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|  | INTERNATIONAL TELECOMMUNICATION UNION  **TELECOMMUNICATION STANDARDIZATION SECTOR**  STUDY PERIOD 2022-2024 | | TSAG-TD034 |
| TSAG |
| Original: English |
| **Question(s):** | | N/A | Geneva, 12-16 December 2022 |
| **TD** | | | |
| **Source:** | | Chairman, ITU-T SG12 | |
| **Title:** | | ITU-T SG12 Lead Study Group Report | |
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| **Abstract:** | In line with WTSA Resolution 1, this report provides updates about the SG12 lead study group activities. |

SG12 has held one study group meeting since the conclusion of WTSA, in June 2022. The first face-to-face meeting since December 2019 was attended by 170 participants from 58 countries.

An executive summary of the meeting can be found at <https://www.itu.int/en/ITU-T/studygroups/2022-2024/12/Pages/2206-summary.aspx>.

## Lead study group on quality of service and quality of experience

In its role as lead study group on QoS and QoE, SG12 liaised ITU-internally with

– ITU-T SG2 – on network health evaluation, and on machine learning based approaches for QoS and QoE prediction and network performance management,

– ITU-T SG9 – on QoE aspects of augmented reality,

– ITU-T SG13 – on machine learning based approaches for QoS and QoE prediction and network performance management, and on QoE aspects of augmented reality,

– ITU-T SG16 – on QoE aspects of augmented and extended reality, on performance requirements for automatic speech recognition (ASR) in vehicles, and on performance requirements for smart speaker based intelligent multimedia communication systems,

– ITU-R SG6 – on broadcasting-related QoS and QoE aspects.

SG12 liaised externally, including with 3GPP, ETSI TC STQ, VQEG, JPEG and MPEG.

ITU-T Study Groups are encouraged to engage with SG12, at an early stage, on any ongoing or future work discussing QoS and QoE aspects.

SG12 continues to attract and broaden participation from member states, industry, and academia in its activities. As of December, two new Associates have joined SG12 in 2022.

SG12 continues to produce implementer’s guides and supplements assisting in the implementation/ application/ real life use of Recommendations, e.g., for **ITU-T P.863, P.565 and Y.1540**.

## Lead study group on driver distraction and voice aspects of car communications

A revision of Recommendation **ITU-T P.1140** “Speech communication requirements for emergency calls originating from vehicles” was completed. The 2022 edition of P.1140 takes into account packet switched networks for emergency call systems (so called Next generation (NG) eCall). Future P.1140 updates may be addressing speech communication requirements in automated driving scenarios and post-crash situations.

A new work item on Performance requirements for automatic speech recognition (ASR) in vehicles was established (**P.ASR**). ASR is used in vehicles for all types of communication and commands. Good user experience is to be ensured for the driver not to be distracted from the driving task. The objective of the work item is (a) to provide a test environment and test setups for performing automatic speech recognition tests in a laboratory type environment while simulating relevant driving and operating conditions; and (b) to provide measurement procedures and performance requirements.

SG12 informed the Collaboration on ITS Communication Standards (CITS), CEN, UNECE and European Commission about the progress.

ITU-T Study Groups are encouraged to engage with SG12, at an early stage, on new work items discussing driver distraction and voice aspects of car communications.

## Lead study group on quality assessment of video communications and applications

SG12 completed work on new Recommendations addressing QoE of augmented reality (AR; **ITU-T G.1036**), extended reality (XR; **ITU-T P.1320**), as well as revised Recommendations concerning subjective video quality assessment methods for multimedia applications (**ITU-T P.910**), and video quality assessment of streaming services over reliable transport for resolutions up to 4K with access to full and reduced reference pixel information (**ITU-T P.1204.4**).

Machine learning is a key enabler in the development of QoS and QoE related objective models aimed at assessing video quality. In **P.Sup28** and Recommendation **ITU-T P.1402**, SG12 is offering guidance for the development of machine-learning-based solutions for QoS and QoE prediction and network performance management in telecommunication scenarios.

SG12 liaised ITU-internally and externally on the work completed.

ITU-T Study Groups are encouraged to engage with SG12, at an early stage, on new work items discussing quality assessment of video communications and applications.

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