What can make the Metaverse experience better?

• It is clear that the more advance XR technologies (and XR devices), the better is the quality of interaction between the user(s) and the Metaverse(s)
Interoperability in Social VR is challenging

- Different
  - HMDs
  - Capture formats
  - Connectivity
  - Sensors,
  - Etc.

- Standards are important to reduce fragmentation and interoperability issues
Metaverse(s): an Interop Madness!

Metaverse Market Map

<table>
<thead>
<tr>
<th>Experience</th>
<th>Discovery</th>
<th>Cloud Computing</th>
<th>Security</th>
<th>Social Media</th>
<th>Infrastructure</th>
</tr>
</thead>
<tbody>
<tr>
<td>FORTNITE</td>
<td>ROBLOX</td>
<td>Facebook</td>
<td>Google</td>
<td>LinkedIn</td>
<td>Amazon</td>
</tr>
</tbody>
</table>

Platforms

Application, Content, Monetization
- Decentraland
- Sandbox

Blockchain, Web3 Infrastructure
- Ethereum
- Solana

Connectivity
- Telco Operators
- Telco Vendors

Device and Components
- Modem/Chip
- Components
- Android
- iOS

Tokens, Wallets, Exchanges
- Coinbase
- Binance

Graphical Middleware
- Unity
- Unreal Engine

Application Store
- GMS
- Apple App Store

Cloud PaaS
- AWS
- Azure

Interactive Content
- V-Ray
- Unreal Engine

Graphic Middleware
- NVIDIA
- AMD

IoT Streaming
- Qualcomm
- Intel

Telecom Operators
- AT&T
- Verizon

Tokenization
- Ethereum
- Metaverse

Device Components
- Samsung
- Google

Metaverse Market Map

VRIF – 2022
VRIF Mission statement

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

• VRIF has an end-to-end perspective to provide industry guidelines, reduce fragmentation and improve interoperability

• Initially focused on VR360, VRIF has extended the scope to address more advance immersive experiences
Who Are We?

- CEATME
- ERICSSON
- FRAUNHOFER
- HUAWEI
- INTERDIGITAL
- IRDETA
- GAUDIO
- NOKIA
- PARACOSMA
VRIF into the Metaverse: Four Tracks

VR360
Volumetric
Social VR
5G Cloud
VR360 track

- Address aspects of capture, distribution and security of VR360 content (3DOF).
- It is based on viewport dependent technology (such as MPEG OMAF technology).
- It covers download, streaming and live use cases.
Volumetric track

- It covers aspects of capture, production, storage and distribution formats, and security of volumetric assets (6DOF).
- It can be rendered in HMD, AR glasses and flat screens.
- Meshes and Point Clouds formats are discussed as well as compression and distribution mechanisms.
Social VR track

- Address telecommunication aspects of:
  - Real-time VR communication for different segments such as consumer and enterprise
  - Virtual representation of the users: avatars, video, volumetric, etc.
  - Sharing live experiences
  - Security aspects
  - Network requirements are investigated
5G Cloud track

- This track considers aspects of how best to utilize 5G and cloud/edge infrastructure to process and distribute XR content to low complexity devices.
- The goals are:
  - Guide content providers on how to use 5G and Cloud/Edge
  - Promote the transition from "device-centric" to "network-centric" content distribution
Interested in joining or knowing more

www.vr-if.org/join

• Volumetric Video Guidelines: https://www.vr-if.org/guidelines/
• Newsletters: https://www.vr-if.org/newsletters/
• Past events, workshops and presentations: https://www.vr-if.org/presentations/
• Industry mailing list – open to all: http://goo.gl/4xZgbt
• LinkedIn group: https://www.linkedin.com/company/vr-industry-forum