UNLEASH THE POWER OF LIMITLESS CONNECTIVITY
Fostering of Patent Pools Covering Cable Technology: Lessons from VVC Pool Fostering

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This presentation represents our own views and not necessarily those of our respective organizations (or any of its members) or of any of the participants in the recent effort by holders of VVC-essential patent to foster the formation of a VVC patent pool.
Patent Pool Fostering: VVC Lessons – Overview

• Potted history of licensing video codecs: from MPEG2 to HEVC
• VVC: fostering by MC-IF of patent pool formation
• AVS3: building on long-standing preference for patent pools
• AV1: royalty-free licensing environment
• And also: EVC and LC-EVC
Potted History of Licensing Video Codecs: MPEG2 → HEVC

• MPEG2: CableLabs establishes MPEG “Licensing Administrator” (LA)
• Launch of modern era of licensing Standard Essential Patents (SEPs) (a.k.a. “patent pools”)

Many Owners of Patents essential to MPEG2, that name

Licensing Administrator, that supervises essentiality review, prepares joint license covering all SEPs, launches program by offering licenses to

Implementers, that pay royalties and submit reports on use of SEPs to

Licensing Administrator, that monitors compliance with license, collects its fee and pays out royalties to

Owners of Patents (that can use royalty income for more R&D for future standardized technology...)

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Potted History of Licensing Video Codecs: MPEG2 → HEVC

- MPEG2: CableLabs establishes MPEG LA
  - Cable Operators hesitant to make the jump from analog to digital without SEP licensing assurances.
  - Along with the widespread adoption of the MPEG2 standard, the MPEG LA pool was highly successful.
  - MPEG LA offered a “one-stop shop” for licensing, lowering aggregate royalties, easing administrative burdens, providing clarity to markets for SEP licensing . . . .
  - While also providing greater certainty for quality of patents, a settled regulatory framework (US DOJ approval), and over time, a proven licensing model.
Potted History of Licensing Video Codecs: MPEG2 → HEVC

Source: Digital TV Europe
VVC: Potential Improvement for VVC Licensing?

Pool fostering to identify a single Licensing Administrator

- **SDO Pool Fostering**
- **Facilitation (pool formation)**
- **Program launch / market introduction (poll administration)**
VVC: Pool Fostering by MC-IF

• 2019: MC-IF goal—reduce fragmentation of licensing for VVC (compared to HEVC)
• 2020 (June): MC-IF launches pool fostering effort based on DVB model
  • Operating Rules: Participation based on “well-founded belief” of potentially essential patents; confidentiality; consensus or 2/3 supermajority; equality of treatment (MC-IF member or not); antitrust; netiquette
• Extensive exchanges with candidate facilitators
  • Presentations by candidate facilitators
  • Multiple rounds of questions/answers between candidate facilitators and participants
• Significant engagement by participants through surveys, voting, comments…
• Progress by narrowing the field of candidate facilitators
• 2021 (Jan): VVC Pool Fostering participants “identified two strong pool administrators”
VVC

- 9/10 top accepted contributors to VVC
- Mix of R&D, NPEs, implementers
- Scope and numbers far greater than DVB’s pool fostering experience
VVC: “Two Strong Pool Administrators”: MPEG LA

- MPEG LA reports: “Over 40 patent holders (including the market’s largest) have made great progress, and actively engaged with MPEG LA in a consensus-based collaborative process to develop a VVC pool license. As a result of this process, MPEG LA is now preparing final agreements for execution by participants in order to offer, ahead of VVC’s deployment, a license on reasonable terms that supports the adoption of VVC. MPEG LA’s VVC License is not priced in support of MPEG LA’s HEVC license, which is widely accepted by some 400 licensees, but rather will be independently and reasonably priced in support of VVC.”
VVC: “Two Strong Pool Administrators”: Access Advance

- Access Advance reports: “Access Advance announced the launch of its VVC patent pool on July 1, 2021, with VVC royalty rates set at a modest 25% increase over its HEVC pool rates. It also announced its new “Platform” initiative, which offers licensees to both the Advance VVC and HEVC pools the Multi-Codec Bridging Agreement (MCBA). The MCBA provides licensees that sell products implementing both VVC and HEVC consolidated and simplified reporting and a discount on each codec resulting in a combined rate equivalent to the VVC-Only rate – an effective 45% discount for their VVC+HEVC products. In effect, implementers using both video codecs pay only a combined rate that is the same as the rate for the latest (i.e., VVC) technology. And the “Platform” structure is expandable to include other future video codecs. Access Advance’s HEVC pool is also expanding rapidly, with now over 15,000 SEPs representing ~70% of all HEVC SEPs. Details of the VVC Advance and HEVC Advance licensing programs are available at www.accessadvance.com.”
VVC Pool Fostering: Lessons Learned

• Tightened participation test: SEP holders with genuine interest in pooling
• Confidentiality: NDAs outside of pool fostering between participants and licensing administrators could limit open discussion within pool fostering
• Finding consensus: more mechanisms in remote environment for finding consensus (“heads nodding”)
• Affiliates in pooling: greater disclosure
• Request for proposals: fostering participants impose formal structure on proposals/presentations
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• And also: EVC and LC-EVC
AVS3: Video Codec Licensing Ecosystems

• Audio Visual Coding Standard Workgroup of China was formed in the mid 2000s. For licensing it followed approaches adopted by other standards bodies in the ‘00s:
  • **FRAND** commitment by AVS participants
  • Patent **pooling**
  • **Royalty cap** (1 RMB / device)
• Decisions on royalties and other licensing terms will be determined by the essential patent holders participating in AVS3 pool formation.
AV1: Royalty-Free Licensing Ecosystem

- Developed by the Alliance for Open Media, which has adopted the W3C IPR policy. **Alliance for Open Media Patent License 1.0** provides the following:

  [E]ach licensor… grants Licensee a non-sublicensable, perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable… patent license to its Necessary Claims to make, use, sell, offer for sale, import or distribute any Implementation.
AV1: Royalty-Free Licensing Ecosystem

• Further consideration No. 1—Compulsory reciprocal RF licensing
  As a condition to the grant of rights to Licensee to make, sell, offer for sale, import or distribute an Implementation [on a royalty free basis as provided above], Licensee must make its Necessary Claims available under this License, and must reproduce this License with any Implementation . . .

• The RF reciprocity creates a genuine “eco-system” for RF licensing.

• But it puts some implementers at a disadvantage since, if an implementer holds AV1-essential patents, the true cost for the license is at least the foregone royalties, that is, the royalties it would have received from other implementers.

Net of royalties it would have paid to other AV1-essential patent holders subject to the RF requirement.
AV1: Royalty-Free Licensing Ecosystem?

- Further consideration No. 2—Some AV1-essential patents are not royalty free
- Sisvel has formed a pool of AV1 patents not covered by royalty-free licensing ecosystem.
  - These are patent holders who did NOT participate, within the Alliance for Open Media process, in the development of AV1 (and so they are not bound by the RF commitment of participants).
  - These patent holders are evidently NOT implementers of AV1 (and so they are not subject to the provision in the license requiring the licensee to license its own patents on a royalty-free basis).
- Information on the Sisvel pool can be found at AV1 License Terms.
Essential Video Coding (EVC) and Low Complexity Enhancement Video Coding (LC-EVC)

• EVC is an open-source codec completed by MPEG in April 2020 where the development effort was led by Samsung, Huawei and Qualcomm. The development process has been defensive against patent threats with a baseline with tools made public more than 20 years ago. There are a further 21 payable tools for the main profile available under separate negotiated licenses.

• V-Nova, responsible for core technology foundation of LC-EVC, announced licensing terms (May 2021): free for integration by device or chipset manufacturers, browsers, encoder/player vendors; fee for usage by service operators based on service size, from $0.01/per user per year to a cap at $3.7 million.
Thank You!

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SDO Pool Fostering: Further Resources

- SEPs Experts Group, Contribution to the Debate on SEPs (Jan 2021), Proposal 72 (at pp 162 ff)
- Press release, “VVC Pool Fostering identifies Access Advance and MPEG LA as possible administrators to take forward pool formation covering VVC-essential patents” (MC-IF, 27 Jan 2021)
- Frequently asked questions on pool fostering and other materials, available at VVC Pool Fostering | MC-IF (mc-if.org)
- DVB Project, DVB’s Fostering of early Formation of Patent Pools: Note to DVB’s Liaison Partners and to Standards Bodies that author Materials normatively referenced by DVB Standards (2018)