

Video Quality Experts Group  
September 25 – 29, 2006  
Tokyo, Japan.

Final Participants List

<b>Aygen</b>	<b>Arman</b>	<b>Genista</b>
<b>Bourret</b>	<b>Alex</b>	<b>BT</b>
<b>Brunnström</b>	<b>Kjell</b>	<b>Acreo</b>
<b>Dhondt</b>	<b>Yves</b>	<b>Ghent Univ.</b>
<b>Ferguson</b>	<b>Kevin</b>	<b>Tektronix</b>
<b>Ford</b>	<b>Carolyn</b>	<b>NTIA/ITS</b>
<b>Horita</b>	<b>Yuukou</b>	<b>Toyama Univ.</b>
<b>Huynh-Thu</b>	<b>Quan</b>	<b>Psytechnics</b>
<b>Juric</b>	<b>Pero</b>	<b>SwissQual</b>
<b>Kurita</b>	<b>Takaaki</b>	<b>NTT</b>
<b>Le Callet</b>	<b>Patrick</b>	<b>IRCCyN</b>
<b>Lee</b>	<b>Chulhee</b>	<b>Yonsei Univ.</b>
<b>Miyamoto</b>	<b>Yoshihiro</b>	<b>NEC</b>
<b>Okamoto</b>	<b>Jun</b>	<b>NTT</b>
<b>Pinson</b>	<b>Margaret</b>	<b>NTIA/ITS</b>
<b>Sazzad</b>	<b>Z.M.Parvez</b>	<b>Toyama Univ.</b>
<b>Schmidmer</b>	<b>Christian</b>	<b>Opticom</b>
<b>Sugimoto</b>	<b>Osamu</b>	<b>KDDI R&amp;D</b>
<b>Takahashi</b>	<b>Akira</b>	<b>NTT</b>
<b>Watanabe</b>	<b>Keishiro</b>	<b>NTT</b>
<b>Webster</b>	<b>Arthur</b>	<b>NTIA/ITS</b>
<b>Winkler</b>	<b>Stefan</b>	<b>Genista</b>
<b>Yamada</b>	<b>Toru</b>	<b>NEC</b>
<b>Corriveau (phone)</b>	<b>Phil</b>	<b>INTEL</b>

# Agenda

## Video Quality Experts Group

September 25-29, 2006 - Meeting

Tokyo, Japan

[www.vqeg.org](http://www.vqeg.org)

(Note: The ITU-T JRG-MMQA met coincident with the Multimedia Sessions of the VQEG Meeting)

### Final Agenda

#### Monday, September 25

- 8:00 Start / Designate Note Taker (Webster/Speranza)  
Introductions  
Meeting Logistics  
Updates (Maximum 15 minutes - each Group)  
Independent Lab Group (ILG)(Brunnstrom)  
RRNR-TV (Bourret/ Lee)  
Multimedia (Brunnstrom)  
HDTV (Pinson)  
Tools and Subjective Labs Setup Group (Le Callet)  
POC for Source and HRC Sequence collection (Lee)
- 10:00 Begin MM/JRG-MMQA
- 11:30-1:00 Lunch Hosted by KDDI
- 1:00 MM and JRG-MMQA
- 0) MM TestPlan
  - 1) The 20% clause x
  - 2) De-Interlacing x
  - 3) The use of actual broadcast hardware for the creation of HRCs
- x
- 5) Distribution of originals. x
  - 6) Secret Source & HRCs. x
  - 7) Replicating experiments. x
  - 8) Hybrid approach x
  - 9) Schedule Discussions x
- 5:00 End of Day

#### Tuesday, September 26

- 8:00 Start / Designate Note Taker

Review Monday's Decisions (Webster/Speranza)  
 MM Continues  
     New items:  
         ILG replicating test x  
         6a. Fitting functions (tbd after input from  
 statisticians)  
         Tektronix contribution on data analysis; x  
         Opticom discussion of polynomial &  
 logistics fitting (tbd after input from statisticians)  
  
     Mini Test Demonstrations x  
     Source/PVS Material Review (not needed)  
 5:00      End of Day

### **Wednesday, September 27**

8:00      Start / Designate Note Taker  
           Review Tuesday's Decisions (Webster/ Speranza)  
           Review MM Decisions  
           RRNR-TV Discussion  
           Following the inclusion of H264 and VC1 codecs in HRC  
 list :  
  
           - Decision on model access to codec information x  
           - Decision on allowing bitstream models x  
           - Impact on the test organization x  
           - Discussion on result analysis x  
  
           Revision of calendar and actions  
  
 5:00      Final Review of RRNR-TV Decisions  
           End of Day  
  
 7:00      Dinner   Hosted by KDDI at Dome Hotel

### **Thursday, September 28**

8:00      Start / Designate Note Taker  
           Review Wednesday's Decisions (Webster/Corriveau)  
 10:00- 11:30   HDTV (TBD)  
           Source and PVS availability  
           Industry needs  
  
 11:30-1:00     Lunch  
  
 1:00 – 5:00     HDTV – Continued

Source and PVS availability  
Current testing

5:00 End of Day

**Friday September 29**

8:00 Start / Designate Note Taker  
Review Thursday's Decisions (Webster/Corriveau)  
Final Review of HDTV decisions (if needed)

10:00 Review and Documentation of VQEG Decisions  
Review action items

11:00 Other Business  
Next Meeting

11:30-1:00 Lunch

1:00-3:00 Write Liaison statements to ITU etc.  
3:00 Close VQEG meeting

# VQEG meeting minutes - Monday 25 September 2006

## *Introduction of meeting attendees*

Agenda and logistics review (Monday lunch hosted and Wednesday dinner hosted by KDDI).

Updates from the different ad-hoc groups:

- ILG: KB said he would wait for more info to come in from FS, GC and PC.
  - o ILG labs: IrCCyN, FUB, FT, CRC, INTEL, ACREO and Verizon.
  - o ILG has been working at dividing workload between labs concerning SRC and HRC selection
  - o De-interlacing issue to prepare the SRCs remain an issue
  - o ILG worked at defining the exact fees but this is difficult to finalize because some proponents have not committed to a number of models they will submit.
- RRNR-TV:
  - o AB reported an audio-call in July.
  - o H.264 and VC-1 have been added in the RRNR-TV test plan. This introduced new points to be addressed. Initially the test plan targeted only MPEG-2. Because new codecs are now considered, some discussion started about the possibility to provide some side information (i.e. codec name) to the objective models – both RR and NR.
- MM:
  - o KB reported that major progress since the Boston meeting is the completion of all the annexes in the test plan
  - o CRC has done the SRC selection from the original material from KDDI
  - o CL has brought all the original material from the different MM content providers. This data can be exchanged provided each lab has signed the required NDA.
  - o MP said that Vivaik is unable to spend time on the de-interlacing because of Intel restructuring.
  - o ACREO has updated the subjective testing software and uploaded it on the ftp server. KB encouraged all labs to test the software and feedback any issue.
  - o MM test plan timetable must be revisited and discussed.
- HDTV:
  - o MP reported that 2 audio conferences took place and open issues remain to be addressed.
  - o CS said Opticom is likely to become a proponent in the HDTV effort
- Tools and subjective lab set-up:
  - o PLC reported that current progress in MM effort is the updated subjective testing software by ACREO
  - o Tools are needed to perform the data analysis in the MM effort
  - o Solutions for HDTV subjective testing are still being investigated.
- SRCs:
  - o CL has received all the video data, except the KDDI data which was sent only to CRC to make to a selection. The selected portions will be shared to proponents
  - o QH commented that portions not selected from the KDDI original material can not be part of the secret SRCs.

- NDAs: most MM proponents have signed NDAs. The organizations that have not signed yet the NDAs are Lucent and Toyama University.

Announcement from NTIA/ITS:

NTIA is withdrawing from the MM effort and remains a proponent in RRNR-TV and HDTV effort. NTIA wishes to become an ILG lab for the MM effort. NTIA may require a fee as an ILG lab. NTIA can help in obtaining/shooting new SRCs, de-interlacing the video material and producing HRCs.

The fact that an organization can be a proponent in one effort and an ILG lab in another effort will be discussed during the meeting [discussion held Tuesday provided decisions immediately below].

Decision:

C. Schmidmer states that NTIA should not have access to the Opticom fitting software so that they will not potentially have an advantage in other tests besides MM.

Decision:

Any secret content that NTIA sees cannot then be used in other tests as secret content.

AW reported that ITU rules demand now that all Rapporteurs meetings documents and Liaison Statement will have to be posted officially to the ITU. This includes documents from the JRG-MMQA meeting.

## ***MM discussion***

KB reported that the main remaining issue in the current MM test plan is the step-by-step process and timeline. The main technical obstacle in the MM effort is the de-interlacing of original interlaced material to progressive video, especially for VGA resolution.

ILG sent a list of concerns that they think they need to be addressed before the step-by-step schedule can be finalized:

- The "20% clause"
- De-interlacing
- The use of actual broadcast hardware for the creation of HRCs
- Distribution of originals
- Secret SRCs and HRCs
- Replication of experiments
- Detail about the schedule

The details of this list can be found in the document named 'ILG concerns list.doc' on the ftp server. These points will be discussed later during the meeting.

SW said he would like the MM test plan to be re-discussed concerning the current video file format (i.e. AVI) and the possibility to change the chose format in order to provide more information to the objective models.

## **Subjective testing display**

KB reported that Section 4.1.3 in the test plan has a sentence 'Annex V contains a list of preferred LCD monitors for use in the subjective tests'. Currently Annex V does not specify

such list. KB said that specifying a list might be too restrictive. His proposal is to allow use of LCD displays that have a 'TCO 06 label'. Currently only 3 display have this certification:

- BenQ FP241W, FP241WZ, FP241VW (Q24W5)
- EIZO FlexScan S2110W ColorEdge CE210W (S2110W)
- Samsung 215TW (DP21)

## Data analysis

Editorial changes in Section 8:

Equations (5) and (14):  $CI=...$

Subsection title added for outlier ratio.

Equation (17) is missing but is in the version 1.13 of the test plan.

The word 'monotonic' is missing in the text for the cubic polynomial mapping (Agreement was reached at the Boston meeting – see Boston meeting minutes – to perform the cubic polynomial **monotonic** fit as the primary fit, with the logistic fit as the backup in case of no convergence).

Discussion re-opened on which mapping to be used: if one model does not converge with the monotonic cubic polynomial, then should all models use the logistic mapping or just the model for which the polynomial mapping did not converge?

## Review of the different points of concern sent by ILG:

### 20% clause:

Current test plan specifies that "For each proponent subjective test, no more than 20% of test sequences may be derived from a single proponent." FS suggests that the restriction only applies to proponents (not to ILG labs). Another proposal is to increase the limit from 20% to 34% or 50%.

Vote to change the limit from 20% to 34%:

For: Acreo, Psytechnics, KDDI, Yonsei, NTIA, SwissQual, Toyama, NTT, BT, Genista

Against: none

Agreement reached: For each proponent subjective test, no more than 34% of test sequences may be derived from a single proponent. This does not apply to PVSs created by the ILG.

Vote to exclude the set of common sequences from this limit:

For: Acreo, Psytechnics, KDDI, Yonsei, NTIA, SwissQual, NTT, Opticom, IrCCyN, Genista, BT

Against: none

Agreement reached: For each proponent subjective test, no more than 34% of test sequences may be derived from a single proponent. This does not apply to PVSs created by the ILG or to common sequences.

Vote to increase the limit to 50%:

For: Acreo, Psytechnics, IrCCyN, NTIA, SwissQual, BT, Genista

Against: Yonsei

Decision reached: For each proponent subjective test, no more than 50% of test sequences may be derived from a single proponent. This does not apply to PVSs created by the ILG or to common sequences.

**De-interlacing:**

Proposal from ILG: Modify section 6.1.4 to allow other de-interlacing mechanisms, e.g., proprietary algorithms and hardware de-interlacing.

Agreement reached to modify Section 6.1.4 to:

De-interlacing will be performed when original material is interlaced, using the de-interlacing function "KernelDeint" in Avisynth. If the deinterlacing using KernelDeint results in source sequence that has serious artifacts, the Blendfield or Autodeint may be used as alternative methods for deinterlacing. Proprietary algorithms and/or hardware deinterlacing may be used if the above three methods prove unsatisfactory.

(Agreement reached from vote and support by following organizations: Acreo, Psytechnics, IrCCyN, NTIA, SwissQual, BT, Genista, NTT, Opticom)

**Use of actual broadcast hardware:**

CRC would like to use a hardware encoder taking only SDI input and outputs only 352x240 (vs. 352x288 in test plan) and 176x120 (vs. 176x144 in test plan). The group agreed to the fact that interlacing-deinterlacing can be part of the HRC. However, it is unknown if CRC's system warps the input video or not. Also padding from 352x240 to 352x288 (or 176x120 to 176x144) is disallowed in the test plan.

No agreement reached on this point.

**Detail about schedule:**

Currently, the entire source pool is to be de-interlaced as a whole before 12-sec portions are selected to produce the reference sequences.

Proposal by ILG: First the ILG selects 12-sec clips for experiments, and then only those clips are de-interlaced. So, reverse order of these two steps.

No decision reached on this point since this involves re-visiting the step-by-step procedure. This point will be discussed later during the meeting.

**Secret Source & HRCs:**

Proposal from ILG: The secret material in each proponent test will be part of the common set.

Agreement reached to add following sentence in 4.1.7:

The common set of PVSs will include the secret PVSs and secret SRCs

**Replicating experiments:**

Proposal from ILG: The ILG would like to have the option open to use some of the secret tests to replicate experiments (i.e., run viewers through another lab's experiment).

No decision reached.

## Tuesday notes VQEG Tokyo Sept. 26, 2006

Thanks to M.Pinson for taking Tuesday notes

### Filippo's MM ILG update

Nortel will be ILG for MM test.

On fee payment, plan must be updated. Answer needed promptly on whether NTIA will require a fee or not.

Selection of source sequences from KDDI, KBS, Yonsei, CRC and FT have been done. SVT is almost done. NTIA & Psytechnics are not done but will be relatively easy because footage already 12-seconds in duration. SwissQual will require a small effort; Opticom will require a lot of effort (lots of content); and NTT effort fairly small – 4 scenes each 1 minute in duration.

### Filippo's RRNR-TV & HDTV ILG update

Not much yet to do; RRNR-TV issue is source sequences. Addition of H.264 will require extra processing. Should consider starting over with new sequences, e.g., from MM test. Test plans are still moving targets; feedback is needed on video material (SRC sequences).

See also Filippo Speranza's report in the meeting file folder.

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### MM test plan discussions continue

On replicating experiments: Concerns raised that some proponents don't want two replicated experiments combined into one experiment for model comparison purposes. For model evaluation, each of the replicated experiments should be treated as two separate tests, and aggregated as per MM test plan specifications (i.e., don't average the two sets of viewers.) Concern raised that such replicated tests shouldn't have a double weight in aggregation. Quan disagrees with the following sentence from the below agreement: "The first experiment run will provide the data to be used for model performance evaluation." Note that the ILG may or may not perform replication.

**Agreement was reached** to insert the following text into the test plan: "The ILG has the option to open to use some of the secret tests to replicate experiments (i.e., run viewers through another lab's experiment). Models' performance evaluation will follow the procedures laid out above. The data collected will not be considered an additional experiment for the purposes of model comparison – i.e., no double weight for any single experiment. The first experiment run will provide the data to be used for model performance evaluation. The replication will be used for other analysis. This data will be shared with proponents."

On data analysis: proposal to add sentence to section 8.2.2: "The mapping function will maximize correlation between DMOS<sub>p</sub> and DMOS while simultaneously minimizing mean squared error." A decision on this issue will be delayed until Wednesday, so that Greg Cermak and Irena can be consulted.

On data analysis: proposal to add sentence to section 8.2.2 (replacing existing sentence that begins with the same phrase), "If the cubic monotonic polynomial rescaling does not properly converge for a model, then a logistic monotonic rescaling will be applied to all the models and the best method will be used for each model, but the same method must be used for a given model across all tests." An email has been sent to Greg & Irena asking for their opinions on this issue as well.

Questions raised concerning subjective testing software's conversion from YUV to RGB for image display, which is currently performed by the display card.

Acreo's subjective test software was demonstrated using NTIA's CIF resolution min-test.

**Agreement was reached** to add the following text to annex 5: "Experimenter is required to change the "SubjectID" for each subject in the MM test."

**Agreement was reached** to change Acreo's software to *not* require a click after the "okay" & prior to the play of video. After the "okay" button click, grey should be presented for one second, then the next video sequence will play, then one-half second of grey, and then the scoring window shall appear.

A request was made for someone to supply a program that will update the subject number within the script that Acreo's software uses. Carolyn Ford volunteered to supply such a program.

Interest was expressed in having an alternative input mechanism, using a 10-key keypad instead of mouse for data input.

Concerns were raised about visual impact of black clipped border against grey player background having a large impact on subjective scores. Suggestion made to change player background from mid-level grey to black. An alternative suggestion is to have a border of black around the video, e.g., 12 pixels/lines for VGA, 6 pixels/lines for CIF, and 3 pixels/lines for QCIF. This suggestion has a problem in that it would be a lot of work for Acreo, and Kjell might not have the time and/or resources. A third suggestion was to use a black background with a grey cardboard or cloth screen in front to form the mid-level grey background. The problem with this is that the scoring window would be larger than the QCIF image size, causing problems.

These suggestions will be posted to the reflector, and a decision to be made on Wednesday.

MM test plan schedule modified. See post of updated test plan.

JPEG 2000 and/or Motion JPEG 2000 should probably be added to the MM test plan list of potential codecs.

## Meeting Minutes Wednesday 27. Sep. 2006-09-27

Moderated by Kjell & Arthur

Note taker: Christian Schmidmer

New attendee: Mr. Horita from Toyama Univ.

Start 8:39

- Identification of MM work items not yet completed:
  - Hybrid approach
  - Fitting functions (no answer from reflector yet)
  - Still Video
- Review of notes from Tuesday
  - Short repetition of the discussion on experiment replication between AW and QHT

### ***Continuation of MM Testplan Discussion***

**Decision was taken** to include JPEG 2000 Part 3 and VC1 into the list of interesting codecs in the testplan (Testplan V1.14: 6.3.7).

Question from QHT: Do the license statements for the codecs we are going to use allow us the usage of the codec SDKs for VQEG purpose? No definite answer can be given by the group, but we don't see the VQEG use as commercial. Brand names of used codecs will go to the ILGs only.

#### **Discussion of answeres received via email:**

*Note explaining problem: Spatial scaling is not allowed by the testplan, but cropping to some extent is explicitly allowed. Prb. is if the subjects see this as a degradation but the models ignore it. Ignoring probably reflects the practice of people using commercial players.*

Antony Rix: Black frames around images are commonly used today in consumer devices.

Filipo Speranza: Doesn't like option 3 and is in favour of all grey background. He proposes to avoid black lines in cropped sequences by e.g. resizing the images or converting the black lines to grey. Black borders in the SRCs should be avoided.

Phil Coriveau: Option 3 is best (black border in grey background)

#### **Vote on having a black frame around the images:**

Pro: Acreo, KDDI, Yonsei, NTIA, Swissqual, OPTICOM, Genista, BT, Toyama Univ.

Against: NTT, CRC

No vote: Psytechnics

➔ **Decision was taken** to change the testplan accordingly

Vote on whole screen black: Nobody

Vote on masking screen with cardboard / or cloth: Nobody

Vote on having a black frame around the video (inside the grey background): KDDI, Yonsei, Swissqual, NTIA, OPTICOM, Genista, INTEL

- ➔ **Decision was taken** to have a black frame on a grey background around the images (Testplan V1.14: 4.1.3). Soft wording for the size of the frame was appreciated by NTIA since we still want to gain experience with the optimal size. An according editors note was added to the testplan.

Agreed upon text: *“Video sequences will be displayed using a black border frame (0) on a grey background (128). The black border frame will be of the following size:*

*36 lines/pixels VGA*

*18 lines/pixels CIF*

*9 lines/pixels QCIF*

*[Ed. Note: The size of the black border may change after some initial trials of the software change. This will not require 2/3 to change size of black border.]*

*The black border frame will be on all four sides.”*

- ➔ Testplan was changed to avoid black lines/borders in SRCs (Testplan V1.14: 6.1.5)  
Agreed upon text: *“The source region selection must not include overscan—i.e. black borders from the overscan are not allowed.”*

Discussion on black borders in original unprocessed sequences: This is currently allowed and nobody seems to have a strong opinion on this. It seems desirable to be more specific in the testplan on this, but no further action was taken.

**Deinterlacing / Resizing:** Answer from Filippo, that his hardware system can't be used for the purpose.

**Discussion of hybrid approach:**

Genista asks if side information (e.g. codec, bitrate etc.) should be supplied to the RR/NR models in the MM test. It was discussed that this is currently not the target of the MM group and that it is too late for changing the test plan in this direction. Future projects might however deal with it.

**Review of the test schedule (continued from Tuesdays discussion):**

**11:30..12:55 Lunch Break**

**Review of the test schedule (continued)**

**Agreed upon version of schedule:**

1. *Approval of test plan [14 February 2006]*
2. *Declaration of intent to participate and the number of models to submit [6 weeks prior to model submission date]*
3. *VQEG compiles a list of HRCs that are of interest to the MM test. Proponents will send details of proposed HRCs and indicate which ones they can create to the points of contacts and example PVSs (HRC point of contacts Quan Huynh Thu and Philip Corriveau). [24 March 2006]*
4. *Each test lab will produce a test design for each subjective test they plan to perform. This test design should be sent to Filippo S and Vivaik B and Margaret P for initial review to*

ensure no duplication. [Draft test designs produced by Tokyo meeting; test design for review by 31 October 2006] A full and final review of test plans will be performed by the ILG and proponent labs. [30 November 2006]

5. Proponents informed by ILG to whom fee payment is made. [31 May 2006] Revision (not necessarily final revision) to list of who pays whom to be sent out to all concerned by October 15, 2006.
6. Content license agreements distributed to proponents and ILG. [31 May 2006]
7. Each proponent must have signed (and content provider received) all NDAs by October 10, 2006. No guarantees of a three month review of the video source will be possible if NDAs are not received by content providers by October 10, 2006.
8. The proposed lists of HRCs for each experiment are examined by VQEG for problems (e.g., one organization creating too many HRCs, overlap between experiments, using NTT guidelines). [9 June 2006]
9. ILG send invoice to proponent. [4 weeks prior to model submission date]
10. All source video sent to content point of contact (Chulhee Lee) [29 September 2006]
11. Source video sent by POC to most ILG. [October 15, 2006]
12. ILG/VQEG will select source video pool files and distribute source pool to regional points of contact (Asia: Chulhee Lee, Europe: Kjell Brunnstrom, North America: Filippo Speranza) [ October 15, 2006]
13. Participating organizations obtain copies of source pool, except for the secret SRC. The requesting organization has to pay any costs involved. [October 25, 2006]
14. Receiving organization must send acknowledgement to MM reflector that they have received the source pool files. When all proponents have acknowledged to the MM reflector that they have received all source pool, there will be a 3 month period until the submission of models. Secret content may still be collected by ILG. Proponents are not allowed to provide secret content. [November 1, 2006]
15. Fee payment if applicable. Payment will be made directly from each proponent to the selected testing facility, according to a table agreed on by ILG and distributed to the proponents [same date as model submission]
16. Proponents submit their models (executable and, only if desired, encrypted source code). Procedures for making changes after submission will be outlined in a separate document (see Annex VII on storing encrypted version of submitted source code). To be approved prior to submission of models. [9 February 2007]
17. NDAs for secret SRCs distributed and signed by proponents [2 weeks after model submission Feb 23, 2007].
18. ILG selects and distributes all SRC used for each experiment, secret SRC, backup SRCs, and common set of PVSs to be included in every experiment, as proposed by NTT (e.g., 5 SRC & 5 HRC, which would be 25 of 160 video sequences or 15%). This is the step where the ILG (or other organization) must have deinterlaced and resized the 12 second source video sequences. [3 weeks after model submission March 2, 2007]
19. Proponents and ILG inform VQEG of any problem source content. Problem content must be made available on ftp site and reviewed by proponents / ILG. Majority decision needed to reject suspect source. [6 weeks after model submission March 23, 2007]
20. Organizations will generate the PVSs and check calibration using the scenes that were sent to them and send all the PVSs to a common point of contact. [9 weeks after model submission April 13, 2007 ]

21. All PVSs are sent by each test laboratory to a regional point of contact. Point of contact then distributes PVSs to all the proponents [11 weeks after model submission 27 April 2007]
22. Proponents check the calibration and registration of the PVSs in their experiment. [13 weeks after model submission 11 May 2007]
23. If a proponent testlab believes that their experiment is unbalanced in terms of qualities or have calibration problems, they may ask the ILG and the proponent group to review the selection of test material. If 2/3<sup>rd</sup> majority agrees then selection of PVSs will be amended by the ILG. An even distribution of qualities from excellent to bad is desirable. [15 weeks after model submission 25 May 2007]
24. Proponents check calibration of all PVSs and identify potential problems. They may ask the ILG to review the selection of test material and replace if necessary. If a proponent or ILG does not review the test content, then they lose the right to object to the content composition of that test. [15 weeks after model submission 25 May 2007]
25. Proponents run their models and the ILG performs validity checks on a subset of test sequences. [21 weeks after model submission 6 July 2007]
26. Each organization runs their test and submits results to the ILG. Any source content used in a subjective test with a MOS of <4 will be evaluated by the ILG. The ILG will determine whether the source and its associated processed files are valid. Any invalid test content will be removed before data analysis is performed and before proponents submit their objective data to the ILG. Subjective test finished by [23 weeks after model submission 20 July 2007]
27. Verification of submitted models [23 weeks after model submission 20 July 2007]
28. ILG distribute subjective and objective data to the proponents and other ILG [24 weeks after model submission 27 July 2007]
29. Statistical analysis [31 weeks after model submission 14 September 2007]
30. Draft final report [35 weeks after model submission 12 October 2007]
31. Approval of final report [38 weeks after model submission 2 November 2007]

**Discussion on still videos:**

Still videos are currently neither explicitly allowed or disallowed by the testplan.

**Vote on having (completely) still SRCs in the test:**

**Pro:** nobody

**Against:** KDDI, Yonsei, Swissqual, OPTICOM, NTT, IRCCYN, INTEL

**Neutral:** Psytechnics

**Decision was taken** to change the testplan was changed accordingly.

Agreed upon text: *“There will be no completely still video scenes in the test”* (V1.14: 6.2)

**The schedule will be posted on the FTP site and an email for notification will be sent out. Comments (on the schedule only) are required by Oct. 13<sup>th</sup>.**

**END OF MM MEETING (14:00)**

**Start of RR/NR TV Discussion 14:00**

Change of moderator to Alexandre Bourrett

Changes on the testplan required due to newly added codecs (H.264, VC1):

-> Models have to be retrained for new codecs and some proponents are concerned of having several codecs in the same test.

The following concerns were raised:

- If there is no such information, the models may all fail.
- If the information is provided, the amount test data used for validation are not sufficient
- General models which don't need such information are appreciated, but the comparison with models that use such information is unfair.

It was also proposed to start a project on hybrid models.

Existing solutions like MDI and V-Factor were mentioned

Current standardisation in ITU-T SG12 was mentioned.

Market requirements were briefly discussed (many channels in parallel in realtime using NR technology)

**Question by AW:** How many parties are interested to supply a model for which type of model:

	No Info (A)	A + Codec = B	B + Bitrate = C	C + Bitstream = D
RR	4	3	3	5
NR	1	3	1	7

CL points out that the ITU Focus group will come out with a recommendation on IPTV soon.

### Coffee break

During the break it was discussed that an additional Model "E" might be required which is lightweight and takes only transport parameters into account (like MDI or V-Factor). The combination of E (realtime information on transport quality) and A (non-realtime information on video quality) was reported by Swissqual as a market need. ITU-T SG12 Q14 is working on model type "E".

Vote:

**Vote: Do we want to change the RRNR testplan to accommodate models that require additional sideinfo?**

Pro: BT, Acreo,

Against: KDDI, Yonsei, NTIA, Swissqual, OPTICOM, NEC, Toyama, Psytechnics

Neutral: IRCCYN

**Decision was taken** NOT to change the testplan

**Vote: Does anybody object to project D being a separate project?**

No objections, testplan remains unchanged on this.

NEC wants to be a proponent for RRNR-TV. The number of models they are going to submit is not yet decided upon.

NEC has no opinion yet on the test size

Toyama Univ. is fine with the current test size

BT is fine with the current test size.

NTIA is fine with the current test size.

Yonsei is fine with the current test size.

Genista and TDF are not present

Psytechnics and OPTICOM raise their concern that the test is too small.

**Proposal** to amend 3.2.1 bullet point 4 in a way that it reads Video material from FRTV phase II Tests and Multimedia Test may be used

**This was with no objections approved**

**5:15 Meeting adjourned for the day**

VQEG meeting minutes (hours), September 28 2006, Tokyo

Weather: sunny  
Arthur's mood: cloudy

**Decision:** Change to MM testplan – added to 8.2.4 “ILG experiments” to clarify replication of experiments section. Quan, Pero, Chulhee will write a proposal regarding choice of algorithms to be used.

**Decision:** Change to MM testplan to add “Mapping algorithms used for official data analysis must be documented”

Finish RR discussion.

**Decision:** Agreement to use NDAs signed for MM test for RRNR-TV

**Decision:** Deadline for model submission: April 9 '07. No dissenters.

More **revisions**/additions of schedule, see RRNR testplan section 6.

Re-re-re-visit the MM testplan statistical analysis question, again, one more time.

**Decision** to remove logistic rescaling option. Alter sentence slightly.

Vote:

For: KDDI, Acreo, NTIA, Yonsei, Swissqual, Opticom, NTT, Tektronix, Psytechnics.

Neutral: ear-sin

Opposed: none.

**Change** the 2<sup>nd</sup> decision above to replace “documented” with “referenced.”

**Add** line to schedule, before Statistical Analysis item: “Optional submission of mapping coefficients by proponents due to ILG. 28 weeks after model submission.”

**Add:** Proposed paragraph by Chuhlee, Quan, Pero and Christian for section 8.2.2, regarding the computations of mapping functions. No dissenters.

HDTV test plan discussions.

Presentation/proposal from NTT : “Proposal to add the packet-loss condition in HDTV test plan” Vote:

For: KDDI, NTIA, Acreo, Yonsei, SwissQual, Opticom, NEC, NTT, Tektronix

Against: BT, IRCCyN

**Proposal accepted**

Proposal for definition for transmission errors: add “types of errors will include packet errors such as packet loss (both IP and Transport Stream), packet delay variation, jitter, overflow and underflow, bit errors, and over the air transmission errors. Error concealment and forward error correction should be included in at least some of the HRC's.” Vote: no dissenters.

Note added to plan that source and HRC's should be captured with audio when possible in preparation for follow-on phases.

**Action item:** Pero will generate user's guide for using Ethereal by next meeting.

Review of changes generated by audio conferences.

**Decision:** Add possible frame rates– 1080i/50 & 60hz/30fps, 720p 50/60fps, 1080p. Accepted, no objections.

Accepted changes discussed in audio conferences. Minor wording adjustments.

**Action Item:** Patrick (IRCCyN) will investigate requirements for transparent display.

Scene change reqt, change to what's “typical” for the content.

Switch to discussion about new project for the “hybrid” RRNR concept.

Chulhee will be one chair (no dissention)

Pero will be co-chair (no dissention)

Chris will help maybe

Name: Hybrid – Perceptual/Network (Opticom, SwissQual)

Hybrid – Perceptual/Bitstream (6 votes) <- **Decision**

Return to HDTV discussion, continue accepting changes from conf call

**Decision:** Remove list in 2.1.3. (for: Opticom, BT, Tektronix, IRCCyn, against: SwissQual)

Camera spec decision delayed until next meeting. See section 4.3 for verbage.

4.4.3, delete sentence about frame skipping in 1<sup>st</sup> and last second.

Frame rate conversion as an hrc needs to be checked, esp 720p to 20 or 25fps

Number of viewers is TBD

End of day...

QED: Quit and Eat Dinner

## Friday

**NO Agreement was reached** (for MM test plan) to add the following text when computing polynomial coefficients to “maximize correlation between DMOS<sub>p</sub> and DMOS (over a, b, and c) and then use a linear function to minimizing mean squared error (constant multiplier k for a, b, and c; then determination of d). This will produce  $a' = k*a$ , etc.” A long discussion ensued, in which complicated details were considered for inclusion in the test plan.

The multiple party NDA covering the MM test plan was discussed. NTT requires this confidentiality agreement. **Agreement was reached** to have all MM, RRNR-TV, and HDTV proponents & ILG sign a multiple party NDA, so that the data sets and other data can be protected by a confidentiality agreement. All organizations should run this confidentiality agreement by their lawyer within one month, and report requested changes. MM test plan schedule revised to mention this multiple party confidentiality agreement.

**Agreement was reached** on how to phrase “maximize correlation and minimize RMSE”. See MM test plan.

### New MM Content Currently Available

Video Conferencing –	NTIA, NTT , Yonsei possibly,
Movies & Movie Trailers –	Psytechnics, SVT, Opticom
Sports –	Yonsei, SVT, Opticom, Psytechnics
Music Video –	NTIA
Advertisement –	Psytechnics, Opticom
Animation –	Opticom, NTIA,
Broadcasting News –	KBS, Opticom,
Home Video –	SwissQual, Yonsei, NTIA,

If anyone has a suggestion on how to obtain music video (e.g., like seen on M-TV), please contact the ILG. This footage would be greatly appreciated for secret scenes.

## HDTV

**Agreement was reached** that different tests should be conducted by each lab (different PVS's).

**Agreement was reached** to modify data analysis changes from MM (Section 8) into HDTV (section 6), and replace MM references with HDTV reference\.

**Action item:** please bring examples to the next meeting, showing the worst quality of transmission errors VQEG would like to see in the HDTV test plan.