Terms of reference for the ITU-T Focus Group on metaverse (FG-MV)

1 Rationale and scope

Recently, metaverse has become one disruptive area of innovation with great potential to change our economy, way of living and communicating and society. In this nascent phase of the metaverse, the industry has not converged towards common terms and definitions. The metaverse concept has attracted considerable public attention. Bloomberg analysts[1] have suggested the total market value of the metaverse as the world's "next big technology platform" could reach USD 800 billion by 2024, doubling its value seen in 2020.

This Focus Group provides a collaboration platform for dialogue, for identifying stakeholders with whom ITU-T could collaborate, and for enabling the inclusion of non-members to contribute to the technical pre-standardization work. The Focus Group work will be enriched with the identification of relevant use cases.

Focus Group will consider the following aspects for pre-standardization work of the metaverse:

– working definitions and terminology, concepts, vision, use cases and ecosystem;

– technical requirements;

– technical framework and characteristics, including identification of fundamental underlying technologies;

– security and personally identifiable information (PII) protection related aspects;

– networking infrastructure and connectivity;

– interoperability;

– application interfaces;

– accessibility including persons with disabilities;

– gap analysis of standardization activities in other standardization bodies, including terminology and principles used in ISO and IEC;

– economic aspects and regulatory implications;

– environmental sustainability.

2 Objectives

The objective of the focus group is to support pre-standardisation activities, including the following:

a) To study terminology, concepts, vision and ecosystem.

b) To identify and study the enabling technologies, their evolution and key tasks for standardization purposes, including multimedia, network optimization, connectivity, interoperability of services and applications, security, protection of personally identifiable information, quality (including bandwidth), digital assets (e.g., digital currencies), IoT, accessibility, digital twin and environmental sustainability.

c) To study and gather information to develop a pre-standardization roadmap.

d) To build a community of experts and practitioners to unify the concepts, develop common understandings, so that it be benefiting not only the ITU standardization scene but also the global community.

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[1] https://www.bloomberg.com/professional/blog/metaverse-may-be-800-billion-market-next-tech-platform/.

e)   To identify stakeholders with whom ITU-T could collaborate and establish liaisons and relationships with other organisations that could contribute to the pre-standardisation activities and identify potential collective action and specific next steps.

f)   To stimulate international collaboration, to share knowledge and best practices, and to explore the opportunities and challenges related to interoperability.

g)   To provide a platform to share findings and for dialogue on economic, policy and regulatory implications of metaverse related to telecommunication/ICT.

3   Specific tasks and deliverables

The FG is expected to provide its deliverables to TSAG in time for its January 2024 meeting for its consideration and action, as appropriate (e.g., distribution to SGs for their consideration on starting new work).

a)   To develop deliverables related to working definitions and terminology, use cases, and requirements.

b)   To develop deliverables with guidelines and collection of best practices, including a gap analysis and a pre-standardization roadmap.

c)   To develop deliverables related to technical frameworks, and architecture, taking into consideration security requirements and approaches, PII protection and design principles to meet accessibility requirements.

d)   To organize and participate in workshops to share and collect knowledge and experience from a wide range of expert community and stakeholders.

e)   Upon completion of its lifetime, to provide the final report and a complete set of deliverables to TSAG.

4   Relationships

The Focus Group will work through co-located meetings with relevant ITU-T SGs when possible. It will establish and maintain task-appropriate collaboration arrangements with other partners as well.

The Focus Group will collaborate with:

–   ITU-T SG2 – Operational aspects

–   ITU-T SG3 – Economic & policy issues

–   ITU-T SG5 – Environment, EMF & circular economy

–   ITU-T SG9 – Broadband cable & TV

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

–   ITU-T SG12 – Performance, QoS & QoE

–   ITU-T SG13 – Future networks

–   ITU-T SG16 – Multimedia & digital technologies

–   ITU-T SG17 – Security

–   ITU-T SG20 – IoT, smart cities & communities

Furthermore, the Focus Group will collaborate (as required) with other relevant groups and entities, in accordance with Recommendation ITU-T A.7. These include governments, non-governmental organizations (NGOs), policy makers, SDOs, industry forums and consortia, companies, academic institutions, research institutions and other relevant organizations, inter alia:

–   ITU-R SG5 – Systems and networks for fixed, mobile, radiodetermination, amateur and amateur-satellite services

- IEC TC57 – Power systems management and associated information exchange
- IEC TC65 – Industrial process measurement, control and automation
- IEC TC79 – Alarm and electronic security systems
- IEC TC85 – Measuring equipment for electrical and electromagnetic quantities
- IEC TC93 – Design automation
- IEC TC100 – Audio, video and multimedia systems and equipment
- IEC TC110 – Electronics displays
- ISO/TC68/SC8 – Reference data for financial services
- ISO/TC69 – Applications of statistical methods
- ISO/TC133 – Clothing sizing systems – Size designation, size measurement methods and digital fittings
- ISO/TC184/SC4 – Industrial data
- ISO/TC307 – Blockchain and distributed ledger technologies
- ISO/IEC JTC1
- ISO/IEC JTC1/SC24/WG6 – Computer graphics, image processing and environmental data representation
- ISO/IEC JTC1/SC27 – Information security, cybersecurity and privacy protection
- ISO/IEC JTC1/SC29 – Coding of audio, picture, multimedia and hypermedia information
- ISO/IEC JTC1/SC38 – Cloud computing and distributed platforms
- ISO/IEC JTC1/SC41 – Internet of things and digital twin
- ISO/IEC JTC1/SC42 – Artificial intelligence
- ISO/IEC JTC1/SC43 – Brain computer interfaces
- ISO and IEC Joint Standardization Evaluation Group (JSEG) on metaverse
- IEEE-SA Metaverse Standards Committee
- IEEE Computer Society SAB SC Metaverse SG (MSG)
- W3C (Open) Metaverse Interoperability (OMI) Community Group
- IETF
- ETSI ISG Augmented Reality Framework
- 3GPP SA
- Metaverse Standardization Forum (MSF)

5 Structure

The Focus Group may establish sub-groups if needed.

6 Parent group

The parent group of the Focus Group is TSAG.

7 Leadership

See clause 2.3 of Recommendation ITU-T A.7.

8   Participation

See clause 3 of Recommendation ITU-T A.7. A list of participants will be maintained for reference purposes and reported to the parent group.

9   Administrative support

See clause 5 of Recommendation ITU-T A.7.

10   General financing

See clauses 4 and 10.2 of Recommendation ITU-T A.7.

11   Meetings

The Focus Group will conduct regular meetings. The frequency and locations of meetings will be determined by the Focus Group management. The overall meetings plan will be announced after the approval of the terms of reference. The Focus Group will use remote collaboration tools to the maximum extent.

The meeting dates will be announced by electronic means (e.g., e-mail and website, etc.) at least four weeks in advance.

12   Technical contributions

See clause 8 of Recommendation ITU-T A.7.

13   Working language

The working language is English.

14   Approval of deliverables

Approval of deliverables shall be taken by consensus.

15   Working guidelines

Working procedures shall follow the procedures of Rapporteur meetings. No additional working guidelines are defined.

16   Progress reports

See clause 11 of Recommendation ITU-T A.7.

17   Announcement of Focus Group formation

The formation of the Focus Group will be announced via TSB Circular to all ITU membership, via the ITU-T News log, press releases and other means, including communication with the other involved organizations.

18   Milestones and duration of the Focus Group

The Focus Group lifetime is set for one year from the first meeting with possibility of extension.

Any extension beyond the above-mentioned date is subject to the decision by TSAG, in line with ITU-T A.7.

19   Patent policy

See clause 9 of Recommendation ITU-T A.7.

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