

DRAFT MEETING RECORD
Video Compression Measurements Subcommittee G-2.1.6
Audio Video Techniques Committee G-2.1

Broadcast Technology Society
Institute of Electrical and Electronics Engineers

Thirteenth Meeting

Embassy Suites Minneapolis, Downtown
425 South 7th Street
Minneapolis, MN 55415
July 27, 1999

Item 1 - Welcome and Introduction by Interim Chairman, of IEEE G-2.1.6.

The meeting was called to order at 11:07 AM by acting Chairman John Libert.

Item 2 - Approval of Draft Agenda

A liaison from ITU-R Joint Working Party 10/11Q was added as Agenda Item 5a. A liaison from ITU Study Group 9 on ITU-T Draft Recommendation J.OVQ, Objective Measurement Methodologies for Perceptual Video Quality for Digital Cable Television was added as Agenda Item 5b. With these additions, the agenda was approved.

Item 3 - Review and Approval of Minutes of the Previous Meeting #12, May 3, 1999

The [Minutes from Meeting 12](#) were approved as submitted.

Item 4 - Matters Arising from the Minutes

There was no discussion under this item..

Item 5 - Report of progress of ITU Video Quality Experts Group (VOEG) in the planned tests - Arthur Webster, David Fibush, Al Morton and other participants.

John Libert reported that as of this meeting, all but one proponent had submitted objective test scores. That one is expected this week. Four of the eight subjective test labs have submitted data, with additional data expected

over the next few weeks. All of the verification runs on the objective data have been completed and submitted. Libert said he was trying to come up with a complete analysis to provide guidance to the Study Group 9 meeting in September, but will continue to analyze the data after the meeting.

5.1 Further Discussion and Recommendations from the Subcommittee to the September meeting of VQEG

There was concern people will use the validation data to tweak their measurement systems to match the VQEG results. If that happens, another independent validation test will be required. John Libert agreed there should be a succinct statement describing how the data should be used.

Item 5a - Liaison Report for the ITU-R JWP 10-11Q Meetings held in Geneva, May 17 to 21, David Fibush

David Fibush discussed his *Liaison Report for the ITU-R JWP 10-11Q Meetings held in Geneva, May 17 to 21*, T1 Document [T1A1.5/99-101](#), (IEEE Doc. G-2.1.6/97). The *Report* includes an extensive document list. Copies of many of the documents are available from David Fibush.

Item 5b - Liaison Report for ITU-T Draft Recommendation J.OVQ, Objective Measurement Methodologies for Perceptual Video Quality for Digital Cable Television, David Fibush

David Fibush outlined his *Liaison Report: ITU-T Draft Recommendation J.OVQ, Objective Measurement Methodologies for Perceptual Video Quality for Digital Cable Television*, [T1A1.5/99-102](#), (IEEE Doc. G-2.1.6/98). The *Liaison Report* includes the full text of the *Draft Recommendation J.OVQ* from ITU Study Group 9. Fibush said they did a good job defining the types of objective measurements. The work on single-ended measurements was interesting. When the PQA and single ended measurements were compared, the correlation was 0.9. He cautioned, however, that on any given scene actual measurements might be different.

There was a comment that the appendices of *J.OVQ* are worded as informative. To make them normative, a more complete description of the measurements is needed. VQEG should mention this to Study Group 9.

Item 6 - Report of Task Force on "Defining A Unit of Measure & a Means of Calibration for Video Impairment", Chair, Leon Stanger.

Leon Stanger was not present. John Libert reported that Leon Stanger wanted a vote on his *Requirements for A JND Based Video Quality Measurement Method*, 21 June 1999 ([IEEE Doc. G-2.1.6/99](#)). The goal of the document was to let the industry know what we are trying to do and perhaps create some interest in the project. The document was reviewed.

It was agreed we could not vote on the document because we did not have a quorum.

Several changes to the plan were suggested. After discussion, it was decided to completely rewrite the plan.

Rather than develop new video sequences for testing (either natural or synthetic), existing VQEG sequences should be used for the tests. The VQEG material has advantages in that 1) the sequences already exist, 2) we already have a lot of subjective data on the sequences and 3) we can test the same objective methods to see, for example, how well they predict thresholds. Some of the VQEG sequences may be available for use in the final, standardized tapes.

There was also agreement that we should look at threshold measurements. Methods for defining incremental impairments, such as "multiple JNDs", were discussed. Comparison methods include use: 1) simple threshold, 2) binary-paired comparison, and 3) numerical-paired comparison.

It was suggested that since VQEG tests used untrained viewers, we should also use untrained viewers. Viewers should be familiar with the material and the test, as specified for the VQEG tests. The calibration scale can be obtained with trained or untrained observers, but we may not be able to find enough trained observers. There was a recommendation that the viewing distance be set at 5H, as in VQEG. Both of these constraints could be changed for later testing.

There were several comments that the definition of JND in the paper is wrong, according to psychology. It should be rewritten.

The discussion continued into specific techniques for interpolating between the existing VQEG encoder bit rates. Although the VQEG tests used different bit rates for encoding, it was not known if they were from the same encoder.

6.1 Further discussion and action

John Libert will write a response to Leon Stanger's paper, as VQEG work allows.

John Libert and Andrew Watson will attempt to rewrite the plan. Ann Marie Rohaly offered to help, depending on its timing.

John Libert and Andrew Watson will investigate numerical paired comparison methods.

John Libert will contact Phil Corriveau about using the VQEG sequences.

Item 7 - Report of Task Force on "Selecting Test Material and Test Labs for a Unit of Measure and a Means of Calibration for Video Impairment", Chair, John Libert.

Progress Report of Task Force on Selecting Test Material and Test Labs for Defining a Unit of Measure and a Means of Calibration, John M. Libert, 21 July, 1999, (IEEE Doc. G-2.1.6/100) was distributed and discussed.

Item 8 - Further Discussion of Compression Measurement Methodologies.

There was no further discussion.

Item 9 - Any Other Business.

The response of this group to the VQEG tests report was discussed. There was agreement that we will want to use the results.

Item 10 - Date(s) of Future Meeting(s).

The next meeting was planned adjacent to the T1A1.5 meetings in Fort Lauderdale, Florida, the first week of November. The exact date will depend on the T1A1.5 meeting schedule.

The Committee thanked John Libert for acting as chairman for this meeting and U.S. West for providing meeting facilities.

There was a motion to adjourn, which was seconded. The meeting was adjourned at 3:26 PM.

Submitted by:

H. Douglas Lung

Secretary

APPENDIX "A"

List of Documents Distributed

27 July 1999

Draft Agenda - IEEE Compression and Processing Subcommittee G-2.1.6, Thirteenth Meeting, Tuesday, July 27, 1999, Alan Godber, Chairman. ([216m13an.html](#))

Draft Meeting Record, G-2.1.6, Compression and Processing Subcommittee, Twelfth Meeting, May 3, 1999, U.S. Department of Commerce, Boulder Labs, Boulder CO, Doug Lung, Secretary, [IEEE Doc. G-2.1.6/96](#), 14 July 1999.

Liaison Report for the ITU-R JWP 10-11Q Meetings held in Geneva, May 17 to 21, David Fibush, Tektronix, T1 Document [T1A1.5/99-101](#), IEEE Doc. G-2.1.6/97, 27 July 1999

Liaison Report: ITU-T Draft Recommendation J.OVQ, Objective Measurement Methodologies for Perceptual Video Quality for Digital Cable Television, David Fibush, Tektronix, T1 Document [T1A1.5/99-102](#), IEEE Doc. G-2.1.6/98

Requirements for A JND Based Video Quality Measurement Method, Leon Stanger, 21 June 1999, [IEEE Doc. G-2.1.6/99](#), 27 July 1999.

Progress Report of Task Force on Selecting Test Material and Test Labs for Defining a Unit of Measure and a Means of Calibration, John M. Libert, 21 July, 1999, IEEE Doc. G-2.1.6/100, 27 July 1999

APPENDIX "B"
ATTENDANCE RECORD
27 July 1999

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