Minutes VQEG Krakow Poland

[**Monday (Nov 27, 2017)    3**](https://docs.google.com/document/d/1aaJTgJfCLs9CWnMFGgwhIgxmws9WFA4LNFhtKGAJCrM/edit#heading=h.by02pa3eicwu)

[09:00 Group Updates    3](https://docs.google.com/document/d/1aaJTgJfCLs9CWnMFGgwhIgxmws9WFA4LNFhtKGAJCrM/edit#heading=h.25cvanrvhv1f)

[AVHD    3](https://docs.google.com/document/d/1aaJTgJfCLs9CWnMFGgwhIgxmws9WFA4LNFhtKGAJCrM/edit#heading=h.5v1aateauc)

[IMG    3](https://docs.google.com/document/d/1aaJTgJfCLs9CWnMFGgwhIgxmws9WFA4LNFhtKGAJCrM/edit#heading=h.g9anhnqrlbk3)

[HDR/WCG    3](https://docs.google.com/document/d/1aaJTgJfCLs9CWnMFGgwhIgxmws9WFA4LNFhtKGAJCrM/edit#heading=h.f2vvq7lrn6ib)

[JEG/Hybrid    3](https://docs.google.com/document/d/1aaJTgJfCLs9CWnMFGgwhIgxmws9WFA4LNFhtKGAJCrM/edit#heading=h.l3ktr3z39mtt)

[PsyPhyQA    3](https://docs.google.com/document/d/1aaJTgJfCLs9CWnMFGgwhIgxmws9WFA4LNFhtKGAJCrM/edit#heading=h.l6yacmtq5ltg)

[UHD    4](https://docs.google.com/document/d/1aaJTgJfCLs9CWnMFGgwhIgxmws9WFA4LNFhtKGAJCrM/edit#heading=h.11zei5fpg316)

[VQEG E-Letter    4](https://docs.google.com/document/d/1aaJTgJfCLs9CWnMFGgwhIgxmws9WFA4LNFhtKGAJCrM/edit#heading=h.qo2q7brci5ig)

[MOAVI    4](https://docs.google.com/document/d/1aaJTgJfCLs9CWnMFGgwhIgxmws9WFA4LNFhtKGAJCrM/edit#heading=h.p7b424u4wlqd)

[QART    4](https://docs.google.com/document/d/1aaJTgJfCLs9CWnMFGgwhIgxmws9WFA4LNFhtKGAJCrM/edit#heading=h.g16g5fjekzdq)

[General discussion    4](https://docs.google.com/document/d/1aaJTgJfCLs9CWnMFGgwhIgxmws9WFA4LNFhtKGAJCrM/edit#heading=h.lllxgji1lxww)

[VIME    4](https://docs.google.com/document/d/1aaJTgJfCLs9CWnMFGgwhIgxmws9WFA4LNFhtKGAJCrM/edit#heading=h.4tuvtwgfs1i)

[VLQA    4](https://docs.google.com/document/d/1aaJTgJfCLs9CWnMFGgwhIgxmws9WFA4LNFhtKGAJCrM/edit#heading=h.2zpe0jo5k4bp)

[ILG    4](https://docs.google.com/document/d/1aaJTgJfCLs9CWnMFGgwhIgxmws9WFA4LNFhtKGAJCrM/edit#heading=h.huyume1a679o)

[VQEG Administration and Web Support    4](https://docs.google.com/document/d/1aaJTgJfCLs9CWnMFGgwhIgxmws9WFA4LNFhtKGAJCrM/edit#heading=h.yu2rl63gga9o)

[Tools and Subjective Labs Setup    4](https://docs.google.com/document/d/1aaJTgJfCLs9CWnMFGgwhIgxmws9WFA4LNFhtKGAJCrM/edit#heading=h.4po910opq7f1)

[IMG Session (Co-chairs: Phil Corriveau, Jesus Gutierrez and Zhenzhong Chen)    5](https://docs.google.com/document/d/1aaJTgJfCLs9CWnMFGgwhIgxmws9WFA4LNFhtKGAJCrM/edit#heading=h.z6yxj7fxbryz)

[13:30 AVHD-AS / P.NATS Phase 2    5](https://docs.google.com/document/d/1aaJTgJfCLs9CWnMFGgwhIgxmws9WFA4LNFhtKGAJCrM/edit#heading=h.rhx5mee40k93)

[14:15 Qualinet summary by Kjell    5](https://docs.google.com/document/d/1aaJTgJfCLs9CWnMFGgwhIgxmws9WFA4LNFhtKGAJCrM/edit#heading=h.so1s6diwh3c1)

[[Action] Kjell Proposal - Set up a repository or use existing CDVL (Consumer Digital Video Library) database or Qualinet subjective data database    5](https://docs.google.com/document/d/1aaJTgJfCLs9CWnMFGgwhIgxmws9WFA4LNFhtKGAJCrM/edit#heading=h.rf75e2u0e5j)

[[Action] Start writing a white paper on best practices    5](https://docs.google.com/document/d/1aaJTgJfCLs9CWnMFGgwhIgxmws9WFA4LNFhtKGAJCrM/edit#heading=h.9z53g2tmr0pg)

[[Action] Collecting open source immersive media content tools and data set    5](https://docs.google.com/document/d/1aaJTgJfCLs9CWnMFGgwhIgxmws9WFA4LNFhtKGAJCrM/edit#heading=h.l8qdprf3sgyf)

[[Action] Ioannis proposal - Use SMPTE IMF (Interoperable Master Format) as the important and long-lasting media format because:    5](https://docs.google.com/document/d/1aaJTgJfCLs9CWnMFGgwhIgxmws9WFA4LNFhtKGAJCrM/edit#heading=h.qw093yiz1xoi)

[14:40 IMG Presentations    6](https://docs.google.com/document/d/1aaJTgJfCLs9CWnMFGgwhIgxmws9WFA4LNFhtKGAJCrM/edit#heading=h.uh956b71be4d)

[14:40 Salient 360 Grand Challenge ICME 2018    6](https://docs.google.com/document/d/1aaJTgJfCLs9CWnMFGgwhIgxmws9WFA4LNFhtKGAJCrM/edit#heading=h.pjwhugc5pr9p)

[14:50 IEEE standard working group HFVE (Human Factors for Visual Experiences) reaching out VQEG    6](https://docs.google.com/document/d/1aaJTgJfCLs9CWnMFGgwhIgxmws9WFA4LNFhtKGAJCrM/edit#heading=h.ugfvx0wfpxmh)

[16:00 J. Imaging: Special Issue on Image Quality    6](https://docs.google.com/document/d/1aaJTgJfCLs9CWnMFGgwhIgxmws9WFA4LNFhtKGAJCrM/edit#heading=h.j44329l5d162)

[16:15 QoUX for immersive media and novel presentation - Transactions on Multimedia    6](https://docs.google.com/document/d/1aaJTgJfCLs9CWnMFGgwhIgxmws9WFA4LNFhtKGAJCrM/edit#heading=h.qbjq84nxxeax)

[Presentation “Exploring the effects of subjective methodology on assessing visual discomfort in immersive multimedia (HVEI special session)”    6](https://docs.google.com/document/d/1aaJTgJfCLs9CWnMFGgwhIgxmws9WFA4LNFhtKGAJCrM/edit#heading=h.ropvavqlawwg)

[Recover Subjective Quality Scores from Noisy Measurements    6](https://docs.google.com/document/d/1aaJTgJfCLs9CWnMFGgwhIgxmws9WFA4LNFhtKGAJCrM/edit#heading=h.qnv78jbb3k3k)

[**Tuesday (Nov 28, 2017)    6**](https://docs.google.com/document/d/1aaJTgJfCLs9CWnMFGgwhIgxmws9WFA4LNFhtKGAJCrM/edit#heading=h.lfx0f2zerhck)

[09:00 SG12:  statement on ITU-T SG 12 on QoE-VR    6](https://docs.google.com/document/d/1aaJTgJfCLs9CWnMFGgwhIgxmws9WFA4LNFhtKGAJCrM/edit#heading=h.71qxs3cet0ji)

[10:15 Update on Alliance for Open Media    7](https://docs.google.com/document/d/1aaJTgJfCLs9CWnMFGgwhIgxmws9WFA4LNFhtKGAJCrM/edit#heading=h.fdv69xah4nme)

[Immersive Media (Session 2)    7](https://docs.google.com/document/d/1aaJTgJfCLs9CWnMFGgwhIgxmws9WFA4LNFhtKGAJCrM/edit#heading=h.jfzmfbevtgmq)

[HDR-WCG (Session 3)    7](https://docs.google.com/document/d/1aaJTgJfCLs9CWnMFGgwhIgxmws9WFA4LNFhtKGAJCrM/edit#heading=h.fjcq8fiulhtd)

[Administrative Discussion    8](https://docs.google.com/document/d/1aaJTgJfCLs9CWnMFGgwhIgxmws9WFA4LNFhtKGAJCrM/edit#heading=h.qeux3u65wbt9)

[VQEG E-Letter    8](https://docs.google.com/document/d/1aaJTgJfCLs9CWnMFGgwhIgxmws9WFA4LNFhtKGAJCrM/edit#heading=h.p7z44x7krsk4)

[Feedback on Immersive Media Subjective Methods    9](https://docs.google.com/document/d/1aaJTgJfCLs9CWnMFGgwhIgxmws9WFA4LNFhtKGAJCrM/edit#heading=h.jk25d3l39wx0)

[**Wednesday (Nov 29, 2017)    9**](https://docs.google.com/document/d/1aaJTgJfCLs9CWnMFGgwhIgxmws9WFA4LNFhtKGAJCrM/edit#heading=h.g2fps4pr2b6u)

[09:00 ITU SG12 Q13    9](https://docs.google.com/document/d/1aaJTgJfCLs9CWnMFGgwhIgxmws9WFA4LNFhtKGAJCrM/edit#heading=h.j84nbewr9k92)

[Presentation – Subjective Test Plan for assessing user experience of initial loading of streaming video (P.QUIT)    9](https://docs.google.com/document/d/1aaJTgJfCLs9CWnMFGgwhIgxmws9WFA4LNFhtKGAJCrM/edit#heading=h.70y32i9ljch0)

[Presentation — Overall Test Plan and Test Factors for P.QUITS    10](https://docs.google.com/document/d/1aaJTgJfCLs9CWnMFGgwhIgxmws9WFA4LNFhtKGAJCrM/edit#heading=h.btyosmj31bho)

[11:00 Presentations    11](https://docs.google.com/document/d/1aaJTgJfCLs9CWnMFGgwhIgxmws9WFA4LNFhtKGAJCrM/edit#heading=h.dacilm46lbrt)

[Presentation – 3GPP 5G Video KPIs Introduction    11](https://docs.google.com/document/d/1aaJTgJfCLs9CWnMFGgwhIgxmws9WFA4LNFhtKGAJCrM/edit#heading=h.m791ki7fk3j7)

[Presentation – Perceptual quality optimization of video codecs & codec comparison    11](https://docs.google.com/document/d/1aaJTgJfCLs9CWnMFGgwhIgxmws9WFA4LNFhtKGAJCrM/edit#heading=h.hzmnb2ui6y3b)

[QART    11](https://docs.google.com/document/d/1aaJTgJfCLs9CWnMFGgwhIgxmws9WFA4LNFhtKGAJCrM/edit#heading=h.pc93xeizgxdp)

[Presentation – Video Summarisation Evaluation    11](https://docs.google.com/document/d/1aaJTgJfCLs9CWnMFGgwhIgxmws9WFA4LNFhtKGAJCrM/edit#heading=h.sw72eetu009y)

[Next VQEG Meeting    12](https://docs.google.com/document/d/1aaJTgJfCLs9CWnMFGgwhIgxmws9WFA4LNFhtKGAJCrM/edit#heading=h.ssfck9t9jkov)

[Presentations (partly HVEI special session)    12](https://docs.google.com/document/d/1aaJTgJfCLs9CWnMFGgwhIgxmws9WFA4LNFhtKGAJCrM/edit#heading=h.yuuigken4iju)

[Presentation – QoE of Omnidirectional (360°) Videos    12](https://docs.google.com/document/d/1aaJTgJfCLs9CWnMFGgwhIgxmws9WFA4LNFhtKGAJCrM/edit#heading=h.gdwzjb5q4hnx)

[AVHD Summary    12](https://docs.google.com/document/d/1aaJTgJfCLs9CWnMFGgwhIgxmws9WFA4LNFhtKGAJCrM/edit#heading=h.efnnzhu8nwb)

[**Thursday (Nov 30, 2017)    13**](https://docs.google.com/document/d/1aaJTgJfCLs9CWnMFGgwhIgxmws9WFA4LNFhtKGAJCrM/edit#heading=h.quh82xeibhqy)

[09:00 PsyPhyQA    13](https://docs.google.com/document/d/1aaJTgJfCLs9CWnMFGgwhIgxmws9WFA4LNFhtKGAJCrM/edit#heading=h.ibknt8j0ez79)

[10:45 VIME    14](https://docs.google.com/document/d/1aaJTgJfCLs9CWnMFGgwhIgxmws9WFA4LNFhtKGAJCrM/edit#heading=h.1qe0c5c74b8q)

[AGH Subjective Lab Setup (Student Tests)    14](https://docs.google.com/document/d/1aaJTgJfCLs9CWnMFGgwhIgxmws9WFA4LNFhtKGAJCrM/edit#heading=h.1xw2a0ecjybu)

[Presentation – “Device characterization for content adaptation”    14](https://docs.google.com/document/d/1aaJTgJfCLs9CWnMFGgwhIgxmws9WFA4LNFhtKGAJCrM/edit#heading=h.jx8tamc4z6ee)

[SLIDO suggestion by James Goel    15](https://docs.google.com/document/d/1aaJTgJfCLs9CWnMFGgwhIgxmws9WFA4LNFhtKGAJCrM/edit#heading=h.7w13rgey60xx)

[NTIA/ITS Status Report and Questions    15](https://docs.google.com/document/d/1aaJTgJfCLs9CWnMFGgwhIgxmws9WFA4LNFhtKGAJCrM/edit#heading=h.ctxf3hjincax)

Schedule: <https://docs.google.com/spreadsheets/d/1Yg7hudkgXRrXdfbPD4Vp9Lp7kO4eSMQAnlrOb2Ex9JY/edit#gid=0>

Files and Presentations:

ftp://[vqeg.its.bldrdoc.gov/Documents/VQEG\_Krakow\_Nov17/MeetingFiles/](http://vqeg.its.bldrdoc.gov/Documents/VQEG_Krakow_Nov17/MeetingFiles/)

Monday (Nov 27, 2017)

09:00 Group Updates

AVHD

Links to ITU Study Group 12:

* Question 13, <https://www.itu.int/ITU-T/studygroups/com12/sg12-q13.html>
* Question 14 (AVHD-AS  / P.NATS Phase 2), <https://www.itu.int/ITU-T/studygroups/com12/sg12-q14.html>

IMG

Quality assessment of 360 content

Considering both 2D/3D 360 contents

Dataset list available through Google drive

HVEI special session

HDR/WCG

Most question addressed quality assessment

Content Selection is challenging

XR discussion will be tomorrow by James (Qualcomm)

* James mentioned public HDR content:  <https://hdr-2014.hdm-stuttgart.de/> (Click through their security warning since they don’t have a proper security certificate)
* Related compression: [A new display stream compression standard under development in VESA](https://www.spiedigitallibrary.org/conference-proceedings-of-spie/10396/103960U/A-new-display-stream-compression-standard-under-development-in-VESA/10.1117/12.2274595.short?SSO=1)

Idea to merge with IMG? Or merge UHD with HDR/WCG?

JEG/Hybrid

The goal is to produce one model that combines metrics developed separately by a variety of researchers using a large database approach. Will present result of new dataset on Thursday

PsyPhyQA

Results from joint subjective evaluation without sensory information will be presented

Call for new joint tests

UHD

Point of concern: no news from Vittorio since 2 years

Could UHD be merged with another group?

VQEG E-Letter

Most recent issue almost ready, will be released after this meeting

Should apply for ISSN numbers

MOAVI

QART

General discussion

Suggestion to change in Agenda to accommodate Q13 (IMG)

Discussion about whether some groups should merge, what the structure of the working groups should be

VIME

Michelle resigned as co-chair

VLQA

Needs to combine projects (re-organisation of working group)

ILG

No updates as no need for ILG work in current projects

[VQEG Administration and Web Support](https://www.its.bldrdoc.gov/vqeg/projects/vqeg-admin-and-web-support.aspx)

Margaret can update website during breaks

Tools and Subjective Labs Setup

<http://vqegstl.ugent.be/>

The main goal of the VQEG Tools and Subjective Labs Setup support group is to provide the research community with a wide variety of software tools and guidance in order to facilitate video quality research. Most of these tools have been contributed by different VQEG members, but we encourage everyone who has tools made available online to let us know, so they can be included on the website.

Joint Effort Group (Kjell Brunnström)

Nothing to report.

MPEG Updates

Successor of HEVC will be in 2020

IMG Session (Co-chairs: Phil Corriveau, Jesus Gutierrez and Zhenzhong Chen)

Narciso Garcia presented on “Monitoring of video quality experience in real time” is joint work between Nokia Bell Lab and UPM

UPM with Nokia Bell Labs has developed a tool to gather user opinions within immersive environments. A different video sequence can be arranged for each observer with a predefined fixed display time for each test condition and a variable voting period to avoid user dis-engagement from the immersive experience. Users can conduct the test autonomously after training. Any grading scale is allowed.

The tool is offered to VQEG members for research cooperation and non-profit use.

13:30 AVHD-AS / P.NATS Phase 2

Shahid Mahmood Satti <[ss@opticom.de](mailto:ss@opticom.de)> and Christian Schmidmer <[cs@opticom.de](mailto:cs@opticom.de)> presented latest update.

Link to presentation [here](ftp://vqeg.its.bldrdoc.gov/Documents/VQEG_Krakow_Nov17/MeetingFiles/)

14:15 Qualinet summary by Kjell

Link to presentation [here](ftp://vqeg.its.bldrdoc.gov/Documents/VQEG_Krakow_Nov17/MeetingFiles/)

1. [Action] Kjell Proposal - Set up a repository or use existing [CDVL](http://www.cdvl.org) (Consumer Digital Video Library) database or [Qualinet](http://dbq.multimediatech.cz) subjective data database
2. [Action] Start writing a white paper on best practices
3. [Action] Collecting open source immersive media content tools and data set

[Action] Ioannis proposal - Use SMPTE IMF (Interoperable Master Format) as the important and long-lasting media format because:

1. It is codec agnostic
2. Supports individual frame replacement cut-lists

[Qualinet Databases link](http://www.qualinet.eu/index.php?option=com_content&view=article&id=47&Itemid=54)

14:40 IMG Presentations

14:40 Salient 360 Grand Challenge ICME 2018

Patrick LeCallet - IEEE International Conference on Multimedia and Expo (ICME) 2018

(TBD) Link to presentation here.

14:50 IEEE standard working group HFVE (Human Factors for Visual Experiences) reaching out VQEG

Patrick LeCallet

(TBD) Link to presentation here.

16:00 J. Imaging: Special Issue on Image Quality

Mikolaj - (TBD) Link to presentation here.

16:15 QoUX for immersive media and novel presentation - Transactions on Multimedia

Kjell - (TBD) Link to presentation here.

Presentation “Exploring the effects of subjective methodology on assessing visual discomfort in immersive multimedia (HVEI special session)”

By Jing Li, Patrick LeCallet

Recover Subjective Quality Scores from Noisy Measurements

Zhi, Ioannis, Patrick

Tuesday (Nov 28, 2017)

09:00 SG12:  statement on ITU-T SG 12 on QoE-VR

Kazuhisa Yamagishi

Liaison letter regarding Immersive Media Metrics for MPEG-I: Coded Representation of Immersive Media.  Please keep us informed about ITU-T G.QoE-VR. (see letter)

[Action] [Link to all Working documents from Huawei (Working documents WD1..5)](ftp://vqeg.its.bldrdoc.gov/Documents/VQEG_Krakow_Nov17/MeetingFiles/)

[Action] Working Document 02 - VR MPEG Info from Huawei] Are there any questions on this document?  ([VQEG link here](ftp://vqeg.its.bldrdoc.gov/Documents/VQEG_Krakow_Nov17/MeetingFiles/WD02_Huawei-VR-MPEG-Info_v1.0.docx))

[Action] Provide formal feedback for G.VR-360 through formal contributions at ITU.  IMG is interested in contributing through VQEG liaison.  SG12 is next May so feedback required by middle-February.

[Action] IMG co-chair (JesusG) will coordinate a online/offline meeting

[Action] Interested parties: Margaret, PhilC, Christian, Kjell, Narciso, PatrickL, JesusG, Alex

\*\* Offline discussion for work-item.

10:15 Update on Alliance for Open Media

Ioannis Katsavounidis

* 8x Founding Members (<http://aomedia.org/about-us>)
* Quality results presented tomorrow
* Bitstream should be frozen within next month
* Link to software: <http://aomedia.org/contributor-guide/>
* Metrics / test runs: <https://arewecompressedyet.com/>

Immersive Media (Session 2)

Presentation “Towards Subjective Quality Assessment for Panoramic Video (HVEI special session)” by Zhenzhong Chen (Grace Zhang) (TBD insert link)

Presentation “Quality of Experience for a Virtual Reality simulator (HVEI special session)” by Kjell Brunnström (TBD insert link)

This is a task based VR subjective test: loading logs onto a truck. Of interest for doing remote tasks into dangerous environments. May be useful for automatic driving applications. A remote driver could take over the driving in certain situations, such as emergencies.

Discussion ensued about what questions should be asked and how best to phrase the questions, to understand the user’s experience (e.g., immersion versus presence, how to understand whether the delay is appropriate). We need to work on the methods.

HDR-WCG (Session 3)

Presentation #23, “Status update of HDR-WCG VQEG activities” by Patrick Le Callet (Université de Nantes). See file [“VQEG\_HDR-WCG\_2017\_223\_Status\_update\_of\_HDR-WCG\_VQEG\_activities”](ftp://vqeg.its.bldrdoc.gov/Documents/VQEG_Krakow_Nov17/MeetingFiles/VQEG_HDR-WCG_2017_223_Status_update_of_HDR-WCG_VQEG_activities.pptx)

Presentation #22, “Selecting contents for QoE studies: Perceptual characterization for WCG content” by Patrick Le Callet (Université de Nantes). See file: [“VQEG\_HDR-WCG\_2017\_222\_WCGContentCharacterization”](ftp://vqeg.its.bldrdoc.gov/Documents/VQEG_Krakow_Nov17/MeetingFiles/VQEG_HDR-WCG_2017_222_WCGContentCharacterization.pptx)

Presentation #25, “VQEG HDR and XR Quality Discussion” from James Goel (Qualcomm). Slides cannot be distributed at this time.

Kjell Brunnström shared related some related measurement information.

Administrative Discussion

Topics are merging groups and future face-to-face meetings.

How can we improve the organization of VQEG efforts? Currently, we have 11 working groups. Some are very active, but others are less active. The proposal is to merge some groups or stop some groups or have larger scopes with substructure, such as projects under groups. Perhaps replace structure entirely, such as list tasks / projects of interest now that are reviewed each meeting (e.g., must say “we still want to work on this” at the meeting or the task / project is eliminated). Maybe organized into subentities of working groups? Maybe simplify reflectors into three: main reflector for organizational information, board  reflector, and reflector for work on projects. Example task description: we are working on this, we meet this often by this mechanism, go here for more information.

**Decision: Agreement was reached to close VLQA**

HDR/WCG and Ultra HD to merge proposed; this will be discussed offline with absent co-chairs; maybe also add AVHD and high frame rate?

Consider adding new category: “Closed Projects”. Can put MOAVI into this category. It is on hold but activity may resume in the future.

Consider “future technology” working group.

VQEG E-Letter

An issue is nearly ready to be issued, with the topic being immersive media.

**Decision: Agreement was reached** that the VQEG eLetter should apply for an ISSN number. The application will be sought by the editorial board (Naeem, Kjell, Mikolaj, Patrick, Phil, …) plus Enrico. This will increase the credibility of articles.

**Decision:**next eLetter will be on PsyPhyQA and the one after that will be an additional immersive media edition

Feedback on Immersive Media Subjective Methods

Note: the Ultra HD session ended early, so the remaining time was devoted to gathering feedback on the immersive media subjective methods contribution discussed in the Q13/12 session this morning.

* We suggest that the text of ITU-T Rec. P.913 be used as the starting point for this draft Recommendation. That would be a safer starting point than the contribution, because the base document would not assume details of any particular subjective experiment.
* We would like to add a mobile use case to 1.1 and 1.2.
* Section 1.5, the Recommendation should not mandate a codec. This should be more generic, such as a suggestion that this particular encoder is appropriate, while leaving the option open for the use of other encoders.
* Section 2, a sound isolation room is too expensive, so few people will be able to afford to do testing. This should be replaced with a quiet room.
* A multiple lab study could be conducted to determine the minimum number of subjects, when the draft Recommendation is more complete.The lab-to-lab comparisons would help us understand whether the method is stable.

We need to discuss sections 5 and 6 tomorrow (tasks) when more people are present. Interactive tasks are of interest to NTIA, AGH, RISE Acreo, etc.

Wednesday (Nov 29, 2017)

09:00 ITU SG12 Q13

Kazuhisa Yamagishi

Presentation – Subjective Test Plan for assessing user experience of initial loading of streaming video (P.QUIT)

Lily Ji (Huawei)

[Link to presentation](ftp://vqeg.its.bldrdoc.gov/Documents/VQEG_Krakow_Nov17/MeetingFiles/WD01_Subjective%20test%20methodology%20for%20assessing%20impact%20of%20initial%20loading%20buffering%20delay%20on%20user%20experience_v1.docx)

Comments from the audience:

* Suggestion to remove sentence “No question about the semantic content will be asked…” (leftover from other subjective test document)
* Question about the value of the question about content: the scale combines too many different questions, it’s not quantitative.
* If users are not able to choose content, they cannot rate how much they are interested in it
* Question how realistic the setup is altogether, since YouTube or other services might recommend videos based on personalization

Presentation — Overall Test Plan and Test Factors for P.QUITS

Werner Robitza

[Link to presentation](ftp://vqeg.its.bldrdoc.gov/Documents/VQEG_Krakow_Nov17/MeetingFiles/WD05_Overall%20Test%20Plan%20P.QUITS.docx)

[Notetakers suggestion: VQEG Side NOTE: Should we consider using [www.sli.do](http://www.sli.do) for group questions and upvotes? I’ve created and example VQEG [www.sli.do](http://www.sli.do) #N110 for this Working Document #5 review.]

Comments:

* Is this really realistic to do it in the lab? Should such a test not be done with crowd ratings in real life?
* Previous studies in the lab have not been conclusive, also from P.NATS context, and not realistic
* MOS ratings that mix initial loading and video playback could be artificial – can people mix both in one rating?
* Add validation questions to check if users have seen the content
* Content is very relevant
* Different weightings between KPIs (comment from Sky), where startup time seems to be not as important
* Usage context will be the most important factor, e.g. social media scrolling vs.  mobile priority over PC
* Paper mentioned: [Hossfeld et al.](http://ieeexplore.ieee.org/abstract/document/6263849/), [link to PDF](https://www.researchgate.net/profile/Tobias_Hossfeld/publication/235437092_Initial_Delay_vs_Interruptions_Between_the_Devil_and_the_Deep_Blue_Sea/links/55f421ee08ae63926cf26888.pdf), other studies by Conviva, Akamai and others
* Look into different use cases (e.g. Amazon Show platform) with multiple layers of interaction, maybe split tests across labs with similar rating task but different contexts
* Is the goal to have a standard for subjective testing, or a model? → first focus on subjective test methods
* What are the intervals for loading times
* It might be dangerous to separate loading delay from other factors; one may draw some conclusions but it might not have any value to a practical system. Companies have a lot of data that they cannot publish, but data gathered from such tests may not be useful at all when compared with real life data. So main factors like quality changes should also be addressed.
* Content is “more than 90%” of the decisive factor. Which valuable content can be served in a public study that is open source? Netflix and Sky have produced some entertainment type content that people might be willing to view and that could be called interesting, but they are not high value.
  + Statistically, if you show a content to everybody and you vary the loading time, you should be able to factor out the content?
  + But if the sequence is “forced on you”, it’s not possible
* Is there a way to introduce delay into home platforms such that when a user goes to watch the content they want we can vary the start etc.. That would be the best. Is to interrupt the startup of their programs and then impact the playback.
  + Ethics of that? Do providers want that?
  + Can we couch it as a research program for users to opt in.. That way we would have the proper legal disclaimers and research plans in place - and pay them. It is like a test platform.. We would not collect what they are watching just the impact of messing with load times and stream playback.. Not sure that is possible?
* Could content providers still help in this research by providing data that would otherwise be unavailable?
* Providers already have the solution to this problem, market need for such a standard or test results is questionable

11:00 Presentations

Presentation – 3GPP 5G Video KPIs Introduction

Jaime Ruiz (Nokia Bell Labs Spain)

TBD insert link to presentation

Presentation – Perceptual quality optimization of video codecs & codec comparison

Ioannis Katsavounidis (Netflix)

[Link to this presentation](ftp://vqeg.its.bldrdoc.gov/Documents/VQEG_Krakow_Nov17/MeetingFiles/VQEG_AVHD_2017_217_Netflix_Ioannis_Katsavounidis.pdf)

QART

Presentation – Video Summarisation Evaluation

Lucjan Janowski and Mikołaj Leszczuk

TBD insert link to presentation

Feedback: Could crowdsource the task of writing summaries, then use that as training data for a neural network. Probably not feasible for AGH given their time constraints for their project. Could crowdsource validation (esp. view summary, ask questions about the video); this is possible. Spirent: Targeted question about the original seems better than comparison. Netflix: baseline by show full original, asking questions (e.g., 10 questions about the message). Then summary with same questions. NTIA: this solution would generalize to other problems, e.g., intelligibility of sign language. Spirent: descriptive video services are required in the US as of the beginning of 2017 (narration of the scene for visually impaired, e.g., person verbally describes what you would see). The same subjective method and testing of “summarize the video” would be useful for evaluating the automation of descriptive services. US content has descriptive video services. Sky: Sky has the same thing but names it differently, audio description.

Next VQEG Meeting

Tentative Dates:

* Monday March 12th, 2018 - Friday March 16th, 2018
* Monday March 19th, 2018 - Friday March 23rd, 2018

Tentative Location: Munich, Germany (Rohde-Schwarz) or Madrid, Spain (Nokia)

Fall meeting tentative in September and October. Tentative hosts are Intel, Portland and Qualcomm, Toronto

Presentations (partly HVEI special session)

Presentation – QoE of Omnidirectional (360°) Videos

TBD insert link to presentation

Ashutosh Singla and Stephan Fremerey and Alexander Raake

1. Related reference: [Gender Differences in Simulator Sickness  
   In Fixed- versus Rotating-Base Driving Simulator](http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.920.5329&rep=rep1&type=pdf)]
2. James mentioned public HDR content:  <https://hdr-2014.hdm-stuttgart.de/> (Click through their security warning since they don’t have a proper security certificate)

Q: Can this study be extended to stereoscopic 360-degree video?

AVHD Summary

Question about dealing with HDR

Where to find content?

* James mentioned public HDR content:  <https://hdr-2014.hdm-stuttgart.de/> (Click through their security warning since they don’t have a proper security certificate)
* Links to Kjell et al, visually lossless HVEI paper: [Industry and business perspectives on the distinctions between visually lossless and lossy video quality: Mobile and large format displays](http://ist.publisher.ingentaconnect.com/contentone/ist/ei/2017/00002017/00000014/art00015)

Thursday (Nov 30, 2017)

09:00 PsyPhyQA

Naeem and Sebastian Bosse chairing

Sebastian Arndt stepping down from co-chairing

* Brief outline of human psychophysiology signals that can be used to assess video quality
* Current status presented (Google doc regularly updated; video sequences selected, quality levels selected with proper cross-lab validation; experiment planned)
* Special session submitted to QoMeX; invitation to submit work related to 360 and immersive media PsyPhyQA work.
* 6 sequences (12 sec. long) were selected to compress with HEVC and a total 24 PVS were created, with consistent constant quality across content
* These 24 sequences will be used as a basis test plan for future research in this area
* Results were presented with MOS for the various PVS across 4 different labs, using standard ACR methodology
* Behavioral test has been recommended to determine subject sensitivity to video quality artifacts
* Discussion over how to leverage Maximum Likelihood Estimation of parameters to refine MOS and subject-specific parameters. You can also enhance the model to have lab-specific bias and variance parameters.
* Naeem mentioned research to use EEG for emotion recognition tasks (Fusing highly dimensional energy and connectivity features to identify affective states from EEG signals (([http://research-portal.uws.ac.uk/portal/en/publications/fusing-highly-dimensional-energy-and-connectivity-features-to-identify-affective-states-from-eeg-signals(3bf992f3-5a13-46e4-8ef1-67d8f2979e36.html](http://research-portal.uws.ac.uk/portal/en/publications/fusing-highly-dimensional-energy-and-connectivity-features-to-identify-affective-states-from-eeg-signals(3bf992f3-5a13-46e4-8ef1-67d8f2979e36).html))which yields good results; can also be used to do subject identification ((ES1D: A deep network for EEG-based subject identification,(<http://research-portal.uws.ac.uk/portal/en/publications/es1d(8a2d8a94-752f-4cea-8123-445e502188b8).html>))
* Sebastian mentioned that a coalition is being formed of researchers to address PsyPhyQA problems. Review paper has been published IEEE transactions on selected topics on Signal Processing (<http://ieeexplore.ieee.org/document/7569001/>), short review on EEG-based approaches in IEEE Proc. SMC (<http://ieeexplore.ieee.org/abstract/document/7844669/>)
* Mention Scott Daly’s work on this field (<https://doi.org/10.2352/ISSN.2470-1173.2016.16.HVEI-126>); suggestion to include HDR in the test plan so as to broaden collaboration; Maria commented that KUL is planning to include HDR in Feb. 2018.
* Suggestion to add 360-video and VR into the test plan, since HMD already introduce devices attached to the body
* Non-intrusive methods to obtain physiological signals - Naeem mentioned ultra-high resolution cameras that can measure heart rates at ~5% error.
* Invitation to be sent to the general VQEG email reflector for participation in testing (not restricted to medical-grade equipment) in Feb. 2018. Can be extended to QualiNet reflector.

10:45 VIME

AGH Subjective Lab Setup (Student Tests)

TBD insert link to presentation

Mikolaj presented the offer to conduct subjective quality evaluation as part of his classes at AGH.

* Twice a year
* 90 min sessions
* 12-30 students
* BTU.500 “light” conditions
* 30-70 new students every semester, 80-20 (male-female) ratio, biased towards technology, good command of English language
* Throughput of ~ 10K scores, twice a year
* No cost
* Need to provide a problem, appropriate content material and co-define a subjective experiment. Talk to Mikolaj directly (link: <http://vq.kt.agh.edu.pl>)

Margaret commented on the quality of the scores she received; no subject was rejected, very good correlation.

Jaime expressed interest in running an experiment on mobile devices (phone/tablets), by providing displays.

Presentation – “Device characterization for content adaptation”

Narciso Garcia (UPM & Nokia)

TBD insert link to presentation

* Multimedia delivery based on Nokia conditional encoding
* Content selection based on SI/TI corners
* Created resolution/bitrate ladder per content, using 16:9 aspect ratio
* Headphones were used for audio (audiovisual subjective assessment)
* 10-sec sequences, 5-sec voting
* Final debriefing
* Debriefing comments:
  + Resolution ladder with small number of sequences on several devices can affect assessment.
  + General doubts about user interpretation of “good” and “bad”
  + Influence of content selection
* Analysis
  + Need for hidden references
  + Consideration of DCR instead of ACR

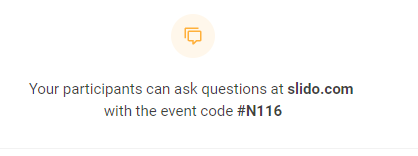
Comments from audience

* Content was rendered by display hardware at max display resolution
* Sources were obtained from TV stations and labs

SLIDO suggestion by James Goel

[www.slido.com](http://www.slido.com)

Event Code N116



NTIA/ITS Status Report and Questions

Margaret Pinson

[Link to presentation here.](ftp://vqeg.its.bldrdoc.gov/Documents/VQEG_Krakow_Nov17/MeetingFiles/VQEG_VIME_2017_207_NTIA_Status_Update_and_Questions.pptx)

Paper mentioned: Margaret H. Pinson, "[Technology Gaps in First Responder Cameras](https://www.its.bldrdoc.gov/publications/3171.aspx)," NTIA Technical Memo TM-17-524,May 2017

Development of NR metric:

* 3 new datasets to become available, Jan. 2018 (image/video)
* 4th dataset (its4s2), in progress
* 5th dataset (its4s3), in planning phase
  + Request for feedback on HRCs
* Using Red pixel percentage as a NR metric
* Questions were posted on slido and live updates on presentation

Online Questions and Comments:

* Anonymous: Can we separate the NR problem into a continuous (homogenous) quality assessment and a discrete (acceptable/unacceptable quality) assessment?
* Grace: It can be accessed in China. This message is from China.
* James Goel: Is a better approach to NR to focus on a few specific technical parameters (i.e. sharpness, brightness, etc) to develop a NR model. Then group these together?
* James Goel: Can a no-reference metric approach the quality and sophistication of a benchmark like DXO when analyzing camera quality?
* James Goel: How can we focus NR modeling on specific use-cases (night-time first responder, versus night-time birthday party)?

14:00 QoMEX Announcement by Maria Martini

Special session in Psychophysiological Assessment of Quality of Experience, QoMEX May 29-31, 2018 in Italy (www.qomex2018.org)

TBD insert link to presentation

Topics of interest:

* Neurophysiological formation of quality judgements
* psychophysiological response to QoE
* experiment designs for psychophysiological assessment of QoE
* psychophysiological assessment of QoE in immersive media
* data processing for psychophysiological assessment of QoE
* relationship between psychophysical and psychophysiological methods
* standardization efforts

Note in audience: 3D also interesting in the context of Psychophysiological Assessment

For effects of 3D in subjective testing, see

* ITU-T P.914, 915, 916
* IEEE SA 3333.1.2

Other QoMEX special session announcements:

* Multi-sensory media experience
* Quality assessment for medical imaging applications
* User-centric evaluation of interactive applications

14:15 JEG-Hybrid

Presentation – Overview of JEG Project

Glenn Van Wallendael, Ahmed Aldahdooh

TBD insert link to presentation

To get involved, see <http://vqegjeg.intec.ugent.be/wiki/>

Biweekly meetings will continue.

Presentation – Different Quality Metrics Analyzed In The Context Of Diverse Content

Wojciech Szmyd, Paweł Szulc, and https://www.its.bldrdoc.gov/vqeg/meetings/krakow-poland-nov-27-to-dec-1-2017.aspx Janowski…

TBD insert link to presentation

Comment about content cropping: should not be done unless absolutely required, as artistic intent is important (e.g., add black bars if necessary, but don’t crop); this is the preferred solution for commercial services.

Standard GOP lengths for streaming: 0.5s, 2s, 5s

Linearization function with respect to MOS, VMAF considered as linear.

Call for contributions for other models (e.g. commercial ones), where proponents get dataset and contribute calculate scores. Must fit within the given master’s project.

Presentation -- Status update on the Content of the Large Scale Database: new Metrics and How to Visualize Them

By Enrico Masala

[Presentation](ftp://vqeg.its.bldrdoc.gov/Documents/VQEG_Krakow_Nov17/MeetingFiles/VQEG_JEG-Hybrid_2017_208_StatusUpdateHEVCDatabase.pdf)

Weka Explorer tool: <https://www.cs.waikato.ac.nz/ml/weka/>

Presentation -- Summary of recent journal publications in Elsevier Digital Signal Processing and SoftwareX

By Glenn Van Wallendael, Ahmed Aldahdooh

Paper: <https://doi.org/10.1016/j.dsp.2017.09.013>

TBD insert link to presentation

Request: please provide your metrics and datasets, to encourage this research.

IEEEXplore found 59 hits for the three terms “video, quality, prediction”: only 9,3% are completely reproducible.

Presentation -- Challenges Obtaining HDR Content with Rights to Use

By James Goel

* Certain Creative Commons licenses have strict attribution requirements that many presentations ignore. Legally, many presentations are in violation, because papers don’t attribute the photos/videos properly. How do you prove you got the attribution correct?
  + Note: attribution doesn’t typically apply to subjective testing, because this isn’t publishing, but attribution would typically apply to crowdsourcing, since the media is published to the internet.
* Commercial usage. To show photos at a trade show, licenses typically prohibit commercial applications. Others don’t say “worldwide rights”; ambiguous on where license is applicable. Privacy laws may make illegal (e.g., include faces, logos), even if someone has signed off on the content.
* Derivative works may be prohibited or have special restrictions.
* Did you really shoot it? Is the ownership claim correct?

Let’s keep an eye out for really high quality HDR monitors.

Margaret:: CDVL is careful to ensure ownership and usage rights as advertised.

Jeremy: Dark scenes may be of more interest than bright, since artist wants something to spring out of nowhere.

Ioannis: Netflix has the artistic means to produce HDR and may be willing to be in collaborate with others to produce HDR content under appropriate licensing terms for HDR R&D.

Discussion – NR Metric: Acceptable limitations, desirable traits

See slides,put in link to presentation

Friday (Dec 1, 2017)

Administrative Session, VQEG Reorganization

Organization

1.       Organize into sub-groups, for clear presentation outside of VQEG (objective metrics, subjective methods, technology & applications, support and outreach)

2.       Chair: point-of-contact for each working group, “one throat to choke”, responsible for body of work, responsible for reporting to VQEG co-chairs during meeting organization, responsible for driving the work.

3.       Vice-chair: support for chair, major contributor, step in if chair is unable to perform work

4.       More dynamic, expectation is that groups will “die” quickly if inactive, projects are reviewed at each meeting and either confirmed or closed due to inactivity

5.       If a working group chair or vice-chair is inactive for two meetings, then the role will be reassigned. For example, if the working group chair does not attend two consecutive face-to-face meetings (i.e., neither remote nor in person attendance), or is unresponsive to emails coordinating the VQEG meeting agenda.

6.       Chairs & vice-chairs can create named roles within their groups, if needed, for special responsibilities (e.g., project leader); and the role is mentioned on the VQEG website

7.       Use Google Calendar to schedule meeting, VQEG co-chairs establish base format and time needed for overall activities, then the working group chairs mark times needed for presentations and discussions and decide the length of the meeting, but the default is 4.5 days.

8.       GoogleDocs for meeting minutes, all participants help write meeting minutes

9.       Desire that the host has remote participation capability. Prospective hosts should find out whether they can support remote participation and indicate the mechanism before meetings (e.g., Hangouts, Skype). This information will be part of the decision on meeting location.

10.   Goal: establish meeting schedule by 2 months before meeting

11.   Goal: establish meeting date & location two meetings in advance (roughly 1 year)

12.   The last hour on Friday meeting is devoted to establishing the draft agenda for the next face-to-face meeting

**Action item:** Ioannis will establish a Google group, to help establish a new working flow around remote participation, schedule, document tracking, etc.

**Action item:** each group should send a reminder or announcement to the main reflector, short description of work and call for participation.

* Objective Metrics
  + VIME – will be totally reorganized; Jeremy to chair, vice-chairs Phil and Margaret, the name will change to NORM (no reference metrics)
  + JEG-Hybrid – group as-is, Marcus to chair, others as vice-chairs
  + AVHD-AS / P.NATS Phase II – Chris, Shahid, Silvio and etc. to discuss offline and establish chair / vice chair roles (because AVHD group is splitting)
  + MOAVI – discuss offline, tentatively to merge work into NORM and close MOAVI
* Subjective Methods
  + Advanced subjective methods (AVHD-SUB) - AVHD Co-chair will be asked to come back with a suggestion on organization and chair and vice chair. Resend email to the reflector
  + **Statistical analysis methods**: VQEG established new group, interim chair Ioannis, chair will put out a call for participation, chair, and vice-chairs
  + QART - Co-chair will be asked to come back with a suggestion on organization and chair and vice chair. Resend email to the reflector
  + PsyPhyQA - Co-chair will be asked to come back with a suggestion on organization and chair and vice chair. Resend email to the reflector
  + Independent Lab Group (ILG) Phil talks to Margaret. Tentatively Phil Chair and Margaret vice Chair.
* Technology and Applications
  + Immersive media - Jesus will be asked to come back with a suggestion on organization and chair (tentatively Jesus) and vice chair. Narrowing the scope. Resend email to the reflector
  + Joint Qualinet-VQEG team on Immersive Media - Kjell will be asked to come back with a suggestion on organization and chair (tentatively Kjell) and vice chair
  + WCG / HDR - Patrick will be asked to come back with a suggestion on organization and chair (tentatively Patrick) and vice chair. Redefining the scope also including UltraHD and high frame rate. Resend email to the reflector
  + Ultra HD - Merge with WCG / HDR. Naeem and Vittorio to confirm if this is fine. Potentially transferring their roles into the new group.
* Support and Outreach
  + eLetter Naeem is Chair and Kjell is vice Chair, Resend email to the reflector
  + VQEG Administration and Web Support - chair Margaret
  + Tools and Subjective Labs Setup - chair Glenn, Resend email to the reflector
  + Outreach (this could be potentially be handled by the eLetter group)
    - Progress report based on status updates at the meeting extracted from the minutes (Nabajeet)
    - Collecting publication list (Nabajeet)

Meeting is closed 12:20