AVC-652

TD18rev.(AVMMS)

June 1, 1994

Title: Report of the First Meeting of the JCG on AVMMS [Audiovisual/Multimedia Services]

Source: Chairman, JCG/AVMMS (M.Yamashita)

1. Introduction

The first meeting of the Joint Coordination Group on AVMMS (Audiovisual/Multimedia Services), convened by collective-letter 3/15 of 22 February 1994, held its first meeting in Geneva, 30-31 May 1994, under the chairmanship of Mr. M.Yamashita, Vice-chairman of Study Group 15. The list of attendees appears in the Attachment1. The agenda of the meeting is provided as Attachment 2. A list of the input documents and documents generated during the meeting is contained in Attachment 3.

Since it was the first meeting of the JCG, the main objectives of the meeting were to;

- Review the current status of studies on AVMMS carried out in the relevant Study Groups,
- Identify interrelationships, potential overlaps and gaps in the work plan,
- Coordinate the work schedule in determination of the priority
- Review and assess relationships with other organizations working in the same field.

2. Terms of reference

Terms of reference of the JCG in TD8 were reviewed. Although it was not for the JCG to amend the terms of reference at this time, it was noted that the IVS (Integrated Video Services) baseline document work that was mentioned as one of the possible task oriented subcommittees of the JCG has now finished generating its final version. (COM13-R18)

3. VPA (Video Performance Assessment) Joint Study Effort

Some discussions took place as to how to deal with the study of VPA which was also mentioned as a possible subject for task oriented subcommittee.

It was thought that there were two phases of work to be carried out to progress the study; i) to plan and coordinate the work, and to ii) actually carry out the technical studies. Under item i), it is necessary to;

a. define scope,

b. identify the responsible SG(s)

c. develop a framework for the Recommendations, and

d. set target dates.

Based on the results of the above work, actual studies of ii) have to be expedited in the responsible Study Groups.

The JCG appreciated the work on VPA through correspondence among the members of relevant groups under the initiative of SG1, as presented by Mr.Kelley, and came to the general understanding that the first phase for the VPA has been completed. In continuing the work, it was felt more study is required in order to expand the scope of work for not only video performance but to other general multimedia aspects. It was agreed that these tasks, especially c) and d) above, be taken care of within JCG/AVMMS and JCG/QOS/NP.

In terms of the second phase work, it was proposed that, in order to help acceleration of the studies in the Study Groups, correspondence among the SG representatives, having Miss Contin from SG12 as a focal point, be encouraged.

4. Review of Questions and work plans of the relevant SGs

Questions and work plans of each Study Group relevant to AVMMS were presented by the SG representatives. Attachments 1 and 2 give consolidated lists of Questions and work plans.

Some of the points made were;

- SG1:
  - SG1 will prepare F.700 (Audiovisual general; the title may be changed) by 1995, which will specify service requirements from user's viewpoint.
  - TD15, addressing a proposed new approach for defining performance objectives from the User's point-of-view, was not discussed in the JCG because it was not yet approved by SG1, and because it contained technical studies,: however, SG representatives were asked to review the document and give comments to Mr.Kelley.
- SG7:
  - Experience of SG7 in carrying out collaborative work with JTC1 should be shared with other SGs initiating similar activities.
- SG8:
  - There seems to be no need at least in SG8 to create a new Question to deal with the emerging VOD (Video on Demand) since it is covered by a related Question. However, the work has just been started and harmonization of studies in the relevant SGs is indispensable.
- SG9:
  - SG9 Questions are still subject to revision; Recommendation development plan will be worked out.
  - Suggestion was made to include SGs 1 and 8 as relevant Groups for the study of Questions A and B/9.
- SG11:
  - For the interworking of N-ISDN and B-ISDN, SG13 is enhancing I.580 which will set the requirements for interworking, on which SG11 will specify the signalling schemes.
- SG12:
  - SG 12 is developing both conversational and viewing/listening test methods to evaluate the transmission quality of audiovisual and multimedia services
- SG13 (IVS Baseline Document):
  - It was noted that TD6 was the final version for IVS Baseline Document consolidated by SG13. The JCG appreciated the work done in SG13.

    The JCG agreed to take over the coordination aspect of the IVS work. It was felt that the scope of the document which would be developed by this JCG should not be limited to broadband video only, but expanded to narrowband and broadband multimedia services. Thus the document will make use of a certain portion of the present IVS Baseline Document, but it will have to be prepared from scratch based on such material as contained TD9. SG representatives were invited to provide information to the JCG so that preparation of this document can be initiated.
- SG15
  - Work has for some years been focused on conversational multimedia systems for N-ISDN, but now there is a broadening into B-ISDN, LANs and PSTN. All the work is harmonized within a framework, effectively within the sections A.2 and A.3 of TD12 (Framework for Recommendations for audiovisual/multimedia services).

The list of relevant Questions and the work plan for developing Recommendations are contained in Annexes 1 and 2. Note that Annex 2 makes use of the information compiled by TSAG at their meeting in April 1994.

In conjunction with the various activities in the SGs, a diagram attempting to identify necessary standardization areas and any gap/duplication, if any, was presented in TD9. An extract from TD9 is reproduced in Annex 3. It was felt that the completed figure and table will form a part of the new baseline document discussed above.

5. Relationships with other organizations

5.1 ETSI TE10

In response to ETSI TE10's suggestion to establish a liaison to each other, Mrs. Abecasis agreed to carry to ETSI TE10 information on the results of our JCG and vice-versa.

5.2 Other bodies

It was mentioned that distinction needs to be made between other international standardization bodies (ISB) and the consensus forming bodies (CFB). Methods have been set up for collaborative work within ISBs; however, the relationship with CFBs has to be treated on a case-by-case basis.

According to the appropriate areas of responsibility of ITU-T and other ISB study groups, standards requirements should be clearly established in coordination with the CFBs in order that timely contributions be made to achieve the targets desired, within the formal standardization process. Furthermore, close coupling with the CFB work should be possible through companies which are members of both organizations.

6. Items requiring immediate action

6.1 Framework for Recommendations for audiovisual/multimedia services

An expanded framework for Recommendations for audiovisual/multimedia services was presented in TD12. The framework is reproduced as Annex 4 of this report. Points made against this framework include;

- intended contents of the Recommendations need to be provided to better show its scope and what it will actually specify,
- a new section is necessary for quality of services Recommendations,
- the framework should only contain those Recommendations having direct relevance to AVMMS; we should avoid the list becoming too long,

Since this framework is a living list, SG representatives were asked to consider this document and to forward comments and new proposals to the JCG Chairman.

6.2 Study of IMS (Interactive Multimedia Services)

The need for proper planning and consequently to put more efforts in the ITU-T Study Groups to the development of standards necessary for such services as VOD (Video on Demand), or what may be called IMS (Interactive Multimedia Services) in general, was strongly identified. Although it was mentioned that parts of the study are already done in some SGs, it was felt that work is necessary to identify the interfaces, requirements and the Recommendations under the responsibility of ITU-T standardization. In order to increase momentum in the work of ITU-T and to give a home to the work carried out by the CFBs which are non-International Standardization Bodies, it was found that the following three steps are necessary;

1) to inform the world outside ITU-T about the agreement here so that it will receive more contributions,
2) to plan the work for IMS standardization
3) to actually work according to the plans.

For items 1) and 2) for which the JCG has responsibilities, it was agreed that the JCG will take the following actions;

- to record our determination in the JCG meeting report so that it will serve as a message to the world outside ITU; use of other means for publicity will also be explored;
- to initiate correspondence among the SG representative on the planning; since SG8 is meeting in three weeks time, the JCG asked SG8 representative to take the matter to SG8 and discuss what standards are required for the IMS from SG8 point of view. The correspondence by the SG representatives will build on this initial input from SG8. The JCG Chairman will act as a reflector for the correspondence. It was stressed that in the light of infrequent SG meetings, correspondence may have to be carried out on a personal basis.
- each SG will consider if any modification to existing Questions or establishment of new Questions are needed to foster the study of IMS. At the same time, inclusion of a suitable text to the JCG/AVMMS terms of reference will be considered. The text could be called a task oriented Question and will describe the objectives of the activities by means of correspondence among the members of JCG. The chairman will attempt to prepare an initial draft for this.

6.3 Profiles for multimedia terminals

In D.146, the need for specifying profiles for multimedia terminals was stressed. The rationale is as follows;

The range of available standardized options is continually widening, and this poses a problem: if the terminals which should (from the user's point of view) interwork do not all implement at least a common

subset of all the possibilities, then despite the options being in a harmonized standard set there is increasingly the probability that two terminals, each itself entirely conformant to suitable standards, will nevertheless have little or nothing in common and so cannot communicate to the level of reasonable expectation of the users. The service achieved is variable, sometimes poor, bringing the profession into disrepute. It is therefore appropriate to specify profiles for the system, expressing the common set of capabilities which all conformant terminals must have. Conformance to a profile ensures interworking with other terminals to the same profile. A terminal may conform to two or more profiles, and may have (probably has) capabilities beyond those embodied in the profile. Communication between terminals having greater capabilities is in no way inhibited by declaration of a profile.

SG1 was requested to consider requirements for such profiles for multimedia terminals.

7. Future activities

It was agreed that the work of JCG/AVMMS would be progressed through correspondence. No next meeting will be planned for the time being until a need is identified by the JCG members.

Annex 1

List of relevant Questions on AVMMS(Audiovisual Multimedia Services)

SG	Q	Title
ITU-T SG1	20/1	Audiovisual multimedia services
ITU-T SG2		
ITU-T SG7	4/7	Routing principles for public data networks
	5/7	Multicast
	7/7	Further study of the DTE/DCE interfaces for packet-mode data terminal equipments
	15/7	Directory systems
	16/7	Reference model and components for open distributed processing
	17/7	testing of data communications protocols
	18/7	X.400/X.500 conformance testing
	19/7	Open System Interconnection (OSI) architecture
	20/7	Security services, mechanisms and protocols for ITU-T applications
	21/7	Open systems interconnection (OSI) application layer
	22/7	Open systems interconnection (OSI) presentation and session layers
	23/7	Open systems interconnection (OSI) transport and network layers
	24/7	Open systems interconnection (OSI) data link and physical layers
ITU-T SG8	2/8	Syntax videotex
	3/8	Open document architecture
	7/8	Protocol aspect of videotex
	10/8	Audiographic conferencing
	11/8	Protocols for interactive audiovisual services (AVIS)
	16/8	Common component for image communication
ITU-T SG9	2/9	Methods of measurement, test signals and operational requirements for sound-programme transmission
	3/9	Technical methods for ensuring privacy in long-distance international television transmission
	5/9	Standards for secondary distribution of television signals (conventional and HDTV)
	6/9	Laws of addition for impairments associated with all-digital and mixed analogue-and-digital transmission of television signals
	7/9	Application of insertion test signals to digital and mixed analogue and digital television circuits
	9/9	Estimation of transmission performance of analogue sound-programme circuits shorter or longer than the hypothetical reference circuit
	10/9	Performance objectives for international connections and circuits carrying sound-programme signals
	11/9	Standards for the digital transmission of sound-programme signals on one, two or three 64 kbit/s channels
	12/9	Definition of a digital hypothetical reference connection for digital sound-programme transmission

	13/9	Standards for digital interface between studio and dedicated or integrated services digital networks
	14/9	Availability of international sound-programme transmission circuits
	19/9	Definitions, measurement methods and objectives related to digital transmission impairments and operational requirements for the transmission of digital television and digitally encoded analogue television signals
	22/9	Subjective assessment of sound quality in broadcasting
	23/9	Parameters and tolerance limits for the technical quality of programmes intended for international exchange
	24/9	Subjective assessment of sound quality in broadcasting using digital techniques
	25/9	Digital audio coding standards
	26/9	Determination of the subjective loudness of a broadcasting programme
	27/9	Measurement and control of subjective loudness in broadcasting
	28/9	Standards for the transmission of television signals (conventional and HDTV) for contribution
	29/9	Standards for the transmission of television signals (conventional and HDTV) for primary distribution
	A/9	Ancillary services carried on networks predominantly intended for the secondary distribution of television
	B/9	Requirements and possibilities for interactivity in the secondary distribution of television
	C/9	Use of non-homogeneous networks comprising digital and analogue links for the secondary distribution of television
	D/9	Use of hybrid links for the secondary distribution of television into the user's premises
	E/9	Transmission of MPEG-compressed television signals on 34-45 Mb/s circuits
	F/9	Transmission of enhanced television signals over digital links
	I/9	Development of a test tool for MPEG2 codecs
ITU-T SG11	1/11	Switching functions and signalling information flows for implementation of basic and supplementary services
	6/11	Intelligent Network capability sets
	7/11	Signalling, Call Handling and Management Requirements for Universal Personal Telecommunications
	8/11	Signalling requirements for existing and future land mobile and satellite mobile networks
	10/11	Signalling Requirements for Broadband ISDN
	15/11	Updating and enhancement of ISDN user-network interface call control protocols
	21/11	Updating and enhancement of ISDN network node-to-node interface call control protocols
ITU-T SG12	21/12	Echo transmission time and stability in telephone networks, ISDN and interconnection with ISDN
	22/12	Audiovisual quality in multimedia services
ITU-T SG13	2/13	Network capability description for support of B-ISDN services
	3/13	Network capabilities for the support of multimedia services in 64k-ISDN and B-ISDN
	8/13	B-ISDN resource management

	9/13	Interworking of B-ISDNs with other networks
	13/13	Refinements and enhancements to B-ISDN customer access Recommendations
	14/13	Functional characteristics of interfaces in access networks
	16/13	General performance issues
	17/13	availability performance
	18/13	Security performance
	19/13	Error performance
	20/13	Performance for ISDN connection processing
	28/13	Integrated Video Services (IVS) principles for B-ISDN
ITU-T SG15	1/15	Equipment for digital sound-programme and television transmission
	2/15	Visual telephone systems including video conferencing and videophone
	3/15	Harmonization of audiovisual systems
	5/15	Variable bit-rate/embedded operation of LD-CELP
	6/15	Audio and wideband speech coding in public telecommunication networks
	7/15	Encoding of speech signals at rates around 4 kbit/s
	9/15	Speech packetization and wideband packet systems
	12/15	Encoding of speech signals at rates around 8 kbit/s
	13/15	Digital circuit multiplication equipment (DCME) and systems (DCMS)
	14/15	Design and network interaction of acoustic processing devices
	16/15	Speech, voice-band and audio transmission in ATM/B-ISDN systems
ITU-R SG10	78-1/10	Standards for the transmission of several sound signals in open television channel in terrestrial or satellite broadcasting including high-definition and enhanced television systems
	79/10	Suitable sound systems to accompany high-definition television and enhanced television systems
	80-1/10	Subjective assessment of sound quality in broadcasting
	91-1/10	Digital recording of sound programmes on magnetic tape for international exchange
	102/10	Transmission of data information as an alternative to the main programme in frequency-modulation sound broadcasting
	105/10	Multilingual services in multichannel sound systems
	206/10	Recording of sound programmes in the case when several programmes might be broadcast in the same digital multiplex
	207/10	Standard for digital audio techniques
	208/10	Low bit-rate audio coding standards
	209/10	Parameters and tolerance limits for the international exchange of sound programmes
	210/10	Objective perceptual quality assessment methods
ITU-R SG11	27-3/11	Standard for the high-definition television studio and for international programme exchange
	31-1/11	Performance and testing of cabled distribution systems for television signals
	42-2/11	Enhanced television
	46/11	Application of a layered model to digital television chains
	47-1/11	Standards for digital high definition television

	48/11	Constitution of a system of stereoscopic television
	58/11	Quality target of overall television systems and allocation of tolerances
	65-1/11	Interfaces for digital video signals
	69-1/11	The compatibility of the HDTV digital standard with existing and future standards
	70/11	Effect of display technology on the HDTV standard
	71-1/11	Objective measurement in an overall HDTV environment
	72-1/11	Multiplexing of data services in a broadcasting channel
	74-1/11	Data broadcasting services provided in a broadcasting channel
	77-1/11	Conditional-access broadcasting systems
	100-1/11	Satellite broadcasting of high-definition television (HDTV)
	104-1/11	Recording of television programmes on optical disks for international exchange
	109-1/11	Recording of high-definition television programmes on cinematographic film for international exchange
	110-1/11	Transfer of high-definition television programmes to non-broadcast media for domestic use according to IEC and ISO standards
	115-1/11	Interconnection specifications for audiovisual equipment related to broadcasting
	119-1/11	The harmonization of standards between broadcast and non-broadcast applications of television
	120/11	Application of video displays in a varying aspect ratio environment
	201/11	HDTV still image recording ("HDTV photography")
	204/11	Data broadcasting systems and services in an HDTV environment
	205/11	Parameters for integrated services digital broadcasting (ISDB)
	211-1/11	Subjective assessments of the quality of television pictures including alphanumeric and graphic pictures
	226/11	Extremely high-resolution imagery
	227/11	Harmonization between television and computer systems
	228/11	Application of new concepts in digital television encoding
ISO/IEC JTC1 SC29	05.01.05	Coding of moving Pictures and Associated Audio for Digital Storage Media up to about 1.5 Mbit/s - Part 5 : Technical Report on Software for ISO/IEC 11172
	05.02.05	Generic Coding of Moving Pictures and Associated Audio Information - Part 5 : Technical Report on Software for ISO/IEC 13818
	05.02.06	Generic Coding of Moving Pictures and Associated Audio Information - Part 6 : Systems Extensions
	05.02.07	Generic Coding of Moving Pictures and Associated Audio Information - Part 7 : Audio Extensions
	06	Coding of Multimedia and Hypermedia Information
	06.01	Coding of Multimedia and Hypermedia Information - Part 1 : MHEG Objects Representation - Base Notation (ASN.1)
	06.02	Coding of Multimedia and Hypermedia Information - Part 2 : Alternate Notation (SGML)
	06.03	Coding of Multimedia and Hypermedia Information - Part 3 : MHEG Extensions for Scripting Language Support
	07	Coding of Standard Multimedia Scripting Language (SMSL)
	10	Lossy / Lossless Coding of Bi-level Images

11	Compression of up to 5-D Images
12	Lossless Compression of Continuous-Tone Still Pictures
13.01	Very-low Bitrate Audio-Visual Coding Part 1 : Systems
13.02	Very-low Bitrate Audio-Visual Coding Part 2 : Video
13.03	Very-low Bitrate Audio-Visual Coding Part 3 : Audio
13.04	Very-low Bitrate Audio-Visual Coding Part 4 : Conformance Testing
01	Picture Coding Methods
01.01	Picture Coding Methods - Part 1 : Identification
01.02	Picture Coding Methods - Part 2 : Procedure for Registration
02	Coded Representation of Computer Graphic Images
02.01	Coded Representation of Computer Graphic Images - Part 1 : Encoding principles for picture representation in a 7-bit or 8-bit environment
02.02	Coded Representation of Computer Graphic Images - Part 2 : Incremental encoding point lists in a 7-bit or 8-bit environment
03	Coded representation of Picture and Audio Information - Progressive Bi-level Image Compression
04	Digital Compression and Coding of Continuous-tone Still Images
04.01	Digital Compression and Coding of Continuous-tone Still Images - Part 1 : Requirements and Guidelines
04.02	Digital Compression and Coding of Continuous-tone Still Images - Part 2 : Compliance Testing
04.03	Digital Compression and Coding of Continuous-tone Still Images - Part 3 : Extensions
05	Coded Representation of Moving Pictures and Associated Audio
05.01	Coding of Moving Pictures and Associated Audio for Digital Storage Media up to about 1.5 Mbit/s
05.01.01	Coding of Moving Pictures and Associated Audio for Digital Storage Media up to about 1.5 Mbit/s - Part 1 : Systems
05.01.02	Coding of Moving Pictures and Associated Audio for Digital Storage Media up to about 1.5 Mbit/s - Part 2 : Video
05.01.03	Coding of Moving Pictures and Associated Audio for Digital Storage Media up to about 1.5 Mbit/s - Part 3 : Audio
05.04	Coding of Moving Pictures and Associated Audio for Digital Storage Media up to about 1.5 Mbit/s - Part 4 : Conformance Testing
05.02	Generic Coding of Moving Pictures and Associated Audio Information
05.02.01	Generic Coding of Moving Pictures and Associated Audio Information - Part 1 : Systems
05.02.02	Generic Coding of Moving Pictures and Associated Audio Information - Part 2 : Video

	05.02.03	Generic Coding of Moving Pictures and Associated Audio Information - Part 3 : Audio
	05.02.04	Generic Coding of Moving Pictures and Associated Audio Information - Part 4 : Conformance Testing
	06	Coded Representation of Multimedia and Hypermedia Information Objects
	06.01	Coded Representation of Multimedia and Hypermedia Information Objects - Part 1 : Base Notation
	06.02	Coded Representation of Multimedia and Hypermedia Information Objects - Part 2 : Alternate notation
	07	Coded Representation of Audio Visual Interactive Scriptware
	09	Image Compression Across Multiple Components
	10	Lossy Coding of Bi-level Images
	11	Hierarchical Compression of 5-D Images with I-16bpp
	12	Next Generation Lossless Compression of Continuous-Tone Still Pictures
	13	Very-low Birate Audio-Visual Coding

Note: Questions for ITU-T are extracted from Annex 4 of TSAG-R2 (Work programme) as well as from information provided by SG representatives.

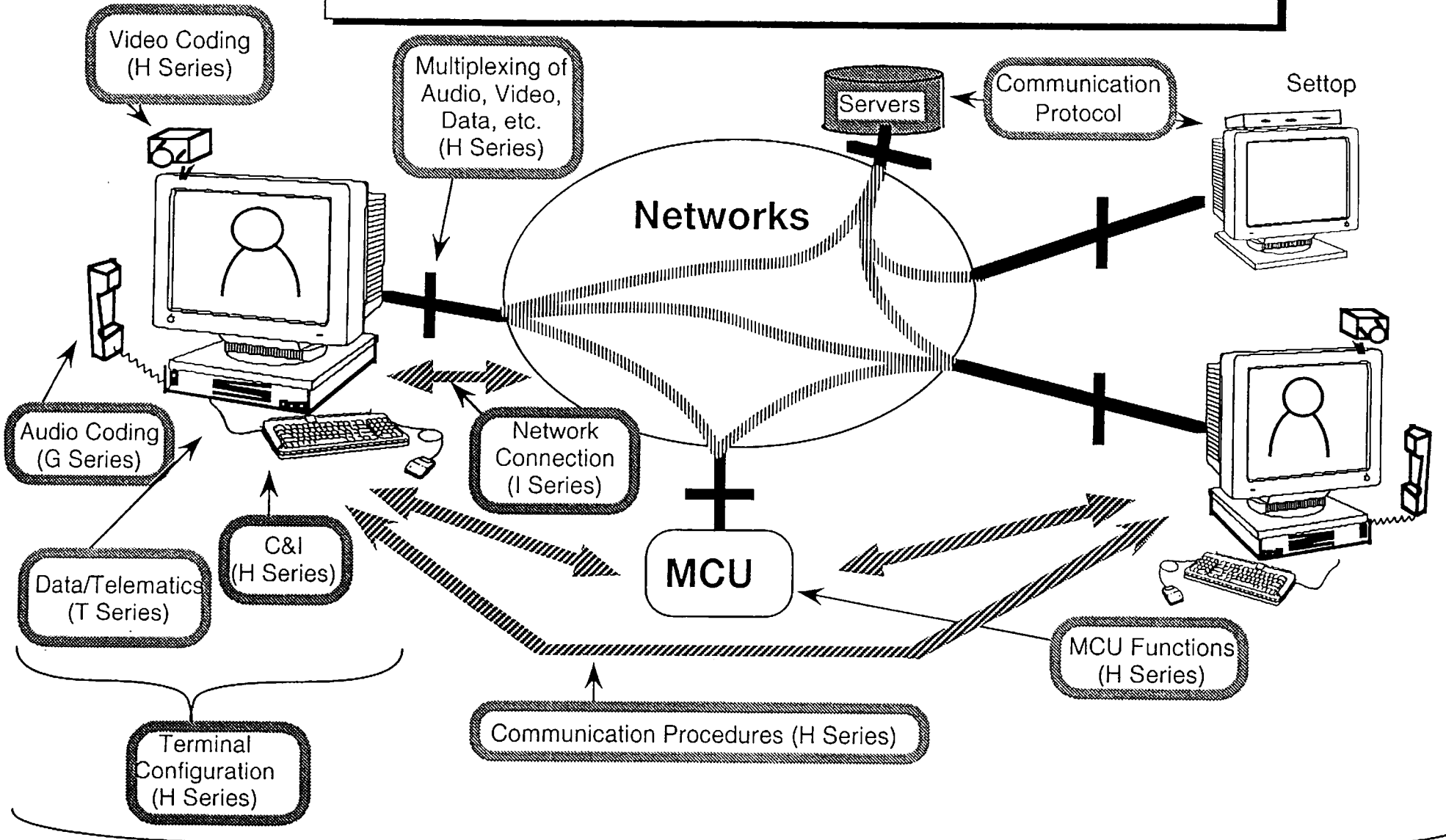
Annex 2

Reproduce pages 344-353 of TSAG/DT/93(rev.1)-E

(14-20 April 1994)

(Annex 3)

Figure Specifications necessary for providing AVMMS



Note; references to Recs. are only to those in ITU-T

Annex 4

Title:Framework for Recommendations for audiovisual/multimedia services

(Note 1): Starred Recommendation numbers are not yet approved, and may change.

(Note 2) Parentheses mean that the entries are for information purposes or that Recommendations are not planned at this moment for those AV numbers.

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/IEC11172-3)
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.262IMPEG2 Video (H.26X)*
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.265b	(Video coding for storage/retrieval above 1 Mbit/s)	
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 on 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

Attachment 1 List of participants

Japan (Chairman)	M. YAMASHITA	
Germany	M. RAUSCH S.	(ITU-T Study Group 1)
	M. SEBESTYEN I.	(ITU-T Study Group 8)
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	M. MITRA N.	(ITU-T Study Group 7)
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	Mme CONTIN L.	(ITU-T Study Group 12)
United Kingdom	M. KENYON N.D.	(ITU-T Study Group 15)
Japan	M. TAWARA Y.	
	M. NAITO Y.	
	M. OKUBO S.	
	M. WASHIDA T.	
Portugal	Mme ABECASIS T.	
TSB	M. BIGI F.	
	Mme KATONA KISS J.	

Attachment 2 Meeting agenda

1. Introduction
2. Approval of the agenda
3. Examination of Recommendations of the TSAG
4. Terms of reference and principles of work
5. Review of the work programme of the various study groups
6. Relationships with other organizations
7. Identification of interrelationships, potential overlaps and gaps in the work plan
8. Coordination of work schedule in determination of priority
9. Items requiring immediate action
10. Future work programme and work methods
11. Miscellaneous
12. Closure of the meeting

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UIT-T WORK PROGRAMME

AREA	DOMAIN	QUES.	RECOMMENDATION	ST	SUBJECT	TIMING	PRI.
AVMMS	TERMINOLOGY	11/2	E.800	R	Quality of service and dependability vocabulary	94.03	M
		17/7	X.290	R	Conformance testing - concepts	94.11	M
	TERMINALS EQUIPMENT ADAPTORS	10/8	T.120		Introduction to the T. series AV Recs.	93.11	H
		10/8	T.124		Generic Conference Control.	93.11	H
		10/8	T.125		Multipoint Communications Service Protocol Def. (para. 4 of Res. 1/8).	93.11	H
		10/8	T.AVC		High Level Audio and Video Control.	96.06	H
		10/8	T.BWC		Bandwidth Arbitration and Control.	94.06	H
		10/8	T.CBFT		Multipoint Binary File Transfer.	94.06	H
		10/8	T.CFAX		Multipoint Facsimile for AVC and AGC.	94.06	H
		10/8	T.PRO		Application Profiles for AVC and AGC.	94.06	H
		10/8	T.RESV.		Reservations for AVC and AGC.	94.06	H
		10/8	T.SI		Still Image for the Conference (JPEG).	94.06	H
		10/8	T.TDC		Transparent User Data Channels.	94.06	H
		16/8	T.83		JPEG Compliance Testing.	94.06	H
		16/8	T.84		Enhancement to T.81, JPEG.	94.06	M
	INTERFACES/PROTOCOLS	08/8	T.331	R		95.04	M
		08/8	T.430	N		95.04	L
		08/8	T.432, T.433	R	DTAM Service and Protocol.	95.04	H
		08/8	T.435	N	DTAM, (Communication support for interactive document manipulation).	94.06	H
		08/8	T.436	N	DTAM (Communication support for interactive document manipulation).	94.06	H
		10/8	T.120		Introduction to the T. series AV Recs.	93.11	H
		10/8	T.124		Generic Conference Control.	93.11	H
		10/8	T.125		Multipoint Communications Service Protocol Def. (para. 4 of Res. 1/8).	93.11	H
		10/8	T.AVC		High Level Audio and Video Control.	96.06	H
		10/8	T.BWC		Bandwidth Arbitration and Control.	94.06	H
		10/8	T.CBFT		Multipoint Binary File Transfer.	94.06	H

UIT-T WORK PROGRAMME

AREA	*DOMAIN*	*QUES.*	*RECOMMENDATION*	*ST*	*SUBJECT*	*TIMING*	*PRI.*
AVMMS	INTERFACES/PROTOCOLS	10/8	T.CFAX		Multipoint Facsimile for AVC and AGC.	94.06	H
		10/8	T.PRO		Application Profiles for AVC and AGC.	94.06	H
		10/8	T.RESV.		Reservations for AVC and AGC.	94.06	H
		10/8	T.SI		Still Image for the Conference (JPEG).	94.06	H
		10/8	T.TDC		Transparent User Data Channels.	94.06	H
		11/8	T.170	R		94.06	H
		11/8	T.171	N		95.04	H
		11/8	T.172	N		95.04	H
		11/8	T.173	N		95.04	H
		11/8	T.175	N		96.	M
		11/8	T.176	N		95.04	M
	NUMBERING						
	ROUTING						
	SIGNALLING						
	INTERWORKING						
	SYNCHRONIZATION						
	SWITCHING						
	NETWORK CAPABILITY						
	TARIFF/CHARGING/ACCOUNTIGN	16/3	D.188	R	Videoconference	95.	H
	NP/QOS	11/2	E.800	R	Quality of service and dependability vocabulary	94.03	M
		21/12	G.114	R	One way transmission time.	95.02	M
		21/12	G.131	R	Stability and echo.	94.11	M
		14/15	G.167	N	Acoustic echo control	96.	H
	NETWORK MANAGEMENT						
	TRAFFIC ENGINEERING						
	EMC/PROTECTION/SAFETY	02/6	Fire Safety	N	Protection	96.	M

AREA	DOMAIN	QUES.	RECOMMENDATION	ST	SUBJECT	TIMING	PRI.
AVMMS	EMC/PROTECTION/SAFETY	09/15	G.765	R	PCME	95.03	H
	SIGNALS PROCESSING	02/15	G.??	N	Speech coding for mobile/PSTN	95.11	H/M
		02/15	H.262MPEG-2Video	N	Generic coding of Moving Picture	95.03	H
		02/15	H.26P	N	Video coding for narrow telecom.channels at <64 kbit/s	95.11	H
		02/15	H.26P/L	N	Advanced video coding for narrow telecom.channels	98.	L
		05/15	G.728	R	Annex on fixed-point LD-CELP	94.05	H
		05/15	G.728	R	Annex on variable-rate LD-CELP	95.03	H
		06/15	G.ACB	N	Audio coding for use on B-ISDN		L
		06/15	G.WSC	N	Wideband speech coding at 16/24 kbit/s	97.07	M
		07/15	G.4kbps	N	Speech coding at 4 kbit/s	97.	H
		09/15	G.764	R	Packetized voice protocol	93.03	H
		09/15	G.765	R	Appendix on PCME operations guide	95.03	H
		12/15	G.8kbit/s	N	Speech coding at 8 kbit/s	96.	H
		13/15	G.	N	16 kbit/s based-DCME	95.11	H
		13/15	G.766	R	Facsimile demodulation including V. fast	95.11	H
		14/15	G.167	N	Acoustic echo control	96.	H
		16/15		N	Speech transmission over ATM	95.03	H
	LANGUAGES FOR TELECOMMUNICATIONS	17/7	X.292	R	Conformance testing - TTCN	95.06	M
	HUMAN FACTORS						
	SERVICE DEFINITION	20/1	F.720		Videotelephony mobile	95.05	L
		20/1	F.723		PSTN videotelephone	95.02	M
		20/1	F.AVMM		AV/MM services	95.05	H
	BEARER SERVICES						
	TELESERVICES						
	SUPPLEMENTARY SERVICES						
	AUDIOVISUAL/MULTIMEDIA	10/8	T.120		Introduction to the T. series AV Recs.	93.11	H

AREA	DOMAIN	QUES.	RECOMMENDATION	ST	SUBJECT	TIMING	PRI.
AVMMS	AUDIOVISUAL/MULTIMEDIA	10/8	T.124		Generic Conference Control.	93.11	H
		10/8	T.125		Multipoint Communications Service Protocol Def. (para. 4 of Res. 1/8).	93.11	H
		10/8	T.AVC		High Level Audio and Video Control.	96.06	H
		10/8	T.BWC		Bandwidth Arbitration and Control.	94.06	H
		10/8	T.CBFT		Multipoint Binary File Transfer.	94.06	H
		10/8	T.CFAX		Multipoint Facsimile for AVC and AGC.	94.06	H
		10/8	T.PRO		Application Profiles for AVC and AGC.	94.06	H
		10/8	T.RESV.		Reservations for AVC and AGC.	94.06	H
		10/8	T.SI		Still Image for the Conference (JPEG).	94.06	H
		10/8	T.TDC		Transparent User Data Channels.	94.06	H
		11/8	T.170	R		94.06	H
		11/8	T.171	N		95.04	H
		11/8	T.172	N		95.04	H
		11/8	T.173	N		95.04	H
		11/8	T.175	N		96.	M
		11/8	T.176	N		95.04	M
		02/15	G.??	N	Speech coding for mobile/PSTN	95.11	H/M
		02/15	H.22P	N	Multiplex and error control for H.32P	95.11	H/M
		02/15	H.262MPEG-2Video	N	Generic coding of Moving Picture	95.03	H
		02/15	H.26P	N	Video coding for narrow telecom.channels at <64 kbit/s	95.11	H
		02/15	H.26P/L	N	Advanced video coding for narrow telecom.channels	98.	L
		02/15	H.320	R	Visual tel. sys. and equip.	95.03	H
		02/15	H.32P	N	Videophone systems operating at very low bit rates		H
		02/15	H.32X	N	Broadband visual sys. and equipment	95.11	H
		02/15	H.32Y	N	H.320 to B-ISDN	95.11	H/M
		02/15	H.32Z	N	H.320 to LANs	95.03	H/M

AREA	DOMAIN	QUES.	RECOMMENDATION	ST	SUBJECT	TIMING	PRI.
AVMMS	AUDIOVISUAL/MULTIMEDIA	03/15	H.221	R	Frame struct. for 64 - 1 920 kbit/s AV teleservices	95.03	H
		03/15	H.22X	N	Multimedia mux. and synch. for ATM environments	95.11	H
		03/15	H.22Y(AGG)	N	Channel aggregation	94.05	H
		03/15	H.22Z(DLL)	N	Data Link Layer for H.221 LSD/HSD	94.05	H
		03/15	H.230	R	C and I for AV systems	95.03	H
		03/15	H.231	R	MCU	95.03	H
		03/15	H.233	R	Confidentiality system	95.03	H
		03/15	H.234(KEY)	N	Key management and authentication systems for AV services	94.05	H
		03/15	H.242	R	Communication procedures	95.03	H
		03/15	H.243	R	Comm. procedures for MCU	95.03	H
		03/15	H.24X	N	Comm. procedures for B-ISDN visual syst.	95.11	H
		03/15	H.28x(FECC)	N	Far end camera control	94.05	H
		14/15	G.167	N	Acoustic echo control	96.	H
	SERVICE MANAGEMENT						
	O & M	09/15	G.765	R	Appendix on PCME operations guide	95.03	H
	TESTING	17/7	X.290	R	Conformance testing - concepts	94.11	M
		17/7	X.291	R	Conformance testing - abstract test suite	94.11	M
		17/7	X.292	R	Conformance testing - TTCN	95.06	M
		17/7	X.293	R	Conformance testing - test realization	94.11	M
		17/7	X.294	R	Conformance testing - test labs and clients	94.11	M
		17/7	X.295	N	Conformance testing - protocol profile	94.11	M
		17/7	X.296	N	Conformance testing - implementation conformance	95.06	M
	ARCHITECTURE						
	OSI	17/7	X.290	R	Conformance testing - concepts	94.11	M
		17/7	X.291	R	Conformance testing - abstract test suite	94.11	M
		17/7	X.292	R	Conformance testing - TTCN	95.06	M

AREA	DOMAIN	QUES.	RECOMMENDATION	ST	SUBJECT	TIMING	PRI.
AVMMS	OSI	17/7	X.293	R	Conformance testing - test realization	94.11	M
		17/7	X.294	R	Conformance testing - test labs and clients	94.11	M
		17/7	X.295	N	Conformance testing - protocol profile	94.11	M
		17/7	X.296	N	Conformance testing - implementation conformance	95.06	M
	SECURITY	03/15	H.233	R	Confidentiality system	95.03	H
		03/15	H.234(KEY)	N	Key management and authentication systems for AV services	94.05	H
		03/15	H.242	R	Communication procedures	95.03	H
		03/15	H.243	R	Comm. procedures for MCU	95.03	H
	TRANSMISSION SYSTEM/EQUIPMENT	21/12	G.114	R	One way transmission time.	95.02	M
		21/12	G.131	R	Stability and echo.	94.11	M
		02/15	H.22P	N	Multiplex and error control for H.32P	95.11	H/M
		02/15	H.320	R	Visual tel. sys. and equip.	95.03	H
		02/15	H.32P	N	Videophone systems operating at very low bit rates		H
		02/15	H.32X	N	Broadband visual sys. and equipment	95.11	H
		02/15	H.32Y	N	H.320 to B-ISDN	95.11	H/M
		02/15	H.32Z	N	H.320 to LANs	95.03	H/M
		03/15	H.231	R	MCU	95.03	H
		09/15	G.765	R	PCME	95.03	H
		13/15	G.	N	16 kbit/s based-DCME	95.11	H
		16/15		N	Speech transmission over ATM	95.03	H
	INFRASTRUCTURE						
	SYSTEM MANAGEMENT						
	USER SUITABILITY						
	OTHERS						

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UIT-T WORK PROGRAMME

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AREA	*DOMAIN*	*QUES.*	*RECOMMENDATION*	*ST*	*SUBJECT*	*TIMING*	*PRI.*
SOUND & TV TRANSMISSION	TERMINOLOGY	11/2	E.800	R	Quality of service and dependability vocabulary	94.03	M
	TERMINALS EQUIPMENT ADAPTORS						
	INTERFACES/PROTOCOLS						
	NUMBERING						
	ROUTING						
	SIGNALLING						
	INTERWORKING						
	SYNCHRONIZATION						
	SWITCHING						
	NETWORK CAPABILITY						
	TARIFF/CHARGING/ACCOUNTIGN	06/3	D.180	R		96.	M
		14/3		N	Establish a methodology for the region and carry out cost studies.	94-96	H
	NP/QOS	11/2	E.800	R	Quality of service and dependability vocabulary	94.03	M
	NETWORK MANAGEMENT						
	TRAFFIC ENGINEERING						
	EMC/PROTECTION/SAFETY	02/6	Fire Safety	N	Protection	96.	M
	SIGNALS PROCESSING						
	LANGUAGES FOR TELECOMMUNICATIONS						
	HUMAN FACTORS						
	SERVICE DEFINITION						
	BEARER SERVICES						
	TELESERVICES						
	SUPPLEMENTARY SERVICES						
	AUDIOVISUAL/MULTIMEDIA						
	SERVICE MANAGEMENT						
	O & M						

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UIT-T WORK PROGRAMME

AREA	*DOMAIN*	*QUES.*	*RECOMMENDATION*	*ST*	*SUBJECT*	*TIMING*	*PRI.*
SOUND & TV TRANSMISSION	TESTING						
	ARCHITECTURE						
	OSI						
	SECURITY						
	TRANSMISSION SYSTEM/EQUIPMENT						
	INFRASTRUCTURE						
	SYSTEM MANAGEMENT						
	USER SUITABILITY						
	OTHERS						