

# Joint Workshop: Streamed Media in Immersive Scene Descriptions

Zoom Webinar,  
September 29 and 30, 2021

Details at <http://mpeg-sd.org>

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# Welcome

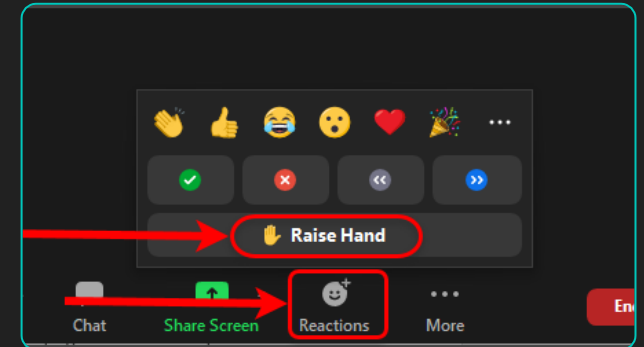
30 minutes before the second call started, we had 280 registrations – welcome all!

# Motivation

- Joint workshop on Streamed Media in Immersive Scene Descriptions
- The primary purpose of the workshop is the exchange of information on developments in MPEG that relate to Khronos specifications, primarily glTF 2.0, and to seek feedback on the approaches taken.
- In addition, the workshop aims to identify additional synergies and opportunities for cooperation regarding
  - Khronos standard APIs for GPU processing and XR run time APIs,
  - MPEG's work on digital representation of digital media, and
  - 3GPP's 5G-based advanced delivery of media.
- Consider this as a starting point – expect more exchange and hopefully soon physical meetings
- Thank you to Neil Trevett (Khronos chair) and Frederic Gabin (3GPP SA4 chair) as well as other colleagues to support this effort and workshop.

# Logistics

- We run on Zoom today and tomorrow – links and registration are valid for both days
- We will record the entire 2 days. If you have concerns on recording, we will only record the talks
- We expect to publish all presentations on the web page <http://mpeg-sd.org>
- We also create online minutes – the link is [here](#) (see chat window) and you may comment online. If you want to support minute taking, please let me know and I will give you rights
- In order to get a feeling of presence, we encourage to switch on cameras when you speak
- When not speaking, please mute and please do not switch on camera. Should there be noise, I will mute.
- As we have a quite packed program, we encourage to also use the chat for discussions and questions
- In order to manage the queue, please use the Zoom functionality to raise your hand
- We strongly encourage to use reactions on Zoom for yes/no, applause, thumbs up, thumbs down, etc.
- We encourage that you change your name into <First Name> <Last Name> (<Affiliation>)
- The webinar will be run under the umbrella of the MPEG-I Scene description Ad Hoc Group (AHG) and is open to the public under the MPEG AHG policies as available [here](#). Registered users are expected to consent to the policies laid out, in particular paragraph 9. If you stay on the meeting we take this as an acceptance



# Program and Agenda (Day 1)

CEST	UTC	PDT		Speakers
<b>September 29, 2021: glTF and MPEG-I Scene Description</b>				
15:00	13:00	6:00	<a href="#">Welcome and Introduction</a>	MPEG & Khronos Moderators ( <a href="#">Thomas Stockhammer</a> and <a href="#">Neil Trevett</a> )
15:10	13:10	6:10	<a href="#">MPEG-I SD Architecture and glTF2.0 Extensions</a>	MPEG ( <a href="#">Imed Bouazizi</a> and <a href="#">Lukasz Kondrad</a> )
16:10	14:10	7:10	<a href="#">Updates on glTF2.0 in Khronos</a>	<a href="#">Khronos</a> ( <a href="#">Brent Scannell</a> )
<b>September 29, 2021: Implementation Support and Tools</b>				
17:00	15:00	8:00	Industry Challenges on Immersive Media	<a href="#">Rob Koenen</a> (TiledMedia)
17:20	15:20	8:20	Implementation Support in Khronos & MPEG for Scene Description	MPEG & Khronos
			<a href="#">Tools in MPEG</a>	MPEG ( <a href="#">Ahmed Hamza</a> , <a href="#">Imed Bouazizi</a> and <a href="#">Lukasz Kondrad</a> )
			<a href="#">Tools in Khronos</a>	<a href="#">Khronos</a> ( <a href="#">Brent Scannell</a> )
			Discussion	
18:00	16:00	9:00	End of Day 1	

# Summary Day 1

- In total we had 186 attendees on the first day
- glTF2.0 and MPEG-I Scene Description
  - MPEG extensions at this point can be viewed as vendor extensions, also from IP perspective
  - Khronos glTF core specifications and KHR extensions are available under Khronos royalty-free IP Policy
  - glTF extensions in both organizations are considered complementary
- Implementor and Tooling Support
  - Industry presentation points mostly to challenges in handling large amount of data efficiently and securely, standards are needed, but need to be carefully checked to have balance between what is needed and what is the application and implementation domain
  - MPEG and Khronos maintain tools to support implementors – promotion and accessibility and maintenance of these tools is a major challenge
- What about an Industry Forum looking at the best of all organizations for industry outreach, promotion, end-to-end workflows, implementor support? – possibly an interesting idea

# Program and Agenda (Day 2)

CEST	UTC	PDT		Speaker
<b>September 30, 2021: Video and 3DG</b>				
15:00	13:00	6:00	Summary of Day 1	MPEG & Khronos Moderators ( <a href="#">Thomas Stockhammer</a> , <a href="#">Neil Trevett</a> )
15:10	13:10	6:10	MPEG-I 3DG and Video Updates	MPEG 3DG and Video ( <a href="#">M. Preda</a> , <a href="#">V. Zakharchenko</a> )
15:45	13:45	6:45	MPEG-I Video Decoding Interface and relation to OpenMAX/Vulkan	MPEG Systems ( <a href="#">E. Thomas</a> , <a href="#">I. Bouazizi</a> , <a href="#">Y.K. Lim</a> )
16:00	14:00	7:00	Vulkan Video	Khronos ( <a href="#">Ahmed Abdelkhalek</a> )
<b>September 30, 2021: XR and Systems</b>				
16:20	14:20	7:20	MPEG-I Scene Description Phase 2	<a href="#">Imed Bouazizi</a> (Qualcomm Incorporated)
16:32	14:32	7:32	MPEG-I Haptics	<a href="#">Chris Ullrich</a> (Immersion Corporation)
16:44	14:44	7:44	MPEG-I Audio	<a href="#">Schuyler Quackenbush</a> (MPEG Audio Convenor)
17:00	15:00	8:00	Khronos OpenXR	<a href="#">Brent Insko</a> (Khronos OpenXR Chair)
17:20	15:20	8:20	Extended Reality in 5G	<a href="#">Frederic Gabin</a> , <a href="#">Gilles Teniou</a> (3GPP SA4 Leadership)
17:45	15:45	8:45	Wrap-up and Next Steps	MPEG & Khronos Moderators ( <a href="#">Thomas Stockhammer</a> , <a href="#">Neil Trevett</a> )
18:00	16:00	9:00	End of Day 2	



**Questions?**



# Wrap up

- Complementary work – many touch points - collaboration seems to be beneficial
- Specific topics identified, but may be digested further
  - glTF and extensions by MPEG-I Scene description
  - Tools and implementation support
  - Vulkan Video and VDI
  - Extended Realities: OpenXR, MPEG-I Phase 2 incl. AR, Interactivity and Haptics
  - Systems and Split Rendering: OpenXR, 3GPP connectivity, MPEG codecs
- Challenges: Timelines, publication rules, IPR policies, membership
- Opportunities: complementary expertise, implementation and developer support, joint promotion, focus
- Proposed next steps:
  - continue the discussion
  - set up some kind of discussion platform

# Thanks

- Neil Trevett (Khronos president) and Frederic Gabin (3GPP SA4 chair)
- All speakers for presentations and answering questions
- All Participants for attending and for the discussions
- Survey: <https://forms.gle/om6VreEE6h2MivJk9>