviousness

A claim is unpatentable as obvious under 35 U.S.C. § 103 "if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains." 35 U.S.C. § 103 (2011). The question of obviousness is resolved on the basis of underlying factual determinations, including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) so-called "secondary considerations," including commercial success, long-felt but unsolved needs, failure of others, and unexpected results. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). Neither party has presented any evidence on the fourth *Graham* factor. We therefore do not consider this factor in our decision.

B. Level of Ordinary Skill in the Art

According to Petitioner, a person of ordinary skill in the pertinent art "would have had at least a bachelor's degree in electrical or computer engineering, or a similar field with at least two years of experience in the field of vehicle location and tracking systems or related technologies." Pet. 9. Petitioner adds that "[a] person with less education but more relevant practical experience may

also meet this standard. The prior art also evidences the level of skill in the art." *Id.* (citing Williams I Decl. ¶ 44).

Patent Owner provided a slightly different formulation in the Preliminary Response. According to Patent Owner, a person of ordinary skill at the relevant time would have had:

> i) at least a bachelor's degree in electrical or computer engineering, or a similar field;
>
> ii) at least two years of experience in wireless cellular network protocols, including location and tracking/positioning, and having an understanding of signal timing and reliability issues in such wireless cellular network protocols; and
>
> iii) knowledge of issues with respect to data privacy and database storage systems. Regarding data privacy, the [person of ordinary skill] need not have extensive knowledge in, e.g. data encryption methodologies, but would have experience with data privacy policies and protection models.

Prelim. Resp. 5. At the institution stage, we adopted Petitioner's more general formulation, with a qualification. We stated we would also expect a person of ordinary skill to also have at least some experience in wireless cellular network protocols, as suggested by Patent Owner. Institution Dec. 19. We reasoned that our review

of the '199 patent and the cited prior art did not suggest that specific experience with data privacy policies and protection models would be required, given the focus of the '199 patent on more general principles of cellular communications and signaling. *Id.* at 19–20. However, we observed that the arguments presented by the parties did not depend on the definition of the person or ordinary skill, and therefore, we concluded that our decision would be the same under either formulation. *Id.* at 20.

Patent Owner responds that it "disagrees" with our formulation because "the ['199] patent is not directed to a vehicle tracking system." PO Resp. 4. Patent Owner explains that "[i]t is directed to a communication system between a rider and driver, albeit using location based services in some aspects of this system, and thus a [person of ordinary skill] would be a person who is skilled in the field of communication systems along cellular networks." *Id.*

We agree that the patented technology involves cellular communications, and this is adequately reflected in our formulation, where we stated "[w]e would also expect a person of ordinary skill to also have at least some experience in wireless cellular network protocols, as suggested by Patent Owner." Institution Dec. 19. But Patent Owner continues that "a [person of ordinary skill] should have knowledge of wireless communications protocols and some general experience with data privacy issues and protection models, in addition to the education level in electrical or computer engineering identified by the parties." PO Resp. 4–5. Patent Owner cites no

authority for this proposal, which we rejected in our Institution Decision based on our review of the patent and the prior art. Institution Dec. 19. We therefore maintain our formulation of the person of ordinary skill from our Institution Decision.

Patent Owner segues from discussing the scope of knowledge of a person of ordinary skill to an attack on Mr. Williams's testimony. PO Resp. 5–6. We are not persuaded by Patent Owner's citations to Mr. Williams's testimony, or by Patent Owner's attempt to discredit Mr. Williams's opinions on the pertinent art as "overreach." Id. None of the testimony cited by Patent Owner relates to the Kalanick, Lalancette, or Kemler references. Nor do we agree that Mr. Williams's testimony concerning background technology "infects each argument that Petitioner makes with respect to the knowledge of a [person of ordinary skill]," as Patent Owner alleges. Id. at 6. Patent Owner does not point to any specific arguments that would be so "infected." We find, instead, as we stated in our Institution Decision, that "the arguments presented by the parties do not depend on the definition of the person or ordinary skill, and therefore, our decision would be the same under either formulation." See Institution Dec. 20.

C. Claim Construction

For this *inter partes* review, the Board applies the same claim construction standard as that applied in federal courts. See 37 C.F.R. § 42.100(b) (2019). Under this standard, claim terms "are generally given their ordinary and customary meaning" as understood by a person of ordinary skill in the art in question at the time

of the invention. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (en banc) (citations omitted). "In determining the meaning of the disputed claim limitation, we look principally to the intrinsic evidence of record, examining the claim language itself, the written description, and the prosecution history, if in evidence." *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 469 F.3d 1005, 1014 (Fed. Cir. 2006) (citing *Phillips*, 415 F.3d at 1312–17). Extrinsic evidence is "less significant than the intrinsic record in determining 'the legally operative meaning of claim language.'" *Phillips*, 415 F.3d at 1317 (citation omitted).

Petitioner prefaced its claim construction discussion by stating "Petitioner interprets all claim terms in accordance with their ordinary and customary meaning *unless otherwise stated below*." Pet. 9 (emphasis added). Petitioner then proceeded to criticize two constructions proposed by Patent Owner in district court: "indicator" and "indicatory signal." *Id.* at 10. Petitioner claimed that Patent Owner's proposed construction of these terms "requires something to be 'actively formulated' by the controller." *Id.* Petitioner disagreed with these constructions, observing that "[t]he term 'actively formulated' is not used anywhere in the patent specification and does not add clarity to the meaning of these claim terms." *Id.* Instead, Petitioner asserted the terms should be given "their ordinary and customary meaning." *Id.*

Patent Owner responded that two terms, in context, required construction and addressed each in the Preliminary Response. Prelim. Resp. 6–11.

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In our Institution Decision, we addressed the parties' proposed constructions of "indicator" and "indicatory signal" as well as the construction of "generate," which we identified as an additional term requiring construction. Institution Dec. 20–25. We further address the construction of these terms below.

1. Indicator

For the term "indicator" (as in "indicatory signal representing an indicator"), Patent Owner proposed the following construction: "any code (e.g., text, alphanumeric, icon, or other symbol), color, etc., or combination thereof, which displays and enables a match between user/rider and driver that preferably is not duplicated in the same pickup location." Prelim. Resp. 11. The '199 patent describes an indicator as "a 'code' (e.g., a text string or an alphanumeric string), an icon, or other identifier, on the display 130 and on a mobile communication device 140 associated with the user P to enable the user P to identify the vehicle that he/she has requested for a ride service." Ex. 1001, 4:19–23. Consistent with this description in the specification, we construed the term "indicator" as "a code (e.g., a text string or an alphanumeric string), an icon, or other identifier, for display to enable a match between the user and the driver." Institution Dec. 21.

We did not see a basis in the claims or specification for Patent Owner's contention that a "new indicator" must be "actively formulate[d] . . . for each rider-driver trip while the driver is in transit." *Id.* at 22 (citing Prelim. Resp. 31).

Patent Owner does not address the construction of "indicator" in its Patent Owner Response. For the foregoing reasons, we maintain our construction of this term. We discuss Patent Owner's contention that a new indicator must be "actively formulated" further in connection with our consideration of the claim term "generate," *infra*.

2. Indicatory Signal

Patent Owner disagreed that this term should be afforded its plain and ordinary meaning. Prelim. Resp. 7. According to Patent Owner, "the term 'indicatory signal' is not the 'indicator' – they are different and 'indicatory signal' is the signal that tells the display what 'indicator' to display." *Id.* (citing Ex. 1001, Fig. 3, block 320, reproduced *supra*, Section II.C).

Patent Owner asserted that "a controller in a vehicle identification system *actively formulates an indicator* (or code/indicatory symbol which represents an indicator) that is sent to the rider, and driver, which is ultimately displayed for each ride." *Id.* at 8 (emphasis added). The controller "generates a signal sent by the transceiver to the driver's 'mobile communication device' when the driver is within a predetermined distance to a location." *Id.* at 8–9. Patent Owner continued, "the location signal is very different from the signal that indicates what code should be on the display." *Id.* at 9. Thus, Patent Owner proposed the following construction for indicatory signal: "a signal that represents an indicator to be displayed (but that is

not necessarily the indicator itself)." *Id.* (citing Ex. 1001, Fig. 3, Block 320).

As in the case of the term "indicator," we did not see a basis for construing this term as requiring that the signal be "actively formulated," in the sense described by Patent Owner. *See* Prelim. Resp. 10. We therefore did not adopt Patent Owner's construction. Institution Dec. 23. Patent Owner does not address this construction in its Patent Owner Response. For the foregoing reasons, we maintain our construction of this term.

3. Generate

Based on the arguments presented and on Patent Owner's analysis of the prior art in the Preliminary Response, we identified "generate" as an additional term appearing in the challenged claims that required construction, as it relates to the controller in such phrases as "generating an indicatory signal representing an indicator." Institution Dec. 23 (citing Ex. 1001, 8:16 (claim element 1D)).

Referring to the specification, Patent Owner explained that "a controller in a vehicle identification system *actively formulates an indicator* . . . that is sent to the rider, and driver, which is ultimately displayed for each ride." Prelim. Resp. 8 (emphasis added). Patent Owner's analysis of the claims in the Preliminary Response equated the claim term "generate" a signal with "actively formulate" an indicator. For example, in discussing claim limitation 1C, which recites "generating a notification signal to a

mobile communication device associated with the driver of the vehicle," Patent Owner asserted that "[t]he claims require that a new signal [i.e., there is no user profile, no signal stored in a user profile, or stored in a database in advance of a rider's request for a driver/taxi] be actively formulated each time a ride is dispatched." *Id.* at 34.

We declined to adopt this implicit construction (and the related construction "actively generate"). Institution Dec. 23. The claims themselves do not require the controller to "actively formulate" a new indicator for the same rider requesting a subsequent trip for that second trip, or that "a new signal be actively formulated each time a ride is dispatched," as Patent Owner's analysis asserts. *See infra*.

Nor is it clear how this construction is supported by the '199 patent specification. The '199 patent describes the controller as "communicatively coupled to the transceiver." Ex. 1001, 2:10–11. Further, "[t]he controller is adapted to generate a first signal to be transmitted by the transceiver to a mobile communication device." *Id.* at 2:12–14. Elsewhere in the patent, "controller" is defined as "any type of computing device, computational circuit, or any type of processor or processing circuit capable of executing a series of instructions that are stored in a memory associated with a with the controller." *Id.* at 3:6–10. The operation of the controller is also described as follows: "The controller 110 may generate a first signal (also referred to herein as a 'notification signal') that is transmitted via the transceiver 120 to the mobile communication device 150 associated with the driver D." *Id.* at 5:14–17.

Still further, "[t]he controller 110 generates four different notification signals, NOTIFICATION-A, NOTIFICATION-B, NOTIFICATION-C, and NOTIFICATION-D, to be transmitted by the transceiver 120 to a first DRIVER'S MOBILE DEVICE 150A, a second DRIVER'S MOBILE DEVICE 150B, a third DRIVER'S MOBILE DEVICE 150C, and a fourth DRIVER'S MOBILE DEVICE 150D, respectively." *Id.* at 6:39–46. And further, "[i]n other embodiments, wherein the vehicle identification system 11 is utilized, an indicatory signal to the rider's mobile communication device may be generated by the controller 110." *Id.* at 7:4–7.

In none of these descriptions of the controller's operation is there mention of "actively formulates," or a disclosure that the controller "actively formulates" a new indicator for the same rider requesting a subsequent trip for that second trip, or that "a new signal be actively formulated each time a ride is dispatched." *See infra*. Instead, the specification describes the controller's operation as generating a signal, and describes the indicator as "a 'code' (e.g., a text string or an alphanumeric string), an icon, or other identifier, on the display 130 and on a mobile communication device 140 associated with the user P to enable the user P to identify the vehicle that he/she has requested for a ride service." Ex. 1001, 4:19–23.

Because the specification and prosecution history do not explicitly provide a definition for the term "generate," we looked to extrinsic sources to determine its plain meaning. Institution Dec. 25. The Federal Circuit has

approved the use of dictionaries for guidance in claim construction, "so long as the extrinsic evidence does not contradict the meaning otherwise apparent from the intrinsic record." *Helmsderfer v. Bobrick Washroom Equip., Inc.*, 527 F.3d 1379, 1382 (Fed. Cir. 2008); *see also Comaper Corp. v. Antec, Inc.*, 596 F.3d 1343, 1348 (Fed. Cir. 2010) (approving of "consult[ing] a general dictionary definition of [a] word for guidance" in determining ordinary meaning); *Praxair, Inc. v. ATMI, Inc.*, 543 F.3d 1306, 1325 (Fed. Cir. 2008) ("[O]ur decisions, including *Phillips*, do not preclude the use of general dictionary definitions as an aid to claim construction.") (citation omitted). One dictionary definition of "generate" is "to bring into existence: such as: . . . to originate by a vital, chemical, or physical process: PRODUCE." *See* https://www.merriam-webster.com/dictionary/generate. We therefore construed the term "generate" as it relates to the controller in reference to a signal in accordance with its plain and ordinary meaning, which is "to originate or produce the signal." Institution Dec. 25.

Patent Owner's Response does not directly respond to this construction. PO Resp. 7. Instead, Patent Owner asserts that "at institution, the Board determined that the term 'generating should be construed according to its ordinary meaning. . . . Applying ordinary meaning should still lead to the conclusion that the prior art does not render the claims of the patent unpatentable." *Id.*

For the foregoing reasons, we maintain our construction of "generate" a signal as "to originate or produce the signal." Institution Dec. 25.

4. Other Terms

To the extent we need to interpret any other terms, we will do so in the context of the analysis of the prior art that follows.

D. Description of the Prior Art References

1. Kalanick (Ex. 1006)

Kalanick discloses a system for arranging an on-demand service to be provided by a transport service provider to a requesting user. Ex. 1006 ¶ 2. Kalanick describes a dynamically configured and personalized display that is positioned on or fastened to a vehicle. The display is easily visible to a user outside of the vehicle and informs the user which vehicle has been assigned to the user for the on-demand service. *Id.* ¶ 10.

The on-demand service system can arrange a transport service for a user by receiving a request for transport from the user's device, selecting a driver from a plurality of available drivers to perform the transport service for that user, sending an invitation to the selected driver's device, and receiving an acceptance of the invitation by the selected driver. *Id.* ¶ 11.

The on-demand service system described by Kalanick can associate an identifier of the user and an identifier of the driver with an entry for that transport service. Once the on-demand service system arranges the transport service for the user and the driver, the transport personalization system can access a user database to

determine whether that user has specified an output configuration for an indication device (e.g., determine whether the user has personalized at least one aspect of the transport service). *Id.* ¶ 11.

This operation is illustrated in Figure 1 of Kalanick, following:

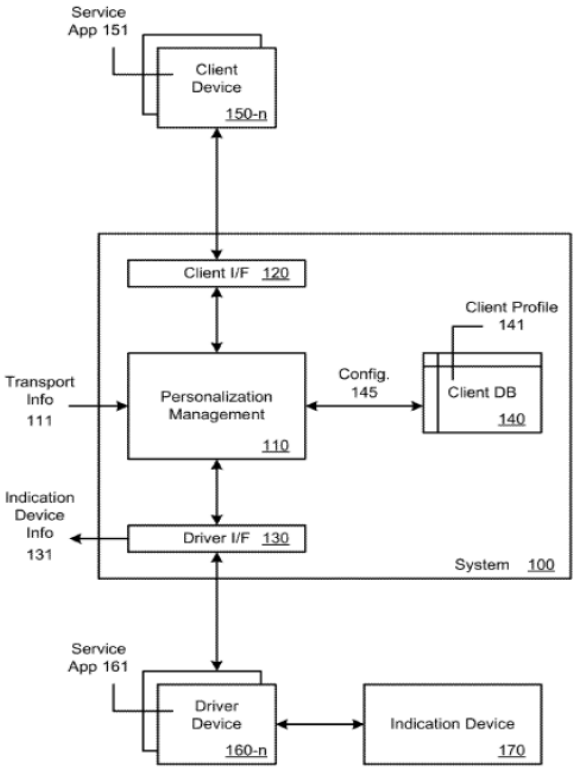

FIG. 1

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Figure 1 of Kalanick illustrates a system to provide configuration information for controlling an indication device for use with an on-demand service. *Id.* ¶ 3. System 100 can communicate, over one or more networks via a network interface (e.g., wirelessly or using a wire), with client devices 150 (e.g., mobile computing devices operated by clients or users/customers) and driver devices 160 (e.g., mobile computing devices operated by drivers) using client device interface 120 and driver device interface 130, respectively. *Id.* ¶ 25. System 100 can receive transport information 111 about the transport service from the on-demand service system and determine whether to transmit user-specified configuration data to the driver device of the driver selected to provide the transport service. *Id.* ¶ 26.

Client database 140 stores a plurality of client profiles 141 for each user that has an account with the on-demand service system. A client profile 141 can include a user identifier. *Id.* ¶ 29. When personalization management 110 receives transport information 111, the personalization management can use the user ID to access client database 140. *Id.*

Personalization management 110 can perform a lookup of client profile 141 (e.g., using the user's ID or user's device ID) and determine if the user has specified an output configuration for an indication device. If the user has specified the output configuration, the personalization management can determine and/or retrieve configuration data 145 corresponding to the specified configuration for

that user. *Id.* ¶ 30. If the user does not provide indication preferences, however, the personalization management can store or maintain default indication preferences in the user's profile 141. *Id.*

The personalization management can transmit the user's configuration data 145 corresponding to the user's indication preferences (or default configuration data if the user has not specified indication preferences) to driver device 160. *Id.* ¶ 31.

In one example, the on-demand service system can use location information from driver's device 160 and/or transport information 111 to automatically determine the driver's state, and based on the state of the transport service or the driver, system 100 and/or the service application 161 can control the operation of indication device 170. *Id.* ¶¶ 35–36.

The state of the transport service can correspond to the driver "arriving now." *Id.* ¶ 37. When the service application 161 determines that the transport service is to change states from "en route" to "arriving now," the service application can trigger or control the indication device to output the user's specified color, e.g., blue, (and/or other preferred output content, patterns, or sequences) so that the user can see which vehicle is approaching and will provide the service for the user. *Id.* The service application can also control the indication device to output the user's specified display/output preferences in a specific configuration that is based on the transport state. *Id.*

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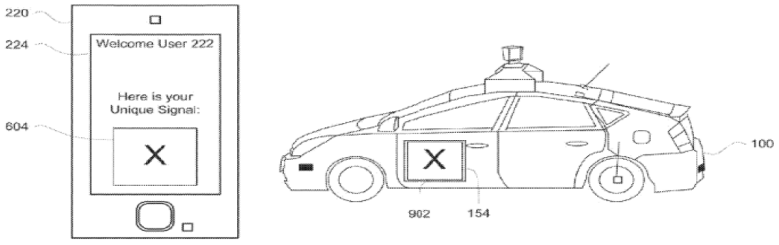
2. Kemler (Ex. 1008)

Kemler discloses providing a user with a way to identify or verify a vehicle dispatched to pick up the user. Ex. 1008, 3:38–40. Once the vehicle is within a certain distance of the user, the vehicle may signal to the user in order to identify the vehicle to the user and avoid confusion. This signaling could include a display or audio including a unique string of text. *Id.* at 3:43–47.

Kemler describes the dispatched vehicle as having an external electronic display mounted on the vehicle and an internal electronic display. *Id.* at 5:22–24. Kemler explains that as the dispatched vehicle approaches the user's client device, a unique signal may be displayed on the vehicle's external display and the user's client device so the user can identify the vehicle without compromising the user's privacy. *Id.* at 4:1–19.

This operation is illustrated in Figure 9 of Kemler, following:



900
FIGURE 9

Figure 9 is a diagram 900 of a client computing device and a computing device of a vehicle displaying unique signal "X" around the same time. *Id.* at 12:45–47. By comparing unique signal 604 of display 224 to unique signal 902 of external electronic display 154, a user may recognize that vehicle 100 was dispatched for that user. *Id.* at 12:47–51. If the signals are the same, the user can easily identify the vehicle, and if not, the user may continue to look for the vehicle dispatched for that user. *Id.* at 12:51–53.

3. Lalancette (Ex. 1009)

In its most relevant embodiment, Lalancette describes an electronic display mounted to be visible from outside a taxi, a mobile computing device in the taxi that manages a dash-mounted driver display and the mounted electronic display, and a smart phone of a user. Ex. 1009 ¶¶ 27–33.

The taxi is equipped with an electronic display mounted outside of the taxi car or at least visible from outside the taxi car as well as a dash-mounted driver display. The displays are configured to display information received from the taxi dispatch service. *Id.* ¶ 27.

In one scenario described by Lalancette, a user orders a taxi using a handset to request taxi service from a taxi dispatch service. *Id.* ¶ 29. The user device (the handset) conveys user identification (user ID) to the service provider. *Id.* The service provider validates the request to ensure the request can be accommodated. *Id.* ¶ 30. An automated dispatch system uses the user's location to

select the most suitable taxi car to respond to the request for service from the user. *Id.*

The service provider then requests a personal human-readable icon for the user from an icon server by sending a message carrying a user ID for the user. The icon server uses the user ID to retrieve a personal icon corresponding to the user from an icon database. *Id.* ¶ 31.

The icon server sends the retrieved icon to the service provider. *Id.* ¶ 32. The service provider dispatches the selected taxi car to the location of user and displays the user's icon on the taxi's roof-top electronic display and the driver's dashboard display. *Id.* The service provider also transmits a copy of the icon to the user device for confirmation to the user. *Id.*

In one embodiment, as part of the dispatch procedure, the service provider transmits the dispatch information and the user's icon to a mobile computer in the taxi car, and the mobile computer manages the taxi roof-top electronic display 122 and the driver's dashboard display. *Id.*

When then taxi car approaches the user's location, the user can view the rooftop display to identify the taxi car as the taxi responding to the user's request. *Id.* ¶ 33. The user can compare the display of the icon on rooftop display to the copy of the icon on the user's device 104 to confirm the identity of the taxi. *Id.*

E. Motivation to Combine Kemler with Kalanick and Lalancette

1. Introduction

Petitioner asserts that a person of ordinary skill would have been motivated to combine the teachings of Kalanick and Kemler with a reasonable expectation of success. Pet. 21–25; Williams I Decl. ¶¶ 116–124. Petitioner asserts that both Kalanick and Kemler address "similar problems related to vehicle identification." Pet. 21–22; Williams I Decl. ¶ 116. Furthermore, Petitioner asserts that "[b]oth teach similar solutions involving generating, transmitting, and displaying unique, easily distinguishable visual indicators on multiple displays such that users can visually match the unique indicators to efficiently identify their assigned vehicle." Pet. 22; Williams Decl. ¶ 116. Further, "[b]oth also utilize vehicle mounted displays which are visible from the outside of the vehicle." Pet. 22; Williams I Decl. ¶ 116. Petitioner asserts "[a person of ordinary skill] would have a reasonable expectation of success as this would require nothing more than modifying the software of *Kalanick's* system to permit the central controller to create and assign unique indicators, using the technique taught in *Kemler*." Pet. 25.

Similarly, Petitioner contends a person of ordinary skill would have been motivated to combine the teachings of Lalancette and Kemler. Pet. 35–38; Williams I Decl. ¶¶ 151–158. Petitioner asserts that "*Lalancette* and *Kemler* address similar problems related to vehicle identification

and share the common objective of enabling riders to visually locate a requested vehicle while protecting the rider's privacy." Pet. 35. Further, "[b]oth teach similar solutions involving generating, transmitting, and displaying unique visual indicators on multiple displays such that users can visually match the unique indicators to efficiently identify their assigned vehicle." *Id.*

Petitioner contends "combining *Lalancette* and *Kemler* would have been well within the skill of a [person of ordinary skill in the art] and doing so is a suitable option because it is nothing more than combining known display technologies and visual identification techniques described in these references to perform their intended functions with described benefits and predictable results." *Id.* at 38 (citing Williams I Decl. ¶ 158).

2. Patent Owner's Contentions

Patent Owner responds that the Petition gives "no reason to combine" Kemler with either Kalanick or Lalancette. PO Resp. 8 (Kemler), 28 (Lalancette). Patent Owner contends that Petitioner's assertion that Kalanick and Kemler "teach similar solutions" is insufficient proof of a motivation to combine "as a matter of law." *Id.* at 10–11. Patent Owner asserts that Kalanick "already mitigates" the potential "duplication" problem created when riders from the same area select the same or similar indicators. *Id.* at 11–13. Patent Owner argues that "combining known technologies" is not sufficient to establish a motivation to combine Kemler and Kalanick. *Id.* at 14–18. And Patent Owner contends there is no "evidence of a reasonable expectation of success in combining Kemler to make up

the deficiencies of Kalanick." *Id.* at 18–19. Patent Owner asserts that "[t]he immense expense and complexity of operating a server 'farm' would be a reason to *avoid* Kemler's teachings." *Id.* at 18.

Patent Owner makes similar arguments asserting an insufficiency of evidence of a motivation to combine Kemler with Lalancette. *Id,* at 28–34. For example, in addition to the arguments discussed above in connection with Kalanick, Patent Owner asserts that "Kemler is no better at protecting privacy than Lalancette." *Id.* at 30–32. Patent Owner also argues that "Petitioner has failed to substantiate that the combination [of Kemler and Lalancette] would improve efficiency." *Id.* at 33. Patent Owner expands on this latter argument as follows: "Petitioner provides no support for the claim that combining the system of Kemler to Lalancette would make Lalancette more efficient by virtue of turning the icon indicator light on when the vehicle was in a predetermined distance to the location of the user." *Id.* at 33.

Patent Owner argues also that "there is no reasonable expectation of success in combining Kemler with Lalancette." *Id.* at 34–35. Patent Owner explains that "[t]he relative[] simplicity of the configuration of Lalancette – an icon server and icon database in a network, contrasts with the complexity of operating the server farm of Kemler." *Id.* at 34.

3. Discussion

For the reasons that follow, we find that Petitioner has established a sufficient motivation to combine the

teachings of Kemler and Kalanick and of Kemler and Lalancette. We further find, for the reasons given here and in Section III.E.1, *supra*, that Petitioner has demonstrated that there was a reasonable expectation of success in making those combinations. *See id.*

The Federal Circuit has recently reminded us that "[t]he motivation-to-combine analysis is a flexible one. *Any* need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed." *Intel Corp. v. PACT XPP Schweiz AG*, 61 F.4th 1373, 1379 (Fed. Cir. 2023) ("*Intel Corp.*") (citing *KSR Int'l Co. v. Teleflex*, 550 U.S. 398, 420 (2007)) (alterations and internal quotation marks omitted). Reversing a decision of the Board finding insufficient motivation to combine references, the Federal Circuit further reminded us that "a person of ordinary skill is also a person of ordinary creativity, not an automaton." *Id.* (quoting *KSR*, 550 U.S. at 421) (alterations omitted).

The Federal Circuit further observed that "in many cases[,] a person of ordinary skill will be able to fit the teachings of multiple patents together like pieces of a puzzle." *Id.* at 1379–80 (alteration in original, internal quotation marks omitted). The Court continued, "[t]hat's why the motivation-to-combine analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ." *Id.* at 1380 (internal quotation marks omitted).

The Federal Circuit also recognized what it termed "universal motivation," i.e., motivation "known in a particular field to improve technology," commenting that such motivations "provide a motivation to combine prior art references *even absent any hint of suggestion* in the references themselves." *Id.* (citing *Intel Corp. v. Qualcomm Inc.*, 21 F.4th 784, 797–99 (Fed. Cir. 2021) (internal quotation marks omitted).

a) Kalanick and Kemler

We find that Petitioner demonstrates that Kalanick and Kemler address "similar problems related to vehicle identification." Pet. 21–22; Williams I Decl. ¶ 116. Furthermore, as Petitioner asserts, we find that "[b]oth teach similar solutions involving generating, transmitting, and displaying unique, easily distinguishable visual indicators on multiple displays such that users can visually match the unique indicators to efficiently identify their assigned vehicle." Pet. 22; Williams I Decl. ¶ 116. Further, "[b]oth also utilize vehicle mounted displays which are visible from the outside of the vehicle." Pet. 22; Williams I Decl. ¶ 116.

We do not agree with Patent Owner that the Petition "fail[s] to establish a motivation" to combine Kemler with Kalanick." PO Resp. 8. As noted above, the Federal Circuit does not require Petitioner to identify "precise teachings directed to the specific subject matter of the challenged claim." *See Intel Corp.*, 61 F.4th at 1380.

Appendix C

We find that the Petition and supporting expert testimony sufficiently demonstrate that a person of ordinary skill would have combined the teachings of Kemler and Kalanick with a reasonable expectation of success. Pet. 21–25. In addition to the reasons given *supra*, Petitioner explains that Kalanick's "on-demand service system can also use location information from the driver's device and/or transport information . . . to automatically determine the driver's state or state of the transport service." *Id.* at 22 (citing Ex. 1006 ¶¶ 29, 35). Petitioner explains that in Kalanick, "[w]hen a service application on the driver's device determines that the transport service is to change state, such as to 'arriving now,' based on a determination that the driver is within a predetermined distance, the service application can trigger the indication device to output the user's specific color." *Id.* at 23 (citing Ex. 1006 ¶ 37). Thus, Kalanick's system can "control the indication device to output the user's color or other unique distinctive indicator based on the transport state." *Id.* (citing Ex. 1006, ¶ 38).

Petitioner explains that Kemler describes a central dispatching system in which one or more server computing devices of the centralized dispatching system may select a vehicle to be dispatched based upon the location of the client computing device. *Id,* (citing Ex. 1008, 10:3–33). Thus, Petitioner explains that Kemler, like Kalanick, "discloses ridematching based on proximity and distance to match requesting riders with drivers based at least in part on the proximity of their respective locations." *Id.*

Petitioner demonstrates that "a [person of ordinary skill] would find it obvious to modify *Kalanick's* vehicle

identification system in view of *Kemler,* at least because both systems disclose substantially similar ride-matching techniques based on proximity and distance to match requesting riders with drivers based at least in part on the proximity of their respective locations." *Id.* at 23–24. Petitioner also explains that a person of ordinary skill would "anticipate success of such a modification." *Id.* at 24. Petitioner explains that "the controller in *Kalanick* is already in communication with the car and could easily send a signal to activate the display with the unique code." *Id.* (citing Williams I Decl. ¶ 121).

Petitioner recognizes that although both Kalanick and Kemler "focus on vehicle identification by utilizing indicators, the disclosures approach indicator selection in slightly different ways." *Id.* Kemler approaches indicator selection through a "centralized dispatching system," while Kalanick allows the user to specify the "output configuration" of the identification information. *Id.*

We do not find Patent Owner's responsive arguments persuasive. *See* Section III.E.2, *supra*. For example, we disagree with Patent Owner's argument that Petitioner's demonstration that Kalanick and Kemler provide similar solutions is "insufficient as a matter of law." PO Resp. 10–11. The assertion that Kalanick and Kemler are analogous art to the '199 patent, which Patent Owner no longer disputes (see Hearing Tr. 58:11–15), is entitled to consideration as one factor in Petitioner's argument. See Pet. 21–25; Pet. Reply 3–8. Moreover, Patent Owner's argument that it is "insufficient as a matter of law" that Kalanick and Kemler teach similar solutions (PO Resp. 10) is contrary to Intel's approval of the "knowntechnique"

rationale for combining the teachings of references: "[I]f there's a known technique to address a known problem using 'prior art elements according to their established functions,' then there is a motivation to combine." Intel Corp., 61 F.4th at 1380 (citation omitted).

We disagree, also, with Patent Owner's "duplication" argument. PO Resp. 11–13. The fact that Kalanick may not "disclose any problem" arising from the possibility of two passengers in the same area having the same signal does not prove a problem did not exist or that a person of ordinary would not be motivated to improve upon the solution for it. See Pet. Reply 5–6. Similarly, we are not persuaded by Patent Owner's argument that there would be no reasonable expectation of success based on Kemler's disclosure of a server farm. PO Resp. 18 ("The immense expense and complexity of operating a server 'farm' would be a reason to avoid Kemler's teachings."). Testimony from Mr. Williams establishes the advantages of such systems. Pet. Reply 19 (citing Williams Dep. 82:1–88:25, 92:13–93:1; Williams III Decl. ¶ 35)).[5]

Petitioner demonstrates that a person of ordinary skill would have expected success in combining the teachings of the references, because it would require modifications to Kalanick's controller "already in communication with the car and could easily send a signal to activate the display with the unique code." Pet. Reply 8 (citing Williams I

5. We find Mr. Williams testimony credible on this issue. On cross-examination by Patent Owner's counsel, Mr. Williams testified to his experience in designing, implementing, and setting up server farms. *See* Williams Dep. 82:17–88:7; 91:11–93:1.

Decl. ¶ 123; *see also* Williams III Decl. ¶ 13 (expressing the opinion that the expense of operating a server farm would not lead to unexpected results). We find that for the reasons given, the necessary modifications to Kalanick are "nothing more than combining known display technologies and visual identification techniques described in these references to perform their intended functions with described benefits and predictable results." Pet. Reply 8; Williams III Decl. ¶ 15.

We find for the reasons given that "[a person of ordinary skill] would have been motivated to implement *Kemler's* indicator selection system, which provides for automatic selection of the indicator, in *Kalanick* because it would eliminate instances where riders within a similar area select the same or similar indicators, or are provided the same default indicator, making them less unique." Pet. 25. Williams I Decl. ¶ 120. Petitioner explains also that Kemler teaches the benefits of using rules requiring "unique" signals. Pet. 25 (citing Ex. 1008, 8:54–9:2). Petitioner demonstrates also that "[a person of ordinary skill] would have a reasonable expectation of success as this would require nothing more than modifying the software of *Kalanick's* system to permit the central controller to create and assign unique indicators, using the technique taught in Kemler." *Id.*

b) Lalancette and Kemler

Similarly, we find that Petitioner demonstrates that a person of ordinary skill would have combined the teachings of Lalancette and Kemler with a reasonable

expectation of success. Pet. 35–38; Pet. Reply 15–19. Petitioner explains that "*Lalancette* and *Kemler* address similar problems related to vehicle identification and share the common objective of enabling riders to visually locate a requested vehicle while protecting the rider's privacy." Pet. 35. Further, "[b]oth teach similar solutions involving generating, transmitting, and displaying unique visual indicators on multiple displays such that users can visually match the unique indicators to efficiently identify their assigned vehicle." *Id.*

Petitioner explains that "*Lalancette* discloses a system, which includes a vehicle dispatch controller to generate and transmit unique, personalized, privacy-protected indicators, to provide more efficient and effective identification of dispatched vehicles." *Id.* at 36 (citing Williams I Decl. ¶ 153). Petitioner also relies on the disclosure in Kemler that "[t]he signal may include a unique, distinct, and/or easily distinguishable string of text or image, and may further include, for example, a series of nonsensical letters, a sequence of colors, and/or a barcode." *Id.* (citing Ex. 1008, 3:60–67, 10:62–11:14).

Petitioner shows also that "*Kemler* explains that a centralized dispatching system may generate a signal to identify [a] vehicle to the user, and that [o]nce the vehicle is within a certain distance of the user's client device, the vehicle's computing device may display the signal on an external display of the vehicle such that the signal should be visible to the user as the vehicle approaches the user's client device." *Id.* at 35–36 (quoting Ex. 1008, 3:48–4:11 (alterations in original, internal quotation marks omitted)).

Still further, Petitioner explains "[r]eceiving and displaying signal as disclosed in *Kemler* provides a more efficient and effective system for identifying dispatched vehicles." *Id.* at 37 (citing Williams I Decl. ¶ 155). Petitioner reasons that "[t]his is so at least because the system is more efficient by only displaying the signal once the vehicle [is] within a threshold distance of the rider and thus conserves energy." *Id.*

Finally, as Petitioner explains, we find that a person of ordinary skill would have had a reasonable expectation of success in making the combination. *Id.* at 38. "Because both of the systems utilize the same basic display technologies and similar techniques for generating, transmitting, and displaying unique privacy-protected visual indicators, it would have been well within a [person of ordinary skill's] level of skill to implement *Lalancette's* taxi identification system with the additional technical details taught for *Kemler's* substantially similar vehicle identification system." *Id.* (citing Williams I Decl. ¶ 157). Furthermore, as Petitioner explains, "combining *Lalancette* and *Kemler* would have been well within the skill of a [person of ordinary skill in the art] and doing so is a suitable option because it is nothing more than combining known display technologies and visual identification techniques described in these references to perform their intended functions with described benefits and predictable results." *Id.* (citing Williams I Decl. ¶ 158).

We do not agree with Patent Owner's arguments in response. *See supra*, Section III.E.2. For example, Patent Owner reprises the argument that "showing the

references are analogous art" is insufficient to show a motivation to combine references, which is similar to the argument discussed *infra* in connection with Kalanick and Kemler, and is unavailing for similar reasons. PO Resp. 30; *see supra*, Section III.E.3.a. Similarly unavailing is Patent Owner's argument that "Lalancette is a complete and finished method of facilitating the connection of users and drivers, allowing users to select icons that do not allow an association with the user, thus protecting privacy." PO Resp. 31. This argument is similar to the "duplication" argument discussed *supra* in connection with Kalanick, and is unavailing for similar reasons. The fact that Lalancette is allegedly "complete" does not prevent a person of ordinary skill from being motivated to improve upon it.

Finally, we credit Petitioner's argument that combining Kemler and Lalancette would make Lalancette more efficient. Pet. 37 ("This is so at least because the system is more efficient by only displaying the signal once the vehicle within a threshold distance of the rider and thus conserves energy.") *Id.* (citing Williams I Decl. ¶ 155). This argument is persuasive because it is supported by the testimony of Mr. Williams and by common sense. *See* Pet. Reply 19. Mr. Williams testified credibly that a person of ordinary skill would understand that by virtue of turning Lalancette's indicator light on only when the vehicle was in a predetermined distance to the location of the user as disclosed in Kemler, the vehicle indicator display system would conserve energy and thus be more energy efficient. *Id.* (citing Williams I Decl. ¶¶ 155, 170–171; Williams III Decl. ¶ 36; Williams Dep. 97:5–21). Moreover, Mr. Williams

backed up his testimony on the power requirements of server farms with several years of experience designing, implementing, and operating a server farm. *See* discussion *supra*. We find that this experience lends credibility to his testimony that the server farm in Kemler would improve efficiency of the system, even without specific test data. Pet. Reply 19 (citing Williams III Decl. ¶ 35; Williams Dep. 82:1–88:25, 92:13–93:1).

c) Conclusion

We are persuaded and find for the reasons given that a person of ordinary skill would have combined the teachings of the references as proposed by Petitioner with a reasonable expectation of success. As Mr. Williams testifies, the necessary modifications to Kalanick and Lalancette are "nothing more than combining known display technologies and visual identification techniques described in these references to perform their intended functions with described benefits and predictable results." Williams I Decl. ¶¶ 124, 158.

F. Obviousness Based on Kalanick and Kemler

Petitioner asserts that claim 1 would have been obvious in light of Kalanick and Kemler. Pet. 21–35. Petitioner provides an element-by-element claim analysis, supported by expert testimony. *Id.* at 26–35; Williams I Decl. ¶¶ 130–149. Patent Owner disputes Petitioner's analysis for several of the claim element, as is discussed *infra*. *See* PO Resp. 19–27.

Appendix C

1. Claim 1

(Preamble) A vehicle identification method implemented as an Application on mobile communication devices over a wireless communication network, comprising:

Petitioner contends the preamble of claim 1 is disclosed by Kalanick. Pet. 26–27; Williams I Decl. ¶¶ 126–129. Petitioner explains that Kalanick discloses a "system that can automatically configure an indication device (or a display device) for use with an on-demand service." Pet. 27 (quoting Ex. 1006 ¶ 10). Patent Owner does not address this contention.

We find for the reasons given that Kalnick teaches or suggests the preamble of claim 1.[6]

(1A) requesting a ride from a transportation service from a mobile communication device of a user

Petitioner contends Kalanick meets this limitation by disclosing an "on-demand service system [that] can arrange a transport service for a user by receiving a request for transport from the user's device." *Id.* (citing Ex. 1006 ¶ 1; Williams I Decl. ¶ 130). Patent Owner does not address this contention.

6. We do not express an opinion on whether the preamble is limiting.

We find for the reasons given that Kalanick teaches or suggests claim element 1A.

> *(1B) determining that a vehicle is within a predetermined distance of the location of the user*

Petitioner contends Kalanick discloses this limitation. Pet. 27–28. Petitioner contends that "*Kalanick* discloses that the system can determine if the driver's position is within a predetermined distance of the user's current location or the pickup location." *Id.* at 38 (citing Ex. 1006 ¶ 35) (internal quotation marks omitted).

Patent Owner responds that Kalanick fails to disclose this step. PO Resp. 19. Patent Owner asserts that "Kalanick's cited portions merely disclose that the system determines that the driver's current location is within a predetermined distance. It does not disclose that the system sends a signal to the mobile device of the driver when the driver is a predetermined distance from a specific location." *Id.* (citation omitted).

We disagree with this argument by Patent Owner. The claim limitation does not call for sending a signal to the driver. As Petitioner points out, the parties appear to agree that Kalanick performs the "determining" step called for in this claim element. Pet. Reply 9 (citing PO Resp. 9). The dispute, therefore, is not over the "determining" step, but the next following "generating" step. *Id.* We agree with Petitioner and, for the reasons given, we find that Kalanick teaches or suggests claim element 1B.

Appendix C

(1C) generating a notification signal to a mobile communication device associated with a driver of the vehicle

Petitioner contends that Kalanick discloses this limitation. Pet. 28. Petitioner contends that in Kalanick, "service application 161 can receive the configuration data 145 from the system 100 and control the indication device 170." *Id.* (citing Ex. 1006 ¶ 32). Petitioner further explains that in Kalanick, "when the controller detects the driver is close to the rider, it generates a signal 1) notifying the driver's device of the appropriate identifier and 2) notif[ying] the driver's device that it is time to display that identifier." *Id.* (citing Williams I Decl. ¶ 134).

Patent Owner contends that Kalanick does not disclose this step. PO Resp. 20–22. Patent Owner contends that "the determining step [1B] must be read in connection with the generating step [1C] for the notification signal." *Id.* at 21. According to Patent Owner, Kalanick "merely discloses that the system 100 can communicate with the driver devices 160. It does not, however, indicate when the communication occurs." *Id.* (internal quotation marks and citations omitted). Patent Owner further contends that Kalanick "merely disclose[s] that the system can determine the driver's current location and status, but it does not disclose that the system sends a signal to the mobile device of the driver when the driver is a predetermined distance from a specific location." *Id.*

We do not agree with Patent Owner's arguments. As Petitioner points out, "nowhere does the claim language recite this limitation of sending the notification signal when

it is determined that the vehicle is within a predetermined distance of a specific location." Pet. Reply 10. We agree with Petitioner that Patent Owner is attempting to introduce a limitation not present in the language of the claim. *Id.* We agree also that a person of ordinary skill "would understand that the communications sent from Kalanick's controller ('system 100') via a transceiver to the driver's mobile communication device was a notification signal and satisfies the limitation." *Id.* (citing Pet. 28; Williams III Decl. ¶ 19).

We find for the reasons given that Kalanick teaches or suggests claim element 1C.

(1D) generating an indicatory signal representing an indicator

Petitioner demonstrates that this limitation is met by the combination of Kalanick and Kemler. Pet. 29 (citing Williams I Decl. ¶¶ 135–137). Petitioner contends that "Kalanick's 'controller' (i.e., its 'system 100') can communicate, over one or more networks via a network interface [i.e., transceiver] (e.g., wirelessly or using a wire), with the client devices 150 (e.g., mobile computing devices operated by clients or users/customers) and the driver devices 160 (e.g., mobile computing devices operated by drivers) using a client device interface 120 and a driver device interface 130, respectively." *Id.* at 32–33 (alteration in original) (citing Ex. 1006 ¶ 25).

Petitioner explains that Kemler discloses an identifier in the form of a signal that is displayed on the display. *See id.* at. 30; Ex. 1008, 3:60–63 ("The signal may include a

unique, distinct, and/or easily distinguishable string of text or image rather than the user's name, destination, etc. This protects the user's privacy.").

Petitioner contends that "[a person of ordinary skill] would be motivated to combine the controller generated signal/indicator of *Kemler's* driverless vehicle identification system with *Kalanick's* driver-oriented vehicle identification system to permit the driver's device to send the signal to the display on the vehicle after the driver's device receives the signal from the controller." Pet. 30 (citing Williams I Decl. ¶ 137); *see also* Section III.E.3, *supra* (finding sufficient motivation to combine Kalanick and Kemler).

Patent Owner responds that "[t]he claims require that a new signal be generated each time a ride is dispatched." PO Resp. 22. Further, Patent Owner argues that "Kalanick by contrast does not generate an indicator signal. Instead, it transmits a signal that was stored in the user's profile based on the user's predetermined configuration preferences." *Id.* (citation omitted).

We disagree that the claims "require that a new signal be generated each time a ride is dispatched." As Petitioner points out, this is a variation on the "active formulation" claim construction argument advanced by Patent Owner which we have rejected previously. Pet. Reply 11 ("[Patent Owner] continues to confuse generating a unique icon or symbol for the first time with the claim requirement that simply requires that the controller generate or produce a first signal."); *see supra*, Section

III.C.3 (discussing construction of "generate" as not including active formulation). Moreover, Petitioner relies on the combination of Kalanick and Kemler for this limitation, including the indicator signal. Pet. Reply 12. This combination would disclose having "the controller generated signal/indicator of *Kemler's* driverless vehicle identification system with *Kalanick's* driver-oriented vehicle identification system to permit the driver's device to send the signal to the display on the vehicle after the driver's device receives the signal from the controller." *Id.* (citing Pet. 30; Williams I Decl. ¶ 137; Williams III Decl. ¶ 24). Patent Owner's argument that Kalanick and Kemler "should not be combined" (PO Resp. 25) is discussed *supra*, in Section III.E.

We find for the reasons given that Kalanick and Kemler teach or suggest claim element 1D.

> (*1E) displaying the indicator based on the notification signal on a display associated with the vehicle, the mobile communication device associated with the driver, and the user's mobile communication device,*

Petitioner relies on Kalanick and Kemler to meet this limitation. Pet. 30–33. Petitioner demonstrates that "a [person of ordinary skill] would find it obvious to modify *Kalanick's* vehicle identification system in view of the teachings of *Kemler* to display the indicator on a display associated with the vehicle, the mobile communication device associated with the driver, and the user's mobile communication device." *Id.* at 32 (citing Williams I Decl.

¶ 142). Petitioner continues that "a [person or ordinary skill] would be motivated to do so to ensure that the user can accurately locate their assigned vehicle, which also serves to ensure the user's safety by avoiding entering the wrong vehicle." *Id.*

Patent Owner's response consists mainly of arguments previously addressed, such as the alleged failure of Kalanick to teach or suggest a notification signal or a signal containing an indicator. PO Resp. 26. In addition, Patent Owner contends Kemler does not "fill the gap" it alleges exists in Kalanick, e.g., because "Kemler's system is 'driverless . . . and its computing device is 'incorporated in the vehicle.'" *Id.* One cannot show non-obviousness by attacking references individually where the assertions of obviousness are based on combinations of references. *See In re Keller*, 642 F.2d 413, 426 (CCPA 1981); *In re Merck & Co., Inc.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986). This argument is unavailing because it ignores the fact that while Kemler's vehicle may be driverless, Kalanick's is not. The proper test for obviousness is what the combined teachings of the references would have suggested to those having ordinary skill in the art. *In re Mouttet*, 686 F.3d 1322, 1333 (Fed. Cir. 2012).

We find for the reasons given that Kalanick teaches or suggests claim element 1E.

> *(1F) wherein the display associated with the vehicle is located to be visible from the exterior of the vehicle; and*

> *(1G) identifying the vehicle based on the appearance of a match, by visual observation of the user, between the indicator being displayed on the user's mobile communication device and the indicator being displayed on the display associated with the vehicle.*

Petitioner demonstrates that these claim limitations relating to the display are disclosed by Kalanick and Kemler. Pet. 33–35; Williams I Decl. ¶¶ 145–149. Patent Owner does not challenge these contentions.

We find that for the reasons given, Petitioner has demonstrated by a preponderance of the evidence that the Kalanick and Kemler teach or suggest each limitation of claim 1 and that it would have been obvious to combine the references with a reasonable expectation of success. We therefore determine that Petitioner has shown by a preponderance of the evidence that claim 1 would have been obvious over Kalanick and Kemler.

G. Obviousness Based on Lalancette and Kemler

Petitioner contends also that claim 1 and 2 would have been obvious in light of Lalancette and Kemler and provides an element-by-element analysis. Pet. 38–48. Petitioner provides supporting testimony from Mr. Williams. Williams I Decl. ¶¶ 159–186.

1. Claim 1

Petitioner's analysis for claim 1 demonstrates that each element of the claim is met by Lalancette and

Kemler. Pet. 38–66; Williams I Decl. ¶¶ 159–182. For example, Petitioner demonstrates that the preamble is met by Lalancette's disclosure of "a cross-platform target identification system" for use with a taxi dispatch service. Pet. 39. Similarly, the step of requesting a ride (1A) is met by Lalancette's disclosure of "a user 102 ordering a taxi by using handset/smartphone 104 to request taxi service from a taxi dispatch service ('service provider 1. 108) via communication link 109." *Id.* at 41 (quoting Ex. 1009 ¶ 29) (internal quotation marks omitted).

Petitioner demonstrates that Lalancette and Kemler meet the "predetermined distance" requirement of claim element 1B. *Id.* at 41–44; Williams I Decl. ¶¶ 167–171. Petitioner explains "*Kemler* teaches that 'the centralized dispatching system may send the signal . . . when the vehicle is within the certain distance or time relative to the user.'" Pet. 42–43 (alteration in original) (citing Ex. 1008, 4:12–19). Petitioner asserts "[a person of ordinary skill] would find it obvious to modify *Lalancette's* taxi identification system to determine that a vehicle is within a predetermined distance of the location of the user, as disclosed in *Kemler*." *Id.* at 43 (citing Williams I Decl. ¶ 171).

Patent Owner responds that "Lalancette does not describe any embodiments that generate a notification signal when a driver is within a predetermined distance of the location." PO Resp. 35. This argument is unavailing, among other reasons, because the claim does not require generation of a notification signal when the vehicle is within a predetermined distance from the driver. *See*

Section III.E.1, *supra*; *see also* Pet. Reply 9. Furthermore, the argument fails to address the combination of Kemler with Lalancette. *See* Pet. 42–43 ("*Kemler* teaches that 'the centralized dispatching system may send the signal . . . when the vehicle is within the certain distance or time relative to the user.'" (alteration in original)).

Petitioner asserts that "to the extent that Lalancette does not explicitly discuss determining that a vehicle is within a predetermined distance of the location of the user, a [person of ordinary skill] would find it obvious to modify Lalancette's taxi identification system to determine that a vehicle is within a predetermined distance of the location of the user, as disclosed in Kemler." *Id.* at 43 (citing Williams I Decl. ¶ 171). We do not agree with Patent Owner's argument that the teachings of Lalancette and Kemler "should not be combined." PO Resp. 35. Our reasoning is discussed in Section III.E.3, *supra*. We find that for the reasons given, Petitioner demonstrates that the "determining" limitation 1B is met by Lalancette combined with Kemler.

Petitioner demonstrates that the "generating" steps of limitations 1C and 1D are met by Lalancette or by Lalancette combined with Kemler. Pet. 43–45; Williams I Decl. ¶¶ 172–177. Petitioner explains that Lalancette meets the generating requirement of limitation 1C for a "notification signal" because "*Lalancett*e discloses that the taxi service provider server generates a notification signal including the icon to the driver's mobile computer which is displayed on the roof-top display of the taxi." Pet. 44 (citing Williams I Decl. ¶ 174). Similarly, for limitation 1D,

Petitioner asserts that "even applying [Patent Owner's] construction, the combination of *Lalancette* and *Kemler* . . . discloses that the controller actively formulates a signal that represents the indicator for each ride in a vehicle identification system." *Id.* at 45 (citing Williams I Decl. ¶ 176).

Patent Owner responds that "[t]he claims of the invention require that a new signal be generated each time there is a ride dispatched. No signal is pre-associated with a particular rider or a particular driver." PO Resp. 37. Patent Owner continues, "Lalancette, in contrast, relies on pre-selection – a permanent signal icon stored in a server 112 associated with a user – in a manner similar to Kalanick." *Id.*

As in the case of Patent Owner's argument directed to Kalanick, we do not agree with its argument because it is based on Patent Owner's proposed construction of "generate," which we did not adopt. *See supra*, Section III.C.3; Williams I Decl. ¶¶ 175–177. Furthermore, as Petitioner points out, the argument fails to address the combination of Kalanick and Kemler that Petitioner relies on to meet this limitation. Pet. Reply 12. For the reasons given, we find that Petitioner demonstrates that Lalancette and Kemler meet limitations 1C, calling for "generating a notification signal," and 1D, calling for "generating an indicatory signal." Pet. 43–45.

For claim element 1E ("displaying the indicator based on the notification signal on the display associated with the vehicle, the mobile communication device associated with the driver, and the user's mobile device"), the Petition

demonstrates that Lalancette discloses this step. *Id.* at 45–47. In Lalancette, as part of the dispatch procedure, service provider 108 transmits the dispatch information and the user's icon to a mobile computer in taxi car 118 and the mobile computer manages the taxi roof-top electronic display 122. *Id.* at 44–46; Williams I Decl. ¶¶ 178–179; Ex. 1009 ¶ 32. Petitioner explains that "*Lalancette* discloses that the user 102 can show the driver the copy of the icon on the user device 104 which the driver can compare to the copy of the icon displayed on the driver's dashboard display 124." Pet. 47 (citing Ex. 1009 ¶ 33) (internal quotation marks omitted).

Patent Owner responds that "Lalancette does not disclose a mobile device associated with a driver at all." PO Resp. 39 (citing Valenti III Decl. ¶ 94). Patent Owner continues, "Petitioner's expert acknowledges that Lalancette does not disclose the use of a mobile communication device associated with the driver." *Id.* (citing Williams Dep. 128:14–129:25, 132:1–8). This is a misrepresentation of Mr. Williams's testimony. He was not asked whether Lalancette "discloses" a mobile communication device; he was asked to agree whether Lalancette "identi[fies] the mobile computer as a mobile communication device." Williams Dep 129:10–13. He explained his response later in his testimony: "In the passage where [Lalancette] references mobile computer, it doesn't have a specific form factor discussion such as referencing Smartphones." *Id.* at 132:5–8.

We do not agree with Patent Owner's argument that this limitation is not met by Lalancette and we do

not find the testimony of its expert, Dr. Valenti, credible or helpful. *See* Valenti III Decl. ¶¶ 94 ("Lalancette does not disclose a mobile device associated with a driver at all."). As Petitioner points out, the argument supported by Dr. Valenti is an "attempt to improperly narrow the definition of a mobile device to only mean a smartphone of the driver." Pet. Reply 24. We find that this argument and the supporting expert testimony are contradicted by the '199 patent specification. *See id,* at 24–25 (quoting Ex. 1001, 3:10–11, defining mobile communication device broadly). We, therefore, find that the mobile computer disclosed in Lalancette meets the requirement of this claim limitation for a "mobile communication device associated with the driver." We find for the reasons given that Petitioner demonstrates that Lalancette and Kemler meet limitation 1E.

Patent Owner does not challenge Petitioner's showing that 1F, the one remaining limitation of claim 1, is met by Lalancette and Kemler. We determine for the reasons given that claim limitation 1E is met by Lalancette and Kemler.

We find that for the reasons given, Petitioner has demonstrated by a preponderance of the evidence that the Lalancette and Kemler teach or suggest each limitation of claim 1 and that it would have been obvious to combine the references with a reasonable expectation of success. We therefore determine that Petitioner has demonstrated by a preponderance of the evidence that claim 1 would have been obvious over Lalancette and Kemler.

2. Claim 2

Claim 2 depends from claim 1 and adds the step of "identifying the user based on appearance of a match . . . ." Ex. 1001, 8:28–33. Petitioner demonstrates that this step is taught by Lalancette in view of Kemler. Pet. 48 (citing Ex. 1009 ¶ 33).

Patent Owner does not separately challenge this contention., relying on its contentions for claim 1. PO Resp. 40 n.1.

We determine that for the reasons given for claim 1, Petitioner has demonstrated by a preponderance of the evidence that claim 2 would have been obvious over Lalancette and Kemler.

H. Conclusion

For the foregoing reasons, we determine that Petitioner has demonstrated by a preponderance of the evidence that claims 1 and 2 of the '199 patent would have been obvious (1) over Kalanick and Kemler, and (2) over Lalancette and Kemler.

IV. MOTION TO AMEND

A. Introduction

As discussed *supra,* after institution, Petitioner filed a contingent Motion to Amend. The Motion requests that, if we find in a final written decision that "original

independent claim 1 [is] unpatentable," we amend the '199 patent to "grant entry of corresponding substitute claims 3–4" presented in the Motion. Mot. Amend 1.

Patent Owner submitted the second Declaration of Dr. Matthew Valenti ("Valenti II Decl.") in support of the Motion. *See supra*, Section I. Petitioner filed an Opposition to the Motion to Amend. Paper 16 ("Pet. MTA Opp."). Petitioner submitted the second Declaration of David Williams ("Williams II Decl.") in support of the Opposition.

Patent Owner requested that we provide preliminary guidance in accordance with the Board's pilot program concerning motion to amend practice and procedures. Mot. Amend 1. After considering Patent Owner's Motion to Amend and Petitioner's Opposition, we provided Preliminary Guidance. Paper 20 ("Prelim. Guidance").

In this Preliminary Guidance, we provided information indicating our initial, preliminary, and non-binding views on whether Patent Owner had shown a reasonable likelihood that it had satisfied the statutory and regulatory requirements associated with filing a motion to amend in an *inter partes* review and whether Petitioner (or the record) established a reasonable likelihood that the substitute claims are unpatentable. *See* Notice, 84 Fed. Reg. at 9,497; *see also* 35 U.S.C. § 316(d) (providing statutory requirements for a motion to amend); 37 C.F.R. § 42.121 (providing regulatory requirements and burdens for a motion to amend); *Lectrosonics, Inc. v*

Zaxcom, Inc., IPR2018-01129, Paper 15 (PTAB Feb. 25, 2019) (precedential) (providing information and guidance regarding motions to amend). In our Preliminary Guidance, we concluded that at the preliminary stage of the proceeding, and based on the record at that time, Patent Owner had shown a reasonable likelihood that it has satisfied the statutory and regulatory requirements associated with filing a motion to amend with respect to proposed substitute claims 3 and 4. Prelim. Guidance 4.

Subsequently, Petitioner filed a Reply to the Board's Preliminary Guidance (Paper 24, "Pet. MTA Reply") and Patent Owner filed a Sur-reply in support of its Motion to Amend (Paaper 27, "PO MTA Sur-reply").

For the reasons that follow, we grant Patent Owner's Motion to Amend.

B. Legal Standard

In an *inter partes* review, amended claims are not added to a patent as a matter of right, but rather must be proposed as a part of a motion to amend. 35 U.S.C. § 316(d). "Before considering the patentability of any substitute claims, . . . the Board first must determine whether the motion to amend meets the statutory and regulatory requirements set forth in 35 U.S.C. § 316(d) and 37 C.F.R. § 42.121." *Lectrosonics, Inc.*, Paper 15 at 4. Accordingly, we consider whether: (1) the amendment proposes a reasonable number of substitute claims; (2) the proposed claims are supported in the original disclosure

(and any earlier filed disclosure for which the benefit of filing date is sought); (3) the amendment responds to a ground of unpatentability involved in the trial; and (4) the amendment does not seek to enlarge the scope of the claims of the patent or introduce new subject matter. *See* 35 U.S.C. § 316(d); 37 C.F.R. § 42.121.

The Board assesses the patentability of proposed substitute claims "without placing the burden of persuasion on the patent owner" for issues of patentability. *Aqua Prods., Inc. v. Matal*, 872 F.3d 1290, 1328 (Fed. Cir. 2017) (en banc); *see also Lectrosonics, Inc.*, Paper 15 at 3–4.

In accordance with *Aqua Products* and *Lectrosonics,* Patent Owner does not bear the burden of persuasion to demonstrate the patentability of the substitute claims presented in the motion to amend. To the contrary, ordinarily, "the petitioner bears the burden of proving that the proposed amended claims are unpatentable by a preponderance of the evidence." *Bosch Auto. Serv. Sols., LLC v. Matal*, 878 F.3d 1027, 1040 (Fed. Cir. 2017), *as amended on reh'g in part* (Mar. 15, 2018); *see Lectrosonics*, Paper 15 at 3–4. In determining whether a petitioner has proven unpatentability of the substitute claims, the Board focuses on "arguments and theories raised by the petitioner in its petition or opposition to the motion to amend." *Nike, Inc. v. Adidas AG*, 955 F.3d 45, 51 (Fed. Cir. 2020).

Appendix C

C. Patent Owner's Proposed Substitute Claims

Patent Owner proposes to substitute claims 3 and 4 for claims 1 and 2, respectively. Proposed substitute claim 3[7] provides:

> [3. (Preamble)] A vehicle identification method implemented as an Application on mobile communication devices over a wireless communication network, comprising:
>
> [3(a)] requesting a ride from a transportation service from a mobile communication device of a user;
>
> [3(b)] determining that a vehicle is within a predetermined distance of the location of the user;
>
> [3(c)] generating a notification signal to a mobile communication device associated with a driver of the vehicle;
>
> [3(d)] generating, by creating an indicator that is specific to a user and driver match, an indicatory signal representing ~~an~~ the indicator;
>
> [3(e)] displaying the indicator based on the notification signal on a display associated with

7. Material added to claim 1 is indicated by underlining. Material deleted is stricken through.

> the vehicle, the mobile communication device associated with the driver, and the user's mobile communication device,
>
> [3(f)] wherein the display associated with the vehicle is located to be visible from the exterior of the vehicle; and
>
> [3(g)] identifying the vehicle based on appearance of a match, by visual observation of the user, between the indicator being displayed on the user's mobile communication device and the indicator being displayed on the display associated with the vehicle.

Mot. Amend App. A, 1.[8] Proposed claim 4 modifies claim 2 to change its dependency from claim 1 to claim 3. *Id.* at 2.

D. Requirements for Amendment

1. Claim Listing

Patent Owner provides a claim listing showing the proposed changes. *See* Mot. Amend 2, App. A (Claim Listing) (proposing substitute claims 3 and 4).

2. Reasonable Number of Substitute Claims

Patent Owner proposes two substitute claims. We determine that the requirement for a reasonable number of substitute claims has been met.

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8. Paragraph references in brackets were added to track Petitioner's analysis.

3. Responsive to Ground of Patentability

The proposed substitute claims recite a new limitation that is responsive to a ground of unpatentability on which we instituted trial, namely, the timing of the generation of an indicator that is unique to a user and driver. *See supra*, Sections III.F, III.G.

4. Scope of Amended Claims

The proposed substitute claims do not broaden the scope of the amended claims. Proposed substitute independent claim 3 includes narrowing limitations as compared to corresponding original claim 1. Proposed substitute claim 4 depends from a narrowed claim.

5. New Matter

Petitioner contends that "there is no support in the written description for at least the requirement that "(iii) a new indicator is generated for the new user, by the driver's mobile device in communication with the vehicle identification system, after the notification signal is generated (i.e., after it has been determined that the vehicle is within a predetermined distance of the user's location)." Pet. MTA Reply 6. Petitioner asserts that "[t]he '492 Application simply does not disclose creating *an indicator* once the vehicle is determined to be within a predetermined distance of the user's location." *Id.* (citing Williams II Decl. ¶¶ 113–117). Patent Owner responds that Petitioner "reargues its position" already addressed in the Preliminary Guidance. PO MTA Sur-reply 6.

We agree with Patent Owner. In the Preliminary Guidance, we determined that "[b]ecause the '492 application [which became the '199 patent] discloses that (i) a notification signal is generated for a new rider/user, (ii) the notification signal is generated when it is determined that the vehicle is within a predetermined distance of the user's location, and (iii) a new indicator is generated for the new user, by the driver's mobile device in communication with the vehicle identification system, after the notification signal is generated (i.e., after it has been determined that the vehicle is within a predetermined distance of the user's location), we agree with Patent Owner that the '492 application (and the '199 patent) provides written description support for creating an indicator specific to a user and driver match after determining that the vehicle is within a predetermined distance of the location of the user." Prelim. Guidance 8 (emphasis omitted).

We addressed Petitioner's arguments in the Preliminary Guidance and did not find them persuasive "because the original disclosure of the '199 patent, i.e., U.S. Application No. 16/514,492 ("the '492 application"), which became the '199 patent, explicitly discloses creating an indicator that is specific to a user and driver match, after it is determined that the vehicle is within a predetermined distance of the location of the user, as recited in proposed substitute claim 3." *Id.* at 6.

We noted that that "Petitioner's analysis of paragraph 30 of the specification of the '492 application ignores most of the disclosure in this paragraph." *Id.* at 6–7. We concluded that this paragraph "explicitly discloses that *a new indicator is generated (by the driver's mobile device*

in communication with the vehicle identification system) for a new rider, with previously-used indicators being 'deleted' and 'not . . . duplicated.'" Id. at 7 (alteration in original). We also determined that "Paragraph 30 also discloses that when a new rider is scheduled to be picked up and 'the driver D approaches the second location [of the new rider] (or third location, etc.), the vehicle identification system 10 may *generate another notification signal*.'" *Id.* We concluded that "[f]urther, paragraph 34 of the '492 application discloses that the notification signal is generated 'when it is determined that the vehicle 20 is *within a predetermined distance of the location of the user P*.'" *Id.*

We agree that the arguments in Petitioner's MTA Reply focus on Paragraph 30 and are duplicative of and do not adequately address our preliminary findings. *See* Pet. MTA Reply 7. For the reasons summarized above and stated in our Preliminary Guidance, we find that there is written description support for the proposed amendments.

6. Patentability of the Proposed Claims

a) Obviousness

Petitioner contends the proposed substitute claims would have been obvious over: (1) Kalanick and Kemler, (2) Kalanick, Kemler, and Stanfield[9]; (3) Lalancette and Kemler; and (4) Lalancette, Kemler, and Stanfield. Pet. MTA Opp. 11–25.

9. U.S. Patent No. 9,442,888 (Ex. 1026).

Appendix C

The Preliminary Guidance concluded that "each of Petitioner's challenges (or the record) fails to show a reasonable likelihood that the respective proposed substitute claims are unpatentable." Prelim. Guidance 9. The basis for this determination in each of the challenges was the failure of the references to teach or suggest "creating an indicator after determining that the vehicle is within a predetermined distance of the location of the user as recited in proposed substitute claim 3." *Id.* at 16 (Kalanick and Kemler, with or without Stanfield), 18–19 (Lalancette and Kemler, with or without Stanfield) (emphasis omitted).

Petitioner asserts in its Reply that "the Preliminary Guidance limits Kemler's disclosure to that the unique signal is created when the user requests a vehicle from a dispatching service, as opposed to 'after it is determined that the vehicle is within a predetermined distance of the location of the user.'" Pet. MTA Reply. 2. Petitioner disagrees with this conclusion, asserting that "a [person of ordinary skill] would understand Kemler to also disclose that the unique signal may be generated *after* the user requests a vehicle from a dispatching service." *Id.* Petitioner relies on an "alternative" embodiment of Kemler, depicted in Figures 7 and 8. *Id.* According to Petitioner, in Figures 7 and 8, "the vehicle is already assigned to the user but the unique signal is not yet generated or sent." *Id.*

Alternatively, Petitioner asserts that "it would also have been an obvious implementation choice to only create and send the indicator to the vehicle once the vehicle and the user were within a certain distance to efficiently

allocate resources and protect the user's privacy." *Id.* at 3 (citing Williams II Decl. ¶¶ 26–28).

We do not find these arguments persuasive. As Patent Owner points out, Petitioner's argument is contradicted by Figure 10 of Kemler, a flowchart showing the relationship of the signal generation step to dispatch. PO MTA Surreply 2. Further, it is inconsistent with the Kemler specification. *See* Ex. 1008, 3:52–59 ("The request [for a vehicle] may be sent to a centralized dispatching system which selects or assigns a vehicle to the requesting user. At the same time, the centralized dispatching system may generate a signal to identify the vehicle to the user."). For the reasons summarized above and given in the Preliminary Guidance, we find that the prior art relied on by Petitioner fails to teach or suggest the limitation of "creating an indicator after determining that the vehicle is within a predetermined distance of the location of the user" as recited in proposed substitute claim 3.

In a similar way, the Preliminary Guidance concluded that "Lalancette . . . discloses that an icon is generated by the user in advance of using a taxi service, such that the taxi service (service provider 108) merely retrieves (e.g., from a server) the user's existing icon at the time the user requests a taxi. Lalancette's taxi service provider 108 generates a user's icon after the user requests a taxi." Prelim. Guidance 16. "Thus, Lalancette does not teach creating an icon after it is determined that the requested car is within a predetermined distance of the location of the user (as required by claim 3)." *Id.* at 16–17 (emphasis omitted).

b) Stanfield

In the Preliminary Guidance, we did not find supported Petitioner's contention that Stanfield "discloses the indicator creation features in contingent claim 3." Prelim. Guidance 13. We concluded that "Petitioner's contentions do not establish that Stanfield *creates* the indicator *after* it is determined that the vehicle is *within a predetermined distance of the location of the user* (as required by claim 3)." *Id.* We reasoned that "[i]n Stanfield, creation of the signal (indicator) is not prompted by a determination that the vehicle is within a predetermined distance of the user." *Id.* at 14 (emphasis omitted). We explained that "[b]ecause Stanfield's indicator is *created* when the vehicle's availability becomes known to the fleet manager (or is set by the fleet manager), and *not when* a potential customer approaches (or is within a certain distance of) a vehicle, we are unpersuaded by Petitioner's contentions that 'Stanfield discloses the indicator creation features in contingent claim 3,' or that 'a [person of ordinary skill] would have considered the creation of an indicator for the first time when a vehicle reaches a certain distance obvious.'" *Id.* (second alteration in original)

We found also that Petitioner's arguments and evidence were "insufficient to demonstrate that a skilled artisan would have been prompted by Stanfield to modify Kalanick and/or Kemler to create an indicator after it is determined that a vehicle is within a predetermined distance of the location of the user (as required by claim 3)." *Id.*

In reaching these preliminary conclusions we considered and discussed Petitioner's arguments. *See id.* at 14–16. The arguments Petitioner presents in its Reply are repetitive and no more persuasive than those already considered. *See* Pet. MTA Reply 5–6. For example, the argument that "Stanfield along with the other references address similar problems as the '199 Patent involving vehicle identification in an on-demand transport system" was previously considered and was rejected. *See* Prelim. Guidance 14 ("We are unpersuaded by Petitioner's argument because Stanfield does not address the same problem as the '199 patent.").

Petitioner does not convince us that Stanfield addresses a "security problem," as opposed to an information retrieving problem. *See* Prelim. Guidance 14–15. For the reasons given in our Preliminary Guidance and summarized *supra*, we find that Stanfield does not teach or suggest the indicator creation limitation, nor would a person of ordinary skill have combined Stanfield with the other references relied on by Petitioner.

c) Patent Eligibility

The Preliminary Guidance concluded that Petitioner failed to show "a reasonable likelihood that proposed substitute claims 3 and 4 are patent-ineligible" under 35 U.S.C. § 101. Prelim. Guidance 19. We first determined, under the 2019 Revised Patent Subject Matter Eligibility

Guidance and the October 2019 Update,[10] that the proposed claims recite a judicial exception in Revised Step 2A, Prong One. *See* 2019 Revised Patent Subject Matter Eligibility Guidance, 84 Fed. Reg. 50, 54 (Jan. 7, 2019) (hereinafter "Guidance") updated by USPTO, October 2019 Update: Subject Matter Eligibility ("October 2019 Guidance Update"). Prelim. Guidance 19.

We next determined that in accordance with Prong Two of Step 2A of the Guidance, "proposed substitute claim 3 (and its dependent claim 4) recites technological features that enable communication and coordination between multiple devices that are not co-located and are moving with respect to each other (i.e., a customer's/user's mobile communication device, a vehicle's display, and a driver's mobile communication device and a controller of a vehicle identification system communicating therebetween and generating notifications and indicators based on the vehicle's location and the distance to the user)." *Id.* at 21. We concluded that "[t]hus, proposed substitute claim 3 provides a technological solution rooted in computer and network technologies." *Id.* (citing *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245, 1257–58 (Fed. Cir. 2014); *Visual Memory LLC v. NVIDIA Corp.*, 867 F.3d 1253, 1259–60 (Fed. Cir. 2017)).

We concluded, therefore, that Petitioner had not shown a reasonable likelihood that proposed substitute claims 3 and 4 are patent-ineligible. *Id.* at 22.

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10. Available at https://www.uspto.gov/sites/default/files/documents/peg_oct_2019_update.pdf.

Petitioner responds that "[t]he limitations in steps 3b-3e of determining that a dispatched vehicle is within a predetermined distance of the location of a user, generating a notification signal, creating an indicator that is specific to a user and driver match, and displaying the indicator based on the notification signal on an external display are merely computer implementations of the abstract idea of enabling a user to identify a dispatched cab." Pet. MTA Reply 9. Petitioner continues, "[s]uch limitations do not result in an improvement in the functioning of a computer or other technical improvement." *Id.*

We disagree with Petitioner. As Patent Owner points out, Petitioner has not addressed the rationale of our preliminary decision, only expressing its disagreement with the outcome. PO MTA Sur-reply 7. Petitioner does not persuasively address our conclusion that the proposed substitute claims "recite[] technological features that enable communication and coordination between multiple devices that are not co-located and are moving with respect to each other." Prelim. Guidance 21,

Therefore, for the reasons set forth in our Preliminary Guidance and summarized above, we find that Petitioner fails to prove that the proposed substitute claims at not patent-eligible.

7. Conclusion

For the reasons given, we find that Patent Owner's Motion to Amend has met the regulatory requirements and Petitioner has failed to demonstrate that proposed

substitute claims 3 and 4 are unpatentable. Therefore, Patent Owner's Motion to Amend is *granted*.

V. PATENT OWNER'S MOTION TO EXCLUDE

Patent Owners Motion to Exclude seeks to exclude three categories of evidence relating to Petitioner's expert, David Williams: (1) certain paragraphs of Mr. Williams's second declaration (Ex. 1027)[11] for allegedly expressing "legal opinions"; (2) Exhibits 1027 and 1030 (Mr. Williams's third declaration) as "[n]on-expert and unreliable under FRE 702" and "[p]rejudicial under FRE 703"; and (3) Exhibit 1030 under 37 C.F.R for presenting "new evidence or argument that could have been presented in the Petition." Paper 26, 1–2. Petitioner opposes the motion. Paper 28. For the reasons that follow, Patent Owner's Motion is *denied*.

A. Mr. Williams's Second Declaration (Exhibit 1027)

Patent Owner moves to exclude paragraphs 5–20, 22, 23, 25, 27–31, 39–40, 42, 44–49, and 51–56 of Exhibit 1027, the Second Declaration of Mr. Williams.[12] Paper 26, 1. Patent Owner complains that Mr. Williams's testimony is "[n]on expert and unreliable under FRE 702" and "[p]rejudicial under FRE 703." *Id.* at 2. Patent Owner

11. The Motion incorrectly identifies this declaration as Exhibit 2027.

12. The Motion incorrectly identifies this declaration as Exhibit 2027.

contrasts Mr. Williams's qualifications to those of its own expert, Dr. Valenti. *Id.* Patent Owner refers specifically to the discussion of "server farms" in connection with Kemler. *See supra*, Section III.E.3.

Patent Owner's attack on Mr. Williams's qualifications and credibility are unfounded. As discussed *supra*, in Section III.E.3, we found Mr, Williams's testimony on server farms and other matters reliable and highly credible, especially in his responses to Patent Owner's counsel on cross-examination. *See, e.g.*, Williams Dep. 82:17–94:22. As we noted, Mr. Williams backed up his testimony on the power requirements of server farms with several years of experience designing, implementing, and operating a server farm. We found this experience lends credibility to his testimony that the server farm in Kemler would improve efficiency of the system, even without specific test data. *See id.*

We found the declaration testimony in Mr. Williams's Second Declaration in connection with the Motion to Amend to be helpful. Patent Owner had the opportunity to challenge that testimony on cross-examination, but did not take up that opportunity. We find that these challenges to Mr. Williams's Second Declaration, at most, go to the credibility, and not to the admissibility of the testimony. We agree with Petitioner that the challenged testimony provided by Mr. Williams relates to technical matters commonly addressed by experts testifying in patent cases, and not to conclusions of law. Paper 28, 2–4. We, therefore, deny the Motion as to Mr. Williams's Second Declaration.

B. Mr. Williams's Third Declaration (Ex. 1030)

Patent Owner moves to exclude paragraphs 4–49 (i.e., essentially all) of Mr. Williams's Third Declaration (Ex. 1030). Paper 26, 2. Again, Patent Owner alleges that the declaration is "unreliable" and "[p]rejudicial." Paper 26, 2.

Petitioner responds that Petitioner had a chance to challenge the testimony on cross-examination, but failed to do so. Paper 28, 1. Petitioner asserts that Patent Owner's arguments go to the weight of the testimony, not its admissibility, and that the Board is "well positioned" to assess the weight. *Id.* Petitioner argues that the testimony should not be excluded under Federal Rule of Evidence 703. We agree with these arguments by Petitioner. As Petitioner points out, Patent Owner ignores the testimony of Mr. Williams demonstrating the basis for his opinions that meets the reliability standard of Rule 703. *See* Paper 28, 5–7. This would include the "server farm" testimony cited by Patent Owner as an example. *See id.* at 6. As discussed *infra*, we found Mr. Williams's testimony helpful on that and other issues.

For the reasons given, including those summarized above, we deny the Motion as to Mr. Williams's Third Declaration.

C. Alleged New Evidence or Argument (Exhibit 1030)

Patent Owner alleges that "Exhibit 1030 is inadmissible under 37 CFR 42.23 because it is new evidence that could have been provided in the Petition." Paper 26, 8–9. Patent

Owner gives, as an example, testimony presented by Mr. Williams that Patent Owner itself characterizes as "*in response to* Patent Owner pointing out that Kalanick does not disclose the 'notification signal' of Claim 1[C]." *Id.* at 8 (emphasis added).

Petitioner asserts that "[t]he Federal Circuit has repeatedly made clear that Petitioners may introduce new evidence after the petition stage, when such evidence responds to arguments made and evidence introduced by patent owner." Paper 28, 8–9 (citing *Apple Inc. v. Andrea Elecs. Corp.*, 949 F. 3d 697, 705–07 (Fed. Cir. 2020); *Chamberlain Grp., Inc. v. One World Techs., Inc.*, 944 F.3d 919, 925 (Fed. Cir. 2019)). We agree with Petitioner that Patent Owner seeks to exclude testimony that admittedly was properly presented by Petitioner "in response to" Patent Owner's arguments, such as in the examples cited by Patent Owner. *Id.* at 9–11. Furthermore, we see no undue prejudice to Patent Owner, who passed up the opportunity to cross-examine Mr. Williams on this testimony.

For the reasons given, including those summarized above, we deny the Motion to Exclude Mr. Williams's Third Declaration as untimely.

VI. CONCLUSION

For the foregoing reasons we determine that Petitioner has demonstrated by a preponderance of the evidence that claims 1 and 2 of the '199 patent are unpatentable.

In summary:

Claim(s)	35 U.S.C. §	Reference(s)/ Basis	Claim(s) Shown Unpat-entable	Claim(s) Not shown Unpat-entable
1	103	Kalanick, Kemler	1	
1, 2	103	Lalancette, Kemler	1, 2	
Overall Outcome			1, 2	

Furthermore, we grant Patent Owner's contingent Motion to Amend, cancelling original claims 1 and 2 and replacing them with substitute claims 3 and 4.

In summary:

Motion to Amend Outcome	Claim(s)
Original Claims Cancelled by Amendment	1, 2
Substitute Claims Proposed in the Amendment	3, 4
Substitute Claims: Motion to Amend Granted	3, 4
Substitute Claims: Motion to Amend Denied	
Substitute Claims: Not Reached	

Appendix C

VII. ORDER

Upon consideration of the record before us, it is:

ORDERED that claims 1 and 2 of the '199 patent are not patentable;

ORDERED that Patent Owner's Motion to Amend is *granted*;

ORDERED that claims 1 and 2 of the '199 patent are *cancelled* and replaced by substitute claims 3 and 4, respectively;

ORDERED that Patent Owner's Motion to Exclude is *denied*; and

FURTHER ORDERED that because this is a Final Written Decision, parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

APPENDIX D — MEMORANDUM ORDER OF THE UNITED STATES DISTRICT COURT FOR THE DISTRICT OF DELAWARE, FILED SEPTEMBER 30, 2021

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

Civil Action No. 20-1629-RGA

RIDESHARE DISPLAYS, INC.,

Plaintiff,

v.

LYFT, INC.,

Defendant.

MEMORANDUM ORDER

The Magistrate Judge issued a report and recommendation. (D.I. 46). The subject of the report was Defendant's motion to dismiss based on § 101. (D.I. 14). The Magistrate Judge recommended that the motion be denied without prejudice for three reasons. One, Defendant's "representative claim" was not shown to be representative. Two, Defendant did not convincingly identify an abstract idea that was applicable to the claims.[1] Three, there

1. The Magistrate Judge described the abstract idea issue as being a "close question." I am not so sure I agree with her on this one. I might conclude that the claims are directed to a long-standing method of "organizing human activity." *See* Seinfeld, "The Limo" (television episode from 1992).

was a disputed material fact as to whether there was an "inventive concept."[2]

I have reviewed the underlying briefing, the five asserted patents, the report, and the objections and response. While I have some thoughts about the Magistrate Judge's second and third recommendations, I do not need to reach them. I agree with the Magistrate Judge that Claim 1 of the '987 Patent has not been shown to be representative of all 45 claims.[3] Certainly, the dependent claims to the representative claim add only inconsequential limitations. But there are numerous other independent and dependent claims, and it is too early to tell whether, for example, the driver verification limitation or the predetermined distance limitation are consequential.

Thus, inasmuch as at least 44 of the 45 claims are going forward, all the counts state a claim upon which relief can be granted even were I to agree with Defendant on Claim 1 of the '987 Patent.

The Report and Recommendation (D.I. 46) is **ADOPTED** in relevant part. The motion to dismiss (D.I.

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2. The parties presented arguments to the Magistrate Judge about which Federal Circuit case was most like the instant case. When I was looking at the patents, I was reminded of an earlier case that I handled. *See Baggage Airline Guest Servs., Inc. v. Roadie, Inc.*, 351 F.Supp.3d 753 (D.Del.), *aff'd*, 783 F. App'x 1022 (2019). But I did not see that cited anywhere in the briefing, so I reach no conclusion about whether it has any applicability.

3. It is true that in another case I found a single claim representative of 245 claims. But each case has to be decided on its own facts.

14) is **DENIED** without prejudice to renewal at summary judgment.

IT IS SO ORDERED this 30th day of September 2021.

/s/ Richard G. Andrews
United States District Judge

APPENDIX E — REPORT AND RECOMMENDATION OF THE UNITED STATES DISTRICT COURT FOR THE DISTRICT OF DELAWARE, FILED JULY 12, 2021

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

C.A. No. 20-1629-RGA-JLH

RIDESHARE DISPLAYS, INC.,

Plaintiff,

v.

LYFT, INC.,

Defendant.

REPORT AND RECOMMENDATION

Pending before the Court is Defendant Lyft, Inc.'s Motion to Dismiss the Complaint Pursuant to Fed. R. Civ. P. 12(b)(6). (D.I. 14.) As announced at the hearing on June 10, 2021, I recommend that the Court DENY Lyft, Inc.'s motion without prejudice to Lyft's ability to raise its 35 U.S.C. § 101 arguments at the summary judgment stage.

I. LEGAL STANDARDS

A. Motion to Dismiss for Failure to State a Claim

A defendant may move to dismiss a complaint under Federal Rule of Civil Procedure 12(b)(6) for failure to

state a claim. "To survive a motion to dismiss, a complaint must contain sufficient factual matter, accepted as true, to 'state a claim to relief that is plausible on its face.'" *Ashcroft v. Iqbal*, 556 U.S. 662, 678, 129 S. Ct. 1937, 173 L. Ed. 2d 868 (2009) (quoting *Bell Atl. Corp. v. Twombly*, 550 U.S. 544, 570, 127 S. Ct. 1955, 167 L. Ed. 2d 929 (2007)). A claim is plausible on its face when the complaint contains "factual content that allows the court to draw the reasonable inference that the defendant is liable for the misconduct alleged." *Id.* (citing *Twombly*, 550 U.S. at 556). A possibility of relief is not enough. *Id.* "Where a complaint pleads facts that are 'merely consistent with' a defendant's liability, it 'stops short of the line between possibility and plausibility of entitlement to relief.'" *Id.* (quoting *Twombly*, 550 U.S. at 557).

In determining the sufficiency of the complaint, I must assume all "well-pleaded facts" are true but need not assume the truth of legal conclusions. *Id.* at 679. "[W]hen the allegations in a complaint, however true, could not raise a claim of entitlement to relief, this basic deficiency should be exposed at the point of minimum expenditure of time and money by the parties and the court." *Twombly*, 550 U.S. at 558 (internal quotation marks omitted).

B. Patent Eligibility Under 35 U.S.C. § 101

Section 101 defines the categories of subject matter that are patent eligible. It provides: "Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor,

subject to the conditions and requirements of this title." 35 U.S.C. § 101. The Supreme Court has recognized three exceptions to the broad statutory categories of patent-eligible subject matter: "laws of nature, natural phenomena, and abstract ideas" are not patent-eligible. *Diamond v. Diehr*, 450 U.S. 175, 185, 101 S. Ct. 1048, 67 L. Ed. 2d 155 (1981). "Whether a claim recites patent-eligible subject matter is a question of law which may contain disputes over underlying facts." *Berkheimer v. HP Inc.*, 881 F.3d 1360, 1368 (Fed. Cir. 2018).

The Supreme Court has established a two-step test for determining whether patent claims are invalid under 35 U.S.C. § 101. *Alice Corp. v. CLS Bank Int'l*, 573 U.S. 208, 134 S. Ct. 2347, 189 L. Ed. 2d 296 (2014). In step one, the court must "determine whether the claims at issue are directed to a patent-ineligible concept." *Alice*, 573 U.S. at 218. This first step requires the court to "examine the 'focus' of the claim, i.e., its 'character as a whole,' in order to determine whether the claim is directed to an abstract idea." *Epic IP LLC v. Backblaze, Inc.*, 351 F. Supp. 3d 733, 736 (D. Del. 2018) (Bryson, J.) (quoting *SAP Am., Inc. v. InvestPic, LLC*, 898 F.3d 1161, 1167 (Fed. Cir. 2018); *Internet Patents Corp. v. Active Network, Inc.*, 790 F.3d 1343, 1346 (Fed. Cir. 2015)).

Because "all inventions . . . embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas," *Mayo Collaborative Servs. v. Prometheus Labs.*, 566 U.S. 66, 71, 132 S. Ct. 1289, 182 L. Ed. 2d 321 (2012), "courts 'must be careful to avoid oversimplifying the claims' by looking at them generally and failing to

account for the specific requirements of the claims." *McRO v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299, 1313 (Fed. Cir. 2016) (quoting *In re TLI Commc'ns LLC Pat. Litig.*, 823 F.3d 607, 611 (Fed. Cir. 2016)); *see also Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1337 (Fed. Cir. 2016) ("[D]escribing the claims at [too] high [a] level of abstraction and untethered from the language of the claims all but ensures that the exceptions to § 101 swallow the rule."). "At step one, therefore, it is not enough to merely identify a patent-ineligible concept underlying the claim; [the court] must determine whether that patent-ineligible concept is what the claim is 'directed to.'" *Rapid Litig. Mgmt. Ltd. v. CellzDirect, Inc.*, 827 F.3d 1042, 1050 (Fed. Cir. 2016). If the claims are not directed to a patent-ineligible concept, then the claims are patent-eligible under § 101 and the analysis is over. If, however, the claims are directed to a patent-ineligible concept, then the analysis proceeds to step two.

At step two, the court "consider[s] the elements of each claim both individually and as an ordered combination" to determine if there is an "inventive concept—*i.e.*, an element or combination of elements that is sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [ineligible concept] itself." *Alice*, 573 U.S. at 217-18 (internal quotations and citations omitted). "It is well-settled that mere recitation of concrete, tangible components is insufficient to confer patent eligibility to an otherwise abstract idea." *TLI Commc'ns*, 823 F.3d at 613. Thus, "[m]erely reciting the use of a generic computer or adding the words 'apply it with a computer'" does not transform a patent-ineligible concept into patent eligible

subject matter. *Two-Way Media Ltd. v. Comcast Cable Commc'ns, LLC*, 874 F.3d 1329, 1338 (Fed. Cir. 2017) (quoting *Alice*, 573 U.S. at 223). Nor is there an inventive concept when the claims "[s]imply append[ ] conventional steps, specified at a high level of generality" to a patent ineligible concept. *Alice*, 573 U.S. at 222.

Conversely, claims pass muster at step two when they "involve more than performance of well-understood, routine, and conventional activities previously known to the industry." *Berkheimer*, 881 F.3d at 1367 (citation and internal marks omitted). "The mere fact that something is disclosed in a piece of prior art . . . does not mean it was well-understood, routine, and conventional." *Id.* at 1369. Moreover, "an inventive concept can be found in the non-conventional and non-generic arrangement of known, conventional pieces." *Bascom Glob. Internet Servs., Inc. v. AT&T Mobility LLC*, 827 F.3d 1341, 1350 (Fed. Cir. 2019). Whether an activity was well-understood, routine, or conventional to a person of ordinary skill in the art is a question of fact. *Berkheimer*, 881 F.3d at 1368.

II. DISCUSSION

My report and recommendation regarding the pending motion was announced from the bench at the conclusion of the hearing as follows:

> This is my report and recommendation on the pending motion to dismiss for failure to state a claim in *RideShare Displays, Inc. v. Lyft, Inc.* That's [Civil Action] Number 20-1629. The motion is at Docket Number 14.

I have reviewed the parties' briefing on the motion as well as their supplemental 101-day letters.[1] I've also carefully considered the argument[s] that the parties made this morning at the hearing. I will summarize the reason[s] for my recommendation [in a moment], but before I do, I want to be clear that my failure to address [a] particular argument[ ] does not mean that I did not consider it. I also note that, while we will not be issuing a separate, written recommendation, we will issue a written document incorporating the recommendation I'm about to make.

For the following reasons, I recommend that the Court deny Lyft's motion to dismiss without prejudice to Lyft's ability to renew its § 101 arguments at the summary judgment stage.

[Background]

RSDI filed this suit for patent infringement on November 30, 2020, and, shortly thereafter, filed its first amended complaint.[2] RSDI's amended complaint asserts five patents against Lyft. All five are entitled "Vehicle Identification System," and they all have the

1. (D.I. 15, 17, 20, 39, 40.)

2. (D.I. 1, 6.)

same specification.[3] There are a total of 45 claims across the five patents.

On February 9, 2021, Lyft moved to dismiss the FAC.[4] Lyft contends that every claim of each of the five patents in suit [is] directed to patent-ineligible subject matter and, therefore, is unpatentable under 35 U.S.C. § 101 and the Supreme Court's decision in *Alice*.[5] [Lyft also contends that the FAC fails to plead facts sufficient to state a claim for infringement of the '199 Patent.]

[Discussion]

I'm not going to read into the record the law that applies to motions to dismiss for failure to state a claim under Federal Rule of Civil Procedure 12(b)(6) or the law that applies to the Court's assessment of validity under § 101. I previously set forth the applicable legal standards in another report and recommendation, *CoolTVNetwork.com v.*

3. The asserted patents are U.S. Patent. Nos. 9,892,637 ("'637 Patent"), 10,169,987 ("'987 Patent"), 10,395,525 ("'525 Patent"), 10,559,199 ("'199 Patent"), and 10,748,417 ("'417 Patent").

4. (D.I. 14.)

5. *See Alice Corp. v. CLS Bank Int'l*, 573 U.S. 208, 134 S. Ct. 2347, 189 L. Ed. 2d 296 (2014).

Facebook.[6] I incorporate those legal standards by reference and hereby adopt them into my report.

[Invalidity Under § 101]

Starting with the 101 argument, I conclude that Lyft's 101 motion should be denied without prejudice to Lyft's ability to re-raise invalidity under § 101 at the summary judgment stage. I reach this conclusion for three independent reasons.

First, as a threshold matter, I'm unpersuaded by Lyft's assertion that it is appropriate at this stage to treat claim 1 of the '987 Patent as representative such that all of the claims rise and fall with that claim.[7] As

6. *See CoolTVNetwork.com v. Facebook, Inc.*, C.A. No. 19-292-LPS-2019 U.S. Dist. LEXIS 157841, 2019 WL 4415283 at *3, *10-11 (D. Del. 2019).

7. Claim 1 of the '987 Patent reads:

1 A vehicle identification system, comprising:

a display associated with a vehicle, wherein the display is located to be visible from an exterior of the vehicle by a rider;

a controller communicatively coupled to a network and configured to, in response to receipt of a signal from a user, generate and transmit a first signal representing an indicator via the network to a mobile communication device associated with a driver of the vehicle; and

I mentioned, there are [a] total of 45 claims across the five asserted patents. After carefully reviewing the claims, I agree with RSDI that claim 1 of the '987 Patent is not necessarily representative of all of the claims of all of the patents.

[As] one example, some of the claims additionally require that the controller [ ] transmit an indicator signal to a mobile device associated with a rider, which, as the specification explains, can allow the driver to verify that he or she is picking up the correct rider.[8] As another example, some claims also require that the indicator signal be transmitted from the controller only when the rider and driver are within a predetermined distance of one another.[9]

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wherein, in response to receiving the first signal, the mobile communication device associated with the driver of the vehicle generates and transmits a second signal representing the indicator to the display, the indicator identifies the vehicle.

8. *See, e.g.*, '637 Patent, claim 13 (controller generates signals which are transmitted to mobile communication devices associated with the driver and user); *id.* at 5:61-65 ("Once the user P has identified the vehicle 20, the user P may be requested to show the indicator 111 displayed on his/her mobile communication device 140 to the driver D, e.g., to allow the driver D to verify that he/she is picking up the person who actually requested the ride service.").

9. *See, e.g.*, '637 Patent, claim 1; '199 Patent, claim 1.

As I will explain in a minute, I agree with RSDI that it would be inappropriate at this stage of the case to conclude, as a matter of law, that all of the claimed arrangements are generic and conventional. Accordingly, I cannot conclude at this stage of the case that claim 1 of the '987 Patent is representative of all of the claims in the asserted patents.

Moving to *Alice* step one, I'm not persuaded at this stage of the case that all of the claims are directed to an abstract idea, and that is the second reason that I recommend denying the motion to dismiss.

At step one of the *Alice* inquiry, I must "examine the 'focus' of the claim, i.e., its 'character as a whole,' in order to determine whether the claim is directed to an abstract idea."[10] Lyft asserts that all of the claims are directed to the abstract idea of "identifying a particular vehicle using visual indicators."[11]

As an initial matter, I am concerned that Lyft has done what the Federal Circuit has cautioned against: its description of the focus of the claims is at too high a level of abstraction and is "untethered from the language of the

10. *Epic IP*, 351 F. Supp. 3d at 736.

11. (D.I. 15 at 3.)

claims."[12] While there is no dispute that all of the claims are [ ] directed to systems and methods for vehicle identification, the claim language does contain some detail about the manner in which those vehicles are identified.[13]

In particular, most of the claims require the communication of an indicator by a separate controller to mobile devices associated with the driver and the display of that indicator on the exterior of the vehicle where it can be viewed by the rider so that they can verify they are getting into the correct vehicle. Some claims additionally require that the controller also generate a signal to be sent to the passenger which the driver can use to verify that he or she is picking up the correct rider. [Moreover,] the specification suggests that, prior to the patented invention, there was a need to improve rider and driver security and that the claimed invention, with a separate controller that sends a verification signal to the driver and the rider, is a solution to that problem.[14]

Thus, at this point in the case, I'm unpersuaded that all 45 claims are only directed

12. *Enfish*, 822 F.3d at 1337.

13. *Cf. Core Wireless Licensing S.A.R.L. v. LG Elecs., Inc.*, 880 F.3d 1356, 1362-63 (Fed. Cir. 2018) (claim covering a "particular manner of summarizing and presenting information in electronic devices" was not directed to an abstract idea).

14. *See, e.g.*, '987 Patent, 1:59-61.

to the abstract idea of "identifying a particular vehicle using visual indicators."[15] However, I cannot say on this record that the claims are not directed to one or more other abstract ideas yet to be articulated. Accordingly, I recommend that Lyft be given a chance to re-raise its step one arguments at the summary judgment stage.

Before I leave step one, I have a couple of other comments. At this stage in the development of § 101 law, it is widely acknowledged that there is no single, comprehensive definition of what is an abstract idea and that determining which claims are directed to abstract ideas and which are not has not proved to be a simple task. The Federal Circuit has indicated that it is thus also [ ] useful [ ] at step one to compare the claims

15. *Cf. Mod Stack LLC v. Aculab, Inc.*, No. 18-332-CFC, 2019 U.S. Dist. LEXIS 129145, 2019 WL 3532185, at *4 (D. Del. Aug. 2, 2019) (denying motion to dismiss under § 101 when the defendant's articulation of the abstract idea was oversimplified); *3G Licensing, S.A. v. HTC Corp.*, No. 17-83-LPS, 2019 U.S. Dist. LEXIS 112112, 2019 WL 2904670, at *2 (D. Del. July 5, 2019) ("While it may be possible that claim 1 could be accurately characterized as directed to some abstract idea, all I need to decide today [at the motion to dismiss stage] is that the claim is not directed to the abstract idea articulated by defendant."); *Groove Dig., Inc. v. Jam City, Inc.*, No. 18-1331-RGA, 2019 U.S. Dist. LEXIS 13563, 2019 WL 351254, at *3 (D. Del. Jan. 29, 2019) (denying motion to dismiss under § 101 without prejudice to renew the issue on summary judgment when the defendant's proposed abstract idea did not "satisfactorily capture the substance of the claims").

at issue to claims that have been considered in other decisions.[16]

Accordingly, I also compared the claims at issue in this case to several lines of cases in which the Federal Circuit found claims to be abstract ideas. Judge Bryson, sitting as a District Court Judge in our district, summarized three of those lines of cases in his opinion in *Epic v. Backblaze*.[17]

One line of cases, including *Alice*, holds that "method[s] of organizing human activity," such as fundamental economic practices, are unpatentable.[18] I am not persuaded that this case is like those cases.

A second line of cases, including *Enfish* and *Core Wireless*, draws the distinction between claims that are directed to an improvement in computer technology and claims that use a computer to perform typical computer tasks.[19] But the distinctions drawn in that line of cases, in my view, are most appropriately applied to inventions directed to computer applications

16. *See Enfish*, 822 F.3d at 1334.

17. 351 F. Supp. 3d at 737-740.

18. *Alice Corp.*, 573 U.S. at 220-21.

19. *See Enfish*, 822 F.3d at 1326; *Core Wireless*, 880 F.3d at 1361-63.

and software. The asserted patents here are not directed solely to a computer application but to a method implemented using computer technology.

A third line of cases, including *Interval Licensing* and *Intellectual Ventures* [ ], asks whether a claim lists functions with general terms rather than reciting a specific means of achieving the claimed function.[20] Whether the claims here fall under this line of cases is a closer question. Indeed, this case has, as Lyft suggests, similarities to the claims in *Secured Mail* that the Federal Circuit found were directed to an abstract idea.[21] As in *Secured Mail*, the claims here have steps that are not limited by rules as to how those steps are achieved. I also think that the claims here have similarities to the *Bascom* case relied on by RSDI insofar as there is a credible argument that the invention itself is directed to how certain conventional elements are arranged, notwithstanding [that] the Federal Circuit in *Bascom* stated that the claims there did not "readily lend themselves to a step-one finding that they are directed to a nonabstract idea."[22]

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20. *See Interval Licensing LLC v. AOL, Inc.*, 896 F.3d 1335, 1343 (Fed. Cir. 2018); *Intellectual Ventures I LLC v. Capital One Fin. Corp.*, 850 F.3d 1332, 1342 (Fed. Cir. 2017).

21. *See Secured Mail Solutions LLC v. Universal Wilde, Inc.*, 873 F.3d 905, 911 (Fed. Cir. 2017).

22. *See Bascom*, 827 F.3d at 1349.

In sum, I do think that it is a close question. However, even if I agreed with Lyft that every single one of the claims was directed to an abstract idea, the motion should still be denied at step two.

[B]efore I leave step one, I footnote this final comment. The systems and methods recited by the claims here incorporate various tangible components, and while I'm mindful of the Federal Circuit's warning that mere recitation of concrete, tangible components is insufficient to confer patent eligibility to an otherwise abstract idea, I'm also mindful of the Supreme Court's statement that the machine or transformation test, while not the sole test, "is a useful and important clue, an investigative tool, for determining whether some claimed inventions" satisfy § 101.[23] And the machine or transformation test appears to be satisfied here.

I will now turn to step two of *Alice*. Even if I were to assume that every claim is directed to an abstract idea, I conclude that there are disputes of fact that preclude a holding at step two that the claims lack an inventive concept.

In the prehearing letters to this Court, the parties analogized the claims of the asserted

23. *Bilski v. Kappos*, 561 U.S. 593, 604, 130 S. Ct. 3218, 177 L. Ed. 2d 792 (2010).

patents to other claims assessed by the Federal Circuit. Lyft argues that the claims at issue here are most like the claimed mail identification systems found ineligible under § 101 in *Secured Mail*.[24] RSDI argues that the claims are most like the internet filtering system that survived a motion to dismiss in *Bascom*.[25]

The claims here have similarities to both cases, but I ultimately agree with RSDI that *Bascom* prevents the Court from concluding, as a matter of law, that the claims here lack an inventive concept. *Bascom* reiterated the principal that an inventive concept can be found in the "non-conventional and non-generic arrangement of known, conventional pieces."[26] The invention at issue in *Bascom* was a system for filtering internet sites. Each of the individual limitations were alleged to be known generic components. There, the Federal Circuit concluded that, notwithstanding that filtering internet concepts was a known concept, an arrangement where the filtering list was located on a remote server instead of on local hardware could not be said, as a matter of law, to have been conventional or generic.[27]

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24. (D.I. 40 at 2.)

25. (D.I. 39 at 2-3.)

26. *Bascom*, 827 F.3d at 1350.

27. *Id.* at 1352.

In this case, RSDI conceded during the argument today that the individual elements of the claims are all generic components.[28] Nevertheless, I agree with RSDI that, like in *Bascom*, there remains at least a dispute of fact about whether the claimed arrangement of those known, conventional pieces is sufficiently "non-conventional and non-generic" to provide an inventive concept.

For example, I cannot say on this record that having an arrangement with an externally located controller that separately communicates the indicator signal to both the driver's and the rider's mobile devices is, as a matter of law, conventional or generic. Moreover, Plaintiff's first amended complaint, which I must take as true at this stage, alleges that the claimed arrangement of generic components is not routine [or] conventional and that the claimed invention solves a known problem with ridesharing safety with "a unique and previously unknown and non-conventional solution."[29]

Accordingly, I recommend that Lyft's motion be denied for the separate and independent reason that there is a dispute of fact as to

28. June 10, 2021, Hearing Tr. at 27:24-28:6.

29. (D.I. 6 ¶¶ 172, 183, 194, 205, 216.)

whether the claims include an inventive concept at step two of the *Alice* inquiry.[30]

[Infringement of the '199 Patent]

Finally, Lyft contends that the FAC fails to plausibly allege that Lyft infringes claim 1 of the '199 Patent. In particular, Lyft argues that the complaint fails to allege that it controls a third party that performs all of the method steps of claim 1 of the '199 Patent, including the step of "identifying the vehicle based on appearance of a match, by visual observation of the user."[31]

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30. I do not reach RSDI's argument that Lyft is estopped from asserting that the claims are ineligible based on statements Lyft allegedly made to the PTO during the prosecution of U.S. Patent No. 10,636,108.

31. Claim 1 of the '199 Patent reads:

1. A vehicle identification method implemented as an Application on mobile communication devices over a wireless communication network, comprising:

requesting a ride from a transportation service from a mobile communication device of a user;

determining that a vehicle is within a predetermined distance of the location of the user;

generating a notification signal to a mobile communication device associated with a driver of the vehicle;

generating an indicatory signal representing an indicator;

RSDI contends that it has pleaded that Lyft controls the performance all of the method steps by its drivers and riders. I agree with RSDI that it has adequately pleaded that Lyft conditions the use of its rideshare service on the performance of each of the claimed method steps.

With respect to the identifying [step], the complaint alleges that "[u]nder Lyft's design and control, a rider application . . . is provided that, among other things, provides Lyft's passengers/customers, a method by which to identify a particular vehicle operated by a Lyft driver."[32] The complaint further alleges that "[Lyft] conditions passengers' use of its transportation services network upon the performance of the steps performed by the Rider App, and Lyft establishes the manner or

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displaying the indicator based on the notification signal on a display associated with the vehicle, the mobile communication device associated with the driver, and the user's mobile communication device, wherein the display associated with the vehicle is located to be visible from the exterior of the vehicle; and

identifying the vehicle based on appearance of a match, by visual observation of the user, between the indicator being displayed on the user's mobile communication device and the indicator being displayed on the display associated with the vehicle.

32. (D.I. 6 ¶ 124.)

> timing of the passengers' performance."[33] I do not think that RSDI is required to [say] more to state a claim for infringement of claim 1 of the '199 Patent.[34]
>
> **[Conclusion]**
>
> To sum up, for the reasons I discussed, I recommend that the Court deny Lyft's motion to dismiss. That concludes my report and recommendation.

This Report and Recommendation is filed pursuant to 28 U.S.C. § 636(b)(1)(B), (C), Federal Rule of Civil Procedure 72(b)(1), and District of Delaware Local Rule 72.1. Any objections to the Report and Recommendation shall be filed within fourteen days and limited to ten pages. Any response shall be filed within fourteen days thereafter and limited to ten pages. The failure of a party to object to legal conclusions may result in the loss of the right to *de novo* review in the district court.

The parties are directed to the Court's "Standing", for Objections Filed Under Fed. R. Civ. P. 72," dated

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33. (*Id.* ¶ 127.)

34. *Cf. Akamai Techs., Inv. v. Limelight Networks, Inc.*, 797 F.3d 1020, 1023 (Fed. Cir. 2015) (en banc) (holding that "liability under § 271(a) can also be found when an alleged infringer conditions participation in an activity or receipt of a benefit upon performance of a step or steps of a patented method and establishes the manner or timing of that performance").

Appendix E

October 9, 2013, a copy of which can be found on the Court's website.

Dated: July 12, 2021

/s/ Jennifer L. Hall
THE HONORABLE JENNIFER L. HALL
UNITED STATES MAGISTRATE JUDGE

APPENDIX F — DENIAL OF PANEL REHEARING AND REHEARING EN BANC OF THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT, FILED DECEMBER 22, 2025

UNITED STATES COURT OF APPEALS
FOR THE FEDERAL CIRCUIT

2023-2033, 2023-2034, 2023-2035, 2023-2036,
2023-2037, 2023-2038, 2023-2039

RIDESHARE DISPLAYS, INC.,

Appellant,

JOHN A. SQUIRES, UNDER SECRETARY OF COMMERCE FOR INTELLECTUAL PROPERTY AND DIRECTOR OF THE UNITED STATES PATENT AND TRADEMARK OFFICE,

Intervenor,

v.

LYFT, INC.,

Cross-Appellant.

Appeals from the United States Patent and Trademark Office, Patent Trial and Appeal Board in Nos. IPR2021-01598, IPR2021-01599, IPR2021-01600, IPR2021-01601, IPR2021-01602.

ON PETITION FOR PANEL REHEARING AND REHEARING EN BANC

Appendix F

Before Moore, *Chief Judge*, Lourie, Dyk, Prost, Reyna, Taranto, Chen, Hughes, Stoll, Cunningham, and Stark, *Circuit Judges*.[1]

Per Curiam.

ORDER

Rideshare Displays, Inc. filed a combined petition for panel rehearing and rehearing en banc. The petition was referred to the panel that heard the appeal, and thereafter the petition was referred to the circuit judges who are in regular active service.

Upon consideration thereof,

It Is Ordered That:

The petition for panel rehearing is denied.

The petition for rehearing en banc is denied.

December 22, 2025
Date

For the Court

/s/ Jarrett B. Perlow
Jarrett B. Perlow
Clerk of Court

1. Circuit Judge Newman did not participate.

APPENDIX G — STATUTORY PROVISIONS INVOLVED

5 U.S.C. § 706 provides: "To the extent necessary to decision and when presented, the reviewing court shall decide all relevant questions of law, interpret constitutional and statutory provisions, and determine the meaning or applicability of the terms of an agency action. The reviewing court shall—

> **(1)** compel agency action unlawfully withheld or unreasonably delayed; and
>
> **(2)** hold unlawful and set aside agency action, findings, and conclusions found to be--
>
> > **(A)** arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law;
> >
> > **(B)** contrary to constitutional right, power, privilege, or immunity;
> >
> > **(C)** in excess of statutory jurisdiction, authority, or limitations, or short of statutory right;
> >
> > **(D)** without observance of procedure required by law;
> >
> > **(E)** unsupported by substantial evidence in a case subject to sections 556 and 557 of

this title or otherwise reviewed on the record of an agency hearing provided by statute; or

(F) unwarranted by the facts to the extent that the facts are subject to trial de novo by the reviewing court.

In making the foregoing determinations, the court shall review the whole record or those parts of it cited by a party, and due account shall be taken of the rule of prejudicial error."

APPENDIX H — BRIEF FOR INTERVENOR IN THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT, FILED MARCH 12, 2024

UNITED STATES COURT OF APPEALS
FOR THE FEDERAL CIRCUIT

Appeal Nos. 23-2033, 23-2034, 23-2035, 23-2036, 23-2037, 23-2038, 23-2309

RIDESHARE DISPLAYS, INC.,

Appellant,

KATHERINE K. VIDAL, UNDER SECRETARY OF COMMERCE FOR INTELLECTUAL PROPERTY AND DIRECTOR OF THE UNITED STATES PATENT AND TRADEMARK OFFICE,

Intervenor,

v.

LYFT, INC.,

Cross-Appellant.

Appeals from the United States Patent and Trademark Office, Patent Trial and Appeal Board in Nos. IPR2021-01598, IPR2021-01599, IPR2021-01600, IPR2021-01601, IPR2021-01602

BRIEF FOR INTERVENOR

Appendix H

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March 12, 2024

Appendix H

Representative Claims

U.S. Patent No. 9,892,637

Substitute Claim 29. A method of identifying a vehicle being dispatched to a location of a user having requested a ride from a transportation service, comprising:

when it is determined that the vehicle is within a predetermined distance of the location of the user, generating a notification signal to a mobile communication device associated with the driver;

generating, by creating an indicator, an indicatory signal representing the indicator in response to receiving the notification signal;

displaying, on a display associated with the vehicle, the indicator based on the notification and indicatory signals, the display being located to be visible on the exterior of the vehicle;

displaying the indicator on a mobile communication device associated with the user; and

identifying the vehicle based on appearance of a match, by visual observation of the user, between the indicator being displayed on the mobile communication device associated with the user and the indicator being displayed on the display associated with the vehicle.

Appx56-57; Appx1957-1958.

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U.S. Patent No. 10,559,199

Substitute Claim 3. A vehicle identification method implemented as an Application on mobile communication devices over a wireless communication network, comprising:

requesting a ride from a transportation service from a mobile communication device of a user;

determining that a vehicle is within a predetermined distance of the location of the user;

generating a notification signal to a mobile communication device associated with a driver of the vehicle;

generating, by creating an indicator that is specific to a user and driver match, an indicatory signal representing the indicator;

displaying the indicator based on the notification signal on a display associated with the vehicle, the mobile communication device associated with the driver, and the user's mobile communication device, wherein the display associated with the vehicle is located to be visible from the exterior of the vehicle; and

identifying the vehicle based on appearance of a match, by visual observation of the user, between the indicator being displayed on the user's mobile communication device and the indicator being displayed on the display associated with the vehicle.

Appx197; Appx1995.

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[TABLES INTENTIONALLY OMITTED]

Statement of Related Cases

The Director is not aware of any other appeal in connection with these proceedings that has previously been before this Court or that is currently pending in any other court. Beyond the case identified in the parties' briefs, the Director is also unaware of any related cases pending in this or any other court that will directly affect, or be directly affected by, this Court's decision in the pending appeal.

Appendix H

I. Introduction

The Patent Trial and Appeal Board determined that cross-appellee RideShare Display, Inc.'s ("Rideshare's") substitute claims for a technology that enables rideshare drivers and riders to quickly and safely identify each other and ensure that the correct rider is entering the correct driver's vehicle are patent eligible under 35 U.S.C. § 101. The United States Patent and Trademark Office ("USPTO") has intervened in these appeals for the limited purpose of defending that conclusion.

As the USPTO has recently and repeatedly explained in Supreme Court filings, the current state of the law concerning patent eligibility under § 101 would benefit from further clarification. *See* Brief of Amicus Curiae U.S., *Interactive Wearables, LLC v. Polar Electro Oy et al,*, No. 21-1281, 2023 WL 2817859; Brief of Amicus Curiae U.S, *American Axle & Mfg. Inc. v. Neapco Holdings LLC*, No. 20-891, 2022 WL 1670811. Ambiguity in the governing legal framework has made it difficult for "inventors, businesses, and other patent stakeholders to reliably and predictably determine what subject matter is patent eligible," and creates "unique challenges for the USPTO." USPTO's 2019 Revised Patent Subject Matter Eligibility Guidance, 84 Fed. Reg. 50 (Jan. 7, 2019), and as updated by the October 2019 Patent Eligibility Guidance Update, 84 Fed. Reg. 55942 (Oct. 18, 2019). Neither the Supreme Court nor this Court have articulated readily administrable limits on the exclusions from patent eligibility recognized in recent case law. And absent proper guardrails, those exceptions threaten to imperil the patentability of the

kinds of core technological innovations that have long been understood to be patent eligible.

The Board's conclusion here is, however, consistent with the best understanding of the precedents of the Supreme Court and this Court and should be affirmed. Rideshare has not claimed the abstract process of having rideshare drivers and riders identify each other, but rather, a technologically implemented means for facilitating and improving that recognition process through the generation and transmission of unique identifiers on mobile devices and vehicle displays. Under this Court's precedents, this technological solution is patent eligible. Indeed, when properly understood, § 101 will seldom imperil innovations within patent law's traditional bailiwick of the scientific, technological, and industrial arts—like the ones at issue here. This Court should help restore clarity to the law in this area and affirm the Board's decision.

II. Statement of the Issues

The substitute claims are directed to methods for identifying rideshare customers, drivers, and vehicles comprising the steps of generating a notification signal to the mobile device of the driver when the driver is within a predetermined distance of the rider, and creating and displaying a unique indicator on the rider's and driver's mobile devices, and on a vehicle display that is visible from the exterior of the vehicle. This method enables a rideshare driver and rider to safely and quickly identify each other and ensure that the correct rider is entering the correct driver's vehicle.

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The Board determined that the claims are patent eligible under 35 U.S.C. § 101. In particular, considering the claims as a whole, the Board determined that these claims are not directed to an abstract idea, but to an improvement in a technological process rooted in computers and networks, that uses signaling and automation to coordinate communications between the dispatch service, driver, and rider when the driver and rider are within a pre-determined distance from each other, and automates secure identification of drivers and riders through the generation of a unique identifier that is displayed on mobile devices of the rider and driver and on the exterior of the driver's vehicle.

The USPTO has intervened to address the following issues:

(1) Whether a claim that falls within patent law's traditional bailiwick of the scientific, technological, and industrial arts, and does not encompass either a building block of human innovation or a nontechnological innovation, such as a fundamental economic practice, can be excluded from patent eligibility under Section 101 as an abstract idea.

(2) Whether a claim reciting a technological solution rooted in computer or network technology can be found to be "directed to" an abstract idea based solely on either the fact that the technology is used to facilitate human coordination (here, the process of riders and drivers recognizing

> and validating each other) or because the technological solution utilizes generic computer components.

This Court should conclude that the substitute claims are patent eligible and affirm the Board's decision on that issue.

III. Statement of the Case

Lyft, Inc. ("Lyft") filed petitions for inter partes review ("IPR") challenging several claims of U.S. Patent Nos. 9,892,637 and 10,599,199 owned by Rideshare, which relate to vehicle identification methods and systems designed to assist a rideshare driver and rider in identifying each other. The Patent Trial and Appeal Board ("Board") determined that Lyft had shown by a preponderance of the evidence that the challenged claims are unpatentable over the prior art of record. The Board granted Rideshare's motions to enter substitute claims 29, 31, and 32 of the '637 patent and substitute claims 3 and 4 of the '199 patent (collectively, "the substitute claims"), which the Board found patent eligible. Lyft challenges the Board's patent eligibility determinations in its cross-appeal.

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A. Rideshare's substitute claims recite a technological solution rooted in computer and network technology to allow a rider and driver to identify each other by creating and displaying an indicator on the rider's and driver's mobile devices and on the exterior of the vehicle.

Rideshare's '637 patent and '199 patent, which share a common specification,[1] describe a technological solution rooted in computer or network technology that enable rideshare drivers and riders to quickly and safely identify and validate one another. As background, the specification acknowledges the rise of on-demand transportation services, such as UBER and LYFT, but notes that a "continuing need exists for systems and methods adapted for use by transportation services to ensure rider and driver security." Appx245 at 1:56-58. To meet such a need, the specification describes systems and processes in which the controller generates and transmits a first signal, via a transceiver, to the mobile device of the driver when a driver and rider are within a pre-determined distance, and then the driver's mobile device creates a second signal (a unique indicator) that is displayed on the rider's and driver's mobile devices, as well as on an externally visible display on the driver's vehicle, which allows the rider to identify a vehicle prior to boarding it and further allows the driver to verify that they are picking up the person who actually requested the ride service. *See e.g.*, Appx240 at Abstract, Appx245 at 1:20–25; Appx246 at 3:5–50; Appx247 at 5:35–65.

1. The Director cites to the '637 patent specification, unless otherwise specified.

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Figures 1A and 1B, as shown below, illustrate the components of Rideshare's system for vehicle identification. Appx241; Appx242; Appx245 at 2:35–40.

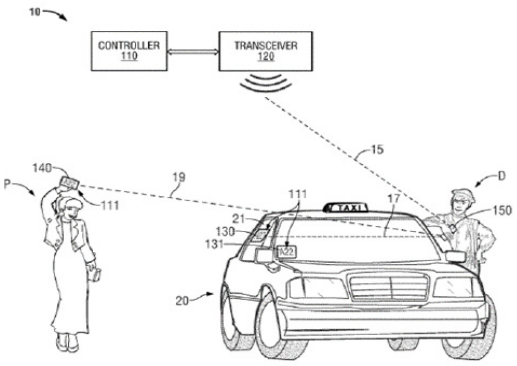

FIG. 1A

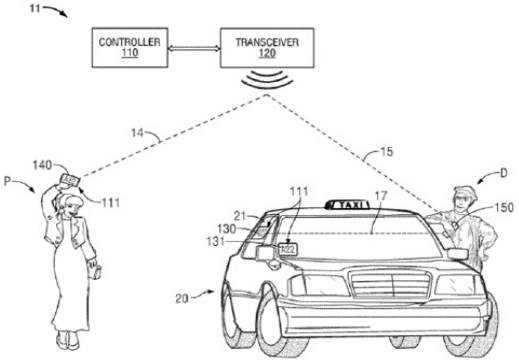

FIG. 1B

In particular, Figure 1A depicts that the vehicle identification system 10 includes controller 110, transceiver 120, mobile devices 140 (associated with the rider), mobile device 150 (associated with the driver), and one or more displays (e.g., display 130 and display 131) associated

with the driver's vehicle 20. Appx246 at 3:54–60. In some embodiments, controller 110, which may be a computer network or a server, can be coupled to transceiver 120, which can consist of one or more cell phone towers or satellites that are capable of wireless communication with mobile device 150, associated with driver D, and mobile device 140, associated with user/rider P. *Id.* at 3:60-4:3.

The specification discloses that controller 110 can generate a first signal, also known as a notification signal, that is transmitted via transceiver 120 to the driver's mobile communication device 150. Appx247 at 5:1-4. This notification signal can be generated when the driver's vehicle 20 approaches a pre-determined distance from the pick-up location of the rider. *Id.* at 5:6-8. The driver's mobile device 150 can then generate one or more second signals, also known as an indicatory signal, which may be displayable as a "code" (e.g., a text string or an alphanumeric string), an icon, or other identifier, on display 130 on driver's vehicle 20 and on mobile communication device 140, associated with user/rider P, to enable the user to identify the vehicle that he or she has requested for a ride service. Appx247 at 5:15-35; Appx246 at 4:4–10.

In the embodiment of Figure 1B, the controller generates indicatory signal 14, which is transmitted to the mobile communication device associated with user P, and notification signal 15, which is transmitted to the mobile communication device associated with driver D. *Id.* at 5:40–45. In this embodiment, the driver's mobile communication device does not communicate with the user's mobile communication device, thereby accommodating users who prefer to communicate with

the dispatching device rather than with driver D. *Id.* at 5:45–50.

Figure 3, as shown below, depicts a flowchart illustrating a method of identifying a rideshare vehicle dispatched to a location of a user having requested a ride from a transportation service. *Id.* at 6:62–6:64; Appx244.

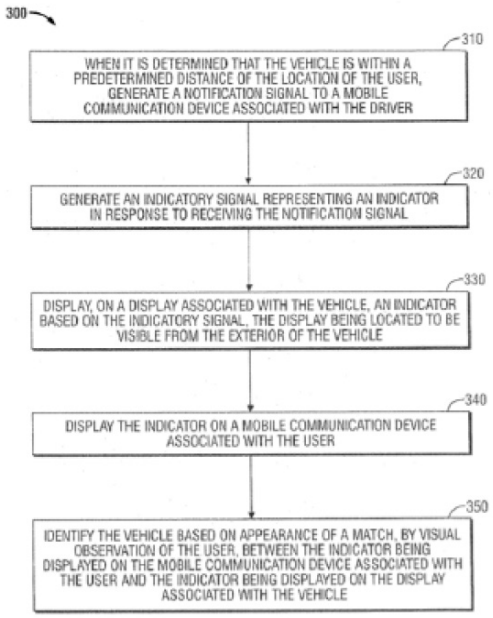

Fig. 3

In particular, when it is determined that the driver's vehicle 20 (as depicted in Figure 1A, for example) is within a predetermined distance of the location of user P, notification signal 15 is generated and sent to mobile communication device 150 associated with driver D. Appx244 at Fig 3, block 310. In response to receiving

notification signal 15, indicatory signal 17 representing indicator 111 is generated. *Id.* at Fig. 3, block 320. Indicator 111 is then displayed on display 130 on the driver's vehicle 20. *Id.* at Fig. 3, block 330. Display 130 is visible on the exterior of the driver's vehicle 20. *Id.* at 7:8–9. Indicator 111 is also displayed on mobile communication device 140 associated with user P. *Id.* at Fig. 3, block 340. User P can then use the indicator to identify the driver's vehicle 20, by comparing the indicator being displayed on the mobile communication device associated with user P and the indicator being displayed on the display associated with vehicle 20 and determining if they match. *Id.* at Fig. 3, block 350.

Substitute claim 29 of the '637 patent and substitute claim 3 of the '199 patent are representative. Substitute claim 29 recites:

> A method of identifying a vehicle being dispatched to a location of a user having requested a ride from a transportation service, comprising:
>
> when it is determined that the vehicle is within a predetermined distance of the location of the user, generating a notification signal to a mobile communication device associated with the driver;
>
> generating, by creating an indicator, an indicatory signal representing the indicator in response to receiving the notification signal;

> displaying, on a display associated with the vehicle, the indicator based on the notification and indicatory signals, the display being located to be visible on the exterior of the vehicle;
>
> displaying the indicator on a mobile communication device associated with the user; and
>
> identifying the vehicle based on appearance of a match, by visual observation of the user, between the indicator being displayed on the mobile communication device associated with the user and the indicator being displayed on the display associated with the vehicle.

Appx56-57; Appx1957-1958. Substitute claim 3 recites:

> A vehicle identification method implemented as an Application on mobile communication devices over a wireless communication network, comprising:
>
> requesting a ride from a transportation service from a mobile communication device of a user;
>
> determining that a vehicle is within a predetermined distance of the location of the user;
>
> generating a notification signal to a mobile communication device associated with a driver of the vehicle;

> generating, by creating an indicator that is specific to a user and driver match, an indicatory signal representing the indicator;
>
> displaying the indicator based on the notification signal on a display associated with the vehicle, the mobile communication device associated with the driver, and the user's mobile communication device, wherein the display associated with the vehicle is located to be visible from the exterior of the vehicle; and
>
> identifying the vehicle based on appearance of a match, by visual observation of the user, between the indicator being displayed on the user's mobile communication device and the indicator being displayed on the display associated with the vehicle.

Appx197; Appx1995.

B. The Board's determination that Rideshare's substitute claims are patent eligible under 35 U.S.C. § 101 because the claims, as a whole, are not directed to abstract ideas.

In the final written decisions on the '637 and '199 patents, the Board determined that substitute claims 29, 31, and 32, which replaced original claims 9, 11, and 12 of the '637 patent, and substitute claims 3 and 4, which replaced original claims 1 and 2 of the '199 patent, satisfy the statutory and regulatory requirements for

patentability, Appx71; Appx210, including 35 U.S.C. § 101.[2] Appx64-66; *see also* Appx2018-2021; Appx204-206; *see also* Appx2041-2044.

The Board applied the Supreme Court's two-part eligibility framework from *Alice Corp. v. CLS Bank International*, 573 U.S. 208 (2014), as referenced in the USPTO's 2019 Revised Patent Subject Matter Eligibility Guidance, 84 Fed. Reg. 50, 54 (Jan. 7, 2019) ("Guidance"), and as updated by the October 2019 Patent Eligibility Guidance Update, 84 Fed. Reg. 55942 (Oct. 18, 2019), and concluded that the substitute claims are not directed to an abstract idea.[3] Appx64-66; *see also* Appx2018-2021; Appx204-206; *see also* Appx2041-2044. While the Board found that the substitute claims recite a method of organizing human activity (e.g., enabling a user to identify a dispatched cab), the Board determined that the claims, as a whole, integrate the abstract idea into a practical application and thus, are not directed to an abstract idea. Appx65 (citing Appx2019-2021); Appx204 (citing Appx2042-2044).

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2. Although the Board determined that substitute claims 21 and 28 of the '637 patent, which are to the "vehicle identification system" (Appx1957; Appx1959), are eligible for patentability under § 101 (Appx65; Appx2019-2021), the Board found them to be otherwise unpatentable (Appx59-61; Appx2008).

3. The USPTO's Guidance synthesizes the Supreme Court's and this Court's patent eligibility precedent. *Alice* step one corresponds to the 2019 Guidance's step 2A (prongs one and two), and *Alice* step two corresponds to the 2019 Guidance's step 2B. The USPTO's Guidance has been incorporated into the USPTO's Manual of Patent Examining Procedure ("MPEP") § 2106 (9th ed. June 2020).

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With respect to substitute claim 29 of the '637 patent, the Board observed that the claim recites a combination of additional elements, including:

- generating a notification signal to a mobile communication device associated with the vehicle's driver when it is determined that the vehicle is within a predetermined distance of the location of the user,

- creating an indicator and indicatory signal representing the indicator in response to receiving the notification signal,

- displaying the indicator on an exterior vehicle display, based on the notification and indicatory signals,

- and also displaying the indicator on a mobile communication device associated with the user.

Appx2019. Turning to the '637 patent specification, the Board determined that this combination of additional elements provides a practical technological application via automation and signaling to improve rideshare technology. Appx2019 (citing Appx245 at 1:20–25; Appx246 at 3:5–50; Appx247 at 5:35–65; Appx240 at Abstract.)

The Board determined that substitute claim 29 recites technological features that enable communication and coordination between multiple devices that are not co-located and are moving with respect to each other.

Appx2020. In particular, the Board pointed to the vehicle identification system communicating and generating notification signals to a driver's mobile device, and communicating and generating indicators to a user's mobile device and vehicle's display, based on the vehicle's location and distance to the user's mobile communication device. *Id*. Furthermore, the Board determined that the signaling and automation recited in substitute claim 29 effect an improvement to ridesharing technology by coordinating communications between dispatch services, vehicles, and customers, to automate the secure identification of vehicles by customers and customers by drivers. *Id*. Accordingly, the Board concluded that the claim provides a technological solution rooted in computer and network technologies to a problem in rideshare technology. Appx2020-2021 (citing Appx 245 at 1:20–25, 1:61–2:26; Appx240 at Abstract; *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245, 1257–58 (Fed. Cir. 2014); *Visual Memory LLC v. NVIDIA Corp.*, 867 F.3d 1253, 1259–60 (Fed. Cir. 2017). The Board indicated that the same reasoning applies to substitute claims 31 and 32 which depend from substitute claim 29. Appx2020.

The Board determined that Lyft had not persuasively addressed the Board's initial assessment that the substitute claims "recite technological features that enable communication and coordination between multiple devices that are not co-located and are moving with respect to each other." Appx66 (citing Appx2020). The Board thus concluded that substitute claims 29, 31, and 32 are patent eligible under § 101.

The Board made similar determinations with respect to the substitute claims in the '199 patent. Appx204-206; Appx2041-2044. In particular, the Board concluded that substitute claim 3 (like substitute claim 29), "recites technological features that enable communication and coordination between multiple devices that are not co-located and are moving with respect to each other," and therefore "provides a technological solution rooted in computer and network technologies," and that Lyft had failed to demonstrate otherwise. Appx205 (citing Appx2043). The Board indicated that the same reasoning applied to substitute claim 4, which depends on substitute claim 3. Appx205-206; Appx2043.

IV. Summary of the Argument

The abstract idea exception, when properly construed, helps to cabin Section 101's reach to patent law's traditional bailiwick of the scientific, technological, and industrial arts. Thus, the exception precludes the patenting of both the fundamental building blocks of technological innovations (e.g., intellectual concepts, such as mathematical algorithms) and innovations in non-technological fields (e.g., methods of organizing human activity, such as fundamental economic practices). *Gottschalk v. Benson*, 409 U.S. 63, 67, 72 (1972); *Parker v. Flook*, 437 U.S. 584, 585 (1978). The purpose of the abstract idea exception is to screen out the sorts of non-technological innovations that do not warrant patent protection, even if they are novel, nonobvious, and adequately enabled. The substitute claims here fall within the traditional bailiwick of the scientific, technological, and industrial arts, and should be patent

eligible under Section 101. The claims do not attempt to tie up either a fundamental building block of innovation or an innovation in a non-technological field, and thus are not within the abstract idea exception.

The Board properly concluded that Rideshare's substitute claims are directed to patent eligible subject matter under the *Alice* framework. The substitute claims are directed to a process that uses a combination of hardware and software technology, not to an abstract idea, and are thus patent eligible under *Alice* step one. The claimed process provides a technological solution rooted in networks and computers that solves the problem of rideshare drivers and riders safely and quickly identifying each other, using a combination of technological components (two mobile devices and a display on a vehicle), the automatic signaling between them, and the automatic generation of a unique indicator. The only human involvement occurs either before (requesting a ride) or after (identifying the correct vehicle/passenger) the claimed method. Including these additional claim limitations cannot transform an otherwise patent eligible claim into a patent ineligible claim. Lyft's argument that the substitute claims are directed only to methods of organizing human activity because they do not recite an improvement to computer functionality is misguided and ignores this Court's precedent, which holds that technological solutions rooted in computer or network technology are patent eligible regardless of whether conventional computer components are used.

Alternatively, though the Court need not reach *Alice* step two, the substitute claims are eligible under step two because the additional limitations, considered both individually and as an ordered combination, transform the abstract idea into a patent-eligible application. Lyft's argument that the patents only describe generic computer components misses the mark, as noted above.

This Court should affirm the Board's decision and provide much needed clarity on the application of 35 U.S.C. § 101 generally, and specifically to computer-based inventions.

V. Argument

A. Standard of Review

Lyft has the burden to show that the Board committed reversible error in its determination that the substitute claims recite patent eligible subject matter. *In re Watts*, 354 F.3d 1362, 1369 (Fed. Cir. 2004). Patent eligibility is a question of law that may contain underlying issues of fact. *Interval Licensing LLC v. AOL, Inc.*, 896 F.3d 1335, 1342 (Fed. Cir. 2018). This Court reviews the Board's legal determination de novo and its findings of fact for substantial evidence. *In re Marco Guldenaar Holding B.V.*, 911 F.3d 1157, 1159 (Fed. Cir. 2018); *Acceleration Bay, LLC v. Activision Blizzard Inc.*, 908 F.3d 765, 769 (Fed. Cir. 2018).

B. Fundamental principles make clear that claims are patent eligible and not directed to abstract ideas when, as here, they fall within the scientific, technological, and industrial arts.

Section 101 of the Patent Act provides that patents may be issued for "any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof." 35 U.S.C. § 101. While the four categories of patent eligible subject matter are expansive, the Supreme Court has identified three "implicit" exceptions to patent eligibility grounded in history and longstanding practice: "Laws of nature, natural phenomena, and abstract ideas" are all unpatentable. *Alice*, 573 U.S. at 216 (quoting *Association for Molecular Pathology v. Myriad Genetics, Inc.*, 569 U.S. 576, 589 (2013)).

To determine whether a claim falls within these implicit exceptions, this Court applies the Supreme Court's two-step *Alice* framework. *Adasa Inc. v. Avery Dennison Corp.*, 55 F.4th 900, 908 (Fed. Cir. 2022), *cert. denied*, 143 S. Ct. 2561, 216 L. Ed. 2d 1181 (2023) (citation omitted). First, at step one, this Court determines whether the claims at issue are "directed to" a patent-ineligible concept, e.g., an abstract idea. *Alice*, 573 U.S. at 218; *see* Guidance, 84 Fed. Reg. at 53. If so, the analysis proceeds to step two. *Alice*, 573 U.S. at 221. Under *Alice* step two, the Court determines if the claims' additional elements, considered both individually and as an ordered combination, amount to significantly more than the patent-

ineligible concept such that they "'transform the nature of the claim' into a patent-eligible application." *Id.* at 217-18 (quoting *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 78 (2012)); *see* Guidance, 84 Fed. Reg. at 56.

Generally speaking, technologies and industrial processes are not abstract ideas, and that principle helps guide application of the abstract idea exception. *See, e.g.*, *Alice*, 573 U.S. at 223 (explaining that Section 101 does not preclude patenting an invention "designed to solve a technological problem in 'conventional industry practice'") (quoting *Diamond* v. *Diehr*, 450 U.S. 175, 177 (1981)). That understanding reflects the fact that such inventions have "historically been eligible to receive the protection of our patent laws." *Diehr*, 450 U.S. at 184. Those categories of inventions are, indeed, precisely the sort of "new and useful process [or] machine" that Congress had in mind in Section 101. 35 U.S.C. § 101. And industrial and technological inventions generally do not attempt to patent the paradigmatic "building blocks of human ingenuity" that the abstract ideas exception is designed to protect, such as mathematical formulas, intellectual processes, or fundamental economic principles or practices. *See Alice*, 573 U.S. at 216; Guidance, 84 Fed. Reg. 50, 52 (January 7, 2019) (describing routine categories of abstract ideas and citing cases). Although borderline cases exist—and *Alice*'s two-step framework exists to assess them—those categories of quintessential, non-abstract innovations serve as useful conceptual anchors for delimiting the abstract-idea category. The category of patent-ineligible abstract ideas thus does not encompass technological

inventions, like the technological process for identifying rideshare riders and vehicles as recited in Rideshare's substitute claims.

The claims held to be patent-eligible in *Diehr* are illustrative. In *Diehr*, the Supreme Court upheld a patent on a "process for molding precision synthetic rubber products," which included "a step-by-step method for accomplishing" the stated objective. 450 U.S. at 184; *see id.* at 181-193. Although "several steps of the process" required use of a particular "mathematical equation"—the Arrhenius equation—the Court "d[id] not view [the] claims as an attempt to patent [that] mathematical formula" or the relationship it expressed. *Id.* at 185, 192. Instead, the Court held that the claims were "drawn to an industrial process" that used the Arrhenius equation "in conjunction with all of the other steps in the[] claimed process." *Id.* at 187, 192-193; *see id.* at 187 ("[T]he respondents here do not seek to patent a mathematical formula. Instead, they seek patent protection for a process of curing synthetic rubber.").

Likewise, here, although the Board determined that some of the limitations of the substitute claims recite a method of organizing human activity (*see e.g.*, Appx2019), the claims as a whole recite specific technological steps (generating and transmitting a notification signal to the mobile device of the driver, and creating and displaying an indicator on the driver's and rider's mobile devices and on the exterior of the vehicle), which allow rideshare drivers and riders to identify each other safely and quickly. Appx2019-2020; Appx65-66. The gravamen of the claims

thus concern a technological process, just as the claim in *Diehr* at its core related to an "industrial process," 450 U.S. at 177.

Accordingly, the claims do not implicate the central purpose of the abstract ideas exception: to avoid "tying up" the fundamental "building blocks" of inventions. *Alice*, 573 U.S. at 216; *see also DDR Holdings*, 773 F.3d at 1259 (determining that the claims at issue do not attempt to preempt every application of the idea of increasing sales by making two web pages look the same). Even if identification of a vehicle were considered to be an abstract method of organizing human activity, others are free to use other means of identification of a vehicle in ridesharing. The particular technological process in the claims does not seek to "broadly preempt" that general idea, *Mayo*, 566 U.S. at 72, just as claims reciting an industrial process did not preempt the mathematical equation at issue in that case, *Diehr*, 450 U.S. at 177. The claimed invention thus falls comfortably within patent law's traditional bailiwick of the scientific, technological, and industrial arts.

C. The Board correctly concluded that Rideshare's substitute claims are patent eligible under either *Alice* step one or step two.

Application of the *Alice* two-step framework confirms the conclusion that the Board correctly concluded that substitute claims 29, 31, and 32 of the '637 patent and substitute claims 3 and 4 of the '199 patent are patent eligible. In particular, under *Alice* Step one, the Board rightly determined that the claims as a whole are not

directed to an abstract idea, but instead to a technological process rooted in computers and networks that solves a problem in rideshare technology. Appx64-66; Appx2018-2021; Appx204-206; Appx2041-2044. And the claims would likewise be patent eligible under *Alice* Step two because the additional claim elements transform the abstract idea into a patent-eligible application.

1. The substitute claims are not directed to an abstract idea, but to a technological process that solves a problem rooted in rideshare technology.

The Board correctly concluded that the substitute claims are patent eligible under step one of the *Alice* framework. As the Board determined, the claimed invention is directed to a technological process rooted in computers and networks that solves a problem arising in rideshare technology. *See DDR Holdings*, 773 F.3d at 1257 (Fed. Cir. 2014) (determining that the claims-at-issue are not directed to an abstract concept because they claim a solution that is necessarily rooted in computer technology in order to overcome a problem specifically arising in the realm of computer networks). The substitute claims here cover a combination of technological components (two mobile devices and a vehicle display), the automatic signaling between them, and the automatic generation of an indicator. Appx1957-1958; Appx2019-2020; Appx1995; Appx2042-2042. In particular, the substitute claims recite a technological process that relies on electrical signals to automatically generate matching images on the rider's

(and driver's) mobile devices[4] and on a mounted vehicle display when the devices approach each other. Appx64-66; Appx2018-2021; Appx204-206; Appx2041-2044; Appx245 at 1:20–25; Appx246 at 3:5–50; Appx247 at 5:35–65; Appx240 at Abstract.

The Board found that the method of substitute claim 29, for example, recites a combination of the following technological steps: (1) generating a notification signal to a mobile communication device associated with the vehicle's driver when it is determined that the vehicle is within a predetermined distance of the location of the user, (2) creating an indicator and indicatory signal representing the indicator in response to receiving the notification signal, (3) displaying the indicator on an exterior vehicle display, based on the notification and indicatory signals, and (4) displaying the indicator on a mobile communication device associated with the user. Appx2019. And the Board determined that this combination of steps provide a technological process via automations and signaling that "allow the user to identify a vehicle prior to boarding the vehicle" and "allow the driver D to verify that he/she is picking up the person who actually requested the ride service," and thus the steps "recite technological features that enable communication and coordination between multiple devices that are not co-located and are moving with respect to each other." Appx2019-2020.

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4. Substitute claim 29 of the '637 patent recites displaying the indicator on the user's (rider's) mobile device and on the vehicle display. Appx1957-1958. Substitute claim 3 of the '199 patent recites displaying the indicator on the rider's and driver's mobile devices and the vehicle display. Appx1995.

As the Board correctly concluded, the claimed process seeks to solve a problem in ridesharing technology (the need for drivers and riders to safely and efficiently identify each other) with a solution grounded in technology (signal generation between devices when they come within a certain distance from each other, and display of an indicator on the devices and on the exterior of the vehicle). Appx66. The only human involvement occurs either before the claimed technological process (i.e., the rider requesting a ride) or after the claimed technological process (i.e., by the rider and driver identifying each other). The inclusion of these additional claim limitations cannot transform an otherwise patent eligible claim into a patent ineligible claim.

First, Lyft argues that the Board erred in determining that the substitute claims are directed to a technological solution rooted in computer and network technologies, such that the claim is not directed to an abstract idea.[5] Lyft's Principal & Response Brief (D.E. No. 26) ("Lyft Br.") at 53-57. In particular, Lyft argues that the claims are directed to organizing human activity and fail to improve the functioning of a computer or present a novel

5. Rideshare argues that the Board erred in its *Alice* step one analysis that the substitute claims are drawn to an abstract idea. Rideshare Response Br. (D.E. No. 30) at 34-41. Rideshare is misreading the decision. While the Board found that certain limitations recite abstract concepts, the Board determined that under *Alice* step one, the substitute claims, as a whole, are directed to a practical application, i.e., an improvement in technology that solves a technological problem through technological means, and thus are not abstract.

solution in computing functionality, and thus are directed to an ineligible abstract idea. *Id*. But Lyft's narrow focus on improvements to the functioning of a computer misses the mark. Whether or not the substitute claims improve the functioning of a computer or present a novel solution in computing functionality, they present a technological solution rooted in computer and network technologies that involve creation and transmission of signals, including a unique indicator, between particular computer components (the controller, the driver's mobile device, the rider's mobile device, and the vehicle display that is visible from the exterior of the vehicle), and thus, constitute a technological solution to the problem of rideshare drivers and riders being able to safely and efficiently identify each other. Appx65; Appx2019-2020; Appx205; Appx2042-2043.

Second, Lyft's argument that the substitute claims are nothing more than a method of organizing human activity because the substitute claims recite generic computer components falls flat. Lyft Br. at 55. Even when a claim does not improve any particular underlying components, it is still patent eligible if it describes a "particular arrangement" of existing components to improve a technological process. *E.g.*, *Bascom Glob. Internet Servs., Inc. v. AT&T Mobility LLC*, 827 F.3d 1341, 1350 (Fed. Cir. 2016). Indeed, the statutory definition of a patent-eligible "process" includes "a new use of a *known* process, machine, manufacture, composition of matter, or material." 35 U.S.C. § 100(b) (emphasis added). And such arrangements of components are patent-eligible technological improvements even if they "involve[] an abstract concept" at some level. *Alice*, 573 U.S. at 217

("At some level, 'all inventions . . . embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas.'").

Here, as the Board explained, the substitute claims recite an arrangement of specific process steps: (1) generating a notification signal to a mobile communication device associated with the vehicle's driver when it is determined that the vehicle is within a predetermined distance of the location of the user, (2) creating an indicator, and indicatory signal representing the indicator, in response to receiving the notification signal, (3) displaying the indicator on the vehicle display, based on the notification and indicatory signals, (4) and also displaying the indicator on a mobile communication device associated with the user. Appx2019; *see also* Appx2042 (Board's determination as to claim 3 of the '199 patent). This is a combination of specific technological steps grounded in technology (computer networks, mobile devices, etc.) underlying rideshare services, which allow the rider and driver to verify each other's identifies. Appx2019-2021; Appx2042-2044; Appx65-66; Appx205-206. The claims thus do more than "perform[] an abstract idea on a computer." Lyft Br. at 55. Even if the recited display and mobile device are used in a conventional manner, Rideshare's substitute claims are directed to a combination of steps that provide a technological solution rooted in computers and networks that solves a problem in ridesharing technology.[6] Appx2019-2021; Appx2042-

6. Lyft's argument (Br. 60-61) that the Board gave insufficient consideration to its arguments fails for the same reasons. Even when underlying components are unchanged, a new combination of components can be patent-eligible.

2044; Appx65-66; Appx205-206. Therefore, the claims are patent eligible under Section 101.

Rideshare's substitute claims are similar to other claims found to be patent eligible by this court. *See e.g., DDR Holdings,* 773 F.3d at 1257–58 (holding patent eligible a claim that "address[es] a business challenge (retaining website visitors)" by enabling visitors "to purchase products from the third-party merchant without actually entering that merchant's website," thus providing a "claimed solution . . . necessarily rooted in computer technology in order to overcome a problem specifically arising in the realm of computer networks"); *Adasa*, 55 F.4th at 908 (determining that claim 1, as a whole, is not directed to an abstract idea, but to a specific, hardware-based RFID serial number data structure designed to enable technological improvements to the commissioning process, regardless of any conventionality of the underlying hardware); *Koninklijke KPN N.V. v. Gemalto M2M GmbH*, 942 F.3d 1143, 1150-1151 (Fed. Cir. 2019) (holding claims to be eligible because they are directed to a specific improvement in the technical process of error-checking data transmissions).[7]

7. Lyft is mistaken that a related district court decision supports its assertion that the claims are directed to an abstract idea. Br. at 55, fn. 4. That decision did not reach the question of patent eligibility and the dicta on which Lyft relies only indicates that court's uncertainty regarding the question of patent eligibility. *See* Appx2046; *Rideshare Displays, Inc. v. Lyft, Inc.*, No. CV 20-1629-RGA, 2021 WL 4477242, at *1 (D. Del. Sept. 30, 2021). Moreover, the district court's decision largely focused on claim 1 of U.S. Patent No. 10,169,987, which does not recite the same sequence of steps as recited in Rideshare's substitute claims.

Third, Lyft wrongly complains that the substitute claims describe each element of the claimed method only in terms of the end result and thus are not eligible. Lyft Br. at 56. While "a result … is not itself patentable," "a specific means or method that solves a problem in an existing technological process" is patent-eligible. *Koninklijke*, 942 F.3d at 1150 (quotation marks omitted). The Board correctly found a "specific means" for solving a technological problem in this case. *See* Appx2020; Appx66. Lyft's argument appears to be that each step must nonetheless be broken down into further steps (such as by explaining how an indicator is generated), but no authority requires that granular level of explanation for each component—particularly when the claim depends on a new combination of existing technological components that are not themselves being changed. So long as the recited means or method are concrete and "specific" enough to be comprehensible, the claim is patent-eligible. *See Koninklijke*, 942 F.3d at 1150 (rejecting the argument that an improved result without more is not enough to confer eligibility, when the claims recite a specific means or method that solves a problem in an existing technological process, such as error checking in data transmissions).

Fourth, Lyft asserts that the additional limitations in the dependent substitute claims do not convey patent eligible subject matter. That argument is forfeited and lacks merit. Lyft did not raise this particular argument before the Board. Lyft Br. at 56-57; *see* Appx2059-62

Compare, e.g., substitute claim 29 (Appx1957-1958) with claim 1 of U.S. Patent No. 10,169,987 (Appx257).

(Lyft's sur-reply opposing Rideshare's motion to amend in the '637 patent raising only that the claims recite generic computer components/functionality); Appx2076-2079 (Lyft's sur-reply opposing Rideshare's motion to amend in the '199 patent raising only that the claims recite generic computer components/functionality); *In re Google Tech. Holdings LLC*, 980 F.3d 858, 863 (Fed. Cir. 2020) ("We have regularly stated and applied the important principle that a position not presented in the tribunal under review will not be considered on appeal in the absence of exceptional circumstances."). In any event, the argument fails because the Board relied on the limitations recited in the independent claims as representative of the eligibility of the substitute claims and found those limitations to be sufficient to confer eligibility. Appx64-66; Appx2018-2021; Appx204-206; Appx2041-2044. And, again, Lyft only raises generic arguments as to particular computer components recited in the dependent substitute claims and does not grapple with the Board's conclusion that the claims recite a technological solution to solve a problem rooted in rideshare technology.

2. The substitute claims also pass muster under *Alice* step two because the additional claim elements transform the abstract idea into a patent-eligible application.

There should be no need for this Court to analyze *Alice* step two. As this Court has recognized, although each step of the *Alice* framework involves its own separate inquiry, these analyses often overlap. *Interval Licensing*, 896 F.3d at 1342. Due to this overlap, this Court has sometimes

determined that challenged claims can pass muster either under *Alice* step one or step two. *See, e.g., Rapid Litig. Mgmt. Ltd.* v. *CellzDirect, Inc.*, 827 F.3d 1042, 1050 (Fed. Cir. 2016) (holding that the claimed invention is patent eligible because it is not directed to a patent ineligible concept under step one or is an inventive application of the patent-ineligible concept under step two); *Enfish LLC v. Microsoft Corp.,* 822 F.3d 1327, 1339 (Fed. Cir. 2016) (noting that eligibility determination can be reached either because claims not directed to an abstract idea under step one or recite a concrete improvement under step two); *McRO Inc. v. Bandai Namco Games America Inc.,* 837 F.3d 1299, 1313 (Fed. Cir. 2016) (recognizing that the "court must look to the claims as an ordered combination" in determining patentability "[w]hether at step one or step two of the *Alice* test"); *Amdocs (Israel) Ltd. v. Openet Telecom, Inc.,* 841 F.3d 1288, 1294 (Fed. Cir. 2016) (observing that recent cases "suggest that there is considerable overlap between step one and step two, and in some situations [the inventive concept] analysis could be accomplished without going beyond step one"); *see also Ancora Techs.* v. *HTC Am.,* 908 F.3d 1343, 1349 (Fed. Cir. 2018) (noting, in accord with the "recognition of overlaps between some step one and step two considerations," that its conclusion of eligibility at step one is "indirectly reinforced by some of [its] prior holdings under step two").

Accordingly, decisions under step two are often belts and suspenders for analyses that really should have stopped at *Alice* step one. To the extent claims have elements that, considered both individually and as an ordered combination, transform the abstract idea into

a patent-eligible application (*Alice*, 573 U.S. at 217), the claims as a whole should generally not be considered "directed to" that abstract idea in the first place. It should be the rare case when the claims, as a whole, are directed to one of the building blocks of innovation (i.e., an intellectual concept or a mathematical algorithm), or when the claims, as a whole, are directed to an innovation in a nontechnological field, such as a fundamental economic practice. In those rare cases, *Alice* step two serves to determine if there are additional elements in the claim that transform the abstract idea into a patent-eligible application.

Tellingly, Lyft repeats its step one argument that Rideshare's patents recite and describe the computer components broadly "with no inventive improvement." Lyft Br. at 57-60. But again, though claims directed to improvements to computers are patent eligible, so too are claims directed to technological solutions rooted in computer or network technology that solves a technological problem, even if conventional computer components are used. *See e.g., Amdocs*., 841 F.3d at 1300–01 (Fed. Cir. 2016) (determining the claims at issue patent eligible, despite recitation of generic network computer components, because they entail a technological solution (enhancing data in a distributed fashion) to a technological problem (massive record flows); *DDR Holdings,* 773 F.3d at 1257-58; *Adasa*, 55 F.4th at 908; *Koninklijke*, 942 F.3d at 1150-1151 [cited in section IV.B.1.a above with parentheticals]. Thus, for the same reasons articulated above, whether or not the claims recite an improvement to computers or components themselves is beside the point.

D. If the panel concludes that precedent is contrary to our position, that precedent should be reconsidered.

While the best reading of existing precedents—and the one that would both incentivize and protect U.S. innovation and investment and bring U.S. law more closely in alignment with the laws of other developed countries—is the one described above, we acknowledge (as we have repeatedly told the Supreme Court) that the precedents in this area are not entirely consistent. Thus, *Lyft*'s argument is not wholly lacking in support. In recent years, some decisions can be construed as having overread the *Alice/May* limitations to preclude patenting of claims that provide a technological solution rooted in computer or network technology if limited to solving a human problem. Likewise, some caselaw suggests (contrary to our argument above) that a claim is "directed to" an abstract idea even when the claim has technological limitations, provides an application of an ineligible concept, and/or does not preempt the ineligible concept. *See, e.g.*, Guidance, 84 Fed. Reg. 50 (Jan. 7, 2019) (noting that applying this Court's recent Section 101 decisions "in a consistent manner has proven to be difficult"; "has caused uncertainty in this area of the law"; has made it difficult for "inventors, businesses, and other patent stakeholders to reliably and predictably determine what subject matter is patent-eligible"; and "poses unique challenges for the USPTO" itself); *see also* Brief of Amicus Curiae New York Intel. Prop. Law Ass'n Supporting Petitioner, *American Axle & Mfg. Inc. v. Neapco Holdings LLC,* Docket No. 20-891, 2021 WL 305998 at *12-14 (discussing uncertainty

caused by recent Section 101 jurisprudence); Brief of Amici Curiae Thom Tillis *et al*. Supporting Petitioner, *American Axle & Mfg. Inc. v. Neapco Holdings LLC*, Docket No. 20-891, 2021 WL 878075 at *5-25 (same); Brief of Amici Curiae Professors Jeffrey A. Lefstin *et al*. Supporting Petitioner, *American Axle & Mfg. Inc. v. Neapco Holdings LLC*, Docket No. 20-891, 2021 WL 859724 at *16-20 (same).

Should the Court disagree that its existing caselaw supports affirmance here, we respectfully suggest that this precedent should be reconsidered. And ultimately, the USPTO continues to believe that further clarification of the law in this area remains necessary. Ultimately, courts should reaffirm that § 101 protects inventions in the technological sphere that has always been the heartland of patent eligibility.

VI. Conclusion

The Court should affirm the Board's conclusion.

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Respectfully submitted,

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