

# Codec Licensing and the Media Coding Industry Forum (MC-IF)

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# Ericsson at a glance



Enabling the full value of connectivity  
for service providers

## Business areas:

- Networks
- Digital services
- Managed services
- Technologies and new businesses

## By the numbers:

- 180+ countries
- 210.8 b. SEK in sales
- 95,359 employees
- 49,000 patents

Image: Ericsson headquarters, Kista, Sweden

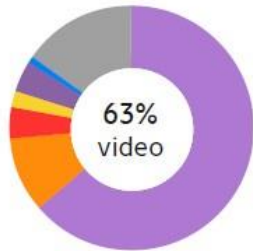
Full year 2018 figures

# Mobile Data Traffic by application

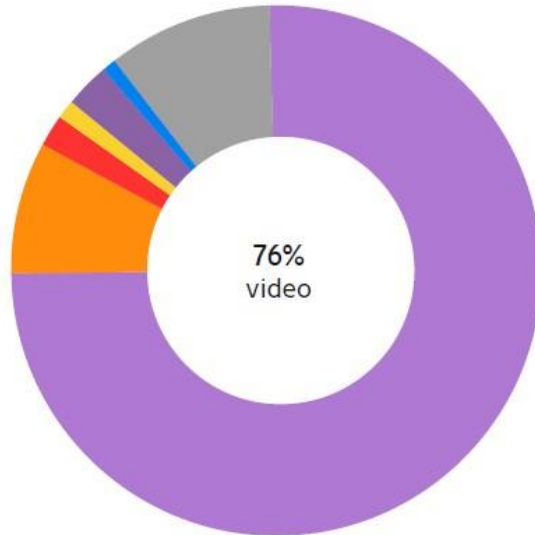


Video Social networking Web browsing Audio Software download and update P2P file sharing Other segments

Mobile video traffic is forecast to grow by around 30 percent annually through 2025 to account for 76 percent of all mobile data traffic.



2019  
38EB  
per month



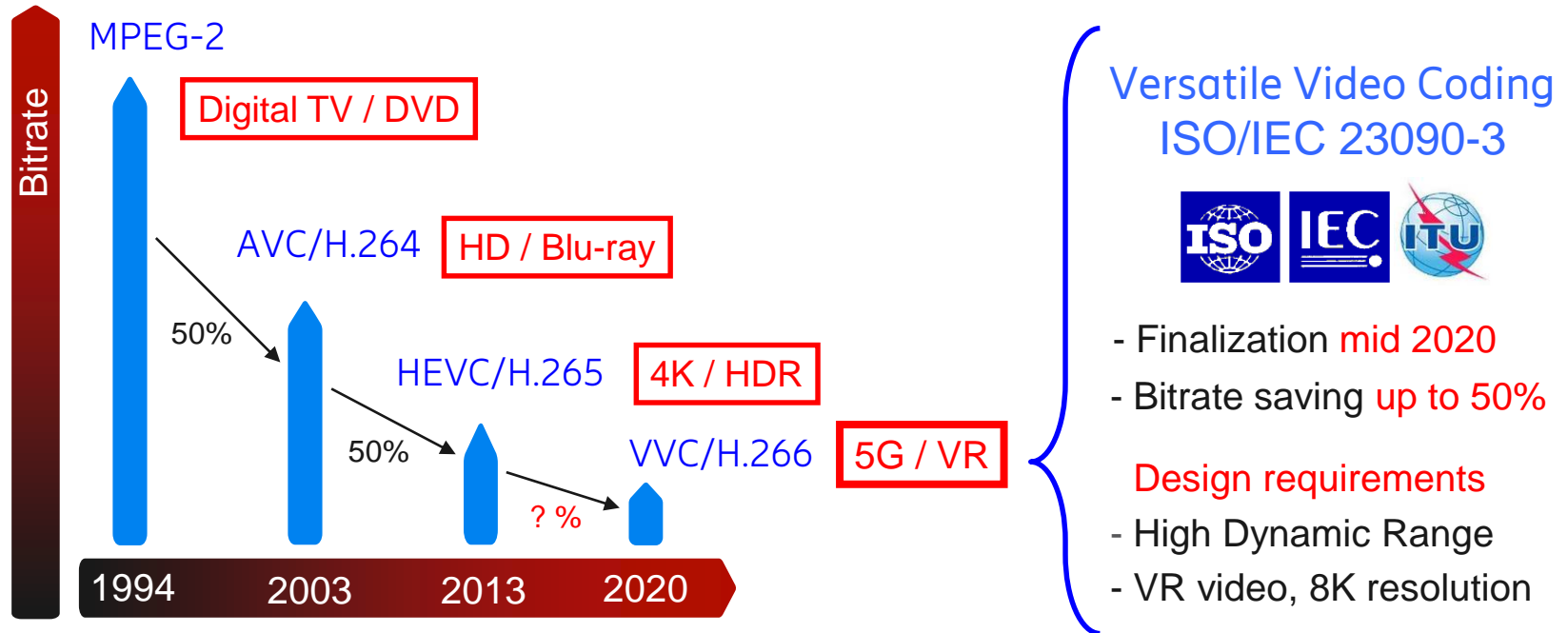
2025  
160EB  
per month

In 2025, nearly half of mobile data traffic will be carried by 5G networks.

## Main drivers for video traffic growth

- Video part of most online content (news, ads, social media, etc.)
- Video sharing services
- Video streaming services
- Changing user behavior – video being consumed anywhere, any time
- Increased segment penetration, not just early adopters
- Evolving devices with larger screens and higher resolutions
- Increased network performance through evolved 4G and 5G deployments
- Emerging immersive media formats and applications (HD/UHD, 360-degree video, AR, VR)

# Video Codec Evolution MPEG/ITU-T



# Video licensing in the past (MPEG/ITU-T codecs)



- MPEG-2 (1994)
  - MPEG LA patent pool founded in 1996 to facilitate adoption
    - Note, there is no relationship between MPEG and MPEG LA
    - Sony, Thomson and Mitsubishi Electric
    - The number of licensors varied with time (20+)
- Advanced Video Coding (AVC) / H.264 (2003)
  - MPEG LA and ~~Via Licensing~~
    - One pool MPEG LA
  - Currently 38 licensors. Not all IP owners are in the pool
  - Currently 1469 licensees
  - Successful



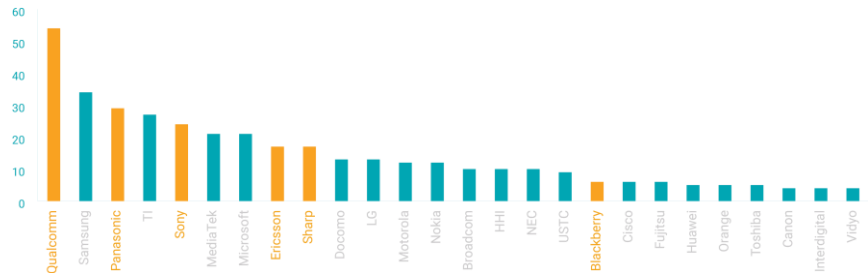
# Video licensing HEVC



- High Efficiency Video Coding (HEVC) / H.265 (2013)
  - Patents pools
    - 2014 **MPEG LA**, no solution for all → 2 more pools
    - 2015 **HEVC Advance**
    - 2017 **Velos Media**
- Current number of licensors: 40 + 27 + 6
  - Some overlap
  - Not all IP owners are in a pool



Velos claims to represent > 1/3 of all adopted HEVC contributions



# Video licensing of “Royalty Free” codecs



- What about allegedly royalty-free video codecs?
- VP8 (2008)
  - MPEG LA Call for Essential Patents (2011)
    - deal with Google (2013)
  - Other companies ...
- VP9 (2013) and AV1 (2018)
  - Sisvel announced licensing programs in March 2019
    - JVC Kenwood, NTT, Orange, Philips and Toshiba
  - Other companies ...

VP8

VP9



SISVEL

# ISO/IEC/ITU Common Patent Policy



- In general: Proposals to standards are evaluated based on technical merits.
- Disclaimer: I'm not a lawyer. See [www.iso.org/patents](http://www.iso.org/patents) for details and resources.
- Any party participating in the work of ITU, ISO or IEC should, from the outset, draw the attention to any known patent or to any known pending patent application
- Three different situations may arise
  1. The patent holder is willing to negotiate licenses free of charge with other parties on a nondiscriminatory basis on reasonable terms and conditions.
  2. The patent holder is willing to negotiate licenses with other parties on a non-discriminatory basis on reasonable terms and conditions.
  3. The patent holder is not willing to comply with the above provisions.  
In such case, the standard shall not include provisions depending on the patent.

Note: Negotiations are left to the parties concerned and are performed outside ISO/IEC/ITU.



# Media Coding Industry Forum (MC-IF)



- Inspiration from the 'late' MPEG-4 Industry Forum (M4IF) (which played a major role for AVC)
- Long discussions: Apple, Nokia, Ericsson, Rob, ...
- Public and informal "media coding interest group" meetings of potential licensors and licensees

## → Creation of MC-IF in 2018

- 16 Sep 2018            Amsterdam Kick-Off during IBC
- 14 Oct 2018            First Member meeting (MPEG in Macau)

# Motivation for MC-IF

Licensing situation for HEVC has been unhelpful to adopters

- Three separate patent pools
- Several patent holders not members of any pool
- Difficult for users to create an accurate business model
  - HEVC has struggled to gain adoption for video streaming
- Potential early adopters of VVC fear a repetition

*Some keywords:*

- *Predictable*
- *Transparent*
- *Timely*

Need to improve business environment for VVC

- To benefit the video compression industry and the consumer
- Common patent policy of ISO/IEC and ITU-T prevents discussion of licensing issues within the standardization bodies
- An industry forum is needed to discuss and resolve these issues

Need to improve market environment for VVC

# Goals and Objectives

**The principal purpose of the Corporation shall be**

*To further the adoption of MPEG Standards (the “Standards”), initially focusing on VVC (Versatile Video Coding), by establishing them as well accepted and widely used standards for the benefit of consumers and the industry. (“Purpose”)*

*from MC-IF bylaws*

# Goals and Objectives (cont'd)

## The objectives of the Corporation are to:

**Promote these Standards** by making available information about them and facilitating access to marketing materials and tools [...] and by creating industrial focus around the interoperable usage of these Standards.

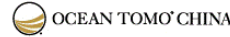
Provide for **open international participation** of all interested parties, on reasonable terms applied uniformly and openly.

Provide a forum for, and encourage, **the discussion of issues related to lawful aspects of licensing of intellectual property rights** relevant to the deployment and use of these Standards, in the furtherance of the Purpose. Such discussions will be subject to the limitations described below in Appendix B – **Antitrust Guidelines**.

**Contribute** the results of its activities to **MPEG, ITU-T** and other standards bodies as applicable.

All actions above to be undertaken in conformance with Section 9.10 [**Compliance with Antitrust Laws**] of these Bylaws.

# MC-IF Members



# Board Members/Officers

Director	Representing
Judson Cary, President	CableLabs
Per Fröjdh, Vice President	Ericsson
Stephan Wenger, Secretary	Tencent
Jim Harlan, Treasurer	InterDigital
Jonatan Samuelsson, Chief Commun Officer	Divideon
Frederic Bonnet	Orange
Jill Boyce	Intel
Justin Ridge	Nokia
David Singer	Apple

# Work Groups in MC-IF

**IP Ecosystem WG**

**Profiling WG**

**Interoperability WG**

**Marketing & Outreach WG**

# IP Ecosystem WG

Chair: Stephan Wenger (Tencent)

- Identify the participants in the media ecosystem, and identify the concerns perceived by each participant for IP licensing of current MPEG Standards.
- Survey the IP licensing ecosystem of previous/contemporary media compression standards, to include MPEG Standards such as H.264/AVC and HEVC, and other codecs such as VP9 and AV1, to the extent that the review of such other codecs can inform the discussion of the Work Group and support the mission of MC-IF to promote MPEG Standards such as VVC (and other MPEG Standards, as applicable or as requested by the Board).
- Within the confines of antitrust and competition laws, identify possible mechanisms to improve the future IP licensing ecosystem of VVC, and other MPEG Standards as requested by the Board.
- Identify whether, and to what extent, MC-IF can assist in creating/maintaining such mechanisms, and implement as requested by the Board.



# Profiling WG

Chair: Jill Boyce (Intel)

- Identify need for profiling, sub-profiling, constraint flags, and sets thereof, initially for VVC.
- Communicate MC-IF requests or recommendations to relevant bodies, including VCEG, MPEG.
- Define a process for MC-IF to use to serve as a registration authority for sub-profiles, initially focusing on VVC.

# Interoperability WG

Chair: Lukasz Litwic (Ericsson)

- **Identify needs of interoperability**, testing and implementation beyond what's done by the standards committees (e.g. ISO/IEC, DASH-IF).
- Promote interoperability via **tools, bitstreams, online and face to face interoperability testing**.
- Encourage **publication** of interoperability results and status in a way that encourages broad participation.
- Document, inspire and provide **implementations** to support potential implementors of the standard and assessment of interoperability. One example: VVC implementation that can be exposed under FFmpeg.
- Develop and maintain **online resources of interoperability** test bitstreams, tools, validators, reference code, guidelines, and other resources.

# Marketing & Outreach WG

Chair: Jonatan Samuelsson (Divideon)

- Manage MC-IF **visibility and messaging** by
  - Mentions and placements in articles, journals, and at events.
  - Managing social media accounts and website, and promote visibility of MC-IF in other social media.
- Manage MC-IF **outreach and recruitment** by
  - Identifying suitable venues and local organizers for outreach events; organize and promote such events.
  - Initiating and fostering conversations with potential new members.
- **Promote standards** identified by the membership as priorities, including:
  - The technical, business, and ecosystem advantages of the selected standards.
  - The industry needs, use cases and business opportunities enabled by these standards.
  - The importance of these standards to the ecosystems (open, FRAND, pro-competition).
- Achieve these promotion goals by:
  - Putting information on the **web** including **social media** and mailing lists, in **articles and journals, white-papers**.
  - Presenting at selected trade shows and other events.
  - Perform other communication as needed or requested by the board.

# MC-IF Meetings



# Join and Engage!

- Regular Member
  - USD \$9,500
- Small Entity Member
  - USD \$2,500
  - (Annual revenue less than USD \$5 million)
- More information, bylaws and membership agreement:
  - <http://www.mc-if.org>

# More information



[www.mc-if.org](http://www.mc-if.org)



[info@mc-if.org](mailto:info@mc-if.org)



[twitter.com/mediacoding\\_if](https://twitter.com/mediacoding_if)



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