

Draft VQEG meeting minutes

Ghent, Belgium September 22 - 26, 2008

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 Meeting Minutes

Ghent, Belgium September 22 -26, 2008

VQEG Minutes from Monday 22 September 2008, Ghent

Thanks to Stefan Winkler of Symmetricom for taking notes.

Introductions (see separate list for participants)

Update from Independent Lab Group (ILG) (Greg Cermak)

Finishing MM analysis and report
Consider additional analysis of MM data
Discussions with ATIS IIF on ILG involvement

Update on RRNR-TV (Chulhee Lee)

4 proponents (NTIA, NEC, K-WILL, Yonsei)
Finalized PVS selection
About to begin subjective testing
Plan to finish data analysis in October

Update on Multimedia (David Hands)

MM phase I is completed, final report approved and submitted to ITU-T SG9
Possible submission of MM final report to ITU-R WP6C
Question on usage of MM data, e.g. NTIA report
Greg Cermak talks about his reports on discriminatory power of evaluation metrics, which is also based on MM data

Update on HDTV (Phil Corriveau)

Work on HDTV test plan, to be discussed later

Update on Tools and Subjective Labs Setup Group (Patrick Le Callet)

Riccardo Pastrana: SAMVIQ tool will be available in an HD version in a few months, for a fee

Arthur Webster collecting video quality links and tools for VQEG web site

Update on POC for Source and HRC Sequence collection (Chulhee Lee)

License for most MM content will expire end of 2008

Suggestion to add links for source material on VQEG web site

Update on Hybrid – Perceptual/Bitstream (Chulhee Lee)

Need for reference IP analyzers

Update on Project for Collaborative Development (Alex Bourret)

No news; inputs and ideas requested

Liaison Report from ITU-R WP6C (Filippo Speranza)

Liaison #1: Establishing a permanent rapporteur with VQEG

First objective: present report of MM project as contribution for possible recommendation

Some proponents do not like idea of second recommendation with same models, also concerned about not being able to participate in recommendation drafting

Scope of ITU-R recommendation may be different

Liaison #2: Call for proposals for audio quality objective measurements

Liaison Report from ITU-T SG12 (Vincent Barriac, Akira Takahashi)

Call for participation in P.NAMS standardization work

Upcoming interim meeting 13-14 Nov 2008 in Tokyo

Discussion of possible collaborative approach for P.NAMS as well as VQEG work

Advice from VQEG on subjective testing for P.NAMS and G.OMVAS requested

Liaison Report from ITU-T SG9 (Arthur Webster)

New recommendations J.246, J.247 approved

P.911 almost approved, but needs audio work first

Liaison Report from ATIS IIF QoS (David Hands, Stefan Winkler)

Stefan Winkler presented set of slides on the proposed process for on-demand model validation. Discussion of some of the practical issues with the execution of such an approach ensued:

Some entrance threshold may be needed to avoid too many entries

Danger of causing confusion in the industry by many models giving different results

May be difficult to find suitable institution(s)

A group of labs should do something of this scale

VQEG could function as an overseeing agency to independent lab(s)

How can labs guarantee long-term secrecy of the database?
Are there tuning possibilities despite secret database?
FUB is in the process of creating new SRC content that might be suitable

What are the costs? How much are model developers willing to pay?
How much should universities, research institutes pay?

MM/JRG-MMQA

Aggregated MOS data of MM test will be released in one year
Decision: individual subjective scores can be requested from individual
labs/proponents in one year

Discussion of publication of NTIA report on MM supplementary analysis; 3 options:

- Publish as is
- Publish with proponents' names anonymized
- Publish including only data from those proponents who agree to it

Decision postponed to tomorrow

Discussion of MM Phase II
Audio-video combination considered important
19 people interested
Looking for MM Phase II co-chairs

Christian Schmidmer proposes 2 changes to MM final report:

- Add comments about Opticom's model speed to Section I.2
- Replace text on "General remarks on data analysis" in Appendix VI.2

Decision postponed to tomorrow, after text can be reviewed by everybody

Riccardo Pastrana proposes to add clarification to MM final report that the metrics
have only been tested with unimpaired reference clips

VQEG Minutes from Tuesday 23 September 2008, Ghent

Thanks to: Christian Schmidmer (CS), OPTICOM, for taking notes.

Start: 9:00

AW: Welcome of new attendees

AW: Presentation of last days minutes

Decision: New MM Cochair is Vittorio Barrocini (VB) since David Hands (DH) does not volunteer anymore.

Notes accepted.

Discussion on MM Final Report Continued

Discussion of the proposed changes from OPTICOM (see document on the FTP site):

- AW is in favour of closing the document and not changing it again.
- NTT is against changing it.
- Swissqual avoided all comparisons between models, but all others did, especially Psytechnics did.
- Non-proponents did not state their opinions.
- Vincent Barriac (VB2) asked why the report is important now since the ITU-T recommendation exists already. CS pointed out that there are other SOs deciding on standards where we are not even aware of and proponents will not be able to comment on these standards.

Decision: The report will not be changed.

Discussion of the change proposed by Ricardo Pastrana (RP):

Decision: The proposed sentence should be written in a recommendation and not in the report.

Discussion of call for proposals for P.NAMS

- VB2 presents the ITU-T SG12 call for Proposals and the terms of reference included in it. The document is on the VQEG FTP site. P.NAMS is dealing with parametric models designed to predict audio visual quality. The input to the model would be an IP trace. SG12 is seeking advice from VQEG regarding the validation of the proposed models, especially regarding the subjective tests and potential use of data from the Hybrid project.
- Chulhee Lee (CL) points out that the scope is very wide and asks for a target date of finalisation. VB2: Objective is 2010
- VB2: Please don't focus too much on the schedule, it is all still preliminary and will depend on the answers received after the CfP.
- One major problem will be the required setup to generate the IP traces (required for the models) together with the decoded sequences (required for the subjective test).

- The required capturing and decoding tools will not all be available from the ITU, but there are many tools freely available. However, no single tool will be able to do the entire job, a collection of tools will be required.
- Tools required to simulate network conditions etc. are partly proprietary.
- VB points out, that the scope of MM Phase I was maybe too broad and better models may have been developed for a smaller scope and wishes this to be handled better for P.NAMS.
- VB2: Must wait for answers to CfP before the scope can be narrowed, but it maybe good to do so.
- AW: We may learn from the hybrid project.
- Jörgen Gustafsson (JG) asked, how the subjective tests from P.NMAS (audio visual) and Hybrid (video only) could be used for both projects:
 - Discussion of ITU recs on subjective quality – not conclusive
 - RP points out that there is interaction between audio and video, but using an interaction model the results can be combined to an audio visual score.
 - CS raises concern that several interactional models exist and all differ. There may be a strong dependency on the content.
 - RP confirms this, but the effect of the stream impairments may be far stronger.
- To further discuss the subjective tests, P.910 has been uploaded to the VQEG FTP site.
- Lengthy discussion on the “correct” subjective assessment method. Quan proposed to discuss this based on real subjective data only.
- Filippo Speranza (FS) says there is good experience ACR from 41 experiments...
- Marie Neige Garcia (MNG) proposed to make a comparison of the methods.
- Jens Berger (JB) points out that we also have to keep the purpose of the test in mind when making such a decision.

11:35 Lunch break and photo session..

IBBT Demonstrations

13:54 Meeting reconvenes

Hybrid Model Discussion

Discussion is mostly based on Chulhees slides.

Decisions:

- Max. time limit for freeing or rebuffering is 8s
- The max. delay of the PVS compared to the SRC is +/-0.25s. Other conditions are as laid out in the final MM testplan.

Discussion on subjective test (again...)

- VB: concerned with ACR-HR, prefers DSCQS; he prefers classic ACR to ACR-HR.
- Silvio Borer (SB): Some concerns with HR and DMOS, would prefer MOS instead of DMOS. Also proposes to use a finer quantized scale (see his email).
- RP: also prefers MOS instead of DMOS and a multistimulus method like e.g. SAMVIQ or DSCQS.

- CS: The question answered by subjects in an ACR (How good does it look?) or CSCQS (how different does it look) test is different. In this project we are interested in the answer given in ACR experiments. Users at home make no comparison too.

Criticisms against ACR-HR:

- Opinion: not suitable for High quality video
- Opinion: Stability was not proven

Pro ACR-HR:

- Experience from MM test
- Stability could probably be proven using the common subset of the MM experiments
- Resembles situation of the user at home (which has no reference signal available)
- Very efficient in its implementation

CL presented some data comparing ACR-HR with DSCQS
VB wants this discussion to be mentioned in the testplan.

Decision: Use same method for all tests

Vote on 11 point scale ACR-HR:

Pro: DT, Verizon, Symetricom, BT, Intel, Ericsson, OPTICOM, Swissqual, Yonsei, FUB

Vote use DSCQS:

Pro: KDDI

Decision: Use ACR-HR with 11 point scale

List of interested parties / proponents ILGs

Lancaster University is tentatively interested to be a proponent and is added to the list.

Capturing programs:

Yonsei tested MS Network Analyser.

Capuring format:

- Proposal from NTT: Use PCAP file format
- Yonsei: Proposal to use MS Network Analyser.

Bitsream server:

Decisions:

- Delete Darwin server since it might be produce strange bitstreams
- May Change FFMpeg to FfServer (MPEG2, MPEG4, H264(?)) further examination needed.

IP analyzer converter & decoder:

Comments:

ACREO has developed a software "IPTV Interface" for windows which can subscribe to an IPTV channel and using a standard decoder decode the data and store them in a file. It

is stable and has been used for several weeks. It is available as open source and will soon be available for download from the ACREO web site.

AW: Telchemy uses TCPReplay which can playback TCP dumps correctly based on the timestamps in the file. (TCPReplay is open source).

CL: Yonsei has conducted some tests, see slides for test configuration.

Proponents shall try and report working tool chains!

SB raises the question of synchronisation between bitstream and PVS as they are input to the model. According to CL, the model should handle this and the bitstream may be much longer than the PVS. JB and JG do not fully agree to this.

Clarification: Bitstream models get the part of the bistream which is equivalent to the sequence that was shown to the subjects (bitstream models can not synchronise to the PVS since they do not decode the signal).

----- Coffee Break -----

CL has modified the block diagram with the capture setup.

Data Analysis

Same as MM

Target PLR/BER range (proposals, no decisions yet)

SD/HD: get info from Broadband forum

QCIF / QVGA

Internet:

Mobile: 0..15%

Drafting of testplan

The first draft will be prepared by the editors and co-chairs. It will be based on the MM testplan and shall be presented at the next meeting.

Schedule

- Proposals for working tool chains shall be provided at the next meeting (latest, better before on the reflector).
- Finalisation of testplan After reference analyser is ready: VQEG meeting July 2009
- Model submission: Six month after testplan is ready.

JB proposes having a training round before the real model submission in order to test the exchange of data etc. as long as it is still easy to adjust things. SB proposes that each proponent generates 10 PVS and IP traces plus some expert rating of the PVSs. JG supports this.

Subjective tests

Reuse of material from MM and/or HDTV tests?

Stefan Winkler (SW) and Patrick Le Callet (PC) are in favour of the ATIS proposal for an independent validation organisation which does all the testing.

-> Topic will be readdressed at a later stage.

Calibration limits:

CL proposes to apply the same limits as for MM and HDTV

Resolutions to be tested

B and JG are in favour of including VGA into the test. There was no strong support for this and it was not accepted.

Summary of remaining issues

- Number of subjective tests
- Subjective test

--- End of Hybrid session

Further Discussion of the MM Report

It was proposed to remove all comparisons between models from the proponents section. CL also proposes to have a strong disclaimer in front of the proponents section. Psytechnics does not like to change this, NTT does not want to change it, Swissqual, Yonsei and OPTICOM want to change it.

It was further discussed how to proceed with the change proposed by RP (Add a sentence that the reference files used for the measurement should be of high quality). AW, FS, Phillip Corriveau (PC) and Kjell Brunnstrom (KB) are against changing the document. Decision was postponed.

Decision was made to not change the MM report.

Discussion on NTIA report continued

Psytechnics wants the report anonymized, Swissqual wants it separate for NR and FR, RR models. All other proponents are fine with it as it is.

----- 17:11 Meeting ended -----

VQEG Minutes from Wednesday 24 September 2008, Ghent

Meeting Minutes VQEG Meeting Ghent, 24.9.2008

Thanks to Phil Corriveau of INTEL for taking notes the first part of Wednesday

Thanks to Chulhee Lee of Yonsei University for taking notes the last part of Wednesday.

VQEG – Minutes September 24th 2008

AW – Ratify and approve the minutes from September 23rd. _- APPROVED...

Sub-group to be added to the test tool committee (Quan, Maria, Alexander, Philip and Vittorio) to start a proper investigation around the subjective test methods and applications.

New volunteers to edit the test plan for the Hybrid models – Vittorio and Yves.

RRNR Discussion

Updated slides sent to the mailing list.

4 proponents

1 ILG

2 subjective tests – done solely by CRC (source and design) to expedite the process..

Delays in the creation of the PVS and lots of changes in ranges of quality etc. So there is always room for improvement so we need to be careful in HDTV – based on the experience in RRNR.

Subjective tests – distributed over 4 proponent labs. And all of the data will be combined across labs to have a full set in 525 and 625. Screening procedures are in place..

Tentative schedule is in the foils – aiming for draft report 30 November.

KWILL – Concerned about the subjective testing – hire NHK to perform the testing – a huge headache about the actual cost – and they have the data set and quote is really higher than 20K and has impact on KWILL. From a discussion with CL there is a simplified method that he would like to propose and see if this method is acceptable.

Can KWILL – use a normal conference room ?

CL – most important is the monitor and the players (equipment) more critical than the environment.

FS – the room is the least of the issues – can you display the sequences. If you are testing you need to screen the viewers – not sure that KWILL can conduct the testing in 15 days.

KWILL – critical issue is not the room so – he will ask NHK to rent the equipment and use the KWILL conference. Is this ok?

CL – this type of testing can be completed by the lab with the equipment, and if NHK has it they can conduct the tests. Thinks that it might be better to contract to a lab.

VB – 60 Hz country viewers look at 50Hz test they are more sensitive to the Flicker. So please consider this since it can influence the judgments.

KWILL – Thanks for the suggestions..

CL – during the break – check to see if there are labs that are able to conduct the tests for them and that any lab much have subjective test results before the 15th of October. NTIA is conducting the 625 with American Viewers. Vittorio to talk with KWILL .

Do our best to hit this current timeline.

GC – what are the issues they encounter

FS – calibration is always challenging – the bit rates changed significantly over the years – the design – factorial design was changed based on the individual setting etc.. these are the problems they had and nothing too complicated

CL – the calibration issue was correctable in this case – might have an issue for HDTV.

Ricardo - France – is offering another subjective test, needs to talk with tech people to see if there is room in the schedule. KWILL needs to complete the data collection and if there are additional labs – but need to come in the process in time. Still need to have a balance test design. Right now – not considering adding more tests.

NEC – no comment

NTIA – no comment

Close the RRNR discussion – thank you from CL.

Thanks to Chulhee Lee of Yonsei University for taking notes the last part of Wednesday.

Start: 10:30 HDTV session

HDTV project

- MP requests ILG subjective tests
- Working on Version 2.3
- Discussion about sources (720p). Some changes in Introduction.

- VB raised a question about 720p sources.

DECISION: 1080p enlarged from 720p or 1080i enlarged from (1366x768 or similar) will be valid HD sources.

- Some editorial changes are accepted in Introduction.
- Testing the currently standardized standard definition models will be removed from the test.

DECISION: J144/BT1683 models will be removed from the test.

- “2. Division of Labor and Ownership,” editorial changes are accepted.

- Potential proponent

- NTT(1080i60, CRT)
- KDDI(1080i60, CRT)
- SwissQual (50)
- KWILL(1080i60, CRT)
- Symmetricom((60), NEC(1080i60i, CRT), OPTICOM(50), Yonsei(60), Psytechnics(50)

- Potential ILGs: Verizon(60), FUB, Orange-FT(50), Acreo, Ghent Univ.(50), Intel, IRCCYN(50), DT, NTIA, Ericsson, CRC.

- Discussions on “Ownership of Experiments and Permission to Publish”

- Some editorial changes are made.
- Decision was made on the withdrawal of models.
- QH raised an objection to allowing ILG to publish supplementary analysis beyond the metrics described in this section.
- CS supports QH on the supplementary analysis by ILG.
- FS & AW state that if ILGs are not allowed to publish additional analysis, ILGs may not be very interested in participating VQEG activities.
- A lot of discussions with no agreement.

DECISION: Discussion via email. We should reach an agreement before next meeting.

[Note: on Thursday Moderators were designated: Moderators: CS for proponents and GC & KB for ILG]

- Discussions on “3. Objective quality models”

- Proposal to allow proponent to specify the video formats (1080i50, 1080i60, 1080p30, and 1080p25). No decision was reached.

- Calibration Limits

- Discussions on the additional inputs (to the model) for spatial and temporal shifts

- ◆ Yes for removal: 9

- ◆ No to removal: 2

DECISION: remove the corresponding text

- Proposal to loosen calibration limits

- ◆ Took votes for temporal limits.

DECISIONS are as follows:

- Agreed to remove maximum allowable deviation in Cb and Cr gain

- Agreed to remove maximum allowable deviation in Cb and Cr offset

- Maximum allowable horizontal/vertical shifts are increased to +/- 5 pixels / lines

- A lot of discussions about the temporal shift limits: TBD

VQEG Minutes from Thursday 25 September 2008, Ghent

Thanks to Greg Cermak of Verizon for taking notes.

THURSDAY MORNING Sept 25, 2008

1. Notes from yesterday morning:

Small corrections of wording.

Looking for moderators (Greg, Kjell, Chris) of an email discussion of intellectual property issues mainly regarding objective data (model outputs).

DECISION: Greg, Kjell, and Chris will moderate this discussion.

Reviewing changes to calibration limits in HD Test Plan. Verifying that agreed-to changes appear in updated Test Plan.

Re-visiting the sentence added yesterday about “artificial PVSs.” Will have to fix that sentence in the HD Test Plan.

Wednesday Minutes approved.

2. Next meeting.

Options are Intel@Portland; Symmetricom@San Jose. San Jose seems to be preferred.

Question: Link up with SPIE or with VPQM? Majority prefers SPIE. Question: Can Saturday or Sunday be hosted at a San Jose site? No answer.

Decision: VQEG will be after SPIE in San Jose. Exact dates will be decided via email reflector. Likely to start on 22 Jan.

3. HD Test Plan.

Section 8.1. New text at beginning of section being proposed by Chulhee. Discussion regarding post-processing vs. effects produced by codecs & network: What is considered “natural” and “reasonable”? Regarding adding freeze frames or dropping frames: Apparently it may not be possible to satisfy calibration requirements without some manual freezing or dropping frames. Ricardo says actual network practice includes frame freezing & dropping. Chulhee worries about proponents “gaming” using strange frame freezing & dropping. Kjell suggests reviewing PVSs for strangeness, but Marcus points out that PVSs and subjective data and models are supposed to be submitted at the same time, so review would not be possible in a timely or convenient way.

Items for vote:

- Manual introduction of freeze frames without skipping? Yes = 11, No = 3.
- Manual frame dropping (includes skipping)? Yes = 4, No = 5.

Further discussion may be making these votes moot.

Decision: There will be an HD email list.

N. Jayant of Georgia Tech reports work on mean time between errors and an objective model based on packet loss and bit rate. Basically supports the idea that monitoring bit rate and PLR is a good predictor of subjective video quality. Methodological questions from the academics.

Back to section 8.1:

Proposed text on freeze frames and dropped frames from Chulhee says (roughly) that adding and dropping frames can be done only to satisfy calibration requirements, and must be reported & explained.

Decision: Chulhee’s paragraph was accepted. Section 8.1, Test Plan 2.3R2.

- Temporal alignment section: Two proposals up for consideration, one from Chulhee, one from Chris.

- **Decision** : 25% maximum of freeze frames may be in the last ¼ second of video sequence -- agreed.
- The second proposal about “entire PVS must be contained in the corresponding SRC; a maximum of 0.25 sec of the PVS may be cut off:” Has been rephrased to something like “No portion of a PVS may be included that does not have an associated portion in the SRC.” Proposal: Table this topic and have a phone conference to work out wording. Agreed.

Section 4.4.3, Display Specification and Setup:

Proposal from Vittorio: Use only “Grade 1” flat panel displays, or high quality CRTs. He seems to be withdrawing this proposal.

Before this proposal can be decided, the scope of the HD test must be decided. Are we using consumer-grade playback or professional-grade? Chulhee shows high correlations across monitors. Patrick shows much lower correlations across monitors.

- Proposal alternatives: 1. Use one monitor technology = 5 votes. 2. Use both CRT and LCD technologies = 8 votes. Agreed: 2 technologies.
- Proposal alternatives: 1. Professional grade CRT 2a. Use LCD professional grade (grade 2 or better) only – does not exist in a large size display. 2b. LCD high end consumer TV set. Apparently it was agreed by default that we would use a high end consumer LCD with a minimum size of 42”. Discussion of monitors and what’s available today. Apparently all consumer grade monitors do post-processing.
- Proposal: Use LCD monitors less than 42”. Agreed that a 24” LCD monitor can be used. In subsequent discussion, having monitors of different sizes seems to have been rejected??
- Proposal: Labs must post to the reflector what monitor they plan to use; VQEG members have 2 weeks to object. Agreed.
- Proposed text regarding input requirements for HDMI, SDI, and conversions was inserted in the Test Plan. Agreed.

Since we are using CRT monitors, the question of de-interlacing arises.

[Beyond the use of Professional CRTs in some labs, no firm decision was made on the monitors that can be used in the test.]

SUBJECTIVE JUDGMENT SECTION.

Proposal to use ACR in 9-point or 11-point scales. Refined proposal to use the same 11-point scale as Hybrid. Agreed to use 11-point scale.

SECTION 3.1. ON MODEL SUBMISSION.

Should each model address all formats? How many formats for test? Source may not be available in some formats; disagreement about how much material is available in various formats.

Proposal: Proponent can choose which formats their model applies to. No decision.

Proposal: Test only on progressive; for labs with interlace displays, have deinterlacing be part of the HRC. No decision.

Phil and Margaret will set up audio calls to deal with the undecided issues.

Decision: New tentative model submission date: August of 2009.

HYBRID TEST PLAN.

Discussion about using the MM approach vs. using the HDTV approach. Number of subjective tests per proponent and ILG – for information only:

BT = 1
Ericsson = 1
DT = 1
Ghent U. = 1
KDDI = 2
Lancaster U = 1
NEC = 1
NTT = 1
Opticom = 1
Psytechnics = 1
Symmetricom = 1
SwissQual = 1
Tektronix = ?
Yonsei = 3
CRC = 0
Intel = 0
Acreo = 1?
IRCCyN = 1
Nortel = ?
FUB = 1

Calibration limits. Will use limits from MM and HD Test Plans.

Information to be used in bitstream models. P.NAMS vs. P.NBAMS. P.911 needs to be revised for audio + video tests. Tentative decision to test video only as a priority; however, we will include audio wherever possible. Therefore, VQEG may not be able to meet P.NAMS requirements, and maybe the Hybrid test cannot collaborate fully with P.NAMS.

Check of tentative proponent list for Hybrid models. Check verified current list.

Check of proponents for P.NAMS adds NEC.

Check of proponents for P.NBAMS . Check verified current list.

COLLABORATIVE EFFORT.

Patrick describes goals of effort: Share information about objective metrics with, e.g., MPEG and JPEG. Alex Bourret of BT describes general approach: Start with generic model; test only using new modules (sort of a LINUX-like approach?). Make source code available. There would be a patent pool. There is a general plan about sharing video materials and subjective data (“open database”). Presents an example of the working process. Discusses “profiles” and “levels.” Suggesting a possible first use on H.264 & NR models. Discussion and comparison of this approach with the proposed ATIS certification approach. Patrick & Alex solicit potential collaborators. NTIA signs up because they have no patent issues. Also, HHI/Fraunhofer, Acreo, Ericsson, DT, Ghent, AGH/Lancaster, FUB, CRC, BT, IRCCyN, Verizon, Yonsei, INTEL, NTT, KDDI. A goal would be to finally standardize a model.

VQEG Minutes from Friday 26 September 2008, Ghent

Thanks to: Nicolas Staelens (Ghent University) for taking notes.

Meeting Minutes VQEG Meeting Ghent, 26.9.2008

Start: 9.20 am

Meeting minutes 25.9.2008

Yesterdays' meeting minutes reviewed.

HDTV testplan

Vittorio had some remarks concerning the scope of the HDTV project. He will place his remarks in a document which will be used during the first upcoming audio call (within 2 weeks).

New discussion was started concerning the monitor that should be used for the HD subjective tests. No decision was made yesterday about the monitor size. Arthur added this remark to the meeting minutes of yesterday.

Chris had a remark on the proposed text regarding the input requirements for HDMI & SDI: he also wants DVI to be included.

Meeting minutes **APPROVED**.

Next meetings

Next meeting will be held in San Jose (hosted by Symmetricom) (no data selected yet). Proposal to hold VQEG meeting after the SPIE conference in San Jose, but this would mean that the meeting would be held during the weekend (not on Sunday however).

Meeting after San Jose would be organized in July in Berlin (hosted by DT). Chulhee wants to have a date fixed for the Berlin meeting asap. Vittorio could also host a meeting in June in Italy (Rome) as backup.

Conference calls

During next week, Margaret and Phil will set a date for an audio call for HDTV.

Vittorio 's remarks on HDTV project

Document of Vittorio with his remarks concerning the scope of the HDTV project was shown. This document will be used during the HDTV audio call.

Liaisons

ATIS IIF liaison: **APPROVED**

ITU-R 6C liaison: **APPROVED**

ITU-T Study Group 12 liaison: **APPROVED**

AW asked if a liaison statement should be written to PRQC. There is no objection and AW will write the liaison statement offline:

AOB

Arthur wants to setup some mirrors of the VQEG ftp site: Ghent, KDDI and Yonsei will look in to it.

Agenda next VQEG meeting: different co-chairs indicated how many days they each needed for their project.

Vittorio mentioned writing a paper concerning the MM Phase I project.

Markus: Paper would start from executive summary and we also already have the conclusion section.

Arhtur: HRCs have same limitations as SRC (specified in license agreement). Chulhee: most used video materials will expire this year so they will become unusable.

During the Kyoto meeting, a document has been written that covers publishing papers concerning the subjective data. Christian: no document found concerning the objective data.

Quan: objective data can only be used with proponent's approval.

Chulhee proposal: ILG and Proponents can cite report but do not publish papers containing negative comments on other models.

3D Video (Fillipo): investigate how to measure visual quality of 3D television. At every time each eye sees a different image. Proposal to create a new group for investigating methodologies for assessing 3D. Filipino and Patrick will be co-chairs. **APPROVED**. Project name: 3DTV **APPROVED**.

Patrick will no longer be a co-chair for the tools section