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| Title: ITU logo | INTERNATIONAL TELECOMMUNICATION UNION  **TELECOMMUNICATION STANDARDIZATION SECTOR**  STUDY PERIOD 2022-2024 | | | TSAG-TD644 |
| TSAG |
| **Original: English** |
| **Question(s):** | | N/A | | Geneva, 29 July - 2 August 2024 |
| **TD (Ref.:** [SG20-LS121](http://handle.itu.int/11.1002/ls/sp17-sg20-oLS-00121.docx)**)** | | | | |
| **Source:** | | ITU-T Study Group 20 | | |
| **Title:** | | LS/r on metaverse (reply to TSAG-LS35) [from ITU-T SG20] | | |
| **LIAISON STATEMENT** | | | | |
| **For action to:** | | | TSAG | |
| **For information to:** | | | - | |
| **Approval:** | | | ITU-T Study Group 20 meeting (Geneva, 12 July 2024) | |
| **Deadline:** | | | – | |
| **Contact:** | | | Hyoung Jun Kim SG20 Chair | E-mail: [khj@etri.re.kr](mailto:khj@etri.re.kr) |
| **Contact:** | | | Shane He SG20 Vice-Chair | E-mail: [shane.he@nokia.com](mailto:shane.he@nokia.com) |

This liaison statement answers [TSAG-LS35](https://www.itu.int/ifa/t/2022/ls/tsag/sp17-tsag-oLS-00035.docx).

A new liaison statement has been received from SG20.

This liaison statement follows and the original file can be downloaded from the ITU ftp server at <http://handle.itu.int/11.1002/ls/sp17-sg20-oLS-00121.docx>.

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|  | INTERNATIONAL TELECOMMUNICATION UNION  **TELECOMMUNICATION STANDARDIZATION SECTOR**  STUDY PERIOD 2022-2024 | | | | | **SG20-LS121** |
| **STUDY GROUP 20** |
| **Original: English** |
| **Question(s):** | | All/20 | | | | Geneva, 1-12 July 2024 |
| **Ref.: SG20-TD1589-R4** | | | | | | |
| **Source:** | | ITU-T Study Group 20 | | | | |
| **Title:** | | LS/r on metaverse (reply to TSAG-LS35) | | | | |
| **LIAISON STATEMENT** | | | | | | |
| **For action to:** | | | | TSAG | | |
| **For information to:** | | | | – | | |
| **Approval:** | | | | **ITU-T Study Group 20 meeting (Geneva, 12 July 2024)** | | |
| **Deadline:** | | | | – | | |
| **Contact:** | | Hyoung Jun Kim SG20 Chair | | | E-mail: [khj@etri.re.kr](mailto:khj@etri.re.kr) | |
| **Contact:** | | | Shane He SG20 Vice-Chair | | E-mail: [shane.he@nokia.com](mailto:shane.he@nokia.com) | |

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| **Abstract:** | This liaison statement is a reply to TSAG-LS35 on metaverse. ITU-T Study Group 20 informs TSAG of its interest on the FG-MV deliverables allocated to multiple Study Groups and all Study Groups. Also, it informs ITU-T Study Group 20’s interests on the FG-MV deliverables that were approved from January to June 2024. |

This liaison statement answers [TSAG-LS35](http://handle.itu.int/11.1002/ls/sp17-tsag-oLS-00035.docx).

ITU-T Study Group 20 would like to thank TSAG for sharing the current status of the allocation of FG-MV deliverables.

ITU-T Study Group 20 reviewed and discussed the ITU FG-MV deliverables allocated by TSAG. The results of the discussions are contained in Annex A. ITU-T Study Group 20 would like to inform TSAG that new work items based on the ITU FG-MV deliverables were approved during the ITU-T Study Group 20 meeting (Geneva, 1-12 July 2024) as well as of ITU-T Study Group 20’s interests in the ITU FG-MV deliverables allocated by TSAG.

ITU-T Study Group 20 also reviewed the ITU FG-MV deliverables approved after the TSAG meeting in January 2024. The results of the discussions are contained in Annex B. ITU-T Study Group 20 would like to request TSAG to consider ITU-T Study Group 20’s interests when allocating ITU FG-MV deliverables to relevant Study Groups at the next TSAG meeting to be held from 29 July – 2 August 2024.

During the last ITU-T Study Group 20 closing plenary held on 12 July 2024, it was agreed that work items [Draft Recommendation ITU-T Y.ACC-IoTMV](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=19599) “Accessibility requirements for metaverse services supporting IoT” and [Draft Recommendation ITU-T Y.CIP](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=19637) “Requirements of metaverse-based emergency response in chemical industrial parks” will begin their work, while the following work items [Draft Recommendations ITU-T Y.dtmv-reqts](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=19590) “Requirements of integrating virtual and physical worlds through digital twins for the metaverse”, [ITU-T Y.dtmv-ref](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=19591) “Reference model of integrating virtual and physical worlds through digital twins for the metaverse” and [ITU-T Y.dtmv-if](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=19592) “ Interface model and its requirements of integrating virtual and physical worlds through digital twins for the metaverse” will not commence their work until the related FG-MV deliverables will be discussed during the next TSAG meeting to be held on 29 July - 2 August 2024.

ITU-T Study Group 20 looks forward to keeping you updated and to continuing its cooperation with you on this topic.

**Annex A – FG-MV approved deliverables (from March to December 2023)**

The table below contains the FG-MV approved deliverables from March to December 2023, which have been allocated by TSAG to various ITU-T Study Groups or sent as information only to all.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.** | **Title** | **Approved** | **Sent as information only or Allocated** | **SG20** |
| [FGMV-01](http://handle.itu.int/11.1002/pub/82047d78-en) | Technical Report on Exploring the metaverse: opportunities and challenges​ | July 2023 | All for information |  |
| [FGMV-02](http://handle.itu.int/11.1002/pub/822e1df0-en) | Technical Report on Metaverse: an analysis of definitions | October 2023 | All for information |  |
| [FGMV-20](http://handle.itu.int/11.1002/pub/822f50fd-en) | Technical Specification  Definition of metaverse | December 2023 | ITU-T SG16 |  |
| [FGMV-03](http://handle.itu.int/11.1002/pub/822e1f34-en) | Technical Report on Guidelines to assess inclusion and accessibility in metaverse standard development | October 2023 | ITU-T SG16 |  |
| [FGMV-04](http://handle.itu.int/11.1002/pub/822e20cf-en) | 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 |  |
| [FGMV-05](http://handle.itu.int/11.1002/pub/822e20f7-en) | 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, and ITU-T SG2 |  |
| [FGMV-06](http://handle.itu.int/11.1002/pub/822f50e6-en) | Technical Report on Guidelines for consideration of ethical issues in standards that build confidence and security in the metaverse | October 2023 | ITU-T SG17 |  |
| [FGMV-07](http://handle.itu.int/11.1002/pub/822f50e7-en) | Technical Report on Policy and regulation opportunities and challenges in the metaverse | October 2023 | ITU-T SG3 |  |
| [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 and ITU-T SG20 | Q7/20 plans to initiate new work in this area and welcomes future Contributions. |
| [FGMV-09](http://handle.itu.int/11.1002/pub/822f50e9-en) | Technical Report on Power metaverse: Use cases relevant to grid side and user side | October 2023 | ITU-T SG20 and ITU-T SG13 | Q2/20 plans to initiate new work in this area and welcomes future Contributions. |
| [FGMV-10](http://handle.itu.int/11.1002/pub/822e2292-en) | Technical Report on Cyber risks, threats, and harms in the metaverse | December 2023 | ITU-T SG17 |  |
| [FGMV-11](http://handle.itu.int/11.1002/pub/822e22ae-en) | 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 SG11 |  |
| [FGMV-12](http://handle.itu.int/11.1002/pub/822e22fb-en) | Technical Report on Children's age verification in the metaverse | December 2023 | ITU-T SG17 |  |
| [FGMV-13](http://handle.itu.int/11.1002/pub/822e2315-en) | Technical Report on Responsible Use of AI for Child Protection in the metaverse | December 2023 | ITU-T SG17 |  |
| [FGMV-14](http://handle.itu.int/11.1002/pub/822f50ea-en) | Technical Report on Regulatory and economic aspects in the metaverse: Data protection | December 2023 | ITU-T SG3 and ITU-T SG17 |  |
| [FGMV-15](http://handle.itu.int/11.1002/pub/822f50eb-en) | Technical Specification on Accessibility requirements for metaverse services supporting IoT | December 2023 | ITU-T SG20 and ITU-T SG16 | Q2/20 agreed to initiate a new work item. |
| [FGMV-16](http://handle.itu.int/11.1002/pub/822f50ec-en) | Technical Report on Accessibility in a sustainable metaverse | December 2023 | ITU-T 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 | December 2023 | ITU-T SG16 |  |
| [FGMV-18](http://handle.itu.int/11.1002/pub/822f50ee-en) | Technical Report on Guidance on how to build a metaverse for all – Part I: Legal Framework | December 2023 | ITU-T SG16 and ITU-T SG3 |  |
| [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, ITU-T SG20, ITU-T SG13 and ITU-T SG11 |  |
| [FGMV-21](http://handle.itu.int/11.1002/pub/822f50fe-en) | Technical Report on Principles for Building Concepts and Definitions Related to metaverse | December 2023 | All for Information |  |
| [FGMV-22](http://handle.itu.int/11.1002/pub/822f50ff-en) | Technical Specification on Capabilities and requirements of Generative Artificial Intelligence in metaverse applications and services | December 2023 | ITU-T SG16 |  |

**Annex B – FG-MV approved deliverables (from January to June 2024)**

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| **No.** | **Title** | **Approved** | **Suggested by the FG-MV to be allocated to** | **SG20** |
| [FGMV-23](https://www.itu.int/en/ITU-T/focusgroups/mv/Documents/List%20of%20FG-MV%20deliverables/FGMV-23.pdf) | Technical Report on Considering online and offline implications in efforts to build confidence and security in the metaverse | March 2024 | SG17 |  |
| [FGMV-24](https://www.itu.int/en/ITU-T/focusgroups/mv/Documents/List%20of%20FG-MV%20deliverables/FGMV-24.pdf) | Technical Report on A framework for confidence in the metaverse | March 2024 | SG17  (SG13, SG16) |  |
| [FGMV-25](https://www.itu.int/en/ITU-T/focusgroups/mv/Documents/List%20of%20FG-MV%20deliverables/FGMV-25.pdf) | Technical Report on Near-term and long-term Implications for people in the metaverse | March 2024 | SG16  (SG17) |  |
| [FGMV-26](https://www.itu.int/en/ITU-T/focusgroups/mv/Documents/List%20of%20FG-MV%20deliverables/FGMV-26.pdf) | Technical Specification on Requirements for communication between human-avatar languages in the metaverse | March 2024 | SG16 |  |
| [FGMV-27](https://www.itu.int/en/ITU-T/focusgroups/mv/Documents/List%20of%20FG-MV%20deliverables/FGMV-27.pdf) | Technical Report on Guidelines for metaverse application in power system | March 2024 | SG20 (SG16) | Q3/20 plans to initiate new work in this area and welcomes future Contributions. |
| [FGMV-28](https://www.itu.int/en/ITU-T/focusgroups/mv/Documents/List%20of%20FG-MV%20deliverables/FGMV-28.pdf) | Technical Specification on Requirements for the metaverse based on digital twins enabling integration of virtual and physical worlds | March 2024 | SG20  (SG16) | Q1/20 agreed to initiate a new work item based on the discussions concerning [C416](https://www.itu.int/md/T22-SG20-C-0416/en). |
| [FGMV-29](https://www.itu.int/en/ITU-T/focusgroups/mv/Documents/List%20of%20FG-MV%20deliverables/FGMV-29.pdf) | Technical Specification on Reference model for the metaverse based on a digital twin enabling integration of virtual and physical worlds | March 2024 | SG20  (SG16) | Q1/20 agreed to initiate a new work item based on the discussions concerning [C417](https://www.itu.int/md/T22-SG20-C-0417/en). |
| [FGMV-30](https://www.itu.int/en/ITU-T/focusgroups/mv/Pages/deliverables.aspx) | Technical Report on Overview of the application requirements of metaverse on emergency management in chemical industrial parks | April 2024 | SG20  (SG16) | Q5/20 agreed to initiate a new work item. |
| [FGMV-31](https://www.itu.int/en/ITU-T/focusgroups/mv/Pages/deliverables.aspx) | Technical Specification on Requirements, functional framework and capability of IoT for metaverse | April 2024 | SG20  (SG16) | Q2/20 and Q3/20 plan to initiate new work in this area and welcome future Contributions. |
| [FGMV-32](https://www.itu.int/en/ITU-T/focusgroups/mv/Documents/List%20of%20FG-MV%20deliverables/FGMV-32.pdf) | Technical Report on ​ Overview of metaverse | June 2024 | SG16  (All SGs) |  |
| [FGMV-33](https://www.itu.int/en/ITU-T/focusgroups/mv/Documents/List%20of%20FG-MV%20deliverables/FGMV-33.pdf) | Technical Specification on Glossary for metaverse | June 2024 | SG16  (All SGs, SCV) |  |
| [FGMV-34](https://www.itu.int/en/ITU-T/focusgroups/mv/Documents/List%20of%20FG-MV%20deliverables/FGMV-34.pdf) | Technical Report on Definitions of CitiVerse | June 2024 | SG20 | Q5/20 plans to initiate new work in this area and welcomes future Contributions. |
| [FGMV-35](https://www.itu.int/en/ITU-T/focusgroups/mv/Documents/List%20of%20FG-MV%20deliverables/FGMV-35.pdf) | Technical Report on ​Building a People-centred CitiVerse | June 2024 | SG20 | Q7/20 plans to initiate new work in this area and welcomes future Contributions. |
| [FGMV-36](https://www.itu.int/en/ITU-T/focusgroups/mv/Documents/List%20of%20FG-MV%20deliverables/FGMV-36.pdf) | Technical Report on The future of travel in the metaverse: landscape and use cases | June 2024 | SG16, SG20  (SG5) | Q2/20 plans to initiate new work in this area and welcomes future Contributions. |
| [FGMV-37](https://www.itu.int/en/ITU-T/focusgroups/mv/Documents/List%20of%20FG-MV%20deliverables/FGMV-37.pdf) | Technical Report on Landscape and Use cases for the Industrial metaverse | June 2024 | SG20  (SG16, SG13) | Q2/20 plans to initiate new work in this area and welcomes future Contributions. |
| [FGMV-38](https://www.itu.int/en/ITU-T/focusgroups/mv/Documents/List%20of%20FG-MV%20deliverables/FGMV-38.pdf) | Technical Specification on Framework and requirements for the construction of human-driven 3D digital human application system for metaverse | June 2024 | SG16 |  |
| [FGMV-39](https://www.itu.int/en/ITU-T/focusgroups/mv/Documents/List%20of%20FG-MV%20deliverables/FGMV-39.pdf) | Technical Specification on Use case and requirements for virtual and real fusion coding in metaverse application | June 2024 | SG16 |  |
| [FGMV-40](https://www.itu.int/en/ITU-T/focusgroups/mv/Documents/List%20of%20FG-MV%20deliverables/FGMV-40.pdf) | Technical Specification on Multimedia aspect of metaverse architecture | June 2024 | SG16 |  |
| [FGMV-41](https://www.itu.int/en/ITU-T/focusgroups/mv/Documents/List%20of%20FG-MV%20deliverables/FGMV-41.pdf) | Technical Specification on The reference framework of industrial metaverse | June 2024 | SG20 (SG13, SG16) | Q3/20 plans to initiate new work in this area and welcomes future Contributions. |
| [FGMV-42](https://www.itu.int/en/ITU-T/focusgroups/mv/Documents/List%20of%20FG-MV%20deliverables/FGMV-42.pdf) | Technical Report on Interoperability of identity of things across metaverse platforms | June 2024 | SG20  (SG16) | Q6/20 plans to initiate new work in this area and welcomes future Contributions. |
| [FGMV-43](https://www.itu.int/en/ITU-T/focusgroups/mv/Documents/List%20of%20FG-MV%20deliverables/FGMV-43.pdf) | Technical Specification on High-level interoperability architecture for cross-platform metaverse | June 2024 | SG16  (SG13, SG20) |  |
| [FGMV-44](https://www.itu.int/en/ITU-T/focusgroups/mv/Documents/List%20of%20FG-MV%20deliverables/FGMV-44.pdf) | Technical Report on Security for things across metaverses in aspects of data processing and management | June 2024 | SG17  (SG16, SG20) | Q6/20 plans to initiate new work in this area and welcomes future Contributions. |
| [FGMV-45](https://www.itu.int/en/ITU-T/focusgroups/mv/Documents/List%20of%20FG-MV%20deliverables/FGMV-45.pdf) | Technical Report on Challenges to achieving trustworthy metaverse | June 2024 | SG17  (SG13, SG16, SG20) |  |
| [FGMV-46](https://www.itu.int/en/ITU-T/focusgroups/mv/Documents/List%20of%20FG-MV%20deliverables/FGMV-46.pdf) | Technical Report on The essential components of trusted data use in building a trustworthy metaverse | June 2024 | SG17  (SG13, SG16, SG20) |  |
| [FGMV-47](https://www.itu.int/en/ITU-T/focusgroups/mv/Documents/List%20of%20FG-MV%20deliverables/FGMV-47.pdf) | Technical Report on Economic Value Creation and Competition in metaverse | June 2024 | SG3  (SG5) |  |
| [FGMV-48](https://www.itu.int/en/ITU-T/focusgroups/mv/Documents/List%20of%20FG-MV%20deliverables/FGMV-48.pdf) | Technical Report on Guidance on how to build a metaverse for all: Part II - Survey | June 2024 | SG16  (SG9, SG20) |  |
| [FGMV-49](https://www.itu.int/en/ITU-T/focusgroups/mv/Documents/List%20of%20FG-MV%20deliverables/FGMV-49.pdf) | Technical Report on Metaverse Sustainability: Driving energy efficiency and GHG emissions reduction | June 2024 | SG5  (SG16, SG20) | Q7/20 plans to initiate new work in this area and welcomes future Contributions. |
| [FGMV-50](https://www.itu.int/en/ITU-T/focusgroups/mv/Documents/List%20of%20FG-MV%20deliverables/FGMV-50.pdf) | Technical Specification on Methodology on assessment of GHG emissions of metaverse | June 2024 | SG5  (SG16, SG20) | Q7/20 plans to initiate new work in this area and welcomes future Contributions. |
| [FGMV-51](https://www.itu.int/en/ITU-T/focusgroups/mv/Documents/List%20of%20FG-MV%20deliverables/FGMV-51.pdf) | Technical Report on Standardization roadmap for metaverse | June 2024 | SG16  (All SGs) |  |
| [FGMV-52](https://www.itu.int/en/ITU-T/focusgroups/mv/Documents/List%20of%20FG-MV%20deliverables/FGMV-52.pdf) | Technical Report on Metaverse standardization landscape for gap analyses | June 2024 | SG16  (All SGs) |  |

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