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|  | INTERNATIONAL TELECOMMUNICATION UNION**TELECOMMUNICATIONSTANDARDIZATION SECTOR**STUDY PERIOD 2022-2024 | TSAG-C79 |
| TSAG  |
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| **CONTRIBUTION** |
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| **Title:** | Proposals on the assignment of FG-MV deliverables |
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| **Abstract:** | This contribution proposes the target SG of the ITU FG-MV deliverables approved in the third and fourth FG-MV.  |

**1. Introduction**

TSAG was approved the establishment of the ITU Focus Group on metaverse (FG-MV) under TSAG in 16 December 2022. In FG-MV, nine working groups (WG) were organized and studied pre-standardization issues. FG-MV has already held four meetings and three workshops. It published 22 deliverables until December 2023 [LS-from-FG-MV].

In order to spread the standardized metaverse in the world, it is important for TSAG to allocate these deliverables to appropriate SGs and for SGs to study them and complete ITU-T Recommendations as soon as possible.

**2. Discussion**

Regarding the allocation of the deliverables to ITU-T SGs, FG-MV shows the candidates of SGs in [LS-from-FG-MV] and they are shown in Annex 1 of this Contribution. As the column in *“Proposed allocation to ITU-T Study Groups and/or other entities”* indicates not only one focal SG, but also some focal SGs, TSAG is required to decide one of them.

For this discussion in TSAG, the relationship between the existing SGs and/or Questions under SGs and metaverse may be helpful. Such relationships are shown in in Annex 2 of this contribution, which is based on the Contribution to TSAG [TSAG C009] and the ToR of FG-MV.

After assignment, TSAG should encourage SGs to review and consider making ITU-T Recommendations, in order for ITU-T to take a leading role of metaverse standardization.

**3. Proposals**

The purpose of this contribution is to help TSAG decision for assignment FG-MV deliverables, and to reduce the discussion time in TSAG. This contribution proposes candidates of assigned Questions of SG16, from the viewpoints of ITU-T SG16 and FG-MV management members in Japan. These proposals were made through the experiences in the management of ITU-T SG16 and FG-MV.

Table 1 shows the proposed assignment of deliverables, whose assigned candidates include SG16 in the FG-MV report, to specific Questions of SG16, and the followings are rationales of these assignments:

* As FGMV-01, 02, 19, 20 and 21 are general document about metaverse, it is proposed that they should be assigned to Q8/16 (Immersive live experience systems and services), because Q8/16 studies immersive live experience system using virtual reality and related technologies. By this assignment (gathering general documents in one Questions), it is expected that the consistent documents will be produced.
* FGMV-03, 04, 05, 16, 17 and 18 are expected to be discussed in Q26 (Accessibility) of SG16, because SG16 is the lead study group of accessibility and Q26 is Accessibility group.
* FGMV-22 is expected to be discussed in Q5/16, because Q5/16 studies AI multimedia and metaverse applications and services can be regarded as multimedia applications and services.

After FG-MV deliverable assignments to SGs in this TSAG, it is expected that the standardization of metaverse will be accelerated. For more acceleration, some ToR of Questions under such SGs will be modified to align their studies about metaverse.

**Table 1 – Proposed allocations**

| **No.** | **Title** | Allocations in [LS-from-FG-MV] | **Proposed allocation** |
| --- | --- | --- | --- |
| [FGMV-01](http://handle.itu.int/11.1002/pub/82047d78-en) | Technical Report on Exploring the metaverse: opportunities and challenges​ | ITU-T SG3, SG16, SG20 (ITU-D SGs) | Q8 (Immersive live experience systems and services) of SG16 |
| [FGMV-02](https://www.itu.int/en/ITU-T/focusgroups/mv/Documents/List%20of%20FG-MV%20deliverables/FGMV-02.pdf) | Technical Report on Metaverse: an analysis of definitions | ITU-T SG3 and SG16 (SG20, ITU-T SCV, ITU-D SGs) |  Q8 (Immersive live experience systems and services) of SG16 |
| [FGMV-03](https://www.itu.int/en/ITU-T/focusgroups/mv/Documents/List%20of%20FG-MV%20deliverables/FGMV-03.pdf) | Technical Report on Guidelines to assess inclusion and accessibility in metaverse standard development | ITU-T SG16 (ITU-T SG9, ITU-T SG20, JCA-AHF, IRG-AVA) |  Q26 (Accesibility) of SG16 |
| [FGMV-04](https://www.itu.int/en/ITU-T/focusgroups/mv/Documents/List%20of%20FG-MV%20deliverables/FGMV-04.pdf) | Technical Specification on Requirements of accessible products and services in the metaverse: Part I – System design perspective | ITU-T SG16, ITU-T SG9, ITU-T SG20 (JCA-AHF, IRG-AVA) |  Q26 (Accesibility) of SG16 |
| [FGMV-05](https://www.itu.int/en/ITU-T/focusgroups/mv/Documents/List%20of%20FG-MV%20deliverables/FGMV-05.pdf) | Technical Specification on Requirements of accessible products and services in the metaverse: Part II – User perspective | ITU-T SG16, ITU-T SG9, ITU-T SG20 (JCA-AHF, IRG-AVA) |  Q26 (Accesibility) of SG16 |
| [FGMV-16](https://www.itu.int/en/ITU-T/focusgroups/mv/Documents/List%20of%20FG-MV%20deliverables/FGMV-16.pdf) | Technical Report on Accessibility in a sustainable metaverse | ITU-T SG16 (ITU-T SG9, ITU-T SG20, JCA-AHF, IRG-AVA) |  Q26 (Accesibility) of SG16 |
| [FGMV-17](https://www.itu.int/en/ITU-T/focusgroups/mv/Documents/List%20of%20FG-MV%20deliverables/FGMV-17.pdf) | Technical Report on Guidelines and requirements on interpreting in the metaverse | ITU-T SG16 (ITU-T SG9, ITU-T SG20, JCA-AHF, IRG-AVA) |  Q26 (Accesibility) of SG16 |
| [FGMV-18](https://www.itu.int/en/ITU-T/focusgroups/mv/Documents/List%20of%20FG-MV%20deliverables/FGMV-18.pdf) | Technical Report on Guidance on how to build a metaverse for all – Part I: Legal Framework | ITU-T SG16 (ITU-T SG9, ITU-T SG20, JCA-AHF, IRG-AVA) |  Q26 (Accesibility) of SG16 |
| [FGMV-19](https://www.itu.int/en/ITU-T/focusgroups/mv/Documents/List%20of%20FG-MV%20deliverables/FGMV-19.pdf) | Technical Specification on Service scenarios and high-level requirements for metaverse cross-platform interoperability | ITU-T SG16 | Q8 (Immersive live experience systems and services) of SG16 |
| [FGMV-20](https://www.itu.int/en/ITU-T/focusgroups/mv/Documents/List%20of%20FG-MV%20deliverables/FGMV-20.pdf) | Technical Specification on Definition of metaverse | ITU-T SG16 (SG3, SG20, ITU-T SCV) | Q8 (Immersive live experience systems and services) of SG16 |
| [FGMV-21](https://www.itu.int/en/ITU-T/focusgroups/mv/Documents/List%20of%20FG-MV%20deliverables/FGMV-21.pdf) | Technical Report on Principles for building concepts and definitions related to metaverse | ITU-T SG16 (SG3, SG20, ITU-T SCV) | Q8 (Immersive live experience systems and services) of SG16 |
| [FGMV-22](https://www.itu.int/en/ITU-T/focusgroups/mv/Documents/List%20of%20FG-MV%20deliverables/FGMV-22.pdf) | Technical Specification on Capabilities and requirements of generative artificial intelligence in metaverse applications and services | ITU-T SG16 (ITU-T SG9, ITU-T SG20) | Q5 (AI) of SG16 |

**Reference**

[LS-from-FG-MV] T22-TSAG-240122-TD-GEN-0400, *LS on Results of the fourth meeting of the FG-MV* (Ref.: FG-MV-O-187-R2) (Geneva, 22 - 26 January 2024).

[TSAG C0009] T22-TSAG-C-0009, *Proposal to create a Focus group on metaverse in ITU-T SG16* (Geneva, 12-16 December 2022)

**Annex 1: FG-MV approved deliverables with proposed allocation**

The following table is excerpted from [LS-from-FG-MV].

\*() entities or groups that might be interested in these deliverables

| **No.** | **Title** | **Approved** | **Proposed allocation to ITU-T Study Groups and/or other entities** |
| --- | --- | --- | --- |
| [FGMV-01](http://handle.itu.int/11.1002/pub/82047d78-en) | Technical Report on Exploring the metaverse: opportunities and challenges​ | July 2023 | ITU-T SG3, SG16, SG20 (ITU-D SGs) |
| [FGMV-02](https://www.itu.int/en/ITU-T/focusgroups/mv/Documents/List%20of%20FG-MV%20deliverables/FGMV-02.pdf) | Technical Report on Metaverse: an analysis of definitions | October 2023 | ITU-T SG3 and SG16 (SG20, ITU-T SCV, ITU-D SGs) |
| [FGMV-03](https://www.itu.int/en/ITU-T/focusgroups/mv/Documents/List%20of%20FG-MV%20deliverables/FGMV-03.pdf) | Technical Report on Guidelines to assess inclusion and accessibility in metaverse standard development | October 2023 | ITU-T SG16 (ITU-T SG9, ITU-T SG20, JCA-AHF, IRG-AVA) |
| [FGMV-04](https://www.itu.int/en/ITU-T/focusgroups/mv/Documents/List%20of%20FG-MV%20deliverables/FGMV-04.pdf) | Technical Specification on Requirements of accessible products and services in the metaverse: Part I – System design perspective | October 2023 | ITU-T SG16, ITU-T SG9, ITU-T SG20 (JCA-AHF, IRG-AVA) |
| [FGMV-05](https://www.itu.int/en/ITU-T/focusgroups/mv/Documents/List%20of%20FG-MV%20deliverables/FGMV-05.pdf) | Technical Specification on Requirements of accessible products and services in the metaverse: Part II – User perspective | October 2023 | ITU-T SG16, ITU-T SG9, ITU-T SG20 (JCA-AHF, IRG-AVA) |
| [FGMV-06](https://www.itu.int/en/ITU-T/focusgroups/mv/Documents/List%20of%20FG-MV%20deliverables/FGMV-06.pdf) | Technical Report on Guidelines for consideration of ethical issues in standards that build confidence and security in the metaverse | October 2023 | ITU-T SG17, ITU-T SG16 (OHCHR, UNDESA) |
| [FGMV-07](https://www.itu.int/en/ITU-T/focusgroups/mv/Documents/List%20of%20FG-MV%20deliverables/FGMV-07.pdf) | Technical Report on Policy and regulation opportunities and challenges in the metaverse | October 2023 | ITU-T SG3 (ITU-T SG16, ITU-T SG17, ITU-T SG20) |
| [FGMV-08](https://www.itu.int/en/ITU-T/focusgroups/mv/Documents/List%20of%20FG-MV%20deliverables/FGMV-08.pdf) | Technical Specification on Design criteria and technical requirements for sustainable metaverse ecosystem | October 2023 | ITU-T SG5 (ITU-T SG16, ITU-T SG13, ITU-T SG20, UNDESA) |
| [FGMV-09](https://www.itu.int/en/ITU-T/focusgroups/mv/Documents/List%20of%20FG-MV%20deliverables/FGMV-09.pdf) | Technical Report on Power metaverse: Use cases relevant to grid side and user side | October 2023 | ITU-T SG16 and ITU-T SG20 |
| [FGMV-10](https://www.itu.int/en/ITU-T/focusgroups/mv/Documents/List%20of%20FG-MV%20deliverables/FGMV-10.pdf) | Technical Report on Cyber risks, threats, and harms in the metaverse | December 2023 | ITU-T SG17 |
| [FGMV-11](https://www.itu.int/en/ITU-T/focusgroups/mv/Documents/List%20of%20FG-MV%20deliverables/FGMV-11.pdf) | Technical Report on Embedding safety standards and the user control of Personally Identifiable Information (PII) in the development of the metaverse | December 2023 | ITU-T SG17 and ITU-T SG16 |
| [FGMV-12](https://www.itu.int/en/ITU-T/focusgroups/mv/Documents/List%20of%20FG-MV%20deliverables/FGMV-12.pdf) | Technical Report on Children's age verification in the metaverse | December 2023 | ITU-T SG17 (UNICEF and ITU-D SG2) |
| [FGMV-13](https://www.itu.int/en/ITU-T/focusgroups/mv/Documents/List%20of%20FG-MV%20deliverables/FGMV-13.pdf) | Technical Report on Responsible Use of AI for Child Protection in the metaverse | December 2023 | ITU-T SG17 (ITU-T SG3, UNICEF and ITU-D SG2) |
| [FGMV-14](https://www.itu.int/en/ITU-T/focusgroups/mv/Documents/List%20of%20FG-MV%20deliverables/FGMV-14.pdf) | Technical Report on Regulatory and economic aspects in the metaverse: Data protection-related | December 2023 | ITU-T SG3 (ITU-T SG17, ITU-T SG20) |
| [FGMV-15](https://www.itu.int/en/ITU-T/focusgroups/mv/Documents/List%20of%20FG-MV%20deliverables/FGMV-15.pdf) | Technical Specification on Accessibility requirements for metaverse services supporting IoT | December 2023 | ITU-T SG20 (ITU-T SG16, ITU-T SG9, JCA-AHF, IRG-AVA) |
| [FGMV-16](https://www.itu.int/en/ITU-T/focusgroups/mv/Documents/List%20of%20FG-MV%20deliverables/FGMV-16.pdf) | Technical Report on Accessibility in a sustainable metaverse | December 2023 | ITU-T SG16 (ITU-T SG9, ITU-T SG20, JCA-AHF, IRG-AVA) |
| [FGMV-17](https://www.itu.int/en/ITU-T/focusgroups/mv/Documents/List%20of%20FG-MV%20deliverables/FGMV-17.pdf) | Technical Report on Guidelines and requirements on interpreting in the metaverse | December 2023 | ITU-T SG16 (ITU-T SG9, ITU-T SG20, JCA-AHF, IRG-AVA) |
| [FGMV-18](https://www.itu.int/en/ITU-T/focusgroups/mv/Documents/List%20of%20FG-MV%20deliverables/FGMV-18.pdf) | Technical Report on Guidance on how to build a metaverse for all – Part I: Legal Framework | December 2023 | ITU-T SG16 (ITU-T SG9, ITU-T SG20, JCA-AHF, IRG-AVA) |
| [FGMV-19](https://www.itu.int/en/ITU-T/focusgroups/mv/Documents/List%20of%20FG-MV%20deliverables/FGMV-19.pdf) | Technical Specification on Service scenarios and high-level requirements for metaverse cross-platform interoperability | December 2023 | ITU-T SG16 |
| [FGMV-20](https://www.itu.int/en/ITU-T/focusgroups/mv/Documents/List%20of%20FG-MV%20deliverables/FGMV-20.pdf) | Technical Specification on Definition of metaverse | December 2023 | ITU-T SG16 (SG3, SG20, ITU-T SCV) |
| [FGMV-21](https://www.itu.int/en/ITU-T/focusgroups/mv/Documents/List%20of%20FG-MV%20deliverables/FGMV-21.pdf) | Technical Report on Principles for building concepts and definitions related to metaverse | December 2023 | ITU-T SG16 (SG3, SG20, ITU-T SCV) |
| [FGMV-22](https://www.itu.int/en/ITU-T/focusgroups/mv/Documents/List%20of%20FG-MV%20deliverables/FGMV-22.pdf) | Technical Specification on Capabilities and requirements of generative artificial intelligence in metaverse applications and services | December 2023 | ITU-T SG16 (ITU-T SG9, ITU-T SG20) |

**Annex 2: The relationship between ITU-T SGs and metaverse**

[ToR of FG-MV](https://www.itu.int/en/ITU-T/focusgroups/mv/Documents/FGMV_ToR-TSAG-TD0164-20221212.pdf) incudes the relationship between ITU-T SGs and metaverse. And [TSAG C0009] contains more detailed observations of the relationship between FG-MV and the following SGs: SG5, SG9, SG12, SG13, SG17, and SG20.

Consolidated list of the above documents are as follows:

– ITU-T SG 16 on multimedia aspects of the metaverse

* ITU-T Q1/16, Q11/16, Q13/16, Q21/16, Q27/16 and Q28/16 on multimedia
* ITU-T Q5/16 on artificial intelligence-enabled multimedia applications
* ITU-T Q6/16 for visual, audio and signal coding
* ITU-T Q8/16 for immersive live experience systems and services
* ITU-T Q12/16 on intelligent visual systems and services
* ITU-T Q23/16 and Q12/16 on digital culture-related systems and services
* ITU-T Q22/16 for multimedia aspects of distributed ledger technologies and e-services
* ITU-T Q24/16 for human factors for intelligent user interfaces and services
* ITU-T Q26/16 for accessibility to multimedia systems and services
* ITU-T Q28/16 for multimedia framework for digital health applications

– ITU-T SG13 on cloud computing aspects of the metaverse

* ITU-T Q17/13 for cloud requirement
* ITU-T Q18/13 for cloud architecture
* ITU-T Q19/13 for cloud management
* ITU-T Q22/13 for emerging network technologies
* ITU-T SG13 ad-hoc group on “Future ICT Evolution for emerging Web Era”

– ITU-T SG9 on broadband cable and TV aspects of the metaverse

* ITU-T Q1/9 for contribution, primary distribution and secondary distribution
* ITU-T Q9/9 for the advanced service over integrated broadband cable networks
* ITU-T Q11/9 for accessibility to cable systems and services

– ITU-T SG12 on quality-of-service aspects of the metaverse

* ITU-T Q7/12 for the subjective assessment of audiovisual quality interactions
* ITU-T Q10/12 for the subjective methods of XR communication
* ITU-T Q13/12 for the subjective methods of VR and the objective assessment of design.
* ITU-T Q14/12 for the multimedia quality assessment of packet-based video services
* ITU-T Q19/12 for the objective and subjective methods for audiovisual quality
* ITU-T Q15/12 for the conversational speech and audio-visual quality

– ITU-T SG17 on security aspects of the metaverse [TD94/GEN]

* ITU-T Q2/17 for the security architecture and network security
* ITU-T Q3/17 for the telecommunication information security management and services
* ITU-T Q4/17 for the cybersecurity and countering spam
* ITU-T Q7/17 for the secure application services
* ITU-T Q8/17 for the cloud computing and big data security
* ITU-T Q14/17 for the distributed ledger technology security

– ITU-T SG20 on the digital twin aspects of the metaverse

* ITU-T Q1/20 for Interoperability and interworking of IoT and SC&C applications and services

– ITU-T SG5 on the environmental sustainability aspect​ [TD109/GEN]

* ITU-T Q6/5 for environmental efficiency of digital technologies
* ITU-T Q7/5 for circular economy
* ITU-T Q9/5 for assessment methodologies of digital technologies
* ITU-T Q11/5 for smart energy solutions

– ITU-T SG2 – Operational aspects

– ITU-T SG3 – Economic & policy issues

– ITU-T SG11 – Protocols, testing & combating counterfeiting

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