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By Electronic Mail

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Dear Mr. Hamer:

This letter responds to your request, on behalf of your client, Avanci LLC, for a business review letter from the Department of Justice pursuant to our Business Review Procedure, 28 C.F.R. § 50.6. You have requested a statement of the Department’s current antitrust enforcement intentions with regard to Avanci’s proposed joint patent-licensing pool (“the Platform”), pursuant to which Avanci will license patent claims that have been declared “essential” to implementing 5G cellular wireless standards for use in automobile vehicles (“vehicles”) and distribute royalty income among the Platform’s licensors.¹ Avanci currently operates a licensing platform related to 4G cellular standards and offers licenses to 2G, 3G, and 4G standards-essential patents used in vehicles and smart meters.² After soliciting input from a range of stakeholders in the automotive and telecommunications industries, including potential licensors and licensees, conducting an independent review, and considering our prior guidance and reviews of other patent pools, we

¹ Although Avanci refers to its licensing program as a “Platform,” the proposed Avanci 5G Patent Platform includes only one program that aggregates complementary patents essential to connected vehicles. Therefore, the Department considers it a pool and evaluates the Platform in the same manner as it would a pool. Avanci may expand the proposed Platform to include other Internet of Things (“IoT”) devices, such as smart meters and connected homes, but these will be separate “pools” of complementary patents. *See* Letter from Mark H. Hamer, Partner, Baker & McKenzie, to Makan Delrahim, Assistant Att’y Gen., Antitrust Div., U.S. Dep’t of Justice, at 4 (Nov. 21, 2019) [hereinafter “BRL Request”]. The same pooling analysis would apply to these additional programs.

² The Department finds Avanci’s 5G Platform to be “proposed business conduct” within the meaning of 28 C.F.R. § 50.6 because, among other reasons, different patents and licensors will be required to implement 5G standards and the Platform may encompass more Licensing Programs than the current 4G Platform. Moreover, no licensees are able to license 5G patents through the current 4G Platform and Avanci has represented that there are other differences in the licensing terms between the two programs that relate to royalty distribution and royalty reduction incentives for potential licensees.

conclude that, on balance, Avanci's proposed 5G Platform is unlikely to harm competition. Therefore, the Department has no present intention to challenge the Platform.

I. Fifth Generation (5G) Standards and Vehicles

5G cellular capability enhances network speed and capacity, and reduces latency, which will enable connectivity in IoT devices, including vehicles.³ 4G connected vehicles already offer infotainment with smartphone integration, which reports indicate consumers find valuable.⁴ 5G cellular technologies, however, are expected to significantly enhance the safety and functionality of vehicles, including vehicle-to-everything ("V2X") communication, which permits data transmission from a vehicle to another entity, including other vehicles.⁵ V2X communication will enable autonomous vehicles, among other innovations, in the automotive industry.⁶

The 3rd Generation Partnership Project ("3GPP"), in conjunction with several standards development organizations ("SDOs"),⁷ is developing 5G standard specifications, described in Release 15 and subsequent releases, related to V2X.⁸ These specifications provide for 5G functionality in vehicles, including enhanced sensors that allow the exchange of data from other local sensors or devices not connected to the car, remote driving, semi-automated or fully automated driving, and vehicle platooning, where vehicles travel closely together in a group.⁹

5G cellular standards developed through 3GPP, like earlier generations of cellular standards, include patented technologies that many patent holders have declared, through one or

³ The IoT is "the collection of physical objects (e.g., health monitors, industrial sensors) that interconnect to form networks of devices and systems that can collect and compute data from many sources." JILL C. GALLAGHER & MICHAEL E. DEVINE, CONG. RESEARCH SERV., R45485, FIFTH-GENERATION (5G) TELECOMMUNICATIONS TECHNOLOGIES: ISSUES FOR CONGRESS, at 5 (Jan. 30, 2019), <https://crsreports.congress.gov/product/pdf/R/R45485> [hereinafter "CRS 5G Report"]. See also ETSI, 3GPP TR 21.915 VERSION 15.0.0 RELEASE 15, § 5.2 (2019), https://www.etsi.org/deliver/etsi_tr/121900_121999/121915/15.00.00_60/tr_121915v150000p.pdf.

⁴ See Bowman Heiden, *The Value of Connectivity in the Automotive Sector – A First Look*, at 42 (Dec. 12, 2019), <http://dx.doi.org/10.2139/ssrn.3521488> (calculating current estimates of the revenue from connectivity to automakers at \$670 (US) and \$593 (Worldwide) per connected vehicle "based on a subset of existing applications in 2018"); Martin Gehring & Volker Handing, Simon-Kucher & Partners, *The Value of Mobile Connectivity in the Automotive Industry*, at 3 (June 27, 2017), <https://www.simon-kucher.com/en/resources/perspectives/value-mobile-connectivity-automotive-industry> (reporting that researchers found that U.S. customers spent an average of \$840 on connectivity).

⁵ See CRS 5G Report, *supra* note 3, at 5-6.

⁶ *Id.*

⁷ These SDOs are ARIB, ATIS, CCSA, ETSI, TSDSI, TTA, and TTC. See *About 3GPP*, 3GPP, <https://www.3gpp.org/about-3gpp/about-3gpp>.

⁸ Avanci defines 5G to include both Non-Standalone and Standalone modes of the 5G standards specifications. See BRL Request, Ex. A.1, Doc. A.1.1, Standard Patent License Agreement § 1.27 [hereinafter "Standard PLA"]. The Non-Standalone specifications allow telecommunications carriers to supplement existing 4G networks with 5G technologies to improve speed and latency, whereas the Standalone specifications support independent deployment of 5G. See CRS 5G Report, *supra* note 3, at 12-13.

⁹ *3GPP Releases*, 3GPP, <https://www.3gpp.org/specifications/releases> (last visited Apr. 14, 2020).

more SDOs, to be 5G essential.¹⁰ Sizes of the patent portfolios vary, but there can be thousands of essential patents that must be licensed to avoid patent infringement.¹¹

Avanci, founded in 2016, offers a licensing Platform that aggregates patents declared essential to 2G, 3G, and 4G standards, which are licensed for manufacturing connected vehicles and smart meters. Avanci proposes to implement a similar program for implementing 5G cellular technologies. Avanci's 4G Platform has 38 licensors, including major standards contributors such as Ericsson, Qualcomm, and Nokia, and it has 14 automotive brands as licensees.¹² A recent study indicates that Avanci has aggregated approximately 50% of declared 3G standards-essential patent ("SEP") families worldwide (46,444 patents) and 46% of declared 4G SEP families worldwide (68,837 patents).¹³ Although Avanci currently does not have an active licensing program related to 5G, this same study estimated that if Avanci's 4G licensors join the Platform, the Platform's estimated share of declarations would be approximately 43% (31,421 patents).¹⁴

II. The Proposed Platform

To join Avanci's proposed 5G Platform as a licensor, a patent holder must have at least one patent claim that an independent evaluator has determined to be technically essential to 2G/3G/4G/5G cellular standards.¹⁵ The structure of the proposed patent-licensing arrangement is embodied in (1) the 5G Master License Management Agreement ("5G MLMA") and (2) the Standard Patent License Agreement ("Standard PLA") and attachments.

A. The 5G MLMA

The 5G MLMA governs the terms of the patent license from the cellular standards-essential patent licensor to Avanci, which acts as Platform administrator and licensing agent.¹⁶ Avanci itself

¹⁰ IPLYTICS, WHO IS LEADING THE 5G PATENT RACE?, at 2 (Nov. 2019), https://www.iplytics.com/wp-content/uploads/2019/01/Who-Leads-the-5G-Patent-Race_2019.pdf [hereinafter "IPlytics, 5G Study, Nov. 2019"]; AMPLIFIED & GREYB, EXPLORATION OF 5G STANDARDS AND PRELIMINARY FINDINGS ON ESSENTIALITY (May 2020), <https://static1.squarespace.com/static/59fa01a118b27d1bfef7f050/t/5ecc8c109259ee3d45ecda99/1590463526894/5G+SEP+Preliminary+Report.pdf> [hereinafter "Amplified and GreyB, 5G Study, May 2020"].

¹¹ For example, a study conducted by IPlytics in November 2019 identified 87,752 5G patent declarations which relate to 22,604 5G patent families in which 98% have at least one family member with active status. IPlytics, 5G Study, Nov. 2019, *supra* note 10, at 3. A patent family is a group of patents claiming the same or similar subject matter disclosed by a common inventor but granted in different jurisdictions. *See Glossary*, U.S. PAT. AND TRADEMARK OFF., <https://www.uspto.gov/learning-and-resources/glossary> (defining patent family).

¹² AVANCI, <http://avanci.com/>.

¹³ Bridget Diakun, *Avanci Platform Covers Just Under 50% of 3G and 4G SEPs, Research for IAM Indicates*, IAM (Oct. 18, 2019), <https://www.iam-media.com/frandseps/avanci-platform-covers-just-under-50-3g-and-4g-seps-research-iam-indicates> [hereinafter "Diakun, *Avanci Platform Report*"].

¹⁴ *Id.* *See also* Amplified and GreyB, 5G Study, May 2020, *supra* note 10, at 10.

¹⁵ BRL Request, Ex. 1, 5G Master License Management Agreement § 3.1 [hereinafter "5G MLMA"].

¹⁶ BRL Request, *supra* note 1, at 4.

holds no patents. Under the 5G MLMA, Avanci is authorized to administer a “Licensing Program,” which here is the “Release 15 5G Connected Vehicles Licensing Program.”¹⁷ The 5G MLMA allows Avanci to establish additional Licensing Programs provided that Avanci and at least two licensors agree; individual licensors may choose whether to join additional programs.¹⁸ All licensors, however, must agree to participate in at least one Licensing Program and the term of the agreement is ten years unless it is terminated or the licensor withdraws.¹⁹ Avanci will identify potential licensees for the Licensing Program and negotiate the Standard PLA.²⁰ Under Section 7.4 of the 5G MLMA, licensors are prohibited from participating in another joint licensing program for “products that are the subject of [the] Licensing program”; there are exceptions if the licensor participated in another joint licensing program before joining Avanci; it withdraws from Avanci; or it is in breach of the 5G MLMA and does not join the other program until two years after withdrawal, breach, or expiration of the 5G MLMA.²¹

1. Essentiality Review

Avanci’s 5G Platform is designed to license only “technically essential” standards-essential patents – i.e., patents that are necessarily infringed by implementation of the standard. Specifically, Section 1.5 of the 5G MLMA defines “essential patent” to mean a patent that includes at least one claim in which “it is not possible on technical grounds taking into account normal technical practice and the state of the art generally available at the time of adoption or publication of the relevant Standard” to implement the relevant 2G/3G/4G or 5G standard “without infringing such patent claims.”²² Section 1.11 of the Standard PLA also defines “Licensed Patents” to mean “those Essential Patent Claims . . . within a Patent or [that] issue from a Patent Application that . . . is owned by a Licensor.”

Under Section 3.1 of 5G MLMA, only a firm that owns an “Evaluated Essential Patent” is able to become a new licensor of the Platform. Avanci will implement a procedure to evaluate patent claims for essentiality, similar to the one it currently employs in the 4G Platform.²³ The procedure requires an Avanci licensor to submit a single patent portfolio (including patent families) for evaluation within 45 days of becoming a party to the 5G MLMA for a fee.²⁴ Avanci

¹⁷ Release 15 set forth the standard specifications for 5G connectivity, including V2X. *See supra* note 8 and accompanying text; 5G MLMA, *supra* note 15, § 1.10 & App. A.

¹⁸ 5G MLMA, *supra* note 15, § 4.1.

¹⁹ *Id.* §§ 4.2, 7.1-7.3.

²⁰ *Id.* § 2; Standard PLA, *supra* note 8, § 1.27.

²¹ 5G MLMA, *supra* note 15, § 7.4.

²² Avanci has indicated that patents essential to 2G, 3G and 4G standards are included in the Platform because they are necessary for backward compatibility.

²³ *See* 5G MLMA, *supra* note 15, § 1.6 & App. B. An “Evaluated Essential Patent” is defined as a patent determined to be essential by an expert pursuant to Avanci’s evaluation procedure. *Id.* § 1.6.

²⁴ *Id.* § 3.2; *id.*, App. B §§ 2, 3.

will then assign an independent examiner to evaluate the patent claims that the licensor has identified as essential. Avanci maintains a number of patent examiners for this purpose; an examiner will be chosen after screening for conflicts of interest (meaning the examiner cannot be affiliated with a licensor or have represented the licensor in the past).²⁵

The examiner will determine a patent to be essential if a single claim is essential; however, the independent examiner does not assess the validity of the patent claims.²⁶ Licensors may only collect royalties on evaluated essential patents.²⁷ Unevaluated essential patents and patent families that are not associated with an “Evaluated Essential Patent” do not count toward the royalty distribution but are included within the Platform license.²⁸ Avanci will terminate for cause any licensor that does not continue to meet Avanci’s essentiality requirements, that is, if the licensor fails to maintain at least one valid, enforceable, evaluated essential patent in the pool.²⁹

2. Right to Independently License Outside the Platform

The 5G MLMA provides that Avanci licensors have the right to license their essential patents independently outside the Platform.³⁰ The 5G MLMA prohibits a licensor, however, from collecting royalties from a licensee twice: once independently and again from the same licensee through the Platform.³¹ Licensors must “resolve the effect of any overlapping license with a [l]icensee.”³² Licensors can do this by bilaterally negotiating offsetting payments, providing “credit or other consideration directly to a licensee as a result of an individual direct license,” or notifying “Avanci to issue a deduction or credit to a licensee commensurate with the individual licensor’s ... share (or portion) of Total Net Collections from a particular licensee who has an overlapping license.”³³

3. Royalty Distribution

Avanci will calculate a licensor’s share of Platform revenue based on quantitative and qualitative factors. Points are awarded for the following:

- **The number of the licensor’s “Evaluated Essential Patents.”** Licensors can earn

²⁵ BRL Request, *supra* note 1, at 10; 5G MLMA, *supra* note 15, App. B § 4.

²⁶ 5G MLMA, *supra* note 15, App. B § 5.

²⁷ Licensors earn points for essential patents, which are capped at 150 points. *Id.*, App. C § 2.3.

²⁸ *Id.*; Standard PLA, *supra* note 8, § 1.11. *See also* Royalty Distribution, *infra* Part II.A.3.

²⁹ BRL Request, *supra* note 1, at 9; 5G MLMA, *supra* note 15, §§ 3.1, 7.5.

³⁰ 5G MLMA, *supra* note 15, § 4.3.

³¹ *Id.* § 4.4.

³² *Id.*

³³ BRL Request, *supra* note 1, at 12.

a maximum of 150 points for this category.³⁴ Avanci has explained that the cap is intended to incentivize a licensor to have as many patent claims evaluated as possible.³⁵ At the same time, however, the cap is intended to encourage licensors with smaller portfolios to participate because they are able to realize a meaningful share of the royalty distribution.³⁶

- **Other Licensing Revenue.** Points are also earned based on licensing revenue for the licensor's average annual licensing revenue outside the pool during three consecutive calendar years for its 2G/3G/4G/5G SEPs.³⁷ Avanci has indicated that basing a licensor's share of royalties on comparable licensing revenue provides a proxy for how the portfolio has been valued through bilateral negotiations in the marketplace.³⁸
- **Standards Contributions.** Avanci will award royalty points based on standards contributions using an Avanci-commissioned independent third-party study of technical contributions to relevant 3GPP working groups.³⁹
- **Licensing or Enforcement Support.** Licensing support awards a limited number of points to licensors that enforce or are prepared to enforce their essential patents and their efforts result in Platform licenses that benefit all licensors.⁴⁰ In addition to earning royalty points, licensors that sue for patent infringement of an essential patent may request reimbursement of costs if the litigation results in a Platform license.⁴¹

4. Competitively Sensitive Information

Avanci is an independent licensing agent and has mechanisms in place to protect the dissemination and sharing of licensors' competitively sensitive information. Under Section 6.1 of MLMA, Avanci will not disclose a licensor's competitively sensitive information to unaffiliated third parties, such as other licensors. In addition, Avanci employees and agents will only disclose

³⁴ 5G MLMA, *supra* note 15, App. C § 2.3.

³⁵ BRL Request, *supra* note 1, at 13.

³⁶ *Id.* at 13-14.

³⁷ 5G MLMA, *supra* note 15, App. C § 2.4.

³⁸ BRL Request, *supra* note 1, at 14.

³⁹ *Id.*; 5G MLMA, *supra* note 15, App. C § 2.5.

⁴⁰ BRL Request, *supra* note 1, at 6; 5G MLMA, *supra* note 15, App. C §§ 2.6-2.7.

⁴¹ 5G MLMA, *supra* note 15, §§ 1.15, 5.1.2-5.1.3.

confidential information if they “need to have access” to perform their duties and have signed a non-disclosure agreement.⁴²

B. The Standard PLA

The Standard PLA provides a world-wide, personal, nontransferable, nonexclusive, non-sublicensable royalty bearing license to “make, Have Made, use, import, Sell and offer to sell ‘Licensed Products’” under Avanci’s “Licensed Patents.”⁴³ Licensed Patents are “Essential Patent Claims” that are owned by the Avanci licensors and “Licensed Products” are limited to vehicles that incorporate 5G functionality.⁴⁴ “Cellular 5G Functionality” is defined as “the ability to perform wireless transmissions in accordance with 5G.”⁴⁵ The Standard PLA defines “Standards” to mean “2G, 3G, 4G, and 5G.”⁴⁶ The license includes access to 2G, 3G, and 4G patents in order to enable backward compatibility.⁴⁷ Future cellular standards are not included in the 5G Platform.⁴⁸ Avanci will charge a flat per unit royalty depending on the level of connectivity in the vehicle; licensees pay a lower rate if a vehicle only has E-Call capability for emergency assistance.⁴⁹ The cost of the license will not increase as new patents are added to the Platform.⁵⁰ Avanci has indicated that its 4G Platform will remain active and that licensees will not pay a 5G rate if they only use 4G or 3G connectivity. A licensee will receive a royalty reduction if it signs a Standard PLA before its first sale of a Licensed Product, i.e., a connected vehicle, and if it does not assert claims challenging the pooling agreement, licensing terms, or offers in litigation. Licensees are permitted, however, to challenge the “validity, enforceability, or essentiality of any

⁴² *Id.* § 6.1; *see also* BRL Request, *supra* note 1, at 12.

⁴³ Standard PLA, *supra* note 8, § 2.1. “Have Made” rights do not allow a third-party supplier to sell a product made for the licensee to another party. *Id.* § 1.10.

⁴⁴ *Id.* §§ 1.8, 1.11, 1.12, 1.22.

⁴⁵ *Id.* § 1.4.

⁴⁶ *Id.* § 1.20.

⁴⁷ BRL Request, *supra* note 1, at 4 n.8.

⁴⁸ Standard PLA, *supra* note 8, § 1.9.

⁴⁹ *Id.* §§ 1.6, 5.1. Under the current program, licensees pay \$9 per vehicle for 3G and \$15 per vehicle for 4G connectivity. *See Pricing*, AVANCI, <https://www.avanci.com/marketplace/#li-pricing> (last visited June 22, 2020).

⁵⁰ BRL Request, *supra* note 1, at 14-15. Additional “Licensed Patents” may be added during the term of the Standard PLA. Standard PLA, *supra* note 8, § 1.11.

[p]atent.”⁵¹ The Standard PLA also gives the licensees the right to independently negotiate separate licenses with licensors.⁵²

III. Analysis

The Department has long recognized that patent pools can “provide procompetitive benefits by integrating complementary technologies, reducing transaction costs, clearing blocking positions, and avoiding costly infringement litigation.”⁵³ Pooling achieves these efficiencies by aggregating the patent rights necessary to commercialize a product that are held by multiple rights holders.⁵⁴ “[F]ragmentation of rights can increase the costs of bringing products to market due to the transaction costs of negotiating multiple licenses and greater cumulative royalty payments.”⁵⁵

Patent pools or similar licensing platforms may be particularly useful as the IoT develops.⁵⁶ Potentially thousands to tens of thousands of patents may be declared essential to manufacturing a product with 5G functionality.⁵⁷ Pooling complementary patents together is one way to facilitate licensing in this space and reduce royalty stacking, which occurs when individually priced complementary patents must be licensed to produce an end product.⁵⁸ Pools can locate potential

⁵¹ Standard PLA, *supra* note 8, § 5.2.

⁵² *Id.* § 9.1.

⁵³ U.S. DEP’T OF JUSTICE & FED. TRADE COMM’N, ANTITRUST GUIDELINES FOR THE LICENSING OF INTELLECTUAL PROPERTY § 5.5 (Jan. 12, 2017), <https://www.justice.gov/atr/IPguidelines/download> [hereinafter “Antitrust-IP Guidelines”].

⁵⁴ *Id.*; *see also id.* § 2.3 (stating “[l]icensing, cross-licensing, or otherwise transferring intellectual property can facilitate integration of the licensed property with complementary factors of production . . . [which] can lead to more efficient exploitation of the intellectual property, benefiting consumers through the reduction of costs and the introduction of new products”).

⁵⁵ U.S. DEP’T OF JUSTICE & FED. TRADE COMM’N, ANTITRUST ENFORCEMENT AND INTELLECTUAL PROPERTY RIGHTS: PROMOTING INNOVATION AND COMPETITION, Ch. 3, § I, at 57 (Apr. 2007), <https://www.justice.gov/sites/default/files/atr/legacy/2007/07/11/222655.pdf> [hereinafter “Antitrust-IP Report”]. *See also* U.S. Philips Corp. v. ITC, 424 F.3d 1179, 1192 (Fed. Cir. 2005) (recognizing that negotiating individual licenses can be “extremely expensive and time-consuming”).

⁵⁶ *See Setting out the EU Approach to Standard Essential Patents* § 2.3, COM (2017) 712 final (Nov. 29, 2017), <https://ec.europa.eu/docsroom/documents/26583> [hereinafter “European Communication on Standard-Essential Patents”] (indicating that patent pools and similar licensing platforms “should be encouraged” because “[t]hey can address many of the SEP licensing challenges by offering better scrutiny on essentiality, more clarity on aggregate licensing fees and one-stop-shop solutions”).

⁵⁷ *See* IPlytics, 5G Study, Nov. 2019, *supra* note 10.

⁵⁸ Antitrust-IP Report, *supra* note 55, Ch. 3, § I, at 57 & n.2, 58; *see also* Josh Lerner & Jean Tirole, *Public Policy toward Patent Pools*, 8 INNOVATION POL’Y & ECON. 157, 162 (2007) (explaining that a “pool [of complementary patents] eliminates royalty stacking and benefits both patent holders and technology users”).

licensors and have mechanisms to evaluate essentiality, which “offers savings in search costs to licensees.”⁵⁹ If a pool is successful, it may serve as a “one stop shop.”⁶⁰

Pools benefit licensors as well. Licensors are able to “reap the cost savings of centralized licensing” and “realize an immediate return on their intellectual property.”⁶¹

Because patent pools can significantly reduce transaction costs for both licensors and licensees “and lead to the more efficient exploitation of the intellectual property,” the Department evaluates them under the rule of reason.⁶²

A. Potential Procompetitive Benefits of the Proposed 5G Platform

The proposed 5G Platform appears likely to create efficiencies that may increase consumer welfare.

By acting as a centralized licensing agent, Avanci can facilitate licensing between cellular standards-essential patent holders and vehicle manufacturers that are new to licensing in the cellular space. Thus, the proposed 5G Platform may help to integrate emerging 5G technologies into vehicles faster, with less risk and less cost. As stated, a recent study estimated that the proposed Platform’s hypothetical share of 5G declarations would be approximately 43% (31,421 patents).⁶³ Even if the Platform does not meet these estimates, the efficiencies have the potential to be substantial.⁶⁴ The aggregation of complementary patents is valuable to vehicle manufacturers that want to avoid infringement and quickly integrate 5G functionality into their vehicles.⁶⁵ Indeed, as more licensors join the pool, the proposed 5G Platform has the potential to reduce licensing disputes, including efforts by individual licensors to “hold up” implementation of the

⁵⁹ See Letter from Thomas O. Barnett, Assistant Att’y Gen., Antitrust Div., U.S. Dep’t of Justice, to William F. Dolan, Partner, Jones Day, at 7-8 (Oct. 21, 2008), <https://www.justice.gov/sites/default/files/atr/legacy/2008/10/21/238429.pdf> [hereinafter “RFID Business Review Letter”]; Letter from Charles A. James, Assistant Att’y Gen., Antitrust Div., U.S. Dep’t of Justice, to Ky P. Ewing, Partner, Vinson & Elkins, at 11 (Nov. 12, 2002), <https://www.justice.gov/sites/default/files/atr/legacy/2006/04/27/200455.pdf> [hereinafter “3GPP Business Review Letter”] (“The use of a common process for evaluation and certification of 3G patents . . . offers savings in search costs.”). See also European Communication on Standard-Essential Patents, *supra* note 56, § 2.3.

⁶⁰ RFID Business Review Letter, *supra* note 59, at 7 (indicating the consortium allowed licensees to “shop at a single stop for the patents of [platform] members” rather than having to negotiate with each licensor separately). See also European Communication on Standard-Essential Patents, *supra* note 56, § 2.3.

⁶¹ RFID Business Review Letter, *supra* note 59, at 8.

⁶² Antitrust-IP Guidelines, *supra* note 53, §§ 2.3, 5.5.

⁶³ Diakun, *Avanci Platform Report*, *supra* note 13.

⁶⁴ See RFID Business Review Letter, *supra* note 59, at 7 (“Failure to realize all potential efficiencies does not mean, however, that the efficiencies created are noncognizable.”)

⁶⁵ See U.S. Philips Corp., 424 F.3d at 1193 (“[P]ackage licensing . . . protect[s] against the unpleasant surprise for a licensee who learns, after making a substantial investment, that he needed a license to more patents than he originally obtained.”).

standard or stall the roll out of 5G connectivity in certain vehicles. The Platform's scale may also encourage vehicle manufacturers to take a license.⁶⁶

In addition, the proposed 5G Platform may help cellular SEP holders reduce the costs of finding and negotiating with individual licensees in a fragmented and opaque industry.⁶⁷ The Department understands that cellular SEP holders are fairly new to licensing in the automotive space. Avanci is incentivized to grow the Platform and identify potential licensees.⁶⁸ Avanci also has economies of scale to help licensors minimize other costs associated with licensing, such as monitoring compliance and collecting royalties.

The efficiencies associated with aggregating complementary patents and lowering transaction costs improve consumer welfare only to the extent that licensors participate. The 5G Platform's royalty calculation method has the potential to foster licensors' participation. Increasing incentives to participate benefits licensees because more cellular SEPs may be aggregated, making it easier to clear blocking positions and implement the standard without added costs.⁶⁹

As explained, the Platform's royalty calculation method includes both quantitative and qualitative factors.⁷⁰ These factors could encourage both large and small licensors to join the Platform. For example, Avanci's method considers a licensor's contributions to 5G standards as calculated by an independent study. It also takes into account the licensor's average licensing revenue for 2G/3G/4G/5G SEPs.⁷¹ These considerations may make the Platform more attractive to licensors that have contributed to standards development and/or with large 5G portfolios.⁷² Moreover, the points cap on essential patents may encourage smaller licensors to join the Platform because they too will realize a meaningful share of the royalties.

⁶⁶ See RFID Business Review Letter, *supra* note 59, at 8 (“[I]f . . . patent licensing increases as a result of the pool license, infringement litigation (and the potential for infringement litigation) will decrease.”).

⁶⁷ See BRL Request, *supra* note 1, at 4, 17; see also U.S. Philips Corp., 424 F.3d at 1192 (recognizing that negotiating individual licenses can be “extremely expensive and time-consuming”).

⁶⁸ BRL Request, *supra* note 1, at 7.

⁶⁹ Avanci has represented that the Platform's fixed fees will not increase as more patents are added. BRL Request, *supra* note 1, at 15.

⁷⁰ *Id.* at 14; see also royalty distribution discussion *supra* page 5.

⁷¹ “Market-based evidence of prior licenses to the patent ‘may be the most effective method of estimating the asserted patent’s value.’” Brief for the United States as Amicus Curiae at 12, *HTC Corp. v. Telefonaktiebolaget LM Ericsson*, No. 19-40566 (5th Cir. Oct. 30, 2019) (quoting *Commonwealth Sci. & Indus. Research Org. v. Cisco Sys., Inc.*, 809 F.3d 1295, 1303-04 (Fed. Cir. 2015)) [hereinafter “HTC Amicus Br.”]. See also *Sprint Communications Co. v. Time Warner Cable, Inc.*, 760 F. App'x 977, 983 (Fed. Cir. 2019), *cert. denied*, 140 S. Ct. 467 (2019) (evidence of past licenses “reflect[s] the incremental value of the inventions”).

⁷² See Anne Layne-Farrar & Josh Lerner, *To Join or Not to Join, Examining Patent Pool Participation and Rent Sharing Rules*, 29 INT'L J. INDUS. ORG. 294, 295 (Mar. 2011) (finding patent holders with large standards contributions are less likely to join pools with a numeric proportional (per patent) royalty sharing method).

Finally, the licensing support provisions, which award a limited number of points up to a cap for the assertion of licensed SEPs, and the reimbursement of licensors' litigation costs under certain circumstances, are intended to discourage hold out by licensees and assist with enforcement, which benefits both large and small licensors.⁷³ Avanci represents that it does not own any SEPs and it is not authorized to litigate infringement claims on behalf of licensors.⁷⁴ Therefore, without some mechanism for enforcement, potential licensees would be less likely to take a license, and individual licensors may not have the incentive to lead an enforcement effort. The licensing support and reimbursement provisions reward licensors when their enforcement efforts result in a Standard PLA that benefits all contributors to the Platform.⁷⁵ These provisions are designed to address the collective action problem that licensors may be individually unwilling to bear the substantial risks⁷⁶ or costs of litigation against an infringer when the benefits are shared by all licensors.⁷⁷ They also limit the reward of royalty points to prevent over-enforcement.⁷⁸

We recognize that the reimbursement of litigation costs may incentivize more licensors to sue vehicle manufacturers that Avanci has determined are “unwilling” to take a Platform license.⁷⁹ Increased enforcement may cause fewer firms to continue infringing the Licensed Patents or cause more Licensed Patents to be tested in court and, as a result, invalid or non-essential patents to be removed from the pool.⁸⁰ It is possible, however, that the financial incentive to sue could cause several Platform licensors to assert their essential patents when they otherwise would not have done so (perhaps due to the questionable strength of their declared SEPs) and this action causes

⁷³ BRL Request, *supra* note 1, at 7, 14; 5G MLMA, *supra* note 15, § 5.1.2-5.1.3 & App. C §§ 2.6-2.7. *See also* Jean O. Lanjouw & Mark Schankerman, *Protecting Intellectual Property Rights: Are Small Firms Handicapped?*, 47 J.L. & ECON. 45, 70 (2004) (recognizing that “small firms are at a disadvantage in protecting their intellectual property”).

⁷⁴ BRL Request, *supra* note 1, at 5. *See also* Lone Star Silicon Innovations LLC v. Nanya Tech. Corp., 925 F.3d 1225, 1229-30 (Fed. Cir. 2019) (stating a licensee cannot bring a patent infringement suit on its own unless it possesses all substantial rights in a patent).

⁷⁵ *See* 5G MLMA, *supra* note 15, § 5.1.2-5.1.3 & App. C §§ 2.6-2.7. We have heard concerns that these provisions may deter independent licensing. But the licensing support and reimbursement of costs provisions do not prevent a licensor from entering into a bilateral license. Rather, the licensor will forfeit any points awarded for litigation support and reimbursement of costs if it enters into a bilateral license that does not increase licensing revenue for the Platform.

⁷⁶ *See* *Blonde-Tongue Labs., Inc. v. Univ. of Ill. Found.*, 402 U.S. 313, 350 (1971) (holding a defendant in a patent infringement suit may assert a plea of estoppel once the patent has been declared invalid in a prior proceeding).

⁷⁷ *See* George J. Mailath & Andrew Postlewaite, *Asymmetric Information Bargaining Problems with Many Agents*, 57 REV. ECON. STUD. 351 (1990) (“A yes or no decision must be made about some issue. All agents must agree . . . [A]s the number of agents increases, the probability of an affirmative efficient decision goes to zero.”).

⁷⁸ *See* 5G MLMA, *supra* note 15, App. C §§ 2.6-2.7.

⁷⁹ *See id.* § 4.8 (indicating that if Avanci “identifies a potential licensee that, in [Avanci’s] reasonable judgment, is unwilling to enter into a [Platform license],” then Avanci “shall promptly notify” all licensors).

⁸⁰ Licensors cannot collect royalties on invalid or non-essential patents. *See id.* § 3.3. *See also infra* Part III.B.1.

non-infringing manufacturers to settle and take a Platform license. We find this second outcome less likely given the large number of SEPs that may be licensed through the proposed Platform, the safeguards in place to check essentiality, and the correspondingly high probability of infringement (even if some Licensed Patents are later determined to be invalid).⁸¹ As long as these enforcement incentives do not deter Avanci's or licensors' good faith negotiations and they continue to engage in meaningful negotiations with potential licensees before resorting to litigation, the incentives may create efficiencies.⁸² Accordingly, we do not view the shared compensation of litigation costs as likely to harm competition in this case.

In sum, the proposed 5G Platform has the potential to yield efficiencies by reducing transaction costs and streamlining licensing for connected vehicles. Together these efficiencies may allow cellular standards-essential patent owners and vehicle manufacturers to focus resources elsewhere, such as investment in further research and development in emerging 5G technologies and applications. This possibility could enhance competition in these technologies, improve safety, and benefit American consumers.⁸³

B. Potential Anticompetitive Effects and Safeguards

Patent pools and licensing platforms are not without antitrust risk. Pooling or platform licensing has the potential to harm competition in a number of ways, for example, by facilitating price-fixing, market division, or creating unlawful tying arrangements.⁸⁴ Certain safeguards can minimize these risks. They include excluding substitute patents from the pool; permitting independent licensing outside the pool; making the license agreement available to all interested licensees; providing clear notice of the contents of the license; and limiting access to competitively sensitive information, such as pricing, marketing, or R&D information through the pool.⁸⁵ The failure to include all of these safeguards does not necessarily make a pool anticompetitive.⁸⁶ Rather, the Department evaluates the particular facts and circumstances of the proposed conduct.⁸⁷

⁸¹ See *infra* Part III.B.1.

⁸² “[T]o help reduce the costs and other burdens associated with litigation,” the Department has encouraged “both standards-essential patent owners and potential licensees of standards-essential patents to engage in good-faith negotiations to reach F/RAND license terms.” U.S. DEP’T OF JUSTICE, U.S. PAT. & TRADEMARK OFF., & NAT’L INST. OF STANDARDS & TECH., POLICY STATEMENT ON REMEDIES FOR STANDARDS-ESSENTIAL PATENTS SUBJECT TO VOLUNTARY F/RAND COMMITMENTS, at 4 (Dec. 19, 2019), <https://www.justice.gov/atr/page/file/1228016/download>.

⁸³ See, e.g., U.S. Department of Transportation’s National Highway Traffic Safety Administration Issues Statement on Safety Value of 5.9 GHz Spectrum, NAT’L HIGHWAY TRAFFIC SAFETY ADMIN. (Oct. 24, 2018), <https://www.nhtsa.gov/press-releases/us-department-transportations-national-highway-traffic-safety-administration-issues> (“This technology has the potential to improve infrastructure, safety and efficiency as the Department works to make road travel and future transportation significantly safer.”).

⁸⁴ See Antitrust-IP Guidelines, *supra* note 53, § 5.5; Antitrust-IP Report, *supra* note 55, Ch. 3, § III(B)-(C), at 66-67.

⁸⁵ Antitrust-IP Report, *supra* note 55, Ch. 3, §§ III(1)(d), at 72-73, (D), at 74-84.

⁸⁶ *Id.*, Ch. 3, § I(C)(1)(d), at 72-73.

⁸⁷ *Id.*

The proposed 5G Platform includes many of these safeguards that reduce the risk of competitive harm.

1. Excluding Substitute Patents from the Pool

As explained, the pooling of complementary patents can increase efficiency by removing the need to negotiate separate licenses, especially when, as here, there are potentially thousands of patents declared essential to 5G standards.⁸⁸ It also “may have the pro-competitive effect of lowering the total royalty rate to licensees, thereby lowering the final product cost to consumers.”⁸⁹ Pooling substitutes, however, may in effect fix the prices of substitutable technologies, which eliminates an opportunity for competition and may increase costs to licensees and ultimately consumers. When the Department has issued favorable business review letters to proposed patent pools in the past, each one included essentiality review procedures to ensure that the pools contained only patents “essential” to a relevant technical standard.⁹⁰ Essential patents are necessarily complements, not substitutes.⁹¹ Here, under the terms of the 5G MLMA and Standard PLA, the Avanci 5G Platform will license only “Essential Patent Claims,” that are necessary on “technical grounds” to comply with the 2G, 3G, 4G and 5G standards.⁹² This “technically essential” definition is consistent with, and in some cases, a more rigorous standard than those

⁸⁸ “Complementary” patents are “patents covering separate aspects of a given technology that do not compete with each other.” “Substitute” patents are “patents covering technologies that compete with each other.” *Id.*, Ch. 3, § III(B), at 66.

⁸⁹ *Id.*, Ch. 3, § III(D)(1)(b), at 77. RFID Letter, *supra* note 59, at 7 n.30 (citing Josh Lerner & Jean Tirole, *Efficient Patent Pools*, 94 AM. ECON. REV. 691 (2004)). *See also* Josh Lerner & Jean Tirole, *Standard-Essential Patents*, 123 J. POL. ECON. 547 (June 2015).

⁹⁰ Antitrust-IP Report, *supra* note 55, Ch. 3, § III(C)(1).

⁹¹ 3GPP Business Review Letter, *supra* note 59, at 10.

⁹² 5G MLMA, *supra* note 15, § 1.11 & App. A; Standard PLA, *supra* note 8, § 1.8. Essential patent claims are defined as “any and all Patent claims as to which it is not possible on technical grounds taking into account normal technical practice and the state of the art generally available at the time of the adoption or publication of the relevant Standard, to make, sell, offer for sale, lease or otherwise dispose of and import, repair, use or operate products, equipment, or methods that comply with the relevant Standard without infringing the patent claims.” Standard PLA, *supra* note 8, § 1.8; *see also* 5G MLMA, *supra* note 15, § 1.5 (defining an essential patent as one that includes one claim that is necessary on “technical grounds”).

used in other pools that the Department has found to adequately prevent the inclusion of substitute patents.⁹³ Avanci's definitions are also consistent with ETSI's IPR policy.⁹⁴

In addition, Avanci requires licensors to have their "Essential Patent Claims" evaluated by an independent patent expert that is screened for conflicts of interest. Avanci maintains a plurality of patent experts for this purpose, but they are not employees of Avanci.⁹⁵ The expert's identity is not disclosed to the licensor and he or she evaluates patent claims according to Avanci's standard procedures;⁹⁶ the expert is paid a fixed fee regardless of the outcome of the evaluation.⁹⁷ Engaging an independent expert helps to keep substitute patents from entering a pool.⁹⁸ While the independent expert will not evaluate a patent claim for validity, if a patent is found to be invalid, the licensor is required to report this outcome to Avanci and it is unable to collect royalties on the invalid patent.⁹⁹ We conclude Avanci's procedures appear to adequately ensure that patent claims will be evaluated objectively.¹⁰⁰ In addition, the Department understands that standards development organizations do not provide essentiality checks—any patent owner can declare a patent or patent family essential to a standard.¹⁰¹ Therefore, Avanci's proposed 5G Platform may

⁹³ Compare Letter from Joel I. Klein, Assistant Att'y Gen., Antitrust Div., U.S. Dep't of Justice, to Garrard R. Beeney, Partner, Sullivan & Cromwell (June 26, 1997), <http://www.justice.gov/atr/public/busreview/215742.pdf> [hereinafter "MPEG-2 Business Review Letter"] (requiring pool patents to be technically essential), with Letter from Joel I. Klein, Assistant Att'y Gen., Antitrust Div., U.S. Dep't of Justice, to Carey R. Ramos, Partner, Paul, Weiss, Rifkind, Wharton & Garrison (June 10, 1999), <http://www.justice.gov/atr/public/busreview/2485.pdf> [hereinafter "6C DVD Business Review Letter"] and Letter from Joel I. Klein, Assistant Att'y Gen., Antitrust Div., U.S. Dep't of Justice, to Garrard R. Beeney, Partner, Sullivan & Cromwell (Dec. 16, 1998), <https://www.justice.gov/sites/default/files/atr/legacy/2006/04/27/2121.pdf> [hereinafter "3C DVD Business Review Letter"] (including patents practically or economically essential).

⁹⁴ ETSI, INTELLECTUAL PROPERTY RIGHTS POLICY § 15(6), at 44-45 (Feb. 2, 2020), <https://www.etsi.org/images/files/IPR/etsi-ipr-policy.pdf> (indicating that "'essential' as applied to IPR means that it is not possible on technical (but not commercial) grounds . . . to make, sell, lease, otherwise dispose of, repair, use or operate equipment or methods which comply with a standard without infringing that IPR").

⁹⁵ BRL Request, *supra* note 1, at 10; 5G MLMA, *supra* note 15, App. B §§ 4, 6.

⁹⁶ See 5G MLMA, *supra* note 15, App. B.

⁹⁷ BRL Request, *supra* note 1, at 10.

⁹⁸ MPEG-2 Business Review Letter, *supra* note 93, at 5; 3C DVD Business Review Letter, *supra* note 93, at 4-5; 6C DVD Business Review Letter, *supra* note 93, at 4-5.

⁹⁹ 5G MLMA, *supra* note 15, App. C § 3.3; see also Antitrust-IP Report, *supra* note 55, Ch. 3, § III(D)(1)(b)(ii), at 78 n. 141 (indicating that in other pools the Department has reviewed, the independent expert did not evaluate patent claims for validity).

¹⁰⁰ See 5G MLMA, *supra* note 15, App. B.

¹⁰¹ See e.g., ETSI, *supra* note 94, § 4, at 39; ATIS, OPERATING PROCEDURES FOR ATIS FORUMS AND COMMITTEES (VERSION 5.5) § 10.4.1, at 9 (Aug. 23, 2018), http://www.atis.org/01_legal/docs/OP.pdf ("Neither ATIS nor the relevant Forum shall be responsible for interpreting or making any determination concerning the validity, enforceability or scope of any patented invention referenced in or that may be relevant to any standard, guideline, or other ATIS deliverable."). See also Amplified and GreyB, 5G Study, May 2020, *supra* note 10, at 10 (estimating that about 25% of patents declared essential to 5G are "core" SEPs, i.e., essential to the standard).

give some confidence to licensees that the pool contains patents they actually need to make connected vehicles.¹⁰²

Avanci does not require licensors to have all their declared standards-essential patents independently reviewed for essentiality; however, licensors are encouraged to have their patent families evaluated because royalties are distributed, in part, up to an allowable points cap, based on the number of a licensor's evaluated essential patent claims.¹⁰³ We recognize that a requirement to evaluate all declared standards-essential patents licensed through the Platform would allow Avanci to more accurately exclude substitutes, but the Department appreciates Avanci's position that such an extensive evaluation may be "commercially impractical" due to the number of patents that may be licensed through the Platform and this requirement could inhibit the proposed Platform's formation.¹⁰⁴ Moreover, independent evaluation is not the only safeguard here that prevents the licensing of non-essential patents. As stated, by definition, the proposed Platform is limited to licensing technically essential patents.¹⁰⁵ In addition, licensees are permitted to challenge a Licensed Patent's essentiality (as well as its validity and enforceability).¹⁰⁶

Another antitrust problem that could arise if non-essential patents were included in the Platform is tying. Tying is "the conditioning of a license for one intellectual property right [a standards-essential patent] on the license of a second such right [a non-essential patent]," which "could be a concern where its effect was to foreclose competition from technological alternatives to the second."¹⁰⁷ Avanci's requirements that all patents in Platform be technically essential helps to ensure that non-essential patents are not licensed through the Platform, and therefore, that the Platform will not foreclose competition between a pool patent and an alternative technology.¹⁰⁸

¹⁰² See European Communication on Standard-Essential Patents, *supra* note 56, § 2.3 (discussing that pools provide "better scrutiny on essentiality").

¹⁰³ BRL Request, *supra* note 1, at 13; 5G MLMA, *supra* note 15, Apps. B, C.

¹⁰⁴ BRL Request, *supra* note 1, at 13. In other circumstances, however, e.g., where a pool includes fewer standard essential patents, there may be no countervailing reason for limiting the essentiality review, which helps to prevent harm to competition.

¹⁰⁵ See *supra* note 92 and accompanying text.

¹⁰⁶ See Standard PLA, *supra* note 8, § 5.2. A "no-challenge" clause requiring a licensee to agree not to challenge the validity or enforceability of a patent may be unenforceable in certain circumstances. See *Lear, Inc. v. Adkins*, 395 U.S. 653, 670 (1969) ("Licensees may often be the only individuals with enough economic incentive to challenge the patentability of an inventor's discovery. If they are muzzled, the public may continually be required to pay tribute to would-be monopolists without need or justification."); *Rates Technology Inc. v. Speakeasy, Inc.*, 685 F.3d 163, 169–72 (2d Cir. 2012) (barring covenants precluding future challenges to a patent's validity entered into prior to litigation).

¹⁰⁷ RFID Business Review Letter, *supra* note 59, at 11.

¹⁰⁸ *Id.* MPEG-2 Business Review Letter, *supra* note 93, at 12.

Finally, other aspects of the Platform’s design mitigate the risk that non-essential patents will be included.¹⁰⁹ For example, if a licensor attempted to include wholly non-essential patents in the Platform, these patents likely would be rejected during evaluation, or if they were not evaluated and still included, they would not increase the licensor’s royalty share and have to be licensed for free, similar to any patent submitted beyond the cap.¹¹⁰ In addition, similar to the 4G Platform, Avanci has represented that adding patents to the proposed Platform also will not raise a licensee’s cost.¹¹¹

In light of the number of patents that potentially may be aggregated, the proposed 5G Platform includes a number of safeguards that appear to strike a reasonable balance between excluding non-essential patents from the pool and ensuring that licensors and licensees still benefit from the cost savings associated with pooling.

2. Licensing Outside the Platform

a. Bilateral Licensing

The proposed 5G Platform allows for independent licensing outside of the Platform, which also lessens potential competitive concerns because licensors preserve their ability to compete with the pool license.¹¹² Here, the 5G MLMA provides for independent licensing and prevents licensors from “double dipping,” i.e., collecting royalties through the Platform and from direct licensing for the same products or components that incorporate the Licensed Patents.¹¹³ Avanci has represented that licensors would be required to identify overlapping licenses and work out a method, such as a payment or credit, to account for an overlapping license.¹¹⁴ The ability to license outside the Platform is useful here given the Platform’s limited field of use and that some suppliers may want to negotiate a direct license to make other products. The proposed Platform only provides a license (that is non-sublicensable) to “make, Have Made, use, import, sell and offer to Sell” vehicles that

¹⁰⁹ The Department is aware of allegations that Avanci is including non-essential patents in the 4G Platform. *See* First Amended Complaint at ¶ 116, *Continental Auto. Sys., Inc., v. Avanci, LLC*, No. 19-2520 (N.D. Cal. July 23, 2019). While including such patents in the Platform could raise tying concerns, the Department has found no evidence of that practice in its review of the proposed 5G Platform.

¹¹⁰ Avanci is authorized to expand the scope of the license, at no additional cost to the licensee, to include: “(1) all patent claims included in a patent that includes at least one patent claim that is essential, and (2) all claims in patents that have been declared to a relevant standard-developing body.” BRL Request, *supra* note 1, at 9; 5G MLMA, *supra* note 15, App. A, Doc. A.1.2. The Department does not believe this expansion will result in substitute patents entering the pool because these patents must either contain an essential patent claim or have been declared essential to a relevant standards-development body.

¹¹¹ BRL Request, *supra* note 1, at 15; AVANCI, *supra* note 49 (indicating the cost of a license will never increase when patents are added to the license).

¹¹² Antitrust-IP Report, *supra* note 55, Ch. 3, § III(D)(2)(b), at 79-80.

¹¹³ *See* 5G MLMA, *supra* note 15, § 4.3-4.4; Standard PLA, *supra* note 8, § 9.1.

¹¹⁴ BRL Request, *supra* note 1, at 12; 5G MLMA, *supra* note 15, § 4.4.

incorporate 5G technologies; and thus, the Platform will not license 5G enabled components or other products.¹¹⁵

The Department recognizes that “[c]reating the opportunity for independent licensing does not guarantee that such a license will be granted.”¹¹⁶ It will be up to individual licensors to decide whether they will bilaterally license automotive manufacturers or component suppliers outside the Platform. Based on our investigation, we understand that some licensors do engage in independent licensing for 4G connected vehicles and components, which may continue for 5G applications and allow innovation outside of the proposed Platform’s limited field of use. Other licensors may choose to license to only vehicle manufacturers through the Platform because they find it more profitable. Competitive concerns could arise if pool licensors collectively agreed not to license outside the pool despite this safeguard, which would negate the benefits of independent licensing.¹¹⁷ The Department is not aware of any evidence suggesting that Avanci’s licensors have entered into such an agreement with respect to the proposed Platform; in fact, we found that some licensors independently license in the automotive space, including to component suppliers.

b. Joint Licensing

Similarly, “a concerted attempt by the pool’s licensors to hinder the ability of others (outside the pool) to offer a competitive product or process” could raise competition concerns.¹¹⁸ Section 7.4 of the MLMA prohibits licensors from joining another joint licensing program that also licenses cellular SEPs for connected vehicles.¹¹⁹ The provision does not prevent licensors from participating in pools they joined prior to Avanci, or in pools dedicated to other fields of use, such as a connected vehicle’s component parts (e.g., telematics units).

“Determining the competitive significance of the exclusive nature of licenses granted to the pool . . . depends on the specific facts of the case.”¹²⁰ Here, Section 7.4 requires licensors to commit to the joint licensing of “Release 15 5G Connected Vehicles” exclusively through Avanci. This provision is unlikely to harm competition for a number of reasons. First, the provision allows for direct competition from pools formed before Avanci’s and from independent licensing. Second, the provision allows competition from pools in closely related fields, including in licensing the use of component parts. Although Section 7.4 will apply to all of Avanci’s Licensing Programs, licensors may decide if they want to join future Licensing Programs or competing

¹¹⁵ BRL Request, *supra* note 1, at 5; Standard PLA, *supra* note 8, § 2.1.

¹¹⁶ Antitrust-IP Report, *supra* note 55, Ch. 3, § III(D)(2)(b), at 80.

¹¹⁷ See Complaint at ¶¶ 9-10, In the Matter of Summit Tech., Inc. and VISX, Inc., No. 9286, 1998 WL 129323 (F.T.C. Mar. 24, 1998) (alleging that licensor veto power to prevent the other licensor in a two-licensor pool from licensing independently was anticompetitive); see also Summit Tech., Inc., No. 9286, 1999 WL 33912985, at *219-220 (1999) (consent agreement dissolved the pool).

¹¹⁸ Antitrust-IP Report, *supra* note 55, Ch. 3, § III(D)(2)(b), at 80.

¹¹⁹ See also BRL Request, *supra* note 1, at 10 n.29.

¹²⁰ Antitrust-IP Report, *supra* note 55, Ch. 3, § III(D)(2)(b), at 80.

platforms if any exist; moreover, only one Licensing Program (for connected vehicles) is currently proposed. Third, Section 7.4 provides benefits to licensees. As licensors commit to Avanci, this provision may help to make the proposed Platform a more effective “one stop shop” for vehicle manufacturers to license cellular SEPs. To the extent it reduces the incentive for licensors to defect to other pools, it may also help to mitigate royalty stacking across multiple pool licenses. Thus, on balance, we conclude the provision is not anticompetitive as proposed.

3. Transparency and Nondiscrimination

Under the proposed 5G Platform, Avanci, as an independent licensing agent, would make licenses available to vehicle manufacturers on transparent and non-discriminatory terms. These safeguards also help to minimize competition concerns.¹²¹ The Platform’s flat per-vehicle royalty rate based on the type of connectivity in the vehicle will be publicly available. The rates will not change as new essential patents are added to the Licensing Program.¹²² This transparency streamlines negotiation and helps to reduce transaction costs.

In addition, Avanci has indicated there “would be no restriction on who can receive a license within the Licensing Program’s field of use,” which is limited to vehicles that have 5G functionality.¹²³ Although the 5G Platform’s field of use is limited to connected vehicles and not other components in the supply chain, such as telematics units,¹²⁴ this limited field of use does not necessarily make the Platform anticompetitive.

Here, the efficiencies from the proposed field of use appear to be considerable and are likely to outweigh the potential competitive harm caused by limiting the scope of the Standard PLA to connected vehicles. The *Antitrust Guidelines for the Licensing of Intellectual Property* make clear that field-of-use restrictions can be procompetitive because they allow the licensor “to exploit [its patents] as efficiently and effectively as possible” and that they may “increase the licensor’s incentive to license.”¹²⁵ Avanci has indicated that limiting the Platform’s field of use to connected vehicles and collecting royalties from OEMs will result in numerous licensing efficiencies, such as simplifying scope, pricing, and royalty collection.¹²⁶ Avanci represents that “the Vehicle manufacturer base is more visible, smaller in number, and more consistent over time,

¹²¹ *Id.*, Ch. 3, § III(C)(1)(d), at 71-72; RFID Business Review Letter, *supra* note 59, at 10 (indicating licenses to make products compliant with the Gen-2 standard were available from an independent licensing agent on nondiscriminatory terms).

¹²² BRL Request, *supra* note 1, at 15.

¹²³ *Id.* at 11.

¹²⁴ A telematics control unit (“TCU”) is typically the component in a connected vehicle that exchanges data with a network. *Telematics Control Unit Market Will Exceed \$6,600 Mn By 2027*, MARKETWATCH (last visited June 22, 2020), https://www.marketwatch.com/press-release/telematics-control-unit-market-will-exceed-6600-mn-by-2027-2020-05-20?mod=mw_quote_news&tesla=y.

¹²⁵ Antitrust-IP Guidelines, *supra* note 53, § 2.3.

¹²⁶ See BRL Request, *supra* note 1, at 16-18.

relative to the base of component suppliers.”¹²⁷ The automotive supply chain is complex. Identities of suppliers can be kept confidential and it could be difficult for Avanci to track which components from either Tier 1, Tier 2, or Tier 3 suppliers in a vehicle are licensed.¹²⁸ The Department understands that many cellular SEP holders choose to license at the end-device level for many of the same reasons,¹²⁹ and thus, they may be more likely to join the Platform. Broad licensor participation benefits the Platform’s licensees.

Moreover, the Standard PLA includes “Have Made” rights that would allow a vehicle manufacturer to have third-party component suppliers make components for their 5G connected vehicles.¹³⁰ Thus, the Standard PLA may create new access to the Licensed Patents for component suppliers. Because these “Have Made” rights give component suppliers freedom to supply a licensee, their exclusion from the Platform is unlikely to harm competition.¹³¹ Moreover, if suppliers want a direct license so that they can supply vehicle manufacturers that are not Avanci licensees or make other connected products, they can bilaterally negotiate with licensors outside the Platform. Furthermore, as explained, the Avanci Platform does not prevent the formation of a pool that would license 5G-enabled components.

We note that limiting a pool license’s field of use is not uncommon. For example, the RFID Consortium, which the Department reviewed favorably, licensed reader products, label products, or chips compliant with the Gen-2 standard.¹³² Similarly, the 3G Patent Platform Partnership grouped essential patents into product categories such as, infrastructure, terminals, test equipment, and like the Avanci Platform, the royalty “collection point” was “the last manufacturer in the manufacturing ‘chain.’”¹³³ In neither case did the Department conclude that licensing

¹²⁷ *Id.* at 17.

¹²⁸ *Id.* We understand that Tier 1 suppliers sell telematics units, Tier 2 suppliers sell modules or network access devices (“NADs”), and Tier 3 suppliers sell baseband processors or chips.

¹²⁹ See Keith Mallinson, *Don’t Fix What Isn’t Broken: The Extraordinary Record of Innovation and Success in the Cellular Industry Under Existing Licensing Practices*, 23 GEO. MASON L. REV. 967, 995 (2016) (“It is the widespread practice within the cellular industry that royalties for substantial patent portfolios are assessed on completed devices, and most commonly based on the average wholesale price (‘AWP’).”); see also David Teece & Edward Sherry, *On the “Smallest Saleable Patent Practicing Unit” Doctrine: An Economic and Public Policy Analysis*, at 11 (Tushnet Ctr. for the Mgmt. of Intell. Cap., Working Paper Series No. 11, 2016) [hereinafter “Teece & Sherry, SSPPU”].

¹³⁰ Standard PLA, *supra* note 8, § 1.10.

¹³¹ Cf. Antitrust-IP Guidelines, *supra* note 53, § 5.5 (“Pooling arrangements generally need not be open to all who would like to join . . . In general, exclusion from a pooling or cross-licensing arrangement among competing technologies is unlikely to have anticompetitive effects unless . . . excluded firms cannot effectively compete in the relevant market for the good incorporating the licensed technologies . . .”). See also Borghetti et. al., *FRAND Licensing Levels Under EU Law*, at 17 (Feb. 2020), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3532469 (“Even without explicit ‘have made’ clauses, courts are unlikely to allow an injunction against upstream component makers supplying licensed entities.”).

¹³² RFID Business Review Letter, *supra* note 59, at 2.

¹³³ Letter from Ky P. Ewing, Partner, Vinson & Elkins, to Joel I. Klein, Assistant Att’y Gen., Antitrust Div., U.S. Dep’t of Justice, at 12 (Dec. 14, 1999), <https://www.justice.gov/sites/default/files/atr/legacy/2014/01/08/302201.pdf>.

specific fields of use or, in the case of the 3G Patent Platform Partnership, using the end product as the royalty collection point raised antitrust concerns.¹³⁴ Rather, we focused, as we do here, on whether the proposed licensing mechanisms created efficiencies that were likely to outweigh any potential harms to competition.¹³⁵

Another benefit of end-device licensing through the proposed 5G Platform is that it may help to ensure licensors are appropriately compensated for their innovation. Because the pool sets flat per unit rates based upon the value of the technology to vehicle manufacturers that choose E-Call or full connectivity for their vehicles, licensors may be able to recoup more of the value of the intellectual property they created.¹³⁶

There are “a variety of ways” parties might value patented technology, including setting royalties based on end-product revenue.¹³⁷ The essential cellular SEPs licensed here are subject to FRAND commitments. Avanci represents that its current rates for the 4G Platform are FRAND and reflect input from both licensors and licensees, and that Avanci intends its 5G rates also to be FRAND.¹³⁸ There is no single correct way to calculate a reasonable royalty in the FRAND context.¹³⁹ Each standards-essential patent holder will have to decide whether the Avanci Platform comports with its own FRAND commitments. Standards implementors can enforce the commitments in contract proceedings if there are disputes. The Department believes parties should be given flexibility to license in a manner, consistent with these commitments, that best rewards and encourages innovation.¹⁴⁰

(“Licensees shall not include those manufacturers of component products which are incorporated into final assembled products for which royalties are paid to their respective licensor(s).”).

¹³⁴ RFID Business Review Letter, *supra* note 59, at 10-12; 3GPP Business Review Letter, *supra* note 59, at 10-12.

¹³⁵ See *e.g.*, 3GPP Business Review Letter, *supra* note 59, at 9.

¹³⁶ See BRL Request, *supra* note 1, at 5. See also Teece & Sherry, SSPPU, *supra* note 129, at 14 (indicating that patent holders cannot “extract ‘the value’ of being able to use its patented technology at multiple different levels in the value chain” due to patent exhaustion, and thus, the “second-best approach (in terms of capturing a significant fraction of the overall value of being able to use its technology for the patent holder) is to look as far ‘down’ the value chain as possible”). Under the doctrine of patent exhaustion, licensing a single manufacturer can exhaust the patentee’s rights with respect to all the firms in that manufacturer’s supply chain. See *Impression Prods., Inc. v. Lexmark Int’l, Inc.*, 137 S. Ct. 1523, 1535 (2017) (exhaustion applies “[s]o long as a licensee complies with the license when selling an item”).

¹³⁷ See *Exmark Mfg. Co. v. Briggs & Stratton Power Prod. Grp., LLC*, 879 F.3d 1332, 1348 (Fed. Cir. 2018); *HTC Amicus Br.*, *supra* note 71, at 14.

¹³⁸ See *AVANCI*, *supra* note 49 (“Avanci shares a commitment with the IoT ecosystem to make the latest standard wireless technology available in a way that is fair, reasonable and non-discriminatory (FRAND).”).

¹³⁹ See *Commonwealth Sci. & Indus. Research Org.*, 809 F.3d at 1303-1304 (indicating it would be “untenable” to use component-based royalties in every case); *HTC Amicus Br.*, *supra* note 71, at 16-17.

¹⁴⁰ *HTC Amicus Br.*, *supra* note 71, at 26 (“SSOs and parties can tailor their terms to specific technologies and industries and allow for experimentation with different terms more easily than can courts or governments.”)

In light of these considerations, including that the proposed 5G Platform's limited field of use can promote licensing efficiencies and may encourage licensor participation, and licensors are able to license outside the Platform, including in other fields of use, the Department finds that the proposed limited field of use and royalty collection method are unlikely to harm competition. Rather, they have the potential to facilitate the Platform's adoption and reduce transaction costs for both licensors and vehicle manufacturers.

The Department understands, based on our investigation, that vehicle manufacturers are often indemnified by their suppliers for intellectual property infringement and that suppliers in the automotive industry typically take a license to any intellectual property necessary to produce a particular component. The proposed 5G Platform takes a different approach. To be clear, the Department makes no assessment of whether end-device licensing will be successful in the automotive industry or whether it is the correct approach to licensing in this space.¹⁴¹ We also do not assess whether licensors could be held liable for breaching their individual FRAND commitments if they choose not to license outside the proposed Platform to suppliers. We simply opine, based on Avanci's representations and our review, that Avanci's approach, which has the potential to aggregate a significant number of cellular SEPs in the marketplace and streamline licensing, is unlikely to harm competition. Therefore, the Department has no present intention to challenge it.

4. Limited Access to Competitively Sensitive Information

The proposed 5G Platform also takes measures to protect against the sharing of competitively sensitive, confidential business information.¹⁴² Avanci is an independent licensing administrator, with no patents of its own, and it does not participate in the automotive industry.¹⁴³ Thus, it has little incentive to coordinate on price or output downstream. Competitively sensitive information, such as information provided to support royalty distribution, marketing and sales plans, and the number of connected vehicles sold, is submitted to Avanci. The proposed 5G Platform's confidentiality obligations are written to prevent the disclosure of this competitively sensitive, confidential business information to other licensors or licensees.¹⁴⁴ Avanci employees are also subject to non-disclosure agreements.¹⁴⁵ Limiting access to competitively sensitive, confidential business information concerning cost, output, or other proprietary data lowers the risk of coordination in final product markets and other markets where licensors or licensees may

¹⁴¹ Cf. Letter from Charles A. James, Assistant Att'y Gen., Antitrust Div., U.S. Dep't of Justice, to Douglas W. Macdonald, Esq., Webster, Chamberlain & Bean, at 3 (Oct. 7, 2002), <https://www.justice.gov/atr/response-american-welding-societys-request-business-review-letter> ("The Department is not in the business of picking winners and losers. We leave that to the marketplace.").

¹⁴² BRL Request, *supra* note 1, at 11-12. Confidential information includes technical and commercial information provided to Avanci, such as tax information, royalty distribution reports, marketing and sales plans, and licensee information, such as quantity of licensed vehicles sold. 5G MLMA, *supra* note 15, § 6.1.

¹⁴³ BRL Request, *supra* note 1, at 4-5.

¹⁴⁴ 5G MLMA, *supra* note 15, § 6.1; Standard PLA, *supra* note 8, § 18.

¹⁴⁵ 5G MLMA, *supra* note 15, § 6.1; Standard PLA, *supra* note 8, § 18.

compete.¹⁴⁶ We find that Avanci has sufficient protections in place to prevent the sharing of information that might result in unlawful coordination.

IV. Conclusion

For these reasons, the Department is not presently inclined to initiate an antitrust enforcement action against the proposed 5G Platform. This letter, however, expresses the Department's current enforcement intention. In accordance with our normal practices, the Department reserves the right to bring an enforcement action in the future if the actual operation of the proposed conduct proves to be anticompetitive in purpose or effect.

This statement is made in accordance with the Department's Business Review Procedure, 28 C.F.R. §50.6. Pursuant to its terms, your business review request and this letter will be made public immediately, and any supporting data will be made publicly available within 30 days of the date of this letter, unless you request that part of the material be withheld in accordance with Paragraph 10(c) of the Business Review Procedure.

Sincerely,



Makan Delrahim

¹⁴⁶ See Antitrust-IP Report, *supra* note 55, Ch. 3, § III(D)(4)(b), at 82.