|  |  |  |
| --- | --- | --- |
| A black and white logo  Description automatically generated with low confidence | INTERNATIONAL TELECOMMUNICATION UNION**TELECOMMUNICATIONSTANDARDIZATION SECTOR**STUDY PERIOD 2022-2024 |  TSAG-TD315R2 |
|  TSAG |
|  Original: English |
| **Question(s):** | N/A |  Geneva, 22 – 26 January 2024 |
| **TD** |
| **Source:** | Chair, WP2/TSAG |
| **Title:** | Report of the meeting of WP2/TSAG “Industry Engagement, Work Programme, Restructuring” () |
| **Contact:** | Gaëlle Martin-Cocher InterDigitalCanada | E-mail: Gaelle.Martin-Cocher@InterDigital.com |
| **Contact:** | Guy-Michel Kouakou Côte d'Ivoire | E-mail: kouakou.guy-michel@artci.ci |
| **Contact:**  | Tatiana KurakovaTSB ; Secretary WP2 | E-mail: tatiana.kurakova@itu.int |

|  |  |
| --- | --- |
| **Abstract:** | This TD represents the report of the WP2/TSAG meeting held in Geneva on 22 – 26 January 2024. |

**Action**: Review, approval, follow up on requests for action in clause 0.

**0 Actions for TSAG**

Actions related to RG-IEM

1. **WP2-1:** Agree the date for *the Industry Engagement workshop*, 19 April 2024, Geneva
2. **RG-IEM-1**: Request the TSB to issue a Circular letter announcing the industry. engagement workshop in Geneva, 19 April 2024.

Actions related to RG-WPR

1. **RG-WP2-2:** Agree the consolidation of ITU-T SG9 and SG16.
2. **RG-WPR-2**: Approve Liaison Statement *on consolidation of ITU-T SG9 and SG16 [to ITU-T SG9, SG16]* - [TD484](https://www.itu.int/md/T22-TSAG-240122-TD-GEN-0484/en)-R1
3. **RG-WPR-3**: Approve Liaison Statement to *on WTSA-24 preparations [to all ITU-T SGs] -* [TD485](https://www.itu.int/md/T22-TSAG-240122-TD-GEN-0485/en)
4. **RG-WPR-4**: Approve Liaison Statement *on the new work item ITU-T Q.TSCA which defines procedure for issuing digital certificates for signalling security [to ITU-T SG2, SG11, SG17] -* [TD475](https://www.itu.int/md/T22-TSAG-240122-TD-GEN-0475/en)-R1

Actions related to RG-DT

1. **WP2-3**: Per the agreement, reached at the previous TSAG meeting, on the rotation principle of chairing the group, nominate Mr Ahmad Sharafat (Iran) to be the Rapporteur and Mr Ahmed Said (Egypt) - the Associate Rapporteur for RG-DT. Ms Cynthia Lesufi (South Africa) remains the Associate Rapporteur RG-DT.

Actions related to RG-SOP

1. **WP2-4:** Establish the Rapporteur Group on Strategic and Operational Planning (RG-SOP) with the ToR as shown in Annex 1 of this report.
2. **WP2-5**: Nominate Mr Victor Manuel MARTÍNEZ VANEGAS, Mexico, as the RG-SOP Rapporteur and Mr Bruce GRACIE, Ericsson Canada, and Mr Dao Tian (ZTE Corporation, China) as RG-SOP Associate Rapporteurs.
3. **WP2-6:** Agree that the new RG-SOP be reporting to TSAG Plenary directly

 Actions related to FG-MV

1. **WP2-7**: Extend the lifetime of the FG-MV until June 2024.
2. **WP2-8:** Agree the distribution of the FG-MV Deliverables as shown in table of LS, [TD480](https://www.itu.int/md/T22-TSAG-240122-TD-GEN-0480/en)-R1 as well as in Annex 2 of this report.
3. **WP2-9:** Approve Liaison Statement on metaverse [to all ITU-T SGs] – [TD480](https://www.itu.int/md/T22-TSAG-240122-TD-GEN-0480/en)-R1

Actions related to WP2

1. **WP2-10:** Agree the interim activities plan – clause 8 of this report
2. **WP2-11**: Approve Liaison Statement on action item 73-17 (Resolution 73 on environment and climate change) [to ITU-T SG5] – [TD474](https://www.itu.int/md/T22-TSAG-240122-TD-GEN-0474/en)
3. **WP2-12:** Agree to close the WTSA Action plan items 73-06, 73-17, 94-02 and 94-04
4. **WP2-13**: Approve the WP2/TSAG meeting report – TD315 (this document)
5. **General**

The third meeting of the TSAG Working Party 2 (**WP-IEWPR**) took place in Geneva on 22 – 26 January 2024. The meeting was chaired by the WP2 chair, Ms Gaëlle Martin-Cocher (InterDigital, Canada) with the support of Mr Guy-Michel Kouakou (Côte d'Ivoire), WP2/TSAG Vice-chair.

The chair opened the meeting and welcomed the participants. In elaborating her objectives and expectations for this meeting she mentioned that the group is supposed to review some items from the WTSA Action plan, restructuring proposal (for merging SGs 9 and 16), reactivation of the Rapporteur Group onStrategic and Operational Planning and lifetime extension and distribution of deliverables of the FG-MV.

Agenda for the opening meeting was reproduced in [TSAG-TD313](https://www.itu.int/md/T22-TSAG-240122-TD-GEN-0313/en). It was approved by the meeting. Complete list of documents WP2 considered in this meeting may be found in Annex 3 of this report.

Agenda for the closing plenary may be found in [TD314](https://www.itu.int/md/T22-TSAG-240122-TD-GEN-0314/en). It was approved as TD314-R1.

1. **Review of the WP2 related “pending” actions of the WTSA action plan**

WP2 reviewed the WP2 related “pending” actions from the WTSA action plan, [TD437](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0437) in relation to the Action plan related to the Resolutions and Opinion of WTSA, [TD410](https://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0410).

Meeting participants at opening plenary agreed to close actions on 3 (out of 4) proposed action lines for Resolutions [73](https://www.itu.int/pub/publications.aspx?lang=en&parent=T-RES-T.73-2022) (Rev. Geneva, 2022) “Information and communication technologies, environment, climate change and circular economy” and [94](https://www.itu.int/pub/publications.aspx?lang=en&parent=T-RES-T.94-2022) (Hammamet, 2016) - Standardization work in the ITU Telecommunication Standardization Sector for cloud-based event data technology”, namely, 73-17, 94-02 and 94-03. With regards to the action item 73-06, the decision was deferred to the next session of WP2 in anticipation of the feedback from the SPCG. SPCG confirmed no issue with closing of the action line 73-06. The meeting agreed to close the last action (73-06).

1. **Review of the WP2/TSAG virtual interim activities (June – December 2023)**
	1. **RG-WPR** *“Rapporteur Group on Work Programme and Restructuring, SG work, SG Coordination”* reportedthe progress in 2 interim activities in[TD329](https://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0329). TD329 was introduced by the RG-WPR Rapporteur, Ms Miho Naganuma. This document was entrusted to the RG-WPR then, while WP2 took a good note of the report and progress to date. In essence, input documents to the interim meetings were reviewed and discussed, but no decision was taken at these meetings. Mr Greg Ratta, RG-WPR Associate Rapporteur, stepped down from his position as of September 2023 and the meeting thanked Mr Ratta for its dedication and continuous support of the work of ITU-T.

* 1. **RG-IEM** *“Rapporteur Group on Industry Engagement, Metrics*” reported its progress to date in 3 virtual interim meetings through

 - progress report [TD328](https://www.itu.int/md/T22-TSAG-240122-TD-GEN-0328/en), that was introduced by Mr Glenn Parsons, the Rapporteur for RG-IEM.

The main progress of the group was focused on the Industry Engagement Workshop preparations.

The Industry Engagement Workshop Steering Committee (IEWSC) was established by the last TSAG meeting (see ToR in [TSAG-TD257R1](https://www.itu.int/md/T22-TSAG-230530-TD-GEN-0257/en)), to organize a workshop with four principal goals aligned with the ITU-T action plan for a vibrant engagement of the industry (as agreed by TSAG in [TSAG-TD256](https://www.itu.int/md/T22-TSAG-230530-TD-GEN-0256/en)):

1. Attract Industry decision makers in regard to standardization where ITU-T can provide value;
2. Contribute to the dialogue between all parties;
3. Provide valuable feedback on the industry engagement action plan; and
4. Inform the WTSA-24 preparations.

The meeting noted the progress report of RG-IEM and updates on the industry engagement workshop in [TD433](https://www.itu.int/md/T22-TSAG-240122-TD-GEN-0433/en).

* 1. **RG-DT** *“Rapporteur Group on Sustainable Digital Transformation”* reported its progress to date in 3 virtual interim meetings through

 - progress report [TD330](https://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0330), that was introduced by Mr Ahmed Said (Egypt), the Rapporteur for RG-DT.

Per the request of RG-DT, WP2 took note of the interim RG-DT meetings reports, the oLS on the activities and studies on sustainable digital transformation (August 2023), the iLSs related to RG-DT ([TD350](https://www.itu.int/md/T22-TSAG-240122-TD-GEN-0350) and [TD351](https://www.itu.int/md/T22-TSAG-240122-TD-GEN-0351)) reviewed and discussed by RG-DT (September 2023), the iLSs related to RG-DT ([TD372](https://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0372), [TD369](https://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0369), [TD365](https://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0365), [TD355](https://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0355)) reviewed and discussed by RG-DT (November 2023), responses to the RG-DT LSs, the current list of activities and outcomes on digital transformation which is based on information provided via iLSs, the progress achieved on development of draft new Resolution on Digital Transformation, future interim meetings plan and take note of the progess achieved and provide guidance for further work in RG-DT.

Furthermore, WP2 instructed RG-DT to handle Liaison Statements (SG2 [TD380](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0380), SG15 [TD427](https://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0427), SG5 [TD424](https://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0424)) at the closest occasion and address the [TD440-R1](https://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0440) (see clause 4.1 below).

The RG-DT interim meeting plan (4 e-meetings) was agreed as found in Annex 1 to [TD313](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0313) as well as in [TD481](https://www.itu.int/md/T22-TSAG-240122-TD-GEN-0481/en).

Finally, taking from the decision of the last TSAG meeting (May-June 2023), the WP2 agreed to rotate the RG-DT chairs, so that Mr Ahmad Sharafat (Iran) becomes the Rapporteur and Mr Ahmed Said (Egypt) - Associate Rapporteur for RG-DT. Ms Cynthia Lesufi (South Africa) remains the Associate Rapporteur RG-DT.

1. **Documentation for the meeting**

**4.1** [TD440-R1](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0440) “Digital Transformation Dialogues” by TSB represents the a new platform for Digital Transformation Dialogues. The document was noted by the meeting participants. WP2 added this document to the list of inputs to the RG-DT interim activities (see clause 3.3 above).

**4.2** [TD398](https://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0398) *“Communiqué of the TSB Director CxO consultation meeting, 5 December 2023, Dubai, United Arab Emirates”* contains the information on the last CxO meeting. The meeting noted the communique and encouraged the continuous effort to invite C level executives only to the CxO meetings.

**4.3** New Rapporteur Group on Strategic and Operational Planning (RG-SOP)

[C62](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-C-0062) (item 3-5) “Enhancing the value proposition of ITU-T” from Broadcom Europe Ltd. (United Kingdom) and Ericsson Canada, called for reactivation of the TSAG Rapporteur Group to look after and advise on the strategic and operational planning from the standardization sector perspective. It was well received and the idea to initiate the work of the Rapporteur Group was supported. Saudi Arabia brought two additional points to the proposed ToR of the group. Those were agreed for inclusion (found in [TD466](https://www.itu.int/md/T22-TSAG-240122-TD-GEN-0466/en) as well as in Annex 1 of this report). Furthermore, WP2 agreed to nominate the following leadership for this Rapporteur Group:

**Leadership**

Rapporteur:

* Mr Victor Manuel MARTÍNEZ VANEGAS, Mexico
* Associate Rapporteurs: Mr Bruce GRACIE, Ericsson Canada and Mr Dao Tian (ZTE Corporation, China)

**Action WP2-4:** establish the Rapporteur Group on Strategic and Operational Planning (RG-SOP) with the Terms of Reference as found in Annex 1 of this report.

**Action WP2-5**: Assign Mr Victor Manuel MARTÍNEZ VANEGAS, Mexico, as the RG-SOP Rapporteur supported by Mr Bruce GRACIE, Ericsson Canada, and Mr Dao Tian (ZTE Corporation, China) as RG-SOP Associate Rapporteurs.

**Action WP2-6:** Propose that the new RG-SOP be reporting to TSAG Plenary directly.

**4.4 Metaverse**

As part of its regular duties TSAG received the report of the Focus Group that reports to it, FG-MV. It allocated the following documents for the topic of metaverse:

* Collection of materials to support the review of FG-MV outcomes and requests to TSAG, [TD436](https://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0436)
* FG-MV Progress Report, [TD401](https://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0401)
* Results of interim meetings of the FG-MV and action on their deliverables [TD349](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0349), [TD361](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0361), [TD400](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0400)
* Contributions: [C55](https://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-C-0055) , [C68](https://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-C-0068), [C76](https://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-C-0076), [C79](https://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-C-0079), [C87](https://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-C-0087)
* LS on collaboration on metaverse standardization work FG-MV [**TD360**](https://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0360)**,** SG15 [**TD429**](https://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0429), SG 16 [**TD346**](https://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0346)**,** SG20 [**TD352**](https://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0352)**,**  SG2 [TD381](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0381)
* LS on definition of metaverse [**TD362**](https://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0362)**,** SG2 [TD384](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0384)

In the interests of time the WP2 opening plenary followed the presentation of the FG-MV chair, Mr Shin-Gak Kang (ETRI, Republic of Korea), on the progress of the work in the FG-MV (TD401) and short presentations of Contributions 55, 68, 76, 79 and 87 and had initial exchange of views on the topic of the continuation of the work of this FG and distribution of its deliverables. The discussions will continue in the ad-hoc group on metaverse on 24 January at lunch. The WP2 chair will lead the deliberations. See clause 6 below for the results of the discussions.

Furthermore, given the informative *for TSAG* nature of the following documents and in the interests of time the remaining documents on metaverse issue were entrusted to the FG-MV pursue:

* LS on collaboration on metaverse standardization work - SG15 TD429, SG16 TD346, SG20 TD352, SG2 TD381.
* LS on definition of metaverse – FG-MV TD362 with comments from SG2 in TD384.

Results of interim meetings of the FG-MV, [TD349](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0349), [TD361](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0361), [TD400](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0400), were noted by the meeting participants via FG-MV progress report.

**5 Coordination activities**

**5.1** WP2, as part of its mandate on smart cable work coordination, reviewed and well noted in the information provided in the Liaison Statement from SG5, [TD342](https://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0342) “LS/r on SMART Subsea Cables - Science Monitoring and Reliable Telecommunications (reply to TSAG-LS14R1)”.

**5.2** The JCA-AHF regular progress report, [TD449](https://www.itu.int/md/T22-TSAG-240122-TD-GEN-0449/en), was moved from the agenda of the WP2 to TSAG closing plenary of 26 January. See item 10.1 of [TD304-R1](https://www.itu.int/md/T22-TSAG-240122-TD-GEN-0304/en).

**6 Ad-hoc group on Metaverse**

An ad-hoc group on metaverse, as appeared in the meeting timeplan ([TD303-R1](https://www.itu.int/md/T22-TSAG-240122-TD-GEN-0303/en)) and confirmed by the WP2 opening plenary, met on 24 January 2024. A group, led by the WP2 chair, Ms Gaëlle Martin-Cocher (InterDigital Canada), was tasked by the WP2 to look into the request for the lifetime extension of the FG-MV operation and at the proposed distribution of the FG-MV Deliverables to facilitate the decisions at the WP2 closing. Ad-hoc concluded:

* Lifetime: FG-MV authorized to run until June 2024
* Clarifications were sought by multiple SG chairs and participants on when the work on “metaverse” could start in the SGs.
* Deliverables: the meeting felt more time for allocation of deliverables was needed. To this end, the session chair encouraged all to read the FG-MV Deliverables and invited delegations to provide their opinions to her after the ad-hoc meeting ended.

Proposed documents allocation and clarifications were made available in [TD480](https://www.itu.int/md/T22-TSAG-240122-TD-GEN-0480/en)-R1, Liaison Statement on metaverse [to all ITU-T SGs], for discussion at the WP2 closing plenary.

The WP2 closing plenary reviewed the [TD480](https://www.itu.int/md/T22-TSAG-240122-TD-GEN-0480/en)-R1 and agreed on the lifetime extension of the FG-MV until June 2024, distribution of its Deliverables as appears in Annex 2 to this report (same as in [TD480](https://www.itu.int/md/T22-TSAG-240122-TD-GEN-0480/en)-R1) and agree the Liaison Statement to all ITU-T Study Groups.

**Action WP2-7:** Extend the lifetime of the FG-MV until June 2024.

**Action WP2-8**: Agree the distribution of the FG-MV Deliverables as shown in table of [TD480](https://www.itu.int/md/T22-TSAG-240122-TD-GEN-0480/en)-R1 as well as in Annex 2 of this report.

**Action WP2-9:** Approve Liaison Statement on metaverse [to all ITU-T SGs] – [TD480](https://www.itu.int/md/T22-TSAG-240122-TD-GEN-0480/en)-R1

**7 Review of the results of the Rapporteur Groups (22 – 26 January 2024, Geneva)**

The agreed allocation of the documents to the Rapporteur Groups may be found in Annex 3 of this report for RG-WPR and RG-IEM.

**7.1** **TSAG-RG-IEM** “Rapporteur Group on Industry Engagement, Metrics”

The Rapporteur in charge of the RG-IEM, Mr Glenn Parsons, Ericsson Canada, walked the participants through the meting report of his group found in [TD321](https://www.itu.int/md/T22-TSAG-240122-TD-GEN-0321/en). The report was agreed as appears in [TD321](https://www.itu.int/md/T22-TSAG-240122-TD-GEN-0321/en).

The key outcomes of the RG-IEM meeting, as highlighted by the Rapporteur:

* Progress in the organization of the *Industry Engagement* workshop in Geneva on 19 April 2024:
* Detailed plan in [TD433](https://www.itu.int/md/T22-TSAG-240122-TD-GEN-0433/en) was reviewed by RG-IEM and the work of the workshop steering committee lead by Mr Didier Berthoumieux (Nokia Corporation Finland) was appreciated.
* Steering committee continues to meet on weekly basis to develop and deliver the workshop. Progress will be reported to RG-IEM interim meetings.
* Workshop summary report will inform the discussions in RG-IEM and TSAG.
* TSB Circular to be issued the week of January 29th, LinkedIn event page and other communications to follow.
* Discussion on *Emerging technology mechanism* to resume through the RG-IEM interim meetings.
* Future meetings (see also clause 8 below).

Actions for TSAG:

* **RG-IEM-1**: Request the TSB to issue a Circular letter announcing the industry engagement workshop in Geneva, 19 April 2024.

**7.2 TSAG RG-WPR** “Rapporteur Group on Work Programme and Restructuring, SG work, SG Coordination”

The Report of the work accomplished by the TSAG-RG-WPR ([TD323](https://www.itu.int/md/T22-TSAG-240122-TD-GEN-0323/en)) was presented by the Rapporteur, Ms Miho Naganuma, NEC Corporation. Report of this RG was revised and approved as TD323-R1.

Key meeting outcomes as presented by the TSAG-RG-WM Rapporteur:

* Restructuring: consolidation of ITU-T SG9 and SG16. TSAG had broad consensus to integrate SG9 and SG16, and agreed to ask the management teams of SG9 and SG16 to start the discussion to structure the new SG and report to next TSAG.  Other SGs were asked to focus internally on their structure and Questions and let TSAG handle inter-SG 9 and 16 matters minimizing interference against this integration process.  TSAG asked TSB to reflect this consensus to the TSB Circular requesting nominations of Chairs and Vice Chairs for WTSA-24.
* Outgoing Liaison Statement *on WTSA-24 preparations [to all ITU-T SGs] -*  [TD485](https://www.itu.int/md/T22-TSAG-240122-TD-GEN-0485/en)
* Outgoing Liaison Statement *on consolidation of ITU-T SG9 and SG16 [to ITU-T SG9, SG16]* - [TD484](https://www.itu.int/md/T22-TSAG-240122-TD-GEN-0484/en)
* Outgoing Liaison Statement *on the new work item ITU-T Q.TSCA which defines procedure for issuing digital certificates for signalling security [to ITU-T SG2, SG11, SG17] -* [TD475](https://www.itu.int/md/T22-TSAG-240122-TD-GEN-0475/en)
* Future meetings plan as depicted in clause 10 of [TD323](https://www.itu.int/md/T22-TSAG-240122-TD-GEN-0323/en)-R1. (See also clause 8 below.)

During the presentation of the Liaison Statement in TD475 one update needing to be applied was pointed out. Thus, the Liaison Statement was updated and approved as shown in TD475-R1. So was the report of RG-WPR in TD232-R1.

Actions for TSAG:

* **RG-WP2-2:** Agree the consolidation of ITU-T SG9 and SG16
* **RG-WPR-2**: Approve Liaison Statement *on consolidation of ITU-T SG9 and SG16 [to ITU-T SG9, SG16]* - [TD484](https://www.itu.int/md/T22-TSAG-240122-TD-GEN-0484/en)-R1
* **RG-WPR-3**: Approve Liaison Statement to *on WTSA-24 preparations [to all ITU-T SGs] -* [TD485](https://www.itu.int/md/T22-TSAG-240122-TD-GEN-0485/en)
* **RG-WPR-4**: Approve Liaison Statement *on the new work item ITU-T Q.TSCA which defines procedure for issuing digital certificates for signalling security [to ITU-T SG2, SG11, SG17] -* [TD475](https://www.itu.int/md/T22-TSAG-240122-TD-GEN-0475/en)-R1

**8 Future Meetings**

The WP2 RGs requested the following interim virtual activities to pursue its work:

**RG-WPR** “Rapporteur Group on Work Programme and Restructuring, SG work, SG Coordination”

|  |  |  |
| --- | --- | --- |
| **Date, Time** **(Geneva time)** | **Objectives/Contributions invited on:** | **Contribution Deadline** |
| 19 June 2023 | Preparation status on the consolidation of ITU-T SG9 and SG16 | 12 June 2024 |

**RG-IEM** “Rapporteur Group on Industry Engagement, Metrics”

|  |  |  |
| --- | --- | --- |
| **Date, Time** **(Geneva time)** | **Objectives** | **Contribution Deadline** |
| 20 February 202413:00 – 14:30  | Workshop status  | 12 February 2024 |
| 19 March 202413:00 – 14:30 | Emerging technology mechanism  | 11 March 2024 |
| 7 May 202413:00 – 14:30 | Workshop results | 30 April 2024 |
| 11 June 202413:00 – 14:30 | Emerging technology mechanism | 3 June 2024  |

**RG-DT** “Rapporteur Group on Sustainable Digital Transformation”

|  |  |  |
| --- | --- | --- |
| **Date, Time** **(Geneva time)** | **Objectives/Contributions invited on:** | **Contribution Deadline** |
| 5 March 2024(13:00-15:00) | * Progress a gap analysis on the activities and studies on digital transformation;
* Consider inter alia, definitions, concepts, system architectures, use-cases, fundamental underlying technologies, interoperability, and the ecosystem of digital transformation;
* Progress draft new Resolution WTSA on digital transformation;
* Submit RG-DT report to TSAG.
 | 26 February 2024 |
| 23 April 2024(13:00-15:00) | 15 April 2024 |
| 31 May 2024(13:00-15:00) | 23 May 2024 |
| 16 July 2024(13:00-15:00) | 8 July 2024 |

**RG-SOP** “Rapporteur Group on Strategic and Operational Planning”

|  |  |  |
| --- | --- | --- |
| **Date, Time** **(Geneva time)** | **Objectives** | **Contribution Deadline** |
| 18 June 202413:00 – 14:30 | 1. Review the results of the Industry Engagement Workshop, particularly the value proposition for ITU-T;2. Determine an appropriate methodology for the review of the ITU-T Operational Plans; 3. Establish a work plan for RG-SOP pre- and post-WTSA-24. | 11 June 2024  |

This schedule along with the target objectives was agreed by the meeting.

The membership is invited to contribute and take good note of these dates to progress the work efficiently.

**9 Closure**

The WP2 chair extended her appreciation to the members of the WP2/TSAG management team and all the delegates for the active participation and contributions to the success of the meeting. Thanks went also to all the TSB team supporting this meeting as well as to TSB management, interpreters and captioners.

**Annex 1 – Terms of Reference for the Rapporteur Group on Strategic and Operational Planning (RG-SOP)**

* Function as the TSAG focal point to collect and provide appropriate input from TSAG for consideration of the Council Working Group for the elaboration of the draft strategic plan.
* Identify the key strategic priorities in ITU-T that are unique to the Sector or at least complementary to those undertaken by other SDOs.
* Consider a range of appropriate mechanisms, including the ITU-T homepage, where a narrative can be developed which illustrate the advantages of participating actively in the work of the Sector.
* Review of the annual ITU-T operational plans for approval by Council.
* Consider the input of TSAG Rapporteur Group (RG) - Industry Engagement and Metrics (including the Industry Engagement Workshop) and other Rapporteur Groups in general, from strategic and operational point of view.
* Analyze market needs and technological developments to identify areas where new standards or revisions are necessary.

**Annex 2 – FG-MV Deliverables distribution to the ITU-T Study Groups**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.** | **Title** | **Approved**  | **Send as information only or Allocate**  | **Summary of the deliverable** |
| [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  | Summary:This Technical Report explores the opportunities and challenges, and clarifies the role of international standards and the potential for the metaverse in the achievement of the United Nations Sustainable Development Goals. |
| [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  | All for information | Summary: This Technical Report contains a detailed gap analysis in literature of “metaverse” definitions with an explained terminology. This Technical Report studied and analysed approximately 150 existing definitions of metaverse from various sources. |
| [FGMV-20](https://www.itu.int/en/ITU-T/focusgroups/mv/Documents/List%20of%20FG-MV%20deliverables/FGMV-20.pdf) | Technical SpecificationDefinition of metaverse | December 2023 | ITU-T SG16  | Summary: This Technical Specification provides the definition of the term “metaverse”. It leverages a detailed analysis of 150 existing definitions of metaverse that was undertaken for the development of the ITU Technical Report on “Metaverse: an analysis of definitions”, which was approved at the third meeting of the ITU Focus Group on metaverse (FG-MV), held on 3-5 October 2023 in Geneva, Switzerland. |
| [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  | Summary:Promoting diversity, equity, and inclusion in metaverse via accessibility implementation requires careful consideration of diverse factors. This Technical Report discusses how to realize the principles on metaverse by articulating accessibility. Values are generated through a mixture of virtual reality, augmented reality, mixed reality, and extended reality. [b-Dreamson and Park]’s empirical study articulates six values: bottom-up, collaboration, authorship, ownership, interconnectivity, and community. This Technical Report investigates and improves upon limitations found in earlier research and practices and validates the United Nations’ Sustainable Development Goal (SDG) principles, along with the six metaverse values for Digital Transformation (Dx) creating new values and cultures. Using these justifications, it explores guidelines for aligning metaverse platforms with the SDGs based on Dx, addressing the user experience dimensions of the platforms: conception, interaction, interface, information, and usability [b-Park a]. Universal design is the process of making a product accessible for everyone, regardless of their physical, sensory, or cognitive abilities. In this sense, metaverse should be inclusive of diverse cultures, languages, and perspectives, and should promote the SDG principles. By proposing guidelines and recommendations, the Technical Report strengthens the argument for articulating accessibility as a means of realizing inclusion in developing metaverse. The outcomes of the report are to articulate the values for metaverse SDGs in terms of digital transformation, to develop a set of guidelines for assessing inclusion and accessibility in metaverse, and to provide strategic and meaningful engagement with platforms towards SDGs. |
| [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  | Summary:This Technical Specification provides high-level requirements for designers and developers to create an accessible immersive experience in the metaverse. This document considers the common accessibility requirements for the design and development phases of born accessible products and services in the metaverse. The document is related to “Requirements of accessible products and services in the metaverse: Part II – User perspective” and provides common accessibility requirements. |
| [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, and ITU-T SG2  | Summary:This Technical Specification provides requirements on how to develop an accessible metaverse from a user perspective. This document considers the various metaverse components and the actions that users, regardless of their capabilities, may perform to access the metaverse, create an identity within the metaverse, navigate the metaverse and interact in the metaverse. The document is related to ITU FG-MV Technical Specification on “Requirements of accessible products and services in the metaverse: Part I – System design perspective” and provides requirements on the role of users in creating and assessing accessibility services. |
| [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 | Summary:As the world becomes increasingly digital, the metaverse is emerging as a new frontier of social and economic interaction; allowing people to create, connect, and collaborate in ways that were previously thought impossible. In its nascent phase of user adoption, this is a timely opportunity to formulate guidelines for meaningful engagement, as well as to help mitigate challenges that continue to afflict the digital platforms that make up its infrastructure and ecosystems.The need for trust and confidence, cornerstones in any environment necessitating user interaction and participation, is amplified in virtual environments [b-Gefen et al.]. This need takes on increased significance as the participatory nature of the metaverse and vast amounts and increasingly personalized nature of data collected, together usher in a new frontier for user safety and security.The objective of this Technical Report is to develop a set of guidelines that address ethical aspects in the establishment of standards for engagement within the metaverse.Given the importance of confidence to user engagement, the report puts forward a user-centric approach by emphasizing principles grounded in the Universal Declaration of Human Rights (UDHR) and the United Nations Sustainable Development Goals (SDGs).User expectations, especially as they relate to personal safety, are a central component of confidence in navigating the metaverse and other digital platforms. Yet, historically, the reality (as it compares to these expectations) has fallen short, resulting in a discrepancy between anticipated and actual safeguards.The report will explore user expectations and propose a new framework to define user confidence and how it is expressed in immersive environments. It will also introduce guiding principles to bolster user confidence in navigating metaverse platforms, with a goal of fostering a sense of safety, control, user autonomy, fairness, transparency, and access to adequate information during interactions within immersive spaces.Where confidence in metaverse environments shares similarities with confidence in existing digital platforms will also be discussed, as will unique considerations introduced by the immersive and comprehensive nature of the metaverse as well as ways in which these can be addressed.The report will subsequently explore distinct elements necessary for fostering meaningful engagement within the metaverse context.By centring the user experience in building security and confidence in the metaverse, this Technical Report aims to support efforts to ensure the metaverse evolves in a way that serves its users and their needs, while also adhering to the principles of sustainable development. |
| [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  | Summary:The transformative potential of the metaverse will require policymakers and regulators to strike the right balance between social, environmental, economic, and legal aspects of the metaverse. To support policy makers and regulators in this important endeavour, this Technical Report looks at the policy and regulatory challenges of the metaverse, including an overview of its key enabling technologies, as well as regional and national approaches to metaverse development.With around one third of humanity lacking any digital connectivity, a primary policy and regulatory concern for the metaverse remains addressing the digital divide and ensuring an open, accessible, and inclusive metaverse. To be accessible by all, the metaverse will require energy-intensive data centres and communication networks, presenting substantial environmental challenges. Policymakers and regulators will need to address environmental concerns, including from e-waste, while accelerating the adoption of energy efficient metaverse practices enabled by Internet of Things and Digital Twin technologies. Development of standards and interoperability will play a key role in identifying efficiencies, as well as providing a seamless and enjoyable user experience in the metaverse while encouraging market competition.The immersive nature of the metaverse is expected to generate vast amounts of personally identifiable information, making privacy, security, and trust vital concerns. Similarly, ethical, and human rights considerations will need to be considered to promote responsible behaviour in the metaverse. Policymakers and regulators will need to develop guidelines and frameworks to address these concerns and ensure that the metaverse aligns with societal values.Lastly, the metaverse offers a unique opportunity for policymakers and regulators to harmonize their policy and regulatory efforts related to the metaverse and its enabling technologies. As whole regions around the world, as well as countries, and cities embrace the potential social and economic benefits of the metaverse, policymakers will need to be sensitive to different adoption and implementation approaches while promoting interoperability. The same applies to metaverse-enabling technologies such as AI, blockchain, and cloud computing. This harmonization will not only ensure that the metaverse develops for the benefit of all users but also accelerates sustainable digital transformation and achievement of the Sustainable Development Goals. |
| [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 | Summary:Metaverse holds promises on accelerating progress towards the UN Sustainable Development Goals (SDGs), for instance, in health, biology computation, automotive, aerospace, education, and mitigation of the effects of extreme climate events. However, digital spaces have inherent costs and pose new environmental, social, and economic risks. If not properly governed, the rise of metaverse could amplify adverse environmental consequences inherent to its enabling technologies (e.g., AI, A/R, blockchains, IoT and digital twins) leading to increased CO2-emissions, e-waste, and resource consumption, harming local ecosystems, communities, and their businesses.Moreover, emerging AI risks related, for instance, to manipulation, disinformation, isolation, echo chambers, and amplification of individual/group discriminations can be amplified by the metaverse. In business, high-performance hardware and costly resources needed to develop, test and maintain metaverse applications could be an economic barrier for SMEs, start-ups and non-profit organizations, thus deepening influence and power gaps. Moreover, the development of resource-intensive metaverse can amplify long-term rebound-effects risks, leading to a substantial increase in CO2 emissions and resource consumption. The contributions of this document are threefold: 1. A definition of a sustainable metaverse ecosystem; 2. Design criteria to integrate at design environmental, social and economic sustainability needs; 3. System requirements for sustainable metaverse ecosystems. |
| [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 SG20 and ITU-T SG13 | Summary:This Technical Report provides steps for the realization and use cases of power metaverse applied in the power system from the perspectives of the user and the grid. Each use case describes the application scenario, the assumptions and the service scenario. |
| [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 | Summary:This Technical Report emphasizes the importance of understanding the cybersecurity landscape in the metaverse. It provides an overview of this emerging digital realm and its potential, highlighting its transformative nature. It also analyzes and documents the specific cybersecurity risks, threats, and potential harms associated with the metaverse. This Technical Report covers areas such as identity theft, malware, data breaches, and social engineering. Moreover, it explores the background of cybersecurity risks in the metaverse. Additionally, this Technical Report examines the implications of these cybersecurity risks, including their impact on user trust, virtual economies, and assets. |
| [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 SG11 | Summary:This Technical Report develops three key areas of a rights-based approach to embedding ethics and safety standards and user control of PII in developing the metaverse that build conceptually on each other:* Data control and agency of users in relation to their service and platform provider,
* Human rights test governing workflow design as well as the conduct of service and platform providers as that conduct relates to their public stakeholders, and
* Principles for the development of safety standards in line with the SDGs that can effectively govern user conduct within the metaverse spaces such providers offer.

The report further maps out key lenses in which these three areas interact with one another, with platform design considerations, and other stakeholders. It also offers a practical use-case on an open source and decentralized protocol demonstrating how technical infrastructure can enable user control of PII. |
| [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  | Summary:The metaverse offers a rich, immersive digital experience encompassing Extended Reality (XR) technologies like Virtual Reality (VR), Augmented Reality (AR), and Mixed Reality (MR). With its potential to engage all human senses, the risks and online threats to children in the metaverse are intensified. These threats can originate from content, contact, or conduct, with the metaverse amplifying the impacts of such dangers. The ITU's Child Online Protection (COP) guidelines stress that digital protection measures should not infringe on children's other rights, necessitating age-appropriate content controls.Age verification is pivotal in shielding children from online perils, prompting nations to impose age verification mandates. Methods like self-declaration, credit cards, biometrics, profiling, digital IDs, and third-party verification serve as age verification mechanisms. Existing regulations, such as GDPR and California's AADC, provide general guidelines on age verification and demand utilizing proper technology proportional to potential risks. The metaverse, with its array of sensors and devices, offers a unique avenue to bolster age verification procedures, especially with soft biometrics that do not compromise users' privacy.As online threats in the metaverse surge, platforms should institute risk assessment frameworks considering content and immersion levels. Age verification methods should align with the risk levels, ensuring that the data collected is minimal and solely serves verification purposes. For example, Zero-knowledge proofs (ZKPs) can be used for age assertion without revealing exact ages. Trusted third-party verification is advocated because it enables platform interoperability and prevents sharing data with multiple sources. Thus, we discuss the potential challenges and provide general guidelines that should be helpful for implementing third-party age verification. |
| [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  | Summary:This Technical Report explores the scope for the responsible use of A1 for child protection in the metaverse as a contribution in this area to assist in the achievement of the United Nations Sustainable Development Goals.  |
| [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  | Summary:In a world still striving for securing data protection and data sovereignty, the metaverse comes as one of the latest trends in technological developments and waves, especially that it involves a wide range of economic activities in a non-regulated new world. Similar to its previous counterparts, the idea opens up a multitude of risks and threats, coming hand-in-hand with the opportunities it creates. This technical report tries to explore the possible data protection concerns in the metaverse in terms of regulatory and economic perspectives. The technical report is divided into two parts; general data protection-related concerns and economic data protection-related concerns. The data protection topic is considered a foundational base for conducting economic activities in the metaverse and for regulating all activities on the metaverse. The contribution approaches this novel topic through the 'Life Cycle of Data Threat Model' that tries to pinpoint some threats in different stages of the data life cycle. The model depends on dividing the lifecycle of data into 7 stages; data generation, data transfer, data usage, data sharing, data storage, data archival and data destruction. The contribution finally presents a data protection assessment framework that can be used to assess the level of threat of each of the challenges presented, and therefore policy priorities may be determined accordingly. |
| [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 and ITU-T SG16 | Summary:The virtual world based on real-world data collected through IoT technology and using XR technology as UX is collectively referred to as a metaverse supporting IoT. The ideally constructed metaverse interface should prevent persons with disabilities and those with specific needs who have difficulty using certain senses in the real world from feeling this difficulty in the metaverse. This Technical Specification defines the accessibility requirements that metaverse services supporting IoT should have. |
| [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  | Summary:This Technical Report promotes and instructs on the adaptation of an integrated approach to accessibility and sustainability in the metaverse. It explores the integration of accessibility products and services in the metaverse and their associated social benefit and environmental impact. Emphasising the need for the early integration of accessibility and sustainability, this document presents information and guidance on how to incorporate sustainable accessibility products and services in the metaverse from the outset. Questions related to sustainability and accessibility in the metaverse need to consider the following:* Social benefit of sustainable accessibility products and services in the metaverse.
* Challenges and opportunities of an accessible and sustainable metaverse.
 |
| [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  | Summary:This document provides guidelines and requirements on interpreting in the metaverse. It summarises typical use settings that require interpreting in the metaverse, including conference interpreting, public service interpreting and sign-language interpreting. It describes technical requirements for interpreting in the metaverse. It also provides advice for all parties in interpreted events in the metaverse, including organizers, speakers, interpreters and audience in interpreting-facilitated events in the metaverse. |
| [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 and ITU-T SG3 | Summary:This document proposes some guidelines to ensure by default equity, accessibility, and inclusivity in the development of the metaverse. Its primary objective is to offer the context for the legal framework based on the United Nations (UN) mandates and Sustainable Development Goals (SDGs), along the derived standards. This document offers a comprehensive understanding of the current state of the background which should underlay any metaverse development. The document also identifies the key challenges that hinder the achievement of equity, accessibility, and inclusivity within the metaverse, and propose potential roadmaps towards constructing a metaverse leaving no one behind. |
| [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 | Summary:This deliverable specifies the service scenarios and high-level requirements for metaverse cross-platform interoperability. With the increasing number of metaverse platforms being developed, there is a need to create an open and seamless metaverse interoperable environments between metaverse platforms that fosters innovation and collaboration. This deliverable aims to identify the various intended service scenarios and high-level requirements of four types of metaverse cross-platform interoperability: avatar interoperability, asset interoperability, content interoperability, identity interoperability. |
| [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 | All for Information | Summary:This document establishes the principles for building terms, concepts and definitions related to metaverse, as the foundation for developing technical specification of vocabulary for metaverse. |
| [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 | Summary:As the technology continues to evolve, there is an increasing demand for generative artificial intelligence (GAI) technology in the metaverse. GAI is crucial for creating immersive and interactive experiences in the metaverse. It has numerous capabilities in metaverse applications and services, from creating personalized avatars and environments to generating more immersive and personalized services. These capabilities can enrich the content of metaverse in more forms and significantly enhance the user experience within the metaverse, providing a more engaging and immersive environment.This Technical Specification provides capabilities and requirements of Generative Artificial Intelligence in metaverse applications and services. This document specifies four common capabilities of Generative Artificial Intelligence in metaverse applications and services and analyzes the description, assumption, service scenario. And it specifies the requirements of Generative Artificial Intelligence in metaverse applications and services. |

**Annex 3 -** **List of documents allocated to and considered by**

**WP2 on Industry Engagement, Work Programme, Restructuring (WP-IEWPR)**

Note: the list below doesn’t include the documents produced during the meeting.

# Contributions

| **C#** | **Source** | **Title** | **WP2****(IEWPR)** | **RG-WPR** | **RG-IEM** | **RG-DT** |
| --- | --- | --- | --- | --- | --- | --- |
| [C55](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-C-0055) | Russian Federation, Russian Satellite Communications Company (Russian Federation) | Considerations on an incoming liaison statement from the FG-MV (FG-MV-LS33) | 1 |  |  |  |
| [C57](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-C-0057) | China, Uganda | Further enhancing next generation participation in ITU-T standardization |  |  | 1 |  |
| [C58](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-C-0058) (Rev.3) | Algeria, Bahrain, Egypt, Iraq, Jordan, Kuwait, Morocco, Saudi Arabia, Somalia, Sudan, Tunisia, United Arab Emirates | Restructuring of Study Groups |  | 1 |  |  |
| [C62](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-C-0062) | Broadcom Europe Ltd. (United Kingdom), Ericsson Canada, Inc. | Enhancing the value proposition of ITU-T | 1Items 3-5 |  | [1] Value prop discussionItems 1-2 |  |
| [C65](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-C-0065) | Korea (Rep. of), KT Corporation (Korea (Rep. of)) | Encouraging TSAG to consider recommending ITU-T SGs to work on quantum-resistant |  | 1 |  |  |
| [C66](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-C-0066) | Korea (Rep. of) | Consideration for ITU-T Study Group Restructuring |  | 1 |  |  |
| [C68](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-C-0068) | Electronics and Telecommunications Research Institute (ETRI) (Korea (Rep. of)), Korea (Rep. of), KT Corporation (Korea (Rep. of)) | Request for extension of FG-MV lifetime to keep and enhance the leading role of ITU-T on global metaverse standardization | 1 |  |  |  |
| [C76](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-C-0076) | Japan | Proposals on the extension of FG-MV lifetime | 1 |  |  |  |
| [C78](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-C-0078) | Japan | Proposal on ITU-T study group restructuring |  | 1 |  |  |
| [C79](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-C-0079) | National Institute of Information and Communications Technology (NICT) (Japan), Oki Electric Industry Company Ltd. (OKI) (Japan) | Proposals on the assignment of FG-MV deliverables | 1 |  |  |  |
| [C84](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-C-0084) | Broadcom Europe Ltd. (United Kingdom) | Progressing RG-IEM ToR item 3 on 'new and emerging technologies' |  |  | 1 |  |
| [C87](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-C-0087) | Tanzania | Allocation of FG-MV deliverables and lifetime of the FG-MV | 1 |  |  |  |
| *Number of Contributions* | 6 | 4 | 2 [1] | 0 |

**TDs**

| **TD#** | **Source** | **Title** | **WP2** | **RG-WPR** | **RG-IEM** | **RG-DT** |
| --- | --- | --- | --- | --- | --- | --- |
| [TD313](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0313) | Chair, WP2/TSAG | Opening WP2 agenda | 1 |  |  |  |
| [TD314](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0314) | Chair, WP2/TSAG | Closing WP2 agenda | 1 |  |  |  |
| [TD315](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0315) | Chair, WP2/TSAG | WP2 meeting report | 1 |  |  |  |
| [TD320](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0320) | Rapporteur, RG-IEM | Agenda, RG-IEM |  |  | 1 |  |
| [TD321](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0321) | Rapporteur, RG-IEM | Report, RG-IEM | 1 |  | 1 |  |
| [TD322](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0322) | Rapporteur, RG-WPR | Agenda, RG-WPR |  | 1 |  |  |
| [TD323](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0323) | Rapporteur, RG-WPR | Report, RG-WPR | 1 | 1 |  |  |
| [TD328](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0328) | Rapporteur, RG-IEM | Progress report from interim TSAG RG-IEM meetings | 1 |  | 1 |  |
| [TD329](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0329) | Rapporteur, RG-WPR | Progress report from interim TSAG RG-WPR meetings | 1 | 1 |  |  |
| [TD330](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0330) | Rapporteur and Associate Rapporteurs, RG-DT | Draft progress report of the interim TSAG RG-DT meetings (June 2023 to January 2024) | 1 |  |  |  |
| [TD331](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0331) | ITU-T SG2 | ITU-T SG2 Lead Study Group Report |  | 1 |  |  |
| [TD332](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0332) | Chair, ITU-T Study Group 3 | ITU-T SG3 Lead Study Group Report |  | 1 |  |  |
| [TD333](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0333) | Chair, ITU-T Study Group 5 | ITU-T SG5 Lead Study Group Report |  | 1 |  |  |
| [TD334](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0334) | Chair, ITU-T Study Group 9 | ITU-T SG9 Lead Study Group report |  | 1 |  |  |
| [TD335](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0335) | Chair, ITU-T Study Group 11 | ITU-T SG11 Lead Study Group Report |  | 1 |  |  |
| [TD336](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0336) | Chair, ITU-T Study Group 12 | ITU-T SG12 Lead Study Group Report |  | 1 |  |  |
| [TD337](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0337) | Chair, ITU-T Study Group 13 | ITU-T SG13 Lead Study Group Report |  | 1 |  |  |
| [TD338](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0338) | Chair, ITU-T Study Group 15 | ITU-T SG15 Lead Study Group Report |  | 1 |  |  |
| [TD339](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0339) | ITU-T SG16 | ITU-T SG16 Lead Study Group Report |  | 1 |  |  |
| [TD340](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0340) | ITU-T SG17 | ITU-T SG17 Lead Study Group Report |  | 1 |  |  |
| [TD341](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0341) | ITU-T SG20 | LS/i on ITU-T SG20 Lead Study Group Report [from ITU-T SG20] |  | 1 |  |  |
| [TD342](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0342) | ITU-T SG5 | LS/r on SMART Subsea Cables - Science Monitoring and Reliable Telecommunications (reply to TSAG-LS14R1) [from ITU-T SG5] |  | 1 |  |  |
| [TD343](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0343) | ITU-T SG5 | LS/r on SG5 WTSA-24 preparations (reply to TSAG-LS18 and to TSAG-LS5) [from ITU-T SG5] |  | 1 |  |  |
| [TD345](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0345) | ITU-T SG16 | LS/i on WTSA-24 preparations in SG16 [from ITU-T SG16] |  | 1 |  |  |
| [TD346](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0346) | ITU-T SG16 | LS/r on requesting collaboration on metaverse standardization work (FG-MV-LS1, TSAG-LS21) [from ITU-T SG16] | 1 |  |  |  |
| [TD347](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0347) | ITU-T SG2 | LS/r on the new work item ITU-T Q.TSCA which defines procedure for issuing digital certificates for signalling security (reply to SG11-LS62) [from ITU-T SG2] |  | 1 |  |  |
| [TD349](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0349) | FG-MV | LS/i on Results of the second meeting of the FG-MV and approval of its first deliverable [from FG-MV] | 1 |  |  |  |
| [TD350](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0350) | TDAG | LS/i on Work on Digital Transformation [from TDAG] | 1 |  |  |  |
| [TD351](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0351) | ITU-T SG9 | LS/r on the activities and studies on sustainable digital transformation (TSAG-LS22) [from ITU-T SG9] | 1 |  |  |  |
| [TD352](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0352) | ITU-T SG20 | LS/r on metaverse work items and ITU-T Focus Group on metaverse (reply to TSAG-LS21) [from ITU-T SG20] |  | 1 |  |  |
| [TD353](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0353) | ITU-T SG20 | LS/r on incubation mechanism (reply to TSAG-LS16) [from ITU-T SG20] |  |  | 1 |  |
| [TD354](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0354) | ITU-T SG20 | LS/r on Telecommunication Management and OAM Project Plan (reply to SG2-LS61) [from ITU-T SG20] |  | 1 |  |  |
| [TD355](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0355) | ITU-T SG20 | LS/r on the activities and studies on sustainable digital transformation (reply to TSAG-LS22) [from ITU-T SG20] | 1 |  |  |  |
| [TD357](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0357) | ITU-T SG12 | LS/i on WTSA-24 preparations in SG12 [from ITU-T SG12] |  | 1 |  |  |
| [TD358](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0358) | ITU-T SG12 | LS/i on deletion of P.862.[x] Recommendations [from ITU-T SG12] |  | 1 |  |  |
| [TD360](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0360) | FG-MV | LS/i on request to provide the standardization status for metaverse cross-platform interoperability [from FG-MV] | 1 |  |  |  |
| [TD361](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0361) | FG-MV | LS/i on Results of the third meeting of the FG-MV [from FG-MV] | 1 |  |  |  |
| [TD362](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0362) | FG-MV | LS/i on definition of metaverse [from FG-MV] | 1 |  |  |  |
| [TD363](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0363) | ITU-T SG11 | LS/i on SG11 preparation for WTSA-24 [from ITU-T SG11] |  | 1 |  |  |
| [TD365](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0365) | ITU-T SG11 | LS/r on the activities and studies on sustainable digital transformation (reply to TSAG-LS22) [from ITU-T SG11] | 1 |  |  |  |
| [TD368](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0368) | ITU-T SG11 | LS/r on incubation mechanism (TSAG-LS16) [from ITU-T SG11] |  |  | 1 |  |
| [TD369](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0369) | ITU-D SG1 | LS/i from ITU-D Study Group 1 to TSAG on the Rapporteur Group on sustainable digital transformation [from ITU-D SG1] | 1 |  |  |  |
| [TD370](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0370) | ITU-T SG13 | LS/i on SG13 activity ad-hoc on "Future ICT Evolution for emerging Web Era" [from ITU-T SG13] |  | 1 |  |  |
| [TD371](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0371) | ITU-T SG13 | LS/i on the consent of draft new Recommendation ITU-T Y.3061 (ex Y.AN-Arch-fw) "Autonomous Networks - Architecture Framework" [from ITU-T SG13] |  | 1 |  |  |
| [TD372](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0372) | ITU-D SG2 | LS/i from ITU-D Study Group 2 to TSAG on the Rapporteur Group on sustainable digital transformation [from ITU-D SG2] | 1 |  |  |  |
| [TD374](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0374) | ITU-T SG3 | LS/i on SG3 preparation for WTSA-24 [from ITU-T SG3] |  | 1 |  |  |
| [TD376](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0376) | ITU-T SG2 | LS/i on Telecommunication Management and OAM Project Plan [from ITU-T SG2] |  | 1 |  |  |
| [TD380](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0380) | ITU-T SG2 | LS/r on the activities and studies on sustainable digital transformation (reply to TSAG-LS22) [from ITU-T SG2] | 1 |  |  |  |
| [TD381](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0381) | ITU-T SG2 | LS/r on request to provide the standardization status for metaverse-related technologies (reply to FG-MV-LS23) [from ITU-T SG2] | 1 |  |  |  |
| [TD382](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0382) | ITU-T SG2 | LS/r on incubation mechanism (reply to TSAG-LS16) [from ITU-T SG2] |  |  | 1 |  |
| [TD384](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0384) | ITU-T SG2 | LS/r on metaverse definition (reply to FG-MV-LS27) [from ITU-T SG2] | 1 |  |  |  |
| [TD398](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0398) | TSB | Communiqué of the TSB Director CxO consultation meeting, 5 December 2023, Dubai, United Arab Emirates | 1 |  |  |  |
| [TD400](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0400) | FG-MV | LS/i on Results of the fourth meeting of the FG-MV [from FG-MV] | 1 |  |  |  |
| [TD401](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0401) | FG-MV | LS/i on progress report of the Focus Group on metaverse (FG-MV) to TSAG (updates from June 2023 to December 2023) [from FG-MV] | 1 |  |  |  |
| [TD402](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0402) | ITU-T SG15 | LS/i on the new version of the Access Network Transport (ANT) Standards Overview and Work Plan [from ITU-T SG15] |  | 1 |  |  |
| [TD403](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0403) | ITU-T SG15 | LS/i on the new version of the Home Network Transport (HNT) Standards Overview and Work Plan [from ITU-T SG15] |  | 1 |  |  |
| [TD407](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0407) | ITU-T SG15 | LS/i on OTNT Standardization Work Plan Issue 33 [from ITU-T SG15] |  | 1 |  |  |
| [TD411](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0411) | TSB | Statistics regarding ITU-T study group work (position of 2024-01-15) |  |  | 1 |  |
| [TD424](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0424) | ITU-T SG5 | LS/r on the activities and studies on sustainable digital transformation (reply to TSAG-LS22) [from ITU-T SG5] | 1 |  |  |  |
| [TD426](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0426) | ITU-T SG15 | LS/r on incubation mechanism (reply to TSAG-LS16) [from ITU-T SG15] |  |  | 1 |  |
| [TD427](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0427) | ITU-T SG15 | LS/r on the activities and studies on sustainable digital transformation (reply to TSAG-LS22) [from ITU-T SG15] | 1 |  |  |  |
| [TD428](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0428) | ITU-T SG15 | LS/r on draft analysis of operational parts (resolves, instructs etc) of WTSA/PP/WTDC Resolutions (reply to TSAG-LS15) [from ITU-T SG15] |  | 1 |  |  |
| [TD429](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0429) | ITU-T SG15 | LS/r on request to provide the standardization status for metaverse-related technologies (reply to TSAG-LS21 and FG-MV-LS23) [from ITU-T SG15] | 1 |  |  |  |
| [TD433](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0433) | IEWSC | Industry Engagement Workshop |  |  | 1 |  |
| [TD436](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0436) | Chair, WP2 | Collection of materials to support the review of FG-MV outcomes and requests to TSAG | 1 |  |  |  |
| [TD437](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0437) | Chair, WP2 | Review of the WP2 related actions from the WTSA action plan  | 1 |  |  |  |
| [TD440-R1](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0440) | TSB | Digital Transformation Dialogues and Year in Review 2023 | 1 |  |  |  |
| [TD443](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0443) | Liaison officer to ISO/IEC JTC 1   | Liaison Report from ISO/IEC JTC 1 Plenary held in November 2023 |  | 1 |  |  |
| [TD449](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0449) | Chair, JCA-AHF | Progress report of Joint Coordination Activity on Accessibility and Human Factors (JCA-AHF) | [1] |  |  |  |
| [TD451](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-TSAG-240122-TD-GEN-0451) | TSB | Toolkit on Digital Transformation for People-Oriented Cities and Communities |  |  | 1 |  |
| *Number of TDs* | 31[1] | 32 | 10 | 0 |
| ***Overall count of documents*** | 37 [1] | 36 | 12 [1] | 0 |

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_