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| **INTERNATIONAL ORGANIZATION FOR STANDARDIZATION ORGANISATION INTERNATIONALE DE NORMALISATION ISO/IEC JTC 1 / SC 29 / WG 02**  **MPEG TECHNICAL REQUIREMENTS** |  |
| **ISO/IEC JTC 1 / SC 29 / WG 02 N 61** |  |
| **OnLine - April 2021** |  |
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| |  |  | | --- | --- | | **Source:** | **Igor Curcio (Convenor)** | | **Title:** | **Report of the 2nd MPEG WG2 meeting** | | **Serial number** | **20216** | |  |  | |  |
| This document contains the Report of the 2nd MPEG WG2 meeting hold on 11-15 January 2021 Online.  The meeting calling notice was available in document N29.  The meeting agenda was available in document N30. The agenda was updated during the meeting as follows.  **Agenda (version 9):**  **PLENARY #1**   1. Opening 2. Roll call of experts.   There were 360 registered members to this meeting, including 18 invited experts. The list of attendees of the WG2 Plenaries #1-3 is available in Annex A.   1. Code of conduct.   The ISO code of conduct was shown as below.     1. Adoption of the agenda.   The Agenda was adopted.   1. Allocation of contributions.   The input contributions were allocated to AHG/BoGs as indicated in Annex B.  **Color codes used:**  not-yet processed, processed, late, ~~withdrawn~~   1. Communications from Convenor.   Document m56178 was presented. It was then Noted.   1. Approval of the Report of previous meetings   Document N31 was approved (Recommendation 1.1.1).   1. Workplan   Legend   |  |  |  | | --- | --- | --- | | Std | ISO/IEC | Title | | I | 23090 | Coded representation of immersive media | | Expl |  | Explorations |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | **Std** | **Pt** | **Title** | **E#** | **129** | **130** | **131** | **132-1** | **133-2** | **134-3** | **135-4** | **136-5** | **137-6** | **138-7** | **139-8** | | I | 1 | Immersive media | 1 | (DIS) |  |  |  |  |  |  |  |  |  |  | | Expl | 32 | Data compression | 1 | EXP |  |  | EXP |  |  |  |  |  |  |  | | Expl | 33 | MPEG-21 Based Smart Contracts | 1 | EXP | EXP | CfP | To WG3 |  |  |  |  |  |  |  | | Expl | 34 | Video Coding for Machines | 1 | EXP | EXP | EXP | EXP |  |  |  |  |  |  |  | | Expl | 35 | 5G Opportunities | 1 | EXP | EXP | EXP | EXP |  |  |  |  |  |  |  | | Expl |  | Quality of Immersive Media | 1 |  | EXP | EXP | To AG5 |  |  |  |  |  |  |  | | Expl |  | Future capabilities for MPEG-I | 1 |  |  | EXP | EXP |  |  |  |  |  |  |  | | Expl |  | Haptics support in MPEG | 1 |  |  | EXP | DCfP |  |  |  |  |  |  |  | | Expl |  | Deep Neural Networks (DNN) Based Video Coding | 1 |  | EXP | EXP | To WG5 |  |  |  |  |  |  |  | | Expl |  | Compression of neural networks for Multimedia CDA | 1 |  |  | DCfP | CfP |  |  |  |  |  |  |  |  1. Ad hoc group reports    1. Ad hoc Group on MPEG-I Architectures and Requirements.   Document m55654 was Noted.   * 1. Ad hoc Group on Future Capabilities for MPEG-I.   Document m55651 was Agreed.   * 1. Ad hoc Group on Haptics Support in MPEG.   Document m55645 was Agreed.   * 1. Ad hoc Group on MPEG & 5G.   Document m55653 was Agreed.   * 1. Ad hoc Group on Video Coding for Machines.   The goal is to have the CfE issued at this meeting. Document m55648 was Agreed.   * 1. Ad hoc Group on Data Compression.   Document m55655 was Agreed.   * 1. Ad hoc Group on MPEG Roadmap.   Document m55656 was Agreed.   1. Organisation of this meeting    1. The following Joint meetings were planned (UTC time). The WG2 meetings are indicated in blue.     **Notes of the joint meetings:**  Joint Meeting with WG8 on Genomic Mobile Profile   * Handled Documents   + m55995: the document is not ready for approval. It needs improvement on the numbers used in the profile and levels and there needs to be support of experiments over mobile platforms (e.g., low-end mobile phone, high-end mobile phone, tablet, latptop) to understand the processing requirements and performance of the decoder in these cases. The document is noted.   Joint Meeting with JVET and VCEG on Profiles, SEI, extensions of VVC   * Handled documents   + 1)Document U0089 (8-bit profile for VVC)   + <https://jvet-experts.org/doc_end_user/documents/21_Teleconference/wg11/JVET-U0089-v3.zip>.   + Lot of discussion and different opinions. There is no consensus.   + 2)JVET-U0100 Extensions (U0078).   + 3)Other SEI messages. No particular concerns.   Joint Meeting with WG7 on requirements for mesh coding.   * Handled documents   + m55999: the requirements are in good shape from WG2 point of view. Good level of detail. This document will be a WG2 output document.   Joint Meeting with WG 6 on MPEG-I Audio CfP.   * Handled documents   + m55706. The CfP is made of 8 documents. 3 are not yet finalized at this meeting. Depending of the maturity of this meeting, the schedule could be adjusted. There will not be a joint CfP, but Igor will ask Mayumi how to handle the recommendations for approvals in this case.   Joint Meeting with WG 3 on dynamic adaptation.   * Handled documents   + m56077 (revised). It was commented that it is hard to see the relationship with NBMP and SAND. This is not related to DASH because it is generic server-based adaptation. It was commented that there is no relation to 5G, but it is using 5G for no reason. The document is **noted**, but the last comment from the WG3 Convenor was that the document does not fit in the current architecture, but it may fit new work and opportunities. For this, a differentiation from NBMP or DASH or SAND should be studied and elaborated in a future contribution.   Joint meeting with WG 4 on MIV profiles and dense lightfields.   * Handled documents   + m55713. Agreed that WG4 can proceed with developing the profile.   + m56017. Agreed that the document will be a WG2 output.   Joint meeting with WG 7,8 on lossless generic data compression.   * Handled documents   + m56164. It is essentially free technology, and it is possible to make backward-compatible extensions. It has an Informational RFC status. No standards track. It has no Area Director assigned in the IETF. There are standards in MPEG that use GZIP (3DG). MPEG-G uses LZMA, which is something similar to GZIP. LZMA is not an IETF standard. It was commented that GZIP is 30 years old based on a technology which is 50 years old and it works well. Perhaps there is no need to standardize this. There may be other lossless compression standards in IETF. Perhaps we could contact informally someone in the IETF. It would be nice to understand why several lossless compression specs are not in standard tracks. The motivation for doing this work was coming from JTC1 searching for tools for generic data compression. The issue for us was to reference a stable version of an algorithm, which was not available. So, MPEG-G took the LZMA code to make it a specification in MPEG. Lossy compression can be also an interesting area to explore (Jörn).   1. Room assignment      1. The Zoom links were available in the MPEG Calendar “WG2 Requirements” and “Joint Meetings”.      2. Schedule. In this meeting there have been 21 sessions (including joint meetings) according to the following.   Timeline  Description automatically generated   1. Issues for immediate consideration   a)  Test material for CfE and CfP (m56088).  Comment: we should address the issue of “content available for non-commercial purposes”. It would be nice if the request to the content owner would come from ISO in some official capacity.  Comment: “affirmative consent” should be better described.  The intention is to approve an improved version of the document on Friday Plenary #3.  Document N32 was approved (Recommendation 5.1).  b)  AHG rules: document m55835 was noted. Document N49 was Approved (Recommendation 4.5.1) with the following text in a recommendation *“In addition to the guidelines for ad-hoc groups in document XXX, , the chair(s) of a WG2 AhG shall be permitted to invite experts to join AhG activities.”* (Recommendation 4.5.2).  **PLENARY #2-3**   1. WG management    1. Terms of reference    2. Officers    3. Editors    4. Liaisons   Document N33 was Approved (Recommendation 4.4.1). Add the recommendation *“WG2 recommends that liaison representatives be coordinated at SC29 level to improve efficiency and asks SC29 to derive a consolidated list of liaison officers”.* (Recommendation 4.4.2)   * 1. Work item assignment   2. BoG reports, Ad hoc groups      1. Future Capabilities for MPEG-I.   The BoG Report in m56218 was Agreed.  Document N35. Comment: ”Does it describe MPEG SD?” Answer: ”Yes”. The document was Approved (Recommendation 3.6.1). After some more discussion it was decided to make this document Non public.  Document N36 was Approved (Recommendation 3.6.1).  The AHG Mandates were Approved.   * + 1. Haptics Support in MPEG.   The BoG Report in m56231 was Agreed.  The AHG Mandates were Approved.   * + 1. MPEG & 5G.   The BoG Report in m56245 was Agreed.  Document N47 was Approved (Recommendation 3.4.1).  The AHG Mandates were Approved.   * + 1. Video Coding for Machines   The BoG Report in m56226 was Agreed.  Document N44 was Approved (Recommendation 3.3.1).  The AHG Mandates were Approved.   * + 1. Data Compression.   Joint meeting report (see above in the joint meetings section).  The AHG Mandates were Approved.   * + 1. MPEG Roadmap.   The BoG Report in m56256 was Agreed.  The AHG Mandates were Approved.   * 1. Requirements      1. MPEG-I Future. Document N34. Question: ”Has the work done in SD been considered?” Answer: ”Part 14 is not enough to support immersive displays”. Question: ”why not focusing only on the delta?” Answer: ”yes, we are focusing on the delta”. The document was Approved (Recommendation 3.6.1).      2. Mesh compression. Document N50. The document was Approved (Recommendation 3.1.1).      3. Video Coding for Machines. Document N43 was Approved (Recommendation 3.3.1).      4. MPEG & 5G. Document N46 was Approved (Recommendation 3.4.1).      5. Dense light fields. Document N51 was Approved (Recommendation 3.2.1).   2. CfEs and CfPs      1. NNR evaluation framework. Document N45. 2 responses to the call arrived before the meeting. One on 7.1.2021 and one on 8.1.2021. It was commented by Werner that 8 days difference to get the clarification in not a significant delay for the respondents. It was commented to expand “w.r.t. = with regards to”. The front page will be updated. The document was Approved (Recommendation 2.1.1).      2. Haptics support in MPEG.   Document N37. There are no issues with the content licensing (there is no cost). The schedule has been delayed by one month. The document was Approved (Recommendation 3.5.1).  Document N38 was Approved (Recommendation 3.5.1).  Document N39 was Approved (Recommendation 3.5.1).  Document N40 was Approved (Recommendation 3.5.1).   * + 1. Video Coding for Machines   Document N41. In page 7 “shall” and “must” mean the same. They should be aligned. One “that” must be changed to “should”. The excel document will be a separate document. The document was Approved (Recommendation 3.3.1).  Document N42. It was asked to clarify the schedule (editorial updates). The excel document will be a separate document. The document was Approved (Recommendation 3.3.1).  Document N54. Evaluation methodology and reporting template for VCM. The document was Approved (Recommendation 3.3.1).  The full list of established AHG was approved in document N52 (recommendation 4.5.1).   * 1. New activities   Market Needs. The AHG mandates were Approved. The reflector will have to be setup within 24 hours from the end of the meeting.   * 1. Asset management   2. IPR management  1. Work plan and timeline   MPEG Roadmap. Document N48 was Approved (Recommendation 4.8.1).   1. Administrative matters   Schedule of future MPEG/WG2 meetings   |  |  |  |  |  | | --- | --- | --- | --- | --- | | **#** | **City** | **Country** | **Start** | **End** | | **134** | **Geneva -> OnLine** | **CH** | **2021-04-26** | **2021-04-30** | | **135** | **Prague -> OnLine** | **CZ** | **2021-07-12** | **2021-07-16** | | **136** | **Antalya** | **TR** | **2021-10-11** | **2021-10-15** | | **137** | **Geneva** | **CH** | **2022-01-XX** | **2022-01-XX** | | **138** | **Miami** | **US** | **2022-04-25** | **2022-04-29** | | **139** | **Cologne** | **DE** | **2022-07-18** | **2022-07-22** | | **140** | **Geneva** | **CH** | **2022-10-XX** | **2022-10-XX** | | **141** |  |  | **2023-01-XX** | **2023-01-XX** |  * 1. Promotional activities   2. Press release  1. Other documents   Document m56142 was noted.  Document m56067 was postponed.   1. Conclusions of this meeting   The list of meeting Recommendations are available in document N53 which was approved.  The list of output document is in Annex C.   1. A.O.B.   WG2 has a new WG2 mailing list. Please subscribe to  [https://lists.aau.at/mailman/listinfo/mpeg-req](https://lists.aau.at/mailman/listinfo/mpeg-req" \o "https://lists.aau.at/mailman/listinfo/mpeg-req). The below mailing list in the note will not be used anymore from the closing of the current meeting. (Recommendation 5.1.2)   1. Closing at 16.11 UTC on 15 January 2021.   Note:  Until further notice, WG2 will continue to use the former WG11 Requirements Sub-Group mailing list.  Subscribe here: <https://listserv.uni-hannover.de/cgi-bin/wa?SUBED1=REQUIREMENTS-TNT&A=1>  **Annex A**  **List of attendees**   |  |  |  |  |  | | --- | --- | --- | --- | --- | | **Title** | **First Name** | **Last Name** | **Representing** | **Role** | | **Mr** | **Kiyofumi** | **Abe** | **JISC (Japan)** | **EXPERT** | | **Mr** | **Homayun** | **Afrabandpey** | **SFS (Finland)** | **EXPERT** | | **Mr** | **Jukka** | **Ahonen** | **SFS (Finland)** | **EXPERT** | | **Mr** | **Emre** | **Aksu** | **SFS (Finland)** | **EXPERT** | | **Mr** | **Thomas** | **Alder** | **ANSI (United States)** | **EXPERT** | | **M.** | **Mohamed** | **Allouche** | **AFNOR (France)** | **EXPERT** | | **Mr** | **Shuichi** | **Aoki** | **JISC (Japan)** | **EXPERT** | | **Mr** | **Muhammad** | **Asad Lodhi** | **ANSI (United States)** | **EXPERT** | | **Mr** | **Kohtaro** | **Asai** | **JISC (Japan)** | **EXPERT** | | **Dr** | **Pekka** | **Astola** | **SFS (Finland)** | **EXPERT** | | **Mr** | **Hamid** | 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**Wang** | **ANSI (United States)** | **EXPERT** | | **Mr** | **Wei** | **Wang** | **ANSI (United States)** | **EXPERT** | | **Dr** | **Xin** | **Wang** | **ANSI (United States)** | **EXPERT** | | **Dr** | **Ye-Kui** | **Wang** | **ANSI (United States)** | **EXPERT** | | **Mr** | **zekun** | **wang** | **SAC (China)** | **EXPERT** | | **Dr** | **Wade** | **Wan** | **ANSI (United States)** | **EXPERT** | | **Mr** | **Jim** | **Welch** | **ANSI (United States)** | **EXPERT** | | **Dr** | **Stephan** | **Wenger** | **ANSI (United States)** | **EXPERT** | | **Mr Dr.-Ing.** | **Mathias** | **Wien** | **DIN (Germany)** | **EXPERT** | | **Dr** | **Ping** | **Wu** | **BSI (United Kingdom)** | **EXPERT** | | **Dr** | **Xiaozhong** | **Xu** | **ANSI (United States)** | **EXPERT** | | **Mr** | **Yoichi** | **Yagasaki** | **JISC (Japan)** | **EXPERT** | | **Mr** | **Haitao** | **Yang** | **SAC (China)** | **EXPERT** | | **Dr** | **Hyunkoo** | **Yang** | **KATS (Korea, Republic of)** | **EXPERT** | | **Mr** | **Yu Chiao** | **Yang** | **ANSI (United States)** | **EXPERT** | | **Dr** | **Yan** | **Ye** | **ANSI (United States)** | **EXPERT** | | **Ms** | **Peng** | **Yin** | **ANSI (United States)** | **EXPERT** | | **Mr** | **Eric** | **Yip** | **KATS (Korea, Republic of)** | **EXPERT** | | **Ms** | **Akane** | **Yokota** | **JISC (Japan)** | **EXPERT** | | **Mr** | **Kyoungro** | **Yoon** | **KATS (Korea, Republic of)** | **EXPERT** | | **Mr** | **Yong-Uk** | **Yoon** | **KATS (Korea, Republic of)** | **EXPERT** | | **Ms** | **Sunmi** | **Yoo** | **KATS (Korea, Republic of)** | **EXPERT** | | **Mr** | **Kentaro** | **Yoshida** | **JISC (Japan)** | **EXPERT** | | **Mr** | **Yu** | **You** | **SFS (Finland)** | **EXPERT** | | **Mr** | **hualong** | **yu** | **SAC (China)** | **EXPERT** | | **Dr. Prof.** | **Lu** | **Yu** | **SAC (China)** | **EXPERT** | | **Dr** | **Joung Il** | **Yun** | **KATS (Korea, Republic of)** | **EXPERT** | | **Mr** | **Alexandre** | **Zaghetto** | **ANSI (United States)** | **EXPERT** | | **Dr** | **Vladyslav** | **Zakharchenko** | **ANSI (United States)** | **EXPERT** | | **Mr** | **Honglei** | **Zhang** | **SFS (Finland)** | **EXPERT** | | **Dr** | **Li** | **Zhang** | **ANSI (United States)** | **EXPERT** | | **Mr** | **qian** | **zhang** | **SAC (China)** | **EXPERT** | | **Mr** | **Wenhao** | **Zhang** | **SAC (China)** | **EXPERT** | | **Dr** | **Shuai** | **Zhao** | **ANSI (United States)** | **EXPERT** | | **Mr** | **Yin** | **Zhao** | **SAC (China)** | **EXPERT** | | **Mr** | **Xiaozhen** | **Zheng** | **SAC (China)** | **EXPERT** | | **Dr** | **Minhua** | **Zhou** | **ANSI (United States)** | **EXPERT** | | **Mr** | **Tianyang** | **Zhou** | **JISC (Japan)** | **EXPERT** |   **Invited Experts:**  **United States National Body**  **Mr. Chris Chinnock**  **Mr. Dell Wolfensparger**    **China National Body**  **Mr. Mary-Luc Champel**  **Dr. Yue Yu**  **Dr. Haoping Yu**    **Germany National Body**  **Michel Bätz**  **Annex B**  **List of input documents**   |  |  |  |  |  | | --- | --- | --- | --- | --- | | SC29 N-number | WG2 N-number | MPEG m-number | Title | Decision / Comment | | Liaison statements | | | | | |  |  | 56179 | Liaison organizations for WG2 | Approved | | MPEG-I Architecture and Requirements | | | | | |  |  | 55654 | AHG on MPEG-I Architecture and Requirements | Noted. | | Future Capabilities for MPEG-I | | | | | |  |  | 55651 | AhG on Future Capabilities of MPEG-I | AHG Report | |  |  | 56003 | MPEG-I Beyond The VR HMD | See BoG Report | |  |  | 56056 | [MPEG-I Future] Characterizing Rendering Methods for Immersive Applications | See BoG Report | |  |  | 56057 | [MPEG-I Future] Immersive media content creation workflows for immersive displays | See BoG Report | |  |  | 56059 | [MPEG-I Future] Revised draft requirements for support of emerging immersive displays and media for immersive applications | See BoG Report | |  |  | 56063 | [MPEG-I Future] Revised framework for characterization of emerging immersive displays for immersive applications | See BoG Report | |  |  | 56065 | [MPEG-I Future] Attributes of Immersive Displays that Impact Format and Distribution of Media | See BoG Report | |  |  | 56066 | [MPEG-I Future] Draft use cases for end-to-end ecosystem of immersive media and immersive applications | See BoG Report | |  |  | 56218 | [MPEG-I Future] BoG report of Future Capabilities of MPEG-i | BoG Report | | Haptics Support in MPEG | | | | | |  |  | 55645 | AHG on Haptics Support in MPEG | AHG Report | |  |  | 55829 | [Haptics] Revised Draft Call for Proposals on the Coded Representation of Haptics - Phase 1 | See BoG Report | |  |  | 55830 | [Haptics] Draft Submissions and Evaluation Procedures for the Haptics CfP - Phase 1 | See BoG Report | |  |  | ~~55832~~ | ~~Haptics] Report of the AHG on Haptics Support in MPEG~~ | See BoG Report | |  |  | 55836 | [Haptics] Draft MPEG CE Methodology for Haptics | See BoG Report | |  |  | 55984 | [Haptics] Vibrotactile and Kinesthetic content for the AHG MPEG-haptics | See BoG Report | |  |  | 55985 | [Haptics] OHM file format for haptic data description | See BoG Report | |  |  | 55986 | [Haptics] Kinesthetic reference setup for the AHG MPEG-haptics | See BoG Report | |  |  | 56041 | [Haptics] Revised Draft Encoder Input Format for Haptics | See BoG Report | |  |  | 56087 | [Haptics] Thoughts on Haptic Rendering | See BoG Report | |  |  | 56231 | Report of the WG 2 Haptics BOG Sessions | BoG Report | | MPEG&5G | | | | | |  |  | 55653 | AHG on MPEG&5G | AHG Report | |  |  | 55964 | [MPEG&5G] Updates about activities on spatial information within MPEG | See BoG Report | |  |  | 56064 | [MPEG&5G] Further information on 3GPP activities related to MPEG | See BoG Report | |  |  | 56077 | MPEG 5G requirements for server-side dynamic adaptation at edge | See BoG Report | |  |  | 56245 | MPEG&5G BoG Report | BoG Report | | Video Coding for Machines | | | | | |  |  | 55648 | AHG on Video Coding for Machines | AHG Report | |  |  | 55743 | [VCM]Anchor generation for MOT20(updated) | See BoG Report | |  |  | 55744 | [VCM]Anchor generation for HiEve(action recognition) | See BoG Report | |  |  | 55745 | [VCM] Anchors on OpenImages dataset | See AHG Report | |  |  | 55761 | [VCM]Anchor generation for HiEve(object tracking) |  | |  |  | 55774 | [VCM]License for HiEve Dataset | See AHG Report | |  |  | 55785 | [VCM] Anchor and Pareto-Front curve results for object detection in IR image | See AHG Report | |  |  | 55786 | [VCM] Image or video format of feature map compression for object detection | See AHG Report | |  |  | 55787 | [VCM] Investigation on feature map layer selection for object detection and compression | See AHG Report | |  |  | 55788 | [VCM] Investigation on feature map quantization for object detection and compression | See AHG Report | |  |  | 55809 | [VCM] Additional datasets for testing and evaluation of VCM technology | See AHG Report | |  |  | 55854 | [VCM] On the Evaluation of VCM Proposals | See AHG Report | |  |  | 55886 | [VCM]Anchor generation for HiEve(pose tracking) | See BoG Report | |  |  | 55888 | [VCM]Anchor generation for HiEve(pose estimation) | See BoG Report | |  |  | 55915 | [VCM] Additional crosscheck results on object detection in IR image | See AHG Report | |  |  | 55916 | [VCM] On Clearly Define Machine Vision Quality Measurements | See AHG Report | |  |  | 55932 | [VCM]Crosscheck of anchor generation for HiEve(pose estimation, m55888) | See BoG Report | |  |  | 55933 | [VCM]Crosscheck for anchor generation for HiEve(object tracking, 55761) | See BoG Report | |  |  | 55934 | [VCM]Crosscheck of anchor generation for HiEve(action recognition, m55744) | See BoG Report | |  |  | 55935 | [VCM]Crosscheck for anchor generation for HiEve(pose tracking) | See BoG Report | |  |  | 55936 | [VCM]Crosscheck for anchor generation for MOT20(updated, m55743) | See BoG Report | |  |  | 55937 | [VCM] Updated Common test conditions, evaluation methodology and reporting template for VCM | See AHG Report | |  |  | 55953 | [VCM] Anchor crosscheck for object detection on CityPersons dataset (crosscheck of m54886) | See AHG Report | |  |  | 55960 | [VCM] Evaluation results of object segmentation with deep learning-based image compression | See AHG Report | |  |  | 55987 | [VCM] Comments on VCM requirements | See AHG Report | |  |  | 56001 | [VCM] Comments on VCM Call for Evidences | See AHG Report | |  |  | 56068 | [VCM] Candidate dataset for VCM | See AHG Report | |  |  | 56099 | [VCM] Poznan University of Technology additional anchor experiment for object detection | See AHG Report | |  |  | 56105 | [VCM] Requirements for stereoscopic and multiview video in VCM environment | See BoG Report | |  |  | 56126 | [VCM] Improved anchor results for object detection on Open Images | See AHG Report | |  |  | 56226 | [VCM] BoG Report on Video Coding for Machines | BoG Report | | Data Compression | | | | | |  |  | 55655 | AHG on Data Compression | AHG Report | |  |  | 56164 | An initial study of generic data compression | To JM w/ WG7-8 | | MPEG Roadmap | | | | | |  |  | 55656 | AHG on MPEG Roadmap | AHG report | |  |  | 55720 | Notes about the MPEG Roadmap | See AHG report | |  |  | 56180 | MPEG Roadmap after AHG meeting prior to MPEG 133 | See BoG Report | |  |  | 56256 | BoG report | BoG report | | Others | | | | | |  |  | 55835 | Deficiencies and vulnerabilities of the SC29 AHG process | Plenary #1 | |  |  | 56067 | [MPEG Req General] Draft templates for CFP and CFE | Postponed | |  |  | 56088 | (Draft) Guidelines for test material for CfEs and CfPs | Plenary #1 | |  |  | 56142 | Communication from SC 29 Secretariat to SC 29 as of December 2020 | Plenary #3 | |  |  | 56177 | Agenda of the 2nd WG2 MPEG Technical Requirements meeting | Plenary #1-3 | |  |  | 56178 | Communications from Convenor | Plenary #1 | |  |  | 56183 | Ad hoc group rules for MPEG AGs and WGs | Plenary #1 |   **Annex C**  **List of output documents**    **Annex D**  **Recommendations of 2nd MPEG WG2 meeting** |  |

**1. Reports**

**1.1 Meeting Reports**

**1.1.1 WG 02 approves**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **No.** | **Title** | **In Charge** | **TBP** | **Available** | **S/N** |
|  |  |  |  |  |  |
| **31** | **Report of the 1st MPEG WG2 meeting** | **Igor Curcio** | **N** | **2021-01-15** | **20115** |

**2. MPEG-7 (ISO/IEC 15938 - Multimedia Content Description Interface)**

**2.1 Part 17 - Compression of neural networks for multimedia content description and analysis**

**2.1.1 The WG 02 recommends approval of the following document**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **No.** | **Title** | **In Charge** | **TBP** | **Available** | **S/N** |
|  | **ISO/IEC 15938-17 - Compression of neural networks for multimedia content description and analysis** |  |  |  |  |
| **45** | **Clarifications about NNR evaluation framework** | **Werner Bailer** | **Y** | **2021-01-15** | **20129** |

**3. Explorations**

**3.1 General**

**3.1.1 The WG 02 recommends approval of the following document**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **No.** | **Title** | **In Charge** | **TBP** | **Available** | **S/N** |
|  | **ISO/IEC 99999** |  |  |  |  |
| **50** | **Draft Requirements for mesh compression** | **Ralf Schaefer** | **N** | **2021-01-15** | **20134** |

**3.2 Part 7 - Immersive Video**

**3.2.1 The WG 02 recommends approval of the following document**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **No.** | **Title** | **In Charge** | **TBP** | **Available** | **S/N** |
|  | **Explorations** |  |  |  |  |
| **51** | **Use Case and Application Scenario for Dense Light Field** | **Mehrdad Teratani** | **N** | **2021-01-15** | **20137** |

**3.3 Part 34 - Video Coding for Machines**

**3.3.1 The WG 02 recommends approval of the following documents**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **No.** | **Title** | **In Charge** | **TBP** | **Available** | **S/N** |
|  | **Explorations** |  |  |  |  |
| **41** | **Evaluation Framework for Video Coding for Machines** | **Manouchehr Rafie** | **Y** | **2021-01-15** | **20125** |
| **42** | **Call for Evidence for Video Coding for Machines** | **Manouchehr Rafie** | **Y** | **2021-01-15** | **20126** |
| **43** | **Use cases and requirements for Video Coding for Machines** | **Yuan Zhang** | **Y** | **2021-01-15** | **20127** |
| **44** | **Collection of Evidences Table for Video Coding for Machines** | **Yuan Zhang** | **Y** | **2021-01-15** | **20128** |
| **54** | **Common Test Conditions and Evaluation Methodology for Video Coding for Machines** | **Shan Liu** | **Y** | **2021-01-15** | **20161** |

**3.4 Part 35 - 5G Opportunities**

**3.4.1 The WG 02 recommends approval of the following documents**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **No.** | **Title** | **In Charge** | **TBP** | **Available** | **S/N** |
|  | **Explorations** |  |  |  |  |
| **46** | **MPEG and 5G use cases and requirements** | **Yu You** | **N** | **2021-01-15** | **20130** |
| **47** | **5G activities relevant to MPEG** | **Igor Curcio** | **N** | **2021-01-15** | **20131** |

**3.5 Part 40 - Haptics Support**

**3.5.1 The WG 02 recommends approval of the following documents**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **No.** | **Title** | **In Charge** | **TBP** | **Available** | **S/N** |
|  | **Explorations** |  |  |  |  |
| **37** | **Revised Draft Call for Proposals on the Coded Representation of Haptics - Phase 1** | **Yeshwant Muthusamy** | **Y** | **2021-01-15** | **20121** |
| **38** | **Draft Submissions and Evaluation Procedures for the Haptics CfP - Phase 1** | **Yeshwant Muthusamy** | **Y** | **2021-01-15** | **20122** |
| **39** | **Draft MPEG CE Methodology for Haptics** | **Yeshwant Muthusamy** | **Y** | **2021-01-15** | **20123** |
| **40** | **Revised Draft Encoder Input Format for Haptics** | **Yeshwant Muthusamy** | **Y** | **2021-01-15** | **20124** |

**3.6 Part 42 - Future Capabilities for MPEG-I**

**3.6.1 The WG 02 recommends approval of the following documents**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **No.** | **Title** | **In Charge** | **TBP** | **Available** | **S/N** |
|  | **Explorations** |  |  |  |  |
| **34** | **Draft requirements for support of emerging immersive displays and media for immersive applications v2** | **Arianne Hinds** | **Y** | **2021-01-15** | **20118** |
| **35** | **Considerations for support of and framework for characterizing emerging immersive displays for immersive applications** | **Arianne Hinds** | **N** | **2021-01-15** | **20119** |
| **36** | **Draft report of technologies that enable use cases for immersive applications** | **Arianne Hinds** | **Y** | **2021-01-15** | **20120** |

**4. Management**

**4.1 General**

**4.2 Terms of Reference**

**4.3 Liaisons**

**4.4 List of organisations in liaison with WG 02**

**4.4.1 WG 02 recommends approval of the following document**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **No.** | **Title** | **In Charge** | **TBP** | **Available** | **S/N** |
|  | **Liaisons** |  |  |  |  |
| **33** | **Liaison organizations for WG2** | **Igor Curcio** | **N** | **2021-01-15** | **20117** |

|  |  |  |
| --- | --- | --- |
| **4.4.2** |  | **WG2 recommends that liaison representatives be coordinated at SC29 level to improve efficiency, and asks SC29 to derive a consolidated list of liaison officers.** |

**4.5 Ad hoc groups**

**4.5.1 WG 02 approves the following document**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **No.** | **Title** | **In Charge** | **TBP** | **Available** | **S/N** |
|  | **Ad hoc groups** |  |  |  |  |
| **49** | **Ad hoc group rules for MPEG AGs and WGs** | **Igor Curcio** | **N** | **2021-01-15** | **20133** |
| **52** | **WG2 AHGs established at MPEG 133** | **Igor Curcio** | **N** | **2021-01-15** | **20138** |

|  |  |  |
| --- | --- | --- |
| **4.5.2** |  | **WG2 approves document ISO/IEC JTC 1/SC 29/AG 02 N010 which is a mirror of document no. 49.   In addition to the guidelines for ad-hoc groups in document 49, the Chair(s) of a WG2 AHG shall be permitted to invite experts to join AhG activities.** |

**4.6 Asset management**

**4.7 IPR management**

**4.8 Work plan**

**4.8.1 WG 02 approves the following documents**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **No.** | **Title** | **In Charge** | **TBP** | **Available** | **S/N** |
|  | **Work plan** |  |  |  |  |
| **48** | **MPEG Roadmap after MPEG 133** | **Igor Curcio** | **Y** | **2021-01-15** | **20132** |

**4.9 Time line**

**4.10 Expression of Thanks**

|  |  |  |
| --- | --- | --- |
| **4.10.1** |  | **The WG2 Convenor expresses appreciation to Christian Tulvan for the exceptional support for the MPEG Document Management System during this meeting and the WG2 #1 meeting.** |

**5. Administrative matters**

**5.1 WG 02 approves the following**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **No.** | **Title** | **In Charge** | **TBP** | **Available** | **S/N** |
|  | **Administrative** |  |  |  |  |
| **32** | **Guidelines for test material for CfEs and CfPs** | **Justin Ridge** | **N** | **2021-01-15** | **20116** |

|  |  |  |
| --- | --- | --- |
| **5.1.2** |  | **WG2 will use a new mailing list operational after the closing of the current meeting. Please subscribe to https://lists.aau.at/mailman/listinfo/mpeg-req. The early WG11 Requirements Sub-Group mailing list will be discontinued.** |

**5.3 Schedule of meetings**

**5.3.1 WG 02 adopts the following meeting schedule**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **#** | **City** | **Country** | **Start** | **End** |
| **134** | **OnLine** |  | **2021-04-26** | **2021-04-30** |
| **135** | **OnLine** |  | **2021-07-12** | **2021-07-16** |
| **136** | **Antalya** | **TR** | **2021-10-11** | **2021-10-15** |
| **137** | **Geneva** | **CH** | **2022-01-00** | **2022-01-00** |
| **138** | **Miami** | **US** | **2022-04-25** | **2022-04-29** |
| **139** | **Cologne** | **DE** | **2022-07-18** | **2022-07-22** |
| **140** | **Geneva** | **CH** | **2022-10-00** | **2022-10-00** |
| **141** | **TBD** |  | **2023-01-00** | **2023-01-00** |

|  |  |  |
| --- | --- | --- |
| **5.1.2** |  | **WG2 requests to submit contributions for the next WG2 #3 meeting (within MPEG #134) by 23.59 CET of 18 April 2021.** |

**5.4 Promotion**

**5.5 Press release**

**6. Appreciation**

**6.1 Appreciation for meeting sponsors**

**6.2 Appreciation for meeting host**