

VQEG meeting minutes

Krakow, Poland June 28 – July 2, 2010

Including Minutes from each day's sessions.

Note: the ITU-T JRG-MMQA meeting is held coincident with VQEG during the Multimedia and Hybrid sessions.

VQEG Minutes from Monday 28 June 2010, Krakow

Thanks to David Hands of British Telecom for taking the notes.

Updates from each of the active projects

ILG – update from MP. Mostly been working on HD project, test analysis, drafting final report. Report due to be finalised this week.

MM2 – update from QHT. Nothing to report. At previous mtg request for subjective tests to be run on method for audio-visual tests. No progress.

HDTV – as ILG update

Hybrid – update from CL. Two candidate working systems (Yonsei, Ericsson/Swissqual), both available. Need to decide if they are suitable for use.

Tools / Subjective Labs Testing Group – Update from NS. Need to replace Yves. Nicolas to replace Yves as Co-Chair.

JEG – Update from MB. Working on a “charter” that is an extended testplan. Working on HRC generation toolbox. A first, very basic, version of the hybrid model is ready. Request for bitstreams to be provided to aid the work of this group.

3DTV – update from MB and QHT. Difficulty in finding 3D content, hoping to obtain some content in the near future. Need for appropriate standard for subjective assessment methods for 3D.

Liaison Reports

No update from IEC TC100

No update from ITU-R WP6C. CL noted that last mtg cancelled due to Icelandic volcano, next mtg in October.

ITU-T SG12 update from AT. SG12 met in May. Qs 13 consented one new Rec (G.1011) covering guidelines and recommendations for QoE assessment methodologies. G.omvs (opinion model for video services) decision to wait until progress on P.nams. Qs14 working on two activities related to VQEG (P.nams and P.nbams). P.nams, desire to work collaboratively failed so now tests will be open to submission of competing models. Several proponents. P.nbams, working on terms of reference for the project, expect to complete in September Berlin mtg.

ITU-T SG9 update from QHT and CL. No SG9 mtg since last VQEG mtg, next SG9 mtg in July. J.redref has been approved and J.ra-psnr expected to be approved within the next week or so. AW hoping to begin drafting HDTV Recommendation at next SG9 mtg, raised possibility of interim mtg in Oct / Nov to work on HDTV recommendation so that it can be in place as a standard as soon as practically possible.

No update from ATIS.

Proposals

Task-based Project (presented by ML and CF)

- Monitoring public places to provide security / public safety functions
- Quality of video and impact on usefulness for public safety tasks
- Proposal to work on video quality algorithms that are not attempting to estimate reproduction quality per se but to how quality affects ability to identify information in the scene (e.g. face detection, object recognition such as licence plates)
- Agreed to initiate new project on Task-based measurement of video quality
- Group tentatively to be called Target Recognition Assessment Methods (TRAM)
- [note: subsequent title change: QART Quality Assessment for Recognition Tasks]

Break-out sessions

DECISION: Agreed to set-aside Tuesday at next mtg for break-out / drafting groups.

VQEG Rules Documentation

Written rules for VQEG have been prepared and placed on VQEG file server. CS thought rules were good, maybe add some text on unsolicited marketing at VQEG mtgs. AW and CS will add text to address this issue.

HDTV

Reviewed HDTV draft final report version 1.5. Editing changes made to final report, see revised report (version 1.6) on VQEG file server.

DECISION: agreed to include secondary analysis in the final report.

Will discuss Appendix IV Tuesday morning.

Reviewed Executive Summary.

Discussed proposal to include unfitted data plots in final report.

DECISION: Delayed, but large majority, decision in meeting room **not** to include unfitted data plots in final report.

VQEG Minutes from Tuesday 29 June 2010, Krakow

2010-06-29

VQEG Meeting Minutes

(notes taken by Harvey Lieber, Dialogic)

Review of yesterday's meeting minutes.

- **DECISION:** The name of the new Group proposed by Carolyn Ford and Mikolaj Leszczuk is "QART" (Quality Assessment for Recognition Tasks).

Hybrid Project

CL and JB presenting:

- need to determine the working system (currently blocked until decision is made). Yonsei system is complete, and Ericsson/Swissqual system is not complete.
- there is some duplication with JEG Project. JEG has a working system. JEG tools need to be finalized and released. Impairments can be introduced via simulation or real streaming. May want to combine efforts.
- JB reported that there does not need to be a unique working system. Multiple systems are fine. CL clarified that at the beginning, there was no working system at all. There is a need to have at least 1 working system to proceed.
- NS (JEG) is currently working on setting up a tools website to facilitate easy upload/download of tools.
- JB believes that Ericsson would use other working system.
- Need NDAs (with many organizations)
- CL needs video clips. MP is working to put video clips on public website. As video clips are not yet on website (due to size), MP agreed to bring video clips to next meeting on hard disk.
- NS made JEG working system tools available to CL. **DECISION:** It is assumed that JEG tools are accepted as working system. If any problems are encountered with the tools, one should just contact NS. BT (DH), NTT and Yonsei plan on verifying the system

- JB reported on the proposal on how to design the testplan. Will be done jointly by proponents and ILGs. Each interested party proposes a set of HRCs. The Draft testplans are then created and will be reviewed by ILGs. The Final testplans are subject to agreement by all parties. The ILGs will do the final decision about solving reported problems. AW discussed that others need ability to propose tests added to plan, whether or not test can be created. There was a big discussion of how to decide on, and include, all tests. DH expressed concern that content used during the training phase should not be used in the evaluation phase. CL commented/clarified on the dichotomy in that it is in everyone's best interest to provide as best as possible the training content, so that models will do their best in the evaluation phase.
- **DECISION/DESIRE:** The set of HRCs for the training phase should be available for the next VQEG meeting. The bitstreams should be available on the website. MP reported that many free videos are already stored at www.cdvl.org
- CL informally surveyed the audience and counted Proponents = 6 and ILGs = 5.
- CL reported on some planned timelines:
 - o Oct 2010 = working system finalization
 - o Next VQEG = approval of testplan
 - o Next VQEG + 3 months = training data exchange
 - o Next VQEG + 6 months = model submission
 - o (est July 2012) = Final report

HDTV Project

- MP reported that Tektronix was unable to join our meeting today; however Tektronix provided some feedback that has been incorporated and accepted.
- JB provided some additional comments, which have been incorporated. After much good discussion they were adjusted and accepted.
- MP further reviewed the document and additional discussion and changes were made. The entire document is now completely reviewed.
- **ACTION:** MP will immediately post the document to the internal website for final review for everyone. If no one has any objections tomorrow, the document will be accepted.

Miscellaneous

- In preparation for tomorrow's discussion, CF/ML reviewed the QART agenda. Items for follow up study are: Automobile License Plate recognition , Objects recognition, facial recognition, people counting. Many issues need to be followed up on. To be further discussed tomorrow. CF/ML request volunteers to work on this Project.

VQEG Minutes from Wednesday 30 June 2010, Krakow

VQEG minute notes – Wednesday 30th June 2010, Krakow

Thanks to Ludovic Malfait (Psytechnics) and Chulhee Lee (Yonsei University) for taking notes Wednesday.

Review of meeting notes from previous day

- No objections were made on the minutes from 29th June.
- It was stated that 3DTV and JEG email reflectors have been created recently and have not been announced, along with QART.

ACTION: To announce new reflectors (QART, JEG, 3DTV)

Hybrid Session II: chaired by Jens Berger (Swissqual) and Chulhee Lee (Yonsei)

- **DECISION** It was decided yesterday that the chosen working system is the one produced by JEG. The system will be tested over the next three months.

Summary of the **decisions** taken for the hybrid project

- The supported resolutions are:
 - VGA/WVGA (~854x480 TBD) - 8 tests (4 + 4)
 - HD (H264, MPEG2) 6 ((1080i 60 Hz (30 fps), 1080p (25 fps), 1080i 50 Hz (25 fps), 1080p (30 fps)).
- Models must handle both H.264 and MPEG-2
- Models can support either one or both resolutions (VGA/WVGA, HD)

Draft NDA for source material sharing

- A draft NDA was proposed for the sharing source material for Hybrid and MM2 projects.
- It was discussed whether JEG should be considered as proponent or an ILG.
- Chulhee raised the problem of all JEG members accessing the material.
- Kjell Brunnström (Acreo) stated that the definition of proponents from JEG is not defined.
- Vittorio Baroncini (FUB) proposed that JEG members who contributed to the project should be granted access to the sources.

- Arthur mentioned that the VQEG rules (v1.0 – not approved by the group yet) define the requirements for becoming member of ILG in Section 3.1.4.
- There are two possibilities to handle JEG within the NDA: either a category “contributor” for JEG is defined, or the chairs decide whether a JEG contributor can be considered as an ILG.

ACTION: Decide on Thursday how to deal with JEG contributors

Training data

- It was decided yesterday to use a limited number of source material as training data. Margaret Pinson (NTIA) proposed the used of CDVL for this purpose (www.cdvl.org).

ILG

- Vittorio confirmed the participation of FUB as ILG.
- Acreo mentioned the limitation in the open-source subjective test software they use. Although it can handle 1080p resolution, the software pre-load files in memory which takes some time.
- FUB offered to contribute to the update of the software (PhD student).

Codecs to be used

- The hybrid model is based on H.264 and MPEG-2 codecs.
- BT suggested that SD should be included in the scope as SD is still highly used.
- Swissqual proposed to include SD as HRC.
- Opticom commented that handling the upscaling may be a problem.
- FUB commented on interlacing. SD is interlaced whereas HD can be either progressive or interlaced.
- FUB also proposed to include the widescreen format.
- It was proposed to use SD displayed as HD (i.e. upscaled and deinterlaced).

Models

- NTIA stated that as a user, it is desirable that the models handle both H.264 and MPEG2. However, from an analysis point of you, the analysis may be separated.
- Swissqual stated that they were in favor of having combining everything for the evaluation. It was also commented that allowing not to handle both opens doors for multi-models.
- Opticom stated that from a subjective point of you, it is better to have the two codecs mixed in each tests.
- It was confirmed by Nicolas that the working JEG system handles both MPEG2 and H264 bitstream.
- BT questioned the need for MPEG2 given the time frame.
- NTIA commented that MPEG2 should be left in as more resilient to errors.
- A vote was performed on this topic. It was concluded that proponent models should handle both codecs.

DECISION: Models must handle both MPEG-2 and H.264 codecs.

Resolutions

- There were discussions on the resolutions to be considered for the hybrid model evaluation and desired were expressed on reducing the number of different resolution
- Quan (Technicolor) commented that 4:3 is less and less used and that 16:9 is prominent for SD (at least in France and UK).
- FUB proposed to use wideband formats such as 832x480 or 412x240.
- NTIA commented that reference material for these resolutions could be downsized from HD content.

DECISION: Resolutions will be VGA/WVGA (~854x480 TBD) and HD.

- BT expressed concerns on the limited number of tests for validation.
- Yonsei offered to conduct 2 more tests.

ACTION: Vittorio also proposed to ask the MPEG committee for accessing their subjective test databases. A Liaison will be drafted.

- Opticom, Swissqual, DT expressed interests in having all models handling both resolutions (VGA and HD), whereas Yonsei, NTT, KDDI, BT and Psytechnics were in favor of letting the proponents chose.

DECISION: proponents have the choice of handling one or both resolutions.

Codec profiles

- BT proposed the use of the H.264 high-profile.
- Opticom stated that the model will be exposed to any profile in live networks and it should be able to handle with any profile.

Test schedule

- Time scale for the hybrid project was discussed and full details are provided in in VQEG_hybrid_testplan document.

- The test plan should be defined and approved by January 2011.
- Proponents should declare their intention to participate within a month following the approval of the test plan (expected February 2011).
- Model submission is set to six month after the approval of the test plan (expected Mid-2011).
- The design of the validation tests, the statistical analysis and the writing of the report will be performed with the 12 months following model submission.

Data publication

- It was proposed and **decided** that both subjective and objective data (for models incorporated in the report) should be provided as part of the final report.
- **Decision** All video data and bit stream data not disallowed by NDAs with participating labs could also be published.
- **Decision** The common set will be published.

JEG Session - chaired by Kjell Brunnström, Marcus Barkowsky and Patrick Le Callet

- Marcus Barkowsky gave a presentation reminding the objectives of JEG and introducing the structure of the current hybrid model.
- The state of the model and future development were given.
- A wiki page explaining the principle of JEG was created and is available on <http://wiki.vqeg-jeg.org>
- The problem of encrypted bitstream was discussed. It was stated that the HMIX1 (PCAP parser output) and HMIX2 (H.264 parser) would be updated accordingly and the model could use available information only.

Afternoon session:

Minutes, Wed. June 30, 2010

Wed. Afternoon HDTV

- Minor errors were corrected in the HDTV final report.
- **DECISION:** The HDTV final report was approved and will be placed in the VQEG web site.

Wed. Afternoon QART

- Task assignments for the QART project
- Glenn: fire detection, people counting
- Patrick:
- Savvas: human monitoring (action recognition), gait recognition
- Carolyn: objective resolution measurements, subjective human object recognition (Oct 2010)
- Chulhee: detecting objects vehicles, characters, parking system (next VQEG meeting)
- Mikolaj: license plates, people counting, face recognition (Nov 2010)
- Discussion on schedule
- Needs to work with VQiPS (Video Quality in Public Safety) group

Quality Assessment for Recognition Tasks (QART) Krakow Meeting Minutes

(from Mikolaj Leszczuk)

- I. Overview of possible participants (ILGs, proponents, expected deadlines of the first publishable results)
 - a. Glenn
 - i. Fire detection

- ii. People counting
 - b. Patrick
 - i. EMS
 - c. Savvas
 - i. Human monitoring (action recognition)
 - ii. Gait recognition
 - d. Carolyn
 - i. Objective resolution measurements, results: late September 2010
 - ii. Subjective human object recognition, results: late September 2010
 - e. Chulhee
 - i. Detecting objects, vehicles, characters
 - ii. Parking systems
 - f. Mikołaj
 - i. License plates, results: late September 2010
 - ii. People counting, results: late November 2010
 - iii. Face recognition, results: late November 2010
- II. Review of use classes – need to quantify them (Carolyn and Mikołaj to work on this topic)
- III. Scope
 - a. Targets and use classes under study
 - i. Automatic
 1. License plate (live/recorded)
 2. Objects (analytics) (live/recorded)
 3. People counting (live/recorded)
 4. Facial recognition (live/recorded)
 - ii. Human
 1. License plate (live/recorded)
 2. Objects (live/recorded)
 3. Facial recognition (live/recorded)
 4. People counting (live/recorded)
 5. Other “broader” use classes (i.e. applications requiring lower levels of discrimination)?
 - iii. Objective resolution chart measurements
 - b. Parameters under study
 - i. Resolution-only HRC: Resolution vs. Scene parameter interactions
 1. Target size
 2. Lighting
 3. Motion
 - ii. Network HRC’s
 1. Bitrate (compression ratio)
 2. Transmission errors
 3. Delay (live/tactical applications)
 4. Scaling

- a. Spatial
 - b. Temporal
- IV. Test methods
 - a. P.912
 - i. Scenario groups
 - ii. Query methods
 - b. Question: Analogs to “balanced test”
- V. Available source sequences
 - a. CDVL
 - b. Own video footage
- VI. Initial Studies
 - a. To establish ranges/thresholds
 - b. Initial statistical prediction
 - c. To establish ways to express quality in QART (as we all agree it is not MOS anymore!)
 - i. Precision, Recall, ROC, true/false positives/negatives, probabilities
(Mikołaj+Lucjan to prepare a section)
 - ii. “don’t know” button or force choice+confidence? Undecided...
 - iii. Collaborative editing: Microsoft Office Web Apps, Google Docs, Zoho (Mikołaj to propose)
 - d. Improvements to P.912 expected
- VII. Collaborative vs. Competitive
 - a. Tests, distribution of labor
 - b. Collaboration methods/tools
- VIII. Model competition? Possible in future
- IX. Schedule
 - a. Reflector, portal, folder, repository of papers – next week
 - b. Data analysis section – end on July 2010, the first version
 - c. Specification of tests to be done by ILGs, end on July 2010
 - d. Face-to-face meeting – early October, to target VQIPS (Video Quality in Public Safety), US east coast
 - e. Further schedule to be defined at the next VQEG meeting (winter, Asia)
- X. Test plan to incorporate all the above
- XI. Standardization plan
 - a. SG9? SG12? To be decided later. SG16 (multimedia, video coding standards) also possible
- XII. Legal issues?

Wed. Afternoon JEG

- Proposal for patent for the JEG project (<http://wiki.vqeg-jeg.org>) by Marcus

- “This text is preliminary and may be incorrect. It is published in order to prevent repetitive discussions on patents.”

The JEG group is a cooperative approach. Patents do not necessarily conflict with cooperative approaches.

If a member of JEG wants to file a patent on a particular idea, he cannot discuss it openly, e.g. by using the mailing list, before the idea is filled. He first has to develop the idea, file a patent, get it accepted and then he can discuss it openly and propose it to the JEG for inclusion. When it is known that a proposed algorithm part is patented, this information should be shared within JEG. This applies to both self-owned and third party patents.

In case two or more members of the JEG group wish to have a common patent, the same rules as above apply: They cannot reveal their idea by an open discussion on the mailing list. Practical problems may arise from the fact that patents can usually only be filed by a legal entity and cross-country issues may appear due to different laws.

The purpose of the JEG group is to develop an outstanding objective quality metric. In order to achieve this goal, all algorithm enhancements will be evaluated on an objective basis. This involves, for example, comparing the model performance increase to the computational cost. Patented algorithms will neither be rejected nor preferred.

The JEG group is aware that the (final) developed model will need to be evaluated regarding the patented parts of the algorithm before it can be commercially exploited. It is expected that more than one party is involved. In this phase, a shared solution is advised, e.g. by forming a patent pool. As it is expected that patent owners outside the group need to be contacted, it is welcomed to also have patented parts of the algorithm owned by members of the group in order to facilitate the negotiations. Please note, that this is the last stage of the project and following the current schedule may be expected after 2012.

It was decided on 11th of March 2010 that the topic of patents will only be discussed when there is new relevant information not contained in this text.”

- Presentation on HRC generations by Marcus
- Presentation on HMIX file generation by Nicolas
- To use the SW in Window, CYGWIN should be installed.

VQEG Minutes from Thursday 1 July 2010, Krakow

2010-07-01

VQEG Meeting Minutes

(notes taken by Harvey Lieber, Dialogic)

Review of yesterday's meeting minutes

QART provided some updates to the minutes, and they were approved.

Joint Effort Group (JEG) Group

Marcus Barkowsky (IRCCyN) demonstrated the JEG wiki page (wiki.vqeg-jeg.org).

ACTION: Patrick LeCallet (IRCCyN) to send Arthur an email to request adding a JEG wiki link to the VQEG webpage.

Inigo Sedano (Acreo) gave a presentation on video quality (will be posted on VQEG website in Krakow Meeting Files Directory). Vittorio Baroncini (FUB) commented that in the past, he requested some commercial vendors to build an impairment generator such that precise frame impairments could be introduced. This was not done, but rather, a new set top box was introduced with "error concealment" whereby it re-played previous frames. IPTV TR-126 addresses this. In summary, Vittorio mentioned that this error concealment strategy is wonderful. Marcus reported that current tools are now able to inject all of the requested impairments. An idea was discussed about creating a database of relevant technical papers.

Savvas Argyropoulos (T-Labs) gave a presentation on Hybrid model. This is a No Reference (NR) method. This work has results in MSE and not MOS.

Vittorio talked about TR-126 "Triple-play Quality of Experience (QoE) Requirements (in particular, the graph on page 99) and history of it in Italy.

Marcus discussed the Project Plan and solicited volunteers to work on the various items.

ITU Rapporteur Group Discussion

Arthur led this discussion. Need to decide on how to proceed with HDTV recommendations. Do we want 2 recommendations (1 FR and 1RR) or 1 joint RR+FR recommendation?

Decision : We will go with 2 recommendations (1 FR and 1 RR).

Discussion of how many models should we go with? Discussion that model should not just beat PSNR, but rather have significant industry advantages. David Hands (BT) stated that it is always preferable to have a single standard model.

Decision: We will go with the 1 Swissqual FR model.

Action: Arthur directed the rapporteurs to document a draft with these recommendations.

We discussed the RR work. Chris discussed whether the RR models are better (or worse?) than PSNR models. Margaret reported that it would take an additional 2 weeks of work to calculate this. We discussed whether this RR model is good enough for a standard recommendation.

Action: Arthur directed the rapporteurs to document a draft with the Yonsei RR recommendation. Dave Hands will draft an appropriate “scope” section. Whether the Yonsei RR method is suitable for Recommendation will be decided by the ITU-T SG9.

Arthur reported that we also need to draft a JRG-MMQA Report.

VQEG Resumes:

DECISION: Glenn Van Wallendael (Ghent U) is recommended to be the second co-chair of the Tools and Subjective Labs Group.

DECISION: The RRNR-TV Project is formally closed.

The next meeting was discussed. No clear decision. To be resolved in email.

MM2 Project

Quan Huynh–Thu (Technicolor) and Chris Schmidmer (Opticom) discussed whether to release the MM subjective data to the public. It was discussed that the data should be released (in some form) to benefit the scientific community. Chris recommends an “encryption” method by “hiding” the file names. Vittoria recommends a new procedure whereby anyone who wants the data, needs to sign a NDA.

ACTION: Arthur will investigate the NDA issue.

ACTION (Done): Chris to document exactly how the “encryption” procedure should work.

Before releasing the subjective data that were created within the MM1 project, the filenames in the tables shall be ciphered in a way that no party which by incident gains access to the subjective data and the PVSs can associate the files with the scores. To do this, all filenames in the list shall be replaced by random combinations of numbers and/or characters. Information on the HRCs shall be maintained. Only to link any PVS or SRC to a specific MOS shall be made impossible. ILGs and proponents shall of course remain able to access the unciphered data.

ACTION: VQEG has decided to release the data in the encrypted form. If the encryption is multiple pieces, then we need to assign each piece to a specific person. Chulhee (Yonsei U) has agreed to do the randomization work.

Quan requested volunteers to do work on A/V tests. Yonsei and FUB volunteered.

V11_SRC01_HRC01.yuv

Assign new values to all three indices (test, SRC, HRC) while all the PVSs with the same SRC(or HRC, test) should have the same new SRC(or HRC, test) index. Video format information (i.e., QCIF, CIF, and VGA) will be retained.

Decision: Subjective viewer data (i.e., individual viewer ratings as opposed to MOS) will be made available. ILG and Proponents who have this will be contacted and the data posted on the VQEG ftpsite, possibly with an automated (or manual) NDA signing procedure or email confirmation.

3DTV

Quan reviewed the project goals. Marcus reviewed the test plan.

Marcus made a request for participation. T-Labs (Savvas), Intel, Yonsei, AGH, NIT, Orange-Labs, FUB, Technicolor, IRCCyN, and Acreo volunteered .

Vittorio asked how much money he needs to allocate to purchase hardware.

ACTION: Marcus will document a suggested list of hardware

In terms of the test plan, Yonsei, FUB and IRCCyN volunteered to be editors of the test plan.

JEG Project (continued from earlier today):

Yonsei volunteered to contribute further databases.

Margaret reported that it was very difficult to obtain videos from other sources for our free use. Margaret recommends shooting own our videos. Shooting a large crowd scene is fine. Shooting a close up of a person, requires their legal permission. Shooting a child near an elementary school is not permitted/advised.

VQEG Minutes from Friday 2 July 2010, Krakow

VQEG

Friday, July 2, 2010

Thanks to Margaret Pinson for taking notes.

Thursday's minutes were approved. MM1 data release course of action was clarified during edits.

VQEG Rules were discussed and approved.

Examined draft liaison to MPEG, asking for their SRC video material and also coded video material. Vittorio Baroncini and Glenn Van Wallendael will be the liaison persons to MPEG. ITU-T SG16 Q.6 (VCEG) also needs to be consulted, since the video material in question is jointly owned. The MPEG liaisons are approved.

Arthur is tasked with writing the SG16 version of this liaison.

Liaison 1 to SG12 Q13/12 – reply to their liaison (Akira) information on G.1011 – Arthur will write a “thank you” liaison offline

Liaison 2 to SG12 Q14/12 – P.NAMS & P.NBAMS, includes thanks & request for information on SRC and calculating SI & TI on SRC. Arthur & Margaret & Chris & Lucjan & Saavas will write liaison with information offline

Liaison 3 to SG12, SG9, etc. regarding HDTV Report: Quan & Arthur will write offline

JRG-MMQA Report – edited & approved

First draft of the HDTV FR Recommendation – approved to be sent with JRG-MMQA Report, after Swissqual updates & improves their model description.

First draft of the HDTV RR Recommendation – approved to be sent with JRG-MMQA Report, after Yonsei updates & improves their model description.

Quan will draft a Q2/9 report to cover HDTV Draft Recommendations work.

Special thanks to the hosts and the Co-Chair.

End of Meeting