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

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)
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.
<table>
<thead>
<tr>
<th>CPU</th>
<th>Battery</th>
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<td>USB</td>
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<tr>
<td>Browser</td>
<td>BT</td>
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<td>Display</td>
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<tr>
<td>Touch</td>
<td>Brand</td>
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<tr>
<td>Wi-Fi</td>
<td>Wi-Fi</td>
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</tbody>
</table>

Laptop Computer: Total Value
## Bottom-Up Calculation in a Perfect World

### Wi-Fi Functionality: Total Value

(3000 patents)

<table>
<thead>
<tr>
<th>Pat 1</th>
<th>P2</th>
<th>unpatented</th>
</tr>
</thead>
</table>

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

<table>
<thead>
<tr>
<th>Case</th>
<th>Court</th>
<th>Royalty</th>
</tr>
</thead>
<tbody>
<tr>
<td>In re Innovatio</td>
<td>N.D. Ill.</td>
<td>$0.0956 per unit</td>
</tr>
<tr>
<td>Realtek v. LSI</td>
<td>N.D. Cal.</td>
<td>0.12% of net sales</td>
</tr>
<tr>
<td>Ericsson v. D-Link</td>
<td>E.D. Tex.</td>
<td>$0.15 per unit</td>
</tr>
<tr>
<td>CSIRO v. Cisco</td>
<td>E.D. Tex.</td>
<td>Up to $1.90 per unit</td>
</tr>
<tr>
<td>Microsoft v. Motorola</td>
<td>W.D. Wash.</td>
<td>$0.035 per unit</td>
</tr>
</tbody>
</table>

- 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.
“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

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
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”
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

- “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),

- Contreras JL. *Aggregated Royalties for Top-Down FRAND Determinations: Revisiting ‘Joint Negotiation’*, 62 ANTITRUST BULLETIN (2017),


Now Available

The Cambridge Handbook of
TECHNICAL STANDARDIZATION LAW
Competition, Antitrust, and Patents

Jorge L. Contreras

https://www.cambridge.org/core/books/cambridge-handbook-of-technical-standardization-law/oEC1655CDF81AF05BF8726C0904C3362
Thank you!

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