



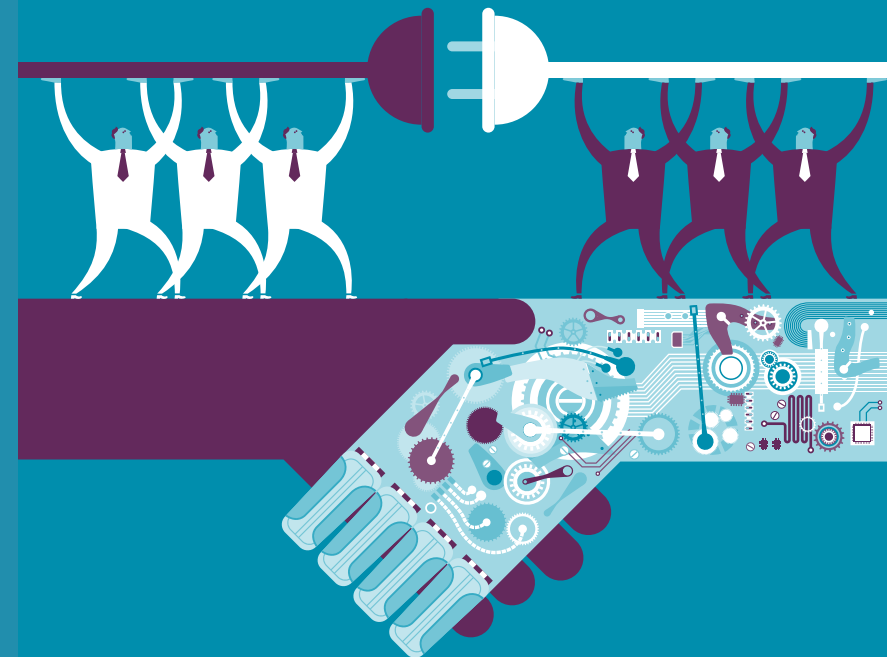
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Solution in Search of a Problem: Licensing Negotiation Groups in the Internet of Things

Host: Dr. Claudia Tapia, Chair of 4iP Council

Presenters:

- Prof. Jonathan M. Barnett
- Dr. Justus A. Baron



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For SMEs:

Which types of intellectual property do you need?

Filter table columns

?	B PATENTS	C COPYRIGHTS	S TRADE SECRETS	R TRADE MARKS
What do they protect?	An invention (idea and process) you're doing something or selling a machine product. See more	A creative original intellectual creation. See more	A secret that original intellectual creation of product. See more	A sign that distinguishes goods or services. See more
Examples of what is protected	Machine product or process, chemical or pharmaceutical product, computer program, etc. See more	Books, music, films, software, etc. See more	Secrets, formulas, processes, etc. See more	Logos, slogans, etc. See more
How are they rights protected?	Automatic protection upon creation of the intellectual property. See more	Automatic protection upon creation of the intellectual property. See more	Automatic protection upon creation of the intellectual property. See more	Automatic protection upon creation of the intellectual property. See more
How long is my protection period?	Up to 20 years. See more	Up to 70 years. See more	Up to 20 years. See more	Up to 10 years. See more
Do I have to register it?	Yes, filing an application is required. See more	No, but registration is recommended. See more	No, but registration is recommended. See more	Yes, filing an application is required. See more



2 - NEGOTIATING
3 - FUNDING
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European Court Decisions:



Case Law post CJEU ruling *Huawei v ZTE*

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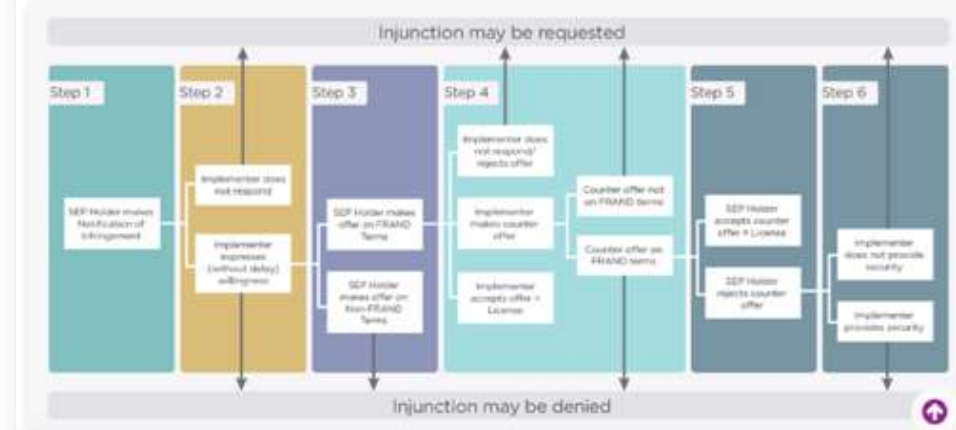
National Courts Guidance

Negotiating Licenses for Essential Patents in Europe

Increased clarity provided on the principles established by the Court of Justice of the European Union in *Huawei v ZTE*.

The Court of Justice of the European Union clarified, in *Huawei v ZTE* (Case No. C-170/13), European law relating to the availability of injunctive relief for infringements of FRAND-based standard essential patents. In doing so, the Court provided a legal framework focused on the good faith conduct to be expected of both parties. Since

Huawei v ZTE process



Webinar 'Licensing Negotiation Groups: what, why, how?' with Igor Nikolic and Haris Tsilikas



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Licensing Negotiation Groups: what, why, how?

AIP COUNCIL WEBINAR



DR. IGOR NIKOLIC
Research Fellow at European University Institute, PhD from University College London. Recent book: 'Licensing Standard Essential Patents, FRAND and the Internet of Things' (Hart Publishing 2021).

Tuesday, 23 November 2021
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Webinar + Q&A



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Paper by Igor Nikolic: Licensing Negotiation Groups For SEPs

Collusive Technology Buyers Arrangements

Licensing Negotiation Groups For SEPs: Collusive Technology Buyers Arrangements? Their Pitfalls And Reasonable Alternatives

by Igor Nikolic

Abstract

One of the experts within the European Commission's Standard Essential Patents (SEP) Expert Group proposed the formation of licensing negotiation groups (LNGs) by implementers to collectively negotiate with SEP owners and patent pools. Accordingly, LNGs could be used for a more efficient SEP licensing process, particularly relevant in the Internet of Things (IoT) with increasingly more interdependencies among the market. This article examines how LNGs could work in practice and raises concerns about LNGs forcing into hidden buyers' cartels creating an industry-wide collective holdout. As a first restrictive alternative, this article explores how using patent pools and other similar licensing structures that aggregate complementary SEPs and provide a one-stop shop for licensing already enable the efficiency and transaction cost savings in the IoT with no harmful anti-competitive effects. By gathering inputs from its absolute implementers before the formation of royalty programs, some licensing platforms can ensure that implementers are consulted and participate in royalty formulations without the risk of collective cartels.

1. Introduction—SEP Licensing Challenges in the IoT

The Internet of Things brings connectivity between different objects allowing them to communicate with each other and the environment. We enjoy cars,¹ domestic appliances, buildings, healthcare devices,² manufacturing machines and, in the near future, cities, all connected to the Internet with the ability to interact with each other and with the users. Devices and

services are getting "smarter." Already around 10 billion devices are estimated to have connectivity, which is expected to rise to as much as 25 billion by 2025.³ The economic impact of the IoT will be enormous, with an estimated growth of as much as \$11.1 trillion per year in 2025,⁴ and \$12.3 trillion by 2035.⁵

Connectivity is largely expected to be facilitated by cellular communication standards, in particular by 5G. The 5G standard will be up to 100 times faster than the existing 4G/LTE,⁶ with end-to-end latency going down to one millisecond, which may support a broad variety of applications, such as remote surgery or the emergence of self-driving cars that depend on uninterrupted and immediate transmission of data. 5G and other standards that enable interoperability are estimated to represent 40 percent of the potential value of the IoT.⁷ Moreover, the IoT will also use many different standards related to, for example, quality and security, cooperation between IoT devices and cloud-based services and standards within IoT devices.⁸

The IoT, however, creates new challenges for licensing standard essential patents (SEPs), i.e., patented inventions that are necessary to comply with a standard implemented in a product or service. The current

1. European Commission, "Internet of Things: The Role of Standards," IP/15/1011 (10 Feb. 2015).

2. S. A. A. A., "The Role of Standardized Technology in Connected Cars," (2018) 4941 QM/18, 355-378.

3. C. C. C. C., "The Internet of Things: The Role of Standards," (2018) 4941 QM/18, 355-378.

4. S. A. A. A., "The Role of Standardized Technology in Connected Cars," (2018) 4941 QM/18, 355-378.

5. S. A. A. A., "The Role of Standardized Technology in Connected Cars," (2018) 4941 QM/18, 355-378.

6. S. A. A. A., "The Role of Standardized Technology in Connected Cars," (2018) 4941 QM/18, 355-378.

7. S. A. A. A., "The Role of Standardized Technology in Connected Cars," (2018) 4941 QM/18, 355-378.

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Solution in Search of a Problem: Licensing Negotiation Groups in the Internet of Things



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Agenda

Proposed “Problem” and “Solution”

Assessing the “Problem”: Theory v.
Evidence Concerning Alleged Market
Failures in SEP Licensing

Assessing the “Solution”: Competitive
Harms v. Gains from Licensing Negotiation
Groups in SEP-Enabled Markets

The “Problem(s)”

- Assumption: SEP licensors are monopolists with unrestrained rate-setting power.
- Problem 1: SEP licensing markets are therefore prone to “patent holdup” since implementers are locked into the standard and SEP owners can set royalty rates at will.
- Problem 2: Assuming each SEP owner has pricing power, a “royalty stack” will develop, resulting in aggregate royalties that limit adoption, stunt market growth, and discourage entry.

The “Solution”

- Assuming SEP licensing markets are prone to holdup and stacking, these problems will worsen in the Internet of Things b/c the number of licensees and licensing relationships will multiply: C2C, B2C, B2B, C2M, B2M, M2M.
- Transaction costs > transaction gains → the IoT stalls.
- Solution: Allow licensees to act collectively and form negotiation groups when interacting with SEP licensors. This will enable “one-stop-shopping”, reducing transaction costs and lowering royalty rates.

Assessing the “Problem”

- If the holdup and stacking theories are correct, then cellular and smartphone markets (2G/GSM through 4G/LTE) should have experienced slow growth, limited adoption, delayed innovation, and increasing prices.
- Actual cellular and smartphone markets have exhibited rapid adoption rates, exceptional growth, continuous innovation, and declining quality-adjusted prices (Gupta and Galetovic 2020, Galetovic et al. 2015).
- All empirical studies of aggregate royalty rates in SEP-intensive markets reach estimates of 3.5% to 5.5% of the average device price. Additionally, these rates are constant over time (Galetovic et al. 2018, Dedrick & Kraemer 2017, Sidak 2016, Mallinson 2016).

Interpreting the Evidence

- All available evidence disfavors the market failure hypothesis. Why?
- **Error 1:** Holdup and stacking theories rely on a “single-period” payoff maximization model. But SEP licensors are repeat players that seek to maximize expected returns on R&D investment over iterative technology generations (3G, 4G/LTE, 5G . . .).
- **Error 2:** SEP licensors bargain under asymmetric conditions that favor licensees. Licensors incur all R&D costs prior to potential standard adoption while branded licensees control market access and enjoy technology access. Even after standard adoption, licensors must accrue goodwill to elicit adoption of future standards.

Assessing the “Solution”

- Competition policy presumptively disfavors collective purchasing groups because they can enable coordination on price or price-related inputs. This can give rise to pricing distortions relative to competitive market conditions.
- Illustration: Suppose retailers form a buyer group to negotiate with suppliers.
 - Distortion 1: Prices paid to suppliers are pushed below competitive levels, causing suppliers to reduce output. Output encompasses R&D expenditures.
 - Distortion 2: If retailers have market power, they pocket the cost-savings from reduced input costs and may also coordinate on prices offered to consumers.
- The presumption against buying groups can be overturned under certain conditions.

Arguments for Licensing Negotiation Groups

- **Argument 1:** LNGs would protect SEP licensing markets from market failure due to holdup and stacking effects.
- **Argument 2:** LNGs would protect SEP licensing markets from market failure due to transaction costs in “large-number” environments.
- Based on three decades of SEP licensing in wireless device markets, neither form of market failure is likely. **Are 5G/IoT markets different?**

Preliminary Evidence: 5G/IoT SEP Licensing Markets

Wireless communications
devices

Automotive/mobility

SMEs (small and medium-
sized enterprises)

Wireless device and automotive markets



- Wireless device markets exhibit no apparent difference in licensing practices for 5G as compared to 3G and 4G/LTE. This is a small-numbers environment with repeat-play licensors and licensees.
- At the OEM level, the automotive market exhibits similar characteristics. Therefore the risk of market failure is similarly low.
- Preliminarily the automotive market is converging on the OEM-level licensing practices developed in the wireless device market. Upstream suppliers are protected by “have made” rights and SEP owners’ implicit waiver of patent rights at any point on the supply chain above the OEM.

SEP Licensing in the Automotive Market (bilateral only)

Announcement Date	Licensor	Licensee	Licensing level
October 2020	Sharp	Daimler	OEM
July 2020	Sharp	Huawei	Component-level
June 2021	Nokia	Daimler	OEM
July 2021	Huawei	Tier 1 supplier to Volkswagen	Tier 1 supplier (restricted to specified OEM)
January 2022	Qualcomm	Volvo	OEM
January 2022	Qualcomm	Honda	OEM
January 2022	Qualcomm	Renault	OEM

Are LNGs necessary to mitigate transaction costs in SME licensing markets?

- Currently “stand-alone” SME licensing markets are mostly hypothetical. If meaningfully developed, this would be a large-number environment potentially exposed to “patent thickets” that obstruct efficient licensing.
- But “patent thicket” claims have generally not been validated under empirical scrutiny: radio communications (Barnett 2015, Howells & Katznelson 2014), aircraft (Katznelson and Howells 2015, Barnett 2015), automotive (Barnett 2015), information technology (Barnett 2014), and biotechnology (Adelman and DeAngelis 2007).
- Consistent finding: markets anticipate, mitigate, or resolve thickets through cross-licensing, pooling and other transactional innovations.

Do LNGs Pass a “Least-Cost” Test?

- Assume SMEs do suffer from significant transaction costs due to large numbers of SEP licensors and licensees.
- LNGs must still pass a “least-cost” test: **Is there another means to achieve transaction-cost savings at a lower risk of competitive harm?**
- Yes. ITC markets already use patent pools to achieve “one stop shopping”, matching tens of licensors with hundreds of licensees. Compared to LNGs, patent pools avoid transaction costs at a lower risk of competitive harm.

Selected Patent Pools in ICT Markets

Standard	Pooling Entity	Technology/product category
MPEG-2	MPEG-LA	Video codec
H.264	MPEG-LA	Video codec
HEVC	MPEG-LA	Video codec
DVB-T	SISVEL	Digital television
AAC	Via Licensing	Audio codec
MPEG Audio	Via Licensing	Audio codec
Wi-Fi (802.11)	Via Licensing	Wireless local area networks (LAN)
Blu-ray	One-Blue	Blu-ray discs and players
Blu-ray	Premier BD	Same

Modern Patent Pools: Standard Characteristics

- Independent administrator.
- Administrator has no economic stake in any downstream product market.
- Administrator secures licensor and licensee adoption by setting “reasonable” rates. This grows the market and promotes the administrator’s fee revenue.
- Administrator is a repeat player that has an incentive to accrue reputational capital among licensors and licensees.
- Licensors are sometimes “net licensees” and have an interest in lowering rates.

Avanci Licensing Platform

Adopts modern patent pool template for 3G and 4G/LTE licensing in the automotive market. Uses more complex royalty allocation formula to reflect value differences among licensors.

Since 2016, secured adoption by most high-value SEP licensors and significant number of automotive OEMs.

2020: After issuance of DOJ business review letter, Avanci launched licensing platform for 5G/IoT.

Main Points

Three decades of SEP licensing in wireless devices do not support predicted market failures. There is no reason to believe that 5G SEP licensing in wireless device and automotive markets would perform differently.

Buyer coordination always poses an inherent risk of competitive harm and can only be justified if it can achieve transaction-cost efficiencies without significant risk of upstream or downstream pricing distortions.

Even if LNGs can achieve transaction-cost efficiencies in SME licensing markets, independently administered pools can achieve the same objective at a lower risk of competitive harm.

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Thank You!

Q&A

Forthcoming Webinar:

Date	Title	Summary
17-02-2022	Anti-Suit and Anti-Anti-Suit Injunctions in SEP litigation, with Dr. Igor Nikolic	The jurisdictional battles with ASIs and AASIs has negative consequences on SEP licensing. The situation calls for a framework that would focus the parties on resolving the key issue behind every SEP dispute.



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