ITU-T Telecommunication Standardization Sector
Study Group 15
Experts Group for Video Coding and Systems
in ATM and Other Network Environments

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Source: CHAIRMAN OF WP1/15, M. YAMASHITA
Title: MEETING REPORT OF WP1/15
Purpose: Report

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Approved by the SG15 Plenary

Working Party 1/15
Geneva, 16-27 May 1994

Source : Working Party 1/15
Title : Meeting report

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1. General

The second meeting of Working Party 1/15(Audiovisual) was held on 17-25 May 1994 in Geneva, under the chairmanship of Mr.M.Yamashita (NTT, Japan), Vice-Chairman of Study group 15.

SG15 Plenary held on 16 May decided that Q6/15 be reallocated to WP2/15, thus WP1/15 now is responsible for Q1-3/15.

A joint meeting of WPs 1 and 2/15 took place during the meeting where low-bit-rate videophony aspects of Q2/15 and Q6/15 were discussed.

2. Objectives of the meeting

Objectives of the meeting were to;

i) finalize H.221rev., H.230rev., H.231rev., H.233app., H.242rev., H.243rev., H.262 and H.320rev. (see Annex 2 of R3)

ii) review initial draft of H.22x, H.22p, H.24x, H.24p, H.AV.25y, H.26p, H.32x, H.32y, H.32z and H.32p.(see Annex 2 of R3)

iii) give guidelines to the work of JCG on AVMMS (Joint Coordination Group on Audiovisual/Multimedia Services)

iv) respond to mandate of SG15 to review COM15-53 through 56 in light of received contributions

3. Documentation (* denotes multiple assignment)

3.1 General

- COM15- 1: Texts of Questions
- COM15- 2: Res. Nos. 1 and 2
- COM15-R3: Report of the previous meeting (Sept. 1993)
- TD 1(Plen): Work plans for satellite issues (SG13)
- TD 2(Plen): JCG/B-ISDN report 1(JCG)
- TD 5(Plen): JCG/B-ISDN report 2 (JCG)
- TD 6(Plen): JCG/B-ISDN report (CM WP3/15)
- TD 3(Plen): ICG/Satellite matters report (ICG)
- TD 8(Plen): ICG/FPMLTS report (ICG)
- TD14(Plen): JCG/QOS/NP report (CM WP3/15)
- TD15(Plen): JCG/QOS/NP report (JCG)
- TD17(Plen): Considerations on IPR (Director)
- TD18(Plen): ITU-T SG9 Questions
- TD19(Plen): ITU-T SG9 Questions
- TD20(Plen): Working methods for JCGs(TSAG)

3.1.1 JCG on AVMMS
- D-146 : Matters for considerations by JCG/AVMMS (BT)
- D-197*: Terminal profiles for conv. MMS (BT)
- D-222*: Interactive multimedia services: standards planning (BT)
- TD4* : Performance ref. model of MM communications (SG12)
- TD22(Plen): Relationship with fora/consortia (TSAG)

3.2 Q1/15
- D-145 : Future equipment of dig. sound-prog. trans. in B-ISDN (France)
- TD34 : Signaling aspects of sound-programme channels (CM)
- TD43 : J series Recommendations

3.3 Q2/15
3.3.1 ATM video coding and related Recs.
- D-297 : Loss priority between H.22x and AAL 1/2 (Korea)
- TD1 : Report of Joint mtg. on AAL (SG13)
- TD3 : Video signal transport in ATM networks (SG13)
- TD9 : Error correction model for delay sensitive signal transport of AAL Type 1 (SG9)
- TD24 : Video coding and testing (SG9)
- TD29 : H.262 (Rapporteur:SO)
- TD30 : ISO/IEC 13818-1 - Part 1 Systems (Rapporteur:SO)
- TD31* : ISO/IEC 13818-1 - Part 3 Audio (Rapporteur:SO)
- TD32* : IVS baseline document (SG13)
- TD33* : Correspondence from Rap.Q10/8 (Rap.Q10/8)
- TD36 : Meeting of ATM video experts progress report (Rapporteur:SO)
- TD38 : Initial draft for H.32x (Rapporteur:SO)
- TD39 : Initial draft for H.32y (Rapporteur:SO)
- TD40 : Initial draft for H.32z (Rapporteur:SO)
- TD41 : Status on patent matters (Rapporteur:SO)

3.3.2 LBC
- D-221 : Detailed requirements for low bit-rate visual telephone (BT)
- TD28 : LBC Report (Rapporteur:RS)
- TD18 : Liaison statement from SG1 (Oct.1993)
- TD21 : Considerations on speech coding at around 4 kbit/s (SG1)
- TD22 : User requirements for VLBR visual telephone in mobile nw.(SG1)

3.3.3 H.261
- COM15-67: Changes to H.261 (USA)
- TD42 : Errors in H.261 (March 1993 issue)

3.3.4 H.320
- COM15-89: Enhancements to H.320 (BT)
- D-149*: Comments on COM15-89 and 90 (Japan)
- D-197*: Terminal profiles for conv. MMS (BT)
- TD5 : Audio level setting (SG12)
- TD20 : Selection of H.320 audio/video coding modes (Q20/1)

3.4 Q3/15
3.4.1 General
[H.DLL]
- D-170 : Proposed action concerning Draft H.DLL (UK)
- D-301 : Proposed action concerning Draft H.DLL (BT)
- TD13 : LS on H.22z and H.28x (SG8)
- TD14 : Status of work of Draft T.125(GCC) (SG8)
- TD17 : Simplex protocols for use on LSD/HSD channels with H.243 broadcast (SG8)
- TD33* :Correspondence from Rap.Q10/8 (Rap.Q10/8)

[H.agg]
- D-284 : Amendments of H.agg (Timer) (FT)
- D-285 : Amendments of H.agg (FT)
- TD11(Plen): Channel aggregation: proposed way forward (Rapporteur: NK)
- TD2 : Network capabilities for support of NW-based ch. agg. (SG13)
- TD7 : Channel aggregation (ISO/IEC JTC1/SC6)

- TD10 : Draft HB.agg in a new approach (Rapporteur: NK)
[Still image transmission]
- TD15 : Still image application (SG8)
- TD16 : T.SI protocol summary and system aspects (SG8)
[H.22x]
- TD37 : Initial draft for H.22x (Rapporteur:SO)
[Others]
- D-222*: Interactive multimedia services: standards planning (BT)
- D-224*: Opening of work item for mode preference requests (AT&T et al.)
- TD4* : Performance ref. model of MM communications (SG12)
- TD19 : HLC assignment (Q20/1)
- TD23 : MM call setup (SG1)

3.4.2 H.221
- COM15-89: Enhancements to H.320 (BT)
- COM15-90: Enhancements to H.221/230/242/243 (Rap. Q3)
- D-149*: Comments on COM15-89 and 90 (Japan)
- D-223 : Enhancement of H.221 for additional MLP bit-rates (USA)
- D-224*: Opening of work item for mode preference requests (AT&T et al.)
- D-247 : BAS codes for MLP channels (BT)
- TD-8 : Use of H.221 for broadcast audio channels (SG9)
- TD33* :Correspondence from Rap.Q10/8 (Rap.Q10/8)

3.4.3 H.230
- COM15-89: Enhancements to H.320 (BT)
- COM15-90: Enhancements to H.221/230/242/243 (Rap. Q3)
- D-149*: Comments on COM15-89 and 90 (Japan)
- R105 Annex2: Frozen text for H.230 and 243

3.4.4 H.231
- TD11 : Draft H.231rev. (Rapporteur: DS)

3.3.5 H.233
- D-278 : IDEA for H.233 (ASCOM)
- TD26 : Request for an codepoint in H.233 (Rapporteur: NK)
- TD27 : Future changes to H.233 (Rapporteur: NK)

3.4.6 H.242
- COM15-89: Enhancements to H.320 (BT)
- COM15-90: Enhancements to H.221/230/242/243 (Rapporteur: NK)
- D-149*: Comments on COM15-89 and 90 (Japan)
- D-150 : Clarification to H.242 (Japan)
- D-224*: Opening of work item for mode preference requests (AT&T et al.)
- TD25 : Communication of network addresses (Rapporteur: NK)

3.4.7 H.243
- R105 Annex2: Frozen text for H.230 and 243
- COM15-90: Enhancements to H.221/230/242/243 (Rapporteur: NK)
- D-224*: Opening of work item for mode preference requests (AT&T et al.)
- TD12 : Draft revised H.243 (Rapporteur: DS)

3.4.8 Draft Recs. for Res.1
- COM15-53: H.223(H.agg)
- COM15-54: H.234(H.KEY)
- COM15-55: H.224(H.DLL)
- COM15-56: H.281(H.FECC)

4. Results

4.0 General

1) Reports of JCGs on B-ISDN and QOS/NP as well as reports of ICGs on satellite matters and FPLMTS were reviewed. In order to inform them of our relevant works, liaison statement to JCG/QOS/NPwas prepared. (Annex 1)

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2) Questions approved for ITU-T SG9 were introduced in TDs 18 and 19. The WP took note of Q31/9 while briefly reviewing these questions and felt the need to send a liaison to SG9 to inform them of our activities in Q2/15 in order to avoid duplication of work. (Annex 2)

3) Proposed structure for J series Recommendations as a consequence of CMTT becoming ITU-T SG9, as contained in TD43(1/15) was reviewed. It was noted that sections 5, 8, 9 and 10, which have not been used until now, have been given titles and have Recommendations under them.

   Another comment made was that whenever there are two versions of the same Recommendation, each maintained by former CCITT and CCIR respectively, the newer version should be maintained.

4) D-146 proposing matters for consideration by the JCG/AVMMS was presented. There was a general resonance to the points raised in the document, specifically the recognition of the changing environment in the telecommunication world in terms of the new services, networks and standardization and that ITU should play more active roles. The WP expects that this document will be discussed again in the JCG/AVMMS in the presence of representatives of relevant Study Groups.

5) D-222 stressed the need to plan standardization for interactive multimedia services. It proposed that WP1/15 initiate work in this area, with particular attention to end-to-end audiovisual system integrity, audio and video coding and multiplexing, carriage of conversational applications and interworking of these with ISDN etc. and control protocols. It was felt that attention to standardization of these factors was not so strong in WP1/15 until recently, but it is time we initiated such studies. The WP solicits contributions to its next meeting on these aspects,. At the same time it was discussed that possibilities of extending Q3/15 or even setting a new Question to deal with these studies need to be considered in the next meeting.

6) Following the discussions on D-146 and 222, the Rapporteur for Q3/15 (pts.1-3,5,7), Dr.Kenyon proposed an extended framework for the audiovisual/Multimedia recommendations. The WP endorsed this proposal. In the new framework, H.DLL would be moved from AV.244 to AV.279, however, it was decided that the Recommendation number will remain as is; after the framework has gone through several stages of evolution, coupling between the AV numbers and the H series Recommendation number cannot help becoming loose. The enhanced framework is attached as Annex 3. This framework will be also sent to JCG/AVMMS for their consideration. See attached

7) TD4 from SG12 contained a reference model for video performance. In order to reply to a request for information on expected quality of terminals and codecs a liaison statement was prepared.(Annex 4)

4.1 Q1/15

1) A French proposal was made for the requirements and architecture of a future equipment for digital sound-programme transmission in an ATM-based B-ISDN (D-145). There was a comment that this equipment could be a subset of the general audiovisual communication terminal, thus harmonized development of Recommendations should be considered. It was decided to study the matter further and to send a liaison statement to SG9 for information and to ask them to keep us informed of their studies concerning the adaptation of sound-programme signals to and from ATM. (Annex 5) A communication was also sent to WP3/15 since it was considered to have relevance to the ATM multiplex equipment studied there.

2) Reply to the Question from WP3/15 (Q21/15) on the signalling aspects for the sound-programme-channel was reviewed. It was pointed out that, for analog 15/10/7 kHz sound-programme as assumed in TD34, there would be no siganalling for circuit connection, however, now that MPEG Audio has become available, this could also considered as a tributary signal, in which case there would be signalling implications. It was decided to locally communicate with the Q21/15 Rapporteur.

4.2 Q2/15

4.2.1 Video coding and systems in ATM and other network environments

Report of the meetings of the experts for video coding and systems in ATM and other network environments was made by the Rapporteur, Mr.S.Okubo. The Working Party thanked Mr.Okubo and his experts for the progress they have made. The progress report is attached as Annex 6 to this report. Annex 6 contains a revised Figure 2 which was drafted following a discussion for a need to further elaborate on the original Figure 2 by indicating the possible use of adapters and gateways.

The following is the summary of discussions including those on the points requested by the experts to give guidance on.

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1) Submission of H.262IMPEG-2 Video to Res.1 approval in February 1995

The WP agreed to submit H.262IMPEG-2 Video as contained in TD29 to Res.1 approval in the next SG15 meeting.

2) Synchronized approval process for H.262

It was agreed that we have to carefully follow the procedure set out in section 7.9 of guide for ITU-T and ISO/IEC JTC1 cooperation.

3) IPR processing for H.262

The WP took note of the efforts made by the Rapporteur in collecting the patent statements. SG15 invites those who see patent implications in H.262 but have not yet filed a patent statement to provide the TSB with written statements in accordance with the general rule, in particular paragraphs 2 and 3 of TSB patent policy.

The WP also draws the attention of the members to a request made by the TSB that "Any ITU member organization aware of a patent held by itself or others which may fully or partly cover elements of the draft Recommendation(s) proposed for approval is requested to disclose such information to the TSB, in no case later than the date scheduled for approval of the approval of the Recommendation(s), in accordance with TSB patent policy."

4) Commitment in the hardware trials

Delegates from GCL, KDD, BT, AT&T and VideoServer expressed either their will or interest in taking part in the hardware trials. It was envisaged that the tests will take place in mid 1995, before all of the family of Recommendations for audiovisual systems for ATM environments are approved. A concern was expressed that a B-ISDN for connecting the hardware may not yet be available when the trials start; there was another comment that there are already ATM LANs that can be used.

5) Relationship between H.32X, H32Y and H.32Z

The WP discussed a diagram showing an array of H-series audiovisual terminals in different network environments (Figure 2 of the progress report) and felt the need for elaboration. This was worked out by volunteers and the figure in the annexed report contains the updated version as mentioned above.

6) Priority primitive insertion see AVC-636

D.297 containing proposals for priority primitive insertion between H.22X and AAL 1/2 was presented by the delegate of Korea. It was agreed that this will be considered in the meetings of the experts in their deliberations for H.22X.

7) Common text approach to MPEG-2 Systems

The meeting of the experts proposed that we take common text approach for the MPEG-2 Systems (ISO/IEC 13818-1) as had done for the video coding(ISO/IEC 13818-2). Although it was recognized that MPEG-2 Systems standard will not be 100% used by us, but perhaps 80-90% of it, it was noted that, by making it a common text, we can share the responsibilities with ISO/IEC in its future revisions. Agreeing to having a common text for systems will follow that we will have H.22WIMPEG-2 Systems approved by Res.1 procedure in February. H.22X (Multimedia multiplex and synchronization for audiovisual communication in ATM environments) will consist of reference to H.22W as well as parts specific to it. H.22W and H.22X will be given the numbers of H.222.0 and H.222.1, respectively. A liaison statement is sent to SC29 to inform them of this decision and to ask for further cooperation (Annex 7).

see attached

8) DSM-CC activities in MPEG

The experts meeting reported on the work in MPEG for enhancing the DSM-CC (Digital storage Media Command and Control) for applications such as conversational video, video shopping, server-to-server communications.

WP1/15 already has H.230 for C&I (Control and Indication) for audiovisual services, which may be used for such applications. WP1/15 draws the attention of MPEG to H.230 and to its extension work, and requests to consider H.230 in their work. A lisaison was sent for this purpose (Annex 8)

see attached

The WP felt that this matter should further be discussed in the JCG/AVMMS to take place after the SG15 meeting.

9) Interaction with the ATM forum

TD22(Plen) reports on the considerations in the TSAG on relations with fora/consortia. It is noted that support and communications between Study Groups and fora/consortia are encouraged at all levels. It is

also noted that the TSB Director is asked to consider contingency arrangements for collaboration with fora/consortia. The WP awaits the outcome of the consideration.

10) Initiation of H.24X preparation

It was pointed out that for the system specifications for the broad-band audiovisual communication, H.22X (Multiplex structure) and H.24X (Communication procedure) may need not be separate. In the case of narrow-band, H.221 and H.242 were separately recommended due to historical reasons, i.e. division of work between then SGXV and SGXVIII. However, there is no such condition in the broad-band case and reading the Recommendation would be easier if the two were merged: this matter will further be considered. Whatever the form of the Recommendations be, Dr.N.D.Kenyon agreed to consider the contents for the H.24X. See AVC-641

11) Protocol model for H.32X

A correspondence from Rapporteur for Q10/8 contained comments to the protocol model proposed by the meetings of the experts in which audio, video and data are multiplexed together by H.22X and presented for transport in a single VC. The comments will be examined in detail by the experts; a preliminary correspondence back to the Q10/8 Rapporteur was prepared as in Annex 9.

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4.2.2 Low bit-rate visual telephone

Report of the meeting of the experts for low bit-rate visual telephone was presented by the Rapporteur, Mr.R.Schaphorst. The Working Party thanked Mr.Schaphorst and his experts for the progress they have made. Main body of the progress report is reproduced in Annex 10 of this report.

Under the chairmanship of the Rapporteur, Mr.R.Schaphorst relevant documents were discussed jointly with WP2/15.

1) Work plan for H.200/AV.257a (audio)

Objectives and work plan for the selection of audio coding algorithm for the near term low bit-rate visual telephone were presented by Mr.Cox and were agreed to. The second phase selection test will begin in July 1994, and after evaluation through bit exact fixed C code and real-time fixed point implementation, it is expected that the draft Recommendation can be stabilized at the February 1995 SG15 meeting.

2) User requirements

D.221, outlining detailed requirements for the low bit-rate visual telephone, was reviewed and generally supported by the group. It was agreed that this document, when combined with minor changes proposed during the discussions, would form one part of the overall definition of requirements for the H.32P terminal. The other part would consist of a more general outline of requirements which was prepared by the LBC Experts Group [Annex J of TD28]..

Liaison statements from SG1 [TD18, TD22] on the user requirements were noted, and a reply was prepared expressing our opinion at to the points raised.(Annex 11)

3) Modem

It was noted that the Experts Group decided that The V.8/V.34 modem should be mandatory. Concern was expressed by Germany that the last versions of Draft V.8/V.34 Recommendation (including the final draft) were not seen and discussed yet by the meeting of the experts and that sufficient IPR information on draft V.34 was not received.

4) Video[H.26P, H.26P/L]

Mr. Karel Rijkse, Editor of H.26P and H.26P/L, reviewed the status of the video work. Considerable progress has been made on the development of a video coding Reference Model TMN2. This Reference Model has been used to prepare a very detailed Draft Recommendation H.26P. It was noted that, although considerable effort has been devoted to the picture format and algorithm issues decisions have not been finalized on these points.

5) Multiplex[H.22P]

It was reported that the experts had agreed that a standard LAP protocol, or a small extension of a standard LAP, is intended to be used for the multiplex function. It was pointed out that the multiplexer design must reflect the best compromise of several conflicting parameters--low overhead, low delay, flexibility, extensibility, good error control properties.

6) Control[H.24P]

It was noted that a key element of the Control System is a supervisory channel which can be used in a highly flexible manner.

7) Data Interface[H.DLP]
There was considerable discussion of the potential uses of the data port, and the impact of this data channel on the applications of the H.32P terminal itself. The Working Party agreed that the H.32P suite of Recommendations may be used for a stand alone videophone or on a workstation PC platform. In the workstation environment there was general agreement that the T.120 standard suite would be attractive for the data channel protocol because of the wide range of services it may supply[JPEG, file transfer, white board, etc.] and the inherent multipoint capability it provides. It was noted further that the H.32P terminal could be used for data services [access to remote data bases] as well as interactive services.

8) System[H.32P]
It was mentioned several times that it will probably be necessary to define a DTE/DCE partition within the H.32P terminal. One reason for this requirement is the need to support non-PSTN networks such as the Mobile environment. It is requested that the Experts Group investigate the cost/performance implications of this partition and include it in the H.32P Recommendation if it is practical.

4.2.3 H.261

Typographical errors in the March 1993 edition of H.261 were reported by the Rapporteur (Mr.Okubo). Correction are contained in Annex 12.

see attached

4.2.4 H.320

Various proposals to change H.320 were examined under the chairmanship of the Rapporteur, Mr.S.Okubo. The proposed changes to the text appear in Annex 13 (TD45) of this report. It is the intention of the WP to stabilize the text in the next meeting of WP1/15.

In reply to SG1 liaison to consider the mode preference request functionality, a reply was sent informing of our study on H.320.(Annex 13a)

4.3 Q3/15

1) H.224 (DLL)/H.281(FECC)

On the basis of written contributions from UK, changes were made to H.224(H.DLL) before putting it to Study Group 15 plenary for Res.1 approval.

The Rapporteur presented TD54, which contained editorial revisions and clarifications to COM15-55R (H.224/former H.DLL). In addition, TD55, containing H.224 procedures and background was discussed as input to H.221/H.230, as well as H.320/H.243. It was decided to put forward H.224 to the SG15 Plenary for Resolution 1 approval (TD 64 (Plen)). It was further decided to preserve TD55 by appending it to the meeting report, and by incorporating appropriate elements in future revisions of H.242 and H.243.(Annex 14)

No changes were requested to COM 15-56(H.281/H.FECC), and it was put forward to the SG15 Plenary for Resolution 1 approval. An intervention called for additional functionality in the form of a position command, and it was agreed to consider this intervention as part of the process of developing the next revision of H.281, and it was also agreed to mention in the meeting report the potential that H.281 will be enhanced in the future.

2) Postponement of H.agg(H.223) approval

H.agg(H.223) was slated for Res.1 approval at this meeting; however, due to unexpected decision in ISO/IEC JTC1/SC6 in October 1993 to adopt a channel aggregation scheme of their own, it was decided to postpone the Res.1 approval but to seek further harmonization of the two standards. A revised version, renumbered H.244 (to reflect better the position in the Multimedia Framework H.200) which takes into account the channel aggregation scheme in ISO is reproduced in TD XX(Plen). It was agreed to put this to Res.1 approval at the next meeting. The new text for the new H.244 is found in Annex 15. A liaison from SC6 in TD7 was noted, and a reply was prepared (Annex 16).

At the verbal request of the USA, the number of 64 kbit/s channels that can be aggregated using the H.221 method ("TAC) is increased to 24.

3) Still image transmission

The work on T.SI in SG8 and their reply to our earlier liaison statement were noted (TDs15 and 16). A liaison statement back to SG8 was prepared for clarification and suggestion. (Annex 17)

4) H.231 and H.243

Enhancements to H.231 and H.243 were discussed under the chairmanship of the Rapporteur, Mr.D.Skran.

a) H.231

Revision of H.231 was discussed based on the text prepared by the Rapporteur. It was concluded that since most of the changes are editorial, there is no urgency in revising H.231, although our initial plan was to revise it at the next SG15 meeting. The current version of revised H.231 is attached as Annex 18 of this report.

b) H.243

The draft revised H.243 (TD12) prepared by the Rapporteur, Mr.D.Skran, was discussed. A number of significant areas were identified that require additional work. They include continuous presence, dial-out procedures, loopback procedures, the robustness of the contention resolution procedure, and MLP/H.224 procedures in a multipoint conference. D-224 contained a proposal for "preferences," hence to be called "mode requests." It was agreed that "mode request" procedures would be useful, and that H.243 and H.242 should be modified as needed when the work was complete.

The large number of areas requiring work indicated a need for the work to continue at a Rapporteurs' meeting so that the text could be stable at the February 95 meeting, with submission to resolution 1 in November 95. The Rapporteur will produce a new draft for the Rapporteurs' meeting, with a deadline for submission of material to be included in the draft of September 15, 1994. Submissions on low-delay continuous presence and dial-out are requested.
This draft will also include comments made during the present discussion. The current version of revised H.243 is attached as Annex 19 of this report.

5) H.221, H.230, H.233 and H.242

Enhancements to the above Recommendations were considered under the chairmanship of the Rapporteur, Dr.N.D.Kenyon.

a) H.221

Enhancements to H.221 to cater for the requirements for channel aggregation, MPEG audio transmission for sound-programme channels, increased number of MLP and H-MLP channel rates, etc. were discussed. Since a large number of independent MLP rates has been requested by various parties, it was decided to structure the codes such that preferred rates mentioned in H.320 can be easily indicated. The updated text was considered to be stable enough and was agreed to put to Res.1 approval at the next meeting. Draft H.221 is contained in TD 51 (Plen). Comments on this draft are solicited. A liaison in TD8 from SG9 was responded to. (Annex 20)

b) H.233

The proposal in D-278 to provide an identifier codepoint in H.233 for the algorithm "IDEA" was agreed to. It was recognized that ISO register entry is not self-contained in terms of parameters hence a simple reference to the ISO register entry number for IDEA is not sufficient for the proper interworking of the two terminals. The delegate of ASCOM was asked to provide the meeting with a proper text to be included in H.233 for defining the operation mode of IDEA.

The proposal (TD26) for giving a codepoint for BARAS was also accepted on the condition that the texts to go into H.233, if necessary, are prepared in time for next H.233 revision.

Since in general the entries in ISO/IEC 9979 registers of algorithms are not sufficiently specific, in terms of parameters or modes, to guarantee interworking, it was agreed that all necessary additional information associated with each algorithm identifier will be contained in a normative Annex; thus FEAL, DES and IDEA all feature in this Annex. There are, however, no non-normative references: sponsors of algorithms must ensure that ISO/IEC 9979 register entries are sufficiently documented.

It was agreed that draft revised H.233 was stable enough to be put to Res.1 approval in the next SG15 meeting. The text is found in TD 63 (Plen).

c) H.242

Revision of H.242 was also postponed by one meeting. The current draft for revised H.242 includes a method for requesting and conveying network addresses in various ways, and other points agreed at

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the meeting (Annex 21). Administrations are invited to send comments on these points by 15 September 1994, based on which the Rapporteur will prepare the next draft.

d) H.230 was enhanced to include necessary codes related to channel aggregation, sound-programme channels and conveyance of network addresses, and the definition of MBE messages was clarified. It was agreed to put revisied H.230 forward to Res.1 approval in the next meeting. The stable draft in contained in TD59(Plen).

5. Future work

5.1 WP1/15 will meet next on 6-17 February 1995. It is noted that the next meeting of SG/WP is scheduled for 13-24 November 1995 subject to the approval in the Council.

5.2 Joint Q2,3/15 Rapporteurs' meeting to review and prepare drafts for H.231, H.242, 243, H.244, H.24X and H.320 will be held most likely in the week of 28 November - 2 December 1994 in Middletown NJ. USA. Objectives and agenda for this meeting appear in Annex 22

5.3 Experts meeting on video coding and systems in ATM and other networks will be held on;

i) 13-22 July 1994 (18-22 jointly with MPEG) in Norway
ii) 2-11 November (7-11 jointly with MPEG) in Singapore
iii) January 1995 in Japan

Objectives and agenda for these meetings are contained in Annex 23

5.4 Experts meeting on low bit-rate videophone will be held on;

i) 25-27 July 1994 in Norway
ii) 10-12 October 1994 in USA
iii) 9-11 January 1995 in the Netherlands

Objectives and agenda for these meetings appear in Annex 24.

Annexes

Annex 1:	TD68	(to JCG/QOS/NP)
Annex 2:	TD50	(to SG9)
Annex 3:	attached in the following(AV/MM framework)	
Annex 4:	TD58	(to SG12)
Annex 5:	TD44	(to SG9 and WP3/15)
Annex 6:	Reproduce TD36, with Figure 2 replaced by TD 53.	
Annex 7:	TD51	(to SC29)
Annex 8:	TD64	(to MPEG)
Annex 9:	TD49	(to Rap.Q10/8)
Annex 10:	Reproduce TD28 pp1-20	
Annex 11:	TD56rev.	
Annex 12:	Reproduce TD42 but delete the first four lines at the beginning and the last line of the text.	
Annex 13:	TD35(Plen)	(H.320rev)
Annex 13a:		(to SG1)
Annex 14:	TD65(Plen)	
Annex 15:	TD60(Plen) + TD61(plen)	
Annex 16:	TD	(to SC6)
Annex 17:	TD	(to SG8)
Annex 18:	TD11	(draft H.231)
Annex 19:	TD12	(draft H.243)
Annex 20:	TD	(to SG9)
Annex 21:	TD63(plen)	(rev.H.242)

Annex 22

Objectives and Agenda for joint Q2 and 3/15 Rapporteur's meeting

1) Site: Middletown NJ AT&T facility during November 1994, sponsored by AT&T GBCS.

2) Objectives:

AVC-638

- Review drafts of H.231, H.243, H.242, H.BAGG(H.244), and H.320 with the direction of resolving issues so that stable white documents can appear at the February 95 WP1/15 meeting.

- Review initial draft of H.24X and discuss related issues.

3) Agenda:

1.Opening, Orientation
2.Continuous Presence papers
3.Other H.231/H.243 presentations
4.H.BAGG (H.244) presentation
5.H.242 presentation
6.H.320 presentation
7.Possible further continuous presence discussion if required
8.H.233??
9.H.24X
10.Review of meeting report

Annex 23
Meetings of the Experts Group for Video Coding and Systems in ATM and Other Network Environments

1) July 1994

Objectives
- resolve fundamental open issues of H.22X, H.32X, H.32Y, H.32Z
- refine draft Recommendation texts

Agenda
1. review of the previous meetings
2. discussion on H.22X, H.32X, H.32Y, H.32Z
3. discussion on hardware trials
4. inputs to the joint sessions with MPEG

2) November 1994

Objectives
- resolve other open issues of H.22X, H.32X, H.32Y, H.32Z
- refine draft Recommendation texts
- reflect the ITU-T comments to the common text Rec. H.262, H.222.0

Agenda
1. review of the previous meetings
2. discussion on H.22X, H.32X, H.32Y, H.32Z
3. discussion on hardware trials
4. inputs to the joint sessions with MPEG

3) January 1995

Objectives
- prepare input documents to the SG15 meeting in February 1995

Agenda
1. editorial refinements to the draft Recommendation texts
2. alignment among relevant draft texts

Annex 24
OBJECTIVES/AGENDA FOR SG15 Q2[LOW BITRATE] MEETINGS

<u>1) NORWAY, JULY 25-27, 1994</u>

OBJECTIVES
-Select a speech codec
-Choose a video format and algorithm
-Finalize decision on Multiplex architecture
-Improve the detail on all Draft Recommendations

AGENDA
1. Opening Session
-Review the May Working Party meeting
-Review all documents
2. Video

3. Speech
4. System
5. Control, Data, Multiplex
6. Closing Session

2) U.S., OCTOBER 10-12, 1994 {the date is to be coordinated with voice coding activites in WP2/15}
OBJECTIVES
-Review characterization tests of speech codec
-Improve the detail on all Draft Recommendations
-Select data channel protocol

AGENDA
1. Opening Session
2. Video
3. Speech
4. Control, Data, Multiplex
5. System
6. Closing Session

3) NETHERLANDS, JANUARY 9-11, 1995
OBJECTIVES
-Final editing of all Draft Recommendations (H.200/AV.257a, H.26P, H.22P, H.24P, H.32P, H.DLP) in stable form

AGENDA
Parallel sessions for all Draft Recommendations chaired by the Editors

Framework for Recommendations for audiovisual/multimedia services

NB: starred Recommendation numbers are not yet approved, and may change.

A.1 Service definition

		Recommendation No .(needs updating)
AV.100	General AV Services	Draft available, F.700
AV.101	Teleconference services, general	NewF.701(F.710in Blue Book)
AV.110	Gen. Principles of Audiographic Conference Services	F.710
AV.111	Audiographic Conf. Teleservices for ISDN	Draft available, F.711
AV.112	Audiographic Conf. Teleservices for B-ISDN	F.712
AV.113	Audiographic Conf. Teleservices for PSTN	
AV.114	(other AGCs, not yet defined)	
AV.120	Videotelephony Services, general	F.720(Res.2 in '92)
AV.121	Videotelephony Telesvs. for ISDN	F.721(Res.2 in '92)
AV.122	Videotelephony Telesvs. for Broadband ISDN	Draft available, F.722
AV.123	Videotelephony telesvs. for PSTN	
AV.124	Videotelephony telesvs. for Mobile cellular and cordless telecom. NWs	
AV.130	Videoconference Services, General	F.730(Res.2 in '92)
AV.131	Videoconference telesvs. for ISDN	
AV.132	Videoconference telesvs. for Broadband ISDN	Draft available, F.732
AV.140	Audiovisual Interactive (Storage/Retrieval) Services, General	Draft available, F.740
AV.150	(other AV-services, e.g. multimedia, not yet defined)	
AV.160	Audiovisula Service Applications	
AV.161	Telewriting Applications	F.761 (F.730 in Blue Book)
AV.170	Distribution Services	

A.2 Infrastructure

		Recommendation No.
AV.200	(General Audiovisual/Multimedia infrastructure)	H.200
AV.210	(Reference networks)	
AV.220	(Transmission multiplexing and synchronizations)	
AV.221	Frame structure for a 64 to 1920 kbit/s channel in audiovisual teleservices	H.221
AV.222a	*(Common text to MPEG-2 System)*	*H.222.0* (H.22W)*
AV.222b	Multiplexing for services in ATM	*H.222.1* (H.22X)*
AV.223	Multiplexing for low bitrate conversational multimedia	H.223* (H.22P)
AV.224	Multiplexing for distribution services	
AV.225	Multiplexing for storage/retrieval services	
AV.230	Frame-synchronous control and indication signals for audiovisual systems	H.230
AV.231	Multipoint control units for audiovisual systems using digital channels up to 2 Mbit/s	H.231

AV.232	(Broadband multipoint control)	
AV.233	Confidentiality system for audiovisual services	H.233
AV.234	*Encryption Key Management and Authentication System for Audiovisual Services*	*H.234* (H.KEY)*
AV.240	(Communication – Principles)	
AV.241	System aspects for the use of the 7 kHz audio codec within 64 kbit/s	G.725
AV.242	System for establishing communication between audiovisual terminals using digital channels up to 2 Mbit/s	H.242
AV.243	Procedures for establishing communication between three or more audiovisual terminals using digital channels up to 2 Mbit/s	H.243
AV.244	Channel Aggregation	H.244* (HB.AGG)
AV.245	Communication Procedures for conversational services on B-ISDN	H.245* (H.24X)
AV.246	Communication Procedures for low bitrate conversational multimedia services	H.246* (H.24P)
AV.247	Communication Procedures for storage/retrieval services	DSM-CC?
AV.250	(Audio coding)	
AV.251	Pulse code modulation (PCM) of voice frequencies	G.711
AV.252	7 kHz audio-coding within 64 kbit/s	G.722
AV.253	(Audio coding at 16/24 kbit/s)	
AV.254	Coding of speech at 16 kbit/s using low-delay code excited linear prediction	G.728
AV.255	Audio coding for storage/retrieval	MPEG audio (ISO/IEC 11172-3)
AV.256	Audio coding for use on B-ISDN	
AV.257a	SpeechAudio coding for low bitrate conversational multimedia services ("near term")	G.LBR/N
AV.257b	SpeechAudio coding for low bitrate conversational multimedia services ("far term")	G.LBR/L
AV.260	(Video coding)	
AV.261	Video codec for audiovisual services at *p* x 64 kbit/s	H.261
AV.262	(Video coding for use on B-ISDN)	H.262 | ISO/IEC13818-2
AV.263	Video coding for low bitrate conversational multimedia services ("near term")	H.263* (H.26P)
AV.264	Video coding for low bitrate conversational multimedia services ("far term")	H.264* (H.26L)
AV.265a	Video coding for storage/retrieval up to about 1 Mbit/s	MPEG-1 Video (ISO/IEC 11172-2)
AV.266a	(Video coding for distribution)	J.VD?
AV.266b	(Video coding for distribution) - HDTV	J.VH?
AV.270	*(Data/telematic protocols for multimedia systems)*	
AV.271	*Transmission protocols for multimedia data*	T.120
AV.272	*Data Link, Network and Transport protocols*	T.123
AV.273	Multipoint communications service	T.122 + T.125
AV.274a	Generic Conference Control	T.124*
AV.274b , c, d...	Bandwidth control, Audio & Video Control, Reservations	T.BWC, T.AVC, T.RES
AV.275a	Still image protocol	T.SI
AV.275b , c, d...	Binary File Transfer, Transparent Data Channels, Facsimile, Sound, Moving Pix...	T.CBFT....
AV.279	Low latency simplex protocol	H.224* (H.DLL)
AV.280	(For future purposes)	
AV.281	Far-end camera control	H.281* (H.FECC)
AV.290	(Interworking with pre-existing systems)	
AV.291	(Interworking with H.120/H.130 systems)	

A.3 Systems and terminal equipment

AV.300	(General AV systems/terminals)	
AV.310	(TC systems and equipment)	
AV.311	Audiographic teleconference	Draft available (???)
AV.320	Visual telephone systems and equipment	H.320
AV.321	(Broadband visual telephone)	H.321* (H.32X)
AV.322		H.322* (H.32Y)

AV.323		H.323* (H.32Z)
AV.324		H.324* (H.32P)
AV.330	(Equipment for AV retrieval, systems)	
AV.331	Broadcasting type multipoint systems	H.331
AV.340	(Equipment for distribution (receiver terminals) and related multiple uses)	
AV.341	Set-top box	maybe IEC?

Where do Sound Programme Channels go? Also proposal re sound channels on ATM.

SG12 target Rec. on Quality in multimedia - in AV.300 section?

A.4 Call control matters

AV.410	Reservation systems
AV.420	Call control (including multipoint)
AV.440	(Multipoint call set-up)
AV.441	Procedures not requiring special network capabilities
AV.442	Procedures requiring special network capabilities

TD 51 (1/15) **revised**

ANNEX

Questions: 2/15, 3/15

TO: Liaison statement to ISO/IEC JTC1/SC29

SOURCE: ITU-T Study Group 15, WP1/15 (Geneva 16-27 May 1994)

TITLE: Common text approach to ISO/IEC 13818-1 (MPEG-2 Systems)

FOR: Action

DEADLINE: November 1994

CONTACT: Makoto YAMASHITA
Chairman of Working Party 1/15 in ITU-T SG15
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At its meeting held during 16-27 May 1994 in Geneva, SG15 considered application of the common text approach to the ISO/IEC standard 13818-1 (MPEG-2 Systems) according to the recommendation from the Experts Group for Video Coding and Systems in ATM and Other Network Environments.

Based on the understanding that the SG15 Experts Group have had joint meeting sessions with MPEG in this area as well as video coding area and that the specifications should be commonly used among different applications as much as possible to promote interworking, SG15 decided to apply the common text approach also to MPEG-2 Systems.

The current SG15 plan is to invoke Resolution No. 1 to the following two common text Recommendations at the next SG15 meeting in February 1995;

- ITU-T Recommendation H.222.0 | ISO/IEC 13818-1

Information Technology - Generic Coding of Moving Pictures and Associated Audio: Systems

- ITU-T Recommendation H.262 | ISO/IEC 13818-2

Information Technology - Generic Coding of Moving Pictures and Associated Audio: Video

For the network adaptation of audiovisual communication applications to ATM environments, we are developing ITU-T Recommendation H.222.1 which provide necessary functions connecting between the elementary stream layer and the AAL layer. H.222.1 will refer to H.222.0 for such functions as multimedia multiplex and synchronization and timebase recovery; H.222.1 will also include other functions specific to communication applications and/or ATM networks.

We request continued support of ISO/IEC JTC1/SC29 and its WG11 (MPEG) toward achieving a harmonized set of standards for audiovisual communications.

END

TD 64 (1/15) **revised**

ANNEX

Questions: 3/15

TO: Liaison statement to ISO/IEC JTC1/SC29

SOURCE: ITU-T Study Group 15, WP1/15 (Geneva 16-27 May 1994)

TITLE: Comments on the DSM-CC work in MPEG

FOR: Information

CONTACT: Makoto YAMASHITA
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At its meeting held during 16-27 May 1994 in Geneva, Working Party 1/15 of Study Group 15 has reviewed the DSM-CC extension work of MPEG as part of the progress report from the Experts Group for Video Coding and Systems in ATM and Other Network Environments which has been collaborating with MPEG for its phase 2 work.

DSM-CC is deemed as Control and Indication (C&I) signals in our terminology which are used for end-to-end signaling between two terminals or between a terminal and a Multipoint Control Unit.

We have now ITU-T Recommendation H.230 as attached for your information. Though H.230 is intended for general audiovisual and multimedia applications, the currently defined C&I signals are mostly motivated by videoconferencing and videophone applications. WP1/15 intends to extend them to cover other applications such as multimedia storage/retrieval services.

Working Party 1/15 wishes to have close contact on your DSM-CC extension development toward establishing a harmonized set of audiovisual/multimedia communication standards.

END

INTERNATIONAL TELECOMMUNICATION UNION
TELECOMMUNICATION STANDARDIZATION SECTOR
STUDY PERIOD 1993-1996

Temporary Document 42(1/15)

Geneva, 16-27 May 1994

Questions: 2/15

SOURCE: RAPPORTEUR FOR Q.2/15 (Sakae OKUBO)
TITLE: ERRORS IN RECOMMENDATION H.261 - MARCH 1993 ISSUE

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1. Possible errors pointed out in COM 15-67-E (USA) are now correct in the recent publication of the March 1993 issue.

2. However, the following errors related to representation of "number of bits" or "bit rate" are found,

1) title on the cover page

kbits ==> kbit/s

2) 2nd paragraph of §5.2

.... not exceed 256 kbits. ==> ....not exceed 256 Kbits. K=1024.

3) 3rd paragraph of §5.2

.... not exceed 64 kbits. ==> .... not exceed 64 Kbits.

4) 3rd bullet of §D.5

256 kbit/s for CIF ==> 256 Kbits for CIF
64 kbit/s for QCIF ==> 64 Kbits for QCIF

These errors should be immediately publicized and be corrected in the next publication.

END