|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Question(s):** | 14, 19 | | **Meeting:** | |  |
| **Study Group:** | 12 | | **Working Party:** | |  |
| **Source:** | Video Quality Experts Group (VQEG) | | | | |
| **Title:** | Proposal to merge P.913, P.911, and P.910 | | | | |
| **LIAISON STATEMENT** | | | | | |
| **For action to:** | | ITU-T Study Group 12, Questions 19 and 14 | | | |
| **For information to:** | |  | | | |
| **Approval:** | |  | | | |
| **Deadline:** | |  | | | |
| **Contact:** | Margaret Pinson NTIA/ITS USA | | | Tel: +1 720 601 7314 E-mail: mpinson@ntia.gov | |
| **Contact:** | Kjell Brunnström RISE Sweden | | | Tel: +46-708-419105 E-mail: kjell.brunnstrom@ri.se | |

|  |  |
| --- | --- |
| **Abstract:** | ITU-T Rec. P.910 and P.911 refer to obsolete technologies and methods such as CRT monitors. ITU-T Rec. P.913 was originally proposed to address video quality assessment for novel technologies, such as laptops and mobile devices. These technologies have become mainstream. Since the scope of P.913 includes both video-only and audiovisual subjective tests, there remains no logical factor by which we could differentiate between the scope of these three Recs. The logical solution is to merge these three documents into a single Recommendation.  Although P.910 is the most widely referenced of these three ITU-T Recs., the P.913 reference would encourage people to read the updated Recommendation instead of assuming its contents based on previously published subjective tests. P.913 is the most up to date, so using this as the baseline text will require the least changes.  In addition, P.913 needs to be updated to reflect advances in improved subjective methods, video technologies, and ITU Recommendations.  Baseline draft text is proposed in the attached document. |

**Proposal**

We propose that P.913, P.910, and P.911 be merged into a single Recommendation. We propose issuing the updated and merged Recommendation as an update to P.913. We propose that P.910 and P.911 be withdrawn, and their web pages updated to include a note that these obsolete Recs. have been replaced by P.913.

**Summary of Proposed Changes to P.913**

Following is a summary of the proposed changes to the text of P.913. The draft document with marked changes is provided separately. The draft document has been examined and discussed within a series of online VQEG meetings, culminating in a final review during the VQEG online meeting, 12 to 16 December, 2022.

* Update wording throughout to reflect technology changes in 2022, including changing the title and text phrase “Internet video and distribution-quality television” to “Internet video services and linear television”
* Update the *Introduction* to describe the merger of P.913, P.911, and P.910
* Update the *Introduction* to reference updated video technologies
* Expand Clause 1.1 *Limitations* to recognize Study Group 12 work on 3D video, interactive testing, and crowdsourcing
* Insert some definitions from P.910 and P.911
* Create new definitions where needed to:
  + Clarify terms such as SRC, HRC, scene and sequence
  + Distinguish between pre-test and pilot test / pilot study
  + Clarify types of environments
* Allow P.913 to be used for image quality assessment, since images and videos are now captured by the same cameras and displayed on the same monitors
* Expand the duration of stimuli in response to studies assessing the use of shorter or longer videos
* Insert Figures from P.910 and P.911, either in their original form or re-drawn
* Insert text from P.910 describing the use of spatial information (SI) and temporal information (TI) metrics for scene selection
* Modifying the sub-clause numbering within Clause 7, so that all methods are visible in the Table of Contents
* Expand comments on the ACR method to provide precision estimations
* Expand the description of the DCR and CCR methods, noting that the methods can be implemented three different ways (i.e., sequentially, side-by-side, and split video)
* Expand comments on appropriate uses of the DCR and CCR methods
* Create a new Clause that explicitly describes the pair comparison (PC) method, as a variant of the CCR method where the subject is forced to choose between two stimuli.
* Delete MUSHRA, replacing it with a reference
* Expand the comments on the advantages and disadvantages of the ACR-HR method
* In Clause 7, sub-clause for *Acceptable changes to the methods*, add the “skip” option
* In Clause 7, change *Discouraged but acceptable changes to the methods* to *Controversial changes to the methods*, to reflect mixed opinions among experts on these modified methods
* Among *Controversial changes to the methods*, add information on the 9-level and 11-level ACR scales, taken from P.910
* Insert the “watch again” option within the Clause for *Controversial changes to the methods*
* Modify Clause 8 to differentiate between controlled and uncontrolled environments, as well as homogeneous and heterogenous environments
* Clarify instructions within Clause 8.3 *Viewing distance*
* In Clause 8.3 *Viewing distance*, add information for mobile devices and references to information found in other Recommendations
* In Clause 9.1 *Number of Subjects*, insert new information on the number of subjects to be used
* Clarify the distinction between pre-tests and pilot studies
* Bring ITU-T Rec. P.913 and ITU-R Rec. BT.500 into closer agreement, by noting the use of 15 subject for pilot studies and by providing a clear definition of a pilot study
* Fully describe the Few Observers with Repetitions (FOWR) protocol and explain the advantages and limitations of this protocol (note that P.913 included the FOWR protocol but omitted these details)
* In Clause 10 *Experiment Design*, explain the impact of conventional and unrepeated scene experiment designs, and insert new research on the impact of unrepeated scene experiment designs
* In Clause 10 *Experiment Design*, indicate the overall relationship between audiovisual quality, video-only quality, and audio-only quality, as established by research studies
* In Clause 10 *Experiment Design*, provide information on how to design experiments that investigate a specific task
* In Clause 10 *Experiment Design*, add information on the use of repetitions (i.e., the subject views and rates a stimuli more than once)
* Separate the descriptions of pre-test and pilot studies into separate sub-clauses, and clarify the intended uses of each
* Within Clause 11.8 *Voting*, add information recommending the information that is to be recorded
* Provide a name for the newest subject screening method
* Insert statistics to be used for measuring disagreement rates for lab-to-lab and method-to-method comparisons
* Insert an expanded table with mandatory and optional information to be included in subjective test reports
* Insert Annex B, taken from P.910, which provides details for calculating SI and TI
* Insert new *Bibliography* references to ITU Recommendations and to peer reviewed publications that support advised methods or that provide additional information

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