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Genève, le 14 décembre 2016

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| Réf.:  Tél.: Fax: E-mail: | **Circulaire TSB 3**  +41 22 730 6828 +41 22 730 5853 [tsbsg12@itu.int](mailto:tsbsg12@itu.int) | * Aux administrations des Etats Membres  de l'Union; * Aux Membres du Secteur UIT-T; * Aux Associés de l'UIT-T participant aux travaux de la Commission d'études 12; * Aux établissements universitaires participant  aux travaux de l'UIT |
|  |  | **Copie**:   * Aux Présidents et Vice-Présidents des Commissions d'études; * Au Directeur du Bureau de développement  des télécommunications; * Au Directeur du Bureau des radiocommunications; * Aux Coprésidents du Groupe d'experts en qualité vidéo (VQEG) |
| **Objet:** | **Appel à participation de la Commission d'études 12 et du Groupe VQEG concernant la Phase 2 AVHD-AS/P.NATS:** **Modèle d'opinion pour l'estimation de la qualité vidéo d'applications de type streaming adaptatif** | |
| **Action:** | Veuillez annoncer, à titre provisoire, votre intention de participer à la Phase 2 AVHD‑AS/P.NATS, en envoyant, d'ici au **9 janvier 2017**, un courriel à l'adresse [tsbsg12@itu.int](mailto:tsbsg12@itu.int) | |

Madame, Monsieur,

1 Le groupe chargé de la Question 14 de la Commission d'études 12 de l'UIT‑T (Qualité de fonctionnement, qualité de service et qualité d'expérience) souhaite accélérer les travaux menés sur la deuxième phase du projet P.NATS, concernant un modèle d'opinion pour l'estimation de la qualité vidéo d'applications de type streaming adaptatif.

2 Ces travaux, qui seront menés dans le cadre d'un projet commun entre le groupe chargé de la Question 14/12 de l'UIT‑T et le Groupe d'experts en qualité vidéo (VQEG), seront désignés comme étant la Phase 2 AVHD-AS/P.NATS.

3 L'appel à participation concernant la Phase 2 AVHD-AS/P.NATS figure dans l'Annexe 1 de la présente Circulaire.

4 Je vous saurais gré de bien vouloir annoncer, à titre provisoire, votre intention de participer à cette Phase 2 AVHD-AS/P.NATS, au plus tard **le 9 janvier 2017**, en envoyant un courriel à l'adresse [tsbsg12@itu.int](mailto:tsbsg12@itu.int).

5 Si vous souhaitez obtenir des détails ou des précisions supplémentaires sur cet appel à participation, nous vous prions de vous adresser à M. Jörgen Gustafsson ([jorgen.gustafsson@ericsson.com](mailto:jorgen.gustafsson@ericsson.com)), M. Alexander Raake (alexander.raake@tu-ilmenau.de), M. Shahid Mahmood Satti ([ss@opticom.de](mailto:ss@opticom.de)) et M. Silvio Borer ([Silvio.Borer@rohde-schwarz.com](mailto:Silvio.Borer@rohde-schwarz.com)).

6 Je tiens à souligner l'importance de votre participation à ce thème de travail, qui aiderait la Commission d'études 12 de l'UIT‑T et le Groupe VQEG à faire progresser les travaux sur la modélisation de la qualité vidéo pour les services de streaming adaptatif.

Veuillez agréer, Madame, Monsieur, l'assurance de ma considération distinguée.

Chaesub Lee  
Directeur du Bureau de la  
normalisation des télécommunications

**Annexe**:1

**ANNEX 1**(to TSB Circular 3)

**Call for participation on AVHD-AS/P.NATS Phase 2  
Opinion model for estimating video quality of adaptive streaming services**

**Abstract**

This Call for Participation is directed to all parties who are interested to contribute to AVHD‑AS/P.NATS Phase 2 models for objective assessment of progressive download and adaptive streaming type video. Those parties are invited to announce their interest in contributing to AVHD‑AS/P.NATS Phase 2 and spending further active development and analysis efforts into the project. Interested parties are expected to announce their interest before 9 January 2017.

**Background**

The ITU-T P.1203 series of standards which target the parametric and bitstream based modelling of video quality have recently been consented to support progressive download and adaptive streaming types of HD video using H.264 video codec. The next step in Q14/12 model standardization is to broaden the scope of P.1203 for various video codecs and higher resolution, aiming at a more comprehensive model that can meet the requirements of modern day Ultra HD video streaming applications.

The ITU-T J.341/J.342 and J.343 series of standards were developed within VQEG targeting pure pixel‑based and hybrid models to support video quality measurement for HDTV digital cable and IP‑based video services, respectively. At present no standardized pixel-based and hybrid models are available for adaptive streaming applications. In addition, modern day streaming services involve a plethora of video codecs and streaming resolutions (up to and including Ultra-HD) for which these types of models need to be researched.

In an effort to measure video quality in a broad operational scope – ranging from head-end encoding optimization to in-network and client side quality monitoring – this project aims to develop different type of models using a common training/validation dataset to determine the potential of these model types in challenging measurement scenarios.

**AVHD-AS/P.NATS Phase 2 work item**

The AVHD-AS/P.NATS Phase 2 model will be developed using a dedicated training phase with a jointly developed set of training databases followed by cross-validation using a jointly developed set of validation databases.

The AVHD-AS/P.NATS Phase 2 work item is planned to have three tracks. Track 1 is a bitstream-based parametric video-only model, where the provided information is given in the same way as P.1203.1. As such, the first track is planned to result in an extension of P.1203.1 for a broader scope. In tracks 2 and 3, Recommendations are being developed which describe how the output of pure pixel-based and hybrid models can be used to obtain the quality of long (up to five minutes) videos in the context of adaptive streaming.

The building blocks of the AVHD-AS/P.NATS Phase 2 models are shown in Figure 1 below:

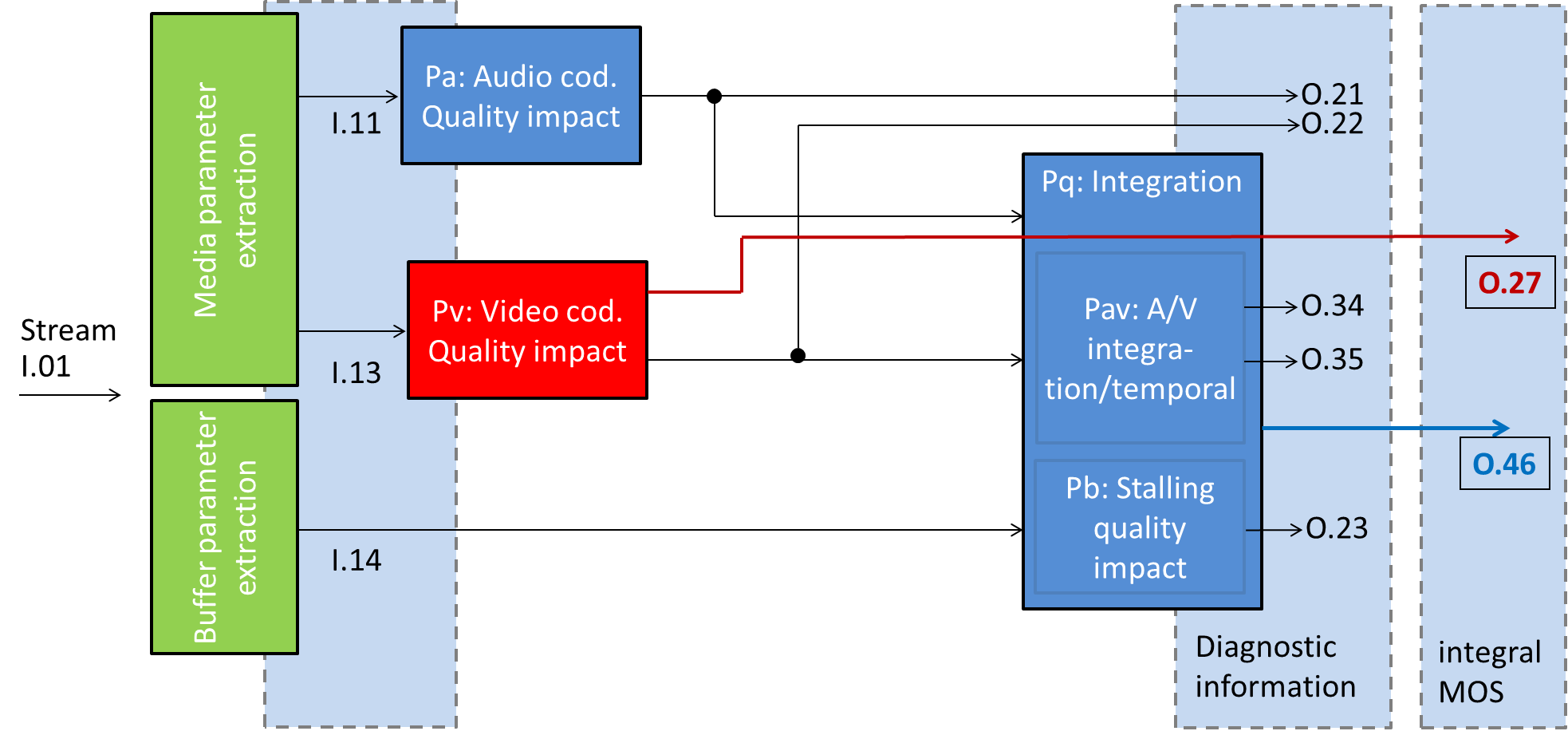
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Figure 1 (a): Building blocks of the bitstream model (track1), only red shaded blocks will be developed, blue blocks are taken from P.1203 for characterization

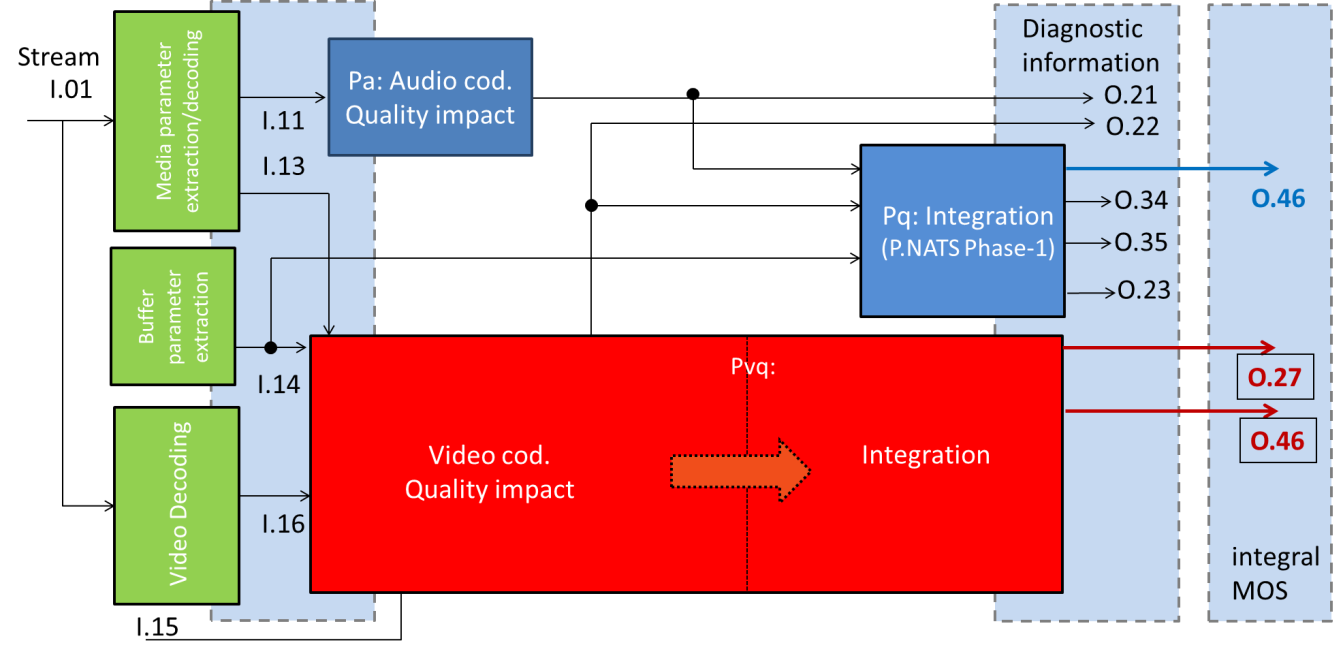


Figure 1 (b): Building blocks of the pixel-based (track2) and hybrid models (track3), only red shaded blocks will be developed, blue blocks are taken from P.1203 for characterization

The individual outputs can be summarized as follows:

* O.27: Final short-term video coding quality score
  + Single score for each short-length video, on 1-5 quality scale
  + Excludes aspects of temporal integration with initial- or re-buffering
* O.46: Final media session quality score
  + Single score for the session, on a 1-5 quality scale
  + Includes initial buffering and stalling and rate adaptivity aspects.
* O.22: Video coding quality per output sampling interval
  + Multiple segment scores provided per session and on a 1-5 quality scale
* O.21: Audio coding quality per output sampling interval
  + Multiple segment scores provided per session and on a 1-5 quality scale
* O.23: Perceptual buffering indication
  + Single score on a 1-5 quality scale for the session
* O.34: Audiovisual segment coding quality per output sampling interval
  + Multiple segment scores provided per session
* O.35: Final long-term audiovisual coding quality score
  + Single score for the session, on a 1-5 quality scale
  + Includes aspects of temporal integration with initial- or re-buffering

It is noted that the output nomenclature can be read as follows: The last number is incrementally specifying the index of the output, the first number specifies the level at which the information is obtained (the higher, the closer to the final media session quality score).

**Requirements on parties**

Interested parties are requested to announce their intent to participate before 9 January 2017, and may then take part in creating an initial set of documents specifying the project layout and modus operandi. The parties which take part in this first step can then, before 3 February 2017, commit to take part in the continued work, contribute to drafting the required documents, and take part in finally creating the new AVHD-AS/P.NATS Phase 2 Recommendation, or withdraw and contribute no further to the project. This work will include producing a number of subjective test databases. If the majority of the proponents consider that the Requirement Specification or the Terms of Reference (ToR) documents are not mature enough, then the deadline for the second response will be delayed accordingly.

The announcement of participation in the mentioned project is divided into two steps:

1. Interested parties must announce their provisional intention to participate in the AVHD‑AS/P.NATS Phase 2 development by **9 January 2017** to [tsbsg12@itu.int](mailto:tsbsg12@itu.int).
2. A binding commitment to participate in the AVHD-AS/P.NATS Phase 2 development has to be made by **3 February 2017** to the secretariat of ITU-T SG12 ([tsbsg12@itu.int](mailto:tsbsg12@itu.int)), and to the VQEG AVHD Co-Chairs ([cs@opticom.de](mailto:cs@opticom.de); [Quan.Huynh-Thu@cisra.canon.com.au](mailto:Quan.Huynh-Thu@cisra.canon.com.au); [mpinson@ntia.doc.gov](mailto:mpinson@ntia.doc.gov)). Only parties who have previously announced their provisional intention to participate may make this commitment. This final commitment is based on a Requirement Specification and Terms of Reference for AVHD-AS/P.NATS Phase 2 that is considered as sufficient by Q14/12 and VQEG/AVHD for starting the development work, and which will be established jointly involving all declared participants according to this call for participation. It is noted that in case of later withdrawal, leaving parties have to grant usage of their already contributed test databases. These aspects will be, as it was done for example for the P.NAMS & P.NBAMS, POLQA and P.NATS development, legally handled outside ITU‑T/VQEG using a respective agreement between the parties.

**Draft overview time plan**

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| **Date (Tentative)** | **Result/activity completed** |
| 13 December 2016 | Call for indication of participation sent out  Stable ToR available  Draft requirement specification |
| **9 January 2017** | Deadline for indication of participation |
| End of SG12 January meeting | Updates (if any) for requirement specification and ToR  Draft test specification available |
| **3 February 2017** | Deadline response for binding call for participation |
| May 2017 | All details of test and processing chain set |
| August 2017 | Training databases submitted |
| November 2017 | Model submission |

**Communication**

Participants are encouraged to respond to this call for participation as indicated above. Participants are also encouraged to subscribe to the e-mail reflector of AVHD-AS/P.NATS Phase 2 (pnats2avhd@lists.itu.int), to join the AVHD-AS/P.NATS Phase 2 conference calls announced on the email reflector, and to participate in the in-person project meetings. An ITU TIES or Guest account is required to subscribe. Participants can register for a Guest account at <https://www.itu.int/net/iwm/public/frmUserRegistration.aspx> and sign up for the e-mail reflector at <https://www.itu.int/net4/iwm/?p0=0&p11=ITU&p12=ITU-SEP-ITU-T-SEP-Other%20Groups-SEP-pnats2avhd&p21=ITU&p22=ITU-SEP-ITU-T-SEP-Other%20Groups-SEP-pnats2avhd>.

More information about Study Group 12 can be found at:   
<https://www.itu.int/en/ITU-T/studygroups/2017-2020/12/>.

More information about VQEG can be found at <http://www.its.bldrdoc.gov/vqeg/>.

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