FRAND LICENSING:
MOVING TO THE AUTOMOTIVE MARKET

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DISCUSSION TOPICS

1. SSOs, SEPs, & the FRAND Undertaking

2. Mobile / Telecom History

3. Current Automotive Challenges

4. FRAND Guidance

5. Key Takeaways
• Standard Essential Patents ("SEPs")
  – Patents that claim an invention that must be used to comply with a standard.
  – Standards are developed and managed by Standard Setting Organizations.

• Standard Setting Organization ("SSO")
  – Set the specifications for the relevant standards;
  – Generally involve companies in the forefront of developing new technologies;
  – Generally do not determine whether a patent is essential to a standard;
  – Generally have disclosure requirements; and
  – Generally have licensing requirements based on Fair, Reasonable, and Non-discriminatory (F/RAND) terms.
  – SSOs are prevalent in various industries: (ETSI (telecom); SAE Automotive, IEEE (power, energy, ethernet, among others); W3C (world wide web); ISO / MPEG (audio / video compression); etc.)
“[C]ollaborative standards setting does not come without some risks. For example, when a standard incorporates patented technology owned by a participant in the standards-setting process, and the standard becomes established, it may be prohibitively difficult and expensive to switch to a different technology within the established standard or to a different standard entirely. As a result, the owner of that patented technology may gain market power and potentially take advantage of it by engaging in patent hold-up, which entails asserting the patent to exclude a competitor from a market or obtain a higher price for its use than would have been possible before the standard was set, when alternative technologies could have been chosen. This type of patent hold-up can cause other problems as well. For example, it may induce prospective implementers to postpone or avoid making commitments to a standardized technology or to make inefficient investments in developing and implementing a standard in an effort to protect themselves. Consumers of products implementing the standard could also be harmed to the extent that the hold-up generates unwarranted higher royalties and those royalties are passed on to consumers in the form of higher prices.
Section 4 Patents: “...SAE Technical Reports may include the known use of patent(s), including patent applications...provided that SAE receive assurance from the patent holder that it will license applicants under reasonable terms and conditions for the purpose of implementing the standard.” This assurance shall be a letter that is in the form of either:

A general disclaimer that the patentee will not enforce any of its present or future patent(s) whose claims would be necessarily infringed by implementation of the proposed SAE Technical Report against any person or entity implementing the mandatory provisions of the Technical Report to effect compliance or;

A statement that a license will be made available to all applicants without compensation or under reasonable rates, with reasonable terms and conditions that are demonstrably free of any unfair discrimination.”
"Courts and participants in industries governed by standards have not focused on the RAND issue until relatively recently. Indeed, Judge Robart’s opinion in the Microsoft case, which issued in April 2013, only a few months ago, represents the first judicial attempt to identify a RAND rate. Accordingly, there are few available comparable licenses that were negotiated in the RAND context. Until more RAND licenses are available..."
ILLUSTRATIVE TIMELINE:
SEP-RELATED OPINIONS

European Commission, “Licensing Terms of Standard Essential Patents,” 2017
Supplemented with other industry resources.
MOBILE TELECOM: CONVERGENCE OF TECHNOLOGIES
MOBILE TELECOM: INCUMBENTS VS. NEW ENTRANTS

Top 10 smartphone OEMs as of December 2016 are:

- Samsung
- Apple
- Huawei
- OPPO
- Vivo
- Lenovo
- Xiaomi
- LG
- Nokia
- Vivo

Statista, “Global Smartphone Shipments from 2007 to 2016,” 2017
Asymco, “First: Apple’s Rank in Mobile Phone Profitability and Revenues,” February 2012
“Many of the Company’s products are designed to include third-party intellectual property, and it may be necessary in the future to seek or renew licenses relating to various aspects of its products and business methods. Although the Company believes that, based on past experience and industry practice, such licenses generally could be obtained on commercially reasonable terms, there is no assurance that the necessary licenses would be available on acceptable terms or at all.

Because of technological changes in the global personal computer, consumer electronics and mobile communication industries, current extensive patent coverage, and the rapid issuance of new patents, it is possible that certain components of the Company’s products and business methods may unknowingly infringe the patents or other intellectual property rights of third parties. From time to time, the Company has been notified that it may be infringing such rights. In certain cases, the Company may consider the desirability of entering into licensing agreements, although no assurance can be given that such licenses can be obtained on acceptable terms or that litigation will not occur.”
MOBILE TELECOM: SMARTPHONE PATENT WARS

The "smartphone wars" began in 2009 when Nokia sued Apple for patent infringement of 10 patents. Apple countersued and litigation in the space took off.

Litigation activity among the large smartphone companies declines as cases settle and cross-licensing agreements are reached.

US patent infringement lawsuit → International Trade Commission complaint → International patent infringement lawsuit → Licensed patents from

Fig. 1 The Internal Combustion Engine

The Economist, “Roadkill,” August 2017
AUTOMOTIVE INDUSTRY: INCUMBENTS VS. NEW ENTRANTS

Total Global Vehicle Production

<table>
<thead>
<tr>
<th>Year</th>
<th>Electric</th>
<th>Hybrid</th>
<th>Internal Combustion Engine</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>25</td>
<td>25</td>
<td>50</td>
</tr>
<tr>
<td>2005</td>
<td>50</td>
<td>50</td>
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<td>2010</td>
<td>75</td>
<td>75</td>
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<td>2015</td>
<td>100</td>
<td>100</td>
<td>125</td>
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<td>2020</td>
<td>125</td>
<td>125</td>
<td>125</td>
</tr>
<tr>
<td>2025</td>
<td>125</td>
<td>125</td>
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</tbody>
</table>

PROJECTIONS

Market Cap

- Ford
- GM
- Tesla

$75 billion

WSJ, “Bill Ford Thinks His Company Lacks Vision – And That He Can Fix It,” August 2017
IHS Market (Forecast); Thomson Reuters (Market Cap)
AUTOMOTIVE INDUSTRY: INCUMBENTS VS. NEW ENTRANTS

Automotive incumbents

Automotive manufacturers

- TOYOTA
- MAZDA
- GM
- HYUNDAI
- VOLVO
- DAIMLER
- HONDA
- KIA

Automotive Suppliers

- DENSO
- BOSCH
- TRW
- Continental

Note: exemplary companies shown; not comprehensive

New entrants

Tech companies

- Google
- Apple
- CISCO
- SAMSUNG
- LG
- Microsoft
- Amazon
- IBM
- Facebook

Semiconductor companies

- Qualcomm
- Intel
- ARM
- Micron
- NVIDIA
- Avago
- Texas Instruments

Electric vehicle companies

- TESLA
- NIO
- Faraday Future
- Atieva

Ride sharing companies

- UBER
- Lyft
- DiDi

AUTOMOTIVE INDUSTRY: “DISRUPTIVE” TECHNOLOGIES

![Graphs showing the growth of connected cars, electric cars, self-driving cars, and shared cars globally.](image-url)
AUTOMOTIVE INDUSTRY:
CONVERGENCE TECHNOLOGIES

IAM, “Patents and Standards in the Auto Industry,” April 2017
AUTOMOTIVE INDUSTRY: PATENT LITIGATION LANDSCAPE

2012-2016 Automotive Patent Litigations by Entity

- Non-Practicing Entity
- Operating Company

2016 Automotive Litigation by Technology

- Multimedia/Infotainment: 34%
- Safety: 34%
- Conventional Vehicle Components: 14%
- Other: 7%
- Automotive Electronics: 7%
- Powertrain: 4%
The increasing integration of information and communication technologies in vehicles is creating new challenges for licensing patents in general and for negotiating royalty payments for standard-essential patents in particular. Interconnectivity across multiple devices and units relies on the specification of technology standards. Standards often frame innovative technologies and are subject to an increasing number of standard-essential patents (SEPs). The integration of highly patented standardized technologies creates economic risks for vehicle manufacturers.” - IAM, Patents and Standards in the Auto Industry (April 2017)

“The automotive industry has recognized the importance of gearing up to embrace a future where connected cars are commonplace in the innovative ecosystem of a 5G world and the Internet of Things. We are delighted in the vote of confidence Daimler and Hyundai Motor Company have shown in our growing coalition [the Fair Standards Alliance].” - Robert Pocknell, Chairman of the FSA (November 2016)
“Daimler has joined the FSA because we share the organization’s principles and values for a fairer and more balanced system of licensing for standard essential patents.” - Ralf Lamberti, Director of Intellectual Property, Trends & Innovation at Daimler (November 2016)

“Hyundai Motor Company is very pleased to share its vision and offer its support to the FSA. Hyundai is ready to dedicate itself to fair and reasonable SEP licensing practices, and looks forward to working with the growing membership of this important coalition as it works to improve the innovation ecosystem for large companies as well as SMEs for future generations.” - Director of IP Development Group at Hyundai. (November 2016)

“The auto industry is one of many sectors that continue to rapidly adopt new, patented technologies—for electric and autonomous vehicles; for audio and entertainment systems; for GPS, mapping, and communications; and for other “smart” systems. The owners of those many thousands of patents include inventors, giant tech companies, and entities that make a business of acquiring patents and using them to sue for infringement. And many have become more aggressive about protecting and exploiting their intellectual property.” — RPX (March 2017)
Licensing Assurance: “The licensing assurance shall be either:

a) A general disclaimer to the effect that the Submitter without conditions will not enforce any present or future Essential Patent Claims against any person or entity making, having made, using, selling, offering to sell, or importing any Compliant Implementation that practices the Essential Patent Claims for use in conforming with the IEEE Standard; or,

b) A statement that the Submitter will make available a license for Essential Patent Claims to an unrestricted number of Applicants on a worldwide basis without compensation or under Reasonable Rates, with other reasonable terms and conditions that are demonstrably free of any unfair discrimination to make, have made, use, sell, offer to sell, or import any Compliant Implementation that practices the Essential Patent Claims for use in conforming with the IEEE Standard. An Accepted LOA that contains such a statement signifies that reasonable terms and conditions, including without compensation or under Reasonable Rates, are sufficient compensation for a license to use those Essential Patent Claims and precludes seeking, or seeking to enforce, a Prohibitive Order except as provided in this policy.”
Reasonable Rate: “... shall mean appropriate compensation to the patent holder for the practice of an Essential Patent Claim excluding the value, if any, resulting from the inclusion of that Essential Patent Claim’s technology in the IEEE Standard. In addition, determination of such Reasonable Rates should include, but need not be limited to, the consideration of:

• The value that the functionality of the claimed invention or inventive feature within the Essential Patent Claim contributes to the value of the relevant functionality of the smallest saleable Compliant Implementation that practices the Essential Patent Claim.

• The value that the Essential Patent Claim contributes to the smallest saleable Compliant Implementation that practices that claim, in light of the value contributed by all Essential Patent Claims for the same IEEE Standard practiced in that Compliant Implementation.

• Existing licenses covering use of the Essential Patent Claim, where such licenses were not obtained under the explicit or implicit threat of a Prohibitive Order, and where the circumstances and resulting licenses are otherwise sufficiently comparable to the circumstances of the contemplated license.”
Prohibitive Orders: “The Submitter of an Accepted LOA who has committed to make available a license for one or more Essential Patent Claims agrees that it shall neither seek nor seek to enforce a Prohibitive Order [defined as: ‘an interim or permanent injunction, exclusion order, or similar adjudicative directive’] based on such Essential Patent Claim(s) in a jurisdiction unless the implementer fails to participate in, or to comply with the outcome of, an adjudication, including an affirming first-level appellate review, if sought by any party within applicable deadlines, in that jurisdiction by one or more courts that have the authority to: determine Reasonable Rates and other reasonable terms and conditions; adjudicate patent validity, enforceability, essentiality, and infringement; award monetary damages; and resolve any defenses and counterclaims.

Arbitrations: “Nothing in this policy shall preclude a Submitter and an implementer from agreeing to arbitrate over patent validity, enforceability, essentiality, or infringement; Reasonable Rates or other reasonable licensing terms and conditions; compensation for unpaid past royalties or a future royalty rate; any defenses or counterclaims; reciprocal obligations; or any other issues that the parties choose to arbitrate.”
IEEE is Not Responsible: “for:

1. **Identifying Essential Patent Claims** for which a license may be required;

2. **Determining the validity, essentiality, or interpretation** of Patent Claims;

3. **Determining whether any licensing terms or conditions** provided in connection with submission of a Letter of Assurance, if any, or in any licensing agreements are **reasonable or non-discriminatory**; or,

4. **Determining whether an implementation is a Compliant Implementation.**”

**Assignments:** “An Accepted Letter of Assurance is intended to be **binding upon any and all assignees and transferees of any Essential Patent Claim covered by such LOA.**”

**Non-SEPs:** “The **Submitter shall not condition a license on the Applicant’s agreeing (a) to grant a license to any of the Applicant’s Patent Claims that are not Essential Patent Claims for the referenced IEEE standard, or (b) to take a license for any of the Submitter’s Patent Claims that are not Essential Patent Claims for the referenced IEEE standard.”
ILLUSTRATIVE TIMELINE:
SEP-RELATED OPINIONS

Microsoft v. Motorola (U.S. District Court)
Vringo v. ZTE (U.K. High Court)
In re. Innovatio (U.S. District Court)
ZTE v. Vringo (Germany District Court)
Korean Fair Trade Commission v. Samsung (Korean KFTC)
CSIRO v. Cisco (U.S. District Court)
St. Lawrence v. Deutsche Telekom (Germany District Court)
IPCom v. HTC (U.K. High Court)
Unwired Planet v. Huawei, et al. (U.K. High Court)
Sisvel v. Haier (Germany District Court)
Sisvel v. Haier (Germany Court of Appeals)

2013
Apr. Huawei v. InterDigital (China Shenzhen Court)
Jun. Ericsson v. D-Link (U.S. District Court)
Sept. Huawei v. InterDigital (China Higher People's Court)
Dec. Ericsson v. TCT Mobile (France District Court)
2014
Feb. Realtek v. LSI (U.S. District Court)
Apr. GPNE Corp v. Apple (U.S. District Court)
May. Apple v. Samsung (Japan High Court)
2015
Apr. Core Wireless v. LG Electronics (France District Court)
Jul. Huawei v. ZTE (Court of Justice of the E.U.)
2016
Jan. Unwired Planet v. Samsung (Germany District Court)
Mar. St. Lawrence v. Vodafone (Germany District Court)
May St. Lawrence v. Vodafone (Germany Court of Appeal)
2017
Apr. Unwired Planet v. Huawei (U.K. High Court)

European Commission, “Licensing Terms of Standard Essential Patents,” 2017
Supplemented with other industry resources.
“A RAND Royalty should be set at a level consistent with the SSOs’ goal of promoting widespread adoption of their standards. In the context of a dispute concerning whether or not a given royalty is RAND, a proper methodology used to determine a RAND royalty should therefore recognize and seek to mitigate the risk of patent hold-up that RAND commitments are intended to avoid. Likewise, a proper methodology for determining a RAND royalty should address the risk of royalty stacking by considering the aggregate royalties that would apply if other SEP holders made royalty demands of the implementer.”

“The court should instruct the jury on the actual RAND commitment at issue and must be cautious not to instruct the jury on any factors that are not relevant to the record developed at trial… We also conclude that, if an accused infringer wants an instruction on patent hold-up and royalty stacking, it must provide evidence on the record of patent hold-up and royalty stacking in relation to both the RAND commitment at issue and the specific technology referenced therein.”
“The court must, however, not consider the effect of standardization when evaluating the ex ante negotiation… Indeed, those parameters are necessary to avoid capturing the value of the standard itself in the royalty resulting from the hypothetical negotiation, rather than just the value of the underlying technology in the asserted patents.”

“We therefore reaffirm that reasonable royalties for SEPs generally—and not only those subject to a RAND commitment—must not include any value flowing to the patent from the standard’s adoption.”

“In sum, the district court erred in failing to account for value accruing to the ’069 patent from the standard’s adoption. This error manifests in at least two parts: (1) in its discussion of the Georgia-Pacific factors, and (2) in its adoption of the parties’ informally offered royalty rates… we must vacate the district court’s damages award and remand for a new determination of a reasonable royalty.”
“Just as we apportion damages for a patent that covers a small part of a device, we must also apportion damages for SEPs that cover only a small part of a standard. In other words, a royalty award for a SEP must be apportioned to the value of the patented invention (or at least to the approximate value thereof), not the value of the standard as a whole. A jury must be instructed accordingly.”

“GPNE must make some attempt to distinguish the allegedly infringing features of 3G and 4G LTE from the non-infringing features, so that [GPNE Expert] may apportion value between them. Without a methodology, an explicit apportionment analysis, or an explanation of why apportionment is inappropriate, cross-examination is futile.”

Ericsson v. D-Link, 773 F.3d 1201 (Fed. Cir. December 2014)

GPNE Corp. v Apple Inc., US D.C.N.D.C., April 2014
“To the extent that the district court applied a per se rule that injunctions are unavailable for SEPs, it erred. A patentee subject to FRAND commitments may have difficulty establishing irreparable harm. On the other hand, an injunction may be justified where an infringer unilaterally refuses a FRAND royalty or unreasonably delays negotiations to the same effect.”

“The relevant patents have been found valid and infringed. Unwired Planet wish to enter into a worldwide licence. Huawei is willing to enter into a UK portfolio licence but refuses to enter into a worldwide licence. However a worldwide licence is FRAND and Unwired Planet are entitled to insist on it. In this case a UK only licence would not be FRAND. An injunction ought to be granted because Huawei stand before the court without a licence but have the means to become licensed open to them.”
KEY TAKE AWAYS

• The automotive industry is experiencing a convergence of technologies.

• This is similar to what the mobile telecommunications market experienced during the relatively recent smartphone evolution.

• Certain F/RAND policies, commitments, and compliance issues have been addressed by the courts in the U.S. and worldwide.

• There are potential challenges to traditional licensing models and practices (e.g., F/RAND encumbered patents, licensing at F/RAND rates, consideration of SSPPU, and consideration of per unit and/or flat royalty rates (Avanci)) that the automotive industry may need to assess in the near-future.

*Avanci, “Accelerating LoT Connectivity,” January 2016
The concepts, theories and examples covered by this presentation are for discussion purposes only and are not intended to be all-inclusive on the topics addressed herein. These concepts, theories and examples are merely illustrative and do not necessarily represent what the presenters or their employers would recommend or endorse in any particular case.

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