Japan Fair Trade Commission (JFTC) Competition Policy Research Centre (CPRC)

Digital Economy and Competition Law and Policies

Osaka, Japan

Determining FRAND Royalty Rates in a Global Market

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Interoperability Standards

Standards Development Ecosystem

Standards Development Organizations (SDOs) or Standard Setting Organizations (SSOs)

=

- Apple
- AT&T
- Broadcom
- Cisco
- Ericsson
- Intel
- Juniper
- Microsoft
- Motorola
- Nokia
- Qualcomm
- Sony
- Toshiba
- ZTE
- etc, etc.

Patent “stacking” and standards

- IEEE 802.11 (Wi-Fi networking)
  - 3000 patents
- ETSI GSM (2G mobile telephony)
  - 4700 patents
- ETSI UMTS (3G mobile telephony)
  - 7,700 patents

***251* Standards**

Blind (2011), Innovatio (2013), Biddle et al (2011)

How SDOs attempt to address hold-up and stacking

- **Disclosure Policies**
  - SDO participants must disclose essential patents prior to approval
- **Licensing Policies**
  - SDO participants commit to license essential patents on terms that are royalty-free (RF) or Fair, Reasonable and Nondiscriminatory (FRAND)

Typical FRAND Language

A holder of standards-essential patents must offer all implementers of the standard "reasonable terms and conditions that are demonstrably free of any unfair discrimination"

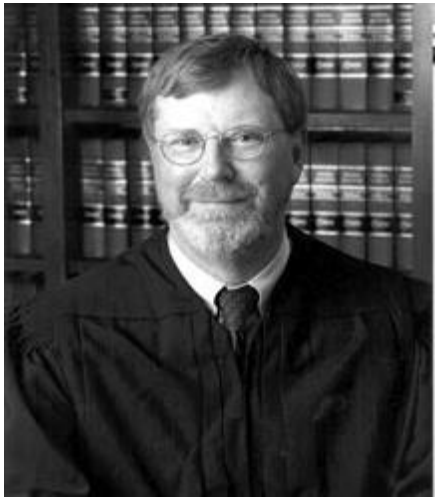
ANSI Essential Requirements, Sec. 3.1.1.b

FRAND Royalty Disputes

- Single rate vs. range
- Top-down vs. bottom-up
- Royalty rate
- Royalty base (EMVR v. SSPPU)
- Comparable licenses
- Patent counting vs. individual valuation
- Ex ante vs. ex post

Major Cases Calculating FRAND Royalties

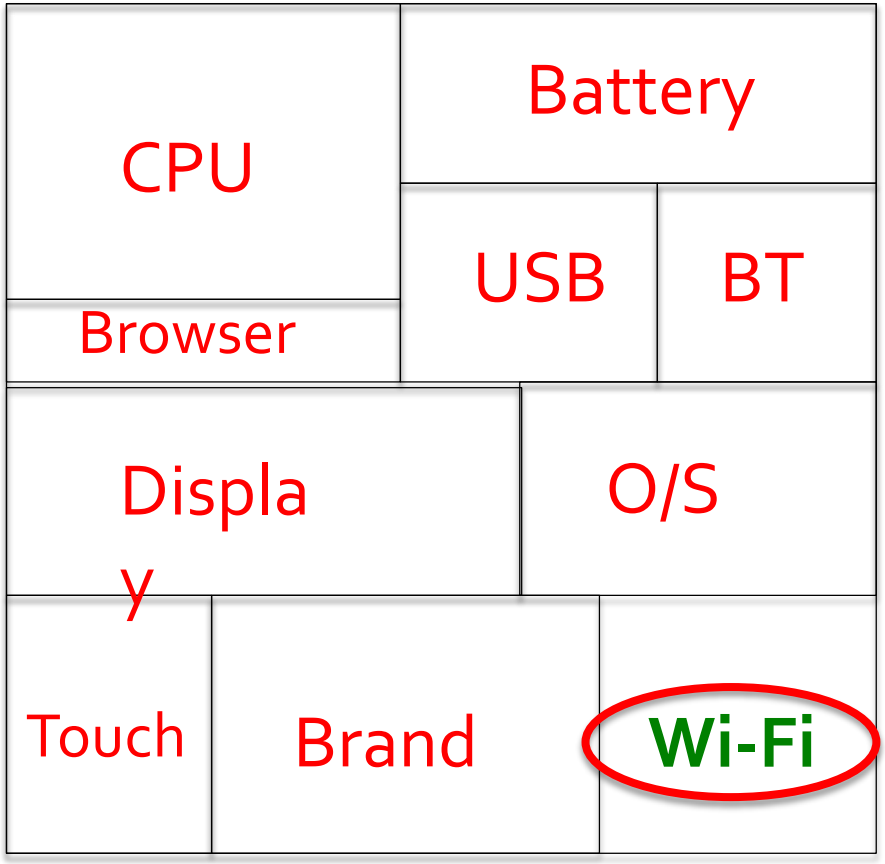
- US
  - *Microsoft v. Motorola*
  - *Innovatio*
  - *Ericsson v. D-Link*
  - *Realtek v. LSI*
  - *CSIRO v. Cisco*
  - *TCL v. Ericsson*
- UK
  - *Unwired Planet v. Huawei*
- Japan
  - *Apple Japan v. Samsung*
- China
  - *InterDigital v. Huawei*



Judge James Robart

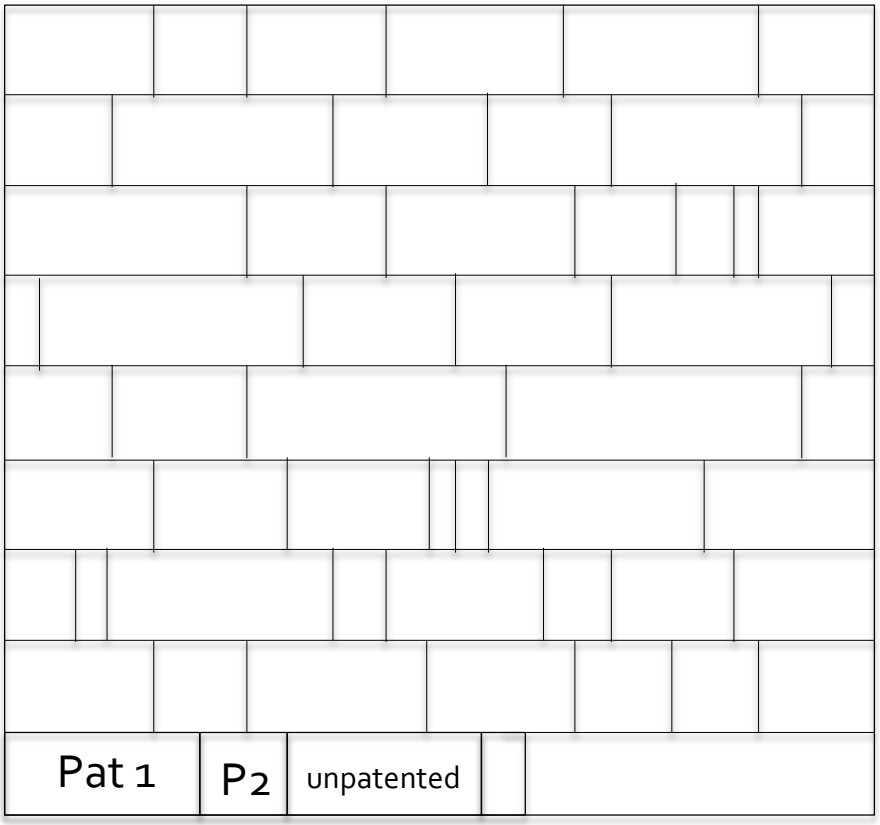
Colin Birss, J.

Bottom-Up Royalty Calculations



Laptop Computer:
Total Value

Bottom-Up Calculation in a Perfect World



Wi-Fi Functionality: Total Value

(3000 patents)

Build up total value case by case

Actual Bottom-Up Calculation

Wi-Fi Functionality: Total Value

(3000 patents)

Problems with Bottom-Up FRAND Royalty Calculations

- Every patentee makes an independent case for the level of FRAND royalties
- No coordination among patentees/cases/courts, and theories/approaches/evidence/results may differ case by case, even for same standard
- Proving value of all other patents covering standard is defendant's burden (further hindered by incomplete information)
- All patents are "above average"
- Total aggregate royalties attributable to standard are likely to exceed actual value of standardized feature

Real life example of bottom-up rate calculations

FRAND Rate Determinations for IEEE 802.11 Wi-Fi Standards

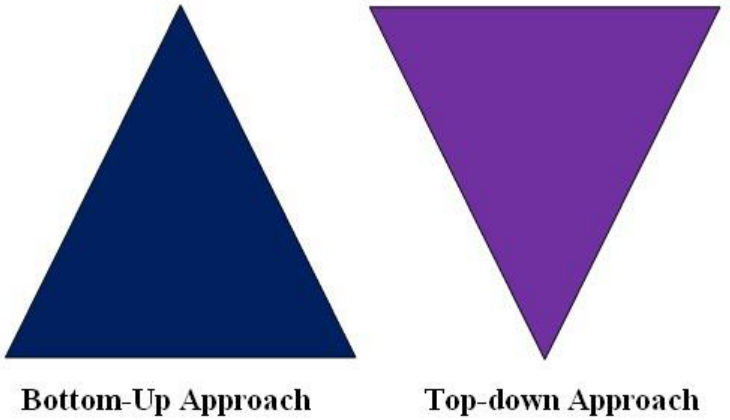
Case	Court	Royalty
In re Innovatio[110]	N.D. Ill.	$0.0956 per unit
Realtek v. LSI[111]	N.D. Cal.	0.12% of net sales
Ericsson v. D-Link[112]	E.D. Tex.	$0.15 per unit
CSIRO v. Cisco[113]	E.D. Tex.	Up to $1.90 per unit
Microsoft v. Motorola[114]	W.D. Wash.	$0.035 per unit

- 35 out of 3,000 patents
- 4.5% combined royalty

Bottom-Up vs. Top-Down

- **Bottom-up** royalty determinations for heavily stacked standards DO NOT WORK

- **Top-Down** approaches are better
  - Establish total aggregate value attributable to standard
  - Allocate appropriate share to each patent holder



Advantages of *Top-Down* Royalty Calculation

- ***Accuracy*** - Total value attributable to standard is computed deliberately, not thru aggregation of independent, serial cases
- ***Fairness to patentees*** – every patentee can participate in the aggregate and share determination; eliminates inequities due to forum/timing of suit
- ***Fairness to licensees*** – payment consistency among competitors, superior planning opportunities
- ***Precedent*** – this is already done with patent pools and group pledge commitments

Support for Top-Down Methods

"the determination of a [F]RAND royalty must address the risk of royalty stacking by considering the aggregate royalties that would apply if other [SEP] holders made royalty demands of the implementer."

-- *Innovatio* (N.D. Ill. 2013)

"to avoid royalty stacking, in defining a FRAND value, an individual SEP cannot be considered in isolation. Parties need to take into account a reasonable ***aggregate rate*** for the standard, assessing the overall added value of the technology"

-- EC Communication on SEPs (Nov. 2017)

Courts have already begun to adopt top-down approaches

- ***Innovatio*** (U.S. – N.D. Ill. 2013)
- ***Apple Japan v. Samsung*** (Japan – IP High Ct. 2014)
- ***Unwired Planet v. Huawei*** (UK –EWHC 2017)
- ***TCL v. Ericsson*** (US - C.D. Cal. 2018)

Apple Japan v. Samsung Methodology

5% aggregate royalty for ETSI's 3G UMTS standard

- Based on four **public statements** and informal agreements among industry participants relating to an aggregate 5% royalty cap for UMTS SEPs

- Court: "many owners of the UMTS standard essential patents support the 5% aggregate royalty cap with a view to preventing the aggregate cap from being excessively high."

Unwired Planet Top-Down Methodology

Used as "cross-check" for comparables-based methodology

Aggregate Rate

- Based on 8 public statements by SEP holders
- Total royalty for standards should be 3%-8%

Allocation among SEPs

- "counting patents is inevitable "

Problems with current top-down methods

- No recognized single top-down approach
  - Different courts, different methods
- **Evidence** used is not robust
  - Manufacturer profits not translatable to multi-standard products
  - SEP holder public statements may be imprecise, "self-serving"
- One court's determination not binding on others

Unwired Planet and Global FRAND Rates

- UK Court required Huawei to accept a *worldwide* license
  - Huawei only wanted a UK license
  - But if Huawei refused, injunction in UK would issue
- UK court can thus force a *worldwide* deal
  - "a licensor and licensee acting reasonably and on a willing basis would agree on a worldwide licence." To do otherwise would be "madness"

Global FRAND Rates and the Race to the Bottom?

- If a UK court can force a global FRAND rate, so can **any other country**
  - Any country with a sufficient domestic market to threaten parties with a national injunction
    - U.S., UK, Germany, France, Japan, China, Korea, India, etc.
- Race to the courthouse?
  - Parties race to file suit in a favorable country
- Race to the bottom?
  - Countries compete to offer FRAND terms favorable to one side or the other

Review: How FRAND is decided today

- **Bilateral negotiation**
  - Bottom-up
  - Information asymmetry
  - Confidentiality → non-transparency of rates
  - Uncoordinated rate determinations → stacking
- **Bilateral Arbitration**
  - Bottom-up
  - Confidentiality → non-transparency of rates
  - Uncoordinated rate determinations → stacking
- **Litigation**
  - Can be top-down or bottom-up
  - But result only binding on parties
  - Uncoordinated rate determinations → stacking
  - Global race to the courthouse?

Question

- What is the optimal venue for calculating FRAND royalty rates, given:
  - Global nature of SEP licenses
  - Inability of parties to efficiently reach bilateral agreement
  - Superiority of top-down over bottom-up approaches

Group Agreement on Aggregate Royalties?

- SDO participants (including SEP holders) are in the best position to determine aggregate rates and allocation
  - Not courts or regulators
- Continue to prohibit price fixing, market allocation and other anticompetitive discussions
- Other antitrust risks are low
  - Standardization itself is a collaborative effort
  - Price is an important element of the viability and desirability of a standard
  - US DOJ, FTC and EC have confirmed this
    - ex ante joint negotiation of SEP licensing terms has "the strong potential for procompetitive benefits" (DOJ-FTC 2007)

Why Collectivized Top-Down Approaches Have Not Yet Worked

- Collective rate ***negotiation*** (aggregate cap and allocation) at SDO, but…
  - Fears of antitrust liability
  - Not supported by SEP holders

- Collective rate ***litigation*** (interpleader), but…
  - Expensive
  - Not all SEP holders are in jurisdiction
  - Late in process
  - Only binds litigants

A role for state intervention?

Japanese Study Group Report: *The IP System for the Fourth Industrial Revolution* (Apr. 2017)

- "the government will consider introducing an ADR system (licensing award system for SEPs) designed to deal with disputes on licensing of SEPs, which have a significant influence on society"

Agency rate setting could address stacking issues

- Allows collective action when parties are unwilling to negotiate collectively
- Avoids complex judicial proceeding
- Precedent from other industries (copyright, utility)
- Binding on parties by law
- Information gathering and public hearings, plus appeal route, satisfy procedural due process

BUT which country?

A thought experiment

What if global FRAND rates could be determined by a single non-governmental arbitration tribunal?

- Reduce litigation costs for parties
- Reduce market uncertainty
- Reduce opportunities for hold-up and holdout
- Ensure fair (Non-discriminatory) treatment for all
- Include evidence from all SEP holders
- Avoid jurisdictional gamesmanship/race to the bottom
- Centralized rate setting is not uncommon (copyright, utilities, transport, etc.)

Weak and Strong Versions

- **Strong version**
  - Tribunal is the mandatory vehicle for adjudicating FRAND disputes
  - Requirement imposed by:
    - Treaty and national law [?]
    - SDO policies

- **Weak version**
  - Tribunal is available for parties to use
  - Non-mandatory
    - But possibly encouraged (e.g., antitrust safe harbor)
  - With sufficient take-up, courts may respect determinations as industry norm
    - Even for outsider claims

Conclusions

- Top-down royalty determination for SEPs is preferable to bottom-up
  - Avoids royalty stacking and inconsistent methods
- But ability of *any* national court to set global FRAND rates is risky
- Establishment of a single international global FRAND arbitration tribunal would offer benefits
  - Top-down determination
  - Single venue for resolution
  - Treats all SEP holders and implementers consistently
  - Considers evidence from all SEP holders
  - Significant reduction of litigation
  - Avoids jurisdictional competition

Further Reading

- Bartlett JR, Contreras, JL. *Rationalizing FRAND Royalties: Can Interpleader Save the Internet of Things?*, 36 REV. LITIG. 285-334 (2017), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2847599
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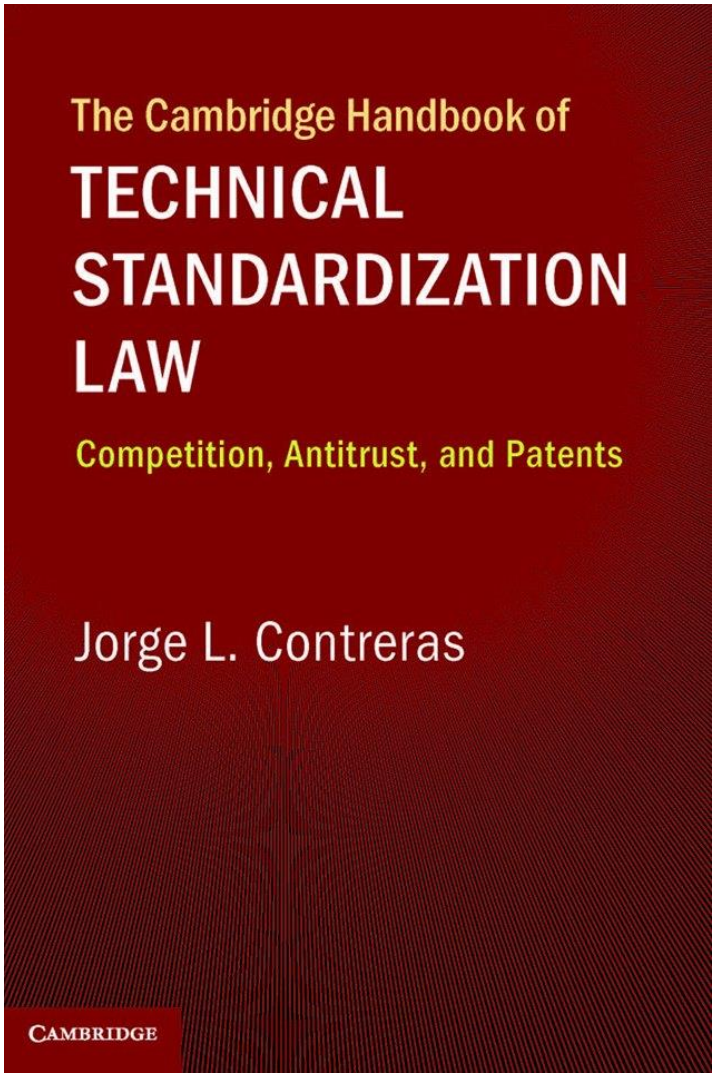

https://www.cambridge.org/core/books/cambridge-handbook-of-technical-standardization-law/0EC1655CDF81AF05BF8726C0904C3362

Thank you!

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