VRIF Master Class

Moderator: Jan Nordmann
Fraunhofer Audio
Chair, VRIF Communications WG
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<td>Alexis Macklin (Greenlight Insights)</td>
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<td>Overview</td>
<td>Mauricio Aracena (Ericsson), Co-Chair, Distribution TF</td>
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<td>Chris Johns (Sky), Vice-President VRIF, Co-Chair Production TF</td>
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<td>Distribution</td>
<td>Ozgur Oyman (Intel), Co-Chair Distribution TF</td>
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<td>Security</td>
<td>Mick O’Doherty (Irdeto), Chair Security TF</td>
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<td>Rob Koenen</td>
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VRIF – A Brief Introduction

www.vr-if.org
Rob Koenen

President, VRIF
Principal, TNO
Founder, Tiledmedia
Source: BT Sport
Where are we headed?

• Full immersion - “six degrees of freedom”
• Real and computer-generated – and indistinguishable
• Immersive story-telling
• Enjoy an event as if you were there
• Enjoy it with friends
Where are we today?

Gartner Hype Cycle for Emerging Technologies, 2017

Source: Gartner (July 2017) © 2017 Gartner, Inc. and/or its affiliates. All rights reserved.
Where are we today?

• First steps: VR360
• Video: Mono or Stereo
• Audio: Stereo or Spatial
• Very low resolution
• Limited (head) motion
• Large HMDs
What is required?

• Attractive user experience
• Great content
• Easy to use
• No side-effects
• Affordable
  – for consumers
  – for providers
• Interoperable
Mission VR Industry Forum

To further the widespread availability of high quality audiovisual VR experiences, for the benefit of consumers

- Non-profit organisation established during CES 2017, after a year of informal meetings
Who Are We?
Creating a Market for 360VR

For consumers:
- **Make 360VR a high-quality, immersive, cross-platform experience**

For content producers & service providers:
- **Broaden reach + reduce cost caused by format proliferation**

For device makers:
- **Ensure a wealthy, premium quality content pipeline**

For advertisers:
- **Drive the creation of a broad, unique & innovative sales channel**
Principles

- Advocating voluntary **industry consensus** around common technical standards for the end-to-end VR ecosystem, from creation to delivery and consumption.

- Advocating the creation and adoption of **interoperable standards** (VRIF will not develop standards itself); promoting the use of common profiles across the industry, and promoting and **demonstrating** interoperability.

- Developing **voluntary Guidelines** that describe best practices, to ensure high quality VR experiences.
How we work

- **Build on available specifications and standards**
  - Don’t do standards ourselves
  - Recommend selections were needed (specs may provide many options)

- **Guidelines that go beyond standardization**
  - Production, Human Factors, etc.

- **Interoperability tests and demos**
  - Demonstrate a cross-platform content ecosystem

- **Advocacy of interoperable solutions and standards**
LESSONS & 2018
VR Standards & Ecosystems Workshop

- 3GPP and VRIF co-organized
- Sessions on HW, Services, Standards,
- Presentations at http://www.vr-if.org/speaker-presentations/
Workshop Take-Aways

• A lot is happening
• We’re not nearly there yet in quality; in hardware
• But still, consumers like what they see
• 3 DoF → Parallax → 6 DoF
• 5G will help
• More social!
• More interaction!
• And yes, standards …
2018 Roadmap

• Testing and Interop Program
  – Acquire Content
  – Create and publish bitstreams

• Adding to Guidelines
  – Live (Synced with Broadcast)
  – looking at HDR
  – Presentation Layer
  – Anything that comes up in Requirements Effort – input welcome!

• Promotion
  – NAB
  – Membership
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<tr>
<th>Guidelines</th>
<th>Events / Meetings</th>
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<tr>
<td><strong>Feb</strong></td>
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<tr>
<td>Formal Release of 1.0</td>
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<tr>
<td>Requirements for 1.5</td>
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<tr>
<td><strong>Mar</strong></td>
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<tr>
<td>Start work on presentation, HDR, Live</td>
<td>f2f London 7-9 March</td>
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<td><strong>Apr</strong></td>
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<tr>
<td>Maintenance update (1.1)</td>
<td>NAB Las Vegas</td>
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<tr>
<td>• Any bugs and omissions</td>
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<tr>
<td>Announce Interop Program</td>
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<td><strong>Jul</strong></td>
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<td>1.5 Public Review</td>
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<td><strong>Aug</strong></td>
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<tr>
<td>Finalize 1.5; Requirements for 2.0</td>
<td>Meeting (place tbd)</td>
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<tr>
<td><strong>Sep</strong></td>
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<tr>
<td>Release 1.5</td>
<td>IBC Amsterdam</td>
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<td>• Live, HDR, Presentation</td>
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<td><strong>Nov</strong></td>
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<td>Draft 2.0 for public review</td>
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<td><strong>Dec</strong></td>
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<tr>
<td>Finalize 2.0 after Public Review</td>
<td>f2f US; 2nd edition of Ecosystem Workshop</td>
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<tr>
<td><strong>Jan</strong></td>
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<tr>
<td>2.0 Final</td>
<td>CES Las Vegas</td>
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QUESTIONS?
www.vr-if.org/join