

**Emerging issues in licensing and enforcement of  
Standard Essential Patents  
Warsaw, Poland**

**RF Licensing and the Codec Wars**

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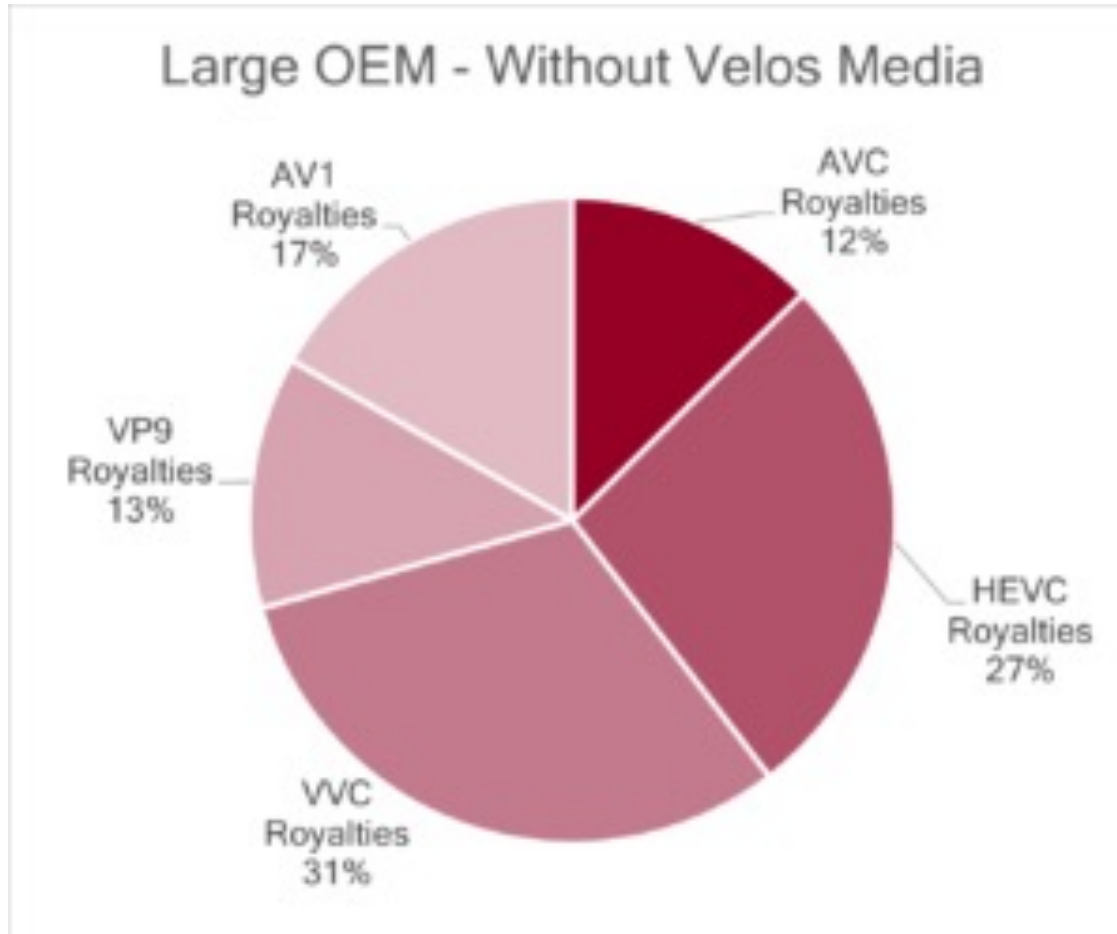
# Competing Codec Development

Gen.		ISO/IEC, ITU-T	Google/ AOM	Huawei, Samsung, Qualcomm
1a	1993	MPEG-1 Part 2		
1b	1994	MPEG-2 (H.262)		
2	2003	MPEG-4 (H.264, <b>AVC</b> )		
<b>3</b>	<b>2013</b>	<b>MPEG-H Part 2 (H.265, HEVC)</b>	2013: VP9 <b>2018: AV1</b>	
4	2020	MPEG-I Part 6 (H.266, <b>VVC</b> )	AV2?	MPEG-5 (EVC)

# Gen 3 Codec Patents

<b>HEVC</b>	<b>MPEG-LA/Via</b> (Apple, MIT, Fujitsu, KAIST, NEC, NTT, Orange, [Samsung], etc.)	<b>Access Advance</b> (AT&T, Microsoft, Nokia, Motorola, Technicolor, Samsung, Panasonic, Sony)	<b>[Velos Media/Marconi]</b> (AT&T, Microsoft, Nokia, Motorola, BlackBerry, Ericsson, Panasonic, Qualcomm, Sharp, Sony.)
<b>AV1</b>	<b>AOM- RF</b> (Amazon, Apple, Cisco, Google, Huawei, Intel, Meta, Microsoft, Mozilla, Netflix, NVIDIA, Samsung, Tencent )	<b>Sisvel</b> (Dolby, Ericsson, IDC, KAIST, Philips, NTT, Orange, Toshiba)	

# Codec royalty burden



\$241M on  
\$150B sales

[\$1B w/ Velos]

# EC's AOM Investigation

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July 2022 - EC opens Case AT.40805

- “AOM and its members may be imposing licensing terms (mandatory royalty-free cross licensing) on innovators ... whose patents are deemed essential to [AV1]. Through this, AOM and its members may be **restricting those innovators’ ability to compete** with the AV1 technical specification (e.g. by imposing different licensing terms) and/or in markets where AV1 is applied and **eliminating incentives to innovate**, thus hindering technical development in video codec technology and/or in markets where AV1 is applied.”

May 2023 - Case closed