REPORT

ON THE ACTIVITIES OF

THE INTERNATIONAL TELECOMMUNICATION UNION

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1. INTRODUCTION

Under the terms of an Agreement signed in Lake Success in 1947, the United Nations recognized the International Telecommunication Union (I.T.U.) — which was founded in 1865 — as « the specialized agency responsible for taking such action as may be appropriate under its basic instrument for the accomplishment of the purposes set forth therein ».

The basic instrument of the I.T.U. is the International Telecommunication Convention, the current version of which, signed in Montreux in November 1965, entered into force on 1 January 1967. Annexed thereto are the Regulations, established by World Administrative Conferences, which govern, on an international basis, the use of radio, the telegraph and the telephone.

The purposes of the Union, as laid down in the Convention, are:

— to maintain and extend international cooperation for the improvement and rational use of telecommunications of all kinds;

— to promote the development of technical facilities and their most efficient operation with a view to improving the efficiency of telecommunication services, increasing their usefulness and making them, so far as possible, generally available to the public;

— to harmonize the actions of nations in the attainment of those common ends.

In furtherance of its purposes, the Union, in particular:

— effects allocation of the radio frequency spectrum and registration of radio frequency assignments in order to avoid harmful interference between radio stations of different countries;

— coordinates efforts to eliminate harmful interference between radio stations of different countries and to improve the use made of the radio frequency spectrum;

— fosters collaboration among its Members and Associate Members with a view to the establishment of rates at levels as low as possible consistent with an efficient service and taking into account the necessity for maintaining independent financial administration of telecommunication on a sound basis;

— fosters the creation, development and improvement of telecommunication equipment and networks in new or developing countries by every means at its disposal, especially its participation in the appropriate programmes of the United Nations;

— promotes the adoption of measures for ensuring the safety of life through the cooperation of telecommunication services;

— undertakes studies, makes regulations, adopts resolutions, formulates recommendations and opinions, and collects and publishes information concerning telecommunication matters for the benefit of all Members and Associate Members.

The supreme organ of the Union is the *Plenipotentiary Conference.* It meets once every five or six years in order to determine the general policies for fulfilling the purposes of the Union and to revise the International Telecommunication Convention if it considers this necessary.

In intervals between Plenipotentiary Conferences the *Administrative Council*, composed of twenty-nine Members of the Union, meets annually. It is responsible for taking all steps to facilitate the implementation by the Members and Associate Members of the Union of the provisions of the Convention, of the Regulations, of the decisions of the Plenipotentiary Conference and,

where appropriate, of the decisions of other conferences and meetings of the Union. The Secretary-General is responsible to the Administrative Council for all administrative and financial aspects of the Union's activities.

Apart from the General Secretariat the Union has three other permanent organs:

— the *International Frequency Registration Board (I.F.R.B.)*, the essential duties of which are:

a) to effect an orderly recording of frequency assignments made by the different countries so as to establish, in accordance with the procedure provided for in the Radio Regulations and in accordance with any decisions which may be taken by competent conferences of the Union, the date, purpose and technical characteristics of each of these assignments, with a view to ensuring formal international recognition thereof;

b) to furnish advice to Members and Associate Members with a view to the operation of the maximum practicable number of radio channels in those portions of the spectrum where harmful interference may occur;

c) to perform any additional duties, concerned with the assignment and utilization of frequencies, prescribed by a competent conference of the Union or by the Administrative Council with the consent of a majority of the Members of the Union, in preparation for or in pursuance of the decisions of such a conference;

— the *International Radio Consultative Committee (C.C.I.R.)* which studies technical and operating questions relating specifically to radiocommunication and issues recommendations on them;

— the *International Telegraph and Telephone Consultative Committee (C.C.I.T.T.)* which studies technical, operating and tariff questions relating to telegraphy and telephony and issues recommendations on them.

The present Report is in the nature of a review of the activities of the International Telecommunication Union and of its permanent organs in 1968.

2. MEMBERSHIP OF THE UNION

1. On 31 December 1968, there were 135 Members of the Union, i.e.:

a) the 129 countries or groups of territories mentioned in Annex 1 to the Montreux Convention, 1965;

b) the following 6 countries which became Members on the deposit of an instrument of accession to the Convention:

	which became a Member on
Maldive Islands	28.2.1967
Guyana	8.3.1967
Kingdom of Lesotho	26.5.1967
Barbados	16.8.1967
Republic of Botswana	2.4.1968
People's Republic of Southern Yemen	15.8.1968

There were no Associate Members.

2. By 31 December 1968, 74 countries had ratified the International Telecommunication Convention, Montreux, 1965, and 11 countries had acceded to it.

In accordance with Administrative Council Decision No. 287, the Secretary-General sent to each Member concerned of the Union a table showing its position in relation to the Montreux Convention, 1965 and the Administrative Regulations annexed thereto.

3. The position of Members on 31 December 1968 in relation to the Montreux Convention, 1965, and to the Administrative Regulations annexed thereto, is indicated in Table I of Annex 1 to this Report. Annex 1 also contains information concerning certain other Conventions and Agreements relating to telecommunications.

3. THE ADMINISTRATIVE COUNCIL

3.1 The 23rd Session of the Administrative Council was held at I.T.U. Headquarters from 11 to 31 May 1968.

It was attended by representatives of all twenty-nine Members of the Council, i.e.:

Algeria (Algerian Democratic and Popular Republic), the Kingdom of Saudi Arabia, the Argentine Republic, the Commonwealth of Australia, Brazil, Canada, China, the Republic of Dahomey, the United States of America, Ethiopia, France, the Republic of India, Ireland, Italy, Japan, Lebanon, the Malagasy Republic, the Kingdom of Morocco, Mexico, the Federal Republic of Nigeria, Uganda, Pakistan, the People's Republic of Poland, the Federal Republic of Germany, the United Kingdom of Great Britain and Northern Ireland, the Confederation of Switzerland, the Union of Soviet Socialist Republics, the Republic of Venezuela and the Federal Socialist Republic of Yugoslavia.

3.2 Mr. Henryk Baczko (People's Republic of Poland) was elected Chairman and Mr. William J. Wilson (Canada) Vice-Chairman and the following Committees were constituted:

Committee 1 — Finance

Chairman: Mr. M. Ben Abdellah (Morocco)
Vice-Chairman: Shri L. C. Jain (India)

Committee 2 — Personnel and Pensions

Chairman: Mr. K. Hind (United Kingdom)
Vice-Chairman: Mr. A. Zaidan (Saudi Arabia)

Committee 3 — Technical Cooperation

Chairman: Mr. Thomas E. Nelson (United States)
Vice-Chairman: Mr. V. A. Haffner (Nigeria)

3.3 Apart from the examination of routine annual reports and administrative questions, the Council took a number of important decisions among which mention should be made of the following:

3.3.1 *Designation of a Deputy Secretary-General ad interim*

At its 22nd Session, the Council decided to seek the opinion of the Members of the Union as to whether it could, if it considered it desirable, take action at the 23rd Session in accordance with the provisions of No. 113 of the Convention.

A large majority of the Members of the Union having replied affirmatively, the Council called for candidates for the post of Deputy Secretary-General ad interim and on 27 May designated Mr. Richard E. Butler (Commonwealth of Australia) to this post. Mr. Butler took up his duties on 1 October 1968.

3.3.2 *Budgets for the year 1968*

After providing certain additional credits, the final budgets for 1968 were approved as follows:

— 23,955,100 Swiss francs for the budget of the Union;
— 2,742,400 Swiss francs for the Technical Cooperation special accounts budget;
— 2,576,500 Swiss francs for the supplementary publications budget.

The contributory unit for 1968 was maintained at 45,600 Swiss francs.

(Resolution No. 621)

3.3.3 *Budgets for the year 1969*

The budgets for 1969 were approved as follows:

— 22,728,900 Swiss francs for the budget of the Union, including an amount of 300,000 Swiss francs for meetings of the C.C.I.T.T. which can be used in whole or in part only with the approval of the Council;
— 2,894,900 Swiss francs for the Technical Cooperation special accounts budget;
— 3,072,300 Swiss francs for the supplementary publications budget;
— 5,105,450 Swiss francs as supplementary budget for the construction of a wing on the I.T.U. building.

The contributory unit for 1969 was fixed at 46,200 Swiss francs.

(Resolution No. 622)

3.3.4 *Grading standards*

During its 21st Session the Council instructed the Secretary-General to constitute a team of two experts from Administrations whose terms of reference were to make recommendations to the Council on the application to I.T.U. posts of common grading standards adopted by the Consultative Committee on Administrative Questions (C.C.A.Q.) in the fields of budget and accounts, personnel, languages and statistics and to draw up detailed job descriptions of technical posts within the I.T.U., to be referred to the C.C.A.Q. for purposes of comparison with the work carried out by technically qualified officials in other specialized agencies. At its 22nd Session the Council decided that the experts should also establish detailed job descriptions for all I.T.U. posts in the General Service, Professional and Senior Counsellor categories and recommend gradings for those posts, based on the common grading standards adopted by the C.C.A.Q. as adapted by the experts, or on standards formulated by them.

At the 23rd Session, the Council approved, with minor amendments, the grading standards recommended by the experts in their report and instructed the Secretary-General to promulgate them with effect from 1 January 1968, and to keep the job descriptions up to date and maintained in conformity with the standards subject to consultation with the C.C.A.Q. expert as appropriate.

(Resolution No. 625)

On the basis of the recommendations of the experts, the Council modified the grading of 142 I.T.U. posts, also with effect from 1 January 1968.

(Resolution No. 627)

Consideration of the grading of a number of high-level posts and certain posts in the Technical Cooperation Department was deferred until the 24th Session.

(Decision No. 348)

3.3.5 *Geographical distribution*

The Council instructed the Secretary-General to continue, with the collaboration of the Coordination Committee, his efforts to achieve the aims defined in Resolution No. 7 of the Plenipotentiary Conference and Resolution No. 580 adopted during the 21st Session of the Council concerning the geographical distribution of Union staff.

(Decision No. 347)

In view of the difficulties which candidates from new and developing countries may experience in connection with the language requirements prescribed in the grading standards referred to in paragraph 3.3.4 above, the Council authorized a relaxation of the requirements of the grading standards so that, when candidates from such countries possess a thorough knowledge of one of the working languages of the Union their applications may be taken into consideration.

(Resolution No. 626)

3.3.6 *United Nations Administrative Tribunal*

The Council decided that the competence of the United Nations Administrative Tribunal should extend to the I.T.U. with regard to claims by officials of the Union alleging infringement of the Regulations of the United Nations Joint Staff Pension Fund.

(Resolution No. 630)

3.3.7 *Activities of the I.T.U. in space telecommunications*

During its 23rd Session the Council devoted particular attention to the activities of the I.T.U. in space telecommunications.

It resolved that every effort should be made to emphasize the role and to strengthen the effectiveness of the I.T.U. and its permanent organs regarding the utilisation of space for telecommunications and instructed the Secretary-General, in collaboration with the Coordination Committee, to submit recommendations in this respect to the 24th Session of the Council, dealing in particular with the basic guide lines for the future work of the permanent organs, the improvement of cooperation with other international organizations and the establishment of general principles defining the broad lines of the activities of the Members of the Union in this field.

(Resolution No. 636)

The Council also adopted a resolution setting forth the role of the I.T.U. in space telecommunications which it instructed the Secretary-General to bring to the notice of the Secretary-General of the United Nations and to the heads of the specialized agencies and of all international organizations known to have an interest in any aspect of space telecommunications, and to request such international organizations to keep the Union informed of any developments which they propose to initiate and which may touch upon the Union's sphere of interest and where appropriate invite the I.T.U. to be represented at any meetings they may convene on subjects involving space telecommunication. Administrations, Members of the Union, were also requested to bring

this resolution to the notice of all representatives sent by their governments to meetings of international organizations interested in space telecommunication, with a view to ensuring that such representatives were fully aware of the activities and responsibilities of the I.T.U. in this field.

(Resolution No. 637)

Finally the Council recommended to Administrations that a World Administrative Radio Conference should be convened during the latter part of 1970 or early in 1971 with an agenda to include in particular the following items:

1. to revise existing administrative and technical regulations and adopt such new provisions as necessary for the space radio services and the radioastronomy service which will ensure the efficient use of the spectrum;

2. to consider, and revise as necessary, the provisions of the Radio Regulations pertaining to the Aeronautical Mobile and the Maritime Mobile Services and to navigation in so far as the use of space techniques is concerned;

3. to consider and provide as far as possible, additional radio frequency allocations for the space radio services;

4. to revise and supplement as appropriate the existing technical criteria for frequency sharing between space and terrestrial systems and establish criteria for sharing between satellite systems.

(Resolution No. 632)

3.3.8 *Frequency planning for LF/MF broadcasting*

The Council felt that further technical studies and information were necessary before a revision of the European Broadcasting Plan, Copenhagen, 1948, or regional frequency planning for LF/MF broadcasting as envisaged in Resolution No. 5 of the African LF/MF Broadcasting Conference, Geneva, 1966, could be satisfactorily undertaken and decided to give further consideration to this matter at its 24th Session.

(Resolution No. 635)

3.3.9 *XIIth Plenary Assembly of the C.C.I.R.*

The Council decided to accept the generous invitation of the Government of India to hold the XIIth Plenary Assembly of the C.C.I.R. in New Delhi during the period January/February 1970.

(Resolution No. 633)

3.3.10 *Extension of the I.T.U. Headquarters building*

Having consulted the Members of the Union, the Council instructed the Secretary-General to conclude forthwith the necessary contracts for the construction of an extension to the Headquarters building providing office accommodation for 200 officials and space for meetings of up to 250 delegates so arranged that it could be converted into offices when later required for this purpose.

(Resolution No. 638)

3.4 The Council also adopted resolutions or decisions with respect to:

— External Audit of the I.T.U. accounts for the period 1 January to 31 December 1967 (Resolution No. 623);
— Financial operating report of the I.T.U. for the year 1967 (Resolution No. 624);
— Suppression and creation of posts (Resolution No. 628);
— Continuation of fixed-term posts (Resolution No. 629);
— Membership of the I.T.U. Staff Pension Committee (Resolution No. 631);
— Organization of the General Secretariat (Resolution No. 634);
— Procedure for the election of the Director of the C.C.I.T.T. (Decision No. 349);
— Transfer of Electronic Computer to the General Secretariat (Decision No. 351);
— Coordination of the work of the Specialized Secretariat of the I.F.R.B. (Decision No. 352).

3.5 The Council decided that, as for the two preceding sessions, the duration of the 24th Session, due to open in Geneva on 3 May 1969, would be limited to three weeks.

(Decision No. 350)

4. ACTIVITIES OF THE PERMANENT ORGANS

4.1 Activities of the General Secretariat

Since the Secretary-General is responsible to the Administrative Council for all the administrative and financial aspects of the Union's activities, the duties of the General Secretariat are mainly of an administrative nature. The activities of the General Secretariat in the field of technical cooperation are described in detail in Section 5 of this report.

In 1968 the General Secretariat made the necessary arrangements for the 23rd Session of the Administrative Council, and carried out the tasks assigned to it in resolutions and decisions adopted during that Session, in particular

— administrative arrangements in connection with the modifications to the grading of posts contained in Resolution No. 627;

— the consultation of Administrations regarding the agenda for the World Administrative Radio Conference for Space Telecommunications envisaged in Resolution No. 632;

— the promulgation on a broad scale of Resolution No. 637 on the role of the ITU in Space Telecommunications;

— initial work in connection with the construction of an extension to the Headquarters building in accordance with Resolution No. 638;

— the organization of a Computer Department following the transfer of the computer from the IFRB to the General Secretariat on 1 June 1968.

In 1968 the General Secretariat also continued to implement a number of resolutions of the Montreux Plenipotentiary Conference. In this connection mention should be made of the preparatory work carried out for the second session of the Study Group for the preparation of a draft Constitutional Charter and General Regulations for the I.T.U., which had been established by the Council in accordance with Resolution No. 35 of the Montreux Plenipotentiary Conference.

The Study Group met at I.T.U. Headquarters from 15 July to 9 August 1968 and produced an Interim Report containing a preliminary draft Constitution. It agreed that a meeting would be necessary in 1969 to examine the General Regulations, for which further preparatory work by the General Secretariat was undertaken.

Although no Administrative Conferences were held in 1968 a considerable load fell upon the documents services in respect to the publication of an exceptionally heavy volume of preparatory documents for the IVth Plenary Assembly of the C.C.I.T.T. and for meetings of Study Groups of the C.C.I.R.

Work was completed on the Manual for Use by the Maritime Mobile Service, the publication of which was decided by the 1967 Maritime Conference. In accordance with a recommendation of that Conference, the General Secretariat, having consulted the Members of the Union, proceeded with a re-edition of the 1959 Radio Regulations incorporating the partial revisions by the Space, Aeronautical and Maritime Conferences. The re-edition will be available in loose-leaf form, to facilitate its being brought up-to-date after future conferences. At the request of a number of Administrations a normal bound version will also be issued.

Finally, mention should be made of the marked increase in public information activities in 1968. The recent spectacular developments in telecommunications—particularly in the field of outer space—are followed with considerable interest by the public at large, and every effort

has been made to draw attention to the important role of the I.T.U. by means of press releases, broadcast interviews, films and television features.

Two exhibitions were organized, one jointly with the P.T.T. Ministry of the Federal Republic of Germany and the other during the seminar at Dakar organized by the Union. The first, which opened on 1 October, will continue until August 1969 and will be seen in 14 towns. Over 95 per cent of the cost is being borne by the P.T.T. Ministry of the Federal Republic of Germany and the balance is being met under a special procedure of the United Nations Development Programme for such activities.

Also with the financial help of U.N.D.P., an I.T.U. staff member was able to make a tour of African countries to collect audio-visual material, which is now being disseminated to publicize the work done by the Union on that continent. At a meeting of the United Nations Consultative Committee on Public Information (C.C.P.I.) the representatives of U.N.D.P. congratulated the I.T.U. on the results obtained in that sphere in 1968.

4.2 Activities of the International Frequency Registration Board (I.F.R.B.)

4.2.1 *Treatment of frequency assignment notices*

The Board continued to carry out its duties as prescribed in the Convention, Montreux, 1965, and the attached Radio Regulations. These duties in relation to the utilization, notification, technical examination and registration of frequencies involved special steps to ensure the application both by the Administrations and the I.F.R.B. of the provisions of the Radio Regulations. During the year 1968, the Board dealt with a total number of 46,293 frequency assignment notices.

4.2.2 *Technical examination of frequency assignment notices*

The required technical examinations or re-examinations of frequency assignments, as prescribed by the Administrative Radio Conference, Geneva, 1959, were made in respect of 18,335 assignments notified according to the provisions of Article 9 of the Radio Regulations with a view to their recording in the Master International Frequency Register. With regard to the frequency bands allocated with equal rights to the Space Service and to the Fixed and Mobile Services, 215 assignment notices were examined in accordance with Article 9A of the Radio Regulations.

4.2.3 *Interference cases, special assistance in frequency matters*

The Board issued a number of specific suggestions on the use of frequencies and made recommendations with a view to the clearance of harmful interference or to rendering special assistance to Administrations. This is an aspect of the Board's work to which Administrations attach particular importance and seems to be a field in which the Board's assistance is most valuable. In addition to the specific requests, many times when the representatives of the Board had the opportunity of meeting representatives of Administrations, they were able to shed useful light on the procedures for notifying frequency assignments or on the use of frequencies that would ensure the most effective use of the radio frequency spectrum.

4.2.4 *Broadcasting in the high frequency exclusive bands*

The Board continued to apply the procedure specified in Article 10 of the Radio Regulations for the high frequency bands allocated exclusively to the Broadcasting Service. The prescribed Schedules were published together with recommendations for their improvement.

4.2.5 *Monitoring*

Monthly Summaries of monitoring information received were prepared and issued to Administrations, as well as special summaries of monitoring information on the use, by broadcasting stations, of the high frequency bands allocated exclusively to the Broadcasting Service. Pursuant to C.C.I.R. Opinion 11, 1963, C.C.I.R. Report 280-1 and C.C.I.R. Recommendation 379-1 (Oslo, 1966), the Board prepared and published a " List of Stations using Special Means of Identification ". This list was based on information received from Administrations in reply to I.F.R.B. Circular-letters No. 113 of 25 November 1964 and No. 129 of 23 June 1965.

4.2.6 *Use of the electronic computer*

During the year, the I.F.R.B. used the computer for its work for approximately 73% of the total time of its use. Following a decision taken by the Administrative Council at its 23rd Session (1968), the computer and the staff of the Computer Division were transferred to the General Secretariat on 1 June 1968.

4.2.7 *Technical Standards*

The Board completed the revision of its Series A Technical Standards to take account of new data contained in the Recommendations and Reports adopted by the XIth Plenary Assembly of the C.C.I.R. (Oslo, 1966).

Studies have been carried out with a view to incorporating, in a suitable form, the C.C.I.R. Atlas of Ionospheric Characteristics (Report 340, Oslo, 1966) into the I.F.R.B. Technical Standards on radio wave propagation.

The Board continued the revision of the Chapter of its Rules of Procedure relating to the processing of notices of frequency assignments to stations which use the bands shared by the Space Service and the Terrestrial Service. It took advantage of the Interim Meeting of C.C.I.R. Study Group IV, in which it played an active role, to obtain clarification on certain points of importance for its work. For this purpose, it submitted to the Study Group a number of proposals for the amendment of various Recommendations.

4.2.8 *Implementation of the Decisions of the World Administrative Radio Conference to deal with matters relating to the Maritime Mobile Service, Geneva, 1967*

To make it easier for Administrations to implement the decisions of the Conference, some of which will involve changes in many of the frequencies used by coast and ship stations and necessitate the alteration, or even the replacement, of existing equipment, the Board decided to issue well in advance an analytical summary of the main decisions of the Conference and a chronological index of their implementation. In Circular-letter No. 201, dated 28 November 1968, the Board reminded Administrations of the action that had to be taken to vacate certain frequencies used by low-traffic ship radiotelegraph stations and the changes to be introduced between 1 January 1969 and 30 June 1969 in the frequencies used by high-traffic ship radiotelegraph stations.

4.2.9 *Implementation of the revised allotment plan for the Aeronautical Mobile (R) Service—Appendix 27 to the Radio Regulations*

During the implementation of the preliminary measures, the assistance furnished by the Board to Administrations demanded a considerable amount of coordination which involved the despatch

of no less than 250 letters, telegrams or messages. For this purpose, the Board cooperated closely with the I.C.A.O. Secretariat.

To facilitate the task of Administrations, the Board drew up lists showing the frequencies which each Administration had to vacate as from 19 September 1968 and a list of the frequencies that it could bring into use as from that date. These lists were sent to Administrations on 28 June 1968 with two copies of a letter giving detailed explanations.

4.2.10 *Implementation of the Recommendations of the I.T.U. Panel of Experts, Geneva, 1963*

Pursuant to Resolution No. 551 of the Administrative Council, the Board requested Administrations to furnish data concerning the progress made up to the end of 1967, or envisaged, in the implementation of the Panel's recommendations, especially in respect of the conversion from double sideband to single sideband or independent sideband operation of radio transmitters and receivers in the Fixed and Aeronautical and Maritime Mobile Services. The detailed information received was condensed by the Board in analytical summaries and communicated to Administrations. During the Seminar on frequency management and use of the radio spectrum, organised by the I.F.R.B., the Board, in compliance with paragraph 5 of Recommendation No. 37 of the Panel of Experts, specially stressed on several occasions the Panel's recommendations concerning improvements in the use of the frequency bands between 4 and 27.5 Mc/s and the measures to be taken to relieve the pressure on the bands in question.

4.2.11 *Seminar on frequency management and use of the radio frequency spectrum*

In pursuance of Administrative Council Resolution No. 528, the Board organized at Union Headquarters in 1968 a new seminar on frequency management and the use of the radio frequency spectrum. The seminar was held from 28 October to 8 November and, thanks to simultaneous interpretation, was conducted throughout in French, English, Spanish and Russian. Detailed explanations of I.F.R.B. activities were given also in small groups formed on a language basis. The seminar was attended by 66 participants from 35 countries all over the world, bringing to 275 the total number of people who have benefited from the seminars organized by the I.F.R.B. since 1963. During the 1968 seminar, experts from the Administrations of Canada, the United States of America, France, the Federal Republic of Germany, the United Kingdom and Switzerland as well as members of the I.F.R.B. and staff of its Specialized Secretariat and of the General Secretariat of the Union gave lectures on the regulatory, theoretical and practical aspects of frequency management. After the seminar, 33 participants spent some time, in certain cases up to six weeks, in the various departments of the I.F.R.B. going more deeply into matters of special interest either to themselves or their Administrations.

4.2.12 *Visits to and training at the I.F.R.B.*

During 1968, numerous representatives of different Administrations visited the I.F.R.B. to discuss and become informed on the procedure for the treatment of frequency assignment notices and to obtain advice on the assignment of frequencies for the services of their Administrations.

4.2.13 *Technical Cooperation*

The Board's activities in the field of Technical Cooperation are described in Section 5 under the heading I.F.R.B.

4.2.14 *Preparatory work for the future World Administrative Conference on Space Radiocommunications (1970/1971)*

In Resolution No. 632, the Administrative Council invited the I.F.R.B. to undertake the preparatory work and to assemble the data which might be required for the future World Administrative Conference on Space Radiocommunications. The Board began by considering the proposals for the agenda which Administrations sent to the General Secretariat in response to Circular-letter No. 6302/68/RE of 21 June 1968. In accordance with the invitation contained in Resolution No. 632, the Board will submit a progress report on its work to the Administrative Council at its 24th Session.

4.2.15 *Miscellaneous*

A total of 13,645 letters and telegrams were exchanged between Administrations and the Board in 1968. In addition to the weekly circulars the Board issued to Administrations 19 circular-letters concerning special studies, and prepared for publication a number of international lists of frequencies and related documents. In accordance with the Convention and the Radio Regulations, members of the I.F.R.B. attended, either as representatives of the I.T.U. or of the I.F.R.B., 24 conferences or meetings of international organisations whose activities with respect to the use of frequencies are closely connected with those of the I.F.R.B.

4.3 Activities of the International Radio Consultative Committee (C.C.I.R.)

During the year 1968, the C.C.I.R. Secretariat was primarily concerned with the preparation and holding of interim Study Group meetings and with carrying out tasks resulting from those meetings. In fact, during the year, all Study Groups for which the C.C.I.R. is responsible, with the exception of Study Group XIV (Vocabulary), met, in accordance with the schedule shown below:

TABLE 1

Study Group		Place	Dates	Attend-ance	Contribu-tions
I	(Emission)	GENEVA	9-25 October	54	23
II	(Receivers)	GENEVA	9-25 October	59	35
III	(Fixed service systems)	GENEVA	9-25 October	68	38
IV	(Space systems)	GENEVA	18 September-8 October	160	116
V	(Propagation over the surface of the earth and through the nonionized regions of the atmosphere)	BOULDER (Colorado)	9-23 July	52	53
VI	(Ionospheric propagation)	BOULDER	22 July-7 August	56	84
VII	(Standard-frequencies and time-signals)	BOULDER	9-19 July	37	52
VIII	(International monitoring)	BOULDER	24 July-7 August	29	13
IX	(Radio-relay systems)	GENEVA	4-24 September	117	80
X	(Broadcasting)	PALMA DE MALLORCA	29 April-10 May	151	64
XI	(Television)	PALMA	29 April-10 May	146	56
XII	(Tropical broadcasting)	PALMA	29 April-10 May	75	6
XIII	(Mobile services)	GENEVA	25 September-8 October	92	37
CMTT	(CCIR/CCITT Joint Group for television transmissions)	GENEVA	4-17 September	89	76
			Totals . . .	1185	733

As previously requested by the Council, Table 2 shows the Administrations represented at the various Study Group meetings.

TABLE 2

Administrations represented at the C.C.I.R. Interim Study Group meetings, 1968

Administration	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	CM TT	Total
Algeria										×	×	×			3
Argentine						×	×						×	×	4
Australia				×					×	×	×	×	×	×	7
Austria										×	×				2
Belgium				×		×		×	×	×	×				6
Brazil					×										1
Cameroon											×	×			2
Canada				×	×	×	×		×	×	×		×	×	9
Denmark				×					×	×	×		×		5
Dominican Republic									×					×	2
Spain				×					×	×	×	×	×		6
United States	×	×	×	×	×	×	×	×	×	×	×	×	×	×	14
Finland				×					×	×	×	×	×	×	7
France	×	×	×	×	×	×	×	×	×	×	×	×	×	×	14
Hungary			×	×					×	×	×		×	×	7
India				×	×	×	×	×	×	×	×	×	×	×	11
Ireland										×	×				2
Italy	×	×	×	×	×	×	×	×	×	×	×	×	×	×	14
Japan	×	×	×	×	×	×	×	×	×	×	×	×	×	×	14
Norway									×	×	×	×			4
New Zealand										×	×	×			3
Pakistan	×	×	×												3
Netherlands	×	×	×	×	×	×			×	×	×	×	×	×	12
Poland	×	×	×	×					×	×	×		×	×	9
Portugal	×	×	×		×	×	×	×		×	×	×	×		11
United Arab Republic										×	×	×			3
F. R. of Germany	×	×	×	×	×	×	×	×	×	×	×	×	×	×	14
United Kingdom	×	×	×	×	×	×	×	×	×	×	×	×	×	×	14
South Africa										×	×	×			3
Sweden	×	×	×	×	×	×		×	×	×	×		×		11
Switzerland	×	×	×	×	×	×	×	×	×	×	×		×	×	13
Czechoslovakia	×	×	×			×			×	×	×	×	×	×	10
U.S.S.R.	×	×	×	×	×	×	×	×	×	×	×	×	×	×	14
Venezuela										×	×	×			3
Yugoslavia	×			×					×	×	×	×	×		7
	15	14	15	20	14	16	12	12	23	30	31	22	22	18	

The more important results of these meetings may be summarized as follows:

Study Group I (Transmitters)

Study Group I met under the Vice-Chairman, Professor S. Ryzko (P.R. of Poland), in the absence of the Chairman, Mr. J. Lochard (France).

The present definitions of necessary and occupied bandwidth are not well suited to use by Administrations and the I.F.R.B. and could not, in all cases, be accepted by other Study Groups. Alternate proposals should, however, take into account the work on spectra and bandwidth of emissions done by the Study Group since 1948. It was decided to maintain the present definitions and to request Administrations to provide further information.

New formulae for the calculation of the bandwidth of composite amplitude-, frequency- and phase-modulation emissions were included in a new Report.

Having examined some new methods of measurement of spectra and bandwidth, the Study Group summarized them in a Report and invited Administrations to submit further contributions on this subject, particularly on measurements carried out under conditions simulating actual traffic.

Studies are continuing on the measurement of spurious radiation by transmitters in all frequency ranges. It is too early to specify any fixed bandwidth for measuring devices appropriate for spurious radiation in the frequency range 1.5 to 30 MHz. It was suggested that Administrations, and in particular Study Group XIII, study the terminology and definitions relative to spurious radiation, as at present there are certain differences between the various expressions used, notably between the texts of Study Groups I and XIII.

Study Group II (Receivers)

Study Group II, under its Chairman Mr. Y. Place (France) followed the practice inaugurated several years ago of presenting the characteristics of receivers by service, and completed the texts and tables relating to typical receivers, and particularly the characteristics of receivers for the fixed service, the mobile service (values for the maritime mobile service: receivers of the principal ship stations) and broadcasting receivers (domestic receivers, including portables).

In addition, the Study Group drew up two new draft Questions: one on the method of specifying for each service the dynamic range of a receiver at radio frequencies, and the other dealing with the possibility of classifying television and sound broadcasting receivers into several categories, as is already done in various countries.

In connection with methods of measurement, the texts dealing with questions of noise, sensitivity, selectivity, etc., were redrafted; in particular, the concept of noise temperature was introduced in the texts concerning the noise factor, and the concept of the " modulation acceptance bandwidth " for frequency- or phase-modulated signals in those concerning selectivity. The Question dealing specifically with the selectivity of receivers now includes an inquiry into the extent to which selectivity is affected by intermodulation products of the fifth order. A new Report was prepared on the sensitivity and noise factor of radiotelephone receivers for class of emission F3.

Other questions were studied, such as diversity reception, remotely controlled receiving stations (the respective Reports were supplemented) and usable sensitivity in the presence of quasi-impulsive interference, the choice of intermediate frequency and protection against unwanted responses of superheterodyne receivers (the respective Reports were amended). A new Question on the susceptibility of television broadcasting receivers to ambient fields was included, and a new Study Programme prepared on the radio-frequency intermodulation characteristics of receivers.

Study Group III (Fixed services)

The major point to be discussed by the Study Group, under the Chairmanship of Dr. H.C.A. van Duuren (Netherlands), was the introduction of a new technique for transmission over long HF radio links, known as the " Lincompex " or " constant net loss " system. Extensive field trials have been made using this equipment and the results indicate that a significant improvement in the quality of service results. The determination of the major characteristics of this system has now reached a stage permitting a draft Recommendation to be drawn up.

Another aspect of long-distance HF communications which has not, so far, been firmly standardized, is the level of the pilot-carrier in single-sideband and independent-sideband emissions. A Study Programme has been drafted, together with a supporting Report, to enable Administrations to suggest a single value for the pilot-carrier level in these classes of emission, regardless of whether the emission is modulated with telephony, telegraphy or data-transmission signals.

The application of high-speed data transmission to international circuits, has made it necessary to envisage methods of assuring a satisfactory standard of transmission for such signals over HF radio links. This problem gave rise to a draft Question and a draft Recommendation, but further work will be necessary on this problem before firm recommendations as to the best manner of ensuring an acceptable grade of service on such links can be established.

Study Group IV (Space systems and radioastronomy)

This Study Group was presided over by its Chairman, Professor I. Ranzi (Italy). The convening of the Second World Administrative Conference for Space Communications in late 1970 or early 1971 gave impetus to this Interim Meeting which considered, in particular, what technical bases might be useful to this projected conference.

The more important results are summarized below:

The technical feasibility of using frequencies above 10 GHz for communication satellite systems having been demonstrated, the Study Group adopted a draft Study Programme on this topic. In this Study Programme, the use of space diversity reception to minimize the difficulties arising from attenuation due to heavy rain, as well as the problem of sharing with other services, were mentioned.

The necessity of sharing frequencies by space systems and terrestrial systems had led to the adoption of coordination procedures to avoid harmful interference. Experience gained by Administrations and the I.F.R.B. during the last few years showed that the existing procedures gave ambiguous results in some cases. At this Interim Meeting, the calculation of the coordination distance was clearly defined as an administrative procedure and the concept of interference probability was introduced to replace the term " separation distance ", hitherto used in cases where precise calculation of the physical separation between earth stations and terrestrial stations must be made. Since propagation studies were decisive factors in this work, the assistance of C.C.I.R. Study Group V was solicited.

The successful experiments of establishing reliable communication between satellites and aircrafts and between satellites and ships led the Study Group to initiate studies on the use of space techniques in the mobile services for communication purposes. As ships and aircrafts also rely upon radio-determination for their operations, the studies were orientated in the direction of combining these functions.

As space communications and the capability of launching geo-stationary satellites develop, the most efficient use of the orbit of such satellites will become an important problem. The Study Group adopted a Study Programme and stressed the need of studies on technical criteria and

characteristics relevant to an orderly development of the use of this orbit. A draft Resolution was also adopted to set up an International Working Party, whose main task was to prepare a report to Study Group IV on the basis of this Study Programme.

The Study Group, in addition, performed the routine duties in revising and up-dating existing texts. These are concerned with communication satellites, direct broadcasting, meteorological and navigational satellites, space research, radioastronomy and radar-astronomy.

Finally, the Study Group recognized the importance of pulse code modulation for satellite communication systems and drafted definitions of various types of multiple access. On the question of broadcasting from space, it has given its comments on a draft Report jointly adopted at Palma de Mallorca by Study Groups X and XI.

Study Group V (Propagation over the surface of the earth and through the non-ionized regions of the atmosphere).

This meeting, presided by Dr. J. A. Saxton (United Kingdom) in the absence of its Chairman, Dr. R. L. Smith-Rose, highlighted the current trends in tropospheric propagation studies. These are:

a) clearer definition of the parameters concerned in sharing problems between the space and the terrestrial services between 1 and 10 GHz and intensified research into propagation at frequencies above 10 GHz;

b) the need for information concerning propagation phenomena leading to signals persisting for very small percentages of time at great distances;

c) an extension of the application of computer techniques to the analysis of propagation data and hence to the planning of links and services;

d) further research into such fields as radiometeorological phenomena affecting propagation.

With respect to the sharing problems, the need for this kind of information is all the more urgent because of the requirements of the forthcoming World Administrative Radio Conference for Space Telecommunications set down for 1970/1971, and this Conference will also need information concerning propagation phenomena at radio frequencies above 10 GHz. In particular, information is required concerning propagation for small percentages of time due to the condition of the atmosphere, for example, rainfall concentration and so on.

The increasing awareness of the possibility of mutual interference occurring between services due to long-distance propagation for short periods of time was reflected in the request for information relating to signals persisting for such extreme time percentages as 99.9998 and by inference, 0.0002, even though recording of such signals is quite difficult with existing equipment and techniques. Sampling periods as short as 1 minute were suggested.

The expanding application of computer techniques is apparent in several matters dealt with in Study Group V. It was considered appropriate for certain propagation data formerly presented as curves for manual use to be presented alternatively in the form of punched cards or numerical tables, to enable Administrations and other interested organizations to use whichever method is the more convenient. In addition, the Director of the C.C.I.R. is to publish an Atlas of Fresnel Reflection Coefficients, based on relevant computer programmes developed within the C.C.I.R. Secretariat, and presented for the use of engineers. Its uses and limitations are to be clearly indicated.

The urgency and importance of research into radiometeorological factors affecting propagation was emphasized, coupled with ever-growing interest in the possibilities of interference occurring both between space and terrestrial services and between different stations within these services.

Finally, existing texts were revised where necessary, to up-date them in the light of more recent knowledge. The meeting in general took place in the awareness of the urgent need for more definite knowledge of the rare propagation phenomena that contribute, not to maintaining a service, but to the propagation of harmful interference over considerable distances, this need being particularly urgent because of the increasing use of the radio-frequency spectrum above 1 GHz, both by the space and by the terrestrial services.

Study Group VI (Ionospheric propagation)

The interim meeting of Study Group VI was held at Boulder under the chairmanship of Dr. D. K. Bailey (United States of America).

It continued its studies of basic ionospheric propagation indices, predictions of the maximum usable frequency (MUF), HF, MF and LF field strengths, atmospheric noise, ionospheric mapping, the occurrence of the sporadic E layer, and fading of signals propagated by the ionosphere. It also studied questions relating to space systems.

This Study Group has made remarkable progress, especially as far as the use of a computer in the preparation of basic documents for ionospheric predictions is concerned. The C.C.I.R. Atlas of Ionospheric Characteristics, based on the analysis of ionospheric data by the computer, permits the calculation of the values of long-term MUF predictions by charts as well as by computer. The introduction of computers has also made it possible to improve the accuracy of definition of certain basic ionospheric propagation indices and their prediction. Administrations of developing countries can now use these basic documents for ionospheric predictions by taking the predictions of ionospheric indices published monthly in the I.T.U. Journal and applying them to the charts in the Atlas. Study Group VI will also study a method of predicting HF field strengths which can be used either with computers or for graphic calculations.

During the meeting every effort was made to improve still further the cooperation between the C.C.I.R. and the International Radio Scientific Union (U.R.S.I.).

Study Group VII (Standard-frequencies and time-signals)

Study Group VII held its interim meeting at Boulder, under the chairmanship of Mr. C. Egidi (Italy).

One of the most important results of the meeting was the creation of International Working Party VII/1 which is to study the improvement of the present UTC System (Universal coordinated time) and to arrive at as wide an international agreement as possible. Since the 13th General Conference of Weights and Measures (1967) defined the international time unit, i.e. the second, in terms of an atomic transition frequency, many users think it desirable to emit standard-frequencies and time-signals on the basis of atomic time. But many users, navigators, astronomers, etc., for example, continue to use Universal Time (UT 2).

In the fairly near future aviation will need standard-frequency and time-signal emissions of very high accuracy (with a tolerance of 0.5 μs), particularly with a view to their use in collision avoidance systems. A new Question was drawn up to this end for the study of methods of providing such emissions on a world-wide basis.

Study Group VIII (International monitoring)

Study Group VIII met at Boulder under the chairmanship of Mr. M. Amaro Vieira (Portugal).

The Study Group discussed at length the problems of frequency measurements, channel identification of single or independent sideband, multi-channel frequency-division and other complex emissions.

The rapid increase in the number of these emissions presents monitoring stations with daily problems, which are insoluble for the moment at least.

A draft Question and a draft Study Programme were prepared to seek a solution to these problems.

The Study Group also discussed the difficulties raised by the publication of the Handbook for monitoring stations. It gave instructions to those responsible for its drafting and to the C.C.I.R. Secretariat to enable the Handbook to be published as quickly as possible.

Study Group IX (Radio-relay systems)

This Study Group, under the Chairmanship of Mr. E. Dietrich (Federal Republic of Germany), considered an important new topic: the use of frequencies above 10 GHz for radio-relay systems. So far, rapid attenuation of the signal has placed a limit on the upper end of the band available for these systems, but with recent advances in technique, more powerful transmitters and better receivers will permit the efficient use of frequencies well above 10 GHz. Study Group V has been asked to provide propagation data for use at these frequencies.

Modern communication systems display an ever-increasing demand for higher capacity and a higher grade of service. Study Group IX is now actively engaged in the study of systems with a capacity of 2700-telephone channels, or the equivalent, and in the application of pulse-code modulation, which, while possessing a very high potential capacity for multi-channel operation, is very resistant to interference. Its application to radio-relay systems gives promise of great advantages to come.

As usual, the problems of frequency sharing with communication-satellite systems was the subject of animated discussion. The problems of the calculation of coordination distance were examined and consequent amendments to existing C.C.I.R. texts were proposed to make the calculations more easy to perform and to understand.

Another important problem is that of system reliability, the probability of attaining a desired grade of service, taking into account the permissible number of interruptions caused either by equipment failures, fading or noise. As a first step, a Question has been drawn up, and it was proposed that the terms of reference of Special Joint Study Group C (CCITT/CCIR) be extended to cover system reliability in addition to circuit noise.

Considerable discussion took place as to the meaning, statistical distribution and methods of application of the hourly-mean noise objectives for the hypothetical reference circuit. International Working Party IX/1 has been set up to study, by correspondence, all aspects of this problem and to report to the next meeting of the Study Group.

Study Group X (Broadcasting)

As far as the audio-frequencies and sound and television recording are concerned, Study Group X, under the chairmanship of Mr. A. Prose Walker (United States), paid particular attention to the problem of standards for the international exchange of programmes on magnetic tape and prepared a draft new Recommendation on the subject. A new Question concerning standards for colour films for the exchange of programmes was drawn up. It also studied the problem of the subjective loudness of programmes and the measurement of audio-frequency noise in broadcasting and sound-recording systems.

In the sphere of radio frequencies, the activities of Study Group X were mainly devoted to a better presentation of the problems to be solved in AM sound broadcasting. This work will no doubt enable a solution to be found for the basic problems which arise, in particular, during the

planning of LF, MF and HF broadcasts. In the same sphere, the question of the necessary passband for a transmission was also broached.

Studies are continuing on VHF frequency-modulation broadcasting, with particular reference to two aspects: 1) the possibility of broadcasting additional programmes in these bands and 2) stereophony (audio-frequency parameters for sound transmission and reproduction, and protection ratios for the pilot frequency system).

Broadcasting from satellites was discussed jointly with Study Group XI and the results are summarized in the section relative to that Study Group.

Study Group XI (Television)

This Study Group, under the chairmanship of Mr. E. Esping (Sweden), devoted its time to a thorough examination of the set of texts with which it is concerned and particularly those dealing with the following aspects: standards, elements for planning, exchange of programmes, picture quality, stereoscopic television, individual and collective antennae and their associated equipment. The latter subject aroused quite a lot of interest, because of the growing importance of this equipment, which must be regarded as one of the links in the transmission chain from the camera to the television set, just as much as a long-distance line.

With regard to standards, a draft new Recommendation advises countries wishing to introduce a new television service to give preference to the 525- or 625-line standards.

One item on the agenda was of particular interest to the I.T.U.: it concerned defining the characteristics for low-cost television receivers. This matter had been raised in the C.C.I.R. in response to a request from UNESCO, aimed at making the advantages of television available to the populations of countries where at present the density of receivers is especially low for economic, geographical or technical reasons. Although the Question was only adopted at the beginning of this year, it was possible, thanks to the contributions received, to adopt draft specifications for these receivers.

Another problem—the use of satellites for broadcasting—aroused very great interest. Studies on the subject had been made by a Joint Working Group of Study Groups X and XI and a number of documents were prepared which, although of a provisional nature only, were nonetheless of great importance; they dealt with the following subjects:

— Terminology. Definitions were proposed for the terms relating to broadcasting from satellites (principal service, rural service and community service) and to the satellite communication service for broadcasting (direct and indirect distribution).

— Frequency sharing between the satellite and terrestrial broadcasting services. The conclusion of this study was that the use of existing broadcasting bands for the broadcasting service from satellites, and, in particular, of band 10, raised technical problems which require further study by the C.C.I.R.

— Exchange of television programmes. The attention of the organizations concerned was drawn to the advisability of transmitting over their networks the original standard and television system, to ensure as good a quality as possible.

The Joint Working Group on satellite questions also examined a document issued by UNESCO and entitled: " Preparatory study of a pilot project in the use of satellite communication for national development purposes in India ". The document included a number of questions which were of interest to the C.C.I.R. and the Group prepared appropriate replies. Among the questions raised was the problem of collective antenna installations and one relating to low-cost television receivers, which has already been referred to above.

Study Group XII (Tropical broadcasting)

This Study Group, under the chairmanship of Mr. Chaman Lal (India), recalled the definition of " broadcasting in the tropical zone " in the Radio Regulations, which denotes a particular type

of broadcasting for the internal national use in countries where it may be shown that, because of the difficulty of high atmospheric noise level and propagation, it is not possible to provide economically a more satisfactory service by conventional means. The Study Group gave particular attention to the following points:

— Transmitting antennae: the use was proposed of antennae covering part of the service area by one hop, the rest being by two-hop propagation. New antennae diagrams have been supplied and will be published in an addendum to the " C.C.I.R. antenna diagrams ".

— New factors were incorporated in the Report on methods for calculating field strength.

— Single side-band reception (of a double side-band transmission). This is a new subject which aroused some interest; arrangements were made for the delegates to listen to tape recordings showing the improvements that could be expected with this method.

— The adoption of a draft new Question, relating to the advantages and disadvantages of using the VHF band for broadcasting in the tropical zone.

Study Group XIII (Mobile services)

After having laid down the technical bases for the World Maritime Administrative Radio Conference to deal with matters relating to the Maritime Mobile Service, held in 1967, Study Group XIII, under the chairmanship of Mr. G.M.H. Gleadle (United Kingdom), while continuing the studies of maritime questions on its agenda, also turned its attention to land mobile service. Discussions were centred on the general principles of planning and on methods of measurement of equipment characteristics, with particular emphasis on the control of interference. Cooperation with the International Electrotechnical Commission was to be intensified.

On maritime questions, the Study Group prepared a draft Recommendation on operational procedures for single-sideband radiotelephone services in the HF maritime bands, which is of great importance to a future maritime conference; it took the initiative to study error control, both for the digital selective-calling system which might come into being in the near future and for direct-printing telegraphy; it also drafted a Question on compandor-expander techniques (Lincompex) to improve the performance of MF and HF radiotelephone circuits.

A Question on radio-paging was drafted. This was considered desirable from the point of view of interference.

C.M.T.T. (CCIR/CCITT Joint Study Group for television transmissions).

The C.M.T.T. met under the chairmanship of Professor Y. Angel (France) and dealt with the following major subjects on its programme.

Standards for circuits other than the 2500 km hypothetical reference circuit, which involve problems of circuits that have a structure similar to that of the hypothetical reference circuit, but which contain a different number of sections, including satellite links.

Unified transmission standards applying to all television systems were discussed, when television signals of various standards (including colour television) are transmitted over long distances.

A unified Recommendation should be drafted for use where circuits will be required at various times to transmit television signals of the 525-line and 625-line standards.

The C.M.T.T., after detailed study of measurement signals inserted in the field-blanking interval, and taking into account the proposals of Study Groups X and XI to standardize these test signals, suggested new insertion signals, which would provide a satisfactory compromise for test purposes in both monochrome or colour television.

At the last meeting of the Group, the question of automatic remote monitoring was the subject of a well-documented Report, which supplemented digital methods for television measurements. These methods are necessary for optimization of measurement procedures and the transfer and processing of television monitoring/measurement information by digital computers. It is reasonable to combine independent monitoring facilities to form comprehensive systems for the measurement of television information.

The C.M.T.T. drafted a new Report on coordinated video and sound transmission, summarizing recent developments. Special attention was given to the techniques which can be used to enable a sound signal to be transmitted in time-division multiplex with the vision signal.

At the request of the XIth Plenary Assembly, Oslo 1966, the terms of reference of the C.M.T.T. were extended to include sound-broadcasting transmissions (stereophonic and monophonic). In view of this change, and in accordance with the six new Study Programmes adopted by correspondence, the C.M.T.T. carried out studies on this subject and proposed a number of new draft Reports.

This problem gave rise to a draft Recommendation; it seems, however, that a great deal of work will be necessary in the future on this subject.

At these meetings, 13 Questions and 13 Study Programmes were adopted for circulation and approval by Administrations. The necessary approvals were in all cases received by the dates requested and the texts thus adopted form the subject of Addenda to the appropriate Oslo Volumes.

Following the close of the various Study Group meetings, interim booklets containing their conclusions were prepared, the last of which went to press in the early part of 1969.

A considerable amount of extra staff was employed in the preparation of these booklets, while, due to insufficient capacity of the reproduction facilities in the I.T.U., a certain number had to be reproduced outside the Union, to assure that all booklets could be despatched early in 1969. It was not possible to delay the publication of these booklets, as they are essentially destined for consideration at the Study Group meetings scheduled for September/October 1969 and also serve as the basis for any national contributions also submitted for these meetings.

Following the adoption of Council Resolution 633, initial preparatory work connected with the XIIth Plenary Assembly of the C.C.I.R. was undertaken.

One of the major technical activities within the C.C.I.R. Secretariat, not concerned with meetings, was the preparation for and the initial use of the remote terminal in the I.T.U. building connected to the IBM 360/40 computer, located at the W.H.O.

4.4 Activities of the International Telegraph and Telephone Consultative Committee (C.C.I.T.T.)

1. *Interim meetings of Study Groups and Working Parties*

The main feature of 1968 was the convening of the IVth Plenary Assembly. During the first half of the year, however, a number of Study Groups and Working Parties met to complete studies to be submitted to the Plenary Assembly. These meetings, with dates, purpose and place, are listed below:

Date	Purpose of the meeting	Meeting place
15-19 January	WP II/2 (Instructions for the international service)	Geneva
22-26 January	WP II/3 (Telephone Regulations)	Geneva
29 January-2 February	WP II/4 (International television transmissions)	Geneva
5-16 February	WP II/1 (International accounting in the automatic and semi-automatic service)	Geneva
19-23 February	WP IV/5 (Maintenance instructions for new systems)	Geneva
26-27 February	WP XI/1 (Intercontinental signalling)	Geneva
26 February-1 March	SG Sp.C (Noise)	Geneva
4-6 March	WP of SG XV (Small coaxial pairs)	Geneva
4-8 March	WP on automatic telegraph maintenance	Geneva
7-8 March	WP of SG XV on echo suppressors	Geneva
11-15 March	WP of SG XV on pulse code modulation systems	Geneva
18-22 March	SG VII (Definitions and symbols)	Geneva
18-29 March	WP on the revision of the Telegraph Regulations	Geneva
25-29 March	WP on revision of the Telegraph Regulations (Phototelegraphy)	Geneva
1-5 April	SG I (Telegraph operation and tariffs)	Geneva
22 April-3 May	Editorial Group for Volume IV (Maintenance)	Geneva
6-10 May	Editorial Group of GAS 3 (Economic and technical comparison of transmission systems)	Geneva
6-10 May	WP XIII/1 (Human factors)	Geneva
20-31 May	WP XIII/4 (Supervision of operation and maintenance)	Brussels
4-7 June	WP IV/2 (Automatic transmission measuring apparatus)	Geneva

Date	Purpose of the meeting	Meeting place
6-7 June	SG III (General tariff principles)	Geneva
10-21 June	SG II (Telephone operation and tariffs)	Geneva
12-14 June	WP of SG Sp.A (Definitions for data transmission)	Geneva
18-19 June	GAS 5 (Economic conditions and telecommunication development)	Geneva
24-27 June	Meeting of Chairmen and Vice-Chairmen on C.C.I.T.T. organization and methods of working	Geneva

In all, 26 meetings were held for a total of 137 days (counting simultaneous meetings by several working parties or sub-groups). The results obtained at these meetings are described in the report on the IVth Plenary Assembly.

2. *IVth Plenary Assembly*

2.1 *Organization and proceedings*

The IVth Plenary Assembly of the C.C.I.T.T. and the final meetings of the Study Groups which preceded the Assembly were held at Mar del Plata (Argentine Republic) from 23 September to 25 October 1968. The excellent arrangements made by the host Administration greatly contributed to the success of the meetings.

The Study Groups met from 23 September to 11 October, each of them for a few days under its Chairman, in order to finalize their reports to the Plenary Assembly. These various meetings were attended in all by 602 delegates, representatives, experts or observers, representing 72 administrations, 26 recognized private operating agencies, 36 scientific or industrial organizations and 15 international organizations.

The Plenary Assembly proper met from 14 to 25 October: 72 administrations, 26 recognized private operating agencies and 15 international organizations were represented, making a total of 309 delegates, representatives or observers.

In accordance with the General Regulations annexed to the International Telecommunication Convention, the chairmanship of the Plenary Assembly was held by the Head of the Argentine delegation, Lt. Col. R. R. Albariño, Director-General of Coordination in the Office of the Secretary of State for Communications.

Mr. Albariño was assisted by five Vice-Chairmen elected by the Assembly and drawn from the five geographical regions of the I.T.U.: Messrs. M. Ben Abdellah (Morocco), R. T. Black (United States), T. Kashiwagi (Japan), A. B. Bjürel (Sweden) and A. Poukhalski (U.S.S.R.).

The Assembly set up four Committees to prepare and submit proposals on various problems of major importance:

Committee A (Organization of the Study Groups and methods of work)
Chairman and Vice-Chairman, Messrs. M. B. Williams (United Kingdom) and Z. Szpigler (Poland);

Committee B (Programme of work of the Study Groups)
Chairman and Vice-Chairman, Messrs. R. C. Sueur (France) and Saw Mamadou Aliou (Mali);

Committee C (Budget control)
Chairman and Vice-Chairman, Messrs. O. H. Mohamed (Pakistan) and J. A. Wiltgen (Brazil);
Committee D (Technical Cooperation)
Chairman and Vice-Chairman, Messrs. Ingedayehu Girmaw (Ethiopia) and G. E. de Silva Ellawela (Ceylon).

The inaugural meeting of the Plenary Assembly, held on 14 October, was honoured by the presence of the Minister of the Interior, the Secretary of State for Communications and other eminent persons. The Secretary of State for Communications also attended the closing meeting on 25 October.

The secretariat of the meetings was provided by a staff of 167, roughly half of which were I.T.U. staff members or recruited from Geneva, while the other half was recruited locally or seconded free of charge by the host administration. The local staff displayed exemplary competence and devotion.

The work of the Plenary Assembly falls into two quite distinct groups:

— consideration and approval of Study Group Reports with the issue of the corresponding recommendations and choice of new questions for study;

— discussions and adoption of proposals on general administration of the C.C.I.T.T. (organization, programmes, methods of work, financial needs), emanating either from Plenary Assembly Committees A, B, C and D or from other sources.

The main results obtained in these two fields are reviewed below.

2.2 *Results of the work of Study Groups*

2.2.1 *Telegraphy and data transmission*

Following a study conducted jointly by the C.C.I.T.T. and the International Organization for Standardization, the IVth Plenary Assembly adopted a new telegraph alphabet No. 5 for use in message and data transmission. This alphabet corresponds to a two-condition, seven-unit code with an additional unit for error detection. It is initially intended for use on leased circuits and not as a substitute for alphabet No. 2. The conditions of its use in synchronous and start-stop systems were defined.

The C.C.I.T.T. has taken a definite trend towards data transmission with ever higher data signalling rates, and, while leaving freedom of choice to leased circuit users, studied and described two modulator/demodulators (modems) operating at 2400 bits per second and issued a recommendation on the use of a group for data transmission at 48 000 bits/second.

It may be hoped that a lasting standardization has been reached for the interface between the modem and the data processing equipment, regardless of the bit rate, mode of transmission or even type of circuit.

For the future development of data transmission, the Plenary Assembly decided to study two types of network: telegraph-type networks using alphabet No. 5 and high modulation speeds and integrated networks using the new technique of pulse code modulation.

For telegraphy proper, recommendations were issued on the formats to be used in message retransmission networks and on links between gentex and message retransmission networks.

Studies have been launched on automatic calculation of the number of words which could be performed by computers installed in switching centres, after some adjustment of the present regulations governing word counting.

On the operating side, mention should be made of the agreements reached on the use and layout of credit cards, the duration of automatic telex calls for inclusion in international accounts and the adoption of the minute charged as the basis for traffic evaluation. A draft revision of the Telegraph Regulations has also been produced for submission to a forthcoming Administrative Conference; this draft will be finalized during the period 1969-72.

With regard to special telegraph circuits, a system of synchronous transmission on long submarine cables has been standardized and a charging system established based on the real duration of automatic telex calls on HF circuits with ARQ.

Finally, in facsimile telegraphy, the C.C.I.T.T. standardized the characteristics of an automatic black and white transmission service between telephone subscribers, improved the standardized test chart and decided to study transmission in colour.

2.2.2 *Telephone transmission*

Study Group XII amended the recommendation on the permissible propagation time in an international telephone connexion, raising this time from 250 to 400 milliseconds, an extremely important decision for the development of satellite communication. The Study Group, however, specified the conditions to be observed and precautions to be taken with connexions where the mean one-way propagation time is between 300 and 400 milliseconds.

The limits for the reference equivalents in national systems which were applicable to 95% of international calls are now recommended for 97% of them.

The new " transmission plan ", concerning which C.C.I.T.T. recommendations were issued in 1964 on the basis of studies entrusted to Study Group XVI from 1960 onwards, may now be regarded as practically complete so far as switched circuits in the public telephone network are concerned. Study Group XVI is to pursue the study of integration in this network of circuits set up via communication satellites and circuits using pulse code modulation systems; it will also study the transmission characteristics of leased circuits.

Study Group XV amplified the recommendations concerning carrier systems on coaxial pairs in land and submarine cables.

For the first time the C.C.I.T.T. issued a recommendation on systems employing pulse code modulation (PCM) and was able to list certain fundamental characteristics of some of the systems. As will be seen later, a new Study Group has been set up to conduct studies in this field which will cover the transmission of all types of signal (telephone, telegraph, facsimile, data, sound and television broadcasting) and deal with the structure of any integrated networks in which digital transmission and time division switching may be closely associated.

Special Autonomous Working Party No. 3 prepared for publication in 1969 a handbook which will be entitled " Economic and technical aspects of the choice of transmission systems " and may be expected to be of great use to the developing countries.

2.2.3 *Telephone operation and switching*

In telephone operation the main question studied by Study Group II was the definition of new procedures for international accounting between administrations (or private operating agencies). The new basic principles introduced are, on the one hand, remuneration on the basis no longer of traffic units but of the circuits provided and, on the other hand, the limitation of remuneration to the first transit centre when a call passes by automatic switching through several of such centres. These provisions, which constitute a radical departure from the present rules, will considerably simplify the implementation of the international routing plan.

In addition, Study Group II, in pursuance of decisions of the Plenipotentiary Conference of 1965, prepared a considerably briefer draft version of the Telephone Regulations; this text will be finalized during the period 1969-72. At the same time, it drafted new " Instructions for the international telephone service " applying both to the European and the continental service. Finally, it fixed the rules to govern the operation of, and charging for, intercontinental television transmissions via satellites and produced recommendations on the layout and use of credit cards.

Study Group III concerned itself mainly with the terms of lease of circuits and, on its proposal, the Plenary Assembly issued four recommendations enunciating these leasing rules. Furthermore, in response in particular to the wishes expressed by the developing countries, the Study Group considered the conditions in which costing studies and the establishment of certain general tariff principles might be undertaken in the various regions of the world. The actual provisions which the Plenary Assembly decided to adopt on these points will be described later.

Study Group XI, in close liaison with Study Group XIII, undertook and completed the study of a new international telephone signalling system called System No. 6. The effort involved and the success achieved are unprecedented, for whereas previous C.C.I.T.T. studies in this field were based on the experience already possessed by certain countries, System No. 6 is a modern data-transmission-type, common-channel signalling system based on completely original principles. A complete specification of this system was adopted and it will undergo thorough trials during the period 1969-1972.

A specification was also adopted for a System No. 5 bis of the conventional multifrequency signalling type. This system is a variant, with additional operating facilities, of System No. 5 defined by the IIIrd Plenary Assembly.

Finally, the IVth Plenary Assembly also standardized for regional purposes two multifrequency inter-register signalling systems valid both for national use down to local exchange level and for international operation in a specific region. These systems which will be called " Regional Systems Nos. 1 and 2 ", correspond respectively to the system used in the North American continent and to one evolved from the studies of a certain number of European countries, which is known as the " MFC (Berne) System ".

Apart from assisting Study Group XI in defining the operating facilities of the new signalling systems, Study Group XIII revised the international routing plan with a view to giving it greater flexibility and taking the use of satellite circuits into account. It further undertook studies on switching maintenance and supervision of service quality and on the human factors to be taken into account, particularly with a fully automatic international service.

Special Autonomous Working Party No. 1 terminated its work on national automatic networks by publishing Part II of its manual which deals with questions of buildings, power supply, protection of staff and equipment, etc.

Special Autonomous Working Party No. 2 likewise completed its task with the preparation of a detailed manual on local networks.

As for the handbook of Special Autonomous Working Party No. 5 which has just appeared, this deals in particular with such questions as traffic growth as a function of economic relations, estimating the investment required for telecommunications and the corresponding methods of financing, and the importance accorded to telecommunications development in the various countries. This Working Party will continue its studies during the next period, concentrating in particular on the priority to be given to the different sectors of telecommunications and on the assembly of documentation on national tariffs.

2.2.4 *Maintenance, protection, definitions and symbols*

Study Group IV, which is concerned with line and circuit maintenance, specified an improved automatic measuring apparatus for world-wide use, established a system of supervision of circuit

quality from a transmission standpoint and laid the bases, in collaboration with Study Group XIII, of a general maintenance organization for both switching and transmission capable of adoption on an international scale, regardless of national practices. Finally, it worked with sound broadcasting organizations on the maintenance of sound programme circuits.

Study Group V continued its studies on telecommunication line protection, in collaboration with the organizations competent in electric power fields, completed the preparation of a work on the effects of lightning discharges and considered, in concert with the other Study Groups concerned, the publication of a booklet on earthing.

Study Group VI produced recommendations for the protection of underground cables against corrosion, to take account in particular of the use of plastics for cable sheathing. It also prepared a booklet on maintenance methods for pressurized cables.

Finally, Study Group VII confined its activities to assisting the International Electrotechnical Commission in compiling a single list of graphical symbols and the next edition of the international electrotechnical vocabulary.

2.3 *Result of the work of the Plenary Assembly Committees and other decisions*

2.3.1 *Organization and methods of work*

The Plenary Assembly, through the medium of its Committee A, made a careful examination of the disquieting situation created by the constant increase in the number of C.C.I.T.T. meetings and in the resultant heavy burdens both on the Union and its Member countries. This workload is illustrated by the fact that during the period between the IIIrd and IVth Plenary Assemblies and not including the latter, the C.C.I.T.T. held 1107 days of meetings and published 2015 contributions which were distributed to 8000 Study Group members.

Committee A set itself the task of considering whether such a situation could be improved by reorganizing the Study Groups and reforming their methods of work. In preparation for this difficult task, the Members of the Union were first asked to send in writing their proposals for such reform and these proposals were studied by a meeting of Study Group Chairmen and Vice-Chairmen convened in Geneva in June 1968. The proposals by Administrations, together with the comments of the Chairmen and Vice-Chairmen, were submitted to Committee A.

Despite these precautions and the efforts of Committee A, no agreement could be reached on any radical reforms. The IVth Plenary Assembly proposed the setting up of a Group of ten experts (two per geographical region) to study between now and the Vth Plenary Assembly any changes to be made in the organization and methods of work of the C.C.I.T.T.; it asked that these experts be appointed by the Administrative Council from the candidates presented by Member countries which have already been consulted for this purpose.

However, pending the conclusions of the Group of ten experts, the IVth Plenary Assembly already made some slight changes in the existing state of affairs. Firstly, with regard to the organization of the Study Groups, it decided to abolish Special Study Group B (World automatic and semi-automatic telephone network) and to replace it by one of the Coordination Groups which will be discussed further on in connexion with methods of work. On the other hand, the scope of the problems raised by the development of pulse code modulation led it to set up a new Study Group, known as Special Study Group D, to investigate these problems. Furthermore, the Plenary Assembly approved the creation of four Regional Tariff Groups to be attached to Study Group III (one for Africa, one for Latin America, another for Asia and Oceania and the fourth for Europe). Also, on the proposal of Committee B and after study by that Committee of the questions common to several Study Groups, it set up some Joint Working Parties.

As far as methods of work are concerned, minor changes were made in the additional Rules of Procedure of the C.C.I.T.T. to amplify and reinforce the existing provisions on the submission of contributions, their analysis in the form of tables recapitulating the various solutions proposed, the preparation of draft replies to straightforward questions and publication of draft plans of work for meetings.

The more substantial innovations it made were to provide for the study of a question within a particular Study Group by a special rapporteur or small team of rapporteurs and, in the case of questions concerning more than one Study Group but not amenable to the conventional solution of Joint Working Parties, the establishment of Coordination Groups by families of Study Groups which would consist of the Study Group Chairmen and Vice-Chairmen and would coordinate the joint studies. As already mentioned such a Coordination Group has already been set up in place of the former Special Study Group B and others may be created as the need occurs.

A still more important result was obtained with regard to the procedure for provisional recommendations. It was agreed that if a draft recommendation on an urgent problem could be completed during the period between two Plenary Assemblies with the unanimous agreement of the members of the Study Group concerned, the Members of the Union could be consulted by correspondance with a view to publishing the draft as a provisional recommendation, pending its final approval by the next Plenary Assembly.

A long debate took place on the desirability of severing the final meetings of Study Groups completely from the Plenary Assembly proper, the advantages of this solution being to leave some time for reflection between the publication of the final reports and their consideration by the Plenary Assembly and also to reduce expenditure considerably should the Assembly be held away from Geneva. The delegates of the developing countries mostly opposed this idea as it would not enable them as at present to take advantage of their participation at the Plenary Assembly to take part in the work of the Study Groups whose interim meetings they find it difficult to attend. A compromise proposal to have longer Plenary Assemblies at which they would be given full accounts of the work of each Study Group, followed by a discussion on it, did not succeed in fully satisfying them. That being so, it was decided to retain the present system at least for the Vth Plenary Assembly on the understanding that the final meetings of the Study Groups and the Plenary Assembly would therefore be held at Union headquarters.

Finally, Committee A established the procedure for publishing the new C.C.I.T.T. book (which will be a White Book). To expedite the publication of the work as far as possible and to facilitate its use, it was decided that the order of urgency and presentation would be as follows: first, the questions and their annexes in the form of booklets bound together by families, then the recommendations in loose-leaf volumes, and finally the supplements in bound booklets from which all inessential texts would be omitted. An alphabetical index to the recommendations is to be compiled and repetition of recommendations in more than one volume will no longer be permitted. All Recommendations will have to be actually published not later than a year after the end of that Assembly.

2.3.2 *Programme of work of the Study Groups*

It is difficult to describe in detail the work of Committee B which was responsible for drawing up this programme, since it had to dwell at length on each of the numerous questions (about 300 in all) on the programme for the period 1968-1972.

This review enabled it to assign the questions to the various Study Groups, noting in passing those of concern to more than one Study Group, to establish an order of importance and urgency of these questions to guide the Chairmen in drawing up their plans of work, to check whether there was any overlapping between questions proposed by different Study Groups and to propose a regrouping of related questions.

With regard to questions of concern to more than one Study Group, the Plenary Assembly approved the recommendations for the maintenance or abolition of existing Joint Working Parties and in a few cases for the creation of new Joint Working Parties, which Committee B, in full agreement with Committee A, found advisable to make.

Finally, Committee B, gathering together all the proposals made by Study Group Chairmen, endeavoured to sketch a programme of meetings for the period 1968-1972. Since this was intended as an indication only, the Plenary Assembly simply took note of the programme without giving it formal approval, leaving it to the Chairmen to establish the final programme in agreement with the Director and within the limit of the credits authorized by the Administrative Council. The discussion which took place on the subject brought out the practical impossibility of strict observance of the rule of one meeting only per Study Group in the interval between two Plenary Assemblies.

2.3.3 *Budget control*

Committee C (Budget control) scrutinized, and raised no objection to, the provisional accounts for the holding of the IVth Plenary Assembly which at the time amounted to 1,870,000 Swiss francs. On that occasion, it expressed its gratitude to the host administration for the excellent organization of the Assembly. It also noted that for the study period ending with the close of the IVth Plenary Assembly, expenditure on C.C.I.T.T. meetings amounted to about 5,200,000 Swiss francs and remained as a whole within the limit authorized by the Administrative Council.

When considering Committee C's report, the Plenary Assembly noted that once again it did not feel itself in a position to apply No. 781 of the General Regulations, i.e. to approve the estimate of financial needs of the C.C.I.T.T. until the following Plenary Assembly.

2.3.4 *Technical Cooperation*

The activities of the Plenary Assembly in the field of Technical Cooperation are described in Section 5 under the heading C.C.I.T.T.

2.3.5 *Other decisions*

2.3.5.1 After completion of the work of Committees A and B, the Plenary Assembly proceeded to appoint the Chairmen and Vice-Chairmen of the Study Groups and Special Autonomous Working Parties for the period 1968-1972. It was obliged to introduce some important changes in the previous position because, owing to an unfortunate combination of circumstances many Chairmen and Vice-Chairmen, who had done yeoman service with the C.C.I.T.T., were obliged to resign their posts after the IVth Plenary Assembly.

2.3.5.2 Throughout its work, the Plenary Assembly displayed a considerable interest in satellite communication and emphasized the need for close coordination between the bodies studying the various aspects of these new transmission systems. It adopted a resolution on action to be taken to this end within the International Telecommunication Union.

2.3.5.3 The Plenary Assembly examined the report on C.C.I.T.T. activities prepared by the Director and approved it, with the exception of a passage on secretariat staff requirements which it merely noted.

2.3.5.4 The serving Director, whose term of office came normally to an end with the close of the IVth Plenary Assembly, was re-elected until the Vth Plenary Assembly.

2.3.5.5 Some invitations for meetings of Study Groups or Working Parties were issued; they were gratefully accepted in principle, subject to authorization of the corresponding expenditure by the Administrative Council.

No invitation having been made for the Vth Plenary Assembly, it will be held in Geneva, in principle in the first half of 1972, the exact date to be fixed later in the light of progress made with studies.

5. TECHNICAL COOPERATION ACTIVITIES

5.1 *General appraisal of 1968 activities*

In 1968 the Union, through its various programmes of technical cooperation, provided assistance to developing countries for a total value of US $ 5,557,688 in the form of 231 expert missions, 274 fellowships implemented or under implementation and US $ 809,800 equipment delivered.

During the year, the three main objectives of the Union's activity in the field of technical cooperation continued to be:

a) The promotion of development of telecommunication networks in Africa, Asia and Latin America

The I.T.U. regional missions for Africa, Asia and the Far East and Latin America, as well as those experts assigned to Central America and the Caribbean area, worked along the lines envisaged by the I.T.U. World and Regional Plan Committees towards the integration of national telecommunication networks into world-wide telecommunication systems. In order to ensure a concerted effort in the preparatory investigation work and the pre-investment surveys undertaken within the framework of the United Nations Development Programme, the Union, directly and through its regional experts, collaborated closely with the United Nations Economic Commissions for Africa (E.C.A.) and for Asia and the Far East (E.C.A.F.E.), as also with the Inter-American Telecommunication Commission (C.I.T.E.L.) and the Inter-American Development Bank (I.D.B.).

b) The strengthening of telecommunication technical and administrative services in developing countries

Approximately 33% of the field experts who served with the I.T.U. during the year, assisted the administrations of recipient countries in an advisory capacity, or as OPAS officers, with problems of an administrative, organizational and/or technical nature.

c) The development of human resources required for telecommunications

60% of the Union's total field experts in 1968 were engaged in the training of telecommunication personnel in developing countries as organizers, advisers, lecturers or instructors. 20% of the fellows studied modern training methods while the others complemented their professional qualifications abroad. It should also be noted that about 77% of the total value of equipment delivered was exclusively for training purposes.

The expenses incurred in connection with the training of telecommunication staff in 1968 represented two-thirds of the total cost of the I.T.U. field programmes.

5.2 *Field of activity*

The trend towards the increasing importance of assistance in the field of training, which was felt during the preceding years, continued during 1968. Thus the Union collaborated with several administrations in the preparation of requests for U.N.D.P. assisted multi-national and national training projects.

In addition to the above, the Union provided assistance in the fields of telephony, telegraphy, radio, telecommunication planning, organization, administration and management, as also in satellite communications.

5.3 *Some problems encountered*

As in the preceding years shortage of candidates for expert posts was experienced and delayed to some extent the implementation of several projects. The main reasons for the very limited response to some vacancies advertised were: language requirements (especially Spanish), unattractive duty stations, shortage of available expertise in some branches (as for instance transmission) and training experience in the various branches when required. Considerable delays were incurred in some cases due to the difficulty in obtaining immediate reaction from the recipient governments concerning the selection of experts and the modification of programmes and projects.

5.4 *The Union's participation in the United Nations Development Programme (U.N.D.P.)*

5.4.1 *Technical Assistance Component*

The year under review brought to an end the system of two-year programme operations, which has been in force since 1961. From 1969 onwards a new procedure termed " continuous programming " has become effective and during 1968 the necessary preparations were made in this respect.

The original programme for the 1967/68 biennium was for US $3,275,088, i.e. US $1,806,812 in 1967 and US $1,468,276 in 1968, its distribution for the biennium by geographical region being US $ 1,326,250 for Africa, US $1,000,899 for Asia and the Far East, US $895,889 for Latin America, and US $52,050 for Europe.

Due to subsequent programme modifications, contingency authorizations granted by the U.N.D.P. Administrator and the carry-over from 1967, the funds available in 1968 for field operations amounted to US $2,201,453 by the end of the year. Against this allocation, the obligations incurred for the implementation of the programme amounted to US $2,171,418. This figure also includes the commitments made in 1968 for the implementation of several expert missions in 1969, totalling 180 man-months of services. This was an exceptional measure decided by the U.N.D.P. in order to ensure a smooth changeover from the biennial programming cycle to " continuous programming ".

Under this Component 82 countries received assistance during the year through country projects. Of these, 28 were in Africa, 25 in Asia and the Far East, 22 in Latin America and 7 in Europe. In addition assistance was provided to various countries under regional projects and one inter-regional project.

During the year 71 experts (including 14 OPAS officers) recruited from 21 countries, 8 of which were themselves receiving assistance from the Union, were on missions of varying duration in the developing countries. Of these experts, 33 were working in Africa, 18 in Asia and the Far East, and 20 in Latin America. Details of expert missions are incorporated in Table 1 of Annex 5.

The above figures also include nine experts who served during the year as members of three regional missions (4 in Africa, 2 in Asia and the Far East and 3 in Latin America).

Under the Technical Assistance Component 196 fellowships were awarded in 1968. Thus, together with the fellowships awarded in previous years, a total of 296 fellowships were dealt with in 1968. 211 of these fellows were undergoing training abroad during the year and the remainder have been carried forward into 1969 and the following years for completion.

The above figures include 28 fellowships for participants in the I.F.R.B. Seminar held in Geneva in 1968, five of which were awarded under the I.T.U. inter-regional project, while the remainder were financed from country projects.

Details concerning the fellowships under report are included in Table 2 of Annex 5.

Under the Technical Assistance Component, the Union also organized a regional seminar in Africa, details of which are given in point 5.6.3.

Training and demonstration equipment was ordered during the year for seven countries, namely, the Central African Republic, Gambia, Hungary, Iran, Jordan, Panama and Rwanda to a total value of US $40,813. Furthermore, equipment ordered in 1967 for Bolivia, China, Niger and Somalia was delivered during the year under review.

5.4.2 *Operational Assistance (OPAS)*

Fourteen OPAS officers, recruited under the Technical Assistance Component, in addition to six under the Funds-in-Trust/OPAS arrangements, served in 9 different countries.

Thirteen of these were employed in Africa, three in Asia, and four in Latin America, all carrying out duties of a managerial and/or operational nature.

5.5 *Special Fund Component*

The Union acted as Executing Agency for 23 U.N.D.P./S.F. assisted projects, i.e. 20 telecommunication training projects, one pilot circuit project, one telecommunication satellite training project, and one telecommunication planning project. Five of these were new projects approved by the U.N.D.P. Governing Council in the course of 1968, i.e. Telecommunication Staff College (Pakistan), Telecommunication Training Centre (Indonesia), Post and Telegraph Training Centre, Phase II (Sudan), Post and Telecommunication Training Centre (Nigeria), Assistance in the Implementation of the National Telecommunication Plan (Paraguay). In addition, the U.N.D.P. Administrator authorized preliminary operations on the African Telecommunication Network Survey (Regional Project) in June 1968.

Table 3 of Annex 5 gives a list of the projects for which the Union was the Executing Agency as at 31 December 1968.

Two training projects—the Telecommunication Training Centre, Seoul (Korea) and the Telecommunication Training Institute, Manila (Philippines)—were successfully completed in June and September 1968 respectively. The activities at these Centres continued under the control of the national counterparts, who were trained by the I.T.U. experts. The Telecommunication Training Centre project at Khartoum, Sudan, was successfully completed on 31 March 1968 and was succeeded by a new project (Phase II) for the consolidation and extension of the activities. The Training Centre project in Kuala Lumpur, Malaysia, which was successfully completed on 31 December 1967, was followed up by a new project (Phase II) for the expansion of the training activities, as also for the establishment of two Training Units one in Sabah and one in Sarawak. Activities also commenced at Telecommunication Training Centres in Saudi Arabia, Chile, Indonesia, as well as preliminary operations on the African Telecommunication Network Survey.

During the year 1968 115 experts were on duty at the projects which were in operation. Details of these expert assignments are included in Table 3 of Annex 5.

Under the Special Fund Component a total of 74 fellowships, including 45 awarded in 1968, were dealt with during the year. 56 of these fellows were undergoing training abroad during the year and 18 have been carried over to 1969. Details of the fellowships dealt with are incorporated in Table 2 of Annex 5.

Equipment to the value of US $354,218 was ordered during the year and deliveries were made to the value of US $708,655, which figure includes equipment ordered in 1967 but not delivered until the end of 1968.

In addition, the Union administered 35 General Service Category Staff (secretaries and drivers) engaged locally for various I.T.U./S.F. projects.

The total expenditure incurred by the I.T.U. for the field operation under the Special Fund Component in 1968 amounted to US $2,815,923.

In collaboration with the U.N.D.P. Resident Representatives concerned, the Union dealt with matters relating to the preparation of requests for U.N.D.P. assistance in the establishment of new training projects in Bolivia, Brazil, Burma, Iran, Korea, Mongolia, Syrian Arab Republic, United Arab Republic, Yemen Arab Republic and a centre for Research and Participation in a Mekong Basin flood forecasting system. The Union was also actively engaged in securing the extension of operational training projects in Afghanistan, Iraq, Madagascar and Thailand.

Furthermore, in conjunction with the United Nations Economic Commission for Asia and the Far East (E.C.A.F.E.), progress has been made in the preparation of a pre-investment survey for the development of telecommunication networks in this region. In addition, the Union has come to an administrative arrangement with the Inter-American Development Bank for a similar pre-investment project in Latin America, for which the Bank is the Executing Agency in association with the I.T.U.

During the year, the Union also collaborated with the Universal Postal Union (U.P.U.) and the International Civil Aviation Organization (I.C.A.O.) concerning possible cooperation at U.N.D.P./S.F. assisted training centres in different countries (Afghanistan, Chile, Madagascar, Turkey, etc.). Furthermore, the I.T.U. assisted the International Bank for Reconstruction and Development (I.B.R.D.) with the implementation of six telecommunication fellowships under a Special Fund project in Pakistan, for which the Bank is the Executing Agency. The disbursement made in this respect was US $7,800.

5.6 *Related aid programmes*

5.6.1 *Funds-in-Trust*

26 experts served under the Funds-in-Trust arrangements, which figure includes 6 OPAS officers employed under Funds-in-Trust/OPAS arrangements: 9 in the Democratic Republic of the Congo, 3 in Libya under Funds-in-Trust/OPAS arrangements, 4 in Saudi Arabia, 8 in Kuwait (3 of whom under Funds-in-Trust/OPAS arrangements), and 2 in Venezuela.

Five fellowships were dealt with under this scheme, four from Libya and one from Venezuela.

The total cost of the Funds-in-Trust programme in 1968 was US $409,905 which amount includes US $10,110 for supplies and equipment ordered for the Democratic Republic of the Congo.

Details of Funds-in-Trust missions are incorporated in Table 1 of Annex 5 and the data concerning fellowships mentioned above in Table 2 of Annex 5.

5.6.2 *Associate expert scheme*

On the basis of the agreements for the provision of associate experts concluded between the Union and the Governments of Denmark, the Netherlands and Sweden, 19 associate experts served with I.T.U. projects in 1968, i.e. 2 in Algeria, 1 in Afghanistan, 5 in Colombia, 1 in Ghana, 1 in Iraq, 5 in Malaysia, 3 in Nigeria and 1 in Thailand. Thirteen of these associate experts were provided by the Government of Sweden, five by the Netherlands and one by Denmark.

In 1968 negotiations for the conclusion of similar agreements were under way with the Federal Republic of Germany and Belgium.

The total value of assistance provided under this scheme in 1968 amounted to US $141,769.

5.6.3 *Technical Assistance in kind and seminars*

In this field the I.T.U. continued in 1968 to disseminate information on the assistance offered by the technically advanced countries, Members of the Union. This assistance takes the form of study visits, individual courses, group training and seminars. Other information was distributed on the regular courses open to nationals of the developing countries.

It should be noted that a new course on satellite communication techniques for foreign engineers was held in 1968 at the Experimental Earth Station in India. The station is the result of an I.T.U. project which received assistance from the U.N.D.P. (Special Fund). The Indian Government offered financial aid to participants in the course to enable them to meet their subsistence expenses during their stay in Ahmedabad.

Three seminars were organized in 1968 by Administrations. The United Kingdom held a seminar on the theme " Communication satellite earth station planning and operation "; Japan's Seminar dealt with " Recent progress in microwave systems and technique "; and the seminar organized by the Federal Republic of Germany was concerned with " The technique and operation of multiplex telecommunication systems ". With aid from the U.N.D.P. (Technical Assistance Component), the Union enabled 24 fellows from developing countries to attend these seminars, while the Federal German Authorities paid the subsistence expenses of those who attended the seminar on multiplex telecommunications.

Under the Technical Assistance regional project for Africa, the Union itself organized a seminar on " Problems of telecommunication management in the new and developing countries " at Dakar, Senegal. The seminar was open to 18 French-speaking countries in Africa, 14 of which are Members of the African and Malagasy Telecommunication Union. The Union awarded 32 fellowships to participants to the seminar. The Administrations of Canada, France and Switzerland made their contributions in kind by providing lecturers, while the Senegalese Government provided reception and accommodation facilities. An exhibition on I.T.U. activities in the field of technical assistance was arranged in conjunction with the seminar.

Negotiations have already begun with a view to organizing further seminars in 1969.

5.6.4 *FUNDWI* (Funds of the United Nations for the Development of West Irian)

Under the FUNDWI operation, the Union was designated by the U.N.D.P. as Executing Agency for the " Telecommunication Repair and Rehabilitation Project ". In order to speed up the implementation of the project, as well as to finalize, at the earliest possible date, formalities concerning the signature of a Plan of Operation, a Project Manager designate was sent to West Irian in October 1968 (made possible by an advance allocation granted by the Administrator of the U.N.D.P.). The Project Manager designate returned to the I.T.U. Headquarters at the end of 1968 with the necessary information for inclusion in the Plan of Operation and specifications of spare parts required for the repair and rehabilitation of the existing telecommunication equipment in West Irian.

The Union is assisting the United Nations Office of Technical Cooperation (U.N.O.T.C.), which is the Executing Agency for a coastal and river navigation project, with advice and specifications concerning the coastal and ship-to-shore radio communication equipment in West Irian. The Union is also cooperating closely with other Executing Agencies such as I.C.A.O. and W.M.O. in order to coordinate telecommunications rehabilitation in different projects of the FUNDWI programme. The value of this field operation in 1968 was US $10,874.

5.7 *Preparation of new projects for 1969*

Especially in the second half of the year under report, the I.T.U. was actively engaged in the preparation of 1969 programmes under the Technical Assistance Component. The first aim of this operation was to ensure where appropriate the continuation, beyond 1968, of the many existing projects.

During the year a large number of potential projects under the Special Fund Component were considered by the I.T.U. and negotiations were under way with the governments concerned. Several of these project requests will be finalized for submission to the U.N.D.P. Governing Council Session in June 1969.

It is expected that in 1969 the I.T.U. technical cooperation will, in particular, be directed towards:

a) further development of regional telecommunication facilities in Africa, Asia and the Far East and in Latin America;

b) establishment or up-dating of network plans;

c) creation of new training facilities in developing countries, and

d) holding of seminars.

5.8 *Activities of the permanent organs*

5.8.1 *General Secretariat*

At the request of the Administrative Council a circular was sent to the Members of the Union informing them that the team of four engineers referred to in Resolution No. 29 of the Plenipotentiary Conference (Montreux, 1965) had been constituted and that the I.T.U. was henceforth in a position to reply to specific questions asked by administrations. Five administrations resorted to the services of this engineer team in 1968 and we were glad to be able to answer their enquiries. In the meantime, the team of engineers has made a large contribution to the technical study of the periodical and end-of-mission reports of I.T.U. experts.

5.8.2 *I.F.R.B.*

During 1968, the Board maintained close liaison with the General Secretariat in implementing the United Nations Technical Cooperation projects, including the Special Fund projects. Thus, in collaboration with other members of the Board, the Chairman and Vice-Chairman participated in the work of examining the qualifications of the candidates who applied for recruitment as experts and, through the Coordination Committee, made recommendations in each case to the Secretary-General, for furnishing a short list of the most suitable candidates to the countries which, in turn, made the final choice. The periodical reports and the final reports submitted by the experts were considered and comments furnished to the Secretary-General for any action.

5.8.3 *C.C.I.T.T.*

The IVth Plenary Assembly of the C.C.I.T.T. studied those aspects of technical cooperation which come within its purview, namely those mentioned in Nos. 188 and 189 of the 1965 Convention. It referred back in this connexion to the programme of action drawn up in 1964 by the IIIrd Plenary Assembly and noted with satisfaction that the most important provisions of that programme had been successfully applied by the Study Groups, Special Autonomous Working Parties and the Secretariat during the period 1964-1968.

That being so, the Plenary Assembly adopted a new resolution recapitulating the main points of the previous programme and urging the developing countries to take a more active part in C.C.I.T.T. work.

At the same time, as already mentioned, the Plenary Assembly decided to establish Regional Tariff Groups and gave instructions for the preparation of a publication on earthing questions.

6. ADMINISTRATION OF THE UNION

6.1 Staff matters

6.1.1 On 31 December 1968, excluding persons engaged on short-term contracts, the staff of the Union was distributed as shown in the following table (for purposes of comparison, the figures for the end of 1967 are given between brackets).

Table 1

Distribution of staff (excluding persons on short-term contracts) throughout the various organs of the Union

Organ	Elected officials	Number of contracts		Total
		Permanent	Fixed-term	
General Secretariat	2	243	18	263
I.F.R.B.	5	93	1	99
C.C.I.T.T.	1	29	2	32
C.C.I.R.	1	22	1	24
	9 (8)	387 (363)	22 (23)	418 (394)

6.1.2 The manning-table—or establishment—in the 1968 budget comprised 439 posts, of which 417 were permanent. The following separations from service took place during the year as regards staff on permanent or fixed-term contracts: 2 retirements, 2 departures on expiration of contract, 15 resignations or transfers and 2 deaths.

6.1.3 Employment on a short-term basis in 1968 is shown in the table below:

TABLE 2

Staff engaged on short-term contracts

	Number of contracts	Total number of working days
Interpreters	179	3,729
Engineers	6	1,436
Translators/Revisers/Précis-Writers	50	2,413
Archivist	1	31
Associate Administrative Officer	1	366
Proof-readers	4	365
Draughtsmen, photographers	8	704
Secretaries, office assistants, book-keepers	55	4,144
Shorthand-typists, typists and clerks	180	11,593
Punch-card operators	4	272
Telephone operators	31	351
Roneo operators/assembly staff	36	2,643
Simultaneous interpretation equipment operators	8	227
Distribution staff, messengers, chauffeurs, store-keepers	31	1,636
	594	29,910

6.1.4 The distribution of staff according to grade among the various organs is given in Table 3.

TABLE 3

Distribution of staff according to grade

Grade	General Secretariat		I.F.R.B.		C.C.I.T.T.		C.C.I.R.		Totals	
Elected officials	2		5		1		1		9	
	P	FT	P	FT	P	FT	P	FT	P	FT
D.1	3	—	—	—	1	—	1	—	5	—
P.5	4	—	2	—	3	—	1	—	10	—
P.4	10	5	5	—	—	—	5	—	20	5
P.3	22	5	15	1	6	—	2	—	45	6
P.2	16	2	6	—	4	—	—	—	26	2
P.1	6	—	5	—	3	—	1	—	15	—
G.7	8	1	3	—	—	—	—	—	11	1
G.6	19	—	15	—	2	2	3	1	39	3
G.5	34	—	18	—	9	—	4	—	65	—
G.4	41	—	13	—	—	—	4	—	58	—
G.3	41	2	8	—	1	—	1	—	51	2
G.2	28	3	3	—	—	—	—	—	31	3
G.1	11	—	—	—	—	—	—	—	11	—
	243	18	93	1	29	2	22	1	387	22
Total	263		99		32		24		418	

(P = Permanent; FT = Fixed-term)

Note: The grades shown in the above table are those of the staff members, those receiving a special post allowance granted upon a recommendation by the Appointment and Promotion Board being shown in the grade for which they receive the allowance.

6.1.5 The principle of equitable geographical distribution applies to elected officials and staff in the following categories: senior counsellors, professional category (excluding languages staff), and staff occupying posts of a technical nature in grades G.7, G.6 and G.5. (It does not apply to other posts in the General Service category.) The geographical distribution at the end of 1968 is shown in Tables 4 and 5. Table 4 concerns the staff whose salaries are paid from the ordinary budget of the Union; 32 nationalities (for 120 officials) were represented in 1968. Table 5 concerns the staff, including experts, whose salaries are paid from the technical cooperation budget; 30 nationalities (for 179 officials) were represented in 1968, 8 of which are not included in Table 4.

TABLE 4

Geographical distribution on 31 December 1968

(Officials whose salary is paid from the ordinary budget of the Union)

Country	Elected officials	D.1	P.5	P.4	P.3	P.2	P.1	G.7	G.6	G.5	Total
Afghanistan					1						1
Argentina	1		1 (–)	(1)	1						3
Australia	1 (–)				1						2 (1)
Belgium					1		1 (–)	(1)			2
Bielorussia				(1)							–(1)
Bulgaria						1					1
Canada							1				1
China				1	1						2
Denmark					1						1
Spain					3 (1)	1 (3)	2 (1)	(1)			6
United States	1	1		1 (–)	1						4 (3)
France	2	1	4 (3)	1 (2)	3 (4)	5 (3)	1 (–)		3 (2)	(1)	20 (18)
India		1			1 (–)	1 (2)					3
Iran					1 (–)	(1)					1
Iraq						1					1
Ireland						1 (–)					1 (–)
Italy				1	(1)	1 (–)	1				3
Japan	1				3 (2)	(1)					4
Morocco	1										1
Mexico					1 (–)	(1)					1
Norway									1		1
Pakistan					1						1
Paraguay				1 (–)	(1)						1
Netherlands				1 (–)		1(–)	(1)		1		3 (2)
Poland (People's Rep. of)					1						1
United Arab Republic						1					1
Fed. Rep. of Germany				1	1	1	1		1		5
United Kingdom		1	2 (1)	2	1 (3)	3 (1)	1	1	1 (–)		12 (10)
Sweden						(1)					– (1)
Switzerland			1	6 (3)	8 (10)	5 (4)	6	1(2)	2 (3)		29
Czechoslovakia			1		1						2
Tunisia	1										1
Turkey				1							1
U.S.S.R.	1			1 (–)	2 (1)	(1)					4 (3)
	9 (8)	4	9 (6)	17 (13)	34	22	14 (12)	2 (5)	9 (8)	(1)	120 (113)

(Whenever changes have taken place, the figure for 1967 appears between brackets.)

TABLE 5

Geographical distribution on 31 December 1968

(Officials and experts whose salary is paid from the Technical Cooperation budget)

	P.1	P.2	P.3	P.4	P.5	P.6	Total
Argentina				1	1		2
Australia				4 (5)	2 (4)		6 (9)
Belgium			2	1	1 (–)		4 (3)
Canada				2	3 (2)		5 (4)
Korea	– (1)	1 (–)					1
Denmark	1 (–)		– (1)	1 (–)			2 (1)
Spain				2			2
United States				1	4 (2)	– (1)	5 (4)
Ethiopia					1 (–)	– (1)	1
Finland				1			1
France			6	19 (16)	2	2 (1)	29 (25)
Greece		1		1 (–)			2 (1)
Guyana				1			1
Haiti				– (1)			– (1)
India		1	– (1)	9 (5)	3 (6)		13
Ireland				2	2 (3)		4 (5)
Italy		1 (–)	2	2 (3)			5
Japan			1	1 (6)	1	1 (–)	4 (8)
Morocco				1			1
Norway			1	2 (6)	1 (–)		4 (7)
New Zealand				– (1)			– (1)
Pakistan				2	2 (3)		4 (5)
Netherlands	4 (2)			4 (5)	2	1	11 (10)
Peru					1		1
Poland (People's Republic of)						– (1)	– (1)
Syrian Arab Republic					– (1)		– (1)
United Arab Republic				2 (–)			2 (–)
Fed. Rep. of Germany			2 (3)	8 (9)	2 (4)		12 (16)
United Kingdom			1	14 (17)	5 (3)	1 (3)	21 (24)
Sweden	10 (–)	3 (–)	1	5	1	3 (1)	23 (8)
Switzerland	1	1 (–)	– (2)	5 (2)			7 (5)
U.S.S.R.		– (1)		3	1 (2)	– (1)	4 (7)
Uruguay					1 (–)		1 (–)
Yugoslavia			– (1)	1 (–)			1
	16 (4)	8 (3)	16 (22)	95 (98)	36 (38)	8 (10)	179 (175)

(Whenever changes have taken place, the figure for 1967 appears between brackets)

6.2 Financial matters

In accordance with Article 10, number 146 of the Convention and Article 46 of the I.T.U. Financial Regulations, the Secretary-General prepares and submits each year to the Administrative Council a Financial Operating Report containing all relevant information on the financial administration and the accounting results of the past year. After the report has been examined by the Administrative Council it is sent to the Members and Associate Members. Nevertheless, to give an idea of the credits allocated to the different activities of the Union, the budget for 1968, including additional credits, is reproduced in Annex 2 hereto.

In accordance with the provisions of Article 16 of the Convention (Montreux, 1965) and Articles 2 and 6 of the I.T.U. Financial Regulations, the I.T.U. budget comprises, on the one hand, recurrent expenditure appertaining to the Administrative Council, the General Secretariat, the International Frequency Registration Board, the Secretariats of the International Consultative Committees and the Union's laboratories and technical equipment and, on the other, expenditure on plenipotentiary conferences, world administrative conferences and all meetings of the International Consultative Committees.

The Montreux Convention also stipulates that the Administrative Council shall review and approve the annual budget of the Union taking into account the limits on expenditure set by the Plenipotentiary Conference. These limits are fixed by Additional Protocol I to the International Telecommunication Convention (Montreux, 1965), which authorized the Administrative Council to set the budget of the Union for 1968 at 18,610,000 Swiss francs for recurrent expenditure, and 4,985,000 Swiss francs for expenditure on conferences and meetings. However, paragraph 5 of this same Additional Protocol authorized the Administrative Council to exceed these limits to take account of increases in the salary scales, pension contributions or allowances including post adjustments established by the United Nations for application to its staff employed in Geneva, and fluctuations in the exchange rate between the Swiss franc and the United States dollar which would involve additional expenses for the Union. The Administrative Council is also authorized to exceed the limits set for conferences and meetings if the excess expenditure can be compensated by credits accrued from a previous year or taken in advance from a future year. However, the Additional Protocol also provided that the total amount authorized for conferences and meetings was to be reduced by 2,000,000 Swiss francs if no world administrative conference dealing with radio questions was held during 1968.

At its 22nd session, 1967, by Resolution No. 604, the Administrative Council approved the budget for 1968 amounting to:

19,442,400 Sw. frs. for recurrent expenditure of which

18,338,400 Sw. frs. are within the limit of expenditure,
1,104,000 Sw. frs. are outside the limit;

3,100,000 Sw. frs. for conferences and meetings, of which

2,351,700 Sw. frs. are within the limit of expenditure,
105,700 Sw. frs. are outside the limit and
642,600 Sw. frs. are covered by unused credits from 1966 and 1967;

230,000 Sw. frs. for the preparation of the draft I.T.U. Charter;

35,000 Sw. frs. for expenses covered by the renewal fund for simultaneous interpretation and sound recording equipment and by the C.C.I.T.T. Reserve Account;

2,616,400 Sw. frs. for the special account for Technical Cooperation administrative expenses;

2,576,500 Sw. frs. for the supplementary publications budget.

By the same Resolution, the Administrative Council fixed the amount of the contributory unit for 1968 at 45,600 Swiss francs on the basis of the classification freely chosen by Members and Associate Members in accordance with numbers 212 and 213 of the Montreux Convention, i.e. on the basis of a total of 471½ units.

Finally, in accordance with Article 16, number 230 of the Convention (Montreux, 1965), the Administrative Council fixed a figure of 5.000 Swiss francs for 1968 as the annual unit of contribution towards defraying the expenses of meetings of the International Consultative Committees payable by the recognized private operating agencies, scientific and industrial organizations and by those international organizations not exempt from contributions.

At its 23rd Session, by Resolution No. 621, the Administrative Council authorized additional credits for the 1968 budget mainly to cover expenditure arising from changes in the employment conditions of the common system of the United Nations and the specialized agencies and also for the meetings of the C.C.I.T.T. By Resolution No. 621, the budget for 1968 was finally fixed at the following amounts:

20,090,100 Sw. frs. for recurrent expenditure of which

18,387,000 Sw. frs. are within the limit of expenditure
1,703,100 Sw. frs. are outside the limit;

3,600,000 Sw. frs. for conferences and meetings of which

2,244,100 Sw. frs. are within the limit of expenditure,
115,000 Sw. frs. are outside the limit, and
1,240,900 Sw. frs. are covered by unused credits of 1966 and 1967;

230,000 Sw. frs. for the preparation of the draft I.T.U. Constitution;

35,000 Sw. frs. for expenses covered by the renewal fund for simultaneous interpretation and sound recording equipment and by the C.C.I.T.T. Reserve Account;

2,742,400 Sw. frs. for the special account for Technical Cooperation administrative expenses;

2,576,500 Sw. frs. for the supplementary publications budget.

At its 23rd Session, by Resolution No. 622, the Administrative Council also approved the 1969 budget for the following amounts:

20,416,900 Sw. frs. for recurrent expenditure;

2,277,000 Sw. frs. for conferences and meetings;

35,000 Sw. frs. for expenses covered by the renewal fund for simultaneous interpretation equipment and sound recording equipment and by the C.C.I.T.T. Reserve Account;

2,894,900 Sw. frs. for Technical Cooperation administrative expenses;

3,072,300 Sw. frs. for the supplementary publications budget;

5,105,450 Sw. frs. for the supplementary budget for the construction of a new wing for the I.T.U. building.

By the same Resolution, the Administrative Council fixed the amount of the contributory unit for 1969 at 46,200 Swiss francs on the basis of 473½ units. The Administrative Council also decided to fix the annual unit of contribution towards defraying the expenses of meetings of the C.C.I.R. or the C.C.I.T.T. for recognized private operating agencies, scientific and industrial organizations and for those international organizations not exempt on the basis of reciprocity, at 5,000 Swiss francs for 1969.

Classification of the Members and Associate Members of the Union for the apportionment of Union expenditure in 1968

At the end of 1967, the Union had 133 Members (no Associate Members) contributing on the basis of a total of 472½ units.

As a result of the accession of two new Members in 1968 and the declaration of Lebanon asking to participate as from 1 January 1968 in the 1-unit class (instead of the ½-unit class) in the expenditure of the Union, the I.T.U. had 135 Members (no Associate Members) on 31 December 1968 contributing on the basis of 474 units to the expenditure of the Union.

Cash resources

That the liquid asset position of the Union continued to be very satisfactory in 1968 can be seen from the fact that no advance from the Government of the Swiss confederation was required and that it was possible to continue making short-term investments throughout the year.

Contributions in arrear

Total amounts in arrear on 31 December 1968 with corresponding amounts for the two previous years:

31 December 1966	4,392,596.50 Sw. frs.
31 December 1967	5,739,456.66 Sw. frs.
31 December 1968	6,788,386.79 Sw. frs.

The situation concerning monies owed to the Union did not improve despite the efforts made by the Administrative Council and the Secretary-General to obtain settlement of accounts in arrear or at least to come to some arrangement with the debtors whereby the longest-standing debts could be settled by annual instalments. It is hoped however that, thanks to the personal contacts established by the Secretary-General and the efforts of the regional experts of the I.T.U., it will be possible in the near future to reduce the sums outstanding.

Annex 6 to this report shows the situation of the debtors to the Union on 31 December 1968.

I.T.U. Staff Superannuation and Benevolent Funds and membership of the United Nations Joint Staff Pension Fund

The following table shows the distribution of members among the various funds on 31 December 1968.

	Working staff	Retired staff	Widow's Pensions	Orphan's Pensions
Provident Fund	6	18	3	—
Reserve and Complement Fund.	—	11	3	3
U.N. Joint Fund				
Union staff:				
Full members	418	19	7	4
Associate members	—	—	—	—
Technical Cooperation experts:				
Full members	138	1	1	—
Associate members	25	—	—	—
Total	587	49	14	7

The Management Report of the I.T.U. S.S. & B. Funds, which constitutes the second part of the Financial Operating Report for 1968, gives full information on the activities of the Management Board of the S.S. & B. Funds.

7. RELATIONS WITH THE UNITED NATIONS AND OTHER INTERNATIONAL ORGANIZATIONS

United Nations

Apart from attendance at meetings of the General Assembly and of the Economic and Social Council (ECOSOC) and participation in the work of the Administrative Committee on Coordination (A.C.C.), the Union has continued to cooperate with the Consultative Committee on Administrative Questions (C.C.A.Q.), the International Civil Service Advisory Board (I.C.S.A.B.) and the Consultative Committee on Public Information (C.C.P.I.).

In view of the experience gained over many years in the use of an electronic computer in the accomplishment of substantive technical tasks for its Members, the I.T.U. has been able to make a substantial contribution to the work of the Computer Users Committee and its subsidiary bodies.

The Union has also closely followed the work of the United Nations in the technical field.

As the specialized agency of the United Nations responsible for telecommunication matters of every kind, the I.T.U. has to pay special attention to international cooperation in the peaceful uses of outer space, particularly in view of the extremely rapid developments which are taking place in this field. In pursuance of General Assembly Resolution No. 2130 (XX), the Administrative Council, at its 23rd Session, prepared a Seventh Report for presentation to ECOSOC and to the United Nations Committee on the Peaceful Uses of Outer Space. The I.T.U. was represented at the 10th Session of that Committee and has continued to participate in the work of its Legal and Scientific and Technical Sub-Committees and also in that of the A.C.C. Inter-Agency Working Group on Programmes and Activities Relating to the Peaceful Uses of Outer Space.

In August 1968 the I.T.U. participated in the United Nations Conference on the Exploration and Peaceful Uses of Outer Space, held in Vienna and presented a background paper entitled " Radiocommunications in the Exploration and Peaceful Uses of Outer Space ".

In the broad field of science and technology the Union continues to follow with attention the work of the Advisory Committee on Science and Technology created by ECOSOC at its 36th Session and that of the A.C.C. Sub-Committee on Science and Technology.

Cooperation with the Regional Economic Commissions

Cooperative arrangements with the Economic Commission for Asia and the Far East (ECAFE) have now been working satisfactorily for some ten years. Two I.T.U. Regional Experts are collaborating closely with the ECAFE. Approval was obtained from the U.N.D.P. for the addition of one expert in 1969. Representatives from I.T.U. Headquarters also participate actively in the meetings of the Transport and Communications Committee and of the Telecommunication Sub-Committee of ECAFE.

During 1968, the I.T.U. experts worked to render assistance to various countries on substantive issues and in helping them to identify the need for technical assistance and to formulate requests therefore. The ECAFE, at its session in April 1968, passed a resolution on the urgent need to establish a regional telecommunication network and on the desirability of seeking

U.N.D.P./I.T.U. assistance for the necessary preinvestment study. The Regional Experts were actively engaged in the preparation, in collaboration with the I.T.U. Headquarters, of the request for assistance under the Special Fund component. The request was submitted to the U.N.D.P. in January 1969 and will probably be considered at the June 1969 session of the Governing Council.

The I.T.U. has also continued to cooperate closely with the Economic Commission for Africa (E.C.A.). In accordance with a memorandum of understanding signed in 1963, three I.T.U. experts stationed in Addis Ababa are working in close collaboration with their colleagues in the E.C.A. Their two main preoccupations in 1968 were telecommunication training and the African regional network. A series of missions was undertaken to discuss the establishment of multi-national training projects in various regions of Africa. Much work has been done to prepare a request to U.N.D.P. for assistance under the SF component towards preinvestment studies of a regional network. A preliminary allocation was granted by the U.N.D.P. for the purpose of feasibility studies and two teams of experts were recruited during the latter part of the year. The team located in Addis Ababa assembled during December and the one in Abidjan began in January 1969. The feasibility studies are to be carried out on the basis of the Addis Ababa Plan and of material collected by the Regional Experts in Addis Ababa.

In Latin America, the I.T.U. has established cooperation with the CITEL, which is an organ established by the Economic and Social Council of the Organization of American States. The I.T.U. has assigned under the TA component of the U.N.D.P. (as is also the case of the Regional Experts in Africa and Asia), three Regional Experts who cooperate closely with the so-called Regional Coordinators of the CITEL. As in the two other regions, the experts in Latin America have been giving advice to countries on an ad hoc basis. For Latin America, the Governing Council of the U.N.D.P. at its session in January 1968 approved assistance from the Special Fund for a preinvestment study on a regional network. The project was to be executed by the Inter-American Development Bank in association with the I.T.U. It is expected that the plan of operation will be signed during the first half of 1969.

Relations with the Specialized Agencies

The I.T.U. has continued to maintain close relations with the agencies of a technical nature which have a special interest in telecommunications, i.e. the International Civil Aviation Organization (I.C.A.O.), the World Meteorological Organization (W.M.O.), the Inter-Governmental Maritime Consultative Organization (I.M.C.O.), and the United Nations Educational, Scientific and Cultural Organization (UNESCO), many of which are examining the possibility of solving their particular problems by the use of space communication techniques.

I.T.U. was represented at the first meeting in November 1968 of the ASTRA Panel created by I.C.A.O.

The I.T.U. has continued to collaborate with the UNESCO Advisory Panel of Experts on Space Communications and attended a meeting of experts on the use of Space Communication for Broadcasting. An official of the C.C.I.R. joined a UNESCO mission to Brazil in connection with a pilot project for the use of satellites for educational purposes.

The Union has also continued to collaborate with the International Oceanographic Commission (I.O.C.) of UNESCO and a joint I.O.C./W.M.O. Group of Experts on Telecommunications.

As in the past the work of the Maritime Safety Committee of I.M.C.O. and of the Sub-Committees on Safety of Navigation and on Radiocommunications has been closely followed.

Since postal and telecommunication services are assured in a large number of countries by the same administration, every effort is made to coordinate with the Universal Postal Union (U.P.U.) the solution of common problems. The possibility of organizing joint U.P.U./I.T.U. training projects is also kept constantly under review.

Relations with other International Organizations

Apart from the specialized agencies, the Union has maintained close collaboration with a number of international organizations, among which special mention should be made of the following:

International Broadcasting and Television Organization (O.I.R.T.)
European Broadcasting Union (E.B.U.)
Danube Commission
International Radio-Maritime Committee (C.I.R.M.)
International Scientific Radio Union (U.R.S.I.)
International Electrotechnical Commission (I.E.C.)
International Organization for Standardization (I.S.O.)
Committee on Space Research (COSPAR)
International Council of Scientific Unions (I.C.S.U.)
International Astronautical Federation (I.A.F.)
Asian Broadcasting Union
Inter-American Association of Broadcasters (A.I.R.)
Union of National Radio and Television Organizations of Africa (U.R.T.N.A.)
Arab Telecommunication Union
European Conference of Posts and Telecommunications (C.E.P.T.)
African and Malagasy Postal and Telecommunications Union (U.A.M.P.T.).

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A list of meetings of the United Nations and other international organizations at which the Union was represented in 1968 appears in Annex 4 to this Report.

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ANNEX 1

POSITION ON 31 DECEMBER 1968
OF MEMBER COUNTRIES IN RELATION TO THE ACTS OF THE UNION

Table I. *Montreux Acts (1965) and Regulations annexed thereto:*

- International Telecommunication Convention, Montreux, 1965;
- Optional Additional Protocol to the International Telecommunication Convention, Montreux, 1965, on the Compulsory Settlement of Disputes;
- Radio Regulations and Additional Radio Regulations (A.R.C. Geneva, 1959);
- Partial Revision of the Radio Regulations (E.A.R.C. Geneva, 1963) (space);
- Partial Revision of the Radio Regulations (E.A.R.C. Geneva, 1966) (aeronautical);
- Partial Revisions of the Radio Regulations and of the Additional Radio Regulations (W.A.R.C., Geneva, 1967) (maritime);
- Telegraph and Telephone Regulations (Geneva, 1958).

Table II. *African Regional Agreements:*

- Regional Agreement for the African Broadcasting Area concerning the use of frequencies by the broadcasting service in the very high frequency and ultra high frequency bands (Geneva, 1963);
- Regional Agreement concerning the use of frequencies by the broadcasting service in the medium frequency band in the African Broadcasting Area (Geneva, 1966).

Table III. *American Regional Agreements:*

- Inter-American Radio Agreement (FIAR) (Washington, 1949);
- North-American Regional Broadcasting Agreement (NARBA) (Washington, 1950).

Table IV. *European Regional Conventions, Arrangements and Agreements:*

- European Broadcasting Convention (Copenhagen, 1948);
- European Regional Convention for the Maritime Mobile Radio Service (Copenhagen, 1948);
- Regional Arrangement relative to Maritime Radiobeacons in the European Area of Region 1 (Paris, 1951);
- Regional Agreement Concerning the Establishment of an International VHF Radiotelephone Mobile Service for Rhine Navigation (Brussels, 1957);
- Regional Agreement for the Use of Frequencies in the Bands 68-73 Mc/s and 76-87.5 Mc/s by the Broadcasting Service on the one hand and by the Fixed and Mobile Services on the other (Geneva, 1960);
- Regional Agreement for the European Broadcasting Area (Stockholm, 1961).

Tables V.1 to V.4. *Special Agreements:*

- Special Regional Agreement Concerning the Use of the 100-104 Mc/s Band by the Broadcasting Service (1962);
- Special Agreement for Use of the 582-606 Mc/s Band for Radionavigation Purposes (Brussels, 1962);
- Special Agreement in Connection with the Use of VHF and UHF in Fixed and Mobile Services in Frontier Areas (Brussels, 1963);
- Special Agreement Concerning the Use of Frequencies for Additional low-power Television Transmitters operating in the high-frequency Range (Band IV, 472-582 Mc/s and Band V, 582-960 Mc/s) in the Frontier Areas (Karlsruhe, 1966).

Table I.

Convention, Regulations

POSITION ON

31 DECEMBER, 1968

The letter S means that the Act concerned has been signed.
The letter A in columns 3 or 5 means accession; in the other columns, it means approval.

Country or group of territories (In the alphabetical order of the French version of the country names)	CONVENTION, etc.					ADMINISTRATIVE REGULATIONS															
	Plenipotentiary Conference, Montreux, 1965					Administrative Radio Conferences												Administrative Telegraph and Telephone Conference			
						Radio Regulations								Additional Radio Regulations				Geneva (1958)			
						A.R.C. Geneva (1959)		Partial Revision E.A.R.C. Geneva (1963) (space)		Partial Revision E.A.R.C. Geneva (1966) (aeronautical)		Partial Revision W.A.R.C. Geneva (1967) (maritime)		A.R.C. Geneva (1959)		Partial Revision W.A.R.C. Geneva (1967) (maritime)		Telegraph Regulations		Telephone Regulations	
	Class of contribution No. of units	Convention, etc.*	Date on which the instrument of ratification or accession was deposited with the General Secretariat	Opt. Add. Protocol**	Date on which the instrument of ratification or accession was deposited with the General Secretariat																
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Afghanistan	½	S [1]		S		S		—		—		—		S		—		—		—	
Albania (People's Republic of)	½	—		—		S	[5]	—		—		—		S	[5]	—		—	A	—	A
Algeria (Algerian Democratic and Popular Republic)	3	S [1]	24. IX. 1968 [2]	—		—	A [4]	S	A	S	A [4]	S	A	—	A [4]	S	A	—	A [4]	—	A [4]
Saudi Arabia (Kingdom of)	1	S [1]	6. IX. 1968 [2]	—		S	A [4]	—	A [4]	S	A [4]	—		S	A [4]	—		S	A [4]	S	A [4]
Argentine Republic	15	S [1]	17. V. 1967	—		S	A [24]	S	A [3]	S	A	S		S	A [24]	S		—	A [27]	—	A [27]
Australia (Commonwealth of)	18	S [1]	25. I. 1967	S	25. I. 1967	S	A	S	A	S	A	S		S	A	S		S	A	S	A
Austria	1	S [1]		S		S	A	S	A	—	A	S	A	S	A	S	A	S	A	S	A
Barbados	½	A	16. VIII. 1967	—		—	A [4]	—	A [4]	—	A [4]	—		—	A [4]	—		—	A [4]	—	A [4]
Belgium	5	S [1]		S		S	A	S	A	S	A	S		S	A	S		S	A [3]	S	A
Bielorussian Soviet Socialist Republic	1	S [1]		—		S	[1]	S	A	—	A [34]	—		S	[1]	—		S	A	S	A
Burma (Union of)	1	S [1]		S		S	A	—		—		—		S	A	—		S	A	S	A
Bolivia	3	S [1]		S		S		—		—		—		S		—		—		—	
Botswana (Republic of)	½	A	2. IV. 1968	—		—	A [4]	—	A [4]	—	A [4]	—		—	A [4]	—		—	A [4]	—	A [4]
Brazil	5	S [1]	12. VII. 1968	S		S	A	—	A [4]	S	A [4]	S		S	A	S		—	A	—	A
Bulgaria (People's Republic of)	1	S [1]		—		S	[1]	S		S	A [12]	S		S	[1]	S		S	A	S	A
Burundi (Republic of) [17]	½	—		—		—	A [4]	—	A	—		—		—	A [4]	—		—	A [4]	—	A [4]
Cambodia (Kingdom of)	1	A	13. IX. 1968	—		S	A	S	A	—	A [4]	—		S	A	—		—	A	—	A
Cameroon (Federal Republic of)	½	S [1]	24. IV. 1968	—		—	A	—	A	—	A [4]	S		—	A	S		—	A [4]	—	A [4]
Canada	18	S [1]	31. VIII. 1966 [2]	S	30. I. 1967	S	A	S	A [3]	S	A	S	A	S	A [3]	S	A	S	A	—	[1]
Central African Republic	½	S [1]	15. VIII. 1966	S	15. VIII. 1966	—	A	—	A	—		—		—	A	—		—	A [4]	—	A [4]
Ceylon	1	S	13. I. 1967	—		S	A [4]	—	A [4]	—		S		S	A [4]	S		S	A [4]	S	A [4]
Chile	3	S [1]		—		—	A [4]	—	A [4]	—		S		—	A [4]	S		—	A [4]	—	A [4]

*) Convention, Final Protocol, Additional Protocols.
**) Optional Additional Protocol on the Compulsory Settlement of Disputes

Table I.

Convention, Regulations *(cont.)*

Country or group of territories (In the alphabetical order of the French version of the country names)	CONVENTION, etc.					ADMINISTRATIVE REGULATIONS													
	Plenipotentiary Conference, Montreux, 1965					Administrative Radio Conferences										Administrative Telegraph and Telephone Conference			
						Radio Regulations								Additional Radio Regulations				Geneva (1958)			
						A.R.C. Geneva (1959)		Partial Revision E.A.R.C. Geneva (1963) (space)		Partial Revision E.A.R.C. Geneva (1966) (aeronautical)		Partial Revision W.A.R.C. Geneva (1967) (maritime)		A.R.C. Geneva (1959)		Partial Revision W.A.R.C. Geneva (1967) (maritime)		Telegraph Regulations		Telephone Regulations	
	Class of contribution No. of units	Convention, etc. *	Date on which the instrument of ratification or accession was deposited with the General Secretariat	Opt. Add. Protocol **	Date on which the instrument of ratification or accession was deposited with the General Secretariat																
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
China	15	S [1]	12. I. 1968	—		S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A
Cyprus (Republic of)	½	S [1]		S		—	A	S	A	—		S		—	A	S		—	A	—	A
Vatican City State	½	S	6. IV. 1968	S		S	A	S	A	—	A [4]	—		S	A	—		—	A	—	A
Colombia (Republic of)	3	S [1]		—		S		S		S		S		S		S		S		S	
Congo (Democratic Republic of the)	1	S [1]		S		—	A [4]	S	A	S		—		—	A [4]	—		—	A [4]	—	A [4]
Congo (Republic of the) (Brazzaville)	½	S [1]	21. XII. 1966	S		—	A	—	A [4]	—		—	A	—	A	—	A	—	A [4]	—	A [4]
Korea (Republic of)	1	S [1]	14. III. 1967	S	14. III. 1967	S	A	S	A	—	A	S		S	A	S		S	A	S	A
Costa Rica	½	S [1]		S		S		—		—		—		S		—		—		—	
Ivory Coast (Republic of the)	1	S [1]	15. I. 1968	S		—	A [30]	—	A	—	A [4]	S		—	A	S		—	A [4]	—	A [4]
Cuba	1	S [1]		—		S	[1]	S		S		S		S	[1]	—	[1]	—	[1]	—	[1]
Dahomey (Republic of)	½	S [1]	10. XI. 1967	—		—	A	—	A	—	A [4]	—		—	A	—		—	A [4]	—	A [4]
Denmark	5	S [1]	9. XI. 1966	A	9. XI. 1966	S	A	S	A	S	A	S		S	A	S		S	A	S	A
Dominican Republic	3	A	20. III. 1968	—		S	A [4]	—	A [4]	—	A [4]	—		S	A [4]	—		—	A	—	A
El Salvador (Republic of)	3	—		—		S		—		—		—		S	[5]	—	[5]	S		S	[5]
Group of Territories represented by the French Overseas Post and Telecommunication Agency [33]	1	S	29. V. 1967	S		S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A
Ecuador	1	S [1]		—		—	A [4]	—		—		—		—	A [4]	—		—	A [4]	—	A [4]
Spain	3	S [1]	6. VI. 1967	—		S	A [3]	S	A	S	A	S		S	A	S		S	A	S	A
United States of America	30	S [1]	29. V. 1967 [2]	—		S	A [25]	S	A	S	A	S	A	—	[1]	—	[1]	S	A [28]	—	[1]
Ethiopia	1	S [1]	29. VII. 1967	—		S	A	S	A	S	A [4]	S		S	A	S		S	A	S	A
Finland	3	S [1]	3. II. 1967	S	22. VI. 1967	S	A	S	A	—		S		S	A	S		S	A	S	A
France	30	S	29. V. 1967	—		S	A	S	A	S	A	S	A	S	A	S	A	S	A [3]	S	A
Gabon Republic	½	S [1]		S		—	A	—	A	—		—		—	A	—		—	A [4]	—	A [4]
Ghana	1	S [1]		S		S	A	S	A	S		S		S	A	S		—	A	—	A
Greece	1	S [1]	26. VII. 1968	S	26. VII. 1968	S	A	S	A	—	A [4]	S		S	A	S		S	A	S	A
Guatemala	1	S [1]		S		—	A [31]	—		—		—		—	A	—		—	A	—	A

*) Convention, Final Protocol, Additional Protocols.
**) Optional Additional Protocol on the Compulsory Settlement of Disputes.

Table I.

Convention, Regulations *(cont.)*

Country or group of territories (In the alphabetical order of the French version of the country names)	CONVENTION, etc.				
	Plenipotentiary Conference, Montreux, 1965				
	Class of contribution No. of units	Convention, etc.*	Date on which the instrument of ratification or accession was deposited with the General Secretariat	Opt. Add. Protocol**	Date on which the instrument of ratification or accession was deposited with the General Secretariat
1	2	3	4	5	6
Guinea (Republic of)	½	S [1]	3. X. 1966	—	
Guyana	½	A	8. III. 1967	—	
Haiti (Republic of)	1	S		S	
Upper Volta (Republic of)	½	S [1]	5. IV. 1968	—	
Honduras (Republic of)	½	—		—	
Hungarian People's Republic	1	S [1]		—	
India (Republic of)	13	S [1]	1. XII. 1967	—	
Indonesia (Republic of)	1	S [1]		—	
Iran	1	S [1]		—	
Iraq (Republic of)	1	S [1]		—	
Ireland	3	S	17. V. 1967	—	
Iceland	½	S [1]	8. III. 1967	—	
Israel (State of)	1	S [1]	20. III. 1968	—	
Italy	10	S [1]	28. X. 1968	—	
Jamaica	1	S [1]		—	
Japan	20	S	30. VIII. 1967	S	30. VIII. 1967
Jordan (Hashemite Kingdom of)	½	S [1]	1. III. 1967	—	
Kenya	½	S [1]	25. X. 1968	—	
Kuwait (State of)	1	S [1]	11. IV. 1968 [2]	—	
Laos (Kingdom of)	½	S	27. IX. 1967	—	
Lesotho (Kingdom of)	½	A	26. V. 1967	—	
Lebanon	1	S [1]	10. I. 1967	—	
Liberia (Republic of)	1	S [1]		—	
Libya (Kingdom of)	½	A	15. VIII. 1968	—	
Liechtenstein (Principality of)	½	S [1]	12. XII. 1967	S	12. XII. 1967
Luxembourg	½	S [1]	31. XII. 1968	S	31. XII. 1968

ADMINISTRATIVE REGULATIONS																
Administrative Radio Conferences												Administrative Telegraph and Telephone Conference				
Radio Regulations								Additional Radio Regulations				Geneva (1958)				
A.R.C. Geneva (1959)		Partial Revision E.A.R.C. Geneva (1963) (space)		Partial Revision E.A.R.C. Geneva (1966) (aeronautical)		Partial Revision W.A.R.C. Geneva (1967) (maritime)		A.R.C. Geneva (1959)		Partial Revision W.A.R.C. Geneva (1967) (maritime)		Telegraph Regulations		Telephone Regulations	
7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
—	A [4]	—	A	—	A	—		—	A [4]	—		—	A [4]	—	A [4]
—	A [4]	—	A [4]	—	A	S	A	—	A [4]	S	A	—	A [4]	—	A [4]
—		—		—		—		—		—		—	A [4]	—	A [4]
—	A [4]	—	A	—	A [4]	—		—	A [4]	—		—	A [4]	—	A [4]
—		—		—		—		—		—		—		—	
S	[1]	S		S		S		S	[1]	S		S	A	S	A
S	A	S	A	S	A	S		S	A	S		S	A	S	A [26]
S	A	S		S		S		S	A	S		S	A	S	A
S	A	—		—		—		S	A	—		S	A	S	A
S		—		—		—		S		—		—		—	
S	A	S	A	S	A	S		S	A	S		S	A	S	A
S	A	S	A	—	A	S	A	S	A	S	A	S	A	S	A
S	A	S	A	—	A [4]	S		S	A	S		S	A	S	A
S	A [21]	S	A	S	A	S		S	A [21]	S		S	A [21]	S	A [21]
—	A [4]	S	A [20]	S		S		—	A [4]	S		—	A [4]	—	A [4]
S	A	S	A	S	A	S		S	A	S		S	A	S	A
S	A	—	A [4]	—		S		S	A	S		S	A	S	A
—	A [4]	—	A	—	A	—	A	—	A [4]	—	A	—	A [4]	—	A [4]
S	A	S	A	S	A [4]	S		S	A	S		—	A	—	A
—	A	—	A	—	A [4]	—	A	—	A	—	A	—	A	—	A
—	A [4]	—	A [4]	—		—		—	A [4]	—		—	A [4]	—	A [4]
S	A	S	A	—		—		S	A	—		S	A	S	A
—	A	S		—		S		—	A	S		—	A	—	A
S	A [4]	—	A [4]	—	A [4]	—		S	A [4]	—		S	A [4]	S	A [4]
—	A [4]	S	A [4]	—	A [4]	—		—	A [4]	—		—	A [4]	—	A [4]
S	A	S	A	S	A	—	A	S	A	—	A	S	A [3]	S	A

*) Convention, Final Protocol, Additional Protocols.
**) Optional Additional Protocol on the Compulsory Settlement of Disputes.

Table I.

Convention, Regulations *(cont.)*

Country or group of territories (In the alphabetical order of the French version of the country names)	CONVENTION, etc. — Plenipotentiary Conference, Montreux, 1965					ADMINISTRATIVE REGULATIONS — Administrative Radio Conferences										Administrative Telegraph and Telephone Conference			
						Radio Regulations								Additional Radio Regulations				Geneva (1958)			
						A.R.C. Geneva (1959)		Partial Revision E.A.R.C. Geneva (1963) (space)		Partial Revision E.A.R.C. Geneva (1966) (aeronautical)		Partial Revision W.A.R.C. Geneva (1967) (maritime)		A.R.C. Geneva (1959)		Partial Revision W.A.R.C. Geneva (1967) (maritime)		Telegraph Regulations		Telephone Regulations	
	Class of contribution No. of units	Convention, etc. *	Date on which the instrument of ratification or accession was deposited with the General Secretariat	Opt. Add. Protocol **	Date on which the instrument of ratification or accession was deposited with the General Secretariat																
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Malaysia	3	S [1]	6. IX. 1968	—		S	A	S	A	S	A	S		S	A	S		S	A	S	A
Malawi	½	S [1]		A	16. XII. 1966	—	A [4]	—	A	—		—		—	A [4]	—		—	A [4]	—	A [4]
Maldive Islands	½	A	28. II. 1967	—		—	A [4]	—	A [4]	—		—		—	A [4]	—		—	A [4]	—	A [4]
Malagasy Republic	1	S [1]	18. VIII. 1967	S		—	A [4]	—	A	—	A	—	A	—	A [4]	—	A	—	A [4]	—	A [4]
Mali (Republic of)	½	S [1]	14. III. 1968	—		—	A	—	A	—	A [4]	—		—	A	—		—	A [4]	—	A [4]
Malta	½	S [1]		S		—	A [4]	—	A [4]	S		S		—	A [4]	S		—	A [4]	—	A [4]
Morocco (Kingdom of)	1	S [1]	17. X. 1968	—		S	A [3]	S	A	—	A [4]	—		S	A	—		S	A	S	A
Mauritania (Islamic Republic of)	½	S [1]		S		—	A [4]	—		—		—		—	A [4]	—		—	A [4]	—	A [4]
Mexico	5	S [1]	2. XI. 1967	S		S	A	S	A	S	A [4]	S		S	A	S		S	A	S	A
Monaco	½	S		S		S	A	S		—		S		S	A	S		S	A	S	A
Mongolian People's Republic	½	S [1]		S		—	[1]	—		—		—		—	[1]	—		—	A [4]	—	A [4]
Nepal	½	S [1]	1. VII. 1967 [2]	—		S	A	—	A [4]	—	A [4]	—		S	A	—		—	A	—	A
Nicaragua	1	S [1]		S		S		—		—		—		S		—		—		—	
Niger (Republic of the)	½	S [1]	22. VI. 1967	—		—	A	—	A [4]	—	A	—	A	—	A	—	A	—	A [4]	—	A [4]
Nigeria (Federal Republic of)	2	S [1]	21. I. 1967	—		—	A	—	A	—		—		—	A	—		—	A [4]	—	A [4]
Norway	5	S [1]	13. IX. 1968	A	13. IX. 1968	S	A	S	A [4]	S	A	S		S	A	S		S	A	S	A
New Zealand	5	S [1]	13. IV. 1967 [14]	—		S	A	S	A	S	A	S	A	S	A	S	A	S	A	—	A
Uganda	½	S [1]	1. IV. 1967	—		—	A [4]	S	A	—	A	—	A	—	A [4]	—	A	—	A [4]	—	A [4]
Pakistan	3	S [1]	1. VI. 1967 [2]	—		S	A [3]	S	A [3]	S		S		S	A	S		S	A	S	A
Panama	½	S [1]		S		—	A	—		—		—		—	A	—		—	A	—	A
Paraguay	1	S [1]	8. IX. 1967	S	31. V. 1968	S	A	—	A	—	A	—		S	A	—		S	A	S	A
Netherlands (Kingdom of the)	8	S [1]	27. XII. 1966 [19]	S		S	A	S	A	S	A	S		S	A	S		S	A [3]	S	A
Peru	2	S [1]	1. III. 1967	—		S	[1]	—	[1]	—	[1]	—	[1]	S	[1]	—	[1]	—	[1]	—	[1]
Philippines (Republic of the)	1	S [1]		S		S		S		—		—		S	[1]	—	[1]	—	[1]	—	[1]
Poland (People's Republic of)	3	S [1]		—		S	[1]	S		S		S		S	[1]	S		S	A	S	A
Portugal	3	S [1]	10. IX. 1968	—		S	A	S	A	S	A [4]	S		S	A	S		S	A	S	A

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Table I.

Convention, Regulations *(cont.)*

Country or group of territories (In the alphabetical order of the French version of the country names)	CONVENTION, etc. — Plenipotentiary Conference, Montreux, 1965					ADMINISTRATIVE REGULATIONS — Administrative Radio Conferences — Radio Regulations								Additional Radio Regulations				Administrative Telegraph and Telephone Conference — Geneva (1958)			
	Class of contribution No. of units	Convention, etc.*	Date on which the instrument of ratification or accession was deposited with the General Secretariat	Opt. Add. Protocol**	Date on which the instrument of ratification or accession was deposited with the General Secretariat	A.R.C. Geneva (1959)		Partial Revision E.A.R.C. Geneva (1963) (space)		Partial Revision E.A.R.C. Geneva (1966) (aeronautical)		Partial Revision W.A.R.C. Geneva (1967) (maritime)		A.R.C. Geneva (1959)		Partial Revision W.A.R.C. Geneva (1967) (maritime)		Telegraph Regulations		Telephone Regulations	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Spanish Provinces in Africa	1	S	6. VI. 1967	—		—	A	S	A	—		—		—	A	—		—	A	—	A
Portuguese Oversea Provinces	3	S	10. IX. 1968	—		S	A	—	A	S	A [4])	S		S	A	S		S	A	S	A
Syrian Arab Republic	1	S [1])	1. VI. 1968	—		—	A [4])	—	A [4])	—	A [4])	—		—	A [4])	—		—	A [4])	—	A [4])
United Arab Republic	5	S [1])		—		S		S		—		—		S		—		S	A	S	A
Federal Republic of Germany	20	S [1])	16. XII. 1968 [36])	—		S	A [23])	S	A [32])	S	A	S		S	A	S		S	A [3])	S	A
Ukrainian Soviet Socialist Republic	3	S [1])		—		S	[1])	S	A	—	A [34])	—		S	[1])	—		S	A	S	A
Somali Republic	1	S [1])		—		—	A [4])	—		—		—		—	A [4])	—		—	A [4])	—	A [4])
Rhodesia	1	— [11])	— [11])	— [11])	— [11])	—	A	—	A	—		—		—	A	—		S	A	S	[38])
Roumania (Socialist Republic of)	1	S [1])		—		S	[1])	S		S		S		S	[1])	S		S	A	S	A
United Kingdom of Great Britain and Northern Ireland, the Channel Islands and the Isle of Man	30	S [1])	4. I. 1967	S	4. I. 1967	S	A	S	A	S	A	S		S	A	S		S	A	S	A
Rwanda (Republic of)	½	S [1])		S		—	A [4])	—	A	—		—		—	A [4])	—		—	A [4])	—	A [4])
Senegal (Republic of the)	1	S [1])	5. VI. 1967	S	12. XII. 1967	—	A	—	A	—		S		—	A	S		—	A [4])	—	A [4])
Sierra Leone	½	S [1])		—		—	A [4])	—	A	—		—	A	—	A [4])	—	A	—	A [4])	—	A [4])
Singapore (Republic of) [16])	1	S [1])	23. XI. 1967	A	23. XI. 1967	—	A [4])	—	A [4])	S	A [3])	S		—	A [4])	S		—	A [4])	—	A [4])
Sudan (Republic of the)	1	S [1])		—		S	A	—		—		—		S	A	—		S	A	S	A
South Africa (Republic of) [18])	8	A	11. XI. 1966	—		S	A	S	A	S		S		S	A	S		S	A	S	[5])
Sweden	10	S [1])	8. I. 1968	A	8. I. 1968	S	A	S	A	S	A [4])	S	A	S	A	S	A	S	A [29])	S	A
Switzerland (Confederation of)	10	S [1])	5. I. 1967	S	5. I. 1967	S	A	S	A	S		S		S	A	S		S	A	S	A
Tanzania (United Republic of)	½	S [1])	7. X. 1967	—		—	A [4])	S	A	—	A	—	A	—	A [4])	—	A	—	A [4])	—	A [4])
Chad (Republic of the)	½	S [1])	30. X. 1968	S	30. X. 1968	—	A	—	A	—	A [4])	S		—	A	S		—	A [4])	—	A [4])
Czechoslovak Socialist Republic	3	S [1])	3. I. 1968 [2])	—		S	[1])	S		S		S		S	[1])	S		S	A	S	A
Territories of the United States of America	25	S [1])	29. V. 1967 [2])	—		—	A [25])	S	A	[13])	A	S	A	—	[1])	—	[1])	—	A [28])	—	[1])
Overseas Territories for the international relations of which the Government of the United Kingdom of Great Britain and Northern Ireland are responsible [22])	1	S	7. III. 1968 [37])	S	7. III. 1968	S	A	S	A	S	A	—		S	A	—		—	A	—	A

*) Convention, Final Protocol, Additional Protocols.
**) Optional Additional Protocol on the Compulsory Settlement of Disputes.

Table I.

Convention, Regulations *(end)*

Country or group of territories (In the alphabetical order of the French version of the country names)	CONVENTION, etc.					ADMINISTRATIVE REGULATIONS													
	Plenipotentiary Conference, Montreux, 1965					Administrative Radio Conferences										Administrative Telegraph and Telephone Conference			
						Radio Regulations								Additional Radio Regulations				Geneva (1958)			
	Class of contribution No. of units	Convention, etc.*	Date on which the instrument of ratification or accession was deposited with the General Secretariat	Opt. Add. Protocol**	Date on which the instrument of ratification or accession was deposited with the General Secretariat	A.R.C. Geneva (1959)		Partial Revision E.A.R.C. Geneva (1963) (space)		Partial Revision E.A.R.C. Geneva (1966) (aeronautical)		Partial Revision W.A.R.C. Geneva (1967) (maritime)		A.R.C. Geneva (1959)		Partial Revision W.A.R.C. Geneva (1967) (maritime)		Telegraph Regulations		Telephone Regulations	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Thailand	2	S [1]		S		S	A	—	A	S		—		S	A	—		—	A	—	A
Togolese Republic	½	S [1]	8. VIII. 1967	S		—	A [4]	—	A	—	A [4]	S		—	A [4]	S		—	A [4]	—	A [4]
Trinidad and Tobago	1	S [1]	13. XII. 1967	S		—	A [4]	—	A [4]	—	A [4]	—		—	A [4]	—		—	A [4]	—	A [4]
Tunisia	2	S [1]	1. IV. 1967	—		S	A	—	A	—		S		S	A	S		S	A	S	A
Turkey	2	S [1]	29. VIII. 1968	—		S	A [4]	—	A [4]	—	A [4]	S		S	A [4]	S		S	A	S	A
Union of Soviet Socialist Republics	30	S [1]		—		S	[1]	S	A	S	A [34]	S		S	[1]	S		S	A	S	A
Uruguay (Oriental Republic of)	1	—		—		S		—		—		—		S		—		—		—	
Venezuela (Republic of)	3	S [1]		—		S	[1]	—	[1]	S	[1]	S	[1]	S	[1]	S	[1]	S	[1]	S	[1]
Viet-Nam (Republic of)	1	A	15. I. 1968 [35]	A	15. I. 1968 [35]	—	A	—	A	—	A [4]	S		—	A	S		S	A	S	A
Yemen	1	—		—		—		—		—		—		—		—		—		—	
Southern Yemen (People's Republic of)	½	A	15. VIII. 1968	—		—	A [4]	—	A [4]	—	A [4]	—		—	A [4]	—		—	A [4]	—	A [4]
Yugoslavia (Federal Socialist Republic of)	1	S [1]	22. XII. 1967	—		S	A	S	A	S	A	S		S	A	S		S	A	S	A
Zambia (Republic of)	1	S [1]	13. XII. 1967	S		—	A [4]	—	A	—	A [4]	—		—	A [4]	—		—	A [4]	—	A [4]

*) Convention, Final Protocol, Additional Protocols.
**) Optional Additional Protocol on the Compulsory Settlement of Disputes.

[1]) See the statement or statements appearing in the Final Protocol annexed to the International Telecommunication Convention (Montreux, 1965).

[2]) In ratifying the Convention, the country concerned confirmed the reservation(s) made at the time of signature.

[3]) This approval was given subject to the reservation(s) made at the time of signature.

[4]) Regulations approved *ipso facto*, since they were in force when the country concerned acceded to the International Telecommunication Convention (Geneva, 1959) or ratified the International Telecommunication Convention (Montreux, 1965) or acceded thereto.

[5]) See the statement or statements appearing in the Final Protocol annexed to the International Telecommunication Convention (Geneva, 1959).

[6])-[10])

[11]) See Administrative Council Resolution No. 599.

[12]) See Notification No. 1000.

[13]) The signature on behalf of the United States of America is valid also for the Territories of the United States of America.

[14]) The Government of New Zealand declared that this ratification also applies to the Cook Islands, Niue and the Tokelau Islands pursuant to Article 20 of the Convention.

[15])

[16]) Formerly: Singapore.

[17]) Formerly: Burundi (Kingdom of).

[18]) See Administrative Council Resolution No. 619.

[19]) The Government of the Kingdom of the Netherlands declared that the Convention was ratified on behalf of the Kingdom in Europe, of Surinam and of the Netherlands Antilles.

[20]) In approving this partial Revision of the Radio Regulations, the Government of Jamaica reaffirmed the reservation entered by its delegation at the ninth Plenary Meeting of the Conference, i.e.:

"The Jamaican Delegation declares that it reserves the right of the Jamaican Government to take any action it deems necessary to safeguard its interests, should Members or Associate Members in any way fail to comply with the requirements of the Radio Regulations of the Administrative Radio Conference, Geneva, 1959, as added to and amended by the Extraordinary Administrative Radio Conference, Geneva, 1963, or should reservations by other countries jeopardize its telecommunication services."

[21]) The Italian Administration declared that Italy, by ratifying the International Telecommunication Convention (Geneva, 1959) on 7 November 1962 (the instrument of ratification being deposited with the General Secretariat on 28 December 1962), had, in accordance with No. 193 of the Convention, approved *ipso facto* the Administrative Regulations annexed thereto which were in force on that date, i.e. the Telegraph and Telephone Regulations (Geneva, 1958), which came into force on 1 January 1960, and the Radio Regulations (Geneva, 1959) which came into force on 1 May 1961.

22) The Government of the United Kingdom of Great Britain and Northern Ireland have ratified the International Telecommunication Convention, Montreux, 1965, in respect of the following Overseas Territories for the international relations of which they are responsible *(Notification No. 1004)*:

Associated States

Antigua
Dominica
Grenada
St. Christopher, Nevis and Anguilla
St. Lucia

Protected States

Brunei
Swaziland *a)*
Tonga

Other Territories

The Bahama Islands
Bermuda
British Antarctic Territory (including South Orkney Islands, South Shetland Islands and Graham Land)
British Honduras
Bristish Virgin Islands
Cayman Islands
Falkland Islands (Colony and Dependencies, including South Georgia and the South Sandwich Islands)
Fiji
Gibraltar
Hong Kong
Mauritius *a)*
Montserrat
Pitcairn Islands Group
St. Helena (including Ascension Island and Tristan da Cunha)
St. Vincent
Seychelles
Turks and Caicos Islands
Western Pacific High Commission territories including:
British Solomon Islands Protectorate
Central and Southern Line Islands
Gilbert and Ellice Islands Colony
New Hebrides (United Kingdom — French Condominium)

---

a) Now an independent State Member of the United Nations.

23) See Notifications Nos. 855, 876 and 880.

24) In approving these Regulations, the Argentine Government declared that the Argentine Administration, in its relations with other Administrations, will not accept any provisions or obligations of the said Radio Regulations, its Appendices and Resolutions or the Additional Radio Regulations which the corresponding Administrations have not accepted or have accepted subject to reservations.

25) In a note the United States Embassy in Berne declared that " the deposit of the instrument of ratification of the Radio Regulations (Geneva, 1959) and Additional Protocol thereto, constitutes notifications of approval by the United States of America, including all territories under the jurisdiction of the United States of America." *(Notification No. 878.)*

26) In a letter dated 23 December 1961, the Indian Administration announced that it has approved the Telephone Regulations (Geneva, 1958), while reserving the right not to comply with the following provisions of those Regulations in running its services:

1. Article 16, paragraph 1 (validity of bookings);
2. Article 19, paragraph 3 (operating principles);
3. Article 21, paragraphs 1 and 2 (limitation of the duration of calls);
4. Article 35 (charging for calls booked with special facilities);
5. Article 36, paragraphs 2 and 3 (charges for booking changes).

(Notification No. 883.)

27) In approving these Regulations, the Argentine Administration declares that, in its relations with other Administrations, it will not apply the provisions and obligations of the said Regulations, Appendice(s) and Resolutions which those Administrations, by formulating reservations, have not accepted or have not agreed to apply.

28) In a note, the United States Embassy in Berne declared that " the deposit of the instrument of ratification of the Telegraph Regulations (Geneva, 1958) and the Final Protocol to those Regulations constitutes the notification of approval by the United States of America, including all territories under the jurisdiction of the United States of America."

The United States Embassy declared furthermore:

" It should be noted that the ratification by the United States of America of the Regulations and Final Protocol is made subject to the declarations as set forth in the instrument of ratification. The declarations contained in the text of the instrument of ratification replace and are in lieu of the declarations which appear " For the United States of America " in the said Final Protocol."

(Note by the General Secretariat: the text of this instrument is reproduced in Notification No. 829.)

29) In approving the Telegraph Regulations (Geneva, 1958), the Swedish Government reserves the right, notwithstanding Article 8, paragraph 5 (Nos. 49 and 50) of the said Regulations, to apply an overall rate per word, including the Danish transit charge, for telegrams the normal routing of which passes through Denmark.

30) In approving the Radio Regulations, the Republic of the Ivory Coast, referring to Article 9 of the Regulations and to the procedure defined in Article 10, reserved the right to take any measures necessary for the development and proper operation of its broadcasting service, should the procedure in question fail to give it satisfaction. *(Notification No. 908.)*

31) See Notification No. 911.

32) See Notification No. 977.

33) Comprising the following territories:

Comoro Islands,
New Caledonia and Dependencies,
French Polynesia,
St. Pierre and Miquelon,
French Territory of the Afars and Issas,
French Southern and Antarctic Territories,
Wallis and Futuna.

This ratification also applies to the Anglo-French Condominium of the New Hebrides.

34) See Notifications Nos. 1004 and 1013.

35) See Notifications Nos. 1007, 1009 and 1010.

36) See Notification No. 1014.

37) See Notification No. 1004.

38) See Notification No. 834.

Table II. African Regional Agreements

Cols. 2 and 3: Regional Agreement for the African Broadcasting Area concerning the use of frequencies by the broadcasting service in the very high frequency and ultra high frequency bands (Geneva, 1963);

Cols. 4 and 5: Regional Agreement concerning the use of frequencies by the broadcasting service in the medium frequency band in the African Broadcasting Area (Geneva, 1966).

The letter S means that the Agreement has been signed and the letter A means approval of the Agreement or accession to it.

Country or group of territories	Broadcasting Agreement VHF/UHF (Geneva, 1963)		Broadcasting Agreement MF (Geneva, 1966)	
1	2	3	4	5
Algeria (Algerian Democratic and Popular Republic)	—		S	
Burundi (Republic of)	—		S	
Cameroon (Federal Republic of)	S		S	
Central African Republic	—		S	
Congo (Democratic Republic of the)	S		S	
Congo (Republic of the) (Brazzaville)	S		S	
Ivory Coast (Republic of the)	S		S	
Dahomey (Republic of)	S		S	
Group of Territories represented by the French Overseas Post and Telecommunication Agency [1]	S	A	S	
Spain	S	A	S	
Ethiopia	S	A	S	
France [2]	S	A	S	
Gabon Republic	S		S	A
Ghana	S		S	
Guinea (Republic of)	S		S	
Upper Volta (Republic of)	S		S	
Kenya	S	A	S	A
Liberia (Republic of)	S		S	
Libya (Kingdom of)	S		—	
Malawi	—		S	
Malagasy Republic	S		S	
Mali (Republic of)	S		S	
Morocco (Kingdom of)	—		S	
Mauritania (Islamic Republic of)	S		S	
Niger (Republic of the)	S		S	
Nigeria (Federal Republic of)	S	A	S	
Uganda	S	A	S	A
Spanish Provinces in Africa	S	A	S	
Portuguese Oversea Provinces	S	A	S	
United Arab Republic	—	A	S	
Somali Republic	S		—	
Rhodesia	S [3]	A	—	
Rwanda (Republic of)	S		S	
Senegal (Republic of the)	S	A	S	
Sierra Leone	S	A	—	
Sudan (Republic of the)	—		—	
South Africa (Republic of) [4]	S	A	—	
Tanzania (United Republic of)	S	A	S	A
Chad (Republic of the)	S		S	
Overseas Territories for the international relations of which the Government of the United Kingdom of Great Britain and Northern Ireland are responsible	S		S	A
Togolese Republic	S		S	
Zambia (Republic of)	—		S	

[1]) With respect to French Somaliland *(new denomination: French Territory of the Afars and Issas)* and the Comoro Islands.
[2]) With respect to the Department of Reunion.
[3]) The Agreement was signed on behalf of the Federation of Rhodesia and Nyasaland.
[4]) See Administrative Council Resolution No. 619.

Table III. American Regional Agreements

The letter S means that the Agreement has been signed; the letter R means that the Agreement has been ratified; the letter A means acceptance of the Agreement or accession thereto.

Country or territories	Inter-American Radio Agreement (FIAR) (Washington, 1949)		North-American Regional Broadcasting Agreement (NARBA) (Washington, 1950)	
1	2	3	4	5
Argentine Republic	S		—	
Bolivia	S		—	
Brazil	S		—	
Canada	S		S	R
Chile	S		—	
Colombia (Republic of)	S		—	
Costa Rica	S	A	—	
Cuba	S		S	R
Dominican Republic	S	A	S	R
El Salvador (Republic of)	S		—	
Ecuador	S		—	
United States of America	S	A	S	R
Guatemala	S		—	
Haiti (Republic of)	—	A	—	
Honduras (Republic of)	S	A	—	
Mexico	S	A	—	
Nicaragua	S	A	—	
Panama	S		—	
Paraguay	—	A	—	
United Kingdom of Great Britain and Northern Ireland	—		S*)	R**)
Uruguay (Oriental Republic of)	S		—	
Venezuela (Republic of)	S		—	

*) For the Territories in the North-American Region (the Bahamas and Jamaica).
**) For the Bahamas only.

Table IV. European Regional Conventions, Arrangements and Agreements

The letter S means that the Convention, Agreement or Arrangement has been signed; the letter R means that the Convention has been ratified; the letter A means that the Agreement has been approved or acceded to; in column 7, it means that the Agreement has been approved.

Country or group of territories	European Broadcasting Convention (Copenhagen, 1948)		European Regional Convention for the maritime mobile radio service (Copenhagen, 1948)		Regional Arrangement relative to Maritime Radiobeacons in the European Area of Region 1 (Paris, 1951)		Regional Agreement for Rhine Navigation (Brussels, 1957) *)		Regional Agreement in the bands 68-73 Mc/s and 76-87.5 Mc/s (Geneva, 1960) **)		Regional Agreement for the European Broadcasting Area (Stockholm, 1961)	
1	2	3	4	5	6	7	8	9	10	11	12	13
Albania (People's Republic of)	S	R	—		—		—		S		—	
Algeria (Algerian Democratic and Popular Republic)	—		—		—		—		—		—	
Austria	—		—		—		—		S	A	S	A
Belgium	S	R	S	R	S	A	S	A	—		S	A
Bielorussian Soviet Socialist Republic	S	R	—		—		—		S		S	A[5]
Bulgaria (People's Republic of)	S	R	—	[1]	—		—		S		S	
Cyprus (Republic of)	—		—		—		—		—		S	A
Vatican City State	S	R	—		—		—		—		S	
Denmark	S	R	S	R	S	A	—		S	A	S	
Spain	—		—		S		—		—		S	A[2]
Finland	S	R	—		—		—		—		S	A
France	S	R	S	R	S	A	S	A	S	A	S	A
Greece	S	R	S	R	—		—		S		S	
Hungarian People's Republic	S	R	—		—		—		S	A	S	
Iraq (Republic of)	—		—		—		—		—		—	
Ireland	S	R	S	R	—	A	—		—		S	A
Iceland	—		S	R	—		—		—		S	
Israel (State of)	—		—		—		—		—		S	
Italy	S	R	S	R	S	A	—		S	A	S	A
Jordan (Hashemite Kingdom of)	—		—		—		—		—		—	
Lebanon	—		—		—		—		—		S	
Libya (Kingdom of)	—		—		—		—		—		—	
Liechtenstein (Principality of)	—		—		—		—		—		—	
Luxembourg	—		—		—		—	A	—		S	
Malta	—		—		—		—		—		—	
Morocco (Kingdom of)	S	R	S	R	S	A	—		—		S	A
Monaco	S	R	S	R	S	A	—		—		S	
Norway	S	R	S	R	S	A	—	A	S	A	S	
Netherlands (Kingdom of the)	S	R	S	R	S	A	S	A	—		S	A
Poland (People's Republic of)	S	R	—		—		—		S		S	
Portugal	S		S		S		—		—		S	A
Portuguese Oversea Provinces	—		—		S		—		—		—	
Syrian Arab Republic	—		—		—		—		—		—	
United Arab Republic	—		—		—		—		—		—	
Federal Republic of Germany	—		—		—		S	A	S	A	S	A[6]
Ukrainian Soviet Socialist Republic	S	R	—		—		—		S	A	S	A[5]
Roumania (Socialist Republic of)	S	R	—		—		—		S	A	S	
United Kingdom of Great Britain and Northern Ireland, the Channel Islands and the Isle of Man	S	R	S	R	S	A	—		—		S	A
Sweden	—		S	R	S	A	—		S	A	S	
Switzerland (Confederation of)	S	R	—		—		S	A	S	A	S	A
Czechoslovak Socialist Republic	S	R	—		—		—		S	A	S	
Overseas Territories for the international relations of which the Government of the United Kingdom of Great Britain and Northern Ireland are responsible	—		—		—		—		—		S	A
Tunisia	S	R	S	R	S	A	—		—		—	
Turkey	—		S		S	A	—		S		S	
Union of Soviet Socialist Republics	S	R	—	[3]	—		—		S	A	S	A[5]
Yugoslavia (Federal Socialist Republic of)	S	R	—		—		—		S		S	A

*) Regional Agreement concerning the establishment of an International VHF Radiotelephone Mobile Service for Rhine Navigation (Brussels, 1957).

**) Regional Agreement for the use of frequencies in the bands 68-73 Mc/s and 76-87.5 Mc/s by the broadcasting service on the one hand and by the fixed and mobile services on the other (Geneva, 1960).

[1]) The People's Republic of Bulgaria has given notice that its coast stations use the frequencies assigned to them in the Copenhagen Plan.

[2]) The Spanish Government has approved this Agreement while maintaining the three reservations which appear in paragraph I (A, B and C) of the Final Protocol.

[3]) The Union of Soviet Socialist Republics has given notice that its coast stations use the frequencies assigned to them in the Copenhagen Plan.

[4])

[5]) Considering that, when the plans for the assignment of frequencies to television stations in the 645-960 Mc/s band were established at the Stockholm Conference in 1961, the requirements of the air radionavigation services of the USSR, the Ukrainian SSR and the Bielorussian SSR were not sufficiently taken into consideration, and in view of the special nature of the air radionavigation services, the Telecommunication Administrations of the USSR, the Ukrainian SSR and the Bielorussian SSR cannot assure countries using this range for television of the necessary means to prevent interference from the air radionavigation services of the USSR, the Ukrainian SSR and the Bielorussian SSR.

[6]) In giving its approval, the Administration of the Federal Republic of Germany expressed the following considerations:

" According to the frequency plan for television stations in the frequency band 162-230 Mc/s (Annex 2, Chapter 2, of the Agreement), the frequencies 224.25/229.75 Mc/s are assigned to the Sonneberg television station appearing in the plan with an effective radiated power of 30/6 kW and an effective radiated power of 5 kW for the television carrier permitted in the sector between 45 and 135 degrees.

This assignment is capable of causing harmful interference to the aeronautical radionavigation service stations which operate in the frequency band 223-235 Mc/s in accordance with Article 5 of the Radio Regulations, Geneva, 1959.

Harmful interference to stations operating in the frequency band 223-235 Mc/s, which is allocated to the aeronautical radionavigation service on a primary basis, can only be avoided if the effective radiated power of the Sonneberg television station does not exceed 0.5/0.1 kW in the sector between 135 and 345 degrees. "

Tables V.1 to V.4. Special Agreements

V.1. Special Regional Agreement concerning the use of the 100-104 Mc/s band by the broadcasting service (1962)

This Agreement was concluded between the following Administrations: Austria, *Italy*, *Switzerland (Confederation of)*, *Yugoslavia (Federal Socialist Republic of)*.

The countries mentioned in italics have approved the Agreement.

V.2. Special Agreement for use of the 582-606 Mc/s band for radionavigation purposes (Brussels, 1962)

This Agreement was concluded between the following Administrations: Belgium, Denmark France, Netherlands (Kingdom of the), Federal Republic of Germany, United Kingdom of Great Britain and Northern Ireland and Switzerland (Confederation of).

V.3. Special Agreement in connection with the use of VHF and UHF in fixed and mobile services in frontier areas (Brussels, 1963)

This Agreement was concluded between the Administrations of Belgium, Netherlands and the Federal Republic of Germany.

V.4. Special Agreement concerning the use of frequencies for additional low-power television transmitters operating in the ultra high-frequency range (Band IV, 472-582 Mc/s and Band V, 582-960 Mc/s) in the frontier areas (Karlsruhe, 1966)

This Agreement was concluded between the following Administrations: Austria, Belgium, France, Italy, Luxembourg, Netherlands (Kingdom of the) and the Federal Republic of Germany.

This Agreement was approved without reservation by all these Administrations.

ANNEX 2

BUDGET FOR 1968

SUMMARY OF ESTIMATED EXPENDITURE IN 1968

Expenditure	Expenditure 1967 *)	Budget 1968	Additional credits 1968	Budget 1968 including additional credits
	Swiss francs			
I. Budget of the Union				
Sect. 1. Administrative Council . . .	430,290	462,300	—	462,300
Common Headquarters expenditure:				
Sect. 2. Staff costs	13,308,285	13,653,000	645,500	14,298,500
Sect. 3. Social security	2,500,975	2,879,500	141,700	3,021,200
Sect. 4. Premises	1,144,345	1,149,600	—	1,149,600
Sect. 5. Missions	103,616	145,000	—	145,000
Sect. 6. Office and miscell. expenditure	1,402,409	953,000	60,500	1,013,500
Provision for cost of regrading posts	—	200,000	—200,000	—
	18,889,920	19,442,400	647,700	20,090,100
Sect. 7. I.T.U. conf. under No. 208 of the Convention:				
— World Admin. Marit. Radio Conf.	1,008,707	—	—	—
Sect. 8. C.C.I. meetings under No. 209 of the Convention:				
— C.C.I.R.	93,000	1,208,000	—	1,208,000
— C.C.I.T.T.	1,358,031	1,800,000	500,000	2,300,000
Sect. 10. Other expenditure:				
— Preparation of draft Constitution	56,105	230,000	—	230,000
— I.T.U. Seminar	19,342	30,000	—	30,000
— Seminars of I.T.U. Member Admins.	—	62,000	—	62,000
	21,425,105	22,772,400	1,147,700	23,920,100
Expenditure on fitting out C.C.I.T.T. Laboratory	1,814	20,000	—	20,000
Expenditure on maintenance and renewal of simult. interpretation and sound reproduction equipment	7,987	15,000	—	15,000
	21,434,906	22,807,400	1,147,700	23,955,100
Transfer to I.T.U. Reserve Account .	1,243,686	—	—	—
	22,678,592	22,807,400	1,147,700	23,955,100
II. Technical Cooperation special accounts budget				
Sect. 11. Techn. Coop. admin. costs .	1,882,745	2,596,400	146,000	2,742,400
Provision for post regradings . . .	—	20,000	—20,000	—
Carried forward to the following year	1,412,481	—	—	—
	3,295,226	2,616,400	126,000	2,742,400
III. Supplementary publications budget				
Total expenditure	2,704,571	2,552,620	—	2,552,620
Excess income	183,851	23,880	—	23,880
	2,888,422	2,576,500	—	2,576,500

*) Rounded off to nearest whole franc.

SUMMARY OF ESTIMATED INCOME IN 1968

Income	Income 1967 *)	Budget 1968	Additional credits 1968	Budget 1968 including additional credits
	Swiss francs			
I. Budget of the Union				
Contributions:				
— Contribs. of Members and Associate Members of the Union to exp. for the current year . . .	20,386,800	21,500,400	—	21,500,400
— Contribs. of private operating agencies and scientific or industrial organizations to expenses of conferences and meetings under Sections 7 and 8:				
— World Admin. Marit. Radio Conf.	5,555	—	—	—
— C.C.I.R.	297,833	287,500	—	287,500
— C.C.I.T.T.	439,792	415,000	—	415,000
Sundry income	84,611	19,500	—	19,500
	21,214,591	22,222,400	—	22,222,400
Withdrawal from C.C.I.T.T. Reserve Account for fitting out C.C.I.T.T. Laboratory	1,814	20,000	—	20,000
Withdrawal from the renewal fund for the maint. and renewal of simult. interpret. and sound reproduc. equip.	7,987	15,000	—	15,000
	21,224,392	22,257,400	—	22,257,400
Withdrawal from the I.T.U. Reserve Account	1,454,200	550,000	1,147,700	1,697,700
	22,678,592	22,807,400	1,147,700	23,955,100
II. Technical Cooperation special accounts budget				
Contribs. to Techn. Coop. admin. costs and sums brought forward from previous years	3,295,226	2,616,400	126,000	2,742,400
III. Supplementary publications budget				
Total income	2,888,422	2,576,500	—	2,576,500
Excess expenditure	—	—	—	—
	2,888,422	2,576,500	—	2,576,500

*) Rounded off to nearest whole franc.

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ANNEX 3

LIST OF PUBLICATIONS ISSUED BY THE UNION IN 1968

			No. of copies
1.	12 Notifications, Nos. 1002 to 1013	F	500
		E	600
		S	150
2.	8 Telegraph and Telephone Division Circulars, Nos. 1450 to 1457	F	500
		E	600
		S	200
3.	17 Radio Division Circulars, Nos. 886 to 902	F	500
		E	600
		S	200
4.	Supplement No. 3 to the Volume of Resolutions and Decisions of the Administrative Council, 23rd session 1968	F	600
		E	750
		S	300
5.	Financial Operating Report for 1967	F	450
		E	500
		S	250
6.	Report on the Activities of the Union in 1967	F	600
		E	650
		S	300
7.	Report to the ECOSOC on the activities of the Union in 1967	F	550
		E	800
		S	300
8.	Portrait of S. K. Mitra	F	400
		E	400
		S	150
9.	Telecommunication Journal, 12 numbers	F	1,700
		E	2,700
		S	800
10.	I.T.U. and Space Radiocommunication	F	4,000
		E	5,000
		S	1,000
11.	12 Operational Bulletins, Nos. 25 to 36	F	500
		E	600
		S	150
12.	List of Addresses, 2nd edition 1967 and Supplements Nos. 1 to 3, trilingual		1,500
13.	Table A, terminal and transit telegraphic rates of the European system, 4th edition 1967, trilingual		550

		No. of copies
14.	Table of elementary rates, Table B, 3rd edition 1966 (new pages), trilingual . .	900
15.	Table C, through telegraph rates of the European system, 5th edition 1967, trilingual	1,700
16.	Table of international telex relations and traffic, 1966, trilingual	700
17.	Table of international telex relations and traffic, 1967, trilingual	670
18.	Optional provisions of the Telegraph Regulations and the Additional Radio Regulations (1st Series), 1967, trilingual	1,350
19.	List of Telegraph Offices, 22nd edition 1965: Supplements Nos. 8 to 11, trilingual	20,000
20.	List of International Telephone Routes, 8th edition 1968, trilingual	1,000
21.	General Telegraph Statistics, 1966, trilingual	680
22.	General Telegraph Statistics, 1967, trilingual	630
23.	General Telephone Statistics, 1966, trilingual.	750
24.	General Telephone Statistics, 1967, trilingual.	750
25.	List of Cables forming the World Submarine Network, 17th edition, 1968, trilingual	1,200
26.	List of Coast Stations, 3rd edition, 1966: Supplements Nos. 2 and 3, trilingual .	30,500
27.	List of Ship Stations, 8th edition, 1967, trilingual.	21,000
28.	List of Radiodetermination and Special Service Stations, 3rd edition, 1966:	
	Supplements Nos. 3 and 4	F 2,600 E 19,300
29.	Alphabetical List of call signs of stations used by the maritime mobile service, 3rd edition 1966:	
	Supplement No. 7, multilingual	22,400
30.	Alphabetical List of call signs of stations used by the maritime mobile service, 4th edition 1968, and Supplements Nos. 1 and 2, multilingual	22,800
31.	Alphabetical List of call signs of stations other than amateur stations, experimental stations and stations of the maritime mobile service, 3rd edition,1968, and Supplements Nos. 1 to 3, multilingual	3,200
32.	List of International Monitoring Stations, 2nd edition 1965:	
	Supplement No. 2, trilingual	850
33.	General Radio Statistics, 1967, trilingual	750
34.	Final Acts of the World Administrative Radio Conference to deal with matters relating to the maritime mobile service, Geneva 1967	F 900 E 2,800 S 900

			No. of copies
35.	Manual for use by the maritime mobile service, Geneva 1967	F	7,000
		E	27,000
		S	5,000
36.	Blue Book, IIIrd Plenary Assembly of the C.C.I.T.T., Geneva 1964:		
	Volume III	S	300
37.	General Plan for the development of the inter-regional telecommunication network, Mexico 1967, trilingual		1,700
38.	C.C.I.T.T. Manual GAS 1, National telephone networks for the automatic service Part C, 1968	F	1,400
		E	4,200
		S	1,400
39.	C.C.I.T.T. Manual GAS 2, Local telephone networks, 1968	F	1,300
		E	3,200
		S	1,400
40.	C.C.I.T.T. Manual GAS 5, Economic studies at the national level in the field of telecommunications, 1968	F	1,300
		E	2,900
		S	1,400
41.	Documents of the XIth Plenary Assembly of the C.C.I.R., Oslo 1966:		
	Volume I	S	600
	Volume II	S	600
	Volume III	S	600
	Volume IV	S	600
	Volume V	S	600
	Addenda 1 and 2 to Volume V	F	1,200
		E	3,500
		S	600
	Volume VI	F	700
		E	1,800
		S	450
42.	Report 340 of the Documents of the XIth Plenary Assembly of the C.C.I.R., Oslo 1966:		
	a) bound trilingual edition and Addendum 1		2,600
	b) edition in punched card form		74
43.	Reports 413, 414 and 415 of the XIth Plenary Assembly of the C.C.I.R., Oslo 1966	F	700
		E	1,600
44.	International Frequency List, 4th edition 1967:		
	Preface: Supplements 3 to 6, trilingual		2,030
	Volume I: Supplements 3 to 6, multilingual		1,900
	Volume II: Supplements 3 to 6, multilingual		1,900
	Volume III: Supplements 3 to 6, multilingual		1,900
	Volume IV *a)*: Supplements 3 to 6, multilingual		1,500
	Volume IV *b)*: Supplements 3 to 6, multilingual		1,450
	Volume IV *c)*: Supplements 3 to 6, multilingual		1,300
	Volume IV *d)*: Supplements 3 to 6, multilingual		1,250
45.	Annual high frequency broadcasting frequency list, 4th edition 1967, trilingual		500

		No. of copies
46.	List of fixed stations operating international circuits, 4th edition 1967:	
	Supplements Nos. 3 to 6, trilingual	1,600
47.	List of broadcasting stations operating in bands below 5950 kc/s, 4th edition 1967: Supplements Nos. 2 and 3, trilingual	1,250
48.	List of broadcasting stations operating in bands between 5950 and 26 100 kc/s, 4th edition 1967, trilingual	900
49.	List of space and radioastronomy service stations, 1st edition 1966:	
	Supplements Nos. 2 and 3, trilingual	1,150
50.	I.F.R.B. Technical Standards, Series A, 4th edition, 1968, trilingual	1,800
51.	I.F.R.B. Weekly Circulars, Parts I, II, III and Special, Nos. 786 to 837, trilingual	550
52.	I.F.R.B. Weekly Circulars, Parts IV, Nos. 786 to 837, trilingual	550
53.	Monthly summaries of monitoring information received by the I.F.R.B., Nos. 137 to 148, trilingual	470
54.	Summaries of monitoring information received by the I.F.R.B. on the use by broadcasting stations of the exclusive high frequency broadcasting bands, Nos. 22 to 27, trilingual	450
55.	Tentative high frequency broadcasting schedules, May 1968, September 1968, November 1968 and March 1969, trilingual	520
56.	High frequency broadcasting schedules, November 1966, March 1967, May 1967, September 1967 and November 1967, trilingual.	470
57.	General Report—A Survey of Telecommunications in Paraguay, bilingual (Spanish—English)	1,000

ANNEX 4

CONFERENCES AND MEETINGS AT WHICH THE UNION WAS REPRESENTED IN 1968

A. United Nations

1. Administrative Committee on Coordination Sub-Committee on Education and Training, Geneva, 31 January-2 February.
2. 36th Session of the Consultative Committee on Public Information, Paris, 5-9 February.
3. Resumed 8th Session of the A.C.C. Sub-Committee on Science and Technology, Geneva, 8-9 February.
4. 5th Session of the Inter-Agency Working Group on Programmes and Activities relating to the Peaceful Uses of Outer Space, Geneva, 28-29 February.
5. 29th Session of the Consultative Committee on Administrative Questions, Geneva, 11-29 March.
6. 45th Session of the Administrative Committee on Coordination, Geneva, 4-5 April.
7. Economic Commission for Asia and the Far East: 24th Session of the Commission, Canberra, 17-30 April.
8. Economic Commission for Latin America: 12th Session of the Committee of the Whole, Santiago, Chile, 23-25 April.
9. 3rd Session of the Committee for Development Planning, Addis Ababa, 29 April-4 May.
10. Standing Committee, United Nations Joint Staff Pension Fund, Rome, 20-21 May.
11. 7th Session of the Legal Sub-Committee of the Committee on the Peaceful Uses of Outer Space, Geneva, June.
12. Standing Committee, United Nations Joint Staff Pension Fund, New York, 20-21 June.
13. 16th Session of International Civil Service Advisory Board, Paris, 26 June-12 July.
14. 45th Session of the Economic and Social Council, Geneva, July.
15. Standing Committee, United Nations Joint Staff Pension Fund, London, 15-26 July.
16. Conference on the Exploration and Peaceful Uses of Outer Space, Vienna, 14-27 August.
17. 23rd Session of the General Assembly, New York, September.
18. 10th Session of the Committee on the Peaceful Uses of Outer Space, New York, 15-18 October.
19. Consultative Committee on Administrative Questions, New York, 28 October-5 November.

B. Specialized Agencies

United Nations Educational, Scientific and Cultural Organization (UNESCO)

20. Meeting of Experts on the use of Space Communication for Broadcasting Paris, 24-26 January.
21. 1st Meeting of the Intergovernmental Oceanographic Commission Working Committee for an Integrated Global Ocean Station System, Paris, 2-5 April.
22. 78th Session of the Executive Board, Paris, 13 May-21 June.
23. 4th Session of the Advisory Panel on Space Communication, Stockholm, 28-30 August.
24. Meeting of Experts on Broadcasting Training in Asia, Kuala Lumpur, 9-14 September.
25. 15th Session of the General Conference, Paris, 15 October-20 November.

World Meteorological Organization (W.M.O.)

26. Informal Planning Meeting on Operational Procedures and on Standards of Technical Characteristics of the World Weather Watch Global Telecommunication System, Geneva, 9-24 January.
27. 20th Session of the Executive Committee, Geneva, May.
28. 2nd Session of the Joint W.M.O./I.O.C. Panel of Experts on Coordination of Requirements, Paris, 1-6 July.
29. 1st Session of the Joint W.M.O./I.O.C. Group of Experts on Telecommunications, Geneva, 17-20 September.
30. 4th Session of the Working Group on Telecommunications of the Commission for Synoptic Meteorology, Geneva, 23 September-4 October.

Inter-Governmental Maritime Consultative Organization (I.M.C.O.)

31. 17th Session of the Maritime Safety Committee, London, 11-15 March.
32. 5th Session of the Sub-Committee on Safety of Navigation, London, 19 March.
33. 4th Session of the Sub-Committee on Radiocommunications, London, 8-11 April.

International Civil Aviation Organization (I.C.A.O.)

34. Limited European-Mediterranean R.A.C./C.O.M. (VHF Planning) Regional Air Navigation Meeting, Paris, 12 February-2 March.

C. International Organizations

International Radio-Maritime Committee (C.I.R.M.)

35. 43rd Meeting of the Technical Committee, Rouen, France, 7-9 May.
36. 44th Meeting of the Technical Committee, London, 20-22 November.

Danube Commission

37. Jubilee Session on the occasion of the XXth Anniversary of the signature of the Convention on the Navigation of the Danube, Budapest, March.

European Broadcasting Union (E.B.U.)

38. 20th Meeting of the Technical Committee, Istanbul, 1-5 April.

International Organization for Standardization (I.S.O.)

39. 5th Meeting of the Sub-Committee " Character Sets and Coding " of Committee 97, Berlin, 7-10 May.

40. 5th Plenary Meeting of Technical Committee 97, Computers and Information Processing, Amsterdam, 10-14 June.

41. Meeting of the Technical Sub-Committee for Digital Data Transmission, Turin, 17-21 June.

International Electrotechnical Commission (I.E.C.)

42. Meeting of Technical Committee 60 and Sub-Committee 60B, Paris, 18-30 March.

43. Meeting of Committee 29 (electroacoustics) and Sub-Committees, Vedbaek, Denmark, 24 April-4 May.

44. Meeting of Technical Committee 12 and Sub-Committee 12A, Baden-Baden, 14-18 May.

45. Meeting of Sub-Committee 60A, Oslo, 4-9 November.

46. Meeting of Technical Committee 1, The Hague, 3-4 December.

International Radio and Television Organization (O.I.R.T.)

47. Meeting of Study Group IV, Bucarest, 11-18 March.

48. Meeting of Study Group III (Television), Budapest, 12-21 November.

Popov Scientific and Technical Society for Radio Technique and Telecommunications

49. XXIVth All-Union Scientific Session, Moscow, 14-16 May.

50. Meeting of the Society, Moscow, December.

International Criminal Police Organization (INTERPOL)

51. 4th Conference of Persons responsible for Interpol Telecommunications, St. Cloud, France, 7-10 May.

Institution of Electrical Engineers (I.E.E.)

52. Conference on " Interference Problems associated with the operation of Microwave Communication Systems ", London, 23-24 April.

International Committee for Weights and Measures

53. Preparatory Meeting, Sèvres, 30-31 May.

International Bank for Reconstruction and Development

54. Meeting on Telecommunications in Africa, Washington, 15 February.

International Astronautical Federation (I.A.F.)

55. 15th Session of the Bureau, Paris, 1-2 April.
56. XIXth International Astronautical Congress, New York, 13-19 October.

EUROSPACE

57. 3rd U.S.-EUROPE Conference, Munich, 18-21 June.

African Development Bank

58. 4th Annual Assembly of the Governing Council, Nairobi, 26-31 August.

Asian Broadcasting Union

59. 5th General Assembly, New Delhi, 20-23 November.

European Conference of Posts and Telecommunications (C.E.P.T.)

60. Meeting of the " Telecommunications " Commission, Interlaken, 3-9 September.

Inter-American Association of Broadcasters (A.I.R.)

61. Extraordinary Assembly of the A.I.R., Quito, Ecuador, 12-17 February.

Union of National Radio and Television Organizations of Africa (U.R.T.N A.)

62. 9th General Assembly, Kinshasa, 18-26 November.

NOTE: Invitations were received to a considerable number of other meetings, the agenda of which did not, in the opinion of the Coordination Committee, justify I.T.U. representation.

ANNEX 5

TECHNICAL ASSISTANCE UNDER I.T.U. AUSPICES IN 1968

TABLE 1

EXPERTS ENGAGED IN I.T.U. TECHNICAL ASSISTANCE PROGRAMME DURING 1968

(in the alphabetical order of the official French names of the countries)

Country or Region of Assignment	Name (Nationality)	Speciality and/or Title	Starting and closing date of mission	Brief description of work; Remarks
1. AFRICA				
Algeria (Special Fund)	Albert L. Claveyrolas (France)	Project Manager	9.12.1967	Assisting the Ministry of Communications to establish a " National School for Telecommunications " in which training courses are provided for medium and higher level technicians.
	Wieslaw Fijalkowski (Poland)	Project Manager	25. 4.1964 31. 1.1968	
	Robert Béchet (France)	Instructor in transmission	9. 9.1965	
	Serge Bégaud (France)	Instructor in automatic telephony	2. 6.1965 1.12.1968	
	Paul Chatard (France)	Instructor in VHF and microwave radio links	9. 9.1965	
	Raymond Chollet (France)	Instructor in telegraphy	22. 9.1966 30. 9.1968	
	Claude M. Decerle (France)	Instructor on regulations and operation of telecommunications	19. 6.1968	
	René D. Eldin (France)	Instructor in radiocommunications	25. 8.1968	
Algeria *(contd.)* (Special Fund) *(contd.)*	Jean-François Gross (Switzerland)	Instructor in electricity and electronics	22. 9.1966	
	Johannes Kraamer (Netherlands)	Associate expert (lecturer in mathematics)	18. 2.1968 31.10.1968	
	Jan Pit (Netherlands)	Associate expert (lecturer in physics)	4. 2.1968	
Cameroon (Technical Assistance)	Edward C. Dudman (United Kingdom)	Telecommunications adviser	5. 8.1968	Acting as adviser on all aspects of the operation and development of telecommunications services; particularly in respect of trunk network planning and the creation of a telecommunications training school.
Central African Republic (Technical Assistance)	Henri Cocoz (France)	Instructor on line communications	9.11.1965	Teaches cable jointing and installation of overhead lines. Basic instruction in telephony.
	Armand A. Wuerst (Switzerland)	Instructor on telephone installations	18. 4.1968	Teaches installation of subscriber equipment and crossbar systems.
East African Community (Kenya, Tanzania, Uganda) (Technical Assistance)	Booth Hubbell (U.S.A.)	Training adviser for Kenya, Tanzania and Uganda	21. 5.1968	Advising the telecommunications authorities in Kenya, Tanzania and Uganda on all training aspects of telecommunications personnel.
Congo (Kinshasa) (Funds-in-Trust)	Giovanni Cali (Italy)	Telephone exchange technician	4. 5.1966	Studies problems connected with the international and automatic telephone exchange projects and assists the Chief of Telephone Planning in his routine duties.

Country or Region of Assignment	Name (Nationality)	Speciality and/or Title	Starting and closing date of mission	Brief description of work; Remarks
Congo (Kinshasa) *(contd.)* (Funds-in-Trust) *(contd.)*	Aurel Hostens (Belgium)	Automatic telegraphy expert	1. 1.1966	Advises the Assistant Director in charge of telegraphy in the planning and operation of telex, teleprinter and telegraph operations. Supervises installations of telegraph equipment and performs planning work in this field.
	Amrit L. Kumar (India)	Radio maintenance expert	1. 1.1962 31.12.1967	Performed installation duties on radio equipment in the receiving and transmitting stations in Kinshasa.
		Technical Adviser (In addition, he has been acting as Chief of I.T.U. Mission since 28.8.1968)	1. 1.1968	Acts as adviser to the Secretary General of the Ministry of Posts and Telecommunications.
	Jules Marquet (Belgium)	Radio maintenance expert	15. 1.1963	Performs installation and maintenance work on radio equipment; trains local staff in the receiving and transmitting stations in Kinshasa, and also local technicians.
	Terence A. A. Marshall (United Kingdom)	Technical adviser to the Regional Director of Telecommunications, Lubumbashi	7. 8.1967 31.12.1968	Acted as technical adviser to the Regional Director of Telecommunications in Lubumbashi.
	Jean Piloyan (France)	Radio maintenance expert	10. 5.1965	Carried out maintenance duties at the radio transmitting station in Kinshasa until he was transferred to Lubumbashi. Performs installation and maintenance of radio equipment in the Province of Katanga.
Congo (Kinshasa) *(contd.)* (Funds-in-Trust) *(contd.)*	Etienne Rey (France)	Cable expert	27. 9.1963	Studies projects for new cable networks.
	V. R. Venugopal (India)	Technical adviser to the Regional Director of Telecommunications	2. 3.1968 5. 6.1968	Acted as technical adviser to the Regional Director of Telecommunications.
	Gottfried W. Wollboldt (F. R. of Germany)	Technical adviser to the Regional Director of Telecommunications, Luluabourg	5. 5.1967 4. 5.1968	Acted as technical adviser to the Regional Director of Telecommunications in Luluabourg and supervised the establishment of telecommunications facilities in adjacent towns.
(Special Fund)	Donald V. Kyle (Canada)	Project Manager	12. 1.1967 8. 9.1968	Assisting the Ministry of Communications to establish a National School of Posts and Telecommunications for the training of all classes of telecommunication personnel.
	Bernard Pain (France)	Instructor in telegraphy	5. 3.1967	
		Acting Project Manager	28. 8.1968	
	Honorato García (Spain)	Instructor in radio	16.11.1967	
	Louis J. Le Saos (France)	Instructor in electronics	16. 3.1967	
	Pier L. Luppi (Italy)	Instructor in transmission	27. 2.1967	
	Charles Maurer (Switzerland)	Instructor in telephony	1. 1.1968	
	Ellioth A. Pierre (Haiti)	Instructor in telephony	1. 1.1966	
	Fritz G. Schmid (Switzerland)	Radio instructor	30. 6.1968 1. 1.1968	

Country or Region of Assignment	Name (Nationality)	Speciality and/or Title	Starting and closing date of mission	Brief description of work; Remarks
Ivory Coast (Technical Assistance)	Raymond Maurel (France)	Expert in vocational training	16. 4.1968	Assisting the P.T.T. with the establishment of courses for technicians and with the training of " contrôleurs " in the specialities carrier transmission and microwave links.
Ethiopia (Technical Assistance)	Roland F. Bradburn (United Kingdom)	Telephone and telegraph traffic expert	8. 4.1968	Advising the Imperial Board of Telecommunications on all aspects of traffic.
Gambia (Technical Assistance)	Cecil A. Wiltshire (Guyana)	Telecommunication training expert	14. 8.1965	Trains local technicians in the operation and maintenance of junction radio and automatic telephony equipment.
Ghana (Technical Assistance)	Stuart A. Downing (United Kingdom)	OPAS Officer (writing of telecommunication maintenance instructions)	5. 6.1967 4.12.1968	Performed operational and executive duties in the Ghana Public Service. Established telecommunication maintenance instructions.
	Carl G. Dragstedt (Sweden)	Telecommunication engineer (OPAS)	1. 5.1967 30. 4.1968	Performed operational and executive duties in the Ghana Public Service.
	Ronald L. Howe (United Kingdom)	Tariff and traffic adviser, telephones	9. 9.1965 31.12.1968	Advised the Ghana Government on the installation planning of subscriber trunk services and related traffic problems.
Ghana *(contd.)* (Special Fund)	Derk E. Luten (Netherlands)	Project Manager	8.10.1964	Assisting the Department of Posts and Telecommunications to further develop its Telecommunication Engineering School in which are trained all grades of telecommunication technical staff. The school has actually existed since 1949.
	Hermannus Brunnekreef (Netherlands)	Instructor in telephony	25. 2.1965	
	Jan Elshout (Netherlands)	Associate expert — training in radio	11. 7.1967	
	Ernst P. Heutelbach (F. R. of Germany)	Instructor in telegraphy	1. 8.1967	
	Johan A. J. Schneider (Netherlands)	Instructor in transmission and carrier	17.12.1965	
	Alex H. van Assum (Netherlands)	Instructor in HF radio, VHF and microwave	25. 6.1967	
	Christianus P. van Vucht (Netherlands)	Instructor in lines and cables	1. 4.1965	
Upper Volta (Technical Assistance)	René A. Villard (France)	Expert in economics and operation of telecommunications	11.10.1968	Reorganizes the Telecommunications Operation and Accounting Section, gives advice on new operational methods and trains personnel in the field of telephone subscription and accounting.
Liberia (Technical Assistance)	Carl G. Dragstedt (Sweden)	Telecommunication expert on training and on organization and operation of microwave toll network and HF radio telecommunication systems	17. 7.1968	Assisting with a long-term training course for Radio and Telephone Technicians and with the establishment of a fault control organization.

Country or Region of Assignment	Name (Nationality)	Speciality and/or Title	Starting and closing date of mission	Brief description of work; Remarks
Liberia *(contd.)* (Technical Assistance) *(contd.)*	Arasurampet R. Ramanathan (India)	Telecommunication training expert	30. 6.1964	Advising on the establishment of telecommunication training at the technician level. Organizing training courses for maintenance of HF radio equipment.
Libya (Technical Assistance)	Michelangelo Correnti (Italy)	Expert for the establishment of a telephone and telegraph traffic section (OPAS)	23.10.1967 22.10.1968	Worked with the Ministry of Communications on the establishment of a telephone and telegraph traffic section.
(Funds-in-Trust)	Alan Irwin (United Kingdom)	Planning engineer, long distance circuits (OPAS)	8.11.1965	Working under the Head of Planning Section of the Directorate General of Posts and Telecommunications on the planning and implementation of radio relay and troposcatter links, submarine and coaxial cable systems and open wire carrier routes.
	Robert Lehmann (F. R. of Germany)	Planning engineer in cable networks (OPAS)	14. 2.1966	Working under the Head of Planning Section of the Directorate General of Posts and Telecommunications on long distance cables and local networks, establishing specifications, evaluating tenders and supervising construction.
	Joseph Rodgers (United Kingdom)	Planning engineer switching (OPAS)	6.12.1965	Working under the Head of Planning Section of the Directorate General of Posts and Telecommunications on the establishment of a national switching, routing and numbering plan.
Madagascar (Special Fund)	Louis Léon (France)	Project Manager	1. 7.1964	Assisting the Department of Posts, Telegraphs and Telephones to establish a National Institute of Telecommunications and Posts in which are trained all grades of telecommunications personnel and also technical personnel for the Meteorological Institute.
	Michel Branle (France)	Instructor in telephony	23. 4.1965	
	Jean Félix (France)	Instructor in telegraphy	19. 3.1965	
	Jean J. Pinatel (France)	Instructor in telecommunication operations	3. 1.1967	
	Lucien Pourreau (France)	Instructor in long distance lines	4. 3.1966	
Mali (Technical Assistance)	Jean C. F. Hubert (France)	Instructor responsible for technical training (wire and radio)	17. 3.1968	Organizes the National School of Posts and Telecommunications and establishes training programmes for skilled workers and medium-level technicians in the telecommunication service.
Mauritius (Technical Assistance)	Kamalakar D. Vaidya (India)	Telecommunication adviser	4. 1.1967 31.12.1968	Acted as adviser to the Minister of Communications on all telecommunication matters in Mauritius, particularly in respect of telephone network planning.
Niger (Technical Assistance)	Raymond A. Chollet (France)	Expert on technical training	1.10.1968	Organizes training courses in the general field of telephony and telegraphy at the National Instruction Centre of Posts and Telecommunications.

Country or Region of Assignment	Name (Nationality)	Speciality and/or Title	Starting and closing date of mission	Brief description of work; Remarks
Nigeria (Technical Assistance)	S. Mahadeva Iyer (India)	Senior telecommunication engineer (OPAS)	16. 3.1968	Performs operational and executive duties in the Nigerian Government service.
	Spyros Kassimatis (Greece)	Senior telecommunication engineer (OPAS)	29. 2.1968	Performs operational and executive duties in the Nigerian Government service.
	Leonid A. Shirokih (U.S.S.R.)	Senior telecommunication engineer (OPAS)	25. 5.1968	Performs operational and executive duties in the Nigerian Government service.
	Hugo J. Stroobants (Belgium)	Senior telecommunication engineer (OPAS)	12. 3.1968	Performs operational and executive duties in the Nigerian Government service.
	David R. Thomas (United Kingdom)	Telecommunication officer (traffic) (OPAS)	1. 6.1966	Trains traffic officers in the telecommunications school in Kaduna (Northern Nigeria).
	V. R. Venugopal (India)	Senior telecommunication engineer (OPAS)	6. 6.1968	Performs operational and executive duties in the Nigerian Government service.
	S. A. Christer Carlstedt (Sweden)	Associate expert	1.10.1968	Assisting the Senior Telecommunications Engineer (OPAS).
	Börje N. E. Ljungquist (Sweden)	Associate expert	1.10.1968	Assisting the Senior Telecommunications Engineer (OPAS).
	Sten I. Svensson (Sweden)	Associate expert	1.10.1968	Assisting the Senior Telecommunications Engineer (OPAS).
United Arab Republic (Technical Assistance)	Sanenobu Hayashi (Japan)	Adviser on protection of cables and overhead lines	16. 1.1968 15. 4.1968	Advised on protection of cables and overhead lines.
Rwanda (Technical Assistance)	Joan A. Blokland (Netherlands)	Training expert	3.12.1966 31.12.1968	Trained technicians in the installation, maintenance and operation of small automatic telephony exchanges and teaches basic telecommunication theory in the Telecommunication School.
Sierra Leone (Technical Assistance)	Kenneth A. Lees (United Kingdom)	Telecommunication instructor (OPAS)	26. 4.1964	Performs operational and executive duties in the Posts and Telecommunications Training Centre.
Sudan (Special Fund)	Paramakudi S. M. Sundaram (India)	Project Manager	10.12.1962 19. 7.1968	Assisting the Department of Posts and Telegraphs to establish a Telecommunication Training Centre for all classes of telecommunication personnel.
	Leonard S. Scammell (United Kingdom)	Instructor in automatic telephony Acting Project Manager	5. 8.1963 15. 4.1968	
	P. R. Desikachar (India)	Instructor in radiocommunications	14. 2.1966	
	Mervyn A. Gale (United Kingdom)	Instructor in telegraphy	8.12.1963	
Chad (Technical Assistance)	Albert Bouchet (France)	Professor in general radio techniques	25. 4.1964	Teaches classes of supervisory technicians the theory of radio, electricity and electronics.
	Yves Heurtin (France)	Instructor in practical radio	26.10.1964	Devises and carries out experiments in the radio laboratory. Gives practical workshop instruction.
Africa (Regional Project) (Technical Assistance)	Masafumi Kinoshita (Japan)	Regional telecommunication adviser (Chief, Joint I.T.U./E.C.A. Mission, Ethiopia)	28. 3.1966 31. 5.1968	Acting as Chief of Joint I.T.U./E.C.A. Unit consisting of three experts. Studying ways and means for improving telecommunications in Africa. Assist E.C.A. in economic surveys concerning telecommunications. Carrying out surveys of existing telecommunications networks, study requirements of telecommunications in the African countries, conduct surveys and study needs in telecommunications training.

Country or Region of Assignment	Name (Nationality)	Speciality and/or Title	Starting and closing date of mission	Brief description of work; Remarks
Africa (Regional Project) *(contd.)* (Technical Assistance) *(contd.)*	Paul Bassole (France)	Chief, Joint I.T.U./ E.C.A. Mission	1. 4.1968	Same duties as Mr. Kinoshita with more emphasis on studies of international communications. As of 1 January 1969, Project Manager of the Preinvestment Study Project for African Telecommunications.
	Hertwig K. Bender (F. R. of Germany)	Member of Joint I.T.U./ E.C.A. Mission	16. 4.1968	Participates in the work of the I.T.U./ E.C.A. Unit. Studies methods of improving telecommunications in Africa. Carries out surveys of telecommunications and training facilities. Assists Governments with training problems.
	Stanislas Sierakowski (Belgium)	Member of Joint I.T.U./ E.C.A. Mission	1. 9.1966	Same duties as Mr. Bender.
(Special Fund)	Frank Norman (Australia)	Project Manager (Ethiopia)	1. 7.1965 5.11.1968	Assisting the Imperial Board of Telecommunications of Ethiopia and the Ministry of Posts and Telecommunications of the Ivory Coast to establish an HF radio link between Addis Ababa and Abidjan with associated telephone and telegraph terminals and telex switching equipment and to train the personnel needed for its operation and maintenance.
	Norman E. Marshall (United Kingdom)	Radiocommunication expert (Ethiopia) Acting Project Manager	19. 3.1967 9.10.1968	
	Hisao Abe (Japan)	Automatic telegraphy expert (Ethiopia)	1.10 1967 10. 9.1968	

Africa (Regional Project) *(contd.)* (Special Fund) *(contd.)*	Charles Guilhou (France)	Expert in cable laying (Ivory Coast)	14. 9.1967 13. 3.1968	
	Bruno E. Meixner (F. R. of Germany)	Automatic telegraphy expert (Ethiopia)	15. 3.1967 5. 9.1968	
	Maurice R. Ravarit (France)	Automatic telegraphy expert (Ivory Coast)	2. 5.1967	
Multinational Training School (Kenya, Malawi, Swaziland, Tanzania, Uganda and Zambia) (Technical Assistance)	William B. Jago (United Kingdom)	Expert in postal and telecommunication training	30.12.1968	Assists the Governments concerned with the preparation of an official request to the UNDP for assistance under the SF in the establishment of the multinational training centre.
African Preinvestment Project (Special Fund)	Francis St. C. Manson (Canada)	Planning expert, coordinator team three telecommunication engineers responsible for carrying out preliminary studies constituting the first phase of a UNDP (Special Fund) project (detailed studies and final projects) (Ethiopia)	1.12.1968 24.12.1968	To study existing short-term plans of development for telecommunications. To study the systems existing for national and international links as well as traffic trends, routes to be constructed or to be improved and technical facilities to be installed. Assessment of investment, personnel needs and profitability of operation.
	Ingidayehu Girmaw (Ethiopia)	Operation traffic expert, member team three telecommunication engineers responsible for carrying out preliminary studies constituting the first phase of a UNDP (Special Fund) project (detailed studies and final projects) (Ethiopia)	9.12.1968	To study all traffic problems and routing problems involved in the development of the African telecommunication network.

Country or Region of Assignment	Name (Nationality)	Speciality and/or Title	Starting and closing date of mission	Brief description of work; Remarks
2. AMERICAS				
Antigua (Technical Assistance)	Albert J. Carey (U.S.A.)	Superintendent of telephones (OPAS)	19.11.1968	Supervised the operation of inland telephone service. Advised the Government on telecommunication matters. Prepared allocation of licences for telecommunications and of frequencies for radiocommunications. Assured in-service training of technical staff.
Argentina (Technical Assistance)	Philip S. Allen (U.S.A.)	Expert on maintenance of long distance networks and equipment	16.11.1967 15. 5.1968	Advised the ENTEL (State Telecommunications Enterprise) on methods of management, on questions concerning the establishment of fault statistics and on maintenance of long distance telecommunications equipment and network.
Bolivia (Technical Assistance)	José I. Caicoya de Rato (Spain)	Telecommunication Adviser	28. 6.1967 31.12.1968	Assisted in drafting laws and regulations for telecommunications. Assisted in the reorganization of the Frequency Department. Advised on training matters. Gave general advice on various telecommunication problems. Assisted in the evaluation of offers resulting from calls for bids.
Brazil (Technical Assistance)	Raymond Métayer (France)	Telecommunication systems planning expert	4. 1.1967 3. 1.1968	Acted as adviser to the SUDENE (Supervising Organization for the Development of the North-East) in questions concerning organization of telecommunications services, planning of telecommunication systems and training of telecommunication technicians.
Chile (Technical Assistance)	Lothar Diehl (F. R. of Germany)	Expert in switching and automatic transmission in the telex service	31. 7.1967	Acts as adviser of the State Telegraph services and furnishes technical guidance in the installation of automatic telex exchanges. Works on the planning and improvement of the telex networks, as well as of the new international services. Advises on the organization and management of the system. Elaborates training programmes in cooperation with the Training Centre.
(Special Fund)	Jacques Raverdy (France)	Project Manager	1. 7.1968	Assisting the Empresa Nacional de Telecomunicaciones of Chile to establish a centre for training of engineers, technicians and skilled operators in the field of telecommunications. The centre is to be established in the Department of Electrical Engineering at the University of Santiago.

Country or Region of Assignment	Name (Nationality)	Speciality and/or Title	Starting and closing date of mission	Brief description of work; Remarks
Colombia (Special Fund)	Ingemar Norberg (Sweden)	Project Manager	25. 9.1965	1) Assisting the Empresa Nacional de Telecomunicaciones to develop further its Technological Institute for Electronics and Telecommunications in Bogota for training of technicians.
	Lars-Rune Berg (Sweden)	Associate expert in transmission	30. 9.1968	
	José L. Colon (U.S.A.)	Instructor in propagation	13. 7.1966	2) Assisting the University of Cauca, Popayan, to: *a)* develop further its Faculty of Electronics and Telecommunication Engineering; *b)* establish a Centre of Applied Research in Electronics and Telecommunications.
	José E. Cordero (U.S.A.)	Instructor in transmission and carrier equipment	20.11.1965	
	Kaj S. Elgstrand (Sweden)	Associate expert in ergonomics	15. 8.1968	
	Johan J. Ernberg (Sweden)	Associate expert in physics	30. 9.1968	
	Matthias J. Josten (F. R. of Germany)	Instructor in switching (applied research work)	1. 7.1968	
	Knut E. Källström (Sweden)	Associate expert in switching	30. 9.1968	
	Arnulf G. Liebetegger (United Kingdom)	Professor in mathematics	3. 6.1968	
Colombia *(contd.)* (Special Fund) *(contd.)*	John A. Mossop (U.S.A.)	Instructor in telephony	26.11.1965 25.11.1968	
	Artème Nicolazzi (France)	Instructor in transmission and associated equipment	1. 4.1966	
	Hector Rivera (U.S.A.)	Instructor in telegraphy	3. 3.1967	
	Lars A. Wern (Sweden)	Associate expert in electronics and transmission	30. 9.1968	
Dominican Republic (Technical Assistance)	Benjamin Brok [1] (U.S.A.)	Expert in telegraph and telephone exchange equipment	13. 2.1964	Assists with the development of telecommunication networks, with preparation of specification for telephone and telegraph exchange equipment; advises on the assessment of the technical aspects of offers; supervises installation and arranges for maintenance and operation. Provides in-service training of national staff.
El Salvador (Technical Assistance)	Alexander B. MacLennan [1] (United Kingdom)	Expert in microwave transmission systems	3. 2.1964	Helps the Governments represented in the Central American Organization for the Development of Telecommunications in planning a regional network, preparing specifications for long distance microwave transmission systems and advises in the technical assessment of offers. Coordinates the activities of the other experts in the region.

Country or Region of Assignment	Name (Nationality)	Speciality and/or Title	Starting and closing date of mission	Brief description of work; Remarks
Ecuador (Technical Assistance)	Omar A. Posada da Silveira (Uruguay)	Microwave expert	17. 3.1968	Prepares specifications for equipment for long-distance microwave systems. Advises on the technical assessment of offers. Provides in-service training for the national staff on microwave techniques, maintenance and operation of microwave equipment.
Guatemala (Technical Assistance)	Hirokazu Shimada [1]) (Japan)	Expert in telegraph and telephone exchange equipment	14.12.1967	Helps the Government of the Central American countries in the development of their national and international networks. Assists in preparation of specifications for the purchase of central office equipment. Advises on the assessment of the technical aspects of offers. Advises during installation and in connection with maintenance and operation. Provides in-service training for the national staff.
Guyana (Technical Assistance)	John H. Wagstaff (United Kingdom)	General Manager of the Telecommunication Corporation (OPAS)	8. 6.1965 15. 9.1968	Studied and organized the transformation of the telecommunication organization into a corporation. Set up the structure of the new organization, advised on the legal, financial and organizational problems. Acted as the General Manager of the Corporation and trained a national counterpart.
Honduras (Technical Assistance)	Lars E. G. Gustafsson [1]) (Sweden)	Expert in organization and operation of telecommunication services and tariffs	2.10.1967	Advises the Governments of Central America on problems of organization and operation of public telephone services. Assists with the preparation of operating standards and maintenance of instruction manuals. Assists with drafting relevant laws and regulations for telecommunications, operations and licensing. Assists in studies of traffic problems for establishing rates and carrying out feasibility studies.
Jamaica (Technical Assistance)	Patrick J. O'Sullivan (Ireland)	Senior lecturer, telecommunication engineering (OPAS)	7. 8.1967	Senior lecturer at the College of Arts, Science and Technology, Kingston. Held courses in mathematics and in various telecommunication subjects to a level similar to the City and Guild Telecommunication Technician Certificate and the Higher National Diploma of the United Kingdom. Prepares detailed programmes, syllabi and practical training.
Nicaragua (Technical Assistance)	Friedrich Thoms [1]) (F. R. of Germany)	Transmission expert	9.11.1967 15. 6.1968	Helped and advised the Governments of Central American countries in the development of their telecommunication networks. Prepared specifications for long-distance microwave transmission systems. Advised in the technical assessment of offers. Supervised installations and arranged for their maintenance and operation. Provided in-service training of the national staff.

Country or Region of Assignment	Name (Nationality)	Speciality and/or Title	Starting and closing date of mission	Brief description of work; Remarks
Paraguay (Technical Assistance)	Horst Schaetzke (F. R. of Germany)	Automatic telephone equipment expert	7.11.1966	Investigates operation of existing telephone switching equipment. Prepares instructions and procedures for preventive and corrective maintenance of exchanges. Introduced detailed fault statistics. Organizes routine maintenance services. Makes traffic measurements. Supervises installation of new exchanges. Provides in-service training for local staff.
Peru (Technical Assistance)	Venkat V. Rao (India)	Frequency management expert	13. 4.1968	Advises the J.N.P.T. (National Permanent Telecommunication Board) on establishment of a Frequency Registration Bureau. Studies requests for new frequencies and determines the sets of frequencies necessary to operate the services. Advises on the establishment of a frequency monitoring and supervisory system. Provides in-service training for the J.N.P.T. staff.
St. Kitts (Technical Assistance)	Roy N. Chisholm (Canada)	Telephone line plant OPAS officer	11. 2.1967 10. 7.1968	Supervised the installation of line plant, particularly erection of self-supporting aerial cables.
Trinidad (Technical Assistance)	Johannes Marsman [2]) (Netherlands)	Expert in organization and administration	13. 1.1966	Advised the Governments of the West Indies in the organization of government or government-owned but commercially operated companies for operation of public telecommunication services. Assisted in drafting of relevant laws and regulations for telecommunications operations, licensing, etc. Advised on training for telecommunication staff. Gave general advice to the Government on telecommunication problems.
Venezuela (Funds-in-Trust)	James S. Harrington (Australia)	Traffic engineer	6.10.1967 5. 2.1968	Undertook traffic measurements in all automatic exchanges of Caracas. Gave lectures on traffic measurements in Crossbar exchanges. Established traffic statistics for the local and long-distance networks. Undertook a new design of the junction network. Suggested syllabi for training of traffic engineers and technicians.
	William R. M. Pryde (Australia)	Adviser in switching practices and maintenance	13. 9.1967 12. 1.1968	Investigated the organizational structure of C.A.N.T.V. (Venezuelan Telephone Company) and its maintenance activities. Made proposals for the maintenance of Telephone Plant and exchanges.
(Special Fund)	Jan Deketh (Netherlands)	Project Manager	1. 1.1964	Assisting the Ministry of Communications to establish a Telecommunication Training Centre, initially for the training of high level technicians but ultimately for all classes of telecommunications personnel.

Country or Region of Assignment	Name (Nationality)	Speciality and/or Title	Starting and closing date of mission	Brief description of work; Remarks
Venezuela *(contd.)* (Special Fund) *(contd.)*	Jorge Mareggiani (Argentina)	Instructor in electrical measurements and power equipment	7. 9.1964	
	Claude Moussac (France)	Instructor in theory and practice of transmission	16. 4.1966	
	Oscar G. Platter (Italy)	Instructor in telegraphy	11. 3.1966	
	Humberto Ruiz (Peru)	Instructor in radio equipment and radio systems	8. 9.1964	
	Kaare Welle (Norway)	Instructor in telephone switching equipment and traffic	14. 6.1967	
Latin America (Regional Project) (Technical Assistance)	Juan A. Autelli (Argentina)	Telecommunication planning expert	1. 1.1968	Assists the Coordinator of the Regional sub-Group of CITEL in the studies undertaken by the Inter-American Development Bank. Carries out technical studies and prepares plans for the establishment of the Inter-American Telecommunications Network. Assists the Governments in preparing plans for national telecommunications networks and in the preparation of requests for further technical assistance.
	Roger L. Freeman (U.S.A.)	Telecommunication planning expert	24. 2.1968	The same duties as Mr. Autelli but in charge of another group of countries.
Latin America (Regional Project) *(contd.)* (Technical Assistance) *(contd.)*	Irwin S. Henderson (Canada)	Expert in switching, numbering and signalling attached to CITEL (Inter-American Telecommunication Commission)	4.10.1967	Assists CITEL in studies of international telecommunication network planning in accordance with recommendations of C.C.I.T.T./C.C.I.R. Plan Committee for Latin America (switching, numbering and signalling aspects).
3. ASIA AND THE FAR EAST				
Afghanistan (Technical Assistance)	Bernward Kupitz (F. R. of Germany)	Carrier and line transmission expert	27. 7.1967	Assisting the Ministry of Communications in planning, operating and maintaining 3 and 12-channel carrier telephone equipment on overhead lines.
	Hermann Sauermilch (F. R. of Germany)	Telecommunication adviser	8. 9.1958	Assisting the Ministry of Communications in overall planning of telecommunications and advising on organization and administration of the new network.
(Special Fund)	Anatoli J. Udin (U.S.S.R.)	Project Manager	13. 4.1965	Assisting the Ministry of Communications with the establishment of a Telecommunications Training Centre for the training of technicians, technical officers and for re-training of in-service personnel.
	Roland Carnefur (Sweden)	Instructor in transmission and carrier systems	24.12.1968 1.10.1967	

[1]) On request, assisting other Central American countries.
[2]) On request, assisting other countries in the Caribbean Area.

Country or Region of Assignment	Name (Nationality)	Speciality and/or Title	Starting and closing date of mission	Brief description of work; Remarks
Afghanistan *(contd.)* (Special Fund) *(contd.)*	Joseph Kennedy (Ireland)	Instructor in telephony	31. 8.1965	
	Percival F. A. Morgan (United Kingdom)	Instructor in outside plant	5. 8.1968	
	Gijsbertus J. M. Pappot (Netherlands)	Associate expert — transmission and carrier systems	3. 1.1968	
	Eckhard Pense (F. R. of Germany)	Instructor in telegraphy	15. 5.1967	
	Kurt Scherrer (Switzerland)	Instructor in radio	1. 8.1965	
	Konrad Thiesemann (F. R. of Germany)	Instructor in outside plant	27. 3.1966 26. 9.1968	
Saudi Arabia (Funds-in-Trust)	Rafique Ahmad (Pakistan)	Expert on automatic and manual telephone systems	18. 2.1968	Assisting the Ministry of Communications (P.T.T. Division) in all matters related to telephone exchange systems.
	Natarajan Ganapathy (India)	Microwave expert (Served under Technical Assistance from 1.1.1966 to 31.12.1967)	1. 1.1968 31.10.1968	Assisted Ministry of Communications (P.T.T. Division) in planning and development of trunk telephone network.
	Mukkavalli L. Sastry (India)	Broadcasting adviser	5. 2.1965	Assisting Ministry of Information in planning installation, operation and maintenance of radio broadcasting stations and programme links.
Saudi Arabia *(contd.)* (Funds-in-Trust) *(contd.)*	Syed A. Sathar (Pakistan)	Telecommunication programmer	9.11.1963 8.11.1968	Assisted the Ministry of Communications in all matters relating to the development of the telecommunications network.
(Special Fund)	Rolf H. Stenerudh (Sweden)	Project Manager for the establishment of a Telecommunication and Broadcasting Training Centre and adviser for the establishment of preparatory training	28. 1.1968	Assisting the Ministry of Communications, the Ministry of Education and the Ministry of Information with the establishment of a Telecommunication and Broadcasting Training Centre. Advising on the establishment of preparatory training.
China (Technical Assistance)	Joseph M. Dwyer (Ireland)	Satellite communication expert	12. 3.1968 11. 9.1968	Advised the Directorate General, Ministry of Communications in the Republic of China on the construction of a satellite earth station. Trained local personnel on the technology of space communications and on operation and maintenance of the relevant equipment.
Korea (Special Fund)	Louis L. Thomas (U.S.A.)	Project Manager	10. 2.1963 9. 2.1968	Assisting the Ministry of Communications to establish a Telecommunications Training Centre for all grades of technical staff.
	Erich Ehricke (F. R. of Germany)	Instructor in automatic telephony	16. 3.1967 15. 3.1968	
	John W. Willmot (United Kingdom)	Instructor in telegraphy (Acting Project Manager from 15.11.1967)	4. 5.1964 3. 6.1968	

Country or Region of Assignment	Name (Nationality)	Speciality and/or Title	Starting and closing date of mission	Brief description of work; Remarks
India (Special Fund)	Karl E. Eriksson (Sweden)	Instructor in antennae and associated tracking equipment	27. 9.1967 16. 2.1968	Assisting the Atomic Energy Department of the Government of India with the establishment of a satellite communications earth station for training of engineers and technicians in satellite communications techniques. Assisting in the preparation of training programmes and syllabi and lecturing.
	Albert L. Horley (U.S.A.)	Chief training expert in satellite communication earth station equipment and satellite communication technology	19. 9.1967 7. 9.1968	
	Robert C. Issler (France)	Instructor in microwave radio equipment and technique at the Experimental Satellite Communication Earth Station	1. 7.1968 31.10.1968	
Indonesia (Special Fund)	Masafumi Kinoshita (Japan)	Project Manager for the establishment of a Telecommunication Training Centre in Bandung and eleven regional training units in Indonesia	1. 6.1968	Assisting the General Director of Posts and Telecommunications, Ministry of Communications with the establishment of a Telecommunications Training Centre for the training of technicians and senior technicians.
Indonesia *(contd.)* (Special Fund) *(contd.)*	Ryuzaburo Inano (Japan)	Radio instructor	24.12.1968	
	Sten G. Sallander (Sweden)	Telecommunication lines and cables instructor	4.12.1968	
	John W. Willmot (United Kingdom)	Training adviser for the establishment of a Telecommunication Training Centre in Bandung and eleven regional training units in Indonesia	1.11.1968	
Iran (Technical Assistance)	Fumio Kagawa (Japan)	Expert on switching and transmission techniques	31.12.1966 20. 7.1968	Assisted with training and establishment of syllabi for various courses.
Iraq (Special Fund)	Brian F. Crutcher (Australia)	Instructor in outside plant Project Manager	27. 4.1964 30. 9.1965 1.10.1965 26. 8.1968	Assisting the Ministry of Communications to establish a Telecommunications Training Centre to provide courses for all classes of telecommunications personnel.
	David Holland (United Kingdom)	Instructor in outside plant Acting Project Manager	31. 5.1966 14. 8.1968	
	Johan F. Bos (Netherlands)	Associate expert—general telecommunications	30. 1.1967	
	Kjell Haug (Norway)	Instructor in telegraphy	1. 6.1966 31. 5.1968	
	Alfred K. Højbjerg (Denmark)	Instructor in telegraphy	15. 9.1968	
	John B. King (United Kingdom)	Instructor in traffic	15. 6.1964 30. 4.1968	

Country or Region of Assignment	Name (Nationality)	Speciality and/or Title	Starting and closing date of mission	Brief description of work; Remarks
Iraq *(contd.)* (Special Fund) *(contd.)*	Yoshio Kobayashi (Japan)	Instructor in general telecommunication engineering field	9.12.1968	
	Mitsuhiro Kondo (Japan)	Instructor in transmission and carrier	9.12.1968	
	Takuya Nagasawa (Japan)	Instructor in transmission and carrier	13. 7.1965 9. 5.1968	
	Karl-Heinz Pophal (F. R. of Germany)	Instructor in radio	1. 8.1966	
	Ramamrutham Radhakrishnan (India)	Instructor in telephone switching systems	29.11.1968	
	Eivind Rönnestad (Norway)	General telecommunication engineering expert	3. 1.1967 2. 7.1968	
	Nagnath T. Taskar (India)	Instructor in telephone switching systems	1. 5.1966 30. 8.1968	
West Irian (FUNDWI)	Oystein Linge (Norway)	Project Manager for the rehabilitation of telecommunication public services in West Irian	10.10.1968	Rehabilitation of public telecommunication services in West Irian.
Jordan (Technical Assistance)	Petr P. Bazhan (U.S.S.R.)	Telephone cable network and line transmission expert	10. 1.1966	Advising on planning of new lines, upgrading of existing lines and maintenance procedures.
	Mohd. S. K. Durrani (Pakistan)	Radiocommunication operation expert	31. 8.1966 29. 2.1968	Advised on operational procedures for the radio services.
Jordan *(contd.)* (Technical Assistance) *(contd.)*	Ernst Hondong (F. R. of Germany)	Radio and carrier network expert	30.10.1965	Advising and assisting on improving radio receiving and transmitting stations.
	Subbiah Sankara Raman (India)	Telephone and telex expert	7.12.1965	Advising on general planning of telephone and telex networks. Establishment of operational procedures.
Kuwait (Technical Assistance)	Leonid Vakhtanov (U.S.S.R.)	Expert in establishment of a training centre in maintenance, repair and installation of telecommunication equipment (served under Funds-in-Trust from 18.7.1965 to 31.12.1967)	1. 1.1968 18. 9.1968	Planning and establishment for the Ministry of Posts, Telegraphs and Telephones of a Training Centre for the maintenance, repair and installation of telecommunication equipment.
(Funds-in-Trust)	Wadie F. Boulos (U.A.R.)	Telecommunication instructor	8. 7.1968	Assisting with the in-service training in telecommunications subjects of employees of the Ministry of Posts, Telegraphs and Telephones.
	Austin F. Burke (Ireland)	Police telecommunication planning engineer (OPAS)	6. 1.1967	Assisting the Ministry of Interior with the planning and expansion of the Police Radiomobile Telecommunication Service.
	Fouad H. El Kaffas (U.A.R.)	Telecommunication instructor	8. 7.1968	Assisting with the in-service training in telecommunications subjects of employees of the Ministry of Posts, Telegraphs and Telephones.

Country or Region of Assignment	Name (Nationality)	Speciality and/or Title	Starting and closing date of mission	Brief description of work; Remarks
Kuwait *(contd.)* (Funds-in-Trust) *(contd.)*	Shaikh A. Raheem (Pakistan)	Senior radiocommunication engineer (OPAS)	2.11.1966	Installation, operation and maintenance of all radiocommunication services for the Ministry of Posts, Telegraphs and Telephones.
	Chaudhry M. Sadiq (Pakistan)	Senior telecommunication engineer (telephone) (OPAS)	23. 7.1967	Installation, operation and maintenance of all telephone services for the Ministry of Posts, Telegraphs and Telephones.
	Shawkat S. Sawwaf (Syria)	Telecommunication adviser	19. 7.1967 17. 4.1968	Advised the Ministry of P.T. and T. on the development and organization of the telecommunication services.
	M. M. Siddiqi (Pakistan)	Expert in stores organization (purchasing and supplies)	19. 7.1967	Reorganization of the telecommunications stores organization for the Ministry of Posts, Telegraphs and Telephones.
Malaysia (Technical Assistance)	Jack C. Whybourne (Australia)	National dialling system planning expert	12. 4.1967	Advising the Government on a nationwide automatic telephone network.
(Special Fund)	Colin W. C. Richards (United Kingdom)	Project Manager	24. 9.1962	Assisting the Telecommunication Department of the Government of Malaysia to develop its training programme, to establish a new national training centre replacing one opened during the early 1950's, and to establish provincial training centres in Sabah and Sarawak.
	Dennis W. Berry (United Kingdom)	Instructor in line plant, subscriber's apparatus and switching	24.10.1967	
Malaysia *(contd.)* (Special Fund) *(contd.)*	John M. Broderick (Australia)	Instructor in telecommunication traffic	12.12.1967	
	Clarence L. Canute (Australia)	Instructor in transmission	8. 6.1963	
	Bertil R. Carlsson (Sweden)	Associate expert telecommunications (general)	18. 3.1968	
	Nils A. Carlsson (Sweden)	Associate expert radio and transmission	18. 3.1968	
	Benno Engström (Sweden)	Associate expert switching and telephone instruments	18. 3.1968	
	Mrs. Kerstin M. Engström (Sweden)	Associate expert telecommunication traffic engineering	18. 3.1968	
	Alan Leslie Harris (Australia)	Instructor in line plant, subscriber's apparatus and switching	27. 1.1968 20. 9.1968	
	Robert M. Johnsen (Norway)	Instructor in radio	28. 7.1964	
	John P. Killeen (Australia)	Instructor in line plant	8. 6.1963	
	Stig-Arne Larsson (Sweden)	Associate expert telecommunications (general)	18. 3.1968	
	Bruce R. Muir (United Kingdom)	Instructor in telecommunication switching	15. 6.1966	
	Olav Olsen (Norway)	Instructor in telegraphy	2. 5.1966 1. 5.1968	
Nepal (Technical Assistance)	Alfred H. T. Waldram (United Kingdom)	General adviser	13. 5.1968	Advising the P.T.T. Administration of a national telecommunications development plan.
Philippines (Technical Assistance)	Edward L. Wright (Australia)	Expert in telecommunication organization and administration	1. 4.1968	Advises the Government on telecommunication organization and administration.

Country or Region of Assignment	Name (Nationality)	Speciality and/or Title	Starting and closing date of mission	Brief description of work; Remarks
Philippines *(contd.)* (Special Fund)	William B. Jago (United Kingdom)	Project Manager	30. 1.1963 29.12.1968	Assisted the Bureau of Telecommunications with the establishment of a Telecommunication Training Centre for engineers and technicians. The project terminated in 1968.
	Ryuzaburo Inano (Japan)	Instructor in radio	6. 7.1964 5. 4.1968	
	Yoshizo Ito (Japan)	Instructor in automatic telephone switching	6. 6.1966 5. 4.1968	
	John H. Johnson (United Kingdom)	Instructor in transmission and carrier communications	30. 9.1964 29. 3.1968	
	Oystein Linge (Norway)	Instructor in radio systems engineering	15. 8.1966 14. 6.1968	
	Edward L. Wright (Australia)	Instructor in telecommunication organization and administration	1. 6.1966 31. 3.1968	
	Lennart Ygland (Sweden)	Instructor in telecommunication traffic and system engineering	20. 2.1966 19. 2.1968	
Syrian Arab Republic (Technical Assistance)	Marcel Mauboussin (France)	Expert on accounting	23. 9.1968	Establishment of a modern mechanised accounting service for the Posts and Telecommunications Department of the Ministry of Communications.
	Madan M. Misra (India)	Telecommunication expert on outside network plant	9.12.1968	Advising the General Administration of Posts, Telegraphs and Telephones on the maintenance and development of the local telephone network.
Thailand (Technical Assistance)	Klaus H. Kock (F. R. of Germany)	Expert in national telephone network	1.11.1967 30. 4.1968	Advised the T.O.T. Administration on planning a national automatic nation-wide telephone network.
	James J. Senyard (Australia)	Expert in telephone exchange and local plant operation (under Funds-in-Trust programme since 29.11.1968)	29.11.1967	Advises the T.O.T. Administration in telephone exchange and local plant operation.
(Special Fund)	R. Seshasayee (India)	Instructor in transmission and carrier systems	14.12.1964 30. 6.1967	Assisting the Telecommunication Project Administration Office (in which are represented both the Telephone Organization and the Post and Telegraph Department of Thailand) to establish a new Telecommunication Training Centre and also a Test and Development Centre.
		Project Manager	1. 7.1967	
	Osmo S. Alho (Finland)	Instructor in HF and VHF radio	1. 3.1967	
	Wilfred A. Bergeron (U.S.A.)	Instructor in radio	30. 1.1965	
	Arthur H. Hounslow (United Kingdom)	Instructor in telephone traffic	21.10.1965 20. 1.1968	
	Hans H. Junge Hansen (Denmark)	Associate expert in electronics	6.11.1968	
	Olaf S. Linder (Sweden)	Instructor in telephone switching systems	18. 1.1965	
	Malcolm MacLeod (New Zealand)	Instructor in external plant	9. 1.1965 8. 6.1968	
	Gösta A. Myrenfors (Sweden)	Instructor in telecommunication estimating, costing and stores accounting	15. 8.1966	
	Kazuo Takeuchi (Japan)	Instructor in telegraphy	5. 9.1966	

Country or Region of Assignment	Name (Nationality)	Speciality and/or Title	Starting and closing date of mission	Brief description of work; Remarks
Yemen (Technical Assistance)	Igorj M. Pavlichev (U.S.S.R.)	General telecommunication adviser	1. 9.1966	Advising the Ministry of Posts, Telegraphs and Telephones on all matters concerning the development of the telecommunication services and the training of telecommunications staff.
Asia and the Far East (Regional Project) (Technical Assistance)	Jun-Ichiro Nagai (Japan)	Regional radiocommunication expert	22.11.1966 21.11.1968	Assembling information about the state of radiocommunication services in the region, studying needs of individual countries in the development of radiocommunications, working out proposals for improvement of radiocommunications, preparing statistics and assessing future requirements in radiocommunications and in technical assistance.
	Kaliyanpur V. Pai (India)	Senior telecommunication expert	9.12.1961	Studies existing telecommunication facilities in the region and the needs of the countries in the development of their national and international telecommunications. Carries out surveys and assists governments in the preparation of plans of development of telecommunications. Advises governments on further technical assistance in the field of telecommunications. Coordinates the work of the other I.T.U. Regional Expert in the ECAFE Region.

4. EUROPE				
Turkey (Special Fund)	Edward W. Collett (United Kingdom)	Project Manager	6.11.1967	Assisting the P.T.T. Administration of Turkey with the establishment of a National Telecommunication Training Centre to provide introductory, complementary and specialized courses for engineers, technicians, instructors and administrative staff.
	Martin J. Keane (Ireland)	Carrier current and line transmission instructor	23.10.1968	
	Walter J. Lander (Canada)	Assistant telecommunication switching instructor	3.11.1968	
	Ian Lemco (Canada)	Telecommunication switching instructor	21.10.1968	
	William S. Martin (Canada)	Telecommunication lines and cables instructor	1.10.1968	

TABLE 2

FELLOWSHIPS DEALT WITH IN 1968

Country	Progr. sector	Year of award	Implemented in	Man/ Months in 1968	Host country(ies)	Field of study
1. AFRICA						
Algeria	TA	1968	1968/69/70/71	1/3	France	Telecommunications engineering
	TA	1968	1968/69/70/71	1/3	France	Telecommunications engineering
	SF	1968	1968/69	1/3	France	Switching
	SF	1968	1968/69	1/3	France	Transmission
	SF	1968	1968/69/70	1/3	France	Switching and transmission
	SF	1968	1968	1/6	France	Telegraphy
	SF	1968	1968	1/2	France	Radio
Burundi	TA	1968	1968	1/1	Japan	Microwave techniques
Cameroon	TA	1968	1968	1/1	Japan	Microwave techniques
	TA	1967	1967/68	1/6	Nigeria	Telecommunications engineering
	TA	1967	1967/68	1/6	Nigeria	Telecommunications engineering
	TA	1967	1967/68	1/6	Nigeria	Telecommunications engineering
	TA	1967	1967/68	1/6	Nigeria	Telecommunications engineering
Central African Republic	TA	1967	1967/68	1/3	France	Telecommunications techniques
	TA	1967	1967/68/69	1/12	Malagasy	Electromechanical installations
	TA	1967	1967/68/69	1/12	Malagasy	Electromechanical installations
	TA	1967	1967/68/69	1/12	Malagasy	Electromechanical installations
	TA	1967	1967/68/69	1/12	Malagasy	Electromechanical installations
	TA	1968	1968/69	1/7	France	Work foreman
Comoro Islands	TA	1968	1968/69	1/2	Malagasy	Telegraphy
E.A.C.	TA	1966	1966/67/68	1/1	U.K.	Telephony, telegraphy
East African	TA	1966	1967/68	1/1	U.K.	Traffic
Community	TA	1966	1966/67/68	1/1	U.K.	Telephony, telegraphy
	TA	1968	1968	1/6	U.K.	Telecommunications controller
	TA	1968	1968	1/6	U.K.	Telecommunications controller
	TA	1968	1968	1/6	U.K.	Telecommunications controller
	TA	1968	1968/69	1/3	U.K.	Telecommunications practice
	TA	1968	1968/69	1/3	U.K.	Telecommunications practice
	TA	1968	1968	1/6	U.K.	Telecommunications controller
	TA	1968	1968/69	1/3	U.K.	Telecommunications practice
	TA	1968	1968/69	1/3	U.K.	Telecommunications practice
Congo (Brazzaville)	TA	1966	1966/67/68	1/6	France	Radio relay links
	TA	1967	1967/68	1/6	France	Radio relay links
	TA	1967	1967/68	1/4	France	Switching
	TA	1967	1967/68	1/6	France	Radio relay links
	TA	1967	1967/68	1/7	France	Switching
	TA	1967	1967/68	1/10	France	L. D. lines
	TA	1967	1968/69	1/4	France	Telecommunications practice
	TA	1967	1967/68/69	1/12	France	Telecommunications practice
	TA	1967	1967/68/69	1/12	France	Telecommunications practice
	TA	1967	1968	1/7	France	Radio
	TA	1968	1968/69	1/1	France	Overhead lines, underground cables
	TA	1968	1968/69	1/1	France	Overhead lines, underground cables
Congo (Kinshasa)	TA	1968 *)	1969	1/—	Belgium, France	Telecommunications administration
	TA	1968 *)	1969	1/—		Radio
	TA	1968 *)	1969	1/—	Belgium, France	Telecommunications operations
	TA	1968 *)	1969	1/—	Belgium	Telecommunications administration
	TA	1968 *)	1969/70	1/—	Germany	Telegraphy
	TA	1968 *)	1969	1/—	France	Telephony
	SF	1968	1968/69	1/4	France	Lines and cables
	SF	1968	1968/69	1/4	France	Lines and cables

Country	Progr. sector	Year of award	Implemented in	Man/ Months in 1968	Host country(ies)	Field of study
Ivory Coast	SF	1967	1967/68	1/8	Germany, Switzerland	Telegraphy
	SF	1967	1967/68	1/4	France	Radio
	SF	1967	1967/68	1/8	Germany, Switzerland	Telegraphy
	SF	1967	1968	1/6	France, Switzerland	Telecommunications operations
Dahomey	TA	1968	1969	1/—	France	
	TA	1968	1969	1/—	France	
	TA	1968	1969	1/—	France	
	TA	1968	1969	1/—	France	
Ethiopia	SF	1967	1967/68	1/2	Japan	HF
	SF	1967	1967/68	1/2	Japan	Telex exchanges
	SF	1967	1967/68	1/2	Japan	Telex exchanges
	SF	1967	1968	1/3	U.K., Germany	Radio terminals
	SF	1968	1968	1/4	U.K.	Radio equipment
Gabon	TA	1967	1968	1/9	France	Radio
	TA	1968	1968/69	1/1	Senegal	Radio
Upper Volta	TA	1967	1967/68	1/12	Malagasy	L.D. lines
	TA	1967	1967/68	1/12	Malagasy	Telegraphy
	TA	1967	1967/68	1/10	Malagasy	L.D. lines
	TA	1967	1967/68/69	1/12	Malagasy	Switching
	TA	1967	1967/68	1/12	Malagasy	Telegraphy
	TA	1967	1967/68	1/8	Malagasy	Telecommunications operations
	TA	1967	1967/68	1/12	Malagasy	Radio
	TA	1968	1968	1/2	I.T.U.	Frequency management
Liberia	TA	1968	1969/70	1/—	U.S.A.	Telecommunications engineering
	TA	1968	1969	1/—	U.S.A.	Administrative management
Liberia *(contd.)*	TA	1967	1968/69/70	1/5	U.K.	Telephony
	TA	1966	1968	1/12	U.K., U.S.A., Canada	Telecommunications techniques
Libya	F. in T.	1968	1969/70/71	1/—	Italy	Transmission
	F. in T.	1968	1969/70	1/—	Italy	Telephony
	F. in T.	1968	1969/70	1/—	Italy	Telephone traffic
	F. in T.	1968	1969/70	1/—	Italy	Radio
Malagasy	SF	1967	1967/68/69	1/12	France	Transmission, L.D. lines
	SF	1967	1967/68/69	1/12	France	Telecommunications engineering
	SF	1967	1967/68/69	1/12	France	Telecommunications engineering
Malawi	TA	1966	1966/67/68	1/12	Kenya	Telecommunications engineering
	TA	1968	1969/70/71/72	1/—	U.K.	Telecommunications engineering
	TA	1966	1966/67/68	1/12	Kenya	Telecommunications engineering
	TA	1968	1969/70/71/72	1/—	U.K.	Telecommunications engineering
	TA	1968	1969/70/71/72	1/—	U.K.	Telecommunications engineering
	TA	1967	1967/68/69	1/12	Kenya	Telecommunications engineering
	TA	1966	1966/67/68	1/12	Kenya	Telecommunications engineering
	TA	1966	1966/67/68	1/12	Kenya	Telecommunications engineering
	TA	1968	1969/70/71/72	1/—	U.K.	Telecommunications engineering
	TA	1968	1969/70/71/72	1/—	U.K.	Telecommunications engineering
	TA	1967	1967/68/69	1/12	Kenya	Telecommunications engineering
	TA	1968	1969/70/71/72	1/—	U.K.	Telecommunications engineering
	TA	1968	1969/70/71/72	1/—	U.K.	Telecommunications engineering
	TA	1967	1967/68/69	1/12	Kenya	Telecommunications engineering
	TA	1968	1969/70/71/72	1/—	U.K.	Telecommunications engineering
Mali	TA	1968	1968	1/1	I.T.U.	Frequency management
Niger	TA	1967	1967/68	1/6	France	Telegraphy
	TA	1966	1966/67/68	1/6	France	Telecommunications engineering
	TA	1968	1968/69	1/6	France	Telecommunications engineering
	TA	1965	1965/66/67/68	1/6	France	Telecommunications engineering
	TA	1968	1968/69/70	1/6	France	Telecommunications engineering

Country	Progr. sector	Year of award	Implemented in	Man/ Months in 1968	Host country(ies)	Field of study
Nigeria	TA	1968	1968	1/1	Japan	Microwave techniques
U.A.R.	TA	1967	1967/68	1/6	Austria, Germany	Telex equipment
	TA	1967	1967/68	1/6	Austria, Germany	Telex equipment
	TA	1968	1969	1/—	U.S.A.	Telecommunications accounting
	TA	1968	1969	1/—	U.S.A.	Telecommunications accounting
	TA	1968	1969	1/—	U.S.A.	Telecommunications accounting
	TA	1968	1969	1/—	U.K., Sweden	Network planning
	TA	1968	1969	1/—	U.K., Sweden	Network planning
	TA	1968	1969	1/—	U.K., Sweden	Network planning
	TA	1968	1969	1/—	U.S.A.	Computers in telecommunications
	TA	1968	1969	1/—	U.K., Sweden	Trunk networks, HF carrier
	TA	1968	1969	1/—	Italy	Space propagation, earth stations
	TA	1967	1969	1/—	Italy	Telex equipment
	TA	1968	1969	1/—	U.K., Sweden	Network planning
	TA	1968	1969	1/—	U.S.A.	Telecommunications accounting
	TA	1968	1969	1/—	U.K., Sweden	Network planning
	TA	1968	1969	1/—	U.S.A.	Telecommunications accounting
	TA	1968	1969	1/—	U.K., Sweden	Network planning
	TA	1968	1969	1/—	U.S.A.	Computers in telecommunications
	TA	1968	1969	1/—	U.S.A.	Computers in telecommunications
	TA	1968	1969	1/—	U.S.A.	Computers in telecommunications
	TA	1968	1968/69	1/3	France	Tropospheric scatter propagation
	TA	1968	1969	1/—	U.K., Sweden	Network planning
	TA	1968	1969	1/—	U.S.A.	Telecommunications accounting
Rwanda	TA	1968	1968	1/1	I.T.U.	Frequency management
Sierra Leone	TA	1968	1968	1/3	I.T.U., U.K., Ireland	Frequency management
	TA	1968	1968	1/3	I.T.U., U.K., Ireland	Frequency management
Somalia	TA	1966	1967/68/69	1/12	Yugoslavia	Telecommunications engineering
Sudan	TA	1967	1967/68/69	1/12	U.K.	Radio
	TA	1967	1968/69	1/10	U.K.	Automatic telephony
	TA	1966	1966/67/68	1/5	U.S.A.	Electronics in radio
	TA	1968	1968	1/1	Japan	Microwave techniques
	SF	1968	1968	1/3	Germany, Sweden, U.K.	Radio teaching methods and aids
	SF	1968	1968/69	1/3	Netherlands	Radio
	SF	1966	1967/68	1/10	Germany, U.K.	Telegraphy
	SF	1966	1966/67/68	1/12	U.K., Sweden, Germany, Netherlands	Telephony
Chad	TA	1968	1968	1/1	I.T.U.	Frequency management
Togo	TA	1967	1967/68	1/5	Malagasy	Telecommunications engineering
Tunisia	TA	1967	1967/68	1/3	France	Telex
	TA	1967	1968	1/4	France	Switching
	TA	1967	1967/68	1/3	France	Telephone lines
	TA	1967	1967/68	1/3	France	Telephony
	TA	1967	1967/68	1/5	France, Italy	VHF, radio relay links
	TA	1967	1967/68	1/5	France, Italy	Radio relay links
	TA	1967	1968	1/4	France	Switching
	TA	1968	1969	1/—	I.T.U., France, Switzerland	Frequency management
	TA	1968	1969	1/—	I.T.U., France, Switzerland	Frequency management
2. AMERICAS						
Argentina	TA	1968	1969	1/—	U.K.	Tariffs
	TA	1968	1969	1/—	European country	Tariffs
	TA	1968	1969	1/—	European country	Tariffs
Bolivia	TA	1968	1969	1/—	U.K.	Microwaves
	TA	1968	1968/69/70	1/1	Germany	Telex

Country	Progr. sector	Year of award	Implemented in	Man/ Months in 1968	Host country(ies)	Field of study
Chile	TA	1968	1969	1/—	U.K., Italy	L.D. communications
	TA	1967	1967/68	1/5	France, Belgium	Telex
	TA	1967	1969	1/—	U.K.	Economics in telecommunications
Colombia	TA	1968	1968	1/1	I.T.U.	Frequency management
	SF	1968	1968/69	1/2	Germany, Italy, Sweden, Belgium, U.K.	Telegraphy
	SF	1968	1968	1/2	U.K., Netherlands, Germany, Sweden, I.T.U., Spain	Telecommunications training
	SF	1968	1968	1/2	U.K., Netherlands, Germany, Sweden, I.T.U., Spain	Telecommunications training
	SF	1968	1968	1/2	U.K., Netherlands, Germany, Sweden, I.T.U., Spain	Telecommunications training
	SF	1968	1968/69	1/4	U.S.A.	System theory
	SF	1968	1969/70/71	1/—	U.S.A.	Theoretical physics
	SF	1968	1968/69	1/4	Sweden, U.K., Germany, Switzerland	Telephony, switching, traffic
Costa Rica	TA	1968	1968/69	1/6	U.S.A.	Telephone networks
	TA	1967	1967/68	1/6	U.S.A.	Telephone networks
El Salvador	TA	1968	1969/70	1/—	Italy, U.S.A.	Microwaves
Jamaica	TA	1968	1968	1/1	I.T.U.	Frequency management
	TA	1968	1968	1/1	I.T.U.	Frequency management
	TA	1968	1968	1/6	U.K.	Teaching, electronics and telecommunications
	TA	1968	1969/70	1/—	U.K., U.S.A.	Microwaves, computer circuitry
Mexico	TA	1966	1967/68	1/3	U.K.	Microwaves
	TA	1968	1969	1/—	U.K., Italy, Germany	Telex
	TA	1968	1969	1/—	Germany, U.S.A.	Telecommunications administration
	TA	1968	1969	1/—	Germany, Netherlands	Microwaves
	TA	1968	1969	1/—	U.S.A., Canada	Microwaves
Paraguay	TA	1967	1967/68	1/2	Mexico	Telecommunications engineering
	SF	1966	1966/67/68	1/2	Germany	Telecommunications techniques
	SF	1966	1966/67/68	1/2	Germany	Telecommunications techniques
Surinam	TA	1967	1968	1/6	U.S.A.	Telecommunications management
	TA	1968	1968	1/1	I.T.U.	Frequency management
	TA	1968	1968	1/1	I.T.U.	Frequency management
Uruguay	TA	1968	1969	1/—	Italy	Telex
Venezuela	F. in T.	1968	1968	1/2	Australia	Open wire lines
	SF	1967	1967/68	1/6	France, U.K., Italy, Germany	Transmission
	SF	1968	1968	1/2	U.K., Netherlands Germany, Italy	Radio and electronics
	SF	1968	1968	1/2	U.K., Germany	Telephony
	SF	1968	1969	1/—	Italy	Training methods
3. ASIA AND THE FAR EAST						
Afghanistan	TA	1968	1968	1/1	Japan	Microwave techniques
	SF	1968	1968/69	1/4	Australia, Thailand, Malaysia	Telephony training

Country	Progr. sector	Year of award	Implemented in	Man/ Months in 1968	Host country(ies)	Field of study
Saudi Arabia	TA	1968	1969/70	1/—	U.K.	Crossbar system
Burma	TA	1968	1969	1/—		Automatic telephone networks
	TA	1968	1969	1/—		Longline engineering
	TA	1968	1969	1/—		Telephone and telegraph carrier
	TA	1968	1969/70	1/—		Telecommunications within a railway system
	TA	1968	1969	1/—		Crossbar exchanges
Cambodia	TA	1968	1968	1/1	Japan	Microwave techniques
	TA	1967	1968	1/7	France	Radio
	TA	1967	1967/68	1/7	France	Telephone operation
Ceylon	TA	1968	1968	1/1	Japan	Microwave techniques
	TA	1968	1968	1/2	Sweden, U.K.	Crossbar exchanges
	TA	1968	1969	1/—	U.K., Belgium, Sweden	Automatic telephone exchanges
China	TA	1967	1968/69	1/8	U.S.A.	Subscriber trunk dialling
	TA	1968	1968	1/7	U.S.A., U.K., Italy	Satellite communications
	TA	1968	1968	1/6	U.S.A.	Cost control
Korea	TA	1968	1968	1/3	U.K.	Management telecommunications facilities. Satellite communications
	TA	1968	1969/70	1/—		Telecommunications engineering
	SF	1968	1968	1/2	Japan, Malaysia	Training methods
	SF	1968	1969	1/—	Japan, Malaysia	Training methods
Korea *(contd.)*	SF	1968	1968	1/2	Japan, Malaysia	Training methods
	SF	1968	1968	1/2	Japan, Malaysia	Training methods
	SF	1968	1969	1/—	Japan, Malaysia	Training methods
	SF	1967	1968/69	1/6	Japan, Malaysia	Microwave techniques, training
	SF	1967	1967/68	1/2	U.S.A.	VHF, microwaves
	SF	1967	1967/68	1/2	U.S.A.	Radio
Fiji	TA	1968	1968	1/1	Japan	Microwave techniques
India	TA	1967	1967/68	1/5	U.S.A., U.K., Germany, Italy	Satellite earth stations
	TA	1967	1967/68	1/5	U.S.A.	Telephone and telex operations
	TA	1968	1969	1/—	U.S.A.	Administration and planning
	TA	1968	1968	1/6	U.S.A., Canada	Remote control monitoring
	TA	1968	1969	1/—	U.S.A.	Electronic exchanges
	TA	1968	1969	1/—	U.S.A.	Crossbar system
	SF	1968	1969	1/—	U.S.A., Canada	Satellite communications
	SF	1968	1969	1/—	U.S.A., Canada	Satellite communications
Indonesia	TA	1968	1969/70	1/—	Australia	Maritime telecommunications administration
	TA	1968	1968	1/1	Japan	Microwave techniques
	TA	1968	1968	1/1	I.T.U.	Frequency management
	TA	1968	1968	1/1	I.T.U.	Frequency management
	TA	1967	1968	1/3	Japan, Philippines, Thailand, Malaysia	Training methods
	TA	1967	1968	1/6	Netherlands, Germany	Telegraph transmission
	TA	1968	1968	1/5	Netherlands, Australia, Malaysia	Outside plants
	TA	1967	1968	1/7	Japan, Netherlands, U.S.A., Malaysia	Store organization
	TA	1967	1968	1/5	Japan	Microwave techniques

Country	Progr. sector	Year of award	Implemented in	Man/ Months in 1968	Host country(ies)	Field of study
Indonesia *(contd.)*						
	TA	1968	1968	1/7	Netherlands, Germany, Malaysia	Telegraphy
	TA	1968	1969	1/—	Germany, Malaysia	Carrier
	TA	1968	1968/69	1/5	Germany, Sweden, Malaysia	Telephone switching
	TA	1968	1968	1/6	Japan, Malaysia	Radio, microwave techniques
	TA	1968	1968	1/5	Australia, U.K., Germany, Thailand, Malaysia	Telecommunications training
	TA	1967	1968/69	1/5	Australia	Outside plants
	TA	1968	1968	1/—	Netherlands, U.K., Germany, Sweden, Malaysia	Power plants
	TA	1967	1968	1/5	Malaysia, Japan	Telegraphy, microwave techniques
Iran	TA	1968	1968/69	1/2	I.T.U., Switzerland, U.K.	Frequency management
	TA	1968	1968/69	1/2	I.T.U., Switzerland	Frequency management
	TA	1967	1968	1/7	U.K.	Telephone transmission, multiplex telegraphy
Iraq	TA	1968	1968	1/1	I.T.U.	Frequency management
	TA	1968	1968	1/1	I.T.U.	Frequency management
	SF	1968	1969	1/—	U.K., Netherlands	Radio, training
	SF	1967	1968/69	1/6	Pakistan, Malaysia, Japan, Australia	Telecommunications training
	SF	1968	1969	1/—	Germany, U.K.	Telegraphy, training
	SF	1968	1968/69	1/3	Japan	Carrier telephony, training
	SF	1968	1969	1/—	Australia	Lines and cables, training
	SF	1968	1968/69	1/3	Japan	Carrier telephony, training
Israel	TA	1966	1967/68	1/2	U.K., Italy, Germany	Satellite communications
	TA	1967	1967/68	1/5	U.K., Switzerland, Belgium	Electronic exchanges
	TA	1967	1967/68	1/2	U.S.A., U.K., Sweden, Italy	Telegraph, telex, data transmission
	TA	1968	1968	1/4	Germany, Italy	BC and TV installations
	TA	1968	1968	1/6	U.K., France, Germany, Switzerland, Austria	International telecommunications systems
Jordan	TA	1968	1968	1/1	U.K.	Satellite communications
	TA	1966	1967/68	1/1	U.K.	Radio terminals
Kuwait	TA	1968	1969/70	1/—	U.K., U.S.A., Canada	Power equipment
Laos	TA	1968	1968	1/1	I.T.U.	Frequency management
	TA	1968	1968/69/70	1/1	Malaysia	Radio, telephony
	TA	1967	1967/68	1/5	France	Telephone lines
Malaysia	TA	1967	1967/68	1/4	U.K.	Measurements and standards
	TA	1967	1967/68	1/1	U.K., Sweden, Germany, India	International telephone and telegraph traffic
	TA	1968	1968	1/1	Japan	Microwave techniques
	TA	1968	1969	1/—	Australia	Crossbar system
	SF	1967	1967/68	1/5	U.K., Netherlands, Sweden, U.S.A., Denmark, Australia, New Zealand, Japan	Switching, training
	SF	1967	1967/68	1/5	U.K., U.S.A., Germany, Japan	Transmission, training
	SF	1968	1969	1/—	U.K.	Radio, training
	SF	1968	1969	1/—	Australia	Training aids, training texts
	SF	1968	1969	1/—	Australia	Branch exchanges, signalling

Country	Progr. sector	Year of award	Implemented in	Man/ Months in 1968	Host country(ies)	Field of study
Malaysia *(cont.)*	SF	1968	1969	1/—	Australia	Transmission, training
	SF	1968	1969	1/—	Australia	Switching
	SF	1968	1969	1/—	Australia	Line plants, training, teaching
	SF	1968	1969	1/—	Australia	Telegraphy, training
	SF	1968	1969	1/—	Australia	Training, management techniques
Mongolia	TA	1968	1968	1/1	I.T.U.	Frequency management
Nepal	TA	1968	1968	1/8	U.K.	Radio
Pakistan	TA	1968	1968	1/1	I.T.U.	Frequency management
	TA	1968	1969	1/—	Germany	EMD Exchanges
	TA	1968	1969	1/—	Germany	EMD Exchanges
	TA	1968	1969	1/—	Germany	EMD Exchanges
	TA	1968	1969	1/—	Germany	EMD Exchanges
	TA	1968	1969	1/—	U.K.	Radio terminals
	TA	1968	1969	1/—	U.K.	Radio terminals
	SF [1]	1968	1968/69	1/1	Germany	Economics in telecommunications
	SF [1]	1968	1968/69	1/1	Germany	Telephone systems
	SF [1]	1968	1968/69	1/1	Germany	Traffic
	SF [1]	1968	1968/69	1/1	Germany	Trunk system planning
	SF [1]	1968	1968/69	1/1	Germany	Telephone system planning
	SF [1]	1968	1968/69	1/1	Germany	L.D. trunk system planning
Philippines	TA	1968	1968/69	1/5	U.K., Japan	Satellite communications
	TA	1968	1969	1/—		Training
	TA	1968	1968	1/1	Japan	Microwave techniques
	SF	1967	1967/68	1/1	U.S.A.	Radio (microwaves and troposcart)
	SF	1967	1967/68	1/6	Australia	Traffic and system engineering
Syria	TA	1968	1969	1/—		
	TA	1968	1969	1/—		
Thailand	TA	1967	1968	1/5	Japan, I.T.U.	Frequency management
	TA	1967	1968	1/5	Japan, I.T.U.	Frequency management
	TA	1968	1969	1/—	U.K., Malaysia, Singapore	National and international telephone
	SF	1967	1967/68	1/6	Germany, U.K., Malaysia	Microwaves
	SF	1967	1968	1/6	U.S.A., Japan	Transmission
	SF	1966	1968	1/4	Japan, Hongkong, Malaysia	Outside plant
	SF	1967	1967/68	1/8	Australia, Japan, Philippines, Malaysia	Training methods
	SF	1968	1968/69	1/1	Australia, Malaysia, Japan	Traffic engineering and operation
	SF	1968	1968/69	1/7	Sweden	Stores and finances
	SF	1966	1968	1/6	Japan	Telephony, switching
	SF	1968	1968/69	1/4	Denmark	HF/VHF
	SF	1968	1969	1/—	Malaysia, Hongkong, Japan, Singapore	Traffic engineering and operation
Tonga	TA	1967	1968/69	1/10	U.K.	Radio, radar
4. EUROPE						
Bulgaria	TA	1967	1967/68	1/1	Germany	TV (design, construction, technology)
Spain	TA	1968	1969	1/—	Switzerland, Italy	Economics, accounting
	TA	1968	1969	1/—	Switzerland, Italy	Telegraph accounting
	TA	1968	1969	1/—	Switzerland, Italy	Telegraph accounting

Country	Progr. sector	Year of award	Implemented in	Man/ Months in 1968	Host country(ies)	Field of study
Greece	TA	1967	1968	1/3	U.K.	Telephony
	TA	1967	1968/69	1/2	U.K.	Telephone service administration
	TA	1968	1968	1/1	U.K.	Satellite communications
	TA	1968	1968	1/1	U.K.	Satellite communications
	TA	1968	1968	1/1	I.T.U.	Frequency management
	TA	1968	1968	1/1	I.T.U.	Frequency management
Hungary	TA	1968	1968	1/1	I.T.U.	Frequency management
	TA	1968	1968	1/1	I.T.U.	Frequency management
	TA	1968	1969	1/—	Sweden	Crossbar exchanges
	TA	1968	1968/69	1/1	France	Colour TV, transmission by satellite
	TA	1966	1968	1/2	Sweden	Data transmission
	TA	1968	1969	1/—	Italy	Data transmission
	TA	1968	1968/69	1/1	France	Telephone networks
	TA	1968	1968/69	1/1	France	Telephone networks
	TA	1968	1969/70	1/—	France	Telecommunications systems
Malta	TA	1968	1968	1/5	Germany	Radio services
	TA	1968	1968	1/5	Germany, I.T.U., Italy	Radio frequency management
	TA	1968	1968	1/2	U.K., Germany	Wireless telegraphy
Poland	TA	1967	1967/68	1/3	Sweden	Crossbar exchanges
	TA	1967	1967/68	1/3	Sweden	Organization of telegraph services
	TA	1967	1968	1/3	U.K.	Multichannel system
	TA	1966	1967/68	1/4	Austria	Carrier system amplifiers
	TA	1967	1968	1/3	Italy	Telephone cables

Rumania	TA	1967	1967/68	1/2	France	Protection of telecommunications lines
	TA	1967	1967/68	1/2	France	Protection of telecommunications lines
	TA	1967	1967/68	1/2	France	Radio and TV equipment
	TA	1967	1967/68	1/4	France	HF carrier system
	TA	1968	1969	1/—	France	Colour TV
	TA	1968	1968/69	1/3	France	VHF, UHF
Yugoslavia	TA	1967	1968	1/2	U.K.	Radio transmission
	TA	1967	1968	1/2	U.K.	Radio relay links

[1]) Fellowships administered by the I.T.U. against the funds provided by the International Bank for Reconstruction and Development under a Special Fund project for which the Bank is Executing Agency.

*) Award not finalized at 31 December 1968.

TABLE 3

Projects approved by the U.N. Special Fund (S.F.) for which I.T.U. is Executing Agency as on 31.12.1968
(in the order of the dates of approval of projects)

Country	Description of Project	Date of Approval by S.F.	Duration in years	Assistance being provided by S.F.			Estimated Project Costs		
				No. experts man/ months	No. fellow-ships man/ months	Value of equipment	Special Fund Allocation	Government counterpart contribution	Total
1	2	3	4	5	6	7	8	9	10
Approved Projects in operation:									
Malaysia	Telecommunication Training Centre, Kuala-Lumpur	May 1961	5	7/312	6/72	258,600	907,681	2,431,500	3,339,181
Philippines	Telecommunication Training Institute, Manila	May 1961	5	10/338	10/64	285,440	1,010,745	611,900	1,622,645
Iraq	Telecommunication Training Centre, Baghdad	Jan. 1962	5	9/422	8/78	300,000	1,247,800	2,065,000	3,312,800
Sudan	Post and Telegraph Training Centre, Khartoum.	Jan. 1962	5	5/225	7/78	100,000	508,700	1,450,000	1,958,700
Korea	Telecommunication Training Centre, Seoul	May 1962	5	11/356	23/155	470,000	1,296,945	1,153,195	2,450,140
Venezuela	Training Centre for Telecommunications, Caracas	Jan. 1963	4	7/336	8/90	250,000	1,167,000	3,864,931	5,031,931
Thailand	Telecommunications Training Test and Development Centre, Bangkok	Jun. 1963	5	9/348	9/96	300,000	1,207,300	1,225,000	2,432,300
1	2	3	4	5	6	7	8	9	10
Afghanistan	Telecommunication Training Centre, Kabul	Jan. 1964	5	7/305	4/48	300,000	932,400	491,897	1,424,297
Algeria	National School for Telecommunication Studies, Algiers	Jan. 1964	5	11/348	15/168	200,000	1,005,600	4,352,021	5,357,621
Colombia	Electronics and Telecommunications Training and Research, Popayan and Bogota	Jan. 1964	5	8/372	10/240	385,000	1,312,400	2,102,402	3,414,802
Ghana	Telecommunication Training Centre, Accra	Jan. 1964	5	8/360	8/90	250,000	1,096,200	1,796,390	2,892,590
Madagascar	National Institute of Telecommunications and Post, Antanetibé . .	Jan. 1964	5	6/264	8/132	200,000	845,870	1,632,165	2,478,035
India	Centre for Research and Training on the Use of Satellite Communications, Ahmedabad	Jun. 1964	4	7/36	4/15	540,000	692,804	1,192,875	1,885,679
Paraguay	Telecommunication Survey	Jun. 1964	2	8/96	4/48	104,151	326,767	65,589	392,356
Regional: Ethiopia and Ivory Coast	Pilot Telecommunication Circuit, Addis Ababa, Abidjan	Jun. 1965	2½	8/154	11/62	451,000	858,500	452,739	1,311,239
Congo (Kinshasa)	National School of Telecommunications, Kinshasa	Jan. 1966	6	9/552	11/156	250,000	1,741,800	2,597,990	4,339,790
Saudi Arabia	Telecommunications and Broadcasting Training Centre, Jeddah . . .	Jan. 1967	5	11/372	12/144	50,000	1,081,400	3,810,000	4,891,400

1	2	3	4	5	6	7	8	9	10
Chile	Telecommunications Training Centre, Santiago	Jan. 1967	5	8/324	9/126	300,000	1,152,100	1,258,000	2,410,100
Malaysia	Telecommunications Training Centres (Phase II)	Jan. 1967	3	9/270	—	29,000	692,200	736,815	1,429,015
Turkey	National Telecommunications Training Centre, Ankara	Jan. 1967	5	10/420	15/180	325,000	1,432,300	3,759,300	5,191,600
New Projects approved during 1968									
Indonesia	Telecommunications Training Centre, Bandung	Jan. 1968	3	8/204	8/60	548,500	1,156,000	1,204,000	2,360,000
Pakistan	Telecommunications Staff College, Haripur	Jan. 1968	5	6/192	16/96	337,600	894,600	2,461,000	3,355,600
Sudan	Post and Telegraph Centre, Khartoum (Phase II)	Jan. 1968	3	9/294	8/66	155,000	878,600	850,000	1,728,600
Nigeria	Post and Telecommunications Training Centre, Oshodi	Jun. 1968	3	9/240	16/108	300,000	969,600	4,883,000	5,852,600
Paraguay	Assistance in the Implementation of the National Telecommunication Plan	Jun. 1968	3	3/78	6/72	9,000	229,200	107,000	336,200

ANNEX 6

SITUATION OF THE DEBTORS TO THE UNION ON 31 DECEMBER 1968

	Balances due for arrears	Relating to the years
	Swiss francs	
Argentine Republic	106,718.56	1961-1967
Bolivia	1,352,985.10	1950-1967
Brazil	1,122,227.25	1966-1967
Cambodia (Kingdom of)	55,709.15	1966-1967
Chile	429,125.—	1960-1967
Congo (Democratic Republic of the)	19,223.30	1965-1966
Costa Rica	231,044.30	1959-1967
Dominican Republic	654,683.95	1959-1967
El Salvador (Republic of)	858,479.20	1961-1967
Ecuador	121,957.10	1959-1967
Guinea (Republic of)	25,595.60	1967
Haiti (Republic of)	365,983.40	1955-1967
Honduras (Republic of)	98,513.92	1963-1967
Indonesia (Republic of)	71,118.85	1964-1967
Liberia (Republic of)	12,374.30	1965-1967
Mali (Republic of)	21,697.42	1962-1967
Nepal	12,822.25	1963-1967
Nicaragua	61,256.05	1962-1967
Panama	210,652.27	1962-1967
Peru	188,211.70	1966-1967
Somali Republic	52,165.98	1965-1967
Togolese Republic	29,576.65	1966-1967
Union of Soviet Socialist Republics	20,063.40	1967
Uruguay (Oriental Republic of)	234,824.87	1960-1967
Venezuela (Republic of)	62,674.15	1965-1967
Yemen	207,574.—	1961-1967
Colombia, Empresa Nacional de Telecomunicaciones	12,532.60	1961-1967
Cuba, Cuban Telephone Co.	16,796.55	1960
Brazil, Entel S.A.	19,796.35	1964-1967
	6,676,383.22	
Other debtors	112,003.57	
	6,788,386.79	