



XVIIth PLENARY ASSEMBLY
DÜSSELDORF, 1990



INTERNATIONAL TELECOMMUNICATION UNION

RECOMMENDATIONS OF THE CCIR, 1990

(ALSO RESOLUTIONS AND OPINIONS)

VOLUME XII

TELEVISION AND SOUND TRANSMISSION (CMTT)

CCIR INTERNATIONAL RADIO CONSULTATIVE COMMITTEE

Geneva, 1990

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1990
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**PLAN OF VOLUMES I TO XV
XVIIth PLENARY ASSEMBLY OF THE CCIR**

(Düsseldorf, 1990)

VOLUME I (Recommendations) <i>Annex to Vol. I</i> (Reports)	Spectrum utilization and monitoring
VOLUME II (Recommendations) <i>Annex to Vol. II</i> (Reports)	Space research and radioastronomy services
VOLUME III (Recommendations) <i>Annex to Vol. III</i> (Reports)	Fixed service at frequencies below about 30 MHz
VOLUME IV-1 (Recommendations) <i>Annex to Vol. IV-1</i> (Reports)	Fixed-satellite service
VOLUMES IV/IX-2 (Recommendations) <i>Annex to Vols. IV/IX-2</i> (Reports)	Frequency sharing and coordination between systems in the fixed-satellite service and radio-relay system
VOLUME V (Recommendations) <i>Annex to Vol. V</i> (Reports)	Propagation in non-ionized media
VOLUME VI (Recommendations) <i>Annex to Vol. VI</i> (Reports)	Propagation in ionized media
VOLUME VII (Recommendations) <i>Annex to Vol. VII</i> (Reports)	Standard frequencies and time signals
VOLUME VIII (Recommendations) <i>Annex 1 to Vol. VIII</i> (Reports) <i>Annex 2 to Vol. VIII</i> (Reports) <i>Annex 3 to Vol. VIII</i> (Reports)	Mobile, radiodetermination, amateur and related satellite services Land mobile service — Amateur service — Amateur satellite service Maritime mobile service Mobile satellite services (aeronautical, land, maritime, mobile and radiodetermination) — Aeronautical mobile service
VOLUME IX-1 (Recommendations) <i>Annex to Vol. IX-1</i> (Reports)	Fixed service using radio-relay systems
VOLUME X-1 (Recommendations) <i>Annex to Vol. X-1</i> (Reports)	Broadcasting service (sound)
VOLUMES X/XI-2 (Recommendations) <i>Annex to Vols. X/XI-2</i> (Reports)	Broadcasting-satellite service (sound and television)
VOLUMES X/XI-3 (Recommendations) <i>Annex to Vols. X/XI-3</i> (Reports)	Sound and television recording
VOLUME XI-1 (Recommendations) <i>Annex to Vol. XI-1</i> (Reports)	Broadcasting service (television)
VOLUME XII (Recommendations) <i>Annex to Vol. XII</i> (Reports)	Television and sound transmission (CMTT)
VOLUME XIII (Recommendations)	Vocabulary (CCV)
VOLUME XIV	Administrative texts of the CCIR
VOLUME XV-1 (Questions)	Study Groups 1, 12, 5, 6, 7
VOLUME XV-2 (Questions)	Study Group 8
VOLUME XV-3 (Questions)	Study Groups 10, 11, CMTT
VOLUME XV-4 (Questions)	Study Groups 4, 9

All references within the texts to CCIR Recommendations, Reports, Resolutions, Opinions, Decisions and Questions refer to the 1990 edition, unless otherwise noted; i.e., only the basic number is shown.

DISTRIBUTION OF TEXTS OF THE XVIIth PLENARY ASSEMBLY OF THE CCIR IN VOLUMES I TO XV

Volumes and Annexes I to XV, XVIIth Plenary Assembly, contain all the valid texts of the CCIR and succeed those of the XVIth Plenary Assembly, Dubrovnik, 1986.

1. Recommendations, Resolutions, Opinions are given in Volumes I-XIV and Reports, Decisions in the Annexes to Volumes I-XII.

1.1 *Numbering of texts*

When a Recommendation, Report, Resolution or Opinion is modified, it retains its number to which is added a dash and a figure indicating how many revisions have been made. Within the text of Recommendations, Reports, Resolutions, Opinions and Decisions, however, reference is made only to the basic number (for example Recommendation 253). Such a reference should be interpreted as a reference to the latest version of the text, unless otherwise indicated.

The tables which follow show only the original numbering of the current texts, without any indication of successive modifications that may have occurred. For further information about this numbering scheme, please refer to Volume XIV.

1.2 *Recommendations*

Number	Volume	Number	Volume	Number	Volume
48	X-1	368-370	V	479	II
80	X-1	371-373	VI	480	III
106	III	374-376	VII	481-484	IV-1
139	X-1	377, 378	I	485, 486	VII
162	III	380-393	IX-1	487-493	VIII-2
182	I	395-405	IX-1	494	VIII-1
215, 216	X-1	406	IV/IX-2	496	VIII-2
218, 219	VIII-2	407, 408	X/XI-3	497	IX-1
239	I	411, 412	X-1	498	X-1
240	III	415	X-1	500	XI-1
246	III	417	XI-1	501	X/XI-3
257	VIII-2	419	XI-1	502, 503	XII
265	X/XI-3	428	VIII-2	505	XII
266	XI-1	430, 431	XIII	508	I
268	IX-1	433	I	509, 510	II
270	IX-1	434, 435	VI	513-517	II
275, 276	IX-1	436	III	518-520	III
283	IX-1	439	VIII-2	521-524	IV-1
290	IX-1	441	VIII-3	525-530	V
302	IX-1	443	I	531-534	VI
305, 306	IX-1	444	IX-1	535-538	VII
310, 311	V	446	IV-1	539	VIII-1
313	VI	450	X-1	540-542	VIII-2
314	II	452, 453	V	546-550	VIII-3
326	I	454-456	III	552, 553	VIII-3
328, 329	I	457, 458	VII	555-557	IX-1
331, 332	I	460	VII	558	IV/IX-2
335, 336	III	461	XIII	559-562	X-1
337	I	463	IX-1	565	XI-1
338, 339	III	464-466	IV-1	566	X/XI-2
341	V	467, 468	X-1	567-572	XII
342-349	III	469	X/XI-3	573, 574	XIII
352-354	IV-1	470-472	XI-1	575	I
355-359	IV/IX-2	473, 474	XII	576-578	II
362-364	II	475, 476	VIII-2	579, 580	IV-1
367	II	478	VIII-1	581	V

IV

1.2 Recommendations (cont.)

Number	Volume	Number	Volume	Number	Volume
582, 583	VII	625-631	VIII-2	676-682	V
584	VIII-1	632, 633	VIII-3	683, 684	VI
585-589	VIII-2	634-637	IX	685, 686	VII
591	VIII-3	638-641	X-1	687	VIII-1
592-596	IX-1	642	X-1	688-693	VIII-2
597-599	X-1	643, 644	X-1	694	VIII-3
600	X/XI-2	645	X-1 + XII	695-701	IX-1
601	XI-1	646, 647	X-1	702-704	X-1
602	X/XI-3	648, 649	X/XI-3	705	X-1 ⁽¹⁾
603-606	XII	650-652	X/XI-2	706-708	X-1
607, 608	XIII	653-656	XI-1	709-711	XI-1
609-611	II	657	X/XI-3	712	X/XI-2
612, 613	III	658-661	XII	713-716	X/XI-3
614	IV-1	662-666	XIII	717-721	XII
615	IV/IX-2	667-669	I	722	XII
616-620	V	670-673	IV-1	723, 724	XII
622-624	VIII-1	674, 675	IV/IX-2		

1.3 Reports

Number	Volume	Number	Volume	Number	Volume
19	III	319	VIII-1	472	X-1
122	XI-1	322	VI ⁽¹⁾	473	X/XI-2
137	IX-1	324	I	476	XI-1
181	I	327	III	478	XI-1
183	III	336*	V	481-485	XI-1
195	III	338	V	488	XII
197	III	340	VI ⁽¹⁾	491	XII
203	III	342	VI	493	XII
208	IV-1	345	III	496, 497	XII
209	IV/IX-2	347	III	499	VIII-1
212	IV-1	349	III	500, 501	VIII-2
214	IV-1	354-357	III	509	VIII-3
215	X/XI-2	358	VIII-1	516	X-1
222	II	363, 364	VII	518	VII
224	II	371, 372	I	521, 522	I
226	II	375, 376	IX-1	525, 526	I
227*	V	378-380	IX-1	528	I
228, 229	V	382	IV/IX-2	533	I
238, 239	V	384	IV-1	535, 536	II
249-251	VI	386-388	IV/IX-2	538	II
252	VI ⁽¹⁾	390, 391	IV-1	540, 541	II
253-255	VI	393	IV/IX-2	543	II
258-260	VI	395	II	546	II
262, 263	VI	401	X-1	548	II
265, 266	VI	404	XI-1	549-551	III
267	VII	409	XI-1	552-558	IV-1
270, 271	VII	411, 412	XII	560, 561	IV-1
272, 273	I	430-432	VI	562-565	V
275-277	I	435-437	III	567	V
279	I	439	VII	569	V
285	IX-1	443	IX-1	571	VI
287*	IX-1	445	IX-1	574, 575	VI
289*	IX-1	448, 449	IV/IX-2	576-580	VII
292	X-1	451	IV-1	584, 585	VIII-2
294	X/XI-3	453-455	IV-1	588	VIII-2
300	X-1	456	II	607	IX-1
302-304	X-1	458	X-1	610*	IX-1
311-313	XI-1	463, 464	X-1	612-615	IX-1
314	XII	468, 469	X/XI-3	622	X/XI-3

* Not reprinted, see Dubrovnik, 1986.

⁽¹⁾ Published separately.

1.3 *Reports (cont.)*

Number	Volume	Number	Volume	Number	Volume
624-626	XI-1	790-793	IV/IX-2	972-979	I
628, 629	XI-1	795	X-1	980-985	II
630	X/XI-3	798, 799	X-1	987, 988	II
631-634	X/XI-2	801, 802	XI-1	989-996	III
635-637	XII	803	X/XI-3	997-1004	IV-1
639	XII	804, 805	XI-1	1005, 1006	IV/IX-2
642, 643	XII	807-812	X/XI-2	1007-1010	V
646-648	XII	814	X/XI-2	1011, 1012	VI
651	I	815, 816	XII	1016, 1017	VII
654-656	I	818-823	XII	1018-1025	VIII-1
659	I	826-842	I	1026-1033	VIII-2
662-668	I	843-854	II	1035-1039	VIII-2
670, 671	I	857	III	1041-1044	VIII-2
672-674	II	859-865	III	1045	VIII-3
676-680	II	867-870	IV-1	1047-1051	VIII-3
682-685	II	872-875	IV-1	1052-1057	IX-1
687	II	876, 877	IV/IX-2	1058-1061	X-1
692-697	II	879, 880	V	1063-1072	X-1
699, 700	II	882-885	V	1073-1076	X/XI-2
701-704	III	886-895	VI	1077-1089	XI-1
706	IV-1	896-898	VII	1090-1092	XII
709	IV/IX-2	899-904	VIII-1	1094-1096	XII
710	IV-1	908	VIII-2	1097-1118	I
712, 713	IV-1	910, 911	VIII-2	1119-1126	II
714-724	V	913-915	VIII-2	1127-1133	III
725-729	VI	917-923	VIII-3	1134-1141	IV-1
731, 732	VII	925-927	VIII-3	1142, 1143	IV/IX-2
735, 736	VII	929	VIII-3 (1)	1144-1148	V
738	VII	930-932	IX-1	1149-1151	VI
739-742	VIII-1	934	IX-1	1152	VII
743, 744	VIII-2	936-938	IX-1	1153-1157	VIII-1
748, 749	VIII-2	940-942	IX-1	1158-1168	VIII-2
751	VIII-3	943-947	X-1	1169-1186	VIII-3
760-764	VIII-3	950	X/XI-3	1187-1197	IX-1
766	VIII-3	951-955	X/XI-2	1198	X-1 (1)
770-773	VIII-3	956	XI-1	1199-1204	X-1
774, 775	VIII-2	958, 959	XI-1	1205-1226	XI-1
778	VIII-1	961, 962	XI-1	1227, 1228	X/XI-2
780*	IX-1	963, 964	X/XI-3	1229-1233	X/XI-3
781-789	IX-1	965-970	XII	1234-1241	XII

* Not reprinted, see Dubrovnik, 1986.

(1) Published separately.

1.3.1 *Note concerning Reports*

The individual footnote "Adopted unanimously" has been dropped from each Report. Reports in Annexes to Volumes have been adopted unanimously except in cases where reservations have been made which will appear as individual footnotes.

1.4 *Resolutions*

Number	Volume	Number	Volume	Number	Volume
4	VI	62	I	86, 87	XIV
14	VII	63	VI	88	I
15	I	64	X-1	89	XIII
20	VIII-1	71	I	95	XIV
23	XIII	72, 73	V	97-109	XIV
24	XIV	74	VI	110	I
33	XIV	76	X-1	111, 112	VI
39	XIV	78	XIII	113, 114	XIII
61	XIV	79-83	XIV		

VI

1.5 Opinions

Number	Volume	Number	Volume	Number	Volume
2	I	45	VI	73	VIII-1
11	I	49	VIII-1	74	X-1 + X/XI-3
14	IX-1	50	IX-1	75	XI-1 + X/XI-3
15	X-1	51	X-1	77	XIV
16	X/XI-3	56	IV-1	79-81	XIV
22, 23	VI	59	X-1	82	VI
26-28	VII	63	XIV	83	XI-1
32	I	64	I	84	XIV
35	I	65	XIV	85	VI
38	XI-1	66	III	87, 88	XIV
40	XI-1	67-69	VI	89	IX-1
42	VIII-1	71-72	VII	90	X/XI-3
43	VIII-2				

1.6 Decisions

Number	Volume	Number	Volume	Number	Volume
2	IV-1	60	XI-1	87	IV/IX-2
4, 5	V	63	III	88, 89	IX-1
6	VI	64	IV-1	90, 91	XI-1
9	VI	65	VII	93	X/XI-2
11	VI	67, 68	XII	94	X-1
18	X-1 + XI-1 +	69	VIII-1	95	X-1 + XI-1
27	XII	70	IV-1	96, 97	X-1
42	I	71	VIII-3	98	X-1 + XII
43	XI-1	72	X-1 + XI-1	99	X-1
51	X/XI-2	76	IV-1 + X-1 +	100	I
53, 54	X/XI-2	77	XI-1 + XII	101	II
56	I	78, 79	XII	102	V
57	I	80	X-1	103	VIII-3
58	VI	81	XI-1	105	XIV
59	XI-1	83-86	VIII-3	106	XI-1
	X/XI-3		VI		

2. Questions (Vols. XV-1, XV-2, XV-3, XV-4)

2.1 Numbering of texts

Questions are numbered in a different series for each Study Group: where applicable a dash and a figure added after the number of the Question indicate successive modifications. The number of a Question is completed by an *Arabic figure indicating the relevant Study Group*. For example:

- Question 1/10 would indicate a Question of Study Group 10 with its text in the original state;
- Question 1-1/10 would indicate a Question of Study Group 10, whose text has been once modified from the original; Question 1-2/10 would be a Question of Study Group 10, whose text has had two successive modifications.

Note – The numbers of the Questions of Study Groups 7, 9 and 12 start from 101. In the case of Study Groups 7 and 9, this was caused by the need to merge the Questions of former Study Groups 2 and 7 and Study Groups 3 and 9, respectively. In the case of Study Group 12, the renumbering was due to the requirement to transfer Questions from other Study Groups.

2.2 Assignment of Questions

In the plan shown on page II, the relevant Volume XV in which Questions of each Study Group can be found is indicated. A summary table of all Questions, with their titles, former and new numbers is to be found in Volume XIV.

2.3 *References to Questions*

As detailed in Resolution 109, the Plenary Assembly approved the Questions and assigned them to the Study Groups for consideration. The Plenary Assembly also decided to discontinue Study Programmes. Resolution 109 therefore identifies those Study Programmes which were approved for conversion into new Questions or for amalgamation with existing Questions. It should be noted that references to Questions and Study Programmes contained in the texts of Recommendations and Reports of Volumes I to XIII are still those which were in force during the study period 1986-1990.

Where appropriate, the Questions give references to the former Study Programmes or Questions from which they have been derived. New numbers have been given to those Questions which have been derived from Study Programmes or transferred to a different Study Group.

CMTT

Joint CCIR/CCITT Study Group for Television and Sound Transmissions

TRANSMISSION OF SOUND BROADCASTING AND TELEVISION
SIGNALS OVER LONG DISTANCES*Terms of reference:*

To study, in cooperation with the Study Groups of the CCIR and the CCITT, the specifications to be satisfied by telecommunication systems to permit the transmission of sound and television broadcasting programmes over long distances.

1986-1990 *Chairman:* W. G. SIMPSON (United Kingdom)

Vice-Chairman: G. ZEDLER (Germany (Federal Republic of))

As from the next study period, in conformity with Resolution 61 adopted at the XVIIth Plenary Assembly, Düsseldorf (May-June 1990), the scope of the work which will be undertaken and the names of the Chairman and Vice-Chairman concerned are given below.

CMTT

CCIR/CCITT JOINT STUDY GROUP FOR
TELEVISION AND SOUND TRANSMISSION*Scope:*

Study, in cooperation with the Study Groups of the CCIR and CCITT, the specifications to be satisfied by telecommunication systems to permit the transmission of sound and television broadcasting programmes.

1990-1994 *Chairman:* W. G. SIMPSON (United Kingdom)

Vice-Chairman: G. ZEDLER (Germany (Federal Republic of))

INTRODUCTION BY THE CHAIRMAN OF THE CMTT

1. CMTT activities from 1986 to 1990

1.1 During the study period 1986-1990, the CMTT held two meetings in Geneva:

- Interim Meeting from 2-13 November 1987;
- Final Meeting from 2-13 October 1989.

A total of 200 technical contributions were considered during the two meetings. Sixty nine new or modified texts were adopted by the Final Meeting, including 8 new and 10 revised Recommendations and 8 new and 19 revised Reports.

The CMTT wishes to keep the classification of subjects as adopted for the previous period, as follows:

- Section A (Replies to Questions 13 and 14)
Television transmission standards and performance objectives.
- Section B (Replies to Questions 15 and 16)
Methods of operation and assessment of performance of television transmissions.
- Section C (Replies to Questions 17 and 18)
Transmission standards and performance objectives for sound channels.
- Section D (Replies to Questions 19 and 20)
Methods of operation and assessment of performance of sound channel transmissions.
- Section E (Replies to Questions 21, 22, 23 and 24)
Transmission of signals with multiplexing of video, sound and data signals of new systems.

1.2 During its Interim and Final Meetings, the CMTT set up Working Groups operating as follows:

<i>Working Group</i>	<i>Terms of reference</i>	<i>Chairman</i>
CMTT-A	Q. 13, 15, 21, 22, 24	Mr. L. Gooddy (Canada)
CMTT-B	Q. 14, 16, 23	Mr. J. M. Corbett (United Kingdom)
CMTT-C	Q. 17, 18, 19, 20	Mr. G. Zedler (Germany (Federal Republic of))

1.3 The CMTT also set up an Editorial Group at each of its meetings, with the following membership:

<i>Interim Meeting</i>	<i>Final Meeting</i>
Mr. C. Dorkins (United Kingdom)	Mr. C. Dorkins (United Kingdom)
Mr. M. Bosch (France)	M. C. Bremenson (France)
Mr. L. Bascuñana (Spain)	

1.4 During both the Interim Meeting and the Final Meeting, Interim Working Party CMTT/1 met at the request of its Chairman, Mr. W. G. Simpson (United Kingdom).

At these meetings, statements were made by the following:

- on television transmissions:
Dr. Yamamoto (Japan), Chairman of Working Party 11-D;
Mr. Corbett (United Kingdom), Chairman of Working Party CMTT-B,
- on sound-programme transmissions:
Mr. Steinke (OIRT), Chairman of Working Party 10-C;
Mr. Zedler (Germany (Federal Republic of)), Chairman of Working Party CMTT-C.

These speakers informed the members of the IWP on the work of Study Groups 10, 11 and the CMTT concerning digital signals.

The results obtained by IWP CMTT/1 are summarized in § 2.2.3.

1.5 During the previous Final Meeting held in 1985, Decisions were adopted by the CMTT which established two new IWPs, CMTT/2 and CMTT/3.

1.5.1 IWP CMTT/2, chaired by Dr. L. Stenger (Germany (Federal Republic of)) with Vice-Chairmen Dr. H. Murakami (Japan) and Mr. K. Davies (Canada) was charged with establishing draft new Recommendations on the digital transmission of component-coded television signals. This IWP cooperated closely with IWP 11/7 by arranging that their meetings would be held consecutively at the same place. Five

meetings were held during the study period with the effective result that two new Recommendations and two associated Reports were presented to the Final Meeting of CMTT for its approval*. Additional work on all four of these texts remained to be completed before the XVIIth Plenary Assembly. A meeting of IWP CMTT/2 was held in Grenada (Spain) early in March 1990 with the objective of completing the remaining work.

Recommendation 721 was satisfactorily completed during that meeting. A draft of the revisions proposed by IWP CMTT/2 and consequent revisions proposed for Report 1234 were submitted to and approved by the XVIIth Plenary Assembly.

Agreement could not be obtained for a single system proposed for the third hierarchical level of CCITT Recommendation G.702. As a consequence, CMTT/2 proposed to continue the work on an urgent basis into the next study period, with the objective of obtaining agreement as soon as possible. In the interim, the IWP proposed necessary revisions to Recommendation 723 and associated Report 1235 which were also submitted to and approved by the XVIIth Plenary Assembly.

1.5.2 IWP CMTT/3, under the chairmanship of Mr. A. Brown (EBU), had the task of dealing with the problems of the transmission of television and sound-programme signals in the broadband ISDN. It was essential that information concerning the ISDN services, that broadcasters may wish to use, be communicated to CCITT Study Group XVIII in a timely manner. To this end the IWP was authorized to submit the results of its work directly to Study Group XVIII, subject to their subsequent approval by the CMTT. IWP CMTT/3 held five meetings during the study period (including one held in Geneva in February 1990, which prepared liaison statements to Study Group XVIII and IWP CMTT/2) and the results were presented to Study Group XVIII by the Chairman of IWP CMTT/3. This method of working was considered to be very effective by both Study Group XVIII and the CMTT.

1.5.3 At its Interim Meeting in 1987, the CMTT adopted a Decision to establish an IWP CMTT/4 with the task of preparing a draft new Recommendation on the digital transmission of sound-programme signals of studio quality, this draft to be presented to the Final Meeting of the CMTT. The IWP, under the chairmanship of Mr. A. Weisser (Télédiffusion de France) held two meetings in the period between the Interim and Final Meetings and successfully completed its originally-assigned task.

1.5.4 The Special Rapporteurs of the CMTT for liaison with CCITT Study Groups during the study period 1986-1990 were as follows:

- CCITT Study Group IV: Mr. G. Knowlson (United States of America).
- CCITT Study Group XV: Mr. W. Walter (Germany (Republic Federal of)).
- CCITT Study Group XVIII: Mr. P. Wery (Canada).

2. Results obtained

The Working Groups prepared a number of documents during the two meetings, with the following results:

2.1 Texts submitted to the Plenary Assembly for approval

2.1.1 Recommendations

The CMTT proposed the modification of 10 of the 21 Recommendations appearing in Volume XII (Dubrovnik, 1986). These are: Recommendation 567-2 (MOD F) (Doc. CMTT/1004), Recommendation 604-1 (MOD I) (Doc. CMTT/1012), Recommendation 658 (MOD F) (Doc. CMTT/1013), Recommendation 473-4 (MOD I) (Doc. CMTT/1023), Recommendation 503-3 (MOD F) (Doc. CMTT/1027), Recommendation 505-3 (MOD F) (Doc. CMTT/1028), Recommendation 606 (MOD F) (Doc. CMTT/1034), Recommendation 571-1 (MOD F) (Doc. CMTT/1038), Recommendation 645 (MOD F) (Doc. CMTT/1039) and Recommendation 661 (MOD I) (Doc. CMTT/1040). Recommendation 642, which also concerns Study Group 10, will no longer appear in the CMTT Volume.

* – These are: Recommendation 723 “Transmission of component-coded digital television signals for contribution-quality applications at the third hierarchical level of CCITT Recommendation G.702”;
 – associated Report 1235 “Digital transmission of component-coded television signals at 30-34 Mbit/s and 45 Mbit/s”;
 – Recommendation 721 “Transmission of component-coded digital television signals for contribution-quality applications at bit rates near 140 Mbit/s”; and
 – associated Report 1234 “Digital transmission of component-coded television at bit rates near 68 Mbit/s and 140 Mbit/s”.

The CMTT also proposed the adoption of 8 new draft Recommendations:

Section A

- 722 Uniform technical standards and uniform operational procedures for satellite news gathering (SNG);
- 723 Transmission of component-coded digital video signals for contribution quality applications at the third hierarchical level of CCITT Recommendation G.702;
- 721 Transmission of component-coded digital television signals for contribution quality application at bit rates near 140 Mbit/s.

Section B

- 720 Measurement methods and test procedures for teletext signals.

Section C

- 724 Transmission of digital studio quality sound signals over H1 channels;
- 718 Digital transmission of high-quality sound-programme signals on distribution circuits using 480 kbit/s (496 kbit/s) per audio channel;
- 719 Transmission of high-quality sound-programme analogue signals over mixed analogue/digital circuits at 320 kbit/s.

Section D

- 717 Tolerances for transmission time differences between the vision and sound components of a television signal.

2.1.2 *Questions*

No changes of substance were made to the 12 Questions appearing in the 1986 CMTT Volume. New Question [25], concerning secondary distribution was proposed for adoption, along with associated new Study Programme AQ/CMTT (Question [26]).

2.1.3 *Opinions*

The CMTT does not have any proposals concerning Opinions.

2.2 *Texts submitted to the Plenary Assembly*

2.2.1 *Reports*

The CMTT adopted modifications to 18 of the 39 Reports appearing in Volume XII (Dubrovnik, 1986). Two Reports were deleted (Report 1093 and Report 817-2. The latter was replaced by new Report 1241).

The CMTT also adopted 8 new Reports: 1234, 1235, 1236, 1237, 1238, 1239, 1240 and 1241.

2.2.2 *Study Programmes*

The CMTT adopted substantive modifications to 10 of the 45 Study Programmes appearing in Volume XII (Dubrovnik, 1986): (13G-1, 14A-3, 14E-1, 15D-2, 17D-2, 18A-3, 18F-1, 18G-1, 19D-2, 21A-1). One Study Programme was deleted (Study Programme 18H).

The CMTT adopted 7 new Study Programmes against existing Questions (13H, 14F, 22A, 22B, 22C, 22D, 24A). One new Study Programme is proposed for adoption against a new Question (see § 2.1.2).

2.2.3 *Decisions*

The CMTT made substantive modifications to all of its existing Decisions and added one new Decision:

Decision 18-6 Digital systems for the transmission of sound-programme and television signals

A major revision to Decision 18 expands the participation of former IWP CMTT/1 to include Study Groups 10 and 11. The result is new JIWP CMTT-10-11/2.

Decision 67-2 Digital transmission of component-coded television signals

The terms of reference of IWP CMTT/2 are expanded to include component and multiplexed analogue component HDTV systems.

Decision 68-2 Television and sound-programme signals in the broadband ISDN

Representatives of CCIR Study Groups 10 and 11 are added to the membership, and Special Rapporteurs from the CCITT are invited to participate in IWP CMTT/3.

Decision 76-1 Satellite news gathering (SNG)

The study of overall transmission and performance objectives for HDTV transmission by portable satellite earth stations for SNG is added to the terms of reference of IWP CMTT-4-10-11/1.

Decision 77-1 Transmission of digital sound programme signals of digital studio quality on circuits using the H1 channel

IWP CMTT/4 is extended into the 1990-1994 study period.

Decision 98 Low bit-rate digital-audio coding systems

This Decision, prepared by Study Group 10, includes the participation of specialists from the CMTT.

2.2.4 Proposed modification to the terms of reference of the CMTT

At the Interim Meeting of the CMTT in 1987 the CMTT adopted a proposal to change its terms of reference to read as follows:

To study, in cooperation with the Study Groups of the CCIR and the CCITT, the specifications to be satisfied by telecommunication systems to permit the transmission of sound and television broadcasting programmes.

This change has the effect of extending the terms of reference to embrace all telecommunication systems, irrespective of length.

This proposal was submitted to the CCITT Plenary Assembly in 1988 where it was endorsed by the CCITT. As the CMTT is a joint CCIR/CCITT Study Group this proposal was also submitted to the CCIR Plenary Assembly for its endorsement.

3. Acknowledgements

On behalf of the Vice-Chairman and himself, the Chairman wishes to express his gratitude to participating administrations and organizations for their contributions and to the delegates for their considerable work in an excellent spirit of cooperation which has resulted in the substantial output described above.

He especially thanks the Chairmen of Working Groups and Sub-Groups and the Chairmen of the IWPs who, through their skill in the guiding of the discussions, have enabled the CMTT texts to be produced.

VOLUME XII

TELEVISION AND SOUND TRANSMISSION

(CMTT)

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SECTION CMTT A: TELEVISION TRANSMISSION STANDARDS AND PERFORMANCE OBJECTIVES

RECOMMENDATION 567-3

TRANSMISSION PERFORMANCE OF TELEVISION CIRCUITS DESIGNED FOR USE IN INTERNATIONAL CONNECTIONS

(Question 13/CMTT)

(1978-1982-1986-1990)

The CCIR,

CONSIDERING

the need for a Recommendation concerning analogue television transmissions over long distances, common to the CCIR and CCITT,

UNANIMOUSLY RECOMMENDS

that, taking account of the definitions in Parts A and B and the measurement methods in Part C and its Annexes, the transmission performance of international television circuits should satisfy the objectives for design given in Parts D and E.

Introduction

The Joint CCIR/CCITT Study Group for Television and Sound Transmission (CMTT) has studied problems which occur when transmitting television signals of various standards over long distances.

The CMTT decided to study unified test methods and transmission performance which can be recommended for circuits intended for transmission of signals conforming to the majority of television standards.

This Recommendation is intended for use where circuits will be required at various times to transmit television signals of the 525-line and the 625-line standards.

However, in view of the comprehensive nature of the Recommendation, it is appropriate that it also be applicable to circuits which are required to transmit television signals of only one standard. Accordingly, the document addresses the different requirements of 525-line, 625-line and multi-standard needs where necessary.

The assumption is made that the circuit does not contain satellite systems using line-rate energy dispersal or systems which employ digital transmission techniques. If it does, it is probable that additional objectives will be required.

The Recommendation contains five parts listed below:

Part A: Definitions of a connection and circuits

Part B: Definition of parameters

Part C: Measurement methods and test signals

Part D: Design objectives and tolerances applicable to the hypothetical reference circuit

Part E: Performance of circuits shorter or longer than the hypothetical reference circuit.

Note — References and Bibliography are detailed at the end of the particular Part or Annex to which they are relevant.

PART A — DEFINITION OF AN INTERNATIONAL TELEVISION CONNECTION AND DEFINITION OF THE TERRESTRIAL AND COMMUNICATION SATELLITE HYPOTHETICAL REFERENCE CIRCUITS

A.1 Definitions

A.1.1 *Definition of an international television connection* (Fig. 1)

- Point A, to be considered as the sending end of the international television connection, may be the point at which the programme originates (studio or outside location), a switching centre or the location of a standards converter.
- Point D, to be considered as the receiving end of the international television connection, may be a programme-mixing or recording centre, a broadcasting station, a switching centre or the location of a standards converter.