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**REPORT**  
**ON THE ACTIVITIES OF**  
**THE INTERNATIONAL**  
**TELECOMMUNICATION UNION**

in

**1970**

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## 1. INTRODUCTION

Under the terms of an Agreement signed in Lake Success in 1947, the United Nations recognised 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.

The supreme organ of the Union is the Plenipotentiary Conference. It meets generally 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 Union has four permanent organs, the General Secretariat, the International Frequency Registration Board (I.F.R.B.), the International Radio Consultative Committee (C.C.I.R.) and the International Telegraph and Telephone Consultative Committee (C.C.I.T.T.), the activities of which in 1970 are reviewed in Section 4 of this report.

The activities of the Union in the field of Technical Cooperation are outlined in Section 5.

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\*) In this context, mention should be made of the Draft Constitutional Charter established in accordance with Resolution No. 35 of the Plenipotentiary Conference of Montreux (1965). This Draft Constitutional Charter has been submitted to administrations for consideration.

## 2. MEMBERSHIP OF THE UNION

1. In 1970 two countries, the Republic of Equatorial Guinea and the Kingdom of Swaziland, became Members of the Union, thereby raising the membership of the Union from 137 to 139, i.e.:

- a) the 129 countries or groups of territories mentioned in Annex 1 to the Montreux Convention, 1965;
- b) the following 10 countries which became Members on the deposit of an instrument of accession to the Convention:

	which became a Member on
Republic of Maldives . . . . .	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
Republic of Nauru. . . . .	10.6.1969
Mauritius. . . . .	30.7.1969
Republic of Equatorial Guinea . . . . .	2.7.1970
Kingdom of Swaziland . . . . .	11.11.1970

There were no Associate Members.

2. During 1970 three countries ratified the International Telecommunication Convention, Montreux, 1965, and two countries acceded thereto. On 31 December 1970, the total number of ratifications was 100 and of accessions 16.

3. The position of Members on 31 December 1970 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 25th Session of the Administrative Council was held at I.T.U. Headquarters from 23 May to 12 June 1970.

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 Socialist Federal Republic of Yugoslavia.

3.2 Mr. Mohamed Ben Abdellah (Morocco) was elected Chairman and Mr. A. Zaidan (Saudi Arabia) Vice-Chairman and the following Committees were constituted:

#### *Committee 1 — Finance*

*Chairman:* Mr. R. Rüttschi (Switzerland)  
*Vice-Chairman:* Mr. A. Santiago Irrera (Argentine)

#### *Committee 2 — Personnel and Pensions*

*Chairman:* Mr. C.E. Lovell (United Kingdom)  
*Vice-Chairman:* Mr. H. Baczko (People's Republic of Poland)

#### *Committee 3 — Technical Cooperation*

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

The resolutions and decisions adopted either by the Plenary Meeting or by Committees are summarized below.

#### 3.3 *Financial matters*

##### 3.3.1 *External audit of I.T.U. accounts for the period 1 January to 31 December 1969*

The Council approved the accounts of the I.T.U. for the period 1 January to 31 December 1969, as drawn up and audited by the Federal Audit Department of the Swiss Confederation.

(Resolution No. 662)

### 3.3.2 *Financial operating report of the I.T.U. for the year 1969*

The Council approved the Financial operating report and the Management report of the I.T.U. Staff Superannuation and Benevolent Funds for 1969. Having noted, however, that actual expenditure under certain sections and articles of the budget had exceeded the credits provided, it instructed the Secretary-General to keep a strict control over expenditure to ensure that it does not exceed budget estimates.

(Resolution No. 663)

### 3.3.3 *Financial Regulations of the Union*

The Council came to the conclusion that the Financial Regulations of the Union do not clearly indicate what action the Secretary-General should take should the credits allocated by the Council prove insufficient to meet expenditure essential for the efficient operation of the Union. It therefore instructed the Secretary-General to submit to the next Session of the Council a revised version of the Financial Regulations which takes account of the views expressed during the 25th Session.

(Resolution No. 664)

### 3.3.4 *Additional credits for 1970*

The Council approved the following additional credits for 1970:

	Swiss francs
— Expenditure arising from changes in the employment conditions of the common system . . . . .	410,000.—
— Other expenses . . . . .	40,000.—
— C.C.I.T.T. Study Groups . . . . .	277,000.—
— Seminars . . . . .	15,000.—
— Technical Cooperation Special Accounts Budget . . . . .	77,500.—
— Supplementary Publications Budget . . . . .	60,000.—

At the same time it reduced the credits for the XIIth Plenary Assembly of the C.C.I.R. by 60,000 Swiss francs.

(Resolution No. 672)

### 3.3.5 *Budgets for the year 1971*

The budgets for 1971 were approved as follows:

- 27,571,500 Swiss francs for the budget of the Union;
- 4,167,300 Swiss francs for the Technical Cooperation Special accounts budget;
- 3,694,000 Swiss francs for the supplementary publications budget.

The contributory unit for 1971 was fixed at 55,000 Swiss francs.

(Resolution No. 677)

## 3.4 *Personnel matters*

### 3.4.1 *Posts in grades G.1 to G.7*

The Council authorized the Secretary-General, after ascertaining the views of the Coordination Committee, to create, regrade or abolish established posts in grades G.1 to G.7 within the limits of credits allocated for this purpose in the budget of the Union, the rate of increase in the credits for posts in these grades not to exceed 4% of the annual budget per year.

He was also authorized to regrade established posts in grades G.1 to G.7 within the limits of credits allocated for this purpose in the Technical Cooperation Special Accounts Budget, the rate of increase in the credits for posts in these grades not to exceed 1% per year.

(Resolution No. 666)

### 3.4.2 Possible employment of translators/interpreters

On an experimental basis for 1971/1972, the Council authorized the Secretary-General to reinforce the Languages Division as required in connection with the programme of conferences and meetings by recruiting on a fixed-term basis for one year up to a maximum of four linguists whose competence is recognized both in the interpretation and translation fields.

(Resolution No. 667)

### 3.4.3 Amendment to the Regulations for the I.T.U. Staff Superannuation and Benevolent Funds

The Council decided that Article 30 — Eligibility for a widow's pension — and Article 33 — Eligibility for orphans' pensions — should be amended as from 1 July 1970.

(Resolution No. 668)

### 3.4.4 Membership of the I.T.U. Staff Pension Committee

The following persons were appointed to represent the Council on the I.T.U. Staff Pension Committee.

Members	Alternate Members	Term
Mr. A. Bigi	Mr. E. Sawkins	Until the end of the 26th Ordinary Session of the Council
Mr. D. Milanković	Mr. Gabriel-Tedros	Until the end of the 27th Ordinary Session of the Council
Mr. C.E. Lovell	Mr. F.G. Perrin	Until the end of the 28th Ordinary Session of the Council

(Resolution No. 669)

### 3.4.5 Creation, grading and abolition of posts

The Council approved the creation as from 1 January 1971 of the following posts:

*General Secretariat*: 2 P.4, 1 G.6\*), 1 G.5\*), 1 G.4\*) permanent posts  
fixed-term post for  
two years: 1 P.2\*\*)

*C.C.I.T.T.*: 1 D.1 permanent post

\*) Charged to the Technical Cooperation Budget.

\*\*) Charged to the Supplementary Publications Budget.

As from the same date it approved the abolition of 1 P.5 post in the C.C.I.T.T.  
The Council also approved, as from 1 January 1971, the following regradings:

*General Secretariat*: 1 P.5 to D.1,

1 P.4 to P.5,

1 P.2 to P.3,

1 P.1 to P.2 and

1 G.5 to G.6

*C.C.I.R.*: 2 P.4 posts to P.5

*C.C.I.T.T.*: 1 P.3 post to P.4

(Resolution No. 670)

### 3.4.6 *Annual payment to the Provident Fund*

As recommended by the Management Board of the I.T.U. Staff Superannuation and Benevolent Funds, the Council decided to postpone the annual payment to the Provident Fund until further notice.

(Decision No. 357)

## 3.5 *Conferences and meetings*

### 3.5.1 *World Administrative Radio Conference for Space Telecommunications*

In view of the fact that the XIIth Plenary Assembly of the C.C.I.R. had decided to convene a special joint meeting of C.C.I.R. Study Groups prior to the Space Conference, the Council decided that the duration of the Conference should be limited to six weeks.

(Resolution No. 665)

### 3.5.2 *Frequency planning for regional LF/MF broadcasting*

The Council proposed that the first session of a regional administrative conference to draw up frequency plans for LF/MF broadcasting should be held in 1974 and requested the Chairman of the I.F.R.B. and the Director of the C.C.I.R. to prepare a joint report to enable the countries concerned, and particularly those in Region 3, to appreciate more fully the significance of this conference.

(Resolution No. 671)

### 3.5.3 *Programme of forthcoming conferences*

Having consulted the Members of the Union, the Council decided that the Plenipotentiary Conference would open in Geneva on 14 September 1973 and that the Conference recommended by the 1967 Maritime Conference would be held in the beginning of 1974. It also decided that the preparatory meeting which had been recommended would be replaced by studies carried out by the I.F.R.B. and by appropriate study groups of the C.C.I.R.

(Resolution No. 678)

### 3.5.4 *Date and duration of the 26th Session of the Administrative Council*

It was decided that the 26th Session of the Council would be held from 1 to 21 May 1971.

(Decision No. 358)

### 3.6 *Computer*

Having examined the report on the studies carried out by the Secretary-General in consequence of Resolution No. 654, adopted by the Council at its 24th Session and having noted the possibility of a common United Nations computer centre being established, the Council decided that the I.T.U. should have a computer suitable for its purposes and under its management which should be fully operational by 1 January 1973. It was also agreed that the conversion of the existing computer programmes to common standards adapted to the new computer should be started by the staff of the Union as soon as possible. Furthermore the Secretary-General was instructed to continue coordination with the United Nations consultative bodies in developing inter-agency standards and ensure that the Union's computerization plans and those of the United Nations system be in harmony, taking into account the facilities which may become available if a common United Nations computer centre is established.

(Resolution No. 679)

### 3.7 *External relations*

#### 3.7.1 *I.T.U. film library*

In view of the interest shown by a number of Member Countries in making use of the Union's film library, Members were invited to send to the Union copies of any films they produce on telecommunications.

(Resolution No. 674)

### 3.8 *Miscellaneous*

#### 3.8.1 *World Telecommunication Day*

The Council, noting that a large number of Administrations had celebrated World Telecommunication Day on 17 May both in 1969 and in 1970 decided to designate 17 May as World Telecommunication Day and to celebrate this day every year until the next Plenipotentiary Conference.

(Resolution No. 673)

#### 3.8.2 *Telecommunication statistics*

In view of the interest shown by the C.C.I.T.T. at its IVth Plenary Assembly in the subject of a yearbook of telecommunication statistics and that shown by the C.C.I.R. at its XIIth Plenary Assembly in approving Resolution 37 entitled "Statistical data on radiocommunications", the Council instructed the Secretary-General to speed up, as far as possible, in collaboration with the Coordination Committee, the work on statistics undertaken by the Statistics Working Party.

(Resolution No. 675)

#### 3.8.3 *Position of Southern Rhodesia vis-à-vis the I.T.U.*

Following the adoption by the Security Council of Resolution No. 277 (1970) the Council instructed the Secretary-General to continue the strict enforcement of Resolution No. 599 adopted at its 21st Session in 1966, and in addition not to have any communication with the illegal regime of Southern Rhodesia.

(Resolution No. 676)

3.8.4 *Report on the steps necessary in order to expedite the publication of Final Acts of conferences and meetings*

The Council instructed the Secretary-General to submit a report to the 26th Session indicating the steps which he considered necessary to expedite the publication in the working languages of Final Acts of I.T.U. conferences and plenary assemblies of C.C.I.'s with a view to their distribution within a period of twelve months.

(Decision No. 359)

3.8.5 *Review by the Advisory Committee on Administrative and Budgetary Questions (A.C.A.B.Q.) of the Administrative and Management Procedures concerning the Programme and Budget of the I.T.U.*

The Council decided that the report on the above subject submitted by the A.C.A.B.Q. to the General Assembly of the United Nations and the text of General Assembly Resolution No. 2357 (XXIV) dealing with that report should be sent to all Members of the Union.

(Decision No. 360)

## 4. ACTIVITIES OF THE PERMANENT ORGANS

### 4.1 ACTIVITIES OF THE GENERAL SECRETARIAT

The General Secretariat comprises six departments: Personnel Department, Finance Department, Conference and General Services Department, Computer Department, Department of External Relations and the Technical Cooperation Department.

The work of the *Personnel Department* continues to increase annually. As the work of inter-organization bodies for administrative coordination grows in volume and importance, so does the participation of the Department in these activities. The trilingual set of job descriptions for all the posts in the Union has been completed in 1970 and the procedure for their regular updating is now fully in force. Improvements in insurance coverage have been introduced.

In the *Finance Department* also, the year 1970 saw a continued increase in the day-to-day work resulting from the higher level of budget expenditure and the need to control it. The construction of an extension to the Union's building as well as the expanding Technical Cooperation activities also contributed to this increase.

As a periodic task the *Conferences and Common Services Department* serviced the various meetings. During the course of the year the Languages Division translated 13,183 pages into Spanish, 9,681 pages into French and 6,271 pages into English. The Stenographic Pool typed a total of 74,675 pages in English, French and Spanish. The Offset and Roneo services handled 26,912,594 passages of work through the reproduction equipment. The Publications service arranged for the production of 292,620 copies of publications. The Sales service dealt with the sales of publications with a value of Swiss francs 3,929,058. The Conference Documents section distributed 286,520 items and dispatched 738,529 items. The Postal section dispatched an additional 353,548 items.

The *Computer Department* continued to provide services for the I.F.R.B. and C.C.I.'s as well as for the General Secretariat. For details see Annex 4.

Following Council Resolution No. 679, international public tenders were invited and after detailed and thorough studies of the tenders, site inspections and investigations, the Siemens 4004 computer was selected. The work of change-over to the new computer is in progress, and to facilitate this task, two programming courses have been given and conversion of the General Secretariat programmes has started. Coordination has continued with the United Nations consultative bodies to ensure that the Union's computerization plans and those of the United Nations family be in harmony. Furthermore the Inter-Organization Board for Information Systems and Related Activities was informed of the selection of our new computer.

The *Department of External Relations* comprises three Divisions: Relations with the United Nations and other international organizations, Relations with Members of the Union, and the Information Division.

During 1970 every attempt was made to continue following the work of the United Nations, especially with respect to matters concerning inter-agency coordination. The General Secretariat was represented at a number of conferences and meetings where general policy matters were under discussion, particularly in the field of outer space. Among these mention should be made of meetings of the panel constituted by the Air Navigation Commission of the Civil Aviation Organization on the Application of Space Techniques Relating to Aviation, the UNESCO Panel of Consultants on Space Communication, the Scientific and Technical Sub-Committee of the United

Nations Committee on the Peaceful Uses of Outer Space, and the 9th Session of the Legal Subcommittee on the Peaceful Uses of Outer Space.

In application of Resolution No. 671, additional information prepared by the I.F.R.B. and the Director of the C.C.I.R. was forwarded by the Division — Relations with Members of the Union — to administrations in Regions 1 and 3 concerning the desirability of holding a conference, not later than 1974, for the purpose of regional frequency planning for LF/MF broadcasting, as envisaged in Resolution No. 5 of the African LF/MF Broadcasting Conference, Geneva 1966.

Under Resolutions No. 653 and 665 planning for the World Administrative Radio Conference for Space Telecommunications commenced; invitations to administrations, the United Nations and specialized agencies and notices to various international organizations were despatched. The Conference is to be convened on 7 June 1971 for a duration of six weeks. The regular programme of this Division included the preparation and publishing of new editions for nine service documents including the first edition of the List of Ship Stations prepared with the assistance of the computer. In addition, subsequent to the entry into force on 1 January 1970 of the provisions governing the transferred account telegraph service contained in C.C.I.T.T. Recommendation F.41, a special transferred account booklet was prepared and published at the request of administrations.

Among the activities of the *Information Division* should be mentioned the preparation for the celebration of World Telecommunications Day in 1970 on the theme "Telecommunications and Education" which included the publishing of a special edition of the "Telecommunication Journal" in July; the participation in three exhibitions at Youth and Cultural Centres in French towns in the vicinity of Geneva, and in the exhibition to celebrate the 25th anniversary of the United Nations. Preparations for the exhibition "TELECOM-71" (Geneva, 17-27 June 1971) were started during the latter part of 1970.

Mention should also be made of the activities of the *Legal Adviser*, who continued to follow the progress with respect to the construction of the extension to the Headquarters building, which has proceeded according to programme during the year. Most of the contracts for work have now been drawn up and adjudicated. Amongst other activities in which the Legal Adviser played a part were the negotiations with the Swiss Confederation which led to the draft of a Headquarters Agreement between Switzerland and the I.T.U., which was submitted to the Council at its 25th session. In addition, in the Technical Assistance field contracts were negotiated with Governments, private enterprises and individuals, e.g. for projects financed by funds in trust and for the supply of equipment and services.

The activities of the *Technical Cooperation Department* are fully covered in Section 5 of this report.

## 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 1970, the Board dealt with a total number of 61,330 (in 1969, 35,778) frequency assignment notices.

#### 4.2.2 *Technical examination of frequency assignment notices*

The required technical examinations of frequency assignments, as prescribed by the competent Administrative Radio Conferences, were made in respect of 26,037 (in 1969, 14,379) 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, 875 (in 1969, 890) assignment notices were examined in accordance with Article 9A of the Radio Regulations.

#### 4.2.3 *Interference cases, special assistance to administrations*

The Board formulated 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 as requested by 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 these specific cases which the Board had to deal with, many times when members 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 choice of frequencies to be assigned which would ensure the most effective use of the radio frequency spectrum.

#### 4.2.4 *Broadcasting in the high frequency bands allocated exclusively to this service*

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. In conformity with its mandate, the prescribed four seasonal schedules were published together with recommendations with a view to improving their utilization.

#### 4.2.5 *Monitoring*

The I.F.R.B. was considering arrangements for simplifying the submission of monitoring information by administrations and of the procedure for summarizing and publishing this information. On 25 May 1970 the I.F.R.B. issued its Circular-letter No. 241 which dealt with the whole procedure resulting from the provisions of No. 692 of the Radio Regulations. In its Circular-letter No. 248 of 23 November 1970, the Board invited the particular attention of administrations to the changes introduced in monitoring observations of stations in the high frequency bands allocated exclusively to the Broadcasting Service. With effect from February 1970, all monitoring information received by the I.F.R.B. from administrations for the bands between 2 850 kc/s and 28 000 kc/s has been summarized for inclusion in the new quarterly publication. The first of the new quarterly summaries, covering the months of February, March and April 1970, was published in May 1970. It must be noted, however, that there are still areas from which little or no monitoring information is sent to the I.F.R.B. In the present state of the international monitoring system, this inadequate coverage makes it difficult for the Board to carry out certain of its functions for which world-wide data would be of utmost help in assisting administrations to the extent to be desired.

#### 4.2.6 *Work involving the use of the computer*

Several computer programmes were modified, either for the technical examination of notices or for the establishment of the High Frequency Broadcasting Schedules and for the summaries of international monitoring information. Pursuant to Administrative Council Recommendation No. 679, the Board has taken an active part in studies relating to the changeover to a new computer, the specifications for the new machine and the examination of tenders.

#### 4.2.7 *Technical standards and rules of procedure*

Following the XIIth Plenary Assembly of the C.C.I.R. (see paragraph 4.2.13), the Board reviewed its technical standards and revised them to the extent required.

The Board decided to call the revised version of the technical standards containing MUF curves "Technical Standard Series M"; this replaces and annuls Section I of the first edition of Technical Standard B-2, including the MUF curves in Supplements Nos. 1 and 3 of Standard B-2, as well as all the MUF values given in Technical Standard B-1, including its five supplements, and the values given in Technical Standard C. The curves were plotted by the computer of the Institute for Telecommunication Sciences, Boulder, Colorado, U.S.A., with an oscillograph plotter and microfilm device coupled to the computer. This process enabled the curves to be obtained much more quickly and cheaply than by manual methods.

The Board continued its study of C.C.I.R. Report 252-2 with a view to incorporating it in the computer programmes used for technical examinations and to the possible revision of the corresponding technical standards.

Since their implementation in 1969 the Board has closely followed the results of the application of its Rules of Procedure applicable in the frequency bands between 1 and 10 Gc/s allocated with equal rights to the Terrestrial Services (Fixed or Mobile) and to the Space Service, and noted certain problems which need more detailed study.

#### 4.2.8 *Implementation of the decisions of the World Administrative Maritime Radio Conference, Geneva, 1967*

Although the Final Acts of the World Administrative Maritime Radio Conference, Geneva, 1967, came into force on 1 April 1969, the Conference had arranged for some of the provisions it adopted to be implemented gradually. To this end it adopted a time schedule, some stages of which extended up to 1983. The Maritime Conference had, in particular, dealt with a change in the sub-divisions of the frequency bands attributed exclusively to the Maritime Mobile Service between 4 000 and 27 500 kc/s. The changes in question were to be carried out in successive stages, according to a schedule established by the Conference, the final stage being completed by 1 March 1970. The Board encouraged administrations to apply the Conference decisions as completely as possible and provided them with any assistance they needed. It issued several circular-letters giving all the details of the various operations and subsequently corresponded with the administrations which requested more precise information or the Board's advice on how certain problems should be solved.

Generally speaking, the Board considers that the various stages of the rearrangements of frequency bands allocated exclusively to the Maritime Mobile Service between 4 000 kc/s and 27,500 kc/s were carried out satisfactorily, and the result may be considered a success for the Union.

#### 4.2.9 *Implementation of the Allotment Plan for the Aeronautical Mobile (R) Service in the frequency bands between 2 850 kc/s and 17 970 kc/s allocated exclusively to it — Appendix 27 to the Radio Regulations*

During the second stage of the implementation of the Plan, the assistance furnished by the Board to administrations required a considerable amount of coordination which involved the despatch of no less than 270 letters, telegrams or messages to administrations. For this purpose, the Board cooperated closely with the I.C.A.O. Secretariat.

To facilitate the task of administrations in implementing the second stage, the Board prepared a list of the frequencies which each administration had to release as from 17 September 1970 and a list of the frequencies that it could bring into use according to needs as from that date, in accordance with the agreed programme for implementing the Plan.

The Board also prepared lists of the frequency assignments entered on behalf of each administration in the Master Register on 1 June 1970 in the bands in question and requested administrations to return the extracts after bringing them up to date. The lists were sent to administrations on 15 June 1970 with two copies of a letter giving detailed explanations.

#### *4.2.10 Participation of the I.F.R.B. in meetings of the International Civil Aviation Organization (I.C.A.O.)*

In 1970 the Board took part in the Fifth North Atlantic (NAT) regional air navigation meeting of I.C.A.O.

The work of this meeting was mainly concerned with the problems caused by the constant growth of air traffic in this region and the necessity of obtaining as soon as possible a new family of frequencies for exclusive use with the A3J class of emission in the NAT region. After consultation with the I.F.R.B., arrangements for coordination were made to enable the frequencies in question to be brought into use as soon as possible.

#### *4.2.11 Assistance to the administrations in the European Broadcasting Area in the study of television frequency offsets in Bands IV and V*

To assist administrations in notifying agreed changes to the Stockholm Plan, for publication by the I.F.R.B. in the relevant Special Section of its weekly airmail circular (see Nos. 27 and 28 of the Regional Agreement, Stockholm, 1961), the Board sent to each administration concerned a letter dated 24 February 1970 with which were enclosed three copies of the list of changes to the offset values and other technical characteristics of that administration's assignments to stations appearing in the Plan.

During 1970, more than half the assignments concerned have been notified to the I.F.R.B. for inclusion in the European Special Section of the weekly circular.

The question of the date of implementation of the changed characteristics at the stations already in service is the subject of continuing consultation among the administrations and the broadcasting organizations concerned, under the auspices of the Technical Centre of the European Broadcasting Union.

#### *4.2.12 Organization of a seminar on frequency management and the use of the radio frequency spectrum*

In pursuance of Administrative Council Resolution No. 528, the Board organized at Union Headquarters in 1970 a further seminar on frequency management and the use of the radio frequency spectrum. The seminar was held from 7 to 18 September 1970 and, using 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 80 participants from 45 countries all over the world, bringing to 355 the total number of people who have benefited from the seminars organized by the I.F.R.B. since 1963. During the 1970 seminar, 14 experts from the Administrations of Australia, Canada, the United States of America, France, the Federal Republic of Germany, the United Kingdom, Switzerland and the U.S.S.R., 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, 31 participants spent some time, in certain cases up to four 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.

#### *4.2.13 Participation by the I.F.R.B. in the XIIth Plenary Assembly and in the meetings of C.C.I.R. Study Groups*

The I.F.R.B. was represented at the XIIth Plenary Assembly of the C.C.I.R. held in New Delhi.

Immediately after this Plenary Assembly, the Board undertook an analysis of adopted documents, in particular of those which were prepared on a technical basis for the study of regulatory provisions treated by the forthcoming W.A.R.C., Space.

As a result of this analysis several topics concerning technical characteristics were found insufficiently covered for consideration by the W.A.R.C., Space, implementation by administrations as well as for technical examination of frequency assignment notices carried out by the I.F.R.B. Therefore, the I.F.R.B. has invited the C.C.I.R. to provide the necessary information as soon as possible.

The work of the C.C.I.R. is of special importance for the Board since, in accordance with the provisions of the Radio Regulations, the technical standards it uses are, in general, based on C.C.I.R. recommendations.

#### *4.2.14 Preparatory work for the World Administrative Radio Conference for Space Telecommunications (1971)*

The Board has undertaken a study of technical and regulatory problems and assembling data related to the forthcoming W.A.R.C., Space, and has closely followed and analysed the work which has been done by the C.C.I.R. and its Study Groups in the technical field. As a result of this analysis the Board has submitted a Memorandum to the C.C.I.R. Special Joint Meeting of the Study Groups, in which the Board has requested the C.C.I.R. to provide information on some technical problems which the Board had encountered in its work of treating the frequency assignment notices of stations in the Space and Terrestrial Services sharing the same frequency bands. The Board has also reviewed its existing Rules of Procedure concerning the notification and registration of frequency assignments of stations in the Space and Terrestrial Services and has drafted a new structure of its Rules of Procedure, which can be adapted for immediate application as soon as the decisions of the forthcoming W.A.R.C., Space, are known.

#### *4.2.15 Visits and training of administration officials at the I.F.R.B.*

During 1970, a large number of representatives of various administrations visited the I.F.R.B. to study the procedures for the treatment of frequency assignment notices and to obtain advice on the assignment of frequencies suitable for their countries' radiocommunications. Such visits and on-the-spot training have been found to be one of the best ways of acquainting officials of administrations with frequency management procedures, the use of the radio spectrum and the work of the Board.

#### *4.2.16 Technical cooperation*

In accordance with No. 155 of the Convention, important questions concerning I.T.U. technical cooperation are dealt with by the Coordination Committee. The I.F.R.B. has therefore participated in dealing with those of the questions concerning technical cooperation which have been submitted by the Secretary-General to the Coordination Committee, including experts' reports. The Board also participated by lecturing at some of the I.T.U. seminars organized by the General Secretariat to which it was invited.

#### 4.2.17 *Miscellaneous*

In addition to the weekly circulars the Board issued to administrations 19 (in 1969 30) 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, the members of the I.F.R.B. attended, either as representatives of the I.T.U. or of the I.F.R.B., 30 (in 1969, 27) conferences or meetings of international organizations whose activities with respect to the use of frequencies are closely connected with those of the I.F.R.B.

### 4.3 INTERNATIONAL RADIO CONSULTATIVE COMMITTEE (C.C.I.R.)

4.3.1 The principal activities of the C.C.I.R. Secretariat in 1970 were concerned with:

- a) the XIIth Plenary Assembly, held, at the invitation of the Indian Administration, in New Delhi, from 21 January to 11 February 1970;
- b) the publication of the Volumes containing the Conclusions of that Plenary Assembly;
- c) the preparations for the Special Joint Meeting of C.C.I.R. Study Groups to prepare technical bases for the WARC-ST.

#### 4.3.2 *The XIIth Plenary Assembly*

At the outset, the Director would like to thank the Indian Administration most warmly for their hospitality and excellent arrangements made for the XIIth Plenary Assembly at the Vigyan Bhavan.

It should be recalled here that, contrary to previous assemblies the associated Study Group meetings had been held in Geneva during the latter part of 1969, so that the XIIth Plenary Assembly was essentially concerned with approving the proposals of those Study Group meetings. There were a total of 600 proposals, consisting either of new texts or of modifications to existing ones.

In addition, the Assembly decided to re-organize, to some extent, the C.C.I.R. Study Group structure. The main features of this re-organization were, in the first place, the grouping into a single Study Group of subjects concerned with the efficient use of the radio-frequency spectrum and, secondly, the assignment of studies relative to the use of satellites by various services to the Study Groups concerned.

The Plenary Assembly also gave directives — upon a proposal by the Administrative Council — concerning the organization of the Special Joint Study Group Meeting, referred to under C).

A number of Resolutions concerning Technical Cooperation were also adopted by the Assembly, to assure a more active role in this field by the C.C.I.R. and also envisaging a closer collaboration with the Technical Cooperation Department of the General Secretariat.

In particular, Resolution 38 provides, amongst others, for the establishment of an Interim Working Party (subsequently designated as PLEN/2) under the Chairmanship of India, to study various broadcasting satellite systems and to evaluate them in the light of technical and economic factors.

#### 4.3.3 *Publication of the New Delhi Volumes*

Following the Plenary Assembly and in view of the provisions of Administrative Council Decision No. 359, work was undertaken immediately to produce the traditional C.C.I.R. Volumes, which contain a total of 900 maintained, modified or new texts, taking into account the revised Study Group structure, referred to above.

Both this structure, and the number and length of texts, made it necessary to envisage the publication, in each of the working languages, of seven volumes of which three are divided into two parts.

Five volumes of direct concern to the work of the Special Joint Meeting were available, in the three working languages, in time for that Meeting, and it is expected that the remaining volumes will become progressively available before the 26th Session of the Administrative Council.

In addition Report 252-2, "C.C.I.R. Interim Method for Estimating Sky-Wave Field Strength and Transmission Loss at Frequencies between the Approximate Limits of 2 and 30 MHz" was printed in a separate trilingual edition.

The Editorial Section within the C.C.I.R. Secretariat greatly advanced the work of preparing these volumes. The seven volumes will contain some 3,000 pages in each language. As a part of these texts is only slightly changed, if at all, with respect to the corresponding Oslo texts, the Director of the C.C.I.R. has been examining with the General Secretariat the possibility of economies in the adoption of a system of recording texts on tape, or by other means, in such a manner that they can be reproduced for printing without proof-reading and other repetitive work for which it is becoming difficult to find suitable staff.

#### 4.3.4 *Preparation for the Special Joint Meeting (J.S.M.)*

As the Special Joint Meeting was scheduled to take place early in 1971, most of the preparatory work had to be done in 1970. In reply to invitations sent to participants in the work of the Study Groups concerned, some 400 delegates from 35 Administrations have announced their participation, while the preparatory documentation contains approximately 240 proposals, having a total of some 2000 pages.

Contact was also taken up with the Chairman of the Meeting, Mr. J.R. MARCHAND (Canada) and with the Vice-Chairman, Mr. W. KLEIN (Switzerland), designated by the XIIth Plenary Assembly of the C.C.I.R. in its Resolution 40, with a view to holding a meeting on 1 February 1971, to organize the work of the J.S.M. It is at present anticipated that the conclusions of the latter will take the form of a single Report relating to all aspects of the work of that Meeting, for consideration by the WARC-ST.

#### 4.3.5 *Other activities: Preparations for the Meeting of Interim Working Party PLEN/2 and Interim Meeting of C.C.I.R. Study Group 7 (Standard-frequencies and Time-signals)*

Preparatory work was also undertaken for these two meetings, which are scheduled to take place on 9 and 10 February and from 17 to 23 February respectively — i.e. concurrently with the J.S.M.

The C.C.I.R. Secretariat continued to use the I.T.U. computer and the RAX computer terminal to the W.H.O. computer to prepare predictions for publication in the I.T.U. Journal of Ionospheric Sunspot activity and to investigate possible improvements in these predictions which might be made. It is expected that in the future these problems will be handled on the new I.T.U. computer and the RAX computer terminal will then not be required.

At the request of several administrations of new and developing countries, the Secretariat also prepared predictions of expected field strengths and communication circuit performance for several specific circuits using computer methods based on Report 252-2.

#### 4.4 ACTIVITIES OF THE INTERNATIONAL TELEGRAPH AND TELEPHONE CONSULTATIVE COMMITTEE (C.C.I.T.T.)

##### 1. *General*

As it will be seen from the list of meetings in paragraph 2 below, 1970 was marked by intense activity on the part of C.C.I.T.T. Study Groups and Working Parties.

Generally speaking, the work of the Study Groups has progressed satisfactorily. However some studies of particular importance for the future of telecommunications tended to drag. This delay was largely due to the delicate nature of the questions dealt with and the profound differences of opinion between countries and even between regions of the world on the answers to be given to these questions. Hence the need for the increase in the number of meetings. This move did not always achieve its purpose of finally reaching a compromise solution.

A reform of the C.C.I.T.T.'s methods of work, at present being explored by a group of experts specially appointed for the purpose, may of course be expected to speed up the studies. But a reform of this kind would seem insufficient in itself to bring about a decisive improvement. The attention of the Member countries of the Union is also drawn to the fact that their representatives at C.C.I.T.T. meetings should in the future endeavour to enhance the spirit of cooperation which they have always shown in the past.

Another general consideration that may be mentioned incidentally is that during 1970 the C.C.I.T.T. Secretariat tried to apply the Administrative Council's directives concerning translation of documents and interpretation into the various working languages of the Union. In doing so, it met with many difficulties, which it tried to minimize in accordance with the spirit of the Montreux Convention.

##### 2. *Meetings held in 1970*

These meetings, which took up 258 working days (52 weeks), are listed below in 2.1; the countries which took part in them are listed in Table 2.2.

##### 2.1 *List of meetings held in 1970*

<i>Date</i>	<i>Purpose of the meeting</i>	<i>Place</i>
12 - 23 January	Working Party XIII/1 (Maintenance and service grade)	Geneva
19 - 23 January	Working Party XIII/2 (Network planning)	Geneva
26 January - 4 February	Study Group XIII (Automatic and semi-automatic telephone networks)	Geneva
28 - 30 January	Study Group VI (Protection)	Geneva
2 - 6 February	Working Party CDF (Protection against lightning)	Geneva
5 - 18 February	Study Group XI (Telephone switching and signalling)	Geneva
16 - 26 February	Study Group XII (Telephone transmission performance and local telephone networks)	Melbourne
19 - 24 February	Working Party FT6 (Field trials of System No. 6)	Geneva
3 - 13 March	Study Group XVI (Telephone circuits)	Melbourne

<i>Date</i>	<i>Purpose of the meeting</i>	<i>Place</i>
5 - 18 March	Working Party III/1 (Leasing of intercontinental circuits)	Geneva
23 - 25 March	Editorial Group " Instructions "	Geneva
6 - 7 April	Working Party LTG (Use of telephone-type lines for purposes other than telephony)	Geneva
6 - 10 April	Working Party II/5 (Human factors in telephony)	Geneva
8 - 21 April	Study Group XV (Transmission systems)	Geneva
13 - 17 April	Working Party IV/2 (Measuring equipments)	Darmstadt
20 - 29 April	Regional Plan Committee for Asia and Oceania	Tehran
2 - 3 May	TAS Working Party (Asia tariffs)	Tehran
6 - 8 May	Working Party IV/5 (Maintenance instructions for new systems)	Geneva
11 - 21 May	Study Group IV (Maintenance)	Geneva
15 - 19 June	" Multiplex " Working Party (of Special Study Group D)	Geneva
22 - 26 June	Working Party PAR (Protective devices)	Geneva
22 June - 7 July	Study Group I (Telegraph operation and tariffs)	Montreal
22 June - 7 July	Study Group II (Telephone operation and tariffs)	Montreal
29 June - 3 July	Working Party PFP (Protection of power-feeding systems)	Geneva
8 - 14 July	Study Group III (General tariff principles; lease of telecommunication circuits)	Montreal
1 - 11 September	Editorial Group of GAS/3	Geneva
3 - 4 September	Coordination Group, Study Groups II, IV, XI, XII, XIII, XVI	Geneva
14 - 23 September	Plan Committee for Europe and the Mediterranean Basin	Warsaw
17 - 23 September	Working Party XIII/2 (Network planning)	Munich
24 - 25 September	TEUR Working Party (Europe tariffs)	Warsaw
28 September - 2 October	Working Party IV/3 (Maintenance Programme)	Geneva
5 - 7 October	Group of TV Experts, Study Group IV	Geneva
5 - 28 October	Working Parties of Study Group XV	Geneva
12 - 23 October	Working Party FT6 (Fields trials of System No. 6)	London
19 - 23 October	Working Parties of Study Group XIV	Geneva
26 October - 3 November	Working Parties of Study Group IX and Study Group IX (Telegraph transmission)	Geneva
4 - 10 November	GAS/5 (Economic conditions and telecommunication development)	Geneva

<i>Date</i>	<i>Purpose of the meeting</i>	<i>Place</i>
11 - 17 November	Working Party II/4 (Programme and television transmissions)	Geneva
18 - 20 November	Joint Working Party ALP (Alphabet No. 5)	Geneva
23 - 25 November	Study Group VIII (Telegraph equipment)	Geneva
23 - 27 November	Joint Working Party LTG (Use of telephone-type lines for purposes other than telephony)	Geneva
23 - 27 November	Joint Working Party NRD (New networks for data transmission)	Geneva
30 November - 4 December	Working Party XI/3 (Stored programme controlled exchanges)	Geneva
30 November - 4 December	Working Parties of Special Study Group A	Geneva
7 - 18 December	Special Study Group A	Geneva

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**Participation  
in C.C.I.T.T. Study Group meetings  
in 1970**

2.2 Participation in C.C.I.T.T. Study Group meetings in 1970

Administration (Recognized private operating agencies)	STUDY GROUPS																												Total			
	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	CMIT	Sp. A	Sp. C	Sp. D	PLAN		G. M.									
																					ASIA	Europe	TAS	TEUR	LTG	FT6	NRD	GAS3	GAS4	GAS5		
Afghanistan																															0	
Algeria													X									X		X							3	
Saudi Arabia																					X		X								2	
Argentina	X		X	X				X			X	X			X	X		X	X	X					X		X	X		X	15	
Australia	X	X	X	X		X		X	X		X	X	X		X	X		X	X	X	X		X		X	X	X	X			X	21
Austria	X	X	X	X		X			X		X	X	X		X	X		X	X	X		X		X	X			X			18	
Belgium	X	X	X	X		X					X	X	X		X	X		X	X	X		X		X	X	X	X	X		X	20	
Bielorussia																															0	
Burma																															0	
Bolivia																															0	
Brazil	X	X	X																												0	
Bulgaria																		X				X		X							3	
Cameroon																		X				X									3	
Canada	X	X	X	X					X		X	X	X		X	X		X	X	X		X			X		X	X		X	18	
Central African (Rep.)																															0	
Ceylon																															1	
Chile																															0	
China																															0	
Cyprus																															1	
Colombia																															0	
Congo (Kinshasa)	X	X	X																												0	
Congo (Brazzaville)																															3	
Korea																															0	
Costa Rica																															0	

Ivory Coast																															0		
Cuba				×				×	×			×			×	×		×	×							×	×		×		11		
Dahomey																															0		
Denmark	×	×	×	×		×		×	×		×	×	×		×	×		×	×	×		×		×	×		×	×		×		21	
Ecuador																															0		
Spain			×	×		×		×				×							×	×	×	×	×		×			×	×		×		13
United States	×	×	×	×							×	×	×		×	×		×	×	×	×	×	×	×	×	×	×	×	×		×		21
Ethiopia																															0		
Finland																		×				×		×			×					4	
France		×	×	×		×		×	×		×	×	×		×	×		×	×	×	×	×		×	×	×	×	×		×	×		22
Gabon		×	×																											×		3	
Ghana																																0	
Greece	×	×	×												×	×		×				×		×						×		9	
Guatemala																																0	
Guinea																																0	
Upper Volta																																0	
Hungarian People's Rep.				×		×			×						×			×		×	×	×		×			×	×				11	
India	×	×									×	×	×		×	×					×		×									9	
Indonesia																						×		×								2	
Iran																						×		×								2	
Iraq																						×										1	
Ireland																					×		×		×			×				4	
Iceland				×																												1	
Israel																					×	×		×								3	
Italy	×	×	×	×		×		×	×		×	×	×		×	×		×	×	×	×	×	×		×	×	×	×	×	×		×	23
Japan	×	×	×	×		×		×	×		×	×	×		×	×		×	×	×	×	×	×	×	×	×	×	×	×		×		24
Jordan																						×										1	
Kenya																																0	
Kuwait																						×		×								2	
Laos																																0	

2.2 Participation in C.C.I.T.T. Study Group meetings in 1970 (Cont'd)

Administration (Recognized private operating agencies)	STUDY GROUPS																												Total		
	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	CMIT	Sp. A	Sp. C	Sp. D	PLAN		G. M.								
																					ASIA	Europe	TAS	TEUR	LTG	FT6	NRD	GAS3	GAS4	GAS5	
Lebanon																					×	×									2
Liberia																															0
Libya				×																											1
Luxembourg																															0
Malaysia																					×		×								2
Malawi																															0
Madagascar																															0
Mali		×	×																												3
Malta																													×		0
Morocco																						×		×							2
Mauritania																															0
Mexico																															0
Monaco																															0
Mongolia																															0
Nigeria	×	×	×				×								×															×	6
Norway	×	×	×	×						×	×	×		×	×			×	×	×		×		×	×		×	×			17
New Zealand												×				×															2
Uganda																															0
Pakistan																					×		×								2
Panama																															0
Paraguay																															0
Netherlands	×	×	×	×		×		×	×		×	×	×		×	×		×	×		×	×		×	×	×	×	×		×	22
Peru																															0
Philippines																					×		×								2

Poland (People's Rep. of)								×	×		×		×				×	×		×		×		×	×			×	12	
Portugal	×	×	×	×		×		×			×		×				×		×	×	×		×					×	14	
Syria																				×	×		×						3	
Dominican Republic																	×										×		2	
United Arab Republic																													0	
Fed. Rep. of Germany	×	×	×	×		×		×	×		×	×	×		×	×		×	×	×	×	×		×	×	×	×	×	×	23
Ukraine																													0	
Somalia																													0	
Rhodesia																													0	
Roumania																					×		×						2	
United Kingdom	×	×	×	×		×		×	×		×	×	×		×	×		×	×	×	×	×	×	×	×	×	×	×	×	24
Rwanda																													0	
Sierra Leone																													0	
South Africa (Rep. of)	×	×	×					×	×																				5	
Sweden	×	×		×		×		×	×		×	×	×		×	×		×	×	×	×	×		×	×	×	×	×	×	22
Switzerland	×	×	×	×		×		×	×		×	×	×		×	×		×	×	×	×	×		×	×		×	×	×	22
Tanzania																													0	
Chad																													0	
Czechoslovakia									×		×		×						×		×		×		×				7	
Thailand																					×								1	
Togo																													0	
Trinidad and Tobago																													0	
Tunisia																					×		×						2	
Turkey																				×	×		×						3	
U.S.S.R.	×	×	×	×		×		×	×		×	×	×		×	×		×	×	×		×		×	×		×	×		20
Venezuela																													0	
Yugoslavia									×						×			×		×		×		×					6	
Zambia																													0	
Totals	23	25	25	23		17		18	19		21	21	20		25	21		25	20	23	30	33	12	31	17	12	23	19	1	21
Number of participants	63	82	88	67		51		45	53		93	56	89		115	45		171	52	95	141	165	27	72	35	59	135	38		48

### 3. *Results of meetings*

These results, by broad sphere of activity, are given briefly below.

#### 3.1 *Telegraphy and data transmission*

##### 3.1.1 *Alphabetical telegraphy*

Study Group VIII continued its study of the standardization of apparatus using Alphabet No. 5. It reached agreement on a list of basic modulation rates and character structures for this apparatus. It also adopted some technical characteristics (distortion, margin, etc.) and the sets of graphics of Alphabet No. 5 to be used.

Study Group IX studied the question of intermediate-rate telegraph channels, for group frequency-division multiplex systems, time-division multiplex systems on circuits using modems, or pulse-code modulation techniques. Certain technical characteristics have already been established and studies of new standards are being pursued.

##### 3.1.2 *Facsimile telegraphy*

Study Group XIV confirmed the existing standards for the simultaneous use of telephone channels for facsimile and VF multichannel telegraphy. It further specified certain standards applicable to phototelegraphy and decided to continue the study of outstanding questions.

##### 3.1.3 *Telegraph operation*

Study Group I considered that telegraph tariffs should be based on a fixed component and on a component proportionate to the length of the telegram. It also considered the abolition of letter telegrams.

It concluded that only the general basic principles pertaining exclusively to the international telegraph service should be retained in the Telegraph Regulations. The provisions concerning operation and optional services should be transferred to Recommendations, to avoid any duplication between texts appearing in the Regulations and those appearing in Recommendations.

Accordingly, the new draft Recommendations will be prepared in the form of a complete set of provisions concerning operation, tariffs and accounting for international public telegraph correspondence services.

##### 3.1.4 *Data transmission*

The Joint Working Party on new networks for data transmission (NRD) set up by the IVth Plenary Assembly examined problems relating to interworking between data networks, interface between data terminal equipment and the data network and the requirements of an international data transmission service. It considered the various classes of networks and their technical characteristics, the different stages of a data transmission, the services to be provided on a data network and facilities to be granted to users. This work was done in consultation with I.S.O. and E.C.M.A.

At its first meeting during the current period, Special Study Group A reviewed its entire programme, for which it had received a very large number of contributions.

In view of the need for new modems in intermediate-speed signalling rates, the Study Group drew up a table showing some of the general facilities that should be available for certain uses; another table gives a comparison of the technical characteristics of some of the proposed patterns. The question of new modems for high-speed signalling was also considered, and a similar comparative table was drawn up. The Study Group drafted a new Recommendation concerning a measuring instrument for data transmission tests at high signalling rates. With regard to special quality

leased circuits, the Study Group decided to examine a new set of characteristics for multipoint conference-type networks and point-to-point circuits with higher signalling rates.

Finally, Special Study Group A prepared a list of signalling rates for synchronous transmission, on which a new Recommendation will be drafted. It also prepared a draft Recommendation on the acoustic coupling of data terminals to a telephone set.

### 3.2 *Telephone transmission*

Study Group XII considered methods of objective measurement on telephone sets and their relationship with the subjective tests conducted by the traditional methods of the C.C.I.T.T. laboratory, as well as reference equivalent values and speech power measurements on national networks, subscribers' tolerance of echoes and propagation time, the permissible limits of crosstalk between telephone circuits and the impedance of subscriber lines and stations. Study Group XVI was associated with these activities of Study Group XII, and also studied the use of echo suppressors and adaptive echo cancellers and the use of demand-assignment satellite circuits.

Study Group XV and its Working Parties studied a large number of questions concerning transmission systems, including methods of obtaining high quality mono or stereo programme circuits, future standardization of new types of coaxial pairs and waveguides for long-distance transmission, international transmission of picture signals between telephone subscribers (videophone) and the study of transmission system reliability.

A Working Party of Special Study Group D examined the multiplexes to be used in pulse code modulation systems. Despite considerable differences of opinion, it proved possible to reduce to two the types of primary multiplexes recommended for international circuits, to establish the general principles for their interconnection and also to begin a study of secondary multiplexes.

Joint Working Party LTG unified the characteristics of telephone-type circuits used for data transmission, VF multichannel telegraphy, black-and-white facsimile and phototelegraphy. It also proposed the unification of signal power limits on these circuits.

### 3.3 *Telephone operation and switching*

#### 3.3.1 *Operation and tariffs*

Study Group II obtained the following results on the basis of the reports of its Working Parties:

- a) it clarified the scope of the Recommendation on international accounting, while recognizing that the application of this Recommendation is a long-term project; in particular, it considered that the traffic units to be used in this accounting in automatic transit links should be the conversation time measured by meters or similar devices;
- b) it introduced a certain number of changes into the Instructions for the International Telephone Service which became applicable on 1 January 1971;
- c) it made a certain number of amendments and additions to C.C.I.T.T. Recommendations, to explain further the general principles which alone were retained in the draft text of the Telephone Regulations examined by the IVth Plenary Assembly in conformity with Montreux Resolution No. 36;

- d) it drafted a Recommendation on the presentation of national and international telephone numbers; this draft was submitted to Members for approval, in accordance with the procedure adopted by the IVth Plenary Assembly, and has had the status of a provisional Recommendation since 1 December 1970;
- e) it made appreciable progress in standardizing operational procedures and charging rules for international programme and television circuits;
- f) it continued to study operational procedures and charging rules for international conference (multiple) calls, a question on which there are still considerable differences of opinion;
- g) it recommended the adoption of reduced tariffs during light traffic periods and defined the means of their application at the international level.

### 3.3.2 *General tariff principles*

Study Group III dealt mainly with tariff questions and conditions for the use of inter-continental and continental leased circuits. This study raised some difficult and very controversial points and has not yet resulted in a draft Recommendation.

The regional tariff groups for Asia and Europe, operating under the auspices of Study Group III each met for two days, the former in Tehran and the latter in Warsaw. Both defined their sphere of activity and specified their objectives and the cost studies to be undertaken; these studies were also begun.

### 3.3.3 *Automatic telephone operation*

Study Group XIII defined the basic considerations concerning maintenance of international switching and signalling equipment, monitoring of service quality and the definition of an international index for service quality.

This Study Group also undertook the task of preparing a computer programme to determine the number of international circuits as a function of traffic data and submitting proposals on the subject to the World Plan Committee and the Regional Plan Committees.

It began to study the effects of the use of demand-assignment satellite circuits on the world routing plan and prepared a note on the subject for the Plan Committees.

### 3.3.4 *Telephone switching and signalling*

The activities of Study Group XI are being increasingly directed towards digital switching techniques and the use of stored programme-controlled exchanges. These techniques are gradually assimilating the telephone exchange, hitherto purely electro-mechanical, to the electronic computer. The studies undertaken in this regard relate to the definition of a high-level programming language for switching centres, the interworking of various signalling systems, signalling to be adopted for demand-assignment satellites and pulse-code modulation systems.

Control of echo suppressors and the definition of transmission channel continuity checks for System No. 6 (separate common signalling channel) were two other important subjects dealt with by Study Group XI.

Large-scale signalling trials of System No. 6 are being conducted on a test area covering the whole world and involving about a hundred international and intercontinental circuits. These trials, which were started in 1970, are being carried out between equipments differing widely in design, although conforming to the specifications of System No. 6 which, it should be emphasized, were drawn up entirely by the C.C.I.T.T., from the initial project stage to the detailed definition.

The early experience acquired augurs well for the efficient operation of System No. 6. Both at the international level and for national uses (either directly or by derived systems), the prospects for the development and extended use of System No. 6 during the decade 1970-1980 at present seem to be promising.

### 3.4 *Maintenance, protection, definitions and symbols*

#### 3.4.1 *Maintenance of lines, circuits and chains of circuits*

With the help of its Working Parties, Study Group IV organized tests to continue to check the performance of the international network of lines, circuits, chains of circuits and connections; in accordance with the accelerated procedure adopted by the IVth Plenary Assembly, it also had two general specifications approved on a provisional basis, one relating to automatic equipment for transmission measurement and signalling tests and the other to automatic measuring equipment for sound-programme transmission circuits.

Study Group IV also examined requirements for television circuit tests (test signals and maintenance limits) to be conducted under field conditions, side by side with the theoretical objectives specified by the C.C.I.R. for a hypothetical reference circuit. This study was greatly facilitated by the work of a group of television experts specially convened for the purpose.

Progress was also made in basic specifications for various parts of measuring equipment; in particular, a basic standard was proposed for a device for measuring group delay distortion, which will be very useful for the maintenance of data and stereo transmission circuits.

#### 3.4.2 *Protection*

Joint Working Parties of Study Groups V and VI continued to prepare the Manual on "Protection of telecommunication lines against the effects of atmospheric disturbances" and drafted provisions for the "Directives concerning the protection of telecommunication lines against harmful effects from electricity lines"; they prepared a draft specification for gas discharge lightning protectors for telecommunication lines and studied the principles of protection for line power-fed repeaters. With regard to earthing systems, the Secretariat has prepared the preliminary draft of a Manual, synthesizing all the documentation published by the C.C.I.T.T.

#### 3.4.3 *Terminology and symbols*

While Study Group VII remained inactive, in accordance with a decision of the IVth Plenary Assembly, work on graphical symbols was continued by C.C.I.T.T. representatives in the I.E.C./C.C.I. Joint Working Party on Symbols for Telecommunications.

### 3.5 *Plan for the development of international networks*

3.5.1 The Plan Committee for Asia and Oceania drew up regional forecasts for traffic and circuits for 1974 and 1978. It prepared an artery plan for 1974 and 1978 in the light of forecasts for the development of satellite links.

A large number of delegations submitted declarations of intent concerning their countries' development plans. These declarations were very favourably received and facilitated delegations' discussion of bilateral and multilateral plans.

In connection with technical assistance questions (C.C.I.T.T./C.C.I.R.), the Committee stressed the important part that representatives of Study Groups, particularly their Chairmen and Vice-Chairmen, could play by giving Plan meetings information on the activities of their Study Groups.

To coordinate the Committee's work in the intervals between meetings, it was decided to set up a Coordination Committee, which will meet for the first time in December 1971.

3.5.2 The Plan Committee for Europe and the Mediterranean Basin drew up traffic forecasts for 1974 and 1978 and calculated the numbers of corresponding circuits on this basis. Telephone and artery routing plans were prepared. The preparation of the new Plan gave rise to discussion; the Committee set up a Working Party, which will meet next March, to review the Guide and the layout of the Plan Book. An extraordinary meeting of the Committee is to be held at the time of the meeting of the World Plan in 1971.

### 3.6 *Technical assistance work of the C.C.I.T.T.*

The following activities were carried on during 1970:

#### 3.6.1 *Economic and technical aspects of the choice of transmission systems*

The Editorial Group of GAS 3 prepared new draft texts on submarine cables, communication satellites and pulse-code modulation systems to supplement the existing Manual.

Study Group XVI has undertaken to revise the chapters on transmission plans in the existing Manuals on national automatic networks and on local networks.

#### 3.6.2 *General economic studies in the field of telecommunications*

Special Autonomous Working Party (GAS 5), which is responsible for the study of economic conditions and telecommunication development, has prepared a detailed outline of the new chapters of the Manual "Telecommunications—Economic Studies", Part I of which was published in 1968.

Like the chapters published in 1968, the new chapters of the GAS 5 Manual will be illustrated by quite a large number of graphs plotted from statistical data supplied by over 30 countries in reply to a detailed questionnaire sent out in 1969. In addition to the preparation of these graphs, the analysis of the data has led to the submission of a statistical document which serves as an outline for the "I.T.U. Yearbook of Telecommunication Statistics" which was requested by the IVth Plenary Assembly of the C.C.I.T.T. at Mar del Plata and studies for which are being pursued.

## 4. *C.C.I.T.T. Publications*

The publication of the White Book was completed in 1970. Volumes III (Line transmission), V (Telephone transmission quality) and VI (Telephone signalling and switching) appeared during the year.

The following were also printed and published in 1970:

- Tehran Plan (1970): "General Plan for the Development of the Regional Asian and Oceanian Network";
- GAS 3 Manual: "Economic and technical aspects of the choice of transmission systems";
- GAS 4 Manual: "Primary sources of energy";
- A booklet on the protection of telecommunication cables by pressurization.

Additions and amendments were made to the “Recommendations for the protection of underground cables against corrosion”.

5. *Relations with other international organizations*

The C.C.I.T.T. continued to collaborate closely with the W.M.O., the I.E.C., the I.S.O., the E.B.U., and UNIPEDE. New contacts were established with INTERPOL, which asked the C.C.I.T.T. for technical advice with regard to phototelegraphy, and with O.E.C.D., which is interested in certain general aspects of data transmission.

6. *Changes in Study Groups and in the Secretariat*

Mr. A. Newstead (Australia), Chairman of Study Group XIII, resigned and was replaced by Mr. S. Kuhn (Poland), the Vice-Chairman appointed by the Plenary Assembly; the Study Group elected Mr. J. Biot (Belgium) Acting Vice-Chairman. Mr. Gosewinckel (Australia) resigned from Joint Working Party TGX and was replaced by Mr. Puccioni (Italy).

The following were appointed Chairmen of various Joint Working Parties:

TAF	—	Mr. M. Sidibe (Mali)
TAS	—	Mr. C.A. Cornelius (India)
TEUR	—	Mr. W. Jost (Switzerland)
ALP	—	Mr. G. Baggenstos (Switzerland)
LTG	—	Mr. M. Toutan (France)
MAT	—	Mr. H. Biehler (F.R. of Germany)
PFP	—	Mr. H. Riedel (F.R. of Germany)
PAR	—	Mr. H. Fielding (United Kingdom)
CDF	—	Mr. H. Riedel (F.R. of Germany)

The following officials entered the C.C.I.T.T. Secretariat:

Mr. E. Hummel, Senior Counsellor (succeeding Mr. Besseyre)  
Mr. Y. Bozec, Engineer (Operation Department)  
Mr. E. Pierre, Engineer (Transmission Department)  
Mr. Y. Senuma, Assistant Engineer (Plan and Technical Assistance Department)

7. *Group of Experts for the study of organization and methods of work of the C.C.I.T.T.*

The Group began its work by correspondence; its members will be convened for a meeting in Geneva as soon as the coordinator expresses the wish for such a meeting.

## 5. TECHNICAL COOPERATION ACTIVITIES

### 5.1 *General appraisal of 1970 activities*

In 1970, under the Union's various programmes of technical cooperation in developing countries, 241 experts (including subcontracted personnel and associate experts) were on mission, 395 fellows were undergoing training abroad and U.S. \$780,187 of equipment was delivered. The total cost of this assistance amounted to U.S. \$6,050,198.

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 regional telecommunication networks in Africa, Asia and the Americas*

The Union made further efforts to develop a form of concerted action in regard to the planned and organized integration of telecommunication networks in Africa, Asia and the Americas into a world-wide telecommunication system, in accordance with the objectives established by the Union's World and Regional Plan Committees. To this end, the Union collaborated with the Governments concerned in Africa, Asia and the Americas, as well as with the United Nations Economic Commissions, regional telecommunication organizations, the World Bank and regional banks.

The outstanding achievement in this respect was the progress made in the pre-investment survey for Africa and the feasibility study and survey for the Asian telecommunication network.

Approximately 10% of all the Union's experts in the field in 1970 were engaged in the development of regional telecommunication networks.

- b) *The strengthening of telecommunications technical and administrative services in developing countries*

This type of activity was closely connected with the modernization and improvement of telecommunication facilities in many developing countries, which made it desirable to reorganize the administrative and technical services concerned. Approximately 37% of the experts have been employed for this purpose as advisers or as OPAS officers.

- c) *The development of human resources required for telecommunications*

In the year under review, approximately 53% of the Union's field experts were directly engaged in the training of telecommunication personnel in developing countries, as organizers, advisers, lecturers or instructors. In addition, most of the other experts gave on-the-job training to national counterparts while carrying out their other duties. Approximately 20% of the fellows studying abroad received training in subjects directly connected with the development of human resources, and 85% of the total value of equipment purchased by the Union was exclusively for training purposes.

The expenses incurred in connection with the training of telecommunication staff in 1970 represent approximately two-thirds of the total cost of the I.T.U. field programmes.

## 5.2 *Field of activity*

The predominant field of activity, as in the past, continues to be the training of telecommunication personnel. The Union also provided considerable assistance in the specialized fields of telephony, telegraphy, radiocommunications, frequency management, satellite communications, planning, traffic, tariffs, organization, administration and management, etc. The increasing interest of developing countries in satellite communications is to be noted. One expert was specifically assigned for this purpose and several short-term missions were carried out within the framework of the activities under Resolution No. 29 of the Plenipotentiary Conference (Montreux, 1965).

## 5.3 *Difficulties encountered in the recruitment of experts*

The shortage of qualified candidates for expert posts was even more acute in 1970 than in previous years. This seems, in particular, to be due to the increasing demand for qualified telecommunications experts in all countries in the world. Another serious problem is the unattractiveness of certain duty stations where living conditions are particularly difficult.

Certain posts continued to be difficult to fill owing to language and specialization requirements.

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

### 5.4.1 *Technical Assistance Component*

The year 1970 was the second year of the procedure termed "continuous programming", which became effective on 1 January 1969 in replacement of the two-year programming cycles.

The expenditures incurred, during the year under review, for the implementation of 1970 projects, amounted to U.S. \$1,888,064, distributed by geographical regions as follows:

U.S. \$727,254 for Africa  
U.S. \$533,921 for Asia  
U.S. \$602,000 for the Americas  
U.S. \$24,889 for Europe

Under this Component, 79 countries received assistance during the year through individual country projects. Of these, 27 were in Africa, 22 in Asia, 23 in the Americas and 7 in Europe. In addition, assistance was provided to various countries under regional projects and one inter-regional project.

During the year, 86 experts (including 10 OPAS officers) recruited from 24 countries, 7 of which were themselves receiving assistance from the Union, were on missions of varying duration in developing countries. Of these experts, 37 were working in Africa, 22 in Asia and 27 in the Americas. Details of expert missions are incorporated in Table 1 of Annex 6.

The above figures also include 10 regional experts, three of which served in Africa, three in Asia, three in the Americas and one in the Middle East and North Africa during 1970, as well as 5 specialists hired from a Swedish Consulting Company in connection with the urgent rehabilitation of telecommunication services in Equatorial Guinea.

During the year, the Union dealt with 393 fellowships under this Component, of which 275 were awarded in 1970 (this includes 147 fellowships to participants to I.T.U. seminars) and the remaining 118 under previous years' programmes. Holders of 321 of these fellowships (including fellowships for participants to seminars) were undergoing training in various host countries during the year and the remaining fellowships have been carried forward into 1971 and subsequent years for completion.

The above figures include 29 fellowships for participants in the I.F.R.B. Seminar held in Geneva in September 1970.

Details concerning the fellowships under report are included in Table 2 of Annex 6.

Training and demonstration equipment was ordered during the year for two countries, namely Swaziland and Southern Yemen to a total value of U.S. \$4,600. Furthermore, equipment ordered in 1969 for Gambia, Jordan, Mali and Rwanda was delivered during 1970.

#### 5.4.1.1 *Seminars*

In 1970, the Union organized five seminars within the framework of its regional and inter-regional projects under the Technical Assistance Component, i.e., in Rabat on space communications in the service of progress and cooperation, in Kampala on telecommunication operation problems in Africa, in Managua on the development of rural telecommunications in Latin America and the Caribbean Area, in Bangkok on the organization and management of telecommunication services and in Kuala Lumpur on the technical aspects of broadcasting. The Union awarded 147 fellowships to participants in these seminars. The Administrations and broadcasting organizations of Argentina, Australia, Canada, the Federal Republic of Germany, Spain, Ethiopia, France, Italy, Japan, Morocco, Switzerland, Sweden, the United Kingdom and the United States of America, as also the United Nations and the African Development Bank contributed to the success of the seminars by seconding lecturers on a cost-free basis.

#### 5.4.1.2 *Operational Assistance (OPAS)*

Ten OPAS officers recruited under the Technical Assistance Component, in addition to six under the Funds-in-Trust/OPAS arrangements, served in 12 different countries.

Eight of these were employed in Africa, five in Asia and three in the Americas, all carrying out duties of a managerial and/or operational nature.

#### 5.4.2 *Special Fund Component*

The Union, in 1970, acted as Executing Agency for 24 U.N.D.P./Special Fund assisted projects. Of these, 21 projects were in the training sphere (this includes the Paraguay project listed in Table 3 of Annex 6), two were pre-investment surveys (Survey for the African Telecommunication Network and Asian Feasibility Studies), one was in the field of developing satellite communications (India). Five of these were new projects approved by the U.N.D.P. Governing Council in 1970, i.e., Telecommunication Training Centre (Kabul) (Phase II) in Afghanistan, Expansion of the Experimental Satellite Communication Earth Station (Ahmedabad) in India, Telecommunication Training Centre (Teheran) in Iran, Training Centre for Telecommunication Technicians (Caracas) (Phase II) in Venezuela and Pre-investment Survey for the African Telecommunication Network (East Africa Sector).

In addition, the Union carried out various pre-project activities under special authorizations from the U.N.D.P.:—in Yemen and Southern Yemen, where assistance was given toward the establishment of a Pilot Telecommunication Link between these two countries and a contract negotiated to cover the provision of the necessary equipment; in Singapore, which received assistance in the assessing of its telecommunication training needs and in the preparation of a request to the U.N.D.P. for the establishment of a Training Centre; in the East African Community, with

a view to the establishment of a multinational telecommunications and postal training centre in Nairobi; and in West Africa, where preparatory assistance was provided in connection with the establishment of multinational training schools in the French-speaking countries of this region.

Table 3 of Annex 6 gives a list of the projects for which the Union was Executing Agency on 31 December 1970. Eight were located in Africa, four in America, ten in Asia and one in Europe.

In the course of the year, only one project came to an end, i.e., the Training Centre for Telecommunications Technicians Phase I, in Venezuela, which was immediately followed by Phase II, as mentioned above.

During the year, 111 experts recruited under this Component were in the field. Details of these expert assignments have also been incorporated in Table 1 of Annex 6.

Within the framework of U.N.D.P./Special Fund projects for which the I.T.U. is the Executing Agency, a total of 106 fellowships, including 23 awarded during previous years, were dealt with during 1970. 73 holders of these fellowships were undergoing training abroad during the year under report and 33 fellowships have been carried over to 1971. Details of the fellowships dealt with have been incorporated in Table 2 of Annex 6.

The above figures also cover 31 short-term fellowships awarded to high-ranking officials from Telecommunication Administrations in Africa and Asia, in order to permit them to attend specialist meetings (two in Bangkok and one in Nairobi) in connection with the Union's Pre-investment Surveys.

Equipment to the value of U.S. \$785,067 was ordered during the year and deliveries made to the value of U.S. \$678,644, which figure includes equipment ordered in 1969 and earlier years, delivered only in 1970.

In addition, the Union administered 48 General Service Category Staff (secretaries and drivers) engaged for various I.T.U./Special Fund projects in the countries concerned.

The total expenditure incurred by the Union for the field operation under the Special Fund Component in 1970 amounted to U.S. \$3,321,015.

Under an administrative arrangement concluded in 1968 with the Inter-American Development Bank (I.D.B.), concerning the execution of the pre-investment study for the Inter-American Telecommunication Network (a U.N.D.P./Special Fund project for which the I.D.B. is the Executing Agency in association with the Union), an I.T.U. expert-adviser appointed to the I.D.B. completed his assignment in December 1970. Under the same arrangement U.S. \$80,000 has been reserved enabling the Union to award 16 fellowships to the nationals of countries participating in the project, five of which were awarded in 1970.

In 1970 the I.T.U. concluded two agreements with the Universal Postal Union (U.P.U.) with respect to the association of the U.P.U. in the implementation of U.N.D.P./Special Fund projects in Afghanistan and Turkey for which the I.T.U. is the Executing Agency. This will enable the inclusion of training courses for postal staff at the I.T.U. training centres in the two countries concerned. These agreements are in accordance with the terms elaborated by the U.N.D.P. for the sub-contracting between Executing Agencies.

## 5.5 *Related aid programmes*

### 5.5.1 *Funds-in-Trust*

Sixteen experts served under the Funds-in-Trust arrangements, i.e., four in Saudi Arabia, four in the Democratic Republic of the Congo, three in Korea, three in Kuwait, one in Malta and one in Venezuela.

In addition, six officers were employed under the Funds-in-Trust/OPAS arrangements, i.e., one in Jamaica, two in Libya and three in Kuwait.

One fellowship was dealt with under this scheme (Libya).

The total cost of these Funds-in-Trust projects in 1970 was U.S. \$345,292.

Details of Funds-in-Trust missions are incorporated in Table 1 of Annex 6 and the data concerning the fellowship mentioned above in Table 2 of Annex 6.

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

The Union acted as Executing Agency for the Telecommunication Repair and Rehabilitation Project in West Irian. The value of this field operation in 1970 was U.S. \$208,238.

The emergency repair work carried out and the implementation of the first part of the rehabilitation programme, resulted in a marked increase in the efficiency of the telephone and telegraph circuits in West Irian.

Under this project seven fellowships were awarded and it is expected that all the fellows will undergo training in 1971.

Details of experts and fellowships pertaining to the FUNDWI project are incorporated in Tables 1 and 2 of Annex 6 respectively.

The I.T.U. also assisted the United Nations Office of Technical Cooperation (U.N.O.T.C.) in matters concerning ship-to-shore telecommunications in connection with the latter's Coastal and River Transportation Project in West Irian.

#### 5.5.3 *Associate expert scheme*

On the basis of arrangements for the provision of associate experts, concluded between the Union and the Governments of Denmark, the Netherlands and Sweden, 14 associate experts served on the Union's projects in 1970, i.e., one in Afghanistan, one in Algeria, three in Colombia, two in Jamaica, five in Malaysia, one in the Sudan and one in Thailand.

Nine of these associate experts were provided by the Government of Sweden, four by the Government of the Netherlands and one by the Government of Denmark.

The total value of assistance provided under this scheme in 1970 amounted to U.S. \$154,873. The expenses were borne by the Governments of Sweden, the Netherlands and Denmark.

#### 5.5.4 *Volunteers*

During the year under report, the Union continued to benefit from the services of a United States Peace Corps volunteer at the Telecommunication Training Centre in Afghanistan. In addition, the services of four volunteers have been provided by the Swiss Government. Two of these volunteers have been assigned to the Telecommunication Training Centre in Madagascar and two to the Telecommunications School in the Central African Republic, the latter being staffed by two I.T.U. instructors under the U.N.D.P./Technical Assistance Component. The cost of this assistance was borne by the donor Governments, the recipient Governments providing such facilities as housing and medical services in accordance with separate agreements.

#### 5.5.5 *Technical Assistance in kind*

Under this scheme, the I.T.U. continued in 1970 to disseminate information on the assistance offered by the technically advanced countries, Members of the Union. Two circular-letters were issued containing information on courses organized in France and India for nationals of developing countries. Furthermore, Telecommunication Administrations and broadcasting organizations of 14 countries provided, free of charge to the I.T.U. and U.N.D.P., lectures for the five seminars held in 1970.

## 5.6 *Emergency Assistance to Roumania*

Following the floods in Roumania the Union provided some equipment to that country out of the U.S. \$15,000 allocated to the Union by the United Nations Office of Technical Cooperation (U.N.O.T.C.) under a special emergency programme.

## 5.7 *Preparation of new projects*

During the year under report, the Union was in continuous contact with the Administrations and the Resident Representatives of the U.N.D.P. in recipient countries, in order to assist in the preparation of requests for new projects, as well as for the continuation of existing ones, where this was felt to be appropriate.

Particularly significant progress was achieved in connection with the preparation and submission of requests for training projects under the Special Fund Component in Zambia, Nepal, Ceylon and a pilot link between Yemen and Southern Yemen. Furthermore, the Union was involved in the advance preparatory work in regard to requests for U.N.D.P./Special Fund assistance in (a) the training of telecommunication personnel in Cameroon, Zambia, Kenya, Tanzania, Uganda, Malawi, Swaziland, Lesotho, Senegal, Indonesia, Kuwait, Laos and (b) three projects of a regional character, i.e., the African Radio Monitoring Network and the Pre-investment Surveys for the West African Telecommunication Network and the Telecommunication Network within the Central African Sector.

Preliminary contacts were continued with the International Civil Aviation Organization (I.C.A.O.) regarding a concerted approach to the training of telecommunication staff in Nepal and Somalia. Contacts were also established with the UNESCO with regard to the Union's participation in a Feasibility Study of the Educational Satellite System for the Latin American Countries. Many exchanges of information also took place between the Union and the U.P.U. concerning the anticipated inclusion of training for postal staff in the telecommunication training projects under preparation within the Special Fund Component.

It is expected that most of the above-mentioned projects will become operational in 1971.

## 5.8 *Group of engineers*

In accordance with Resolution No. 29 of the Plenipotentiary Conference (Montreux, 1965), the engineers continued to work in their respective fields, so that it was possible to respond to a number of requests for assistance from Administrations, either by giving advice direct from I.T.U. Headquarters or by missions to the countries concerned.

In view of the nature of the task to be carried out, it was found necessary in three instances—in the Ivory Coast, the East African Community and Uruguay—to call on short-term outside specialists. The total cost of such assistance was U.S. \$11,773.

Requests from Ecuador, Malta and Surinam were met within the framework of U.N.D.P. Technical Assistance projects now being implemented in the respective regions, in accordance with Resolution No. 29.

Advice was given on the following subjects: planning of national telephone networks, satellite communications, the use of satellites for educational purposes, semi-electronic telephone systems, the examination of specifications and tenders, PCM transmission systems and the organization of telecommunication administrations.

The engineers belonging to the Group carried out a number of special missions and represented the I.T.U. at several conferences.

## 6. ADMINISTRATION OF THE UNION

### 6.1 STAFF MATTERS

6.1.1 On 31 December 1970, the staff of the Union, excluding persons engaged on short-term contracts, was distributed as shown in the following table (for purposes of comparison, the figures for the end of 1969 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	266 *)	37 *)	305 *)
I.F.R.B. . . . .	5	96	4	105
C.C.I.T.T. . . . .	1	32	2	35
C.C.I.R. . . . .	1	25	—	26
	9 (9)	419 (396)	43 (28)	471 (433)

\*) The corresponding figures for the Technical Cooperation are 47,13 and 60 respectively.

6.1.2 The manning table—or establishment—in the 1970 budget comprised 484 posts, of which 465 were permanent. The following separations from service took place during the year as regards staff on permanent or fixed-term contracts: 2 retirements, 20 resignations or transfers and 1 death.

6.1.3 Employment on a short-term basis in 1970 is shown in the table below:

TABLE 2

*Staff engaged on short-term contracts*  
(between brackets the corresponding figures for 1969)

	Number of contracts	Total number of working days
Interpreters . . . . .	218	3,296 (3,103½)
Engineers/Programmer-analysts . . . . .	3	211 (1,286)
Translators/Revisers/Précis-Writers/Editors . . . . .	70	2,694 (2,052½)
Associate Administrative Officers . . . . .	2	335 (529)
Proof-readers . . . . .	5	434 (887)
Draughtsmen, photographers . . . . .	14	1,295 (1,163)
Secretaries, office assistants, book-keepers . . . . .	93	9,124 (5,350½)
Shorthand-typists, typists and clerks . . . . .	177	13,265 (13,107½)
Programmers . . . . .	2	151 (—)
Telephone operators . . . . .	40	214 (334½)
Roneo operators/assembly staff . . . . .	49	2,804 (3,890)
Simultaneous interpretation equipment operators . . . . .	16	406 (359)
Distribution staff, messengers, chauffeurs, store-keepers . . . . .	51	3,552 (3,126½)
Punched card and offset operators . . . . .	—	— (923)
	740	37,781 (36,112)

6.1.4 The distribution of staff according to grade among the various organs is given in Table 3. Most of the posts shown under the heading "General Secretariat" belong to services which in fact work for all the organs of the Union or are posts in the Technical Cooperation Department.

TABLE 3

*Distribution of staff according to grade*

(between brackets the corresponding figures for 1969 relative to Technical Cooperation)

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	—	2	—	6	—
P.5 . . . . .	5	—	3	—	3	—	—	—	11	—
P.4 . . . . .	16 (3)	4 (2)	5	—	—	—	7	—	28	4
P.3 . . . . .	23 (1)	12 (10)	15	3	10	—	1	—	49	15
P.2 . . . . .	14 (2)	1 (1)	9	—	3	—	—	—	26	1
P.1 . . . . .	8	—	3	—	2	—	1	—	14	—
G.7 . . . . .	12 (3)	1	4	—	—	—	—	—	16	1
G.6 . . . . .	19 (1)	1	12	—	2	2	4	—	37	3
G.5 . . . . .	48 (19)	3	21	1	10	—	5	—	84	4
G.4 . . . . .	43 (17)	2	13	—	—	—	5	—	61	2
G.3 . . . . .	41	6	9	—	1	—	—	—	51	6
G.2 . . . . .	30	4	2	—	—	—	—	—	32	4
G.1 . . . . .	4	3	—	—	—	—	—	—	4	3
	266 (47)	37 (13)	96	4	32	2	25	—	419	43
Total . . . . .	305		105		35		26		471	

(P = Permanent; FT = Fixed-term)

*Note:* The above table shows the grades of 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 1970 is shown in three tables. Table 4 concerns the staff whose salaries are paid from the ordinary budget of the Union; 38 nationalities (for 130 officials) were represented in 1970. Table 5 concerns the headquarters staff whose salaries are paid from the technical cooperation budget and Table 6 concerns technical cooperation experts. In these three categories of staff 47 nationalities (for 321 officials) were represented in 1970 compared with 45 (for 301 officials) in 1969.

TABLE 4

*Geographical distribution on 31 December 1970*

(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	Total
Afghanistan . . . . .					1					1
Argentina (Rep.) . . . .	1		1							2
Australia (Commonwealth of) . . .	1			1 (-)	(1)					2
Belgium . . . . .					1	1				2
Brazil . . . . .						1 (-)				1 (-)
Bulgaria (People's Republic of) . . . . .					(1)					— (1)
Canada . . . . .				1			1			2
China . . . . .				1	1					2
Denmark . . . . .					1					1
Spain . . . . .					3	1	2			6
U.S.A. . . . .	1	1		2 (1)	— (1)					4
France . . . . .	2	(1)	4	1	5 (4)	3	1	1	1	18
Haiti (Rep.) . . . . .					1 (-)					1 (-)
Hungary (People's Republic of) . . . . .						1 (-)				1 (-)
India (Rep. of) . . . . .		1		1	1					3
Indonesia . . . . .						1 (-)				1 (-)
Iran . . . . .					1					1
Iraq (Rep. of) . . . . .						1				1
Ireland . . . . .					1 (-)	(1)				1
Italy . . . . .				1	1 (-)	(1)	1			3
Japan . . . . .	1				3	2 (-)				6 (4)
Morocco (Kingdom of) . .	1									1
Mexico . . . . .					1					1
Norway . . . . .									1	1
Pakistan . . . . .					1					1
Paraguay . . . . .				1						1
Netherlands (Kingdom of the) . . . .				(1)		1			(1)	1 (3)
Poland (People's Republic of) . . . . .					1					1
Syrian Arab Rep. . . . .						1				1
United Arab. Rep. . . . .						1				1
Fed. Rep. of Germany . .		1 (-)		1	2	1 (-)	1		1	7
U.K. of Gt. Britain and Northern Ireland . .		1	2	3	— (1)	3	1	1	1	12 (13)
Sweden . . . . .					1 (-)					1 (-)
Switzerland (Confederation of) . . . .			2	4	9 (8)	6 (7)	7 (3)	1	3 (2)	32 (27)
Czechoslovak Socialist Republic . . . .		1 (-)	(1)		2 (1)					3 (2)
Tunisia . . . . .	1									1
Turkey . . . . .				1						1
U.S.S.R. . . . .	1			1	2 (-)					4 (2)
Yugoslavia (Fed. Soc. Rep. of) . . .			1							1
	9	5 (4)	10 (11)	19 (18)	39 (34)	24 (21)	14 (10)	3	7	130 (117)

(Wherever changes have taken place the figure for 1969 appears between brackets)

TABLE 5

*Geographical distribution on 31 December 1970*

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

Country	D.1	P.4	P.3	P.2	P.1	Total
Brazil . . . . .			1 (-)			1 (-)
Korea (Rep. of) . . . . .				1		1
Ethiopia . . . . .			1 (-)			1 (-)
France . . . . .		1	1	1		3
Greece . . . . .			1			1
Haiti (Rep. of) . . . . .			- (1)			- (1)
Italy . . . . .		1 (-)	- (1)	1		2
Japan . . . . .			2 (1)			2 (1)
Morocco (Kingdom of) . . . . .		(1)				(1)
Norway . . . . .			(1)			(1)
Netherlands (Kingdom of the) . . . . .		1 (-)				1 (-)
Fed. Rep. of Germany . . . . .			1			1
United Kingdom of Great Britain and Northern Ireland . . . . .		1 (-)	1			2 (1)
Sweden . . . . .	1		1			2
Switzerland (Conf. of) . . . . .			1		- (1)	1 (2)
U.S.S.R. . . . .		- (1)	1 (-)			1
Yugoslavia (Fed. Soc. Rep. of) . . . . .		1				1
	1	5 (4)	11 (10)	3	- (1)	20 (19)

(Wherever changes have taken place the figure for 1969 appears between brackets.)

TABLE 6

*Geographical distribution on 31 December 1970*

(Experts whose salary is paid from the Technical Cooperation budget)

Country	P.1	P.2	P.3	P.4	P.5	P.6	Total
Argentina (Rep.) . . . . .				- (1)	3 (2)		3 (3)
Australia (Commonwealth of) . . . . .				4 (4)	4 (1)	1 (1)	9 (6)
Belgium . . . . .				3 (1)	1 (1)		4 (2)
Canada . . . . .				2 (2)	3 (2)		5 (4)
Cuba . . . . .				1 (-)			1 (-)
China (Taiwan) . . . . .					1 (-)		1 (-)
Dahomey . . . . .			- (1)		1 (1)		1 (2)
Denmark . . . . .	- (1)			1 (-)			1 (1)
Spain . . . . .				1 (1)			1 (1)
United States of America . . . . .				2 (1)	4 (6)		6 (7)
Ethiopia . . . . .				- (1)			- (1)
France . . . . .		1 (1)	2 (2)	20 (19)	1 (2)	3 (3)	27 (27)
Guyana . . . . .				1 (1)			1 (1)
India (Republic of) . . . . .		1 (1)		6 (5)	6 (4)	1 (1)	14 (11)
Ireland . . . . .				3 (2)	2 (2)		5 (4)
Italy . . . . .			1 (1)	1 (1)	- (1)		2 (3)
Japan . . . . .				6 (6)	2 (2)	1 (1)	9 (9)
Morocco . . . . .						1 (-)	1 (-)
Norway . . . . .				1 (1)	3 (1)		4 (2)
New Zealand . . . . .			- (1)	3 (-)			3 (1)
Pakistan . . . . .				3 (3)	3 (1)		6 (4)
Netherlands (Kingdom of the) . . . . .	1 (1)	1 (2)		2 (2)	2 (2)		6 (7)
Peru . . . . .					1 (1)		1 (1)
Poland (People's Republic of) . . . . .				1 (1)			1 (1)
United Arab Republic . . . . .				2 (3)			2 (3)
Federal Republic of Germany . . . . .				7 (10)	5 (2)		12 (12)
United Kingdom of Great Britain and Northern Ireland . . . . .			1 (1)	11 (12)	12 (10)	2 (2)	26 (25)
Sweden . . . . .	2 (9)	2 (-)	- (2)	5 (5)	1 (2)	1 (1)	11 (19)
Switzerland (Confederation of) . . . . .				2 (4)	1 (-)		3 (4)
Czechoslovakia Socialist Republic . . . . .				1 (-)			1 (-)
U.S.S.R. . . . .				1 (1)	2 (2)		3 (3)
Uruguay . . . . .					1 (1)		1 (1)
	3 (11)	5 (4)	4 (8)	90 (87)	59 (46)	10 (9)	171 (165)

(The figure for 1969 appears between brackets)

## 6.2 FINANCIAL MATTERS

In accordance with Article 10, number 146, of the Montreux Convention (1965) 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 and approved by the Administrative Council, it is sent to the Members and Associate Members of the Union. Nevertheless, to give an idea of the credits allocated to the different activities of the Union, the budget for 1970 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 (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 plenary conferences, world administrative conferences and all meetings of the International Consultative Committees.

Additional Protocol I to the Montreux Convention (1965) fixes the limits within which the Administrative Council is authorized to establish the annual budgets of the Union. The limits for 1970 are 19,955,000 Swiss francs for recurrent expenditure and 1,555,000 Swiss francs for the expenses of conferences and meetings. However, paragraph 5 of this Additional Protocol authorizes 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 foreseen for a future year.

At its 24th Session, 1969, by Resolution No. 641, the Administrative Council approved the budget for 1970 amounting to:

23,268,700 Sw. frs. for recurrent expenditure, of which

19,914,700 Sw. frs. are within the limit of expenditure,  
3,354,000 Sw. frs. are outside the limit;

2,742,000 Sw. frs. for conferences and meetings, of which

440,200 Sw. frs. are within the limit of expenditure,  
111,500 Sw. frs. are outside the limit, and  
2,190,300 Sw. frs. are covered by credits accrued from the years 1966 to 1969;

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;

3,918,300 Sw. frs. for the special account for Technical Cooperation administrative expenses;

3,629,620 Sw. frs. for the supplementary publications budget; and

4,466,910 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 1970 at 47,800 Swiss francs on the basis of the classification 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 474 units.

Finally, in accordance with Article 16, number 230, of the Montreux Convention (1965), the Administrative Council fixed a figure of 7,500 Swiss francs as the annual unit of contribution in 1970 towards defraying the expenses of meetings of the C.C.I.R. and the C.C.I.T.T. payable by the recognized private operating agencies, scientific or industrial organizations and those international organizations not exempt by virtue of Administrative Council Resolution No. 574.

At its 25th Session, by Resolution No. 672, the Administrative Council authorized additional credits for the 1970 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 expenditure on C.C.I.T.T. Study Groups.

Under this Resolution the budget for 1970 was finally fixed at the following amounts:

23,653,700 Sw. frs. for recurrent expenditure, of which

19,954,700 Sw. frs. are within the limit of expenditure  
3,699,000 Sw. frs. are outside the limit;

3,039,000 Sw. frs. for the expenses of conferences and meetings, of which

429,700 Sw. frs. are within the limit of expenditure,  
220,000 Sw. frs. are outside the limit, and  
2,389,300 Sw. frs. are covered by credits accrued from the years 1966 to 1969;

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;

3,995,800 Sw. frs. for the special account for Technical Cooperation administrative expenses;

3,629,620 Sw. frs. for the supplementary publications budget; and

4,466,910 Sw. frs. for the supplementary budget for the construction of a new wing for the I.T.U. building.

By its Resolution No. 647, the Administrative Council instructed the Secretary-General to introduce changes in the basic salary scale of staff in the General Service category, as and when these changes are put into force by the United Nations for the staff of the United Nations Office at Geneva. Since that salary scale was changed by the United Nations and the specialized agencies in Geneva as from 1 October 1970, the salary scale of staff in the General Service category in the I.T.U. was accordingly changed on the same date.

This measure has led to an increase of 90,000 Swiss francs in the budget of the Union and of 15,500 Swiss francs in the Technical Cooperation Special Accounts Budget. The recurrent expenditure for these two budgets was thus increased to 23,743,700 Swiss francs and 4,011,300 Swiss francs, respectively.

At its 25th Session, by Resolution No. 677, the Administrative Council also approved the 1971 budget for the following amounts:

23,706,500 Sw. frs. for recurrent expenditure;

3,820,000 Sw. frs. for conferences and meetings, including seminars;

10,000 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 equipment and sound recording equipment and by the C.C.I.T.T. Reserve Account;  
4,167,300 Sw. frs. for Technical Cooperation administrative expenses; and  
3,694,000 Sw. frs. for the supplementary publications budget.

By the same Resolution, the Administrative Council fixed the amount of the contributory unit for 1971 at 55,000 Swiss francs on the basis of the classification chosen by Members and Associate Members in accordance with numbers 212 and 213 of the Montreux Convention (1965), i.e. on the basis of a total of 475 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. at 7,500 Swiss francs in 1971, for recognized private operating agencies, scientific or industrial organizations and those international organizations not exempted by virtue of Administrative Council Resolution No. 574.

*Classification of the Members and Associate Members of the Union for the apportionment of Union expenditure in 1970*

At the end of 1969, the Union had 137 Members contributing on the basis of a total of 474½ units. It had no Associate Members. At that date one of the Members had not informed the I.T.U. of the class in which it wished to contribute.

During 1970, this Member declared that it wished to contribute in the ½ unit class.

As a result of the accession of two Members in 1970, the I.T.U. had 139 Members on 31 December 1970, contributing on a basis of 476 units to the expenditure of the Union.

*Cash resources*

The liquid assets position of the Union continued to be satisfactory in 1970, so that no advance from the Government of the Swiss Confederation was required and it was possible to continue making short-term investments practically throughout the year. It was also possible to cover part of the expenses of the construction of the new wing for the I.T.U. building from the Union's liquid assets.

*Contributions in arrear*

Total amounts in arrear at 31 December 1969 for the years 1968, 1969 and 1970 were:

31 December 1968 . . . . .	8,447,620.19 Swiss francs
31 December 1969 . . . . .	7,395,802.63 Swiss francs
31 December 1970 . . . . .	9,383,605.28 Swiss francs

It will be seen that the amount due has increased, by 1.987.802,65 Swiss francs.

Annex 7 to this report shows the situation of the main debtors to the Union at 31 December 1970.

*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 I.T.U. staff members among the various funds on 31 December 1970.

	Working staff	Retired staff	Widows' pensions	Orphans' pensions
Provident Fund . . . . .	5	18	4	—
Reserve and Complement Fund . . . . .	—	11	3	3
United Nations Joint Staff Pension Fund				
Union staff . . . . .	467	24	9	10
Technical Cooperation experts . . . . .	161	4	3	4
	<hr/>	<hr/>	<hr/>	<hr/>
Total . . . . .	633	57	19	17

The Management Report of the I.T.U. S.S. & B. Funds, which constitutes the second part of the Financial Operating Report for 1970, gives full information on the activities of the Management Board of these Funds.

## **7. RELATIONS WITH THE UNITED NATIONS AND OTHER INTERNATIONAL ORGANIZATIONS**

### **UNITED NATIONS**

During 1970 the I.T.U. has been represented, within the limits of available resources at meetings of the United Nations when matters of common interest were under discussion. As in the past, the work of the Economic and Social Council and its two Committees was closely followed during the summer session which is held in Geneva.

The I.T.U. also continued to participate in the work of the Administrative Committee on Coordination and to cooperate with the Advisory Committee on Administrative and Budgetary Questions, the Consultative Committee on Administrative Questions, the International Civil Service Advisory Board, the Consultative Committee on Public Information and the Computer Users' Committee. I.T.U. officials attended the inaugural meeting of the Inter-Organization Board for Information Systems and Related Activities, established by the Economic and Social Council, and which now replaces the Computer Users' Committee.

In accordance with Administrative Council Resolution No. 636, the I.T.U. continued to pay special attention to meetings dealing with the peaceful uses of outer space and in 1970 was represented at meetings and contributed information from the telecommunication view-point of the Legal Sub-Committee and the Scientific and Technical Sub-Committee of the United Nations Committee on the Peaceful Uses of Outer Space and also at a meeting of the Working Group set up by that Committee to study the technical feasibility and other problems associated with the possibility of communication by direct broadcast from satellites.

Pursuant to General Assembly Resolution 2130 (XX), the 9th Report on Telecommunication and the Peaceful Uses of Outer Space was presented to the Economic and Social Council and to the United Nations Committee on the Peaceful Uses of Outer Space.

During 1970 officials from I.T.U. Headquarters attended meetings of the United Nations Industrial Development Organization of the United Nations Institute for Training and Research and of the Executive Committee of the Programme of the United Nations High Commissioner for Refugees.

Every effort has been made to collaborate with the Joint Inspection Unit, to provide information requested by the Inspectors and to follow their recommendations. The following reports containing references to I.T.U. activities were issued by the Unit in 1970:

- Observations on the work of the I.T.U. in Colombia
- A report on United Nations activities and operations in Nepal
- A report on activities of the United Nations family of organizations in some Central American countries
- Observations on the work of the I.T.U. in Madagascar.

The first of these reports was submitted to the Administrative Council at its 25th Session; the others will be submitted during the 26th Session.

## REGIONAL ORGANIZATIONS

Relations with regional organizations have continued to improve during the year and there is a more regular exchange of information of mutual interest between the I.T.U. and these organizations.

### *Africa*

“ In the interests of efficiency, Africa was divided into three sub-regions and one regional expert was stationed in each. Thus the three regional experts who had hitherto made up the ITU/ECA team were stationed in Addis Ababa, Yaoundé and Dakar. The regional expert in Addis Ababa was made responsible for liaison with the OAU and the ECA. ”

Both the E.C.A. and the O.A.U. have been kept fully informed with respect to the Union's Technical Cooperation activities in Africa and officials of the I.T.U. participated in the 15th Ordinary Session of the Council of Ministers of the O.A.U. in June 1970. A meeting of Heads of States immediately following this session adopted an important resolution urging all members to give priority to the African telecommunications network.

The pre-investment survey project for the Pan-African telecommunications network commenced a new phase in April 1970 when officials of the E.C.A., the I.T.U. and the United Nations Development Programme exchanged views on the implementation of this project at a Coordination Committee meeting held in Abidjan.

Relations with other regional organizations in Africa have also been extended. The Secretary-General attended a meeting of Experts and Ministers of the African and Malagasy Postal and Telecommunications Union (U.A.M.P.T.) in June 1970 where an important project for the study of regional tariff questions in Africa was developed. He also attended the General Assembly of the Union of National Radio and Television Organizations of Africa (U.R.T.N.A.) in Rabat.

### *Asia and the Far East*

As in previous years there has been a very close and successful cooperation between the Economic Commission for Asia and the Far East (E.C.A.F.E.) and I.T.U. Three I.T.U. experts attached to the E.C.A.F.E. Headquarters in Bangkok have assisted in matters concerning telecommunications in the region. Representatives from I.T.U. Headquarters also participated actively in the meetings of the Transport and Communications Committee and the Telecommunication Sub-Committee of E.C.A.F.E. The three experts have followed up the recommendations of these Committees. They have also assisted the countries in the E.C.A.F.E. region in projects such as fundamental planning, economic and tariff studies, surveys with regard to organization and training and prepared requests for U.N.D.P. assisted projects.

The Plan of Operation for the U.N.D.P. assisted Feasibility Study for the Asian Telecommunications Network project was signed by 12 participating countries at the meeting of the Transport and Communications Committee of E.C.A.F.E. in April 1970. The Project Manager and the experts, who have their headquarters at the E.C.A.F.E. offices in Bangkok, have completed two of the five projected surveys.

Officials of the Union also participated in the meetings of the E.C.A.F.E. Committee for Coordination of Investigations of the Lower Mekong Basin and the Meeting of Experts on Tropical Cyclones in the Bay of Bengal and the Arabian Sea and representatives from the Asian Development Bank have received information concerning telecommunications within the region.

The Headquarters of the Union were represented at the General Assembly and at a meeting of the Engineering Committee of the Asian Broadcasting Union (A.B.U.). The possibility of establishing a broadcasting training centre for Asia has also been discussed with the A.B.U., the U.N.D.P. and UNESCO.

### *Latin America*

The Headquarters of the Union maintained contact with the Economic Commission for Latin America through one of the I.T.U. regional experts stationed in the area.

Special mention should also be made of the excellent relations which have been established between the I.T.U. and the Organization of American States and in particular its Inter-American Telecommunication Committee (CITEL).

The three I.T.U. regional experts in Latin America have cooperated closely with the President and the three Coordinators of that Committee, a cooperation which was particularly important in the implementation of the pre-investment study for the Inter-American Telecommunication Network. This project, executed by the Inter-American Development Bank in association with the I.T.U. and the financial assistance of the U.N.D.P., made considerable progress in 1970. The Bank engaged three consulting firms to undertake the technical-economic feasibility studies provided for in the project.

The three I.T.U. regional experts and a project officer from Headquarters attended the Fifth Annual Meeting of CITEL in July 1970. Among the resolutions adopted at that meeting was one requesting the I.T.U. to organize a seminar in Latin America in 1971 which would deal with various aspects relating to the management of the radio frequency spectrum.

### *Europe*

There is less call for cooperation between the I.T.U. and the Economic Commission for Europe than with the Commissions in other regions. In 1970 however, officials from I.T.U. Headquarters attended an E.C.E. meeting of Government Officials Responsible for Standardization Policies.

Close coordination exists between the Secretariats of the I.T.U. and the Council of Europe and an official from Headquarters was designated to attend meetings of the Steering Committee set up to direct a study by a group of experts of the Council of Europe on requirements of European Higher Education for Communication Satellite Services.

The work of the European Conference of Posts and Telecommunications (C.E.P.T.) is followed with interest and the Headquarters were represented at the 6th Ordinary Session in August 1970.

## SPECIALIZED AGENCIES

The I.T.U. continued to maintain close relations with the agencies which have a special interest in telecommunications, i.e. the United Nations Educational, Scientific and Cultural Organization (UNESCO), the International Civil Aviation Organization (I.C.A.O.), the World Meteorological Organization (W.M.O.) and the Inter-Governmental Maritime Consultative Organization (I.M.C.O.).

I.T.U. Headquarters were represented at meetings of the UNESCO General Conference, of the Advisory Panel of Experts on Space Communications and of the International Oceanographic Commission (I.O.C.) of UNESCO and have continued to collaborate with the Joint I.O.C./W.M.O. Group of Experts on Telecommunications.

As regards I.C.A.O., I.T.U. Headquarters were represented at the 5th North Atlantic Regional Air Navigation Meeting and at the 3rd Meeting of the Panel on " Application of Space Techniques relating to Aviation " (ASTRA), set up by the Air Navigation Commission of I.C.A.O.

An official was designated to follow the work of the W.M.O. Working Group on Observation Network at Sea and on Maritime Telecommunications, and attended the first Session of the Group which was held in May 1970. The Headquarters of the Union were also represented at the 5th Session of the Commission for Synoptic Meteorology.

As in the past, the work of the Maritime Safety Committee of I.M.C.O. and its Sub-Committee on Radiocommunications, was closely followed.

Furthermore, since postal and telecommunication services are assured in a large number of countries by the same administration, every effort is made to collaborate with the Universal Postal Union (U.P.U.) with a view to finding a solution to common problems. It was for this reason that an I.T.U. official attended the 1970 annual session of the Executive Council of the U.P.U. during the discussion on the problem of settlement of accounts.

#### RELATIONS WITH OTHER INTERNATIONAL ORGANIZATIONS

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

Arab Telecommunication Union

Committee on Space Research (COSPAR)

Danube Commission

European Broadcasting Union (E.B.U.)

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

International Astronautical Federation (I.A.F.)

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

International Council of Scientific Unions (I.C.S.U.)

International Electrotechnical Commission (I.E.C.)

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

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

International Scientific Radio Union (U.R.S.I.)

International Special Committee on Radio Interference (C.I.S.P.R.)

Inter-Union Commission on Allocation of Frequencies for Radioastronomy and Space Science (I.U.C.A.F.)

\* \* \*

A list of meetings of the United Nations and other international organizations in which officials of the Union participated in 1970 appears in Annex 5 to this report.

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ANNEX 1

**POSITION ON 31 DECEMBER 1970  
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, 1954);
- 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.5. *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 ultra high-frequency Range (Band IV, 472-582 Mc/s and Band V, 582-960 Mc/s) in the Frontier Areas (Karlsruhe, 1966);
- Special Agreements Concerning the Coordinated Use of Frequencies between 29.7 and 470 Mc/s by the Fixed and Land Mobile Services (Vienna, 1969 and 1970).

POSITION ON

31 DECEMBER, 1970

[illegible]

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

Table I.

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 rati- fication or accession was deposited with the General Secretariat	Opt. Add. Protocol **	Date on which the instrument of rati- fication or accession was deposited with the General Secretariat
1	2	3	4	5	6
Cyprus (Republic of) . . . . .	½	S <sup>1)</sup>		S	
Vatican City State . . . . .	½	S	6. IV. 1968	S	
Colombia (Republic of) . . . . .	3	S <sup>1)</sup>		—	
Congo (Democratic Republic of the) . .	1	S <sup>1)</sup>		S	
Congo (People's Republic of the) <sup>48)</sup> . .	½	S <sup>1)</sup>	21. XII. 1966	S	24. I. 1969
Korea (Republic of) . . . . .	1	S <sup>1)</sup>	14. III. 1967	S	14. III. 1967
Costa Rica . . . . .	½	S <sup>1)</sup>		S	
Ivory Coast (Republic of the) . . . . .	1	S <sup>1)</sup>	15. I. 1968	S	
Cuba . . . . .	1	S <sup>1)</sup>	12. II. 1969	—	
Dahomey (Republic of) . . . . .	½	S <sup>1)</sup>	10. XI. 1967	—	
Denmark . . . . .	5	S <sup>1)</sup>	9. XI. 1966	A	9. XI. 1966
Dominican Republic . . . . .	3	A	20. III. 1968	—	
El Salvador (Republic of) . . . . .	3	—		—	
Group of Territories represented by the French Overseas Post and Telecom- munication Agency <sup>33)</sup> . . . . .	1	S	29. V. 1967	S	
Ecuador . . . . .	1	S <sup>1)</sup>	10. X. 1969	—	
Spain . . . . .	3	S <sup>1)</sup>	6. VI. 1967	—	
United States of America . . . . .	30	S <sup>1)</sup>	29. V. 1967 <sup>2)</sup>	—	
Ethiopia . . . . .	1	S <sup>1)</sup>	29. VII. 1967	—	
Finland . . . . .	3	S <sup>1)</sup>	3. II. 1967	S	22. VI. 1967
France . . . . .	30	S	29. V. 1967	—	
Gabon Republic . . . . .	½	S <sup>1)</sup>		S	
Ghana . . . . .	1	S <sup>1)</sup>		S	
Greece . . . . .	1	S <sup>1)</sup>	26. VII. 1968	S	26. VII. 1968
Guatemala . . . . .	1	S <sup>1)</sup>		S	
Guinea (Republic of) . . . . .	½	S <sup>1)</sup>	3. X. 1966	—	

\*) Convention, Final Protocol, Additional Protocols.

\*\*) Optional Additional Protocol on the Compulsory Settlement of Disputes.

Convention, Regulations (cont.)

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	S	A	—		S		—	A	S		—	A	—	A
S	A	S	A	—	A <sup>4)</sup>	—	A	S	A	—	A	—	A	—	A
S		S		S		S		S		S		S		S	
—	A <sup>4)</sup>	S	A	S		—		—	A <sup>4)</sup>	—		—	A <sup>4)</sup>	—	A <sup>4)</sup>
—	A	—	A <sup>4)</sup>	—		—	A	—	A	—	A	—	A <sup>4)</sup>	—	A <sup>4)</sup>
S	A	S	A	—	A	S	A	S	A	S	A	S	A	S	A
S		—		—		—		S		—		—		—	
—	A <sup>30)</sup>	—	A	—	A <sup>4)</sup>	S		—	A	S		—	A <sup>4)</sup>	—	A <sup>4)</sup>
S	<sup>1)</sup>	S	<sup>1)</sup>	S	<sup>1)</sup>	S	<sup>1)</sup>	S	<sup>1)</sup>	—	<sup>1)</sup>	—	<sup>1)</sup>	—	<sup>1)</sup>
—	A	—	A	—	A <sup>4)</sup>	—		—	A	—		—	A <sup>4)</sup>	—	A <sup>4)</sup>
S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A
S	A <sup>4)</sup>	—	A <sup>4)</sup>	—	A <sup>4)</sup>	—		S	A <sup>4)</sup>	—		—	A	—	A
S		—		—		—		S	<sup>5)</sup>	—	<sup>5)</sup>	S		S	<sup>5)</sup>
S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A
—	A <sup>4)</sup>	—	A <sup>4)</sup>	—	A <sup>4)</sup>	—	A <sup>4)</sup>	—	A <sup>4)</sup>	—	A <sup>4)</sup>	—	A <sup>4)</sup>	—	A <sup>4)</sup>
S	A <sup>3)</sup>	S	A	S	A	S	A	S	A	S	A	S	A	S	A
S	A <sup>25)</sup>	S	A	S	A	S	A	—	<sup>1)</sup>	—	<sup>1)</sup>	S	A <sup>23)</sup>	—	<sup>1)</sup>
S	A	S	A	S	A <sup>4)</sup>	S		S	A	S		S	A	S	A
S	A	S	A	—		S	A	S	A	S	A	S	A	S	A
S	A	S	A	S	A	S	A	S	A	S	A	S	A <sup>3)</sup>	S	A
—	A	—	A	—		—		—	A	—		—	A <sup>4)</sup>	—	A <sup>4)</sup>
S	A	S	A	S		S		S	A	S		—	A	—	A
S	A	S	A	—	A <sup>4)</sup>	S		S	A	S		S	A	S	A
—	A <sup>31)</sup>	—		—		—		—	A	—		—	A	—	A
—	A <sup>4)</sup>	—	A	—	A	—	A	—	A <sup>4)</sup>	—	A	—	A <sup>4)</sup>	—	A <sup>4)</sup>

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 rati- fication or accession was deposited with the General Secretariat	Opt. Add. Protocol**	Date on which the instrument of rati- fication or accession was deposited with the General Secretariat
1	2	3	4	5	6
Equatorial Guinea (Republic of) . . . . .	½	A	2. VII. 1970	—	
Guyana . . . . .	½	A	8. III. 1967	—	
Haiti (Republic of) . . . . .	1	S		S	
Upper Volta (Republic of) . . . . .	½	S <sup>1)</sup>	5. IV. 1968	—	
Honduras (Republic of) . . . . .	½	—		—	
Hungarian People's Republic . . . . .	1	S <sup>1)</sup>	20. I. 1969 <sup>39)</sup>	—	
India (Republic of) . . . . .	13	S <sup>1)</sup>	1. XII. 1967	—	
Indonesia (Republic of) . . . . .	1	S <sup>1)</sup>	12. I. 1970 <sup>40)</sup>	—	
Iran . . . . .	1	S <sup>1)</sup>	11. II. 1969	—	
Iraq (Republic of) . . . . .	1	S <sup>1)</sup>	15. VII. 1969 <sup>2)</sup>	—	
Ireland . . . . .	3	S	17. V. 1967	—	
Iceland . . . . .	½	S <sup>1)</sup>	8. III. 1967	—	
Israel (State of) . . . . .	1	S <sup>1)</sup>	20. III. 1968	—	
Italy . . . . .	10	S <sup>1)</sup>	28. X. 1968	—	
Jamaica . . . . .	1	S <sup>1)</sup>	2. IV. 1969 <sup>2)</sup>	—	
Japan . . . . .	20	S	30. VIII. 1967	S	30. VIII. 1967
Jordan (Hashemite Kingdom of) . . . . .	½	S <sup>1)</sup>	1. III. 1967	—	
Kenya . . . . .	½	S <sup>1)</sup>	25. X. 1968	—	
Khmer Republic <sup>50)</sup> . . . . .	1	A	13. IX. 1968	—	
Kuwait (State of) . . . . .	1	S <sup>1)</sup>	11. IV. 1968 <sup>2)</sup>	—	
Laos (Kingdom of) . . . . .	½	S	27. IX. 1967	—	
Lesotho (Kingdom of) . . . . .	½	A	26. V. 1967	—	
Lebanon . . . . .	1	S <sup>1)</sup>	10. I. 1967	—	
Liberia (Republic of) . . . . .	1	S <sup>1)</sup>		—	
Libyan Arab Republic <sup>44)</sup> . . . . .	½	A	15. VIII. 1968	—	
Liechtenstein (Principality of) . . . . .	½	S <sup>1)</sup>	12. XII. 1967	S	12. XII. 1967

\*) Convention, Final Protocol, Additional Protocols.

\*\*) Optional Additional Protocol on the Compulsory Settlement of Disputes.

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 <sup>4)</sup>	—	A <sup>4)</sup>	—	A <sup>4)</sup>	—	A <sup>4)</sup>	—	A <sup>4)</sup>	—	A <sup>4)</sup>	—	A <sup>4)</sup>	—	A <sup>4)</sup>
—	A <sup>4)</sup>	—	A <sup>4)</sup>	—	A	S	A	—	A <sup>4)</sup>	S	A	—	A <sup>4)</sup>	—	A <sup>4)</sup>
—	—	—	—	—	—	—	—	—	—	—	—	—	A <sup>4)</sup>	—	A <sup>4)</sup>
—	A <sup>4)</sup>	—	A	—	A <sup>4)</sup>	—	A	—	A <sup>4)</sup>	—	A	—	A <sup>4)</sup>	—	A <sup>4)</sup>
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
S	A <sup>4)</sup> 39)	S	A <sup>4)</sup>	S	A <sup>4)</sup> 42)	S	A	S	A <sup>4)</sup>	S	A	S	A	S	A
S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A <sup>26)</sup>
S	A	S	A <sup>4)</sup>	S	A <sup>4)</sup>	S	A <sup>4)</sup>	S	A	S	A <sup>4)</sup>	S	A	S	A
S	A	—	A <sup>4)</sup>	—	A <sup>4)</sup>	—	—	S	A	—	—	S	A	S	A
S	A <sup>4)</sup>	—	A <sup>4)</sup>	—	A <sup>4)</sup>	—	A <sup>4)</sup>	S	A <sup>4)</sup>	—	A <sup>4)</sup>	—	A <sup>4)</sup>	—	A <sup>4)</sup>
S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A
S	A	S	A	—	A	S	A	S	A	S	A	S	A	S	A
S	A	S	A	—	A <sup>4)</sup>	S	—	S	A	S	—	S	A	S	A
S	A <sup>21)</sup>	S	A	S	A	S	—	S	A <sup>21)</sup>	S	—	S	A <sup>21)</sup>	S	A <sup>21)</sup>
—	A <sup>4)</sup>	S	A <sup>20)</sup>	S	A <sup>4)</sup>	S	A <sup>4)</sup>	—	A <sup>4)</sup>	S	A <sup>4)</sup>	—	A <sup>4)</sup>	—	A <sup>4)</sup>
S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A
S	A	—	A <sup>4)</sup>	—	—	S	—	S	A	S	—	S	A	S	A
—	A <sup>4)</sup>	—	A	—	A	—	A	—	A <sup>4)</sup>	—	A	—	A <sup>4)</sup>	—	A <sup>4)</sup>
S	A	S	A	—	A <sup>4)</sup>	—	—	S	A	—	—	—	A	—	A
S	A	S	A	S	A <sup>4)</sup>	S	A	S	A	S	A	—	A	—	A
—	A	—	A	—	A <sup>4)</sup>	—	A	—	A	—	A	—	A	—	A
—	A <sup>4)</sup>	—	A <sup>4)</sup>	—	—	—	—	—	A <sup>4)</sup>	—	—	—	A <sup>4)</sup>	—	A <sup>4)</sup>
S	A	S	A	—	—	—	—	S	A	—	—	S	A	S	A
—	A	S	—	—	—	S	—	—	A	S	—	—	A	—	A
S	A <sup>4)</sup>	—	A <sup>4)</sup>	—	A <sup>4)</sup>	—	—	S	A <sup>4)</sup>	—	—	S	A <sup>4)</sup>	S	A <sup>4)</sup>
—	A <sup>4)</sup>	S	A <sup>4)</sup>	—	A <sup>4)</sup>	—	—	—	A <sup>4)</sup>	—	—	—	A <sup>4)</sup>	—	A <sup>4)</sup>

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 ratifi- cation or accession was deposited with the General Secretariat	Opt. Add. Protocol**	Date on which the instrument of ratifi- cation or accession was deposited with the General Secretariat
1	2	3	4	5	6
Luxembourg . . . . .	½	S <sup>1)</sup>	31. XII. 1968	S	31. XII. 1968
Malaysia . . . . .	3	S <sup>1)</sup>	6. IX. 1968	—	
Malawi . . . . .	½	S <sup>1)</sup>	17. I. 1969	A	16. XII. 1966
Maldives (Republic of) <sup>15)</sup> . . . . .	½	A	28. II. 1967	—	
Malagasy Republic . . . . .	1	S <sup>1)</sup>	18. VIII. 1967	S	30. IX. 1970
Mali (Republic of) . . . . .	½	S <sup>1)</sup>	14. III. 1968	—	
Malta . . . . .	½	S <sup>1)</sup>	9. V. 1969	S	9. V. 1969
Morocco (Kingdom of) . . . . .	1	S <sup>1)</sup>	17. X. 1968	—	
Mauritius . . . . .	½	A	30. VII. 1969	—	
Mauritania (Islamic Republic of) . . . . .	½	S <sup>1)</sup>	13. VIII. 1969	S	13. VIII. 1969
Mexico . . . . .	5	S <sup>1)</sup>	2. XI. 1967	S	
Monaco . . . . .	½	S	22. IV. 1969	S	
Mongolian People's Republic . . . . .	½	S <sup>1)</sup>		S	
Nauru (Republic of) . . . . .	½	A	10. VI. 1969	—	
Nepal . . . . .	½	S <sup>1)</sup>	1. VII. 1967 <sup>2)</sup>	—	
Nicaragua . . . . .	1	S <sup>1)</sup>	30. I. 1969	S	
Niger (Republic of the) . . . . .	½	S <sup>1)</sup>	22. VI. 1967	—	
Nigeria (Federal Republic of) . . . . .	2	S <sup>1)</sup>	21. I. 1967	—	
Norway . . . . .	5	S <sup>1)</sup>	13. IX. 1968	A	13. IX. 1968
New Zealand . . . . .	5	S <sup>1)</sup>	13. IV. 1967 <sup>14)</sup>	A	18. VIII. 1969
Uganda . . . . .	½	S <sup>1)</sup>	1. IV. 1967	—	
Pakistan . . . . .	3	S <sup>1)</sup>	1. VI. 1967 <sup>2)</sup>	—	
Panama . . . . .	½	S <sup>1)</sup>		S	
Paraguay . . . . .	1	S <sup>1)</sup>	8. IX. 1967	S	31. V. 1968
Netherlands (Kingdom of the) . . . . .	8	S <sup>1)</sup>	27. XII. 1966 <sup>19)</sup>	S	
Peru . . . . .	2	S <sup>1)</sup>	1. III. 1967	—	

\*) Convention, Final Protocol, Additional Protocols.

\*\*) Optional Additional Protocol on the Compulsory Settlement of Disputes.

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
S	A	S	A	S	A	—	A	S	A	—	A	S	A <sup>3)</sup>	S	A
S	A	S	A	S	A	S	A <sup>3)</sup>	S	A	S	A <sup>3)</sup>	S	A	S	A
—	A <sup>4)</sup>	—	A	—	A <sup>4)</sup>	—		—	A <sup>4)</sup>	—		—	A <sup>4)</sup>	—	A <sup>4)</sup>
—	A <sup>4)</sup>	—	A <sup>4)</sup>	—		—		—	A <sup>4)</sup>	—		—	A <sup>4)</sup>	—	A <sup>4)</sup>
—	A <sup>4)</sup>	—	A	—	A	—	A	—	A <sup>4)</sup>	—	A	—	A <sup>4)</sup>	—	A <sup>4)</sup>
—	A	—	A	—	A <sup>4)</sup>	—		—	A	—		—	A <sup>4)</sup>	—	A <sup>4)</sup>
—	A <sup>4)</sup>	—	A <sup>4)</sup>	S	A <sup>4)</sup>	S	A <sup>4)</sup>	—	A <sup>4)</sup>	S	A <sup>4)</sup>	—	A <sup>4)</sup>	—	A <sup>4)</sup>
S	A <sup>3)</sup>	S	A	—	A <sup>4)</sup>	—		S	A	—		S	A	S	A
—	A <sup>4)</sup>	—	A <sup>4)</sup>	—	A <sup>4)</sup>	—	A <sup>4)</sup>	—	A <sup>4)</sup>	—	A <sup>4)</sup>	—	A <sup>4)</sup>	—	A <sup>4)</sup>
—	A <sup>4)</sup>	—	A <sup>4)</sup>	—	A <sup>4)</sup>	—	A <sup>4)</sup>	—	A <sup>4)</sup>	—	A <sup>4)</sup>	—	A <sup>4)</sup>	—	A <sup>4)</sup>
S	A	S	A	S	A <sup>4)</sup>	S		S	A	S		S	A	S	A
S	A	S	A <sup>4)</sup>	—	A <sup>4)</sup>	S	A <sup>4)</sup>	S	A	S	A <sup>4)</sup>	S	A	S	A
—	1)	—	1)	—	1)	—	1)	—	1)	—	1)	—	A <sup>4)</sup>	—	A <sup>4)</sup>
—	A <sup>4)</sup>	—	A <sup>4)</sup>	—	A <sup>4)</sup>	—	A <sup>4)</sup>	—	A <sup>4)</sup>	—	A <sup>4)</sup>	—	A <sup>4)</sup>	—	A <sup>4)</sup>
S	A	—	A <sup>4)</sup>	—	A <sup>4)</sup>	—		S	A	—		—	A	—	A
S	A <sup>4)</sup>	—	A <sup>4)</sup>	—	A <sup>4)</sup>	—		S	A <sup>4)</sup>	—		—	A <sup>4)</sup>	—	A <sup>4)</sup>
—	A	—	A <sup>4)</sup>	—	A	—	A	—	A	—	A	—	A <sup>4)</sup>	—	A <sup>4)</sup>
—	A	—	A	—		—		—	A	—		—	A <sup>4)</sup>	—	A <sup>4)</sup>
S	A	S	A <sup>4)</sup>	S	A	S		S	A	S		S	A	S	A
S	A	S	A	S	A	S	A	S	A	S	A	S	A	—	A
—	A <sup>4)</sup>	S	A	—	A	—	A	—	A <sup>4)</sup>	—	A	—	A <sup>4)</sup>	—	A <sup>4)</sup>
S	A <sup>3)</sup>	S	A <sup>3)</sup>	S	A	S	A <sup>3)</sup>	S	A	S	A <sup>3)</sup>	S	A	S	A
—	A	—		—		—		—	A	—		—	A	—	A
S	A	—	A	—	A	—	A	S	A	—	A	S	A	S	A
S	A	S	A	S	A	S	A	S	A	S	A	S	A <sup>3)</sup>	S	A
S	1)	—	1)	—	1)	—	1)	S	1)	—	1)	—	1)	—	1)

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 ratifi- cation or accession was deposited with the General Secretariat	Opt. Add. Protocol**	Date on which the instrument of ratifi- cation or accession was deposited with the General Secretariat
1	2	3	4	5	6
Philippines (Republic of the) . . . . .	1	S <sup>1)</sup>		S	
Poland (People's Republic of) . . . . .	3	S <sup>1)</sup>	17. I. 1969 <sup>2)</sup>	—	
Portugal . . . . .	3	S <sup>1)</sup>	10. IX. 1968	—	
Spanish Province in Africa <sup>4)</sup> . . . . .	1	S	6. VI. 1967	—	
Portuguese Oversea Provinces . . . . .	3	S	10. IX. 1968	—	
Syrian Arab Republic . . . . .	1	S <sup>1)</sup>	1. VI. 1968	—	
United Arab Republic . . . . .	5	S <sup>1)</sup>	12. IX. 1969	—	
Federal Republic of Germany . . . . .	20	S <sup>1)</sup>	16. XII. 1968 <sup>3)</sup>	—	
Ukrainian Soviet Socialist Republic . . . . .	3	S <sup>1)</sup>	8. VIII. 1969 <sup>2)</sup>	—	
Somali Republic . . . . .	1	S <sup>1)</sup>		—	
Rhodesia . . . . .	1	— <sup>11)</sup>	— <sup>11)</sup>	— <sup>11)</sup>	— <sup>11)</sup>
Roumania (Socialist Republic of) . . . . .	1	S <sup>1)</sup>	29. IX. 1969 <sup>4)</sup>	—	
United Kingdom of Great Britain and Northern Ireland, the Channel Islands and the Isle of Man . . . . .	30	S <sup>1)</sup>	4. I. 1967	S	4. I. 1967
Rwanda (Republic of) . . . . .	½	S <sup>1)</sup>	11. XII. 1969 <sup>4)</sup>	S	
Senegal (Republic of the) . . . . .	1	S <sup>1)</sup>	5. VI. 1967	S	12. XII. 1967
Sierra Leone . . . . .	½	S <sup>1)</sup>		—	
Singapore (Republic of) <sup>16)</sup> . . . . .	1	S <sup>1)</sup>	23. XI. 1967	A	23. XI. 1967
Sudan (Republic of the) . . . . .	1	S <sup>1)</sup>		—	
South Africa (Republic of) <sup>18)</sup> . . . . .	8	A	11. XI. 1966	—	
Sweden . . . . .	10	S <sup>1)</sup>	8. I. 1968	A	8. I. 1968
Switzerland (Confederation of) . . . . .	10	S <sup>1)</sup>	5. I. 1967	S	5. I. 1967
Swaziland (Kingdom of) . . . . .	½	A	11. XI. 1970	—	
Tanzania (United Republic of) . . . . .	½	S <sup>1)</sup>	7. X. 1967	—	
Chad (Republic of the) . . . . .	½	S <sup>1)</sup>	30. X. 1968	S	30. X. 1968

\*) Convention, Final Protocol, Additional Protocols.

\*\*) Optional Additional Protocol on the Compulsory Settlement of Disputes.

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		
S		S		—		—	A	S	1)	—	A	—	1)	—	1)		
S	1)	S	1)	S	1)	S	1)	S	1)	S	1)	S	A	S	A		
S	A	S	A	S	A <sup>4)</sup>	S		S	A	S		S	A	S	A		
—	A	S	A	—		—		—	A	—		—	A	—	A		
S	A	—	A	S	A <sup>4)</sup>	S		S	A	S		S	A	S	A		
—	A <sup>4)</sup>	—	A <sup>4)</sup>	—	A <sup>4)</sup>	—		—	A <sup>4)</sup>	—		—	A <sup>4)</sup>	—	A <sup>4)</sup>		
S	A <sup>4)</sup>	S	A <sup>4)</sup>	—	A <sup>4)</sup>	—	A <sup>4)</sup>	S	A <sup>4)</sup>	—	A <sup>4)</sup>	S	A	S	A		
S	A <sup>23)</sup>	S	A <sup>32)</sup>	S	A <sup>41)</sup>	S	A <sup>41)</sup>	S	A	S	A <sup>41)</sup>	S	A <sup>3)</sup>	S	A		
S	1)	S	A	—	A <sup>34)</sup>	—	1)	S	1)	—	1)	S	A	S	A		
—	A <sup>4)</sup>	—		—		—		—	A <sup>4)</sup>	—		—	A <sup>4)</sup>	—	A <sup>4)</sup>		
—	A	—	A	—		—		—	A	—		S	A	S	<sup>38)</sup>		
S	A <sup>4)</sup>	S	A <sup>4)</sup>	S	A <sup>4)</sup>	S	A <sup>4)</sup>	S	A <sup>4)</sup>	S	A <sup>4)</sup>	S	A	S	A		
S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A		
—	A <sup>4)</sup>	—	A	—	A	—	A	—	A <sup>4)</sup>	—	A	—	A <sup>4)</sup>	—	A <sup>4)</sup>		
—	A	—	A	—	A	S	A	—	A	S	A	—	A <sup>4)</sup>	—	A <sup>4)</sup>		
—	A <sup>4)</sup>	—	A <sup>4)</sup>	S	A <sup>3)</sup>	S	A <sup>3)</sup>	—	A <sup>4)</sup>	S	A <sup>3)</sup>	—	A <sup>4)</sup>	—	A <sup>4)</sup>		
S	A	—		—		—		S	A	—		S	A	S	A		
S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A		
S	A	S	A	S	A <sup>4)</sup>	S	A	S	A	S	A	S	A <sup>29)</sup>	S	A		
—	A <sup>4)</sup>	—	A <sup>4)</sup>	—	A <sup>4)</sup>	—	A <sup>4)</sup>	—	A <sup>4)</sup>	—	A <sup>4)</sup>	—	A <sup>4)</sup>	—	A <sup>4)</sup>		
—	A <sup>4)</sup>	S	A	—	A	—	A	—	A <sup>4)</sup>	—	A	—	A <sup>4)</sup>	—	A <sup>4)</sup>		
—	A	—	A	—	A <sup>4)</sup>	S		—	A	S		—	A <sup>4)</sup>	—	A <sup>4)</sup>		

Table I. Convention, Regulations (end)

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 ratifi- cation or accession was deposited with the General Secretariat	Opt. Add. Protocol **	Date on which the instrument of rati- fication or accession was deposited with the General Secretariat
1	2	3	4	5	6
Czechoslovak Socialist Republic . . . . .	3	S <sup>1)</sup>	3. I. 1968 <sup>2)</sup>	—	
Territories of the United States of America	25	S <sup>1)</sup>	29. V. 1967 <sup>2)</sup>	—	
Overseas Territories for the international relations of which the Government of the United Kingdom of Great Britain and Northern Ireland are responsible <sup>22)</sup>	1	S	7. III. 1968 <sup>27)</sup>	S	7. III. 1968
Thailand . . . . .	2	S <sup>1)</sup>	28. II. 1969 <sup>2)</sup>	S	
Togolese Republic . . . . .	½	S <sup>1)</sup>	8. VIII. 1967	S	
Trinidad and Tobago . . . . .	1	S <sup>1)</sup>	13. XII. 1967	S	
Tunisia . . . . .	2	S <sup>1)</sup>	1. IV. 1967	—	
Turkey . . . . .	2	S <sup>1)</sup>	29. VIII. 1968	—	
Union of Soviet Socialist Republics . . .	30	S <sup>1)</sup>	16. IV. 1969 <sup>2)</sup>	—	
Uruguay (Oriental Republic of) . . . . .	1	—	—	—	
Venezuela (Republic of) . . . . .	3	S <sup>1)</sup>	2. IV. 1969	—	
Viet-Nam (Republic of) . . . . .	1	A	15. I. 1968 <sup>35)</sup>	A	15. I. 1968 <sup>35)</sup>
Yemen . . . . .	1	—	—	—	
Southern Yemen (People's Republic of) .	½	A	15. VIII. 1968	—	
Yugoslavia (Socialist Federal Republic of) <sup>10)</sup>	1	S <sup>1)</sup>	22. XII. 1967	—	
Zambia (Republic of) . . . . .	1	S <sup>1)</sup>	13. XII. 1967	S	

\*) Convention, Final Protocol, Additional Protocols.

\*\*) Optional Additional Protocol on the Compulsory Settlement of Disputes.

<sup>1)</sup> See the statement or statements appearing in the Final Protocol annexed to the International Telecommunication Convention (Montreux, 1965).

<sup>2)</sup> In ratifying the Convention, the country concerned confirmed the reservation(s) made at the time of signature.

<sup>3)</sup> This approval was given subject to the reservation(s) made at the time of signature.

<sup>4)</sup> Regulations approved *ipso facto*, since they were in force when the country concerned acceded to the International Telecommunication Convention (Geneva, 1959) or ratified the Inter-

national Telecommunication Convention (Montreux, 1965) or acceded thereto.

<sup>5)</sup> See the statement or statements appearing in the Final Protocol annexed to the International Telecommunication Convention (Geneva, 1959).

<sup>6)-9)</sup> Formerly: Yugoslavia (Federal Socialist Republic of).

<sup>11)</sup> See Administrative Council Resolution No. 599.

<sup>12)</sup> See Notification No. 1000.

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 (1983) (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
S	1)	S	1)	S	1)	S	1)	S	1)	S	1)	S	A	S	A
—	A <sup>25)</sup>	S	A	13)	A	S	A	—	1)	—	1)	—	A <sup>23)</sup>	—	1)
S	A	S	A	S	A	—	A	S	A	—	A	—	A	—	A
S	A	—	A	S	A <sup>4)</sup>	—	—	S	A	—	—	—	A	—	A
—	A <sup>4)</sup>	—	A	—	A <sup>4)</sup>	S	—	—	A <sup>4)</sup>	S	—	—	A <sup>4)</sup>	—	A <sup>4)</sup>
—	A <sup>4)</sup>	—	A <sup>4)</sup>	—	A <sup>4)</sup>	—	—	—	A <sup>4)</sup>	—	—	—	A <sup>4)</sup>	—	A <sup>4)</sup>
S	A	—	A	—	—	S	—	S	A	S	—	S	A	S	A
S	A <sup>4)</sup>	—	A <sup>4)</sup>	—	A <sup>4)</sup>	S	—	S	A <sup>4)</sup>	S	—	S	A	S	A
S	1)	S	A	S	A <sup>34)</sup>	S	1)	S	1)	S	1)	S	A	S	A
S	—	—	—	—	—	—	—	S	—	—	—	—	—	—	—
S	A <sup>4)</sup>	—	A <sup>4)</sup>	S	A <sup>4)</sup>	S	A <sup>4)</sup>	S	A <sup>4)</sup>	S	A <sup>4)</sup>	S	A <sup>4)</sup>	S	A <sup>4)</sup>
—	A	—	A	—	A <sup>4)</sup>	S	—	—	A	S	—	S	A	S	A
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	A <sup>4)</sup>	—	A <sup>4)</sup>	—	A <sup>4)</sup>	—	—	—	A <sup>4)</sup>	—	—	—	A <sup>4)</sup>	—	A <sup>4)</sup>
S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A
—	A <sup>4)</sup>	—	A	—	A <sup>4)</sup>	—	—	—	A <sup>4)</sup>	—	—	—	A <sup>4)</sup>	—	A <sup>4)</sup>

<sup>13)</sup> The signature on behalf of the United States of America is valid also for the Territories of the United States of America.

<sup>14)</sup> 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.

<sup>15)</sup> Formerly: Maldive Islands.

<sup>16)</sup> Formerly: Singapore.

<sup>17)</sup> Formerly: Burundi (Kingdom of).

<sup>18)</sup> See Administrative Council Resolution No. 619.

<sup>19)</sup> 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.

<sup>20)</sup> 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 c)

*Other Territories*

The Bahama Islands  
Bermuda  
British Antarctic Territory (including South Orkney Islands, South Shetland Islands and Graham Land)  
British Honduras  
British Virgin Islands  
Cayman Islands  
Falkland Islands (Colony and Dependencies, including South Georgia and the South Sandwich Islands)  
Fiji b)  
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 I.T.U.  
b) Now an independent State, Member of the United Nations.  
c) Now an independent State.

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, Appendix(es) 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 Notifications Nos. 1014, 1016, 1020, 1021, 1023, 1024, 1025, 1027, 1035, 1036 and 1037.

37) See Notification No. 1004.

38) See Notification No. 834.

39) In ratifying the Convention, the Government of the Hungarian People's Republic confirmed the statements Nos. XI, XIV and XXV contained in the Final Protocol to the aforementioned Convention.

It also confirmed some of the statements appearing in the Additional Protocol to the Radio Regulations, Geneva, 1959, in the following terms:

"The Hungarian People's Republic reserves the right to use the frequency bands attributed to the "radio-location" service mentioned in Article 5 of the Radio Regulations, Geneva, 1959, in conformity with the requirements of its radio services.

The Hungarian People's Republic also reserves the right to use the frequency band 415-490 kc/s mentioned in Article 5 of the Radio Regulations, Geneva, 1959, on its territory for the aeronautical radionavigation service.

The Hungarian People's Republic accepts the use of the broadcasting schedules in the broadcasting frequency bands 5 950-26 100 kc/s mentioned in Article 5 of the Radio Regulations, Geneva, 1959, only insofar as they facilitate the preparation of the final frequency allocation plan for the bands concerned."

40) In acceding to the Convention, the Government of the People's Republic of Albania has made the following statements and reservations:

1. The Government of the People's Republic of Albania declares that the decision adopted by the Plenipotentiary Conference of the International Telecommunication Union, Montreux, 1965, to recognize the credentials of Chiang Kai-shek's representative to take part in the Conference and to sign the Final Acts on behalf of China is illegal since the only legitimate representatives of China entitled to undertake commitments on its behalf are those appointed by the Government of the People's Republic of China.

2. The Government of the People's Republic of Albania declares that it does not consider the Saigon authorities as representing the interests of the people of South Viet-Nam.

3. The Government of the People's Republic of Albania declares that it does not recognize the claims of the representatives of South Korea to speak on behalf of the whole Korean people.

4. The Government of the People's Republic of Albania declares that its accession to this Convention in no way implies recognition of the present Government of the Republic of South Africa and does not entail any obligation towards that Government.

5. The Government of the People's Republic of Albania reserves the right to accept or not to accept the Radio Regulations, in whole or in part.

6. The Government of the People's Republic of Albania reserves the right to take any measures it deems necessary to safeguard its interests should reservations made by other countries lead to an increase in its contributory share in defraying the expenses of the Union or should any Members of the Union fail to pay their share of those expenses.

41) See Notifications Nos. 1023, 1024, 1034, 1035 and 1036.

42) See Notification No. 1019.

43) In ratifying the Convention, the Government of the People's Republic of Bulgaria confirmed the reservation made when the Final Protocol was signed (No. XIII).

44) Formerly: Libya (Kingdom of).

45) The instrument was accompanied by a letter from the Ambassador Extraordinary and Plenipotentiary of the Socialist Republic of Roumania in Berne, reading as follows:

"In depositing the instrument of ratification of the International Telecommunication Convention signed at Montreux on 12 November 1965, I have the honour to make the following declaration on the instructions of my Government:

The Council of State of the Socialist Republic of Roumania considers that

a) the continuation of the dependent status of certain territories referred to in Article 20 of the Convention is not in accordance with the Declaration on the Granting of Independence to Colonial Countries and Peoples adopted by the General Assembly of the United Nations on 14 December 1960 in resolution 1514 (XV), which proclaims the necessity to put an end, rapidly and unconditionally to colonialism in all its forms and manifestations;

b) the provisions of Article 1, Nos. 6 and 7, of the Convention are not in accordance with the principle that all

States have the right to become parties to multilateral treaties governing questions of general interest.

The Government of the Socialist Republic of Roumania considers that the Federal Republic of Germany is not competent to extend to West Berlin the application of the International Telecommunication Convention signed at Montreux on 12 November 1965, because West Berlin is not a part of the territory of the Federal Republic of Germany."

46) In ratifying the Convention, the Government of the Republic of Rwanda confirmed the reservation which appears in the Final Protocol to the aforesaid Convention under No. LI and supplemented it as follows:

"The Government of the Republic of Rwanda reserves the right to take such action as it considers necessary to protect its interests, should Members or Associated Members fail to observe in any way the provisions of the International Telecommunication Convention (Montreux, 1965) or of the Annexes and Regulations, or should the reservations made by other countries jeopardize the proper operation of its telecommunication services or entail any increase in its contributory share in the defrayal of Union expenses."

47) Formerly: Spanish Provinces in Africa.

48) Formerly: Congo (Republic of the) (Brazzaville).

49) In ratifying the Convention, the Government of the Republic of Indonesia specified that it has withdrawn the part of its statement concerning the Government of the "Federation of Malaysia" which appears in paragraph 4 of statement No. XXXIII in the Final Protocol to the aforesaid Convention.

50) Formerly: Cambodia (Kingdom of).

**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	
Botswana (Republic of) . . . . .	—		—	
Burundi (Republic of) . . . . .	—		S	
Cameroon (Federal Republic of) . . . . .	S		S	
Central African Republic . . . . .	—		S	
Congo (Democratic Rep. of the) . . . . .	S		S	
Congo (People's Rep. of the) . . . . .	S		S	
Ivory Coast (Republic of the) . . . . .	S		S	
Dahomey (Republic of) . . . . .	S		S	
Group of Territories represented by the French Overseas Post and Telecomm. Agency <sup>1)</sup> . . . . .	S	A	S	
Spain . . . . .	S	A	S	
Ethiopia . . . . .	S	A	S	
France <sup>2)</sup> . . . . .	S	A	S	
Gabon Republic . . . . .	S		S	A
Ghana . . . . .	S		S	
Guinea (Republic of) . . . . .	S		S	
Equatorial Guinea (Rep. of) . . . . .	—		—	
Upper Volta (Republic of) . . . . .	S		S	
Kenya . . . . .	S	A	S	A
Lesotho (Kingdom of) . . . . .	—		—	
Liberia (Republic of) . . . . .	S		S	
Libyan Arab Republic . . . . .	S		—	
Malawi . . . . .	—		S	
Malagasy Republic . . . . .	S		S	

Country or group of territories	Broadcasting Agreement VHF/UHF (Geneva, 1963)		Broadcasting Agreement MF (Geneva, 1966)	
1	2	3	4	5
Mali (Republic of) . . . . .	S		S	
Morocco (Kingdom of) . . . . .	—		S	
Mauritius . . . . .	—		—	
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 Province in Africa . . . . .	S	A	S	
Portuguese Oversea Provinces . . . . .	S	A	S	
United Arab Republic . . . . .	—	A	S	A
Somali Republic . . . . .	S		—	
Rhodesia . . . . .	S <sup>3)</sup>	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) <sup>4)</sup> . . . . .	S	A	—	
Swaziland (Kingdom of) . . . . .	—		—	
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 U.K. of Great Britain and Northern Ireland are responsible . . . . .	S		S	A
Togolese Republic . . . . .	S		S	
Zambia (Republic of) . . . . .	—		S	A

<sup>1)</sup> With respect to French Somaliland (*new denomination: French Territory of the Afars and Issas*) and the Comoro Islands.

<sup>2)</sup> With respect to the Department of Reunion.

<sup>3)</sup> The Agreement was signed on behalf of the Federation of Rhodesia and Nyasaland.

<sup>4)</sup> 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
Argentina 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

Country or territories	Inter-American Radio Agreement (FIAR) (Washington, 1949)		North-American Regional Broadcasting Agreement (NARBA) (Washington, 1950)	
1	2	3	4	5
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 mari- time mobile radio service (Copenhagen, 1948)	Regional Arrangement relative to Maritime Radiobeacons in the Euro- pean Area of Region 1 (Paris, 1951)	Regional Agreement for Rhine Navigation (Brussels, 1957) ) 4)	Regional Agreement in the bands 68-73 Mc/s and 76- 87.5 Mc/s (Geneva, 1960) **)	Regional Agreement for the Euro- pean Broad- casting 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	R	S	R	S	A	S	A	S	A	S	A
Belgium . . . . .	S	R	—	—	—	—	—	—	S	—	S	A
Bielorussian Soviet Socialist Republic . . . . .	S	R	—	1)	—	—	—	—	S	—	S	A <sup>5)</sup>
Bulgaria (People's Republic of) . . . . .	S	R	—	—	—	—	—	—	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 <sup>2)</sup>
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	—
Libyan Arab Republic . . . . .	—	—	—	—	—	—	—	—	—	—	—	—
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 <sup>6)</sup>
Ukrainian Soviet Socialist Republic . . . . .	S	R	—	—	—	—	—	—	S	A	S	A <sup>5)</sup>
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	—	A	—	—	S	A
Sweden . . . . .	—	—	S	R	S	A	—	—	S	A	S	—
Switzerland (Confederation of) . . . . .	S	R	—	—	—	—	—	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 <sup>5)</sup>
Yugoslavia (Socialist Federal Republic of) . . . . .	S	R	—	—	—	A	—	—	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).

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

<sup>2)</sup> 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.

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

<sup>4)</sup> This Agreement was revised in December 1970. The revised Agreement will enter into force on 1 July 1971.

<sup>5)</sup> 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.

<sup>6)</sup> 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."

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## **Tables V.1 to V.5. 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 (Socialist Federal Republic of)*.

The countries mentioned in italics have approved the Agreement.

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### **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).

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**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.

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**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, Kingdom of the Netherlands and the Federal Republic of Germany.  
*This Agreement was approved without reservation by all these Administrations.*

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**V.5. Special Agreements concerning the coordinated use of frequencies  
between 29.7 and 470 Mc/s by the fixed and land mobile services**

One such Agreement was signed at Vienna on 18 July 1969 by the following Administrations: Austria, Italy, Federal Republic of Germany and Confederation of Switzerland.

*This Agreement, which was approved without reservation by these Administrations, came into force on 1 December 1969.*

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Another such Agreement was signed at Vienna on 25 April 1969 by the following Administrations: Austria, Hungarian People's Republic and Czechoslovak Socialist Republic.

*This Agreement, which was approved without reservation by these Administrations, came into force on 1 January 1970.*

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A third such Agreement was signed at Vienna on 24 October 1969 by the following Administrations: Austria and Socialist Federal Republic of Yugoslavia.

*This Agreement, which was approved without reservation by these Administrations, came into force on 1 March 1970.*

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ANNEX 2

**BUDGET FOR 1970**

# SUMMARY OF ESTIMATED EXPENDITURE FOR 1970

EXPENDITURE	Expenditure 1969	Budget 1970	Additional credits	Additional credits cf. Resolution 647	Budget 1970 including additional credits
Swiss francs					
I. BUDGET OF THE UNION					
<i>Sect. 1.</i> Administrative Council . . . . .	470,452	459,000	16,000	—	475,000
Common Headquarters expenditure:					
<i>Sect. 2.</i> Staff . . . . .	15,435,535	16,910,000	283,000	75,600	17,268,600
<i>Sect. 3.</i> Social security . . . . .	3,225,457	3,477,700	46,000	14,400	3,538,100
<i>Sect. 4.</i> Premises . . . . .	1,155,775	1,192,000	40,000	—	1,232,000
<i>Sect. 5.</i> Missions . . . . .	143,049	143,000	—	—	143,000
<i>Sect. 6.</i> Office and misc. expenses . . . . .	1,091,457	1,087,000	—	—	1,087,000
	21,521,725	23,268,700	385,000	90,000	23,743,700
<i>Sect. 7.</i> I.T.U. conference under No. 208 of the Convention:					
Nil . . . . .	—	—	—	—	—
<i>Sect. 8.</i> C.C.I. meetings under No. 209 of the Convention:					
C.C.I.R. . . . .	1,701,693	980,000	—60,000	—	920,000
C.C.I.T.T. . . . .	444,635	1,700,000	342,000	—	2,042,000
<i>Sect. 10.</i> Other expenditure:					
Prep. of a draft Const. Charter . . . . .	101,414	—	—	—	—
I.T.U. Seminar . . . . .	50,308	32,000	—	—	32,000
Seminars of I.T.U. Member Admins. . . . .		30,000	15,000	—	45,000
	23,819,775	26,010,700	682,000	90,000	26,782,700
Expenditure on fitting out C.C.I.T.T. Laboratory . . . . .	2,540	20,000	—	—	20,000
Expenditure on maintenance and renewal of simultaneous interpretation equip. . . . .	13,078	15,000	—	—	15,000
Cancellation of amounts, Cuban Tel. Co. . . . .	16,796	—	—	—	—
	23,852,189	26,045,700	682,000	90,000	26,817,700
Transfer to I.T.U. Reserve Account . . . . .	395,769	—	—	—	—
	24,247,958	26,045,700	682,000	90,000	26,817,700
II. TECHNICAL COOPERATION SPECIAL ACCOUNTS BUDGET					
<i>Sect. 11.</i> Techn. Coop. Admin. costs . . . . .	2,846,638	3,828,600	77,500	15,500	3,921,600
Carried forward to following year . . . . .	1,822,214	—	—	—	—
<i>Sect. 12.</i> Techn. Coop. Pub. Inf. costs . . . . .	54,264	89,700	—	—	89,700
	4,723,116	3,918,300	77,500	15,500	4,011,300
III. SUPPLEMENTARY PUBLICATIONS BUDGET					
Total expenditure . . . . .	3,019,077	3,555,500	60,000	—	3,615,500
Surplus income . . . . .	—	74,120	—60,000	—	14,120
	3,019,077	3,629,620	—	—	3,629,620
<i>Pro. mem.:</i>					
IV. SUPPLEMENTARY BUDGET FOR THE CONSTRUCTION OF A WING ON THE I.T.U. BUILDING					
Total expenditure . . . . .	1,143,931	4,466,910	—	—	4,466,910

# SUMMARY OF ESTIMATED INCOME FOR 1970

INCOME	Income 1969	Budget 1970	Addi- tional income	Addi- tional income cf. Resolu- tion 647	Budget 1970 including additional income
Swiss francs					
I. BUDGET OF THE UNION					
Contributions:					
— Contributions of Members and Associate Members of the Union to expenses for the current year . .	21,912,275	22,657,200	—	—	22,657,200
— Contributions of private operating agencies and scientific or industrial organizations to expenses of confs. and meetings under Sections 7 and 8:					
— C.C.I.R. . . . .	320,208	453,750	—	—	453,750
— C.C.I.T.T. . . . .	474,375	682,500	—	—	682,500
Sundry income . . . . .	105,382	67,250	—	—	67,250
	22,812,240	23,860,700	—	—	23,860,700
Withdrawal from C.C.I.T.T. Res. A/c for fitting out C.C.I.T.T. Lab. . . . .	2,540	20,000	—	—	20,000
Withdrawal from Renewal Fund for the maint. and renewal of simult. int. and sound repro. equipment . . . . .	13,078	15,000	—	—	15,000
	22,827,858	23,895,700	—	—	23,895,700
Withdrawal from I.T.U. Reserve a/c . .	1,420,100	2,150,000	682,000	90,000	2,922,000
	24,247,958	26,045,700	682,000	90,000	26,817,700
II. TECHNICAL COOPERATION SPECIAL ACCOUNTS BUDGET					
Contributions to Techn. Coop. administrative costs and sums brought forward from previous years . . . . .	4,668,852	3,828,600	77,500	15,500	3,921,600
Postg. of Pub. Inf. costs to S.F. proj. . .	54,264	89,700	—	—	89,700
	4,723,116	3,918,300	77,500	15,500	4,011,300
III. SUPPLEMENTARY PUBLICATIONS BUDGET					
Total income . . . . .	2,975,966	3,629,620	—	—	3,629,620
Excess expenditure . . . . .	43,111	—	—	—	—
	3,019,077	3,629,620	—	—	3,629,620
Pro. mem.:					
IV. SUPPLEMENTARY BUDGET FOR THE CONSTRUCTION OF A WING ON THE I.T.U. BUILDING					
Withdrawn from F.I.P.O.I. loan and advanced from I.T.U. funds . . . . .	1,143,931	4,466,910	—	—	4,466,910

# ANNEX 3

## LIST OF PUBLICATIONS ISSUED BY THE UNION IN 1970

		No. of copies
1.	12 Notifications, Nos. 1026 to 1037 . . . . .	F 500 E 600 S 150
2.	20 General Secretariat circulars, Nos. 28 to 47 . . . . .	F 600 E 800 S 200
3.	Supplement No. 5 to the Volume of Resolution and Decisions of the Administrative Council, 25th session 1970 . . . . .	F 600 E 750 S 300
4.	Financial Operating Report for 1969 . . . . .	F 450 E 500 S 250
5.	Report on the Activities of the Union in 1969 . . . . .	F 650 E 750 S 350
6.	Telecommunication Journal, 12 numbers . . . . .	F 1,900 E 3,100 S 900
7.	12 Operational Bulletin, Nos. 49 to 60 . . . . .	F 500 E 600 S 150
8.	List of Addresses, 3rd edition 1969: Supplements Nos. 2 to 6, trilingual . . . . .	1,500
9.	Table C, through telegraph rates of the European system, 6th edition 1969, trilingual . . . . .	1,000
10.	Table C, through telegraph rates of the European system, 7th edition 1970, trilingual . . . . .	1,000
11.	List of destination indicators and telex identification codes, 2nd edition 1970, trilingual . . . . .	1,600
12.	Table of international telex relations and traffic, 1969, trilingual . . . . .	900
13.	Appendix 25 MOD to the Radio Regulations, edition of 1968 . . . . .	F 1,700 E 3,600 S 1,000

		No. of copies
14.	Corrigendum No. 1 to the Table of frequency allocations 10 Kc/s to 40 Gc/s, 1970	F 900 E 1,100 S 350
15.	List of Telegraph Offices, 22nd edition 1965: Supplements Nos. 16 to 19, trilingual . . . . .	20,000
16.	List of International Telephone Routes, 10th edition 1970, trilingual . . . . .	950
17.	List of Coast Stations, 4th edition 1970, trilingual . . . . .	29,000
18.	List of Ship Stations, 10th edition 1970 and Supplement, trilingual . . . . .	25,000
19.	List of Radiodetermination and Special Service Stations, 4th edition 1968: Supplements Nos. 3 and 4, trilingual . . . . .	24,000
20.	Alphabetical List of call signs of stations used by the maritime mobile service, 4th edition 1968: Supplement No. 7, multilingual . . . . .	22,800
21.	Alphabetical List of call signs of stations used by the maritime mobile service, 5th edition 1970 and Supplements Nos. 1 and 2, multilingual . . . . .	22,500
22.	Alphabetical List of call signs of stations other than amateur stations, experi- mental stations and stations of the maritime mobile service, 4th edition 1970 and Supplements Nos. 1 to 3, multilingual . . . . .	3,200
23.	List of International Monitoring stations, 2nd edition 1965: Supplement No. 3, trilingual . . . . .	900
24.	T.A. Booklet accompanying the international credit card for telegraph services, 1970 . . . . .	F 5,600 E 10,500 S 4,800
25.	Standardized test chart for facsimile transmissions 2nd edition 1969, with a booklet explaining its use . . . . .	F 1,200 E 1,200 S 200
26.	General Plan for the Development of the Regional Latin American Network, 1968-1974-1978 (Asunción 1969), trilingual . . . . .	850
27.	General Plan for the Development of the Regional Asian and Oceanian Network 1969-1974-1978 (Tehran 1970), trilingual . . . . .	800
28.	C.C.I.T.T. Manual GAS/3, Economic and technical aspects of the choice of trans- mission systems, 1969 . . . . .	F 1,000 E 2,000
29.	C.C.I.T.T. Manual GAS/4, Handbook on primary sources of energy, 1970 . . . .	F 1,000 E 1,050
30.	Recommendations for the protection of underground cables against corrosion, New Delhi 1960 (new pages 1970) . . . . .	F 1,100 E 1,500

		No. of copies
31.	White Book, IVth Plenary Assembly of the C.C.I.T.T., Mar del Plata 1968:	
	Volume I . . . . .	S 300
	Volume II-A (Recommendations and Supplements) . . . . .	F 1,400
		E 2,700
	Volume II-A (Questions, Recommendations and Supplements) . . . . .	S 400
	Volume II-B (Questions and Recommendations) . . . . .	S 400
	Volume III (Recommendations and Supplements) . . . . .	F 1,400
		E 2,800
	Volume IV (Recommendations) . . . . .	F 1,300
		E 2,800
	Volume IV (Questions and Recommendations) . . . . .	S 400
	Volume V (Recommendations and Supplements) . . . . .	F 1,300
		E 2,700
	Volume V (Questions and Recommendations) . . . . .	S 400
	Volume VI (Recommendations and Supplements) . . . . .	F 1,300
		E 2,700
	Volume VI (Questions and Recommendations) . . . . .	S 400
	Volume VII (Recommendations and Supplements) . . . . .	F 1,300
		E 2,700
	Volume VIII (Supplements) . . . . .	F 1,300
		E 2,700
	Volume VIII (Questions and Recommendations) . . . . .	S 350
	Volume IX (Questions and Recommendations) . . . . .	S 350
32.	Documents of the XIIth Plenary Assembly of the C.C.I.R., New Delhi 1970:	
	Volume II-1 . . . . .	F 1,100
		E 3,200
		S 650
	Volume IV-2 . . . . .	F 1,150
		E 3,500
		S 650
	Volume V-1 . . . . .	F 1,100
		E 3,500
33.	Handbook for monitoring stations . . . . .	S 300
34.	Report 252-2 of the XIIth Plenary Assembly of the C.C.I.R., New Delhi 1970, trilingual . . . . .	1,500
35.	Manual on broadcasting in band 7 (HF) in the tropical Zone, 1969 . . . . .	F 150
		E 350
		S 150
36.	International Frequency List, 5th edition 1969:	
	Preface : Supplements Nos. 3 to 7, trilingual . . . . .	1,950
	Volume I : Supplements Nos. 3 to 6, multilingual . . . . .	1,700
	Volume II : Supplements Nos. 3 to 6, multilingual . . . . .	1,700
	Volume III : Supplements Nos. 3 to 6, multilingual . . . . .	1,700
	Volume IV a) : Supplements Nos. 3 to 6, multilingual . . . . .	1,400
	Volume IV b) : Supplements Nos. 3 to 6, multilingual . . . . .	1,300
	Volume IV c) : Supplements Nos. 3 to 6, multilingual . . . . .	1,250
	Volume IV d) : Supplements Nos. 3 to 6, multilingual . . . . .	1,250

	No. of copies
37. List of fixed stations operating international circuits, 5th edition 1969: Supplements Nos. 3 to 6, trilingual . . . . .	1,300
38. List of broadcasting stations operating in bands below 5950 kc/s, 5th edition 1969: Supplements Nos. 2 and 3, trilingual . . . . .	1,000
39. List of space and radio astronomy service stations, 2nd edition 1969: Supplements Nos. 2 and 3, trilingual . . . . .	1,150
40. I.F.R.B. Weekly Circulars, Parts I-II-III-IV and Special, Nos. 889 to 939, trilingual . . . . .	550
41. Summaries of monitoring information received by the I.F.R.B., Nos. 161 to 167, trilingual . . . . .	600
42. Summary of monitoring information received by the I.F.R.B. on the use by broadcasting stations of the exclusive high frequency broadcasting bands, No. 34, trilingual . . . . .	450
43. Tentative high frequency broadcasting schedules, May 1970, September 1970, November 1970 and March 1971, trilingual . . . . .	550
44. High frequency broadcasting schedules, November 1968, March 1969, May 1969, trilingual . . . . .	470
45. Information booklet No. 6: Ninth report by the International Telecommunication Union on Telecommunication and the peaceful uses of outer space . . . .	F 5,500 E 7,000 S 2,500
46. Microwave Seminar, Tokyo 1968 . . . . .	F 200

# ANNEX 4

## COMPUTER UTILIZATION BY THE I.T.U. IN 1970

The use of various computer facilities by the Union, during 1970, is indicated below. For easy and direct comparison the 1969 figures are also shown.

Year	Hours of use			Direct use of CDC 6500/6600 of CERN
	UNIVAC 1050	IBM 360 at WHO through RAX terminal	Direct use of IBM 360 at WHO	
1970. . . . .	3149	167	—	8
1969. . . . .	2980	272	4	4

The overall hourly use of the I.T.U. computer increased in 1970. The table hereinafter gives the monthly statistics in terms of applications and tests as well as the percentages of total use by the different organs.

After various cost studies on the production of the revised curves of the I.F.R.B. Technical Standards B-2 on the facilities available in Geneva, it was decided that the most logical and economical solution to this complex and non-recurrent problem would be to have the work performed on the computer of the Institute of Telecommunication Services in the Office of Telecommunications, Department of Commerce, Boulder, Colorado, U.S.A. This decision was based on the fact that the programmes in question were originally developed at Boulder and the Institute's installation, as opposed to I.T.U.'s, has a cathode ray plotter and photographic apparatus directly coupled to the computer. This step will result in substantial economy in the final production of these standards. Thus the Union will be enabled to offer this publication at a lower unit price than if the work had been carried out in Geneva.

During 1970, the computerization of the following tasks was implemented:

- a) List of Ship Stations (List V);
- b) Subscriber status and production of corresponding postal labels for sales and dispatch;
- c) Cost analyses for reproduction service;
- d) Analytical index of the Telecommunication Journal and of the Union's archives.

Furthermore, the necessary studies on the computerization of the List of Call Signs of Stations used by the Maritime Mobile Service (List VIIA) have been terminated and relevant specifications were prepared. Programming will be carried out during 1971. Statistical tables were also produced for the Specialized Working Party GAS/5 of the C.C.I.T.T.

As the Union became the owner of the UNIVAC 1050 Computer at the end of 1970, a special contract was signed with UNIVAC covering maintenance during 1971.

1970: UNIVAC 1050 COMPUTER USE

Month	Total use	Applica- tions	Test	I.F.R.B.	G.S.	C.C.I.R. % of total use	C.C.I.T.T.	Misc.
Jan.	214	151	63	74.3	24.0	0.1	—	1.6
Feb.	279	219	60	73.1	19.2	0.9	—	6.8
Mar.	264	200	64	62.9	25.8	6.8	—	4.5
Apr.	263	182	81	71.1	19.4	2.7	—	6.8
May	251	197	54	74.8	19.0	0.3	—	5.9
June	249	186	63	71.6	12.6	0.4	0.4	15.0
July	251	184	67	65.6	11.6	0.7	3.9	18.2
Aug.	274	227	47	73.1	8.8	0.2	2.5	15.4
Sept.	296	227	69	65.4	15.0	0.1	0.6	18.9
Oct.	279	189	90	55.8	19.6	0.2	—	24.4
Nov.	286	238	48	66.3	12.5	0.6	—	20.6
Dec.	243	205	38	68.8	19.5	0.2	—	11.5
Total hours	3149	2405	744					
Monthly average	262	200	62	68.6%	17.2%	1.1%	0.6%	12.5%
Monthly average for 1969	249	187	62	73.8%	16.9%	1.8%	—	7.5%

Notes: Monthly use for applications increased in 1970.

The increase in the miscellaneous column, especially in the second half of the year, is due to the development by the Computer Department of a system to facilitate the transcription of existing programmes into a high-level language programme suitable for the new computer.

## ANNEX 5

### CONFERENCES AND MEETINGS AT WHICH THE UNION WAS REPRESENTED IN 1970

#### A. UNITED NATIONS

		<i>Number of participants <sup>1)</sup></i>	
		Officials from Headquarters	Regional Experts
1.	Consultative Committee on Administrative Questions Working Party, Geneva, 5-14 January . . . . .	1	—
2.	Economic Commission for Europe: Meeting of Government Officials Responsible for Standardization Policies, Geneva, 19-23 January . . . . .	2	—
3.	38th Session of the Consultative Committee on Public Information, Geneva, 9-13 February . . . . .	1	—
4.	Economic Commission for Asia and the Far East: 18th Session of the Transport and Communications Committee, Bangkok, 16-24 February . . . . .	—	1
5.	Combined 8th Editors' Round table and non-governmental organizations' conference, Addis Ababa, 17-21 February . . . . .	1	—
6.	31st Session and Working Party of the Consultative Committee on Administrative Questions, New York, 2-20 March . . . . .	1	—
7.	Special Session of the Governing Council of the United Nations Development Programme, New York, 16-26 March . . . . .	1	—
8.	64th Session of the Preparatory Committee of the Administrative Committee on Coordination, Geneva, 6-14 April . . . . .	1	—
9.	7th Session of the Scientific and Technical Sub-Committee of the Committee on the Peaceful Uses of Outer Space, New York, 14-24 April . . . . .	1	—
10.	Economic Commission for Asia and the Far East: 26th Session, Bangkok, 14-27 April . . . . .	1	1
11.	4th Session of the Industrial Development Board, Vienna, 20-30 April . . . . .	1	—
12.	50th Session of the Administrative Committee on Coordination, Vienna, 23-25 April . . . . .	2	—
13.	Committee on the Peaceful Uses of Outer Space: 3rd Session of the Working Group to study the technical feasibility of communication by direct broadcast from satellites, New York, 11-22 May . . . . .	1	—

<sup>1)</sup> During its 25th Session the Administrative Council asked for the number of officials attending each meeting to be indicated in future reports. It should be noted that all did not necessarily attend for the whole duration of the meeting.

		<i>Number of participants</i>	
		Officials from Headquarters	Regional Experts
14.	1st Session of the European Regional Group of the Advisory Committee on the Application of Science and Technology to Development, Geneva, 12-14 May . . . . .	1	—
15.	Economic Commission for Africa: 3rd Session of the Conference of "African Planners", Addis Ababa, 20-29 May . . . . .	—	1
16.	18th Session of the International Civil Servants Advisory Board, Geneva, 1-18 July . . . . .	1	—
17.	9th Session of the Legal Sub-Committee of the Committee on the Peaceful Uses of Outer Space, Geneva, 8 June-3 July . . . . .	4	—
18.	Special Meeting of the Computer Users' Committee, Geneva, 24-25 June . . . . .	2	—
19.	Meeting of the Inter-Agency Working Group on Outer Space, Geneva, 24-30 June . . . . .	3	—
20.	United Nations Institute for Training and Research: 2nd Colloquium for Senior Officers in the United Nations System, Turin, 30 June-3 July . . . . .	1	—
21.	51st Session of the Administrative Committee on Coordination, Geneva, 3 July . . . . .	2	—
22.	Session of the Working Group of the Committee for Development Planning, Geneva, 3-7 August . . . . .	1	—
23.	49th Session of the Economic and Social Council, Geneva, 6-31 July . . . . .	5	—
24.	25th Session of the General Assembly, New York, September . . . . .	2	—
25.	Inaugural Meeting of the Inter-Organization Board for Information Systems and Related Activities, Geneva, 28 September . . . . .	3	—
26.	Office of the High Commissioner for Refugees: 21st Session of the Executive Committee of the High Commissioner's Programme, Geneva, 28 September-7 October . . . . .	1	—
27.	Economic Commission for Africa: Regional Symposium on the Utilization of Science and Technology for Development in Africa, Addis Ababa, 5-16 October . . . . .	1	1
28.	66th Session of the Preparatory Committee of the Administrative Committee on Coordination, New York, 12-19 October . . . . .	1	—
29.	52nd Session of the Administrative Committee on Coordination, New York, 28 October . . . . .	1	—
30.	Economic Commission for Asia and the Far East: 2nd Session of the Telecommunication Sub-Committee, Bangkok, 10-16 November . . . . .	2	1
31.	Meeting of the Ad Hoc Working Group on Industry and Transfer of Technology, Vienna, 24-30 November . . . . .	1	—

## B. SPECIALIZED AGENCIES

### *United Nations educational scientific and cultural organization (UNESCO)*

		<i>Number of participants</i>	
		Officials from Headquarters	Regional Experts
32.	6th Session of the Panel of Consultants on Space Communication, Paris, 13-15 April . . . . .	3	—
33.	International Working Party on Educational Technology and the Learning Process, Geneva, 14-26 May . . . . .	1	—
34.	16th Session of the General Conference, Paris, 12 October-14 November . . . . .	2	—

### *World Meteorological Organization (W.M.O.)*

35.	2nd Session of the Working Group on Meteorological Telecommunications of Regional Association V (South West Pacific), Melbourne, 16-27 February . . . . .	1	—
36.	W.M.O./I.O.C. — 3rd Joint Session of Experts on Telecommunication, Geneva, 27 April-6 May . . . . .	2	—
37.	1st Session of the Commission for Maritime Meteorology Working Group on Observation Network at Sea and on Maritime Telecommunications, Geneva, 25-30 May . . . . .	1	—
38.	5th Session of the Commission for Synoptic Meteorology, Geneva, 15 June-3 July . . . . .	3	—
39.	W.M.O./E.C.A.F.E. — Meeting of Experts on Tropical Cyclones in the Bay of Bengal, Dacca, East Pakistan, 24-27 October . . . . .	—	1
40.	W.M.O./I.O.C. — 3rd Joint Session of the W.M.O. Executive Committee Panel on Meteorological Aspects of Ocean Affairs and I.O.C. Working Committee for Integrated Global Ocean Station System, Geneva, 11-14 November . . . . .	2	—

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

41.	6th Session of the Sub-Committee on Radiocommunications, London, 12-16 January . . . . .	2	—
42.	7th Session of the Sub-Committee on Radiocommunications, London, 6-10 July . . . . .	2	—
43.	22nd Session of the Maritime Safety Committee, London, 5-9 October	1	—

*Number of participants*  
 Officials  
 from      Regional  
 Headquarters   Experts

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

- |     |  |   |   |
|-----|--|---|---|
| 44. | 3rd Meeting of the Panel on "Application of Space Techniques Relating to Aviation" (ASTRA), Paris, 23 February-3 March . | 1 | — |
| 45. | 5th North Atlantic Regional Air Navigation Meeting, Montreal, 1-25 April . . . . .                                       | 1 | — |

*Universal Postal Union (U.P.U.)*

- |     |  |   |   |
|-----|--|---|---|
| 46. | Annual Session of the Executive Board, Bern, 13-21 May . . . . . | 1 | — |
|-----|--|---|---|

C. INTERNATIONAL ORGANIZATIONS

*Intergovernmental Oceanographic Commission*

- |     |  |   |   |
|-----|--|---|---|
| 47. | 3rd Session of the I.O.C. Working Committee for an Integrated Global Ocean Station System, Geneva, 9-10 November . . . . . | 2 | — |
|-----|--|---|---|

*Council of Europe*

- |     |   |   |   |
|-----|---|---|---|
| 48. | 1st Meeting of the Steering Committee set up to direct the study of requirements of European higher education for communication satellite services and frequency band allocations, Strasbourg, 9-10 April . . . . .     | 1 | — |
| 49. | 2nd Meeting of the Steering Committee set up to direct the study of requirements of European higher education for communication satellite services and frequency band allocations, Strasbourg, 17 June . . . . .        | 1 | — |
| 50. | 4th Meeting of the Steering Committee set up to direct the study of requirements of European higher education for communication satellite services and frequency band allocations, Strasbourg, 26-27 November . . . . . | 1 | — |

*International Red Cross Committee*

- |     |  |   |   |
|-----|--|---|---|
| 51. | Meeting of experts on methods of indication of ambulance aircraft and ships, Geneva, 28-30 October . . . . . | 1 | — |
|-----|--|---|---|

*European Broadcasting Union (E.B.U.)*

- |     |  |   |   |
|-----|--|---|---|
| 52. | 22nd Meeting of the Technical Committee, Montes de Alvor, Portugal, 7-10 April . . . . . | 2 | — |
|-----|--|---|---|

*Number of participants*  
 Officials  
 from  
 Headquarters      Regional  
 Experts

*Danube Commission*

- |  |   |   |
|--|---|---|
| 53. XXVIIIth Session of the Commission, Budapest, 3-14 March . . .                     | 1 | — |
| 54. Experts' Meeting on questions of Navigation, Budapest,<br>10-20 November . . . . . | 1 | — |

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

- |   |   |   |
|---|---|---|
| 55. 47th Meeting of the Technical Committee, Copenhagen, 16-19 June | 2 | — |
| 56. 48th Meeting of the Technical Committee, London, 8-10 December  | 1 | — |

*International Electrotechnical Commission (I.E.C.)*

- |  |   |   |
|--|---|---|
| 57. Meeting of Working Group 3 "Transmitters and Transposers for<br>Monochrome and Colour Television", London, 17-20 March . . | 1 | — |
| 58. Meeting of Working Group 12C/WG3, Budapest, 22-28 September  | 1 | — |
| 59. Meetings of Technical Committee 60, Sub-Groups 60A and 60B,<br>Oslo, 19-23 October . . . . .                               | 1 | — |

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

- |  |   |   |
|--|---|---|
| 60. 6th Meeting of ISO/TC 97 — Computers and Information Processing,<br>Berlin, 8-11 June . . . . .                  | 1 | — |
| 61. Meeting of Sub-Committee TC97/SC6 — Digital Data Transmission,<br>Paris, 1-5 June . . . . .                      | 1 | — |
| 62. Meeting of the Sub-Committee 2 — Character Sets for Coding — of<br>Committee 97, London, 12-15 October . . . . . | 1 | — |

*Organization for Economic Cooperation and Development (O.E.C.D.)*

- |   |   |   |
|---|---|---|
| 63. Meeting of Expert Group on Computer Utilization, Paris, 28-29 April | 1 | — |
|---|---|---|

*International Special Committee on Radio Interference (C.I.S.P.R.)*

- |   |   |   |
|---|---|---|
| 64. Meetings of Working Groups and Steering Committee, Bled, Yugo-<br>slavia, 16-26 March . . . . . | 1 | — |
| 65. Plenary Assembly, Leningrad, 24 August-1 September . . . . .                                    | 1 | — |

*Inter-Union Commission on Allocation of Frequencies for Radio Astronomy  
and Space Science (I.U.C.A.F.)*

- |   |   |   |
|---|---|---|
| 66. 10th Meeting, Göteborg, Sweden, 4-6 May . . . . . | 2 | — |
|---|---|---|

*Number of participants*  
Officials  
from Regional  
Headquarters Experts

*Institut für Rundfunktechnik*

- |   |   |   |
|---|---|---|
| 67. Meeting on Sound Broadcasting (Wave propagation), Düsseldorf,<br>24-26 November . . . . . | 1 | — |
|---|---|---|

*A.S. Popov Society*

- |  |   |   |
|--|---|---|
| 68. XXVIth Scientific Session, Moscow, 9-11 June . . . . . | 1 | — |
|--|---|---|

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

- |   |   |   |
|---|---|---|
| 69. VIth Ordinary Session, Montreux, 18-28 August . . . . . | 1 | — |
|---|---|---|

*Belgian Administration of Telegraphs and Telephones*

- |   |   |   |
|---|---|---|
| 70. Meeting to review the provisions of the Regional Agreement on the<br>establishment of an international VHF mobile radiotelephone<br>service for the Rhine navigation, Brussels, 6-12 December . . | 1 | — |
|---|---|---|

*Société Internationale de Télécommunications Aéronautiques (S.I.T.A.)*

- |  |   |   |
|--|---|---|
| 71. Symposium, Paris, 3-5 February . . . . . | 1 | — |
|--|---|---|

*Conseil International de la Langue Française*

- |  |                 |   |
|--|-----------------|---|
| 72. Meeting of the Working Group for Space Language, Paris, 14 January<br><i>International Union of Producers and Distributors of Electrical Energy (U.N.I.P.E.D.E.)</i> | — <sup>1)</sup> | — |
| 73. 15th Congress, Cannes, 13-17 September . . . . .   | 1               | — |

*Swedish National Board of Shipping and Navigation*

- |  |   |   |
|--|---|---|
| 74. VIIIth International Conference on Lighthouses and other Aids to<br>Navigation, Stockholm, 7-18 June . . . . . | 1 | — |
|--|---|---|

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

- |   |   |   |
|---|---|---|
| 75. 11th Session of the General Assembly, Rabat, 14-16 December . . . | 2 | — |
|---|---|---|

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<sup>1)</sup> The Union was represented by an official of the French Administration.

*Number of participants*  
 Officials  
 from Regional  
 Headquarters Experts

*Organization of African Unity (O.A.U.)*

- |     |   |   |   |
|-----|---|---|---|
| 76. | 7th Session of the Conference of Heads of State and Government and Meetings of Committee " C " of the 15th Ordinary Session of the Council of Ministers, Addis Ababa, 24 August-4 September .<br><i>African and Malagasy Postal and Telecommunications Union (U.A.M.P.T.)</i> | 1 | 1 |
| 77. | Meeting of the Committee of Ministers and Experts, Libreville, 17-23 June . . . . .   | 1 | 2 |

*Arab Telecommunication Union*

- |     |  |   |   |
|-----|--|---|---|
| 78. | 10th Conference, Baghdad, December . . . . . | 1 | 1 |
|-----|--|---|---|

*Asian Broadcasting Union (A.B.U.)*

- |     |   |   |   |
|-----|---|---|---|
| 79. | Meetings of the Engineering Committee, Istanbul, 9-11 September . . | 2 | — |
| 80. | 7th General Assembly, Istanbul, 18-21 September . . . . .           | 1 | — |

*Inter-American Association of Broadcasters*

- |     |   |   |   |
|-----|---|---|---|
| 81. | General Assembly, Guayaquil, Ecuador, 4-8 October . . . . . | — | 1 |
|-----|---|---|---|

*International Telecommunications Satellite Consortium (INTELSAT)*

- |     |   |   |   |
|-----|---|---|---|
| 82. | Resumed 2nd Meeting of the Plenipotentiary Conference to Establish Definitive Arrangements for the INTELSAT, Washington, 16 February-20 March . . . . . | 1 | — |
|-----|---|---|---|

*Organization of American States (O.A.S.)*

- |     |   |   |   |
|-----|---|---|---|
| 83. | 5th Regular Meeting of the Inter-American Telecommunications Commission (CITEL), Bogota, 22-29 July . . . . . | 1 | 3 |
|-----|---|---|---|

*American Institute of Aeronautics and Astronautics*

- |     |   |   |   |
|-----|---|---|---|
| 84. | Meeting on Earth Resources Observations and Information Systems, Annapolis, 2-4 March . . . . . | 1 | — |
|-----|---|---|---|

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*Note* — Invitations to a considerable number of other meetings were declined either due to lack of credits or since the agenda did not, in the opinion of the Coordination Committee, justify I.T.U. representation.

ANNEX 6

**ACTIVITIES OF THE EXPERTS UNDER I.T.U. AUSPICES IN 1970**

TABLE 1 — Experts engaged in I.T.U. technical cooperation programmes during 1970 (this covers all the various programmes in which the I.T.U. is engaged).

TABLE 2 — Fellowships dealt with in 1970.

TABLE 3 — Projects approved by the U.N.D.P. (S.F.) for which I.T.U. is Executing Agency, as at 31.12.1970.

TABLE 1

EXPERTS ENGAGED IN I.T.U. TECHNICAL ASSISTANCE PROGRAMME DURING 1970  
(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	The experts continued their work at the National School for Telecommunications. During the year, 5 courses for medium-level technicians and 4 courses for higher-level technicians continued. In addition, three new courses were commenced, one for "contrôleurs" (medium-level technicians) and 2 for "inspecteurs" (high-level technicians). The total number of students at the school in 1970 varied between 167 and 215. They received instruction in telegraphy, radiocommunications, switching, automatic telephony and long-distance lines. More than 90 students completed training with satisfactory notes. In addition, several were requested to pass an <i>Examen de Rappel</i> . By the end of 1970 a total of 524 medium and higher-level technicians were successfully trained at the school.
	Lucien Autet (France)	Instructor in transmission	5.11.1970	
	Robert Bechet (France)	Instructor in transmission	9. 9.1965 8. 9.1970	
	Paul Chatard (France)	Instructor in VHF and microwave radio links	9. 9.1965	
	René D. Eldin (France)	Instructor in radiocommunications	25. 8.1968	
	Jean-François Gross (Switzerland)	Instructor in electricity and electronics	22. 9.1966	
	Jan Pit (Netherlands)	Associate expert (lecturer in physics)	4. 2.1968	

\*) Column 4 "Starting and closing date of mission"

For those expert missions where only one date is given, this date indicates the starting date; where two dates are given, these are the starting and closing dates of the mission.

In a few cases three dates are given, i.e. when an expert has been transferred or promoted to another post at the same project, or when the post title has changed — the third date denoting the commencement date of the new assignment.

Cameroon (Technical Assistance)	Edward C. Dudman (United Kingdom)	Telecommunication adviser	5. 8.1968	The expert continued to advise and assist in the implementation of telecommunication projects, in particular, the microwave system Yaoundé-Edea-Douala, and the new crossbar exchanges at Yaoundé and Douala, which projects were brought into service in 1970. He furthermore assisted in the examination and assessment of tenders for the construction of a satellite ground station near Yaoundé. In addition, the expert prepared a detailed report on the progress of the telecommunication service in West Cameroon.
Central African Republic (Technical Assistance)	Henri Cocoz (France)	Instructor on line communications	9.11.1965 31.12.1970	The instructors on line communications and on telephone installations continued to give training in their respective fields of speciality at the National School for Posts and Telecommunications. At the end of the 1969/70 scholastic year, 38 trainees had received diplomas in their respective categories. The new scholastic year started with 41 trainees.
	Armand A. Wuerst (Switzerland)	Instructor on telephone installations	18. 4.1968	
East African Community (Kenya, Tanzania, Uganda) (Technical Assistance)	Eric S. H. Davies (United Kingdom)	Member of team of two experts to advise on telecommunication organization	22. 6.1970 21. 7.1970	The experts prepared a report on the re-organization of the East African Posts and Telecommunications Corporation, following a request for high-level advice in this field.
I.T.U. (ordinary budget)	O. Ingemar Norberg (Sweden)	Member of team of two experts to advise on telecommunication organization	10. 6.1970 31. 8.1970	

Country or Region of Assignment	Name (Nationality)	Speciality and/or Title	Starting and closing date of mission	Brief description of work; Remarks
Congo (Kinshasa) (Technical Assistance)	Gabre M. Gabre-Selassie (Ethiopia)	Adviser to the Minister of P.T.T.	24. 1.1969 23. 1.1970	The expert completed his advisory mission which mainly concerned studies in connection with the development of telecommunication organization and services.
Congo (Kinshasa) (Funds-in-Trust)	Joseph Ahoudji (Dahomey)	Expert in telegraph operation	19. 2.1969 18. 2.1970	The expert completed his mission in the field of telegraph operation—re-organization of telegraph offices and on-the-job training of staff.
	Aurel A. Hostens (Belgium)	Automatic telegraphy expert (resumption of mission)	28. 5.1970	After a seven-month interruption, the expert resumed the mission he had started in 1966. He was, in particular, engaged in the putting into service of the new equipment, the planning of a new telex exchange in Kinshasa, the practical training of 10 technicians in his speciality, as also in carrying out the maintenance and operation of the telegraph and telex service in collaboration with other OCPT (Congolesse Office of Posts and Telecommunications) staff.

	Amrit L. Kumar (India)	Radio maintenance expert Regional adviser	1. 1.1962 31.12.1967 1. 1.1968	The expert acted as adviser to the regional directorate of Kinshasa and dealt with the elaboration of organigrams for the 31 telecommunication centres in the region. He also assisted the local authorities in the management of services, staff and preparation of budgetary estimates for the region. At the end of the year he worked on the organization of various refresher courses for the in-service training of the personnel of the OCPT (Congolesse Office of Posts and Telecommunications).
	Jules Marquet (Belgium)	Radio maintenance expert	15. 1.1963	The expert was mainly engaged in rendering advice and assistance to the technical direction of HF radio transmission services. This involved the organization of the proper maintenance of HF links and the installation of the newly acquired equipment. He was also involved in the studies and discussions concerning the establishment of radio relay links in the country, as well as the earth station in Kinshasa.

Country or Region of Assignment	Name (Nationality)	Speciality and/or Title	Starting and closing date of mission	Brief description of work; Remarks
Congo (Kinshasa) (Special Fund)	Jacques G. L. Lemay (Canada)	Project Manager	21. 9.1969	At the National School of Telecommunication Studies the experts continued to give training at both the engineer/technician and technician levels. By the end of its third year of operation (1969/1970), 74 jointers, 71 operators and 123 technicians had graduated from the School. The four-year engineer/technician training programme, which began in 1967 had 73 students enrolled in its three classes and the first graduation is scheduled to take place at the end of the 1970/71 scholastic year. The new school year began with a total enrolment of 282 students, 177 of whom are attending telecommunication courses.
	Bernard Pain (France)	Instructor in telegraphy	5. 3.1967	
	Honorato Garcia (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	
	Andrzej S. Paluchowski (Poland)	Instructor in telegraphy	31. 1.1970	
			9. 6.1969	
Ivory Coast (Technical Assistance)	Raymond Maurel (France)	Expert in vocational training (OPAS officer as from 1.7.1970)	16. 4.1968	The expert terminated his mission under the Technical Assistance Component in mid-1970 and was retained under an OPAS contract. It is thought that as an OPAS officer, he will be able to give more directly effective assistance than had been possible previously, when his work had been hampered by a lack of suitable counterpart staff.

Ivory Coast (jointly I.T.U. ordinary budget and Funds-in-Trust)	Andrew Kovats (Canada)	Telecommunication consultant	30. 4.1970 20. 5.1970	During his short assignment the expert was assisting the Telecommunications Administration in the adjudication of the tenders for the earth station to be established in the Ivory Coast.
Ethiopia (Technical Assistance)	Roland F. Bradburn (United Kingdom)	Telephone and telegraph traffic expert	8. 4.1968 20.11.1970	The expert completed his mission in the field of tariffs and telecommunication operation. His final report makes recommendations for various amendments to the rates and tariffs structure and in the operating methods.
Gambia (Technical Assistance)	Cecil A. Wiltshire (Guyana)	Telecommunication training expert	14. 8.1965	At the Telecommunication Training Centre, run by the expert, a total of 26 technicians and technical officers received training in the fields of broadcasting, telephony, telegraphy, radio, line transmission and civil aviation radiocommunications. In addition the expert organized short refresher courses for telephonists and telegraphists.
Ghana (Technical Assistance)	Denis Gould (United Kingdom)	Air-conditioning maintenance engineer (OPAS)	12. 1.1970	The officer assisted in the implementation of routine maintenance of air-conditioning equipment, compiling records of the existing equipment, preparing specifications and drawings for new installations, training maintenance staff and advising on the standardization of air-conditioning equipment, and advocating the policies to be followed for the design layout as applied to telephone exchanges.

Country or Region of Assignment	Name (Nationality)	Speciality and/or Title	Starting and closing date of mission	Brief description of work; Remarks
Ghana (Special Fund)	Johan A. J. Schneider (Netherlands)	Instructor in transmission and carrier Advisor to the Director of the Telecommunications Training Centre	17.12.1965 15.12.1969 16.12.1969 19.12.1970	This project, which commenced in 1965, was terminated at the end of year under report, when the Adviser to the Director of the Telecommunications Training Centre left. The aim of the project was to expand the facilities of the existing Telecommunications Engineering School in Accra, in order to provide urgently needed, trained personnel for the Posts and Telegraphs Department. One expert in air-conditioning, recruited in the last year of the project, has remained at the Training Centre, although the project has officially terminated, in order to complete the installation of equipment and the arrangement of courses of training in air-conditioning plant installation and maintenance.
	Ernst P. Heutelbach (F.R. of Germany)	Instructor in telegraphy	1. 8.1967 15. 6.1970	
	Lawrence W. Sereda (Canada)	Air-conditioning instructor	1. 6.1970	
Republic of Guinea (Technical Assistance)	Milan Kesjar (Czechoslovakia)	Radio engineer (OPAS)	1.10.1970	The expert is assisting the Telecommunication Administration in the operation and maintenance of radio equipment.

Equatorial Guinea (Technical Assistance)	Kurt V. B. Lillsunde (Sweden)	Telecommunication specialist	11.11.1969 13. 3.1970	This project was sub-contracted to the Swedish firm of consulting engineers, SWEDTEL. A number of different experts were sent to Equatorial Guinea for periods of a few weeks and gave assistance in the maintenance and operation of the telecommunication services as well as general advice to the Telecommunication Administration and in regard to the training of technical operating staff.
	Karl G. Steimar (Sweden)	Telecommunication specialist	11.11.1969 2. 4.1970	
	John L. Wiman (Sweden)	Radio technician	23.11.1969 12. 5.1970	
	Lennart J. Fernström (Sweden)	Organization economist engineer Resumed mission	8. 3.1970 6. 5.1970 2. 8.1970 15.10.1970	
	Hugo Jonsson (Sweden)	Resumed mission Switching instructor	30.10.1970 30.10.1970	
Upper Volta (Technical Assistance)	Charles L. Schenk (Switzerland)	Expert on planning and coordination of telecommunications	1. 5.1970	The expert carried out various technico-economic studies concerning projects for the expansion of telecommunications. He also assisted in the re-opening of a P.T.T. School in Ouagadougou as well as in the negotiations for the financing of a radio relay link between Upper Volta and Ivory Coast.  The expert took up his assignment which is the follow-up of a previous I.T.U. mission in 1969, towards the end of the year. He will advice the Telecommunication Administration on telecommunication accounting and traffic operation.
	Marcel Mauboussin (France)	Expert in telecommunication operation and accounting	14.12.1970	

Country or Region of Assignment	Name (Nationality)	Speciality and/or Title	Starting and closing date of mission	Brief description of work; Remarks
Lesotho (Technical Assistance)	G. D. Gokarn (India)	Telecommunications rates and tariffs expert	9. 8.1970	The expert has been advising the Telecommunication Administration on tariffs and rates problems. He recommended revisions in the tariffs and rates structure in accordance with local national needs and policy and internationally recognized principles and agreements and commenced the drafting of corresponding amendments to the local telecommunication legislation.
Liberia (Technical Assistance)	Arasurampet R. Ramanathan (India)	Telecommunication training expert	30. 6.1964 21. 1.1970	The expert completed his assignment at the beginning of the year, leaving established training programmes for technicians in the radio and telephony fields.
Libya (Funds-in-Trust)	Alan Irwin (United Kingdom)	Planning engineer, long distance circuits (OPAS)	8.11.1965 31.12.1970	The expert completed his mission at the end of 1970. He had been responsible for the implementation of a Libya-Italy submarine cable project. The work involved, in conjunction with the Italian Administration, the preparation of specifications, supervision of the survey of the sea route, adjudication of tenders and the preparation of the contract. The expert prepared a specification for the coaxial cable and the radio-relay systems.

	Douglas J. Kelly (New Zealand)	Planning engineer (local telephone cable networks) (OPAS)	1. 3.1969 28. 2.1970	The expert, who completed his mission in February 1970, had compiled a card index system showing all current costs for materials and installation for all aspects of telephone network planning and construction. 355 technical specifications had been prepared, each dealing with one aspect of local telephone networks. These may be used as standards for materials and methods of installation for all projects in Libya.
Madagascar (Special Fund)	Louis Léon (France) Michel Branle (France) Jean Félix (France) Jean-Jacques Pinatel (France) Lucien Pourreau (France) Pierre L. Vergnes (France)	Project Manager Instructor in telephony Instructor in telegraphy Instructor in telecommunication operations Instructor in long distance lines Instructor in meteorological electronics	1. 7.1964 23. 4.1965 19. 3.1965 3. 1.1967 2. 3.1970 4. 3.1966 13. 6.1969 12. 9.1970	The experts continued with their work at the National Institute of Telecommunications and Posts, organizing medium- and high-level training of telecommunication staff in the various specialities, lecturing and training counterparts. At the end of the scholastic year 1969/1970, 229 technicians had successfully completed their studies. The new scholastic year started with 108 enrolled students, 24 of whom came from other French-speaking African countries.
Mali (Technical Assistance)	Jean C. F. Hubert (France)	Instructor responsible for technical training (wire and radio)	17. 3.1968 31. 7.1970	The expert prepared detailed programmes for all training at the "agent" (junior technician) level and the preparatory courses for "contrôleurs" (medium-level technicians) that are scheduled to be sent to the Multinational Training Centre in Rufisque, Senegal.

Country or Region of Assignment	Name (Nationality)	Speciality and/or Title	Starting and closing date of mission	Brief description of work; Remarks
Mali (Technical Assistance) ( <i>contd.</i> )	Georges Levet (France)	Instructor in practical training	1. 5.1969	The expert continued to conduct practical and laboratory work for the "préposé" (postal agent) and "agent" (junior technician) level students in electromechanics. He also assisted in the elaboration and development of the School's organization plan.
Niger (Technical Assistance)	Raymond A. Chollet (France)	Expert on technical training	1.10.1968	The expert was mainly engaged in the elaboration of several training programmes, in lecturing at the National Instruction Centre of Posts and Telecommunications, and in a project for the expansion of the Centre. Six "contrôleurs adjoints" (medium-level technicians) were successfully trained during the year and assigned to various services.
Nigeria (Technical Assistance)	S. Mahadeva Iyer (India)	Senior telecommunication engineer (OPAS)	16. 3.1968 15. 3.1970	The officer who carried out duties of an operational and executive character in the district of Kaduna, completed his two-year contract in Spring 1970.

Nigeria (Special Fund)	Hubert G. Arthur (New Zealand)	Expert on radio frequency management and associated duties	22. 7.1970	Two experts worked together on the improvement of radio-communication services. A beginning has been made by initiating action for the selection of sites for national and international monitoring stations with a view to the elimination of harmful interference. Some progress has also been made on practical training in frequency management and monitoring.
	K. R. K. Iyengar (India)	Expert on radio monitoring	12. 8.1970	
	Joseph D. A. John (India)	Expert for long distance plant maintenance	2. 8.1970	
	Igor B. Zorin (U.S.S.R.)	Project Manager	28.11.1970	The Project Manager of the Post and Telecommunication Training Centre in Oshodi took up his duties in December 1970. The recruitment of seven instructors was commenced and it is expected that the experts will be at the duty station by mid-1971.

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United Arab Republic (Special Fund)	Mohammed R. A. Khan (Pakistan)	Project Manager	19. 2.1970	The Project Manager concentrated his activities on the preparation and negotiation of the Plan of Operation for the Technical Training and Research Institute for Telecommunications which was signed at the end of the year. In addition he assisted the local authorities in the selection of 15 fellows for studies abroad and prepared a list of equipment to be supplied to the Institute by the I.T.U. to a value of U.S. \$50,000.
Somalia (Technical Assistance)	Anatolij I. Krutkov (U.S.S.R.)	Telecommunication adviser	13. 1.1969 12. 1.1970	The expert terminated his assignment as adviser to the Telecommunication Authorities at the beginning of the year under report.
	Gianfranco Segreti (Italy)	Radio instructor Telecommunications instructor	4. 1.1969 3. 1.1970 4. 1.1970 31.12.1970	The expert gave training in general telecommunication subjects to technicians in the Telecommunication Administration and assisted with the maintenance of the telecommunication services together with other experts provided under bilateral aid arrangements. His assignment terminated at the end of the year.

Sierra Leone (Technical Assistance)	Kenneth A. Lees (United Kingdom)	Telecommunication instructor (OPAS)	26. 4.1964	The officer continued to provide assistance in the development of a training centre which, as a "working entity", was handed over to the national counterpart who had been promoted to Principal. During the year 51 students commenced or continued two-year technological courses in radio microwave and automatic telephony equipment and 94 in-service personnel received vocational training in installation and maintenance.
Sudan (Special Fund)	Leonard S. Scammell (United Kingdom)	Instructor in automatic telephony	5. 8.1963 31. 3.1969	The main activity in the Post and Telegraph Training Centre project was directed towards the consolidation of the new sections of training initiated during the preceding year, the establishment of new courses and increasing the percentage of courses conducted by national counterpart staff (i.e. now 80% of the courses). During the year 761 trainees attended 70 courses. Eight members of the counterpart staff proceeded abroad on I.T.U. fellowships during the year.
	Teunis M. den Toom (Netherlands)	Project Manager	1. 4.1969	
	P. R. Desikachar (India)	Telephone switching instructor	29. 3.1970	
	Mervyn A. Gale (United Kingdom)	Instructor in radio-communications	14. 2.1966	
	John H. M. Johnson (United Kingdom)	Instructor in telegraphy	8. 12.1963	
	John B. King (United Kingdom)	Carrier and line transmission instructor	22. 1.1969	
	Joseph M. Meehan (Ireland)	Telecommunication telephone traffic instructor	19. 3.1969	
	Sabry A. A. Meguid (U.A.R.)	Telecommunication management instructor	18. 6.1969	
	Jan Elshout (Netherlands)	Telecommunication lines and cables instructor Associate expert in radio	6. 1.1969 11. 7.1969 31. 8.1970	

Country or Region of Assignment	Name (Nationality)	Speciality and/or Title	Starting and closing date of mission	Brief description of work; Remarks
Swaziland (Technical Assistance)	Abdur Rouf Kazi (Pakistan)	Lecturer in electrical engineering and telecommunications (OPAS)	4.11.1969	The officer continued to assist local authorities in establishing the Electrical and Telecommunication Engineering Section at the Swaziland Industrial Training Institute and in preparing students for the City and Guilds of London examinations. Nineteen students followed the 1st and 2nd year courses during the year.
Chad (Technical Assistance)	Albert Bouchet (France) Yves Heurtin (France)	Professor in general radio techniques Instructor in practical radio	25. 4.1964 26.10.1964	During the year, the experts continued to give instruction at the National School for Telecommunications in the practical aspects of radiocommunications. 24 students followed 2nd and 3rd year radio technician courses and 15 trainees commenced their first year of training in cable jointing and measurements. The total number of students at the school during 1970 was 48, 38 of whom were nationals of Chad, 13 from the Central African Republic and 3 from the Congo (Brazzaville).

Zambia (Technical Assistance)	David G. Peck (United Kingdom)	Telecommunication adviser	26. 2.1969	The expert continued to give advice and assistance on the organization of the telecommunication services, telecommunication legislation, and the development programme in this field. He was also involved in other important matters such as World Bank loans, the African Plan Pre-investment Survey insofar as it affects Zambia, etc.
Africa (Regional Project) (Technical Assistance)	Hertwig K. Bender (F.R. of Germany)	Regional telecommunication expert	16. 4.1968	The Regional Expert continued to advise countries in eastern Africa on general telecommunication matters. He worked, in particular, on the request for assistance for the Swaziland-Malawi Pilot Circuit Project, and the request for the development of the Telecommunication Training Institute in Addis Ababa under the U.N.D.P. During the year he visited Kenya, Seychelles and Somalia to give advice on request from the telecommunication authorities of the respective countries.

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) (Technical Assistance) ( <i>contd.</i> )	Raymond E. Métayer (France)	Regional telecommunication expert	3. 3.1970	The regional expert gave advice and assistance on general telecommunication matters to a number of countries in West Africa. In particular, he was engaged in the negotiations for the project for the creation of a Multinational Telecommunication Training School at Rufisque in Senegal; he participated in the preparation of the OERS request for modern inter-state links and the preparation of the request for the Bathurst-Kaolack link. He visited Mali, Niger, Ivory Coast, Gambia, Mauritania, Sierra Leone, Upper Volta, Togo, Dahomey, Guinea, Liberia and Ghana, on the request of the telecommunication authorities of the respective countries and gave advice also on the continuation of existing programmes and new projects for expertise, fellowships, the establishment of training schools, etc.
	Stanislas Sierakowski (Belgium)	Regional telecommunication expert	1. 9.1966	The regional expert continued to advise the Telecommunication Administrations of a number of countries in Central Africa on general telecommunication matters. In particular, he assisted in the adjudication of tenders for the earth stations in the Ivory Coast and the Cameroon, made comparative studies for the Central African Republic (radio relay links) and the Cameroons (rentability of the telex service) as well as advising on the continuation of existing programmes and new projects. During the year, he visited Rwanda, Chad, Ivory Coast, Gabon, Central African Republic, the Democratic Republic of the Congo, Nigeria and Burundi to give advice on the request of the respective Telecommunication Administrations.
Multinational Training School (Kenya, Malawi, Swaziland, Tanzania, Uganda and Zambia) (Special Fund)	William B. Jago (United Kingdom)	Expert in postal and telecommunication training Resumed mission Resumed mission	30.12.1968 29. 5.1970 13. 8.1970 20. 8.1970 8.12.1970 14.12.1970	The expert terminated his mission in mid-1970 having completed his work in connection with the preparation of a request for multinational training schools in the Eastern African Region. Parts of this project, which involves the establishment or extension of schools in a number of countries, are now becoming operational. The expert's assistance was again required during 2 short periods following the termination of his assignment, in order to finalize the submission of this complex request.

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African Preinvestment Project (Special Fund)	Paul Bassole (France)	Project Manager (Abidjan) (African Regional Telecommunication Expert 1.4.1968-31.8.1968)	1. 9.1968 31. 3.1970	Reports on the Preliminary Operations were completed at the beginning of the year. This was followed by a request to the U.N.D.P. for further detailed studies for the Eastern Africa network of international links between the Sudan, Ethiopia, Somalia, Kenya, Tanzania, Zambia and Botswana. Fourteen selected firms of consulting engineers were invited to bid for the detailed survey work on these routes and by the end of the year tenders from eleven firms had been received. A request was also submitted for detailed survey work on seven further detailed network studies in Western and Central Africa.
	Lars O. Engvall (Sweden)	Operation traffic expert (Abidjan)	8. 1.1969 7. 2.1970	
	Taofiqui Bouraima (Dahomey)	Project Manager Transmission expert (Abidjan)	1. 4.1970 20. 2.1969 31.12.1970	
	Samuel A. Boyd (United Kingdom)	Planning expert (Addis Ababa) (transferred to Kenya as from 12.12.1969)	31. 3.1969 30. 6.1970	
	Georges A. Joel (France)	Planning expert (Abidjan)	14. 1.1969 31. 1.1970	
Pilot Telecommunication Circuit (Ethiopia/Ivory Coast) (Special Fund)	Roland F. Bradburn (United Kingdom)	Traffic consultant	23.11.1970	This project, which came to an end in 1969, is now fully operational. However, a report on the working of the circuit after one year's operation being required, an expert closely linked with the project in 1968/69 has been requested to compile the necessary documentation and data.

2. AMERICAS				
Antigua (Technical Assistance)	Albert J. Carey (U.S.A.)	Superintendent of telephones (OPAS)	19.11.1968	During 1970, the OPAS expert continued his duties of Superintendent of Telephones. In particular, he advised the Administration in the expansion of the telephone service throughout the country, as well as training a national counterpart to take over the duties of Superintendent of Telephones and to become conversant with the running of the general administration.
Argentina (Technical Assistance)	Ercole Marelllo (Italy)	Expert in satellite communications	30. 4.1970 29. 7.1970	The expert assisted and advised the ENTEL (Empresa Nacional de Telecomunicaciones) in the planning of new installations at the earth station in Balcarce. Moreover, he studied the modifications to be made for permitting operations with INTELSAT IV.
Bolivia (Technical Assistance)	Pedro Chaher (Argentina)	Telecommunication Adviser	2. 9.1969	The expert continued to advise the Telecommunication Administration on matters of general organization. In addition, he assisted in the preparation of a request for the establishment of the National Telecommunication Institute and the drafting of the first general telecommunication laws for Bolivia.

Country or Region of Assignment	Name (Nationality)	Speciality and/or Title	Starting and closing date of mission	Brief description of work; Remarks
Bolivia (Technical Assistance)	John D. Shannon (United Kingdom)	Expert in organization and equipment of monitoring and frequency management station	18. 8.1970	The expert undertook preliminary action in regard to the establishment of a Monitoring Station in Bolivia, assisting in the selection of equipment and a site. On the frequency management site, the work of compiling data for the National Frequency Register is well advanced.
Chile (Technical Assistance)	Lothar Diehl (F.R. of Germany)	Expert in switching and automatic transmission in the telex service	31. 7.1967 31.10.1970	The expert concentrated his efforts particularly on the opening of the new automatic telex system for international service via the Longovilo earth station. He also assisted the "Dirección Nacional de Correos y Telégrafos" in the planning of telex and telegraph services and coordinated with the I.T.U. Project Manager of the Telecommunication Training Centre the establishment of a training programme for the personnel of the National Directorate.
	John Herbert Reinhardt (U.S.A.)	Expert in telecommunication organization and administration and in frequency management	4.11.1969 3.11.1970	The expert assisted in the re-organization of the Telecommunication Department in the "Superintendencia de Servicios Eléctricos de Gas y Telecomunicaciones". His duties also included the resolution of problems related to frequency planning, management, licensing, etc.

Chile (Special Fund)	Jacques Raverdy (France)	Project Manager	1. 7.1968	For the Telecommunication Training Centre project 1970 proved a successful year. The expert team was nearly at its full complement early in the year and 1083 trainees—engineers, high- and medium-level technicians—were attending specialist or refresher courses. A total of 50 different courses were held during 1970.
	André Alcaïde (France)	Line transmission and carrier instructor	3. 2.1970	
	Jean-Claude Boix (France)	Radiocommunication instructor	2. 7.1970	
	Michel Carles (France)	Television instructor	5. 1.1970	
	Joseph M. F. Kennedy (Ireland)	Telephone switching instructor	20.10.1970	
	Gérard P. Mounier (France)	Instructor for television and sound broadcasting receivers maintenance	1. 3.1970	
	Charles Rinaldi (France)	Radio-relay system and multiplex instructor	1.10.1969	
Colombia (Technical Assistance)	Claude M. Zenati (France)	Telegraphy instructor	28.11.1969	During his three-month mission the expert evaluated the training requirements of the country in the telecommunication field. During these investigations he covered numerous telecommunication organizations and operating agencies, with a view to assessing the needs in the different specialities and levels.
	Georg W. Baumgärtner (F.R. of Germany)	Telecommunication adviser	31. 8.1970 30.11.1970	

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 (detached for mission in East African Community 10.6-31.8.1970)	25. 9.1965 24. 9.1970	Since the project is entering its final phase, the number of I.T.U. experts and associated experts decreased substantially in the course of 1970. The experts continued to lecture at both sites of the project (Bogota and Popayan), two new fellowships were awarded and additional equipment purchased.
	Lennart G. Andersson (Sweden)	Associate expert in switching	28. 5.1969	
	Lars-Rune Berg (Sweden)	Associate expert in transmission	30. 9.1968 24.11.1970	
	Kaj S. Elgstrand (Sweden)	Associate expert in ergonomics	15. 8.1968 14. 2.1970	
	Johan J. Ernberg (Sweden)	Associate expert in physics	30. 9.1968 30. 6.1969	
	Matthias J. Josten (F.R. of Germany)	Instructor in mathematics	1. 7.1969 30. 6.1970	
		Instructor in switching (applied research work)	1. 7.1968 30. 6.1970	
	Knut E. Källström (Sweden)	Project coordinator	1. 7.1970	
		Associate expert in switching	30. 9.1968 31. 3.1969	
		Lecturing and research work in propagation	1. 4.1969 31. 1.1970	
	Artème Nicolazzi (France)	Instructor in transmission and associated equipment	1. 4.1966 30. 6.1970	
	Albert J. G. Schlaegel (F.R. of Germany)	Instructor in telegraphy	16. 2.1970	

Costa Rica (Technical Assistance)	Ronald Lionel Howe <sup>1)</sup> (United Kingdom)	Expert in telecommunications traffic	10. 3.1970	The expert assisted and advised the Telecommunication Administrations of Central America in his speciality. In particular, he made traffic and operational studies of the regional network, general studies of national network planning in the various countries and assisted the individual Administrations in the preparation of traffic data for expansion.
Dominican Republic (Technical Assistance)	Benjamin Brok <sup>2)</sup> (U.S.A.)	Expert in telegraph and telephone exchange equipment	13. 2.1964	The expert continued to advise and assist the countries of the Caribbean Region in his speciality. In particular, he gave advice in connection with the U.N.D.P./R.I.T. Pre-investment Study, the expansion of the telex service in the Dominican Republic and the preparation of a technical assistance plan for the telephone services in Surinam. He also trained counterpart personnel and gave lectures to engineering trainees.
El Salvador (Technical Assistance)	Robin D. Stump (U.S.A.)	Expert in telegraph and telephone equipment for Guatemala and El Salvador	17. 7.1970	The expert assisted and advised the authorities of Guatemala and El Salvador in regard to the expansion of local and long-distance telephone networks, reviewing technical specifications to be published for tender. He also visited British Honduras to review a proposal for a new national telephone system.

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Ecuador (Technical Assistance)	Johannes B. Berger (F.R. of Germany)	Frequency management expert	13.10.1969	<p>During the year, the expert concentrated his efforts on terminating the specifications of the equipment for the frequency monitoring service in Ecuador, preparing a proposal for the administrative structure of the Frequency Registration Bureau, together with a description of the required posts. The work in connection with the establishment of the national frequency register was also initiated. Furthermore, the expert gave instruction in his speciality to the local staff.</p> <p>The expert advised the General Directorate of Telecommunications on matters related to the planning of new telephone networks, as well as on general aspects of the organization of the National Telecommunications Enterprise.</p> <p>The expert completed a one-year mission in October 1970, during which he had advised the General Directorate of Telecommunications and the National Telecommunications Enterprise on the elaboration of technical specifications and tenders for a new radio-relay network and in the evaluation of the bids. Moreover, the expert delivered lectures on microwave transmission and gave in-service training to several qualified engineers.</p>
	Ferdinand J. B. P. Ferdinandus (Netherlands)	Expert in national telecommunication network planning	25. 5.1970	
	Heinrich F. Kunst (F.R. of Germany)	Microwave expert	13.10.1969 17.11.1970	

Guatemala (Technical Assistance)	Hirokazu Shimada <sup>1)</sup> (Japan)	Expert in telegraph and telephone exchange equipment	14.12.1967 31. 7.1970	The expert assisted and advised the countries of Central America in telephone and telegraph switching. In particular, he helped in the planning of a trunk microwave link in Central America and in the expansion of the local telephone networks.
Honduras (Technical Assistance)	Lars E. G. Gustafsson <sup>1)</sup> (Sweden)	Expert in organization and operation of telecommunication services and tariffs	2.10.1967 31.12.1970	
Jamaica (Technical Assistance)	Patrick J. O'Sullivan (Ireland)	Senior lecturer, telecommunication engineering (OPAS)	7. 8.1967	The expert continued to lecture intermediate and senior level technicians and middle management personnel at the College of Arts, Science and Technology in Kingston. He also prepared programmes for electronics and advanced electrical engineering courses. During the year he was assisted by two associate experts who participated in the preparation of courses and lectured at the College.
	Peter A. Beeftink (Netherlands)	Associate expert in electrical engineering	2. 1.1970	
	Björn B. Nyberg (Sweden)	Associate expert in electrical engineering	6.11.1969 5.11.1970	

Country or Region of Assignment	Name (Nationality)	Speciality and/or Title	Starting and closing date of mission	Brief description of work; Remarks
Jamaica (Funds-in-Trust)	Clinton H. Davis (Canada)	OPAS Officer (telephone management)	15. 1.1970	The expert continued to advise and assist the Jamaican Public Utility Commission, which forms part of the Ministry of Public Utility and Housing. During the first half of 1970, the expert concentrated his efforts on solving the existing problems, preparing studies, making evaluations and giving advice to the Commission and the Ministry. He is also training counterpart personnel and lectures engineering trainees.
Nicaragua (Technical Assistance)	Wilfred D. McKenzie <sup>1)</sup> (Australia)	Transmission expert	1. 7.1969	The expert continued to assist and advise the authorities of the Central American countries in his speciality. In particular, he gave advice in connection with projects planned by British Honduras, Guatemala and Honduras for which bank loans are being negotiated.

Panama (Technical Assistance)	Wilhelmus J. Bünger <sup>1)</sup> (Netherlands)	Expert in organization and operation of telecommunication services and tariffs	30. 6.1969	The expert, while continuing to advise and assist the Central American countries in his speciality, concentrated his efforts on the preparation of recommendations for the improvement of the integration of national telecommunication services in Panama; surveying commercial procedures in Costa Rica; advising on legislation in Nicaragua and the taking over of the international services in Honduras; he also made proposals for the re-organization of the Telecommunication Administration in Guatemala.
Paraguay (Special Fund)	José E. Cordero (U.S.A.) Ernst P. Heutelbach (F.R. of Germany)	Project Manager  Telegraphy instructor	8.11.1969  20. 7.1970	With the signing of the Plan of Operation in May 1970, the National Paraguayan Institute of Telecommunications became operational and a second expert joined the project. During the year 113 students attended general technical, telephone instrument and line repair and supervisory courses of long and short-term duration. Formal courses were also held for counterparts in decision-making, mathematics and electronics.

Country or Region of Assignment	Name (Nationality)	Speciality and/or Title	Starting and closing date of mission	Brief description of work; Remarks
Peru (Technical Assistance)	Venkat V. Rao (India)	Frequency management expert Multinational frequency management expert	13. 4.1968 31. 3.1970 1. 4.1970	As from April 1970 the expert, who had been assisting the Authorities of Peru in frequency management matters for two years, commenced a new mission aimed at helping some 13 countries in Central and South America and the Carribbean Region in matters related to frequency management and the utilization of the radio frequency spectrum. The expert visited all the countries concerned and prepared a first set of recommendations for the resolution of the most urgent problems. He moreover coordinated the activities carried out by I.T.U. country experts in the area in this same speciality.
	Ricardo A. Criscolo (Argentina)	Expert in telecommunication organization and planning	16. 8.1970	Arriving in the country after the earthquake, the expert's first action was to advise and assist in the re-establishment of communications. He also assisted the Project Manager of the Training Centre in Chile, detached for a short mission to Peru, in preparing the request for the establishment of a Telecommunication Training Centre. He, furthermore, made recommendations in regard to the National Telecommunication Plan.

Trinidad (Technical Assistance)	Theodorus Pasman <sup>2)</sup> (Netherlands)	Expert in telecommunication administration and tariffs	27. 7.1969 26. 8.1970	The expert assisted and advised the Telecommunication Administrations of the Carribbean Region, in particular those of Barbados, the Dominican Republic, Surinam and Trinidad and Tobago, in his speciality. In particular, he drafted the relevant laws and regulations for the operation and licensing of telecommunications in these countries.
Uruguay (I.T.U. ordinary budget)	Royall C. Morrison (U.S.A.)	Telecommunication adviser	3. 9.1970 2.10.1970	The expert assisted the UTE (Usinas y Teléfonos del Estado) in the technical and economical aspects of the installation of MIC systems within Montevideo, which, if approved by UTE, will result in an important investment to improve the local telephone system.
Venezuela (Technical Assistance)	Lothar Diehl (F.R. of Germany)	Expert in telegraph organization and operation	1.11.1970	Having arrived in the country towards the end of 1970, the expert commenced advising the Ministry of Communications on matters related to the organization of the telegraph service.
	Alfonso Hernandez-Cata (Cuba)	Expert in the management of radio frequencies and monitoring stations	6.11.1970	The expert commenced his mission in November 1970. He is advising the Ministry of Communications on matters related to the management of the radio frequency spectrum and the establishment of a monitoring service.

Country or Region of Assignment	Name (Nationality)	Speciality and/or Title	Starting and closing date of mission	Brief description of work; Remarks
Venezuela (Funds-in-Trust)	Frank J. Gottstein (Australia)	Telecommunication adviser	19. 3.1970	Under a special arrangement concluded between the National Telephone Company of Venezuela (CANTV), the Australian Post Office and I.T.U., the expert elaborated a programme of assistance, including expert services and fellowships, to be implemented in 1971 with CANTV financing. He also advised on matters related to external plant.
Venezuela (Special Fund)	Humberto Ruiz (Peru)	Instructor in radio equipment and radio systems	8. 9.1964 30. 4.1969	The first phase of the Training Centre for Telecommunication Technicians project terminated on 30 June 1970. A second phase was under negotiation and the project continued on interim financing. During the year, a large number of courses (regular, refresher, professional advancement), were held and a total of 585 students attended.
	Yoshizo Ito (Japan)	Acting Project Manager	1. 5.1969 31.12.1969	
	Jorge Mareggiani (Argentina)	Project Manager	1. 1.1970	
		Instructor in telephone switching and traffic	17. 8.1969	
	Claude Moussac (France)	Instructor in electrical measurements and power equipment	7. 9.1964 30. 6.1970	Administrative courses for in-service personnel were also commenced.
		Instructor in theory and practice of transmission	16. 4.1966	
	Chukwudumebi P. Onianwa (Nigeria)	Instructor in radio-communications	18. 5.1970 17.11.1970	
	Oscar G. Platter (Italy)	Instructor in telegraphy	11. 3.1966 30. 6.1970	
	Christianus P. van Vucht (Netherlands)	Instructor in external plant	3. 6.1969 2. 9.1970	
Latin America (Regional Project) (Technical Assistance)	Juan A. Autelli (Argentina)	Regional Telecommunication planning expert	1. 1.1968	The regional expert stationed in Rio de Janeiro (Brazil) was particularly concerned with the study for the development of the Inter-American Telecommunications Network, which is now in its final stage, collaborating closely with the President and the Regional Coordinator of the Inter-American Telecommunications Commission (CITEL) as also the individual telecommunications administrations involved. He continued to assist and advise in connection with the identification and formulation of requests under the Technical Assistance and Special Fund components and in this connection visited Argentina, Bolivia, Chile, Paraguay, Peru and Uruguay.

Country or Region of Assignment	Name (Nationality)	Speciality and/or Title	Starting and closing date of mission	Brief description of work; Remarks
Latin America (Regional Project) (Technical Assistance) ( <i>contd.</i> )	Alexander B. MacLennan (United Kingdom)	Regional Telecommu- nication planning expert	1. 1.1969	The regional expert stationed in Guatemala continued to coordinate the activities of the team of experts assigned to Central America, all engaged in the development of the Regional Telecommunication network. The transmission portion of the network is under construction and the call for tenders for the switching equipment has been published. A revised draft request for a Regional Telecommunication Training Centre is also being prepared. During the year, the regional expert visited British Honduras, the Bahamas, Costa Rica, El Salvador, Honduras, Jamaica, Nicaragua and Panama, giving advice and assistance as required.
	Omar A. Posada da Silveira (Uruguay)	Regional Telecommu- nication planning expert	17. 3.1969	Stationed in Quito (Ecuador) the regional expert collaborated in the work of the Inter-American Telecommunications Commission (CITEL) in the countries under his jurisdiction, giving advice and assistance in this respect, especially in Ecuador, Venezuela and Surinam. He also assisted and advised the various Administrations on general telecommunication matters and in the formulation and preparation of requests under the Technical Assistance and Special Fund components. In this connection, he visited Colombia, Surinam, Uruguay and Venezuela.
Pre-investment Study for Inter-American Network (I.D.B./I.T.U.) (Special Fund)	Caesar F. Fiore (U.S.A.)	Telecommunication network planning specialist	1.12.1969 12.12.1970	The expert, recruited by I.T.U. at the end of 1969, was assigned to the Programme Management Group, created by the Inter-American Development Bank (I.D.B.), for the implementation of the Pre-investment study for the Inter-American Telecommunication Network, which is financed by the U.N.D.P. Special Fund. He ensured the liaison between the I.T.U. and the I.D.B. and was put in charge of the co-ordination of the studies undertaken in one group of countries.

<sup>1)</sup> On request, assisting other Central American countries.  
<sup>2)</sup> On request, assisting other countries in the Carribbean area.

Country or Region of Assignment	Name (Nationality)	Speciality and/or Title	Starting and closing date of mission	Brief description of work; Remarks
3. ASIA AND THE FAR EAST				
Afghanistan (Technical Assistance)	Geoffrey Leng (United Kingdom)	HF radiocommuni- cation expert	6.10.1969	The expert continued to assist in the maintenance of HF transmitting and receiving stations and related equipment. He in particular devoted much time to fault clearing and in establishing routine procedures for HF radiocommunication equipment. In addition he trained local staff in his speciality and gave advice on the installation of a 20 kW transmitter due in 1971.
	Bruno Meixner (F.R. of Germany)	Expert on telex	5.10.1970	The expert took up his duties in October 1970 and was mainly engaged in the operation of the new international telex system Herat-Meshed. During the course of his mission he will assist in and advise on the planning, setting up, operation and maintenance of telex networks and stations, of telegraph stations and of a central teleprinter workshop.

	Hermann Sauermilch (F.R. of Germany)	Telecommunication adviser	8. 9.1958 31.12.1970	The expert left Afghanistan at the end of 1970 after a 12-year mission, first as carrier systems expert and since 1966 as Telecommunication Adviser. During 1970 he assisted in the implementation of the plans for the extension of the automatic local switching centres of Kabul City. In his capacity as senior member of the I.T.U. group of experts in the country he coordinated the group's work in the telex and radio fields and in regard to the collection of the data for the Feasibility Study for the Asian Telecommunication network.  The first phase of the project was successfully completed on 31 December 1969. The work at the Telecommunication Training Centre continued immediately under the Phase II project. In 1970 29 trainees passed the three-month Preparatory Course and entered the first year of the three-year Technician course. 28 students were in their third year and 29 in their second year of technician training. Equipment to the approximate value of US \$40,000 was supplied to the Centre by the I.T.U. in the course of the year.
	Sadayuki Ohnuma (Japan)	Project Manager	21. 4.1969 20. 4.1970	
	Odd T. Lehne (Norway)	Project Manager	12. 4.1970	
	Arthur D. Bungay-Prevett (United Kingdom)	Instructor in telephony	1.11.1969	
	Yoshinori Kimura (Japan)	Instructor in transmission and carrier systems	17. 8.1969	
	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 30. 6.1970	
	Eckhard Pense (F.R. of Germany)	Instructor in radio	1. 7.1970	
	Kurt Scherrer (Switzerland)	Instructor in telegraphy	15. 5.1967 6. 8.1970	
		Instructor in radio	1. 8.1965 30. 6.1970	

Country or Region of Assignment	Name (Nationality)	Speciality and/or Title	Starting and closing date of mission	Brief description of work; Remarks
Saudi Arabia (Funds-in-Trust)	Rafique Ahmad (Pakistan)	Expert on automatic and manual telephone systems	18. 2.1968	<p>The expert continued to deal with the improvement of the telephone system in the country. He also assisted in the effective control of the execution of the Automatic Telephone Project, installation of new automatic exchange lines, technical evaluation of tenders and the preparation of a five-year development plan for telecommunications.</p> <p>These experts carried out a special advisory mission to advise the Government on a national trunk telecommunication network, which is to cater for the interconnection of automatic telephone exchanges, the transmission of information for civil aviation and television as also broadcasting programme links.</p> <p>The expert continued to advise the Government in his speciality. In particular he inspected the technical installations of the broadcasting stations and made recommendations on its improvement. He also studied and made recommendations on the construction of the new broadcasting studio.</p>
	Robert C. Barton (Australia)	Member of Special Advisory Mission on Trunk Telecommunication network	16. 3.1970 22. 9.1970	
	Harald T. K. Hohlin (Sweden)	Team Leader of Special Advisory Mission on Trunk Telecommunication network	21. 3.1970 23. 9.1970	
	Mukkavalli L. Sastry (India)	Broadcasting adviser	5. 2.1965	

Saudi Arabia (Special Fund)	David Holland (United Kingdom)	Project Manager	13. 4.1970	<p>The Project Manager and two instructors took up duty during the year. There will be two Centres in Saudi Arabia, one in Jeddah and another in Riyadh, for which a site has been allocated. The experts were particularly engaged in preparing course material and syllabi for the courses and in the organization of preparatory training for students from the intermediate schools who will be embarking on courses at the Centres. The Preparatory School which will provide two-year courses, is expected to be in operation in the autumn of 1971. Training at the Riyadh and Jeddah Centres will not commence before 1973, and the recruitment of the other instructors is therefore being delayed. An amended Plan of Operation has been prepared in conjunction with the Government and the Project Manager.</p>
	Mohammed Ali (Pakistan)	Instructor in telecommunication outside plant (temp. Acting Project Manager from 7.1.70 to 20.4.70)	7. 1.1970	
	Bernhard K. Lillsunde (Sweden)	Instructor in telephone switching	11. 8.1970	

Country or Region of Assignment	Name (Nationality)	Speciality and/or Title	Starting and closing date of mission	Brief description of work; Remarks
Ceylon (Technical Assistance)	Sachio Iijima (Japan)	Telephone exchange planning and design expert	9. 1.1969	The expert prepared and submitted reports concerning equipment required for the interim relief plan of the junction circuits in the Greater Colombo Area of the telecommunication services and on the expansion plan for doubling the capacity of the exchanges in the same Area, which is aimed at meeting the telephone demand up to 1978. As a result of the preparation of these reports, three counterparts assigned to the expert acquired a knowledge of cross-bar equipment and the calculations required to determine the necessary quantity of equipment, as also of the methods utilized to map out expansion plans and compile the appropriate data.
Korea (Funds-in-Trust)	Jurgen F. C. Wegner (F.R. of Germany)	Team Leader — expert in automatic telephone exchange	8. 9.1970 10.12.1970	The team of experts, during a short mission, advised the Korean Administration on a semi-electronic telephone system. They carried out detailed studies in this connection and made comparisons between the new systems available or being developed.
	Frank S. Brough (Canada)	Expert on automatic telephone engineering and maintenance	15. 9.1970 14.12.1970	
	Kenzo Fukui (Japan)	Expert on automatic telephone engineering and development planning	15. 9.1970 14.12.1970	

Indonesia (Special Fund)	Masafumi Kinoshita (Japan)	Project Manager	1. 6.1968	1970 was the second full calendar year of operation at the Telecommunication Training Centre project, and the team of experts was complete. 24 courses were completed during the year, in switching, telegraphy, radio, transmission, outside plant, power and teaching methods. More than 400 students graduated from these courses. In May, five regional training units (Djakarta, Bandung, Surabaya, Makassar and Medan) were inaugurated with 281 students.
	Hans-Jürgen Heymann (F.R. of Germany)	Telecommunication switching instructor	1. 6.1969	
	Ryuzaburo Inano (Japan)	Radio Instructor	24.12.1968	
	Dieter Rosenbaum (F.R. of Germany)	Telecommunication power plant instructor	19.11.1969	
	Sten C. Sallander (Sweden)	Telecommunication lines and cables instructor	4.12.1968	
	Helmut E. A. Schnitzke (F.R. of Germany)	Telegraphy instructor	10. 2.1969	
	Alexander M. Skinner (Australia)	Carrier current and line transmission instructor	16. 1.1969	
	John W. Willmot (United Kingdom)	Training adviser	1.11.1968	
West Irian (FUNDWI)	Oystein Linge (Norway)	Project Manager	10.10.1968	Under the Telecommunication Repair and Rehabilitation Project within the framework of the FUNDWI (Fund of the United Nations for the Development of West Irian) the efforts of the I.T.U. team, at the beginning of the year, were still concentrated on the prevention of a general breakdown of telecommunication services in the country. The outstanding achievement realized in 1970 was the cessation of the frequent breakdowns, the improvement of the quality of service, the completion of the modifications and the beginning of the final rehabilitation of the major circuits.
	Per-Erik Lundborg (Sweden)	Radio maintenance expert	20.10.1969 19.10.1970	
	Maurice Ravarit (France)	Telegraph maintenance expert	20.10.1969	
	Stig T. Toreson (Sweden)	Radio maintenance expert	20.10.1969	
	Hugo J. C. Stroobants (Belgium)	Radio maintenance expert	29. 9.1970	

Country or Region of Assignment	Name (Nationality)	Speciality and/or Title	Starting and closing date of mission	Brief description of work; Remarks
Iran (Special Fund)	Duncan P. Taylor (United Kingdom)	Project Manager	12.12.1969	The Project Manager devoted a large part of his time to the negotiation of the Plan of Operation and the preparatory work related to the establishment of a Telecommunication Training Centre as an extension of the existing P.T.T. School. He also participated in the selection of 105 new entrant trainees who started their training in September. In October 1970 the radio instructor joined the project and was engaged in the planning of the microwave training laboratory, and in providing training of counterpart staff and new entrants.
	Amos L. O'Donnell (Australia)	Radio instructor (radio links)	22. 9.1970	
Iraq (Technical Assistance)	Yoshio Kobayashi (Japan)	Telecommunication planning network expert (Instructor in general telecommunication engineering under Special Fund project 8.12.1968)	9.12.1969 8. 6.1970	The expert continued to advise the Ministry of Oil and Minerals and was particularly engaged in the preparation of specifications for the telecommunication network connecting the Ministry's Administration in Baghdad to various branches and installations throughout Iraq. In this work he collaborated with the national engineers. His advice and assistance has resulted in the successful preparation of a draft for the above-mentioned specifications.

Iraq (Special Fund)	Yuichi Sato (Japan)	Technical adviser on automatic telex exchanges	2. 3.1969 1.11.1970	The expert continued to advise the P.T.T. on the installation of telex systems and made the following studies—general telegraph master plan, telex master plan and a feasibility study of general telegraph and telex systems; preparation of specifications for telex and gentex projects. The expert also surveyed building conditions of existing post and exchange offices and examined their suitability for accommodation of the telex and gentex systems. In addition he trained two counterparts in the fundamentals of planning telex systems.
	Engels A. Demin (U.S.S.R.)	Project Manager	16. 5.1969	The Project Manager of the Telecommunication Training Centre remained on duty throughout the year in order to advise on and assist in the training activities of the Centre. (Seven I.T.U. experts left the Centre in 1969, after the completion of their contracts). He also participated in the preparation of a request for Phase II project. 97 technicians and traffic officers were trained in a two-year course which commenced in February 1970 and 103 trainees graduated from 14 short-term courses.

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Jordan (Technical Assistance)	Fedor D. Axenenkov (U.S.S.R.)	Telephone cable networks and line transmission expert	8. 5.1970	<p>The expert took up his assignment in May and assisted the Ministry of Communications in the improvement and maintenance of cable networks, also training technicians and linesmen in this field. His mission was interrupted in September, when all U.N. personnel left the country, and was only taken up again in mid-December on the expert's return to Amman.</p> <p>The expert continued to advise and assist the Government in his speciality. In particular he studied and made recommendations on the extension of telephone exchanges and assisted in the telex scheme, as well as in the improvement of carrier routes. In view of the interruption of his work in September, when he proceeded to Geneva and subsequently Beirut, he assisted the Regional Expert stationed in the Lebanon with the drafting of a request for a Training Centre project for Jordan. He returned to Amman on 3 January 1971.</p>
	Subbish Sankara Raman (India)	Telephone and telex expert	7.12.1965	

Kuwait (Funds-in-Trust)	Wadie F. Boulos (U.A.R.)	Telecommunication instructor	8. 7.1968	<p>The expert, together with a second telecommunication instructor, Mr. El Kaffas, assisted in the training of local staff. In 1970, 13 trainees graduated from a two-year Satellite Communication course, another group of 18 microwave technicians continued their training during the year and a third group of 22 network technicians started their 24-month training at the end of the year.</p> <p>The officer continued to assist the Ministry of the Interior in the planning and expansion of the Police Radio-mobile Telecommunication Service.</p> <p>The expert collaborated with another telecommunication instructor, Mr. Boulos, in the training of telecommunication personnel. His untimely demise in September 1970 is greatly regretted.</p> <p>Although recruited as a radio specialist, on taking up duty in Kuwait, the expert was appointed to the post of Assistant Chief Engineer for Maintenance and Operation, dealing with outside plant. He was particularly involved in the administration and improvement of telephone and telegraph services, fault finding studies, etc.</p>
	Austin F. Burke (Ireland)	Police telecommunication planning engineer (OPAS)	6. 1.1967	
	Fouad H. El Kaffas (U.A.R.)	Telecommunication instructor	8. 7.1968 15. 9.1970	
	Eizi Kyogoku (Japan)	Senior radiocommunication engineer (OPAS)	13. 6.1970	

Country or Region of Assignment	Name (Nationality)	Speciality and/or Title	Starting and closing date of mission	Brief description of work; Remarks
Kuwait (Funds-in-Trust) ( <i>contd.</i> )	Chaudhry M. Sadiq (Pakistan)	Senior telecommunica- tion engineer (telephone) (OPAS)	23. 7.1967	During the year, the officer continued to render assistance in the installation, operation and maintenance of all telephone services in Kuwait. The expert, who had been assisting in and advising on the improvement of the stores organization, including the preparation of purchase and stores procedures and the training of storekeepers, terminated his mission at the beginning of the year.
	M. M. Siddiqi (Pakistan)	Expert in stores organization (purchasing and supplies)	19. 7.1967 18. 1.1970	
Malaysia (Technical Assistance)	Yoshiro Mishima (Japan)	Telecommunications controller (OPAS) (network manage- ment and service quality control)	17. 9.1970	The officer took up his assignment in September and assisted in the compilation and analysis of statistical data on plant faults. He is also assisting maintenance groups in the utilization of statistical information for the improvement of telephone service quality.

Malaysia (Special Fund)	Colin W. C. Richards (United Kingdom)	Project Manager	24. 9.1962	1970 was the final effective year of Phase II of the Telecommunication Training Centre project. The major part of the I.T.U. expert team left at the end of the year. Development, expansion and consolidation of activities at the Centre in Kuala Lumpur and at the Regional Units in Sabah and Sarawak continued during the year with excellent results. In 1970, 3,061 trainees attended various courses at the Centre and the Regional Units. Several new courses were introduced.
	Dennis W. Berry (United Kingdom)	Instructor in line plant, subscribers' apparatus and switching	24.10.1967 31.12.1970	
	John M. Broderick (Australia)	Instructor in telecom- munication traffic	12.12.1967 31.12.1970	
	Clarence L. Canute (Australia)	Instructor in trans- mission	8. 6.1963 31.12.1970	
	Nils A. Carlsson (Sweden)	Associate expert — radio and transmission	18. 3.1968	
	Benno Engström (Sweden)	Associate expert — switching and telephone instruments	18. 3.1968 17.10.1970	
	Mrs. Kerstin M. Engström (Sweden)	Associate expert — tele- communication traffic engineering	18. 3.1968 17.10.1970	
	Signar Hammargren (Sweden)	Associate expert — tele- communications (general)	22.10.1969	
	Alfred Kurth Højbjerg (Denmark)	Instructor-Adviser on telegraph systems and equipment	15. 9.1969 31.12.1970	
	Robert M. Johnsen (Norway)	Instructor in radio	28. 7.1964 27.12.1970	
	John P. Killeen (Australia)	Instructor in line plant	8. 6.1963 31.12.1970	
	Stig-Arne Larsson (Sweden)	Associate expert — tele- communications (general)	18. 3.1968	

Country or Region of Assignment	Name (Nationality)	Speciality and/or Title	Starting and closing date of mission	Brief description of work; Remarks
Maldives (Technical Assistance)	A. K. M. Mainul Islam (Pakistan)	Telecommunications adviser (radio)	21. 7.1970 25.10.1970	The expert carried out a short mission to advise the Government on technical aspects of the establishment of an international link with Ceylon, the choice of a suitable site for the station and the preparation of specifications for the requisite radio and telegraph equipment. He also advised on the lay-out of buildings.
Nepal (Technical Assistance)	Alfred H. T. Waldram (United Kingdom)	General adviser	13. 5.1968	The expert concentrated on the provision of advice and assistance to the local authorities in the preparation of specifications for diverse telecommunication equipment and systems as well as in the examination of tenders, in connection with the programme of development under a loan from the International Development Bank. He also assisted in the preparation of a request to the U.N.D.P./Special Fund for a Telecommunications and Civil Aviation Training Centre.

Pakistan (Special Fund)	Kurt P. D. Windszus (F.R. of Germany)	Project Manager	12. 4.1970	The Project Manager for the extension of the Telecommunication Staff College (Haripur) was mainly engaged in the finalization of the Plan of Operation, the elaboration of the detailed work programme and the preparatory work for the construction of new buildings, the nomination of fellowships and the preparation of lists of equipment to be procured. In the cyclone relief operation he assisted the local telecommunication authorities and spent a short time in East Pakistan.
Philippines (Technical Assistance)	Frank G. E. Ievers (United Kingdom)	Senior adviser, telecommunications administration, organization and management	16. 3.1970	The expert, in particular, gave advice and assistance in the re-organization of the Bureau of Telecommunications, and the organization of a National Telecommunication Planning Centre. He furthermore assisted in the drafting of telecommunication laws and regulations, also preparing a scheme for the processing of radio station licence issues and renewals by computer. As senior adviser, he coordinated the work of the other two experts assigned to the Philippines.
	Ronald V. Talbot-Jones (United Kingdom)	Planning expert	1. 4.1970	The expert advised on and assisted in the setting up of the National Telecommunication Planning Centre. By the end of the year, a complete schedule of toll systems and equipment had been compiled. He executed his work in collaboration with the other two experts assigned to the Philippines.

Country or Region of Assignment	Name (Nationality)	Speciality and/or Title	Starting and closing date of mission	Brief description of work; Remarks
Philippines (Technical Assistance)	Kenneth C. Newham (Australia)	Expert on planification of microwave network	10. 4.1970	The expert advised on and assisted in the organization of a Telecommunication Planning Centre, as also in the planning of a national microwave network. He worked in collaboration with the other two experts assigned to the Philippines.
Thailand (Special Fund)	R. Seshasayee (India)	Instructor in transmission and carrier systems	14.12.1964 30. 6.1967	The activities at the Telecommunication Training, Test and Development Centre were further developed. The Training Centre is now practically run by the Thai counterpart staff—the I.T.U. experts conducted high-level pre-entry courses. A total of 1,007 trainees passed through the Centre during the year. Outstanding achievements were also realized at the Test and Development Centre, in particular, in the calibration work and the preparation of specifications.
	Frederick J. Andrew (New Zealand)	Project Manager	1. 7.1967	
	Aiichi Aoyama (Japan)	Instructor in external plant	2. 5.1970	
	Wilfred A. Bergeron (U.S.A.)	Instructor in telegraphy and telex systems	11.10.1970	
	Hans H. Junge Hansen (Denmark)	Instructor in radio	30. 1.1965	
	Olof S. Linder (Sweden)	Associate expert in electronics	3.11.1968 2.11.1970	
	Tarakad S. Subramanian (India)	Instructor in telephone switching systems	18. 1.1965	
		Instructor in transmission and carrier systems	8. 5.1969	
Yemen Arab Republic (Technical Assistance)	Finn Jensen (Norway)	Expert on radio	3. 8.1970	The expert advised and assisted the Ministry of Communications in all general matters concerning radio telecommunications and in the coordination of the activities on projects in this field.

	Sudhir K. Kanjilal (India)	Expert on organization and administration (OPAS)	6.12.1970	The officer took up his duties at the end of the year. He will be assisting in the organization of the Telecommunications Department and be responsible, as Chief of the Administrative Division of the Department, for the organization of the work of the Division, as also for assessing the staff requirements for all telecommunication services.
	Kaare Welle (Norway)	Expert in telephony	5. 4.1970	The expert advised and assisted the Ministry of Communications in all general technical matters concerning the national telephone service and the coordination of activities in this field. In particular, he is engaged in training local staff for the operation of the overhead trunk lines.
People's Democratic Republic of Yemen (Southern Yemen) (Technical Assistance)	Terence A. A. Marshall (United Kingdom)	Telephone exchange and equipment maintenance expert General Telecommunications adviser	25. 6.1969 24. 6.1970 25. 6.1970	The expert continued to advise on matters relating to his speciality, and in connection with the assistance to be requested from the U.N.D.P./I.T.U. In particular, he elaborated on budgetary estimates for a national trunk system and plans for an air-conditioning plant to be installed in the new exchange of Mukalla. In addition, the expert gave practical training and some theoretical instruction to local staff.

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Asia and the Far East (Regional Project) (Technical Assistance)	Kaliyanpur V. Pai (India)	Senior regional tele- communication expert	9.12.1961	During the year the three regional experts stationed in Bangkok rendered technical assistance to and visited the following countries: Ceylon, India, Indonesia, the Khmer Republic, Laos, Malaysia, Nepal, the Philippines, the Republic of China, the Republic of Viet-Nam, Singapore, Thailand and the South Pacific Islands. The problems with which the experts dealt were closely connected with the development of telecommunication networks and services in the countries concerned, as well as with the expansion and/or establishment of training facilities.
	Norman V. Knight (United Kingdom)	Regional expert/ Engineer economist	11.11.1969	
	A. David Tadde (U.S.A.)	Regional radio- communication expert	4. 2.1969	
Middle East and North Africa (Technical Assistance)	Abdelhak Benkirane (Morocco)	Regional telecommuni- cation expert	1. 4.1970	The regional expert took up his assignment in Beirut in April 1970. During the year he visited the following countries: Libya, Kuwait, Tunisia, Algeria, U.A.R., Iraq. The expert rendered technical assistance as required, and, in particular, assisted three of these countries in preparing requests for Telecommunication Training Centre projects.
South East Asia and the Far East (Feasibility studies) (Special Fund)	Henry G. Nowotny (Australia)	Project Manager	16.11.1969	The preparatory phase was concluded in April 1970 when twelve participating countries signed the Plan of Operation. Survey work commenced immediately following a meeting of the I.T.U. team with the telecommunication specialists from the countries concerned. By the end of the year, technical reports on the first of five sub-regions [Laos, Khmer Republic (Cambodia) and Viet-Nam] and a second one (Thailand, Malaysia, Singapore and Indonesia) were in the course of detailed preparation. The team started a full-scale study of the third and fourth sub-regions (India, Pakistan, Nepal, Afghanistan and Iran) late in December 1970.
	Mohammad Aslam (Pakistan)	Expert in transmission	20. 2.1970	
	Ting-Chang Chiang (China)	Expert in exploitation and tariffs	16. 4.1970	
	Mangalore M. Kini (India)	Expert in inter- connection and switching	21. 2.1970	
	Yuichi Saito (Japan)	Expert in radio systems	15. 4.1970	

Country or Region of Assignment	Name (Nationality)	Speciality and/or Title	Starting and closing date of mission	Brief description of work; Remarks
4. EUROPE				
Malta (Funds-in-Trust)	Douglas J. Kelly (New Zealand)	Expert in cable network planning	15. 7.1970	The expert submitted to the Government a technical report containing a detailed estimate of the financial investment required and proposals for the rehabilitation and expansion of the telephone network and services. Pending the formal approval of these recommendations, the expert prepared specifications for tender.
Turkey (Special Fund)	Edward W. Collett (United Kingdom)	Project Manager	6.11.1967	The I.T.U. expert team at the National Telecommunication Training Centre achieved further progress in the training of counterpart instructors. The Training Centre was further developed and courses were organized for new intake technicians, for technicians already in service, and for telegraph and telephone operation staff. Seminars were also held for engineers. More than 500 telecommunication personnel were trained at the Centre during the year.
	Martin J. Keane (Ireland)	Carrier current and line transmission instructor	23.10.1968	
	Walter J. Lander (Canada)	Assistant telecommunication switching instructor	3.11.1968 2.11.1970	
	Ian Lemco (Canada)	Telecommunication switching instructor	21.10.1968	
	William S. Martin (Canada)	Telecommunication lines and cables instructor	1.10.1968	
	Raymond H. E. Nelson (Sweden)	Telecommunication radio link instructor	17.10.1970	

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TABLE 2

FELLOWSHIPS DEALT WITH IN 1970

Country	Programme component	Year of award	Implemented in	Man/months in 1970	Host country(ies)	Field of study/remarks
1. AFRICA						
Algeria	TA	1968	1968/69/70/71	1/12	France	Telecommunications engineering
	TA	1968	1968/69/70/71	1/12	France	Telecommunications engineering
	TA	1970	1970	1/1	Morocco	Space communications, seminar
	SF	1969	1969/70	1/2	France	Switching
	SF	1969	1969/70	1/3	France	Radio
	SF	1969	1968/69/70	1/8	France	Switching and transmission
	SF	1970	1970	1/1	Switzerland	Training methods
Botswana	TA	1970	1970	1/1	Uganda	Telecommunications operations, seminar
	TA	1970	1970/71	1/10	Kenya	Telecommunications practice
	TA	1970	1970/71	1/10	Kenya	Telecommunications practice
	TA	1970	1970/71	1/10	Kenya	Telecommunications practice
	TA	1970	1970/71	1/10	Kenya	Telecommunications practice
	TA	1970	1970/71	1/10	Kenya	Telecommunications practice
	TA	1970	1970/71	1/10	Kenya	Telecommunications practice
	TA	1970	1970/71	1/10	Kenya	Telecommunications practice
	SF	1970	1970	1/1	Kenya	Pre-investment survey
Burundi	TA	1970	1970	1/1	Uganda	Telecommunications operations, seminar
	TA	1970	1970	1/1	Morocco	Space communications, seminar
Cameroon	TA	1969	1969/70	1/4	France	Satellite communications
	TA	1969	1970/71	1/11	Madagascar	Telecommunications techniques
	TA	1970	1970	1/1	Uganda	Telecommunications operations, seminar
	TA	1970	1970	1/1	Morocco	Space communications, seminar
	TA	1970	1970	1/1	I.T.U.	Frequency management, seminar
Central African Republic	TA	1969	1970/71	1/12	Madagascar	Telecommunications engineering
E.A.C. (East African Community)	TA	1969	1969/70/71	1/12	U.K.	Telecommunications practice
	TA	1970	1970/71	1/8	U.K.	Traffic
	TA	1970	1970/71	1/8	U.K.	Traffic
	TA	1970	1970/71	1/8	U.K.	Traffic
	TA	1970	1970/71	1/8	U.K.	Traffic
	TA	1970	1970/71	1/8	U.K.	Traffic
	TA	1970	1970/71	1/8	U.K.	Traffic
	TA	1970	1970/71	1/8	U.K.	Traffic
	TA	1970	1970/71	1/8	U.K.	Traffic
	TA	1970	1970/71	1/8	U.K.	Traffic
	TA	1970	1970/71	1/8	U.K.	Traffic
	TA	1970	1970/71	1/8	U.K.	Traffic
	TA	1970	1970/71	1/8	U.K.	Traffic
	TA	1970	1970/71	1/5	U.K.	Telecommunications practice
	TA	1970	1970	1/1	Uganda	Telecommunications operations, seminar
	TA	1970	1970	1/1	Morocco	Space communications, seminar
	TA	1970	1970	1/1	Morocco	Space communications, seminar
	TA	1970	1970	1/1	Morocco	Space communications, seminar
	SF	1970	1970	1/1	Kenya	Pre-investment survey
	SF	1970	1970	1/1	Kenya	Pre-investment survey
Congo (Brazzaville)	TA	1970	1970	1/1	Uganda	Telecommunications operations, seminar

Country	Programme component	Year of award	Implemented in	Man/ months in 1970	Host country(ies)	Field of study/remarks
Congo (Kinshasa)	TA	1968	1969/70	1/5	Belgium, F.R. of Germany	Telegraphy
	TA	1968	1969/70	1/6	Belgium, F.R. of Germany	Telegraphy
	TA	1970	1970	1/1	Morocco	Space communications, seminar
	SF	1969	1970	1/5	France	Telecommunications practice
	SF	1969	1970	1/5	France	Radio
	SF	1969	1969/70	1/7	F.R. of Germany, Belgium	Telegraphy
Ivory Coast	TA	1970	1970	1/1	Uganda	Telecommunication operations, seminar
	TA	1970	1970	1/1	Morocco	Space communications, seminar
Dahomey	TA	1968	1969/70	1/2	France	Telephony
	TA	1968	1970	1/5	France	Telephone operation supervisor
	TA	1968	1969/70	1/8	France	Overhead lines and underground cables
	TA	1968	1970	1/7	France, Switzerland	Draughtsman
	TA	1970	1971	—	France	Switching
	TA	1970	1970	1/1	Uganda	Telecommunications operations, seminar
	TA	1970	1970	1/1	I.T.U.	Frequency management, seminar
	TA	1970	1970	1/1	Uganda	Telecommunications operations, seminar
Ethiopia	TA	1970	1970	1/1	Morocco	Space communications, seminar
	SF	1970	1970	1/1	Kenya	Pre-investment survey
	SF	1970	1970	1/1	Kenya	Pre-investment survey
Gabon	TA	1970	1970	1/1	Uganda	Telecommunications operations, seminar
	TA	1970	1970	1/1	Morocco	Space communications, seminar
Gambia	TA	1970	1971	—	U.K.	Automatic telephone
	TA	1970	1970	1/1	Uganda	Telecommunications operations, seminar

Ghana	TA	1969	1970/71	1/6	U.S.A.	Air conditioning in telecommunications installations
	TA	1969	1970/71	1/7	U.S.A., Netherlands, F.R. of Germany, Sweden	Tariffs and traffic
	TA	1970	1970	1/1	Uganda	Telecommunications operations, seminar
	TA	1970	1970	1/1	Morocco	Space communications, seminar
	SF	1970	1970/71	1/3	Netherlands, Malaysia, Thailand	Transmission and carrier
	SF	1970	1971	—	Netherlands, Malaysia, Thailand	Automatic telephony
	SF	1970	1971	—	Netherlands, Malaysia, Thailand	Telecommunications system and training methods
	SF	1970	1971	—	Netherlands, U.K., Thailand, Malaysia	Radio
	SF	1970	1970/71	1/2	F.R. of Germany, Switzerland, U.K.	Telegraphy
	SF	1970	1971	—	Netherlands, Malaysia	Outside plant
Guinea	TA	1970	1970	1/1	Morocco	Space communications, seminar
Upper Volta	TA	1969	1970/71	1/12	Madagascar	Telecommunications engineering
	TA	1970	1970/71	1/3	Madagascar	Telecommunications operations
	TA	1969	1970/71	1/12	Madagascar	Telecommunications operations
	TA	1970	1970/71	1/12	Madagascar	Telecommunications engineering
	TA	1970	1970	1/1	Uganda	Telecommunications operations, seminar
Liberia	TA	1970	1970	1/1	Morocco	Space communications, seminar
	TA	1967	1968/69/70	1/3	U.K.	Telephony
	TA	1967	1970/71	1/9	U.K.	Telecommunications engineering
	TA	1970	1970	1/1	Uganda	Telecommunications operations, seminar
	TA	1970	1970	1/1	Morocco	Space communications, seminar

Country	Programme component	Year of award	Implemented in	Man/months in 1970	Host country(ies)	Field of study/remarks
Libya	TA	1970	1970	1/1	Uganda	Telecommunications operations, seminar
	F. in T.	1968	1969/70	1/5	Italy	Transmission
Madagascar	TA	1970	1970	1/1	Uganda	Telecommunications operations, seminar
	TA	1970	1970	1/1	Morocco	Space communications, seminar
	TA	1970	1970	1/1	I.T.U.	Frequency management, seminar
	SF	1970	1970	1/3	France	Telephone switching
	SF	1970	1970	1/5	France	Telecommunications operations
	SF	1970	1970	1/2	France	Telex
Malawi	TA	1970	1971	—	Kenya	Telecommunications engineering
	TA	1968	1969/70/71	1/12	U.K.	Telecommunications engineering
	TA	1968	1969/70/71	1/12	U.K.	Telecommunications engineering
	TA	1968	1969/70/71	1/12	U.K.	Telecommunications engineering
	TA	1968	1969/70/71	1/12	U.K.	Telecommunications engineering
	TA	1968	1969/70/71	1/12	U.K.	Telecommunications engineering
	TA	1968	1969/70/71	1/12	U.K.	Telecommunications engineering
	TA	1968	1969/70/71	1/12	U.K.	Telecommunications engineering
	TA	1968	1969/70/71	1/12	U.K.	Telecommunications engineering
	TA	1968	1969/70/71	1/12	U.K.	Telecommunications engineering
	TA	1967	1967/68/69/70	1/4	Kenya	Telecommunications engineering
	TA	1967	1967/68/69/70	1/4	Kenya	Telecommunications engineering
	TA	1967	1967/68/69/70	1/4	Kenya	Telecommunications engineering
	TA	1966	1967/68/69/70	1/4	Kenya	Telecommunications engineering
	TA	1966	1967/68/69/70	1/4	Kenya	Telecommunications engineering
	TA	1969	1969/70/71	1/3	Kenya	Telecommunications engineering
	TA	1969	1969/70/71	1/3	Kenya	Telecommunications engineering
	TA	1969	1969/70/71	1/3	Kenya	Telecommunications engineering
	TA	1969	1969/70/71	1/3	Kenya	Telecommunications engineering
	TA	1969	1969/70/71	1/3	Kenya	Telecommunications engineering
	TA	1969	1969/70/71	1/3	Kenya	Telecommunications engineering

Mali	TA	1970	1970	1/1	Uganda	Telecommunications operations, seminar
	TA	1970	1970	1/1	Morocco	Space communications, seminar
Mauritius	TA	1970	1970	1/1	Morocco	Space communications, seminar
	TA	1970	1970	1/1	Uganda	Telecommunications operations, seminar
Mauritania	TA	1970	1970	1/1	Uganda	Telecommunications operations, seminar
	TA	1970	1970	1/1	Morocco	Space communications, seminar
Niger	TA	1968	1968/69/70	1/9	France	Telecommunications engineering
	TA	1970	1970	1/1	Uganda	Telecommunications operations, seminar
Nigeria	TA	1970	1970	1/1	Morocco	Space communications, seminar
	TA	1970	1970	1/1	I.T.U.	Frequency management, seminar
U.A.R.	TA	1970	1971	—	U.S.A.	Computers in telecommunications
	TA	1970	1971	—	U.S.A.	Computers in telecommunications
	TA	1968	1969/70	1/3	U.S.A.	Telecommunications accounting
	TA	1967	1969/70	1/2	Italy, F.R. of Germany	Telex equipment
	TA	1968	1969/70	1/3	U.S.A.	Telecommunications accounting
	TA	1968	1969/70	1/3	U.S.A.	Telecommunications accounting
	TA	1970	1970	1/1	Morocco	Space communications
	TA	1970	1970	1/1	Uganda	Telecommunications operations
	SF	1970	1971	—	U.K.	Telegraphy
	SF	1970	1971	—	Sweden, U.K.	Telephony and switching
	SF	1970	1971	—	U.K.	Workshop practice
	SF	1970	1971	—	Sweden	Transmission
	SF	1970	1971	—	Japan	Electronics in laboratory work
	SF	1970	1971	—	U.K.	Transmission
	SF	1970	1971	—	U.K.	Training aids
	SF	1970	1971	—	U.K.	Transmission
	SF	1970	1971	—	U.K., F.R. of Germany	Radio
	SF	1970	1971	—	U.K.	Outside plant
	SF	1970	1971	—	Italy, F.R. of Germany, France, U.K., Turkey	Training in Telecommunications

Country	Programme component	Year of award	Implemented in	Man/months in 1970	Host country(ies)	Field of study/remarks
U.A.R. ( <i>contd.</i> )	SF	1970	1971	—	Italy, F.R. of Germany, France, U.K., Turkey	Laboratory training
	SF	1970	1971	—	U.K.	Outside plant
	SF	1970	1971	—	Japan, Thailand, Malaysia	Management of training centres
	SF	1970	1971	—	U.S.A.	Air-conditioning techniques
Somalia	TA	1970	1971	—	U.K.	Telegraphy
	TA	1970	1970	1/1	Uganda	Telecommunications operations, seminar
	TA	1970	1970	1/1	Morocco	Space communications, seminar
	SF	1970	1970	1/1	Kenya	Pre-investment survey
Rwanda	TA	1970	1971	—	Belgium, Netherlands	Telex equipment
Senegal	TA	1970	1970/71	1/2	France	Switching
	TA	1970	1970/71	1/3	France	Telecommunications engineering
	TA	1970	1970/71	1/2	France	Radio
	TA	1970	1970/71	1/3	France	Telecommunications engineering
	TA	1970	1970/71	1/3	France	Telecommunications engineering
	TA	1970	1970	1/1	Uganda	Telecommunications operations, seminar
	TA	1970	1970	1/1	Morocco	Space communications, seminar
	TA	1970	1970	1/1	I.T.U.	Frequency management, seminar
Sierra Leone	TA	1970	1970	1/1	Morocco	Space communications, seminar
	TA	1970	1970	1/1	Uganda	Telecommunications operations, seminar
Sudan	TA	1970	1970	1/1	Uganda	Telecommunications operations, seminar
	TA	1970	1970	1/1	Morocco	Space communications, seminar

	TA	1970	1970	1/1	I.T.U.	Frequency management, seminar
	SF	1970	1971/72	—	U.K.	Traffic
	SF	1970	1970/71	1/6	U.K., Ireland	Telecommunications management
	SF	1970	1970	1/6	U.K., Switzerland, Netherlands	Radio
	SF	1970	1970	1/6	U.A.R., Switzerland, U.K., Turkey, Thailand, Japan, Malaysia	Management of training centres
	SF	1970	1971/72	—	U.K.	Traffic
	SF	1970	1970	1/4	U.K.	Telecommunications management
	SF	1970	1970/71	1/4	U.K.	Outside plant
	SF	1970	1970/71	1/4	U.K., Sweden	Telephony
	SF	1970	1970/71	1/3	U.K., F.R. of Germany	Telegraphy
	SF	1970	1970/71	1/1	U.K.	Transmission and carrier
	SF	1970	1970	1/1	Kenya	Pre-investment survey
Chad	TA	1969	1970/71	1/12	Madagascar	Telecommunications engineering
	TA	1969	1970/71	1/12	Madagascar	Radio
	TA	1969	1970/71	1/12	Madagascar	Telecommunications systems
	TA	1970	1971/72	—	Madagascar	Radio
	TA	1970	1970	1/1	Uganda	Telecommunications operations, seminar
Togo	TA	1970	1970/71/72	1/3	France	Telecommunications engineering
	TA	1970	1971/72	—	France	Transmission
	TA	1970	1970	1/1	I.T.U.	Frequency management, seminar
	TA	1970	1970	1/1	I.T.U.	Frequency management, seminar
	TA	1970	1970	1/1	Morocco	Space communications, seminar
	TA	1970	1970	1/1	Uganda	Telecommunications operations, seminar
Tunisia	TA	1970	1970	1/1	I.T.U.	Frequency management, seminar
	TA	1970	1970	1/1	Morocco	Space communications, seminar
Zambia	SF	1970	1970	1/1	Kenya	Pre-investment survey

Country	Programme component	Year of award	Implemented in	Man/months in 1970	Host country(ies)	Field of study/remarks
2. AMERICAS						
Netherlands	TA	1970	1970	1/1	Nicaragua	Rural telecommunications, seminar
	TA	1970	1970	1/1	Nicaragua	Rural telecommunications, seminar
Argentina	TA	1968	1970	1/7	U.K., F.R. of Germany, U.S.A.	Tariffs
	TA	1970	1970	1/1	I.T.U.	Frequency management, seminar
	TA	1970	1970	1/1	I.T.U.	Frequency management, seminar
	TA	1970	1970	1/1	Nicaragua	Rural telecommunications, seminar
	TA	1970	1970	1/1	Nicaragua	Rural telecommunications, seminar
Bahamas	TA	1970	1970	1/1	Nicaragua	Rural telecommunications, seminar
Barbados	TA	1970	1970	1/1	Nicaragua	Rural telecommunications, seminar
Bolivia	TA	1968	1969/70	1/8	U.K., Italy	Microwaves
	TA	1968	1968/69/70	1/4	F.R. of Germany	Telex
	TA	1969	1970	1/1	Mexico	Frequency management
	TA	1969	1970	1/7	Argentina	Telephone switching
	TA	1970	1971	—	Argentina	Telecommunications engineering
	TA	1970	1971	—	Argentina	Microwaves
	TA	1970	1970/71	1/4	U.K.	Trunk switching
	TA	1969	1970/71	1/4	Mexico	Telecommunications engineering
	TA	1970	1970	1/1	Nicaragua	Rural telecommunications, seminar
	IDB*)	1970	1971	—	Italy, U.K.	Telecommunications development programming
	IDB*)	1970	1971	—	Italy, U.K.	Microwaves

Brazil	TA	1970	1970	1/1	Nicaragua	Rural telecommunications, seminar
Chile	TA	1967	1969/70	1/3	F.R. of Germany, Belgium, U.K., Mexico	Microwaves
	TA	1969	1970	1/4	F.R. of Germany, Belgium, U.K., El Salvador	Microwaves
	TA	1969	1970/71	1/4	France	Economics in telecommunications
	TA	1970	1971	—	U.K., U.S.A.	Telecommunications management
	TA	1970	1971	—	France, U.K., U.S.A.	Microwaves
	TA	1970	1971	—	U.K., F.R. of Germany	Power plants
	TA	1970	1970	1/1	I.T.U.	Frequency management, seminar
	TA	1970	1970	1/1	Nicaragua	Rural telecommunications, seminar
	TA	1970	1970	1/1	Nicaragua	Rural telecommunications, seminar
	TA	1970	1970	1/1	Nicaragua	Rural telecommunications, seminar
	SF	1970	1970/71	1/1	U.K., France, U.S.A.	Telecommunications systems
	SF	1970	1971	—	France, U.K.	Telephony
Colombia	TA	1970	1970	1/1	Nicaragua	Rural telecommunications, seminar
	TA	1970	1970	1/1	Nicaragua	Rural telecommunications, seminar
	SF	1969	1969/70	1/9	U.K., F.R. of Germany	Telegraphy
	SF	1968	1968/69/70	1/8	U.S.A.	System theory
	SF	1969	1969/70	1/8	U.K., Sweden, F.R. of Germany	Transmission and microwaves
	SF	1969	1969/70	1/7	U.K.	Microwave and carrier systems
	SF	1968	1969/70/71/72	1/12	U.S.A.	Physics
	SF	1969	1969/70	1/12	U.S.A.	Antennae and propagation
	SF	1969	1970/71	1/10	Sweden, Mexico	Outside plant
	SF	1970	1971	—	U.S.A.	Telephone traffic
	SF	1969	1969/70	1/9	Netherlands	Electronics
	SF	1970	1971	—	U.K.	Power plant
	SF	1970	1970/71	1/4	Sweden, F.R. of Germany, Spain	Switching
	SF	1970	1970/71	1/4	Sweden, F.R. of Germany, Spain	Switching

Country	Programme component	Year of award	Implemented in	Man/months in 1970	Host country(ies)	Field of study/remarks
Costa Rica	TA	1970	1970/71	1/9	U.K.	Radio
	TA	1970	1970	1/1	Nicaragua	Rural telecommunications, seminar
	TA	1970	1970	1/1	Nicaragua	Rural telecommunications, seminar
Dominican Republic	TA	1970	1970	1/1	Nicaragua	Rural telecommunications, seminar
El Salvador	TA	1969	1969/70/71	1/12	U.K.	Microwaves
	TA	1970	1970/71	1/4	Sweden	Telecommunications techniques
	TA	1970	1970	1/1	Nicaragua	Rural telecommunications, seminar
	TA	1970	1970	1/1	Nicaragua	Rural telecommunications, seminar
Ecuador	TA	1970	1970	1/1	Nicaragua	Rural telecommunications, seminar
	TA	1970	1970	1/1	Nicaragua	Rural telecommunications, seminar
Guatemala	TA	1970	1970/71	1/4	U.S.A., U.K.	Transmission equipment
	TA	1970	1970	1/1	Nicaragua	Rural telecommunications, seminar
	TA	1970	1970	1/1	Nicaragua	Rural telecommunications, seminar
Guyana	TA	1969	1970	1/5	I.T.U., U.K., Canada, U.S.A.	Frequency management, seminar
	TA	1970	1970	1/1	Nicaragua	Rural telecommunications, seminar
	TA	1970	1970	1/1	Nicaragua	Rural telecommunications, seminar
Haiti	IDB*)	1970	1971	—	France, Italy, I.T.U.	Transmission
Honduras	TA	1969	1970/71	1/4	U.S.A., U.K.	Transmission engineering
	TA	1970	1971	—	Mexico, Spain	Statistics, traffic, tariffs
British Honduras	TA	1970	1970	1/1	Nicaragua	Rural telecommunications, seminar
	TA	1970	1970	1/1	Nicaragua	Rural telecommunications, seminar

Jamaica	TA	1970	1971	—	Italy, Malaysia	Management vocational education
	TA	1968	1969/70/71	1/12	U.K., U.S.A.	Microwaves, computer circuitry
	TA	1970	1970	1/1	Nicaragua	Rural telecommunications, seminar
	TA	1970	1970	1/1	Nicaragua	Rural telecommunications, seminar
Mexico	TA	1968	1970	1/6	I.T.U., Switzerland	Computers in telecommunications
	TA	1968	1970	1/8	F.R. of Germany	Radio relay systems
	TA	1968	1970/71	1/3	Japan, U.S.A.	Microwaves
	TA	1968	1970/71	1/2	U.S.A.	Computers in telecommunications
	TA	1970	1971	—	Japan	Multichannel telephony
	TA	1970	1971	—	Sweden	Multichannel telephony
	TA	1970	1971	—	U.S.A., Japan	Telephone exchanges, L.D. networks
	TA	1970	1971	—	U.S.A.	Legal aspects of telecommunications
	TA	1970	1971	—	Sweden	High speed data transmission
	TA	1970	1971	—	U.S.A.	Earth stations
	TA	1970	1971	—	U.S.A.	Community T.V. antennae
	TA	1970	1971	—	U.S.A.	Earth stations
	TA	1970	1971	—	European country	Administration of telecommunications services
	TA	1970	1971	—	Italy, U.K., U.S.A.	Circuits for radio and T.V. broadcasting
	TA	1970	1971	—	Japan, U.S.A.	H.F. communications
	TA	1970	1971	—	European country	H.F. communications
	TA	1970	1970	1/1	Nicaragua	Rural telecommunications, seminar
	TA	1970	1970	1/1	Nicaragua	Rural telecommunications, seminar
	TA	1970	1970	1/1	I.T.U.	Frequency management, seminar
	TA	1970	1970	1/1	I.T.U.	Frequency management, seminar
	TA	1970	1971	—	—	Telephone and telegraph traffic
	TA	1970	1971	—	—	Radiomarine services
	TA	1970	1971	—	—	Data transmission
Nicaragua	TA	1969	1971	—	Mexico	Transmission
Panama	TA	1970	1970	1/1	Nicaragua	Rural telecommunications, seminar
	TA	1970	1970	1/1	Nicaragua	Rural telecommunications, seminar

Country	Programme component	Year of award	Implemented in	Man/months in 1970	Host country(ies)	Field of study/remarks
Paraguay	TA	1970	1970	1/1	Nicaragua	Rural telecommunications, seminar
	TA	1970	1970	1/1	Nicaragua	Rural telecommunications, seminar
Peru	TA	1970	1971	—	—	Telephony
	TA	1970	1971	—	—	Microwaves
	TA	1970	1970	1/1	Nicaragua	Rural telecommunications, seminar
	TA	1970	1970	1/1	Nicaragua	Rural telecommunications, seminar
	IDB*)	1970	1971	—	Spain	Outside plant
	IDB*)	1970	1971	—	Argentina, U.S.A.	Tariffs and traffic
St. Lucia	TA	1970	1970	1/1	Nicaragua	Rural telecommunications, seminar
Surinam	TA	1969	1970	1/6	Netherlands	Telephony (management tariffs)
	TA	1970	1970	1/1	I.T.U.	Frequency management, seminar
	TA	1970	1970	1/1	Nicaragua	Rural telecommunications, seminar
	TA	1970	1970	1/1	Nicaragua	Rural telecommunications, seminar
Uruguay	TA	1970	1970	1/1	Nicaragua	Rural telecommunications, seminar
	TA	1970	1970	1/1	Nicaragua	Rural telecommunications, seminar
Venezuela	TA	1970	1970	1/1	Nicaragua	Rural telecommunications, seminar
	TA	1970	1970	1/1	Nicaragua	Rural telecommunications, seminar
	SF	1969	1970	1/1	Mexico	Telephony
	SF	1969	1969/70	1/4	F.R. of Germany, Italy	Telegraphy
	SF	1970	1971	—	Belgium	Telephone switching
	SF	1970	1971	—	Belgium	Telephone switching
	SF	1970	1971/72	—	U.S.A.	Telecommunications engineering

3. ASIA						
Afghanistan	TA	1969	1970/71	1/4	U.K., F.R. of Germany	Outside plant
	TA	1969	1970	1/6	F.R. of Germany	Trunk exchanges
	TA	1970	1971	—	—	Outside plant
	TA	1970	1971	—	—	Wireless techniques
	TA	1970	1970	1/1	Thailand	Organization and management of telecommunications services, seminar
	TA	1970	1970	1/1	Malaysia	Technical aspects of broadcasting, seminar
	SF	1969	1969/70	1/3	U.K.	Automatic telephone exchanges
Saudi Arabia	SF	1970	1970	1/1	Thailand	Feasibility studies for Asian telecommunications
	TA	1968	1969/70	1/2	Sweden, F.R. of Germany	Crossbar system
	TA	1970	1970	1/1	Morocco	Space communications, seminar
	SF	1970	1971/72	—	U.K., Sweden	Traffic
Burma	TA	1968	1970	1/9	Sweden	Automatic telephone networks
	TA	1968	1969/70	1/3	Sweden, Finland, Denmark	Crossbar exchanges
	TA	1968	1970	1/6	Australia, Hong Kong	Telephone and telegraph carrier
	TA	1970	1970	1/1	Malaysia	Technical aspects of broadcasting, seminar
Brunei	TA	1970	1970	1/1	Thailand	Organization and management of telecommunications services, seminar
	TA	1970	1970	1/1	Malaysia	Technical aspects of broadcasting, seminar

Country	Programme component	Year of award	Implemented in	Man/ months in 1970	Host country(ies)	Field of study/remarks
Ceylon	TA	1969	1970	1/4	Japan, Thailand	Crossbar switching
	TA	1969	1970	1/4	Japan, India	Trunk and junction cable systems
	TA	1968	1970	1/6	Japan, India	Automatic telephone exchanges
	TA	1969	1970	1/4	Japan, Malaysia	Microwaves
	TA	1969	1970	1/4	Japan, Malaysia	Microwaves
	TA	1970	1970	1/1	I.T.U.	Frequency management, seminar
	TA	1970	1970	1/1	I.T.U.	Frequency management, seminar
	TA	1970	1970	1/1	Thailand	Organization and management of telecommunications services, seminar
	TA	1970	1970	1/1	Malaysia	Technical aspects of broadcasting, seminar
China	TA	1969	1970	1/6	U.S.A.	Computers in telecommunications
	TA	1969	1970/71	1/5	U.S.A.	Computers in telecommunications
	TA	1970	1970	1/1	Thailand	Organization and management of telecommunications services, seminar
	TA	1970	1970	1/1	Malaysia	Technical aspects of broadcasting, seminar
Korea	TA	1968	1969/70/71	1/12	U.S.A.	Telecommunications engineering
	TA	1969	1970/71	1/2	U.S.A.	Electronic switching
	TA	1970	1971	—	U.K.	Coaxial cable carrier
	TA	1970	1970	1/1	Thailand	Organization and management of telecommunications services, seminar
	TA	1970	1970	1/1	Malaysia	Technical aspects of broadcasting, seminar
Fiji Islands	TA	1970	1970	1/1	Thailand	Organization and management of telecommunications services, seminar

	TA	1970	1970	1/1	Malaysia	Technical aspects of broadcasting, seminar
Gilbert and Ellice Islands	TA	1970	1970	1/1	Malaysia	Technical aspects of broadcasting, seminar
Hong Kong	TA	1970	1970	1/1	Thailand	Organization and management of telecommunications services, seminar
	TA	1970	1970	1/1	Malaysia	Technical aspects of broadcasting, seminar
India	TA	1969	1969/70	1/6	U.S.A.	Electronic switching
	TA	1969	1969/70	1/4	U.S.A.	Crossbar exchanges
	TA	1970	1971	—	U.K., F.R. of Germany	Signalling and switching techniques
	TA	1970	1971	—	U.K., F.R. of Germany	Signalling and switching techniques
	TA	1970	1971	—	I.T.U., U.S.A.	Frequency management
	TA	1970	1970	1/1	Thailand	Organization and management of telecommunications services, seminar
	TA	1970	1970	1/1	Malaysia	Technical aspects of broadcasting, seminar
Indonesia	SF	1970	1970	1/1	Thailand	Feasibility studies for Asian telecommunications
	TA	1968	1969/70	1/8	Australia	Maritime telecommunications administration
	TA	1970	1970	1/1	Thailand	Organization and management of telecommunications services, seminar
	TA	1970	1970	1/1	Malaysia	Technical aspects of broadcasting, seminar
	SF	1970	1970/71	1/2	F.R. of Germany, Japan, Malaysia, Thailand	Telegraphy
	SF	1970	1971	—	Australia, Japan, Malaysia, Thailand	Outside plant

Country	Programme component	Year of award	Implemented in	Man/ months in 1970	Host country(ies)	Field of study/remarks
Indonesia ( <i>contd.</i> )	SF	1970	1970/71	1/3	F.R. of Germany, Sweden, Thailand, Malaysia	Telephone switching
	SF	1970	1971	—	Australia, U.K., F.R. of Germany, Thailand, Malaysia	Training methods
	SF	1970	1971	—	—	Transmission
	SF	1970	1970	1/1	Thailand	Feasibility studies for Asian telecommunications
	SF	1970	1970	1/1	Thailand	Feasibility studies for Asian telecommunications
	SF	1970	1970	1/1	Thailand	Feasibility studies for Asian telecommunications
Indonesia (West Irian)	FUNDWI	1970	1971	—	—	S.S.B. and transistor techniques
	FUNDWI	1970	1971	—	—	S.S.B. and transistor techniques
	FUNDWI	1970	1971	—	—	Workshop techniques
	FUNDWI	1970	1971	—	—	Workshop techniques
	FUNDWI	1970	1971	—	—	H.F., V.H.F., Antennae and transmitter
	FUNDWI	1970	1971	—	—	Telegraph and teleprinter equipment
	FUNDWI	1970	1971	—	—	Outside plant
Iran	TA	1969	1969/70	1/1	Italy, India, Malaysia	Training in telecommunications
	TA	1970	1970	1/1	Morocco	Space communications, seminar
	TA	1970	1970	1/1	I.T.U.	Frequency management, seminar
	TA	1970	1970	1/1	I.T.U.	Frequency management, seminar
	TA	1970	1970	1/1	Thailand	Organization and management of telecommunications services, seminar
	TA	1970	1970	1/1	Malaysia	Technical aspects of broadcasting, seminar

Iraq	SF	1970	1970	1/1	Thailand	Feasibility studies for Asian telecommunications
	TA	1970	1970	1/1	I.T.U.	Frequency management, seminar
	TA	1970	1970	1/1	I.T.U.	Frequency management, seminar
	SF	1970	1970	1/1	Algeria, Turkey	Training in telecommunications
	SF	1970	1970	1/4	Thailand, U.K.	Teaching methods
	SF	1970	1971	—	France	Telephone switching
Israel	TA	1970	1971	—	U.S.A.	Computers in telecommunications
	TA	1970	1970	1/1	I.T.U.	Frequency management, seminar
Jordan	TA	1970	1971	—	European country	Cable networks, planning and development
	TA	1970	1971	—	European country	Cable networks, installation, operation and maintenance
	TA	1970	1971	—	European country	Carrier transmission system
	TA	1970	1970	1/1	Morocco	Space communications, seminar
Khmer Republic (ex Cambodia)	SF	1970	1970	1/1	Thailand	Feasibility studies for Asian telecommunications
Kuwait	TA	1968	1969/70	1/1	U.K.	Power equipment
	TA	1970	1970	1/1	Morocco	Space communications, seminar
	TA	1970	1970	1/1	I.T.U.	Frequency management, seminar
	TA	1970	1970	1/1	I.T.U.	Frequency management, seminar
Laos	TA	1968	1968/69/70	1/12	Malaysia	Radio and telephony
	TA	1969	1970	1/10	Australia	Radio
	TA	1970	1970	1/1	Thailand	Organization and management of telecommunications services, seminar
	TA	1970	1970	1/1	Malaysia	Technical aspects of broadcasting, seminar
	SF	1970	1970	1/1	Thailand	Feasibility studies for Asian telecommunications

Country	Programme component	Year of award	Implemented in	Man/ months in 1970	Host country(ies)	Field of study/remarks
Laos ( <i>contd.</i> )	SF	1970	1970	1/1	Thailand	Feasibility studies for Asian telecommunications
	SF	1970	1970	1/1	Thailand	Feasibility studies for Asian telecommunications
Lebanon	TA	1970	1970	1/1	I.T.U.	Frequency management, seminar
Malaysia	TA	1970	1970	1/1	Thailand	Organization and management of telecommunications services, seminar
	SF	1968	1969/70	1/1	Australia	Training aids, training texts
	SF	1969	1970	1/6	Australia	Branch exchanges, signalling
	SF	1970	1970	1/1	Thailand	Feasibility studies for Asian telecommunications
	SF	1970	1970	1/1	Thailand	Feasibility studies for Asian telecommunications
	SF	1970	1970	1/1	Thailand	Feasibility studies for Asian telecommunications
Nepal	TA	1970	1970	1/1	Thailand	Organization and management of telecommunications services, seminar
	TA	1970	1970	1/1	Malaysia	Technical aspects of broadcasting, seminar
	SF	1970	1970	1/1	Thailand	Feasibility studies for Asian telecommunications
New Hebrides	TA	1970	1970	1/1	Malaysia	Technical aspects of broadcasting, seminar

Pakistan	TA	1968	1969/70	1/7	F.R. of Germany	E.M.D. exchanges
	TA	1968	1969/70	1/7	F.R. of Germany	E.M.D. exchanges
	TA	1968	1969/70	1/7	F.R. of Germany	E.M.D. exchanges
	TA	1968	1970	1/4	U.K.	Radio terminals
	TA	1970	1970	1/3	Italy	Satellite communications
	TA	1970	1970	1/4	Italy	Satellite communications
	TA	1968	1970/71	1/7	F.R. of Germany	E.M.D. exchanges
	TA	1970	1970	1/1	Thailand	Organization and management of telecommunications services, seminar
	TA	1970	1970	1/1	Malaysia	Technical aspects of broadcasting, seminar
	SF	1970	1970	1/1	Thailand	Feasibility studies for Asian telecommunications
Papua/New Guinea	TA	1970	1970	1/1	Malaysia	Technical aspects of broadcasting, seminar
	TA	1970	1970	1/1	Thailand	Organization and management of telecommunications services, seminar
Philippines	TA	1969	1970/71	1/1	Thailand, Japan, Denmark	Telecommunications development planning
	TA	1969	1970	1/5	U.K., U.S.A.	Microwave networks planning
	TA	1970	1970	1/1	I.T.U.	Frequency management, seminar
	TA	1970	1970	1/1	Malaysia	Technical aspects of broadcasting, seminar
British Solomon Islands	TA	1970	1970	1/1	Thailand	Organization and management of telecommunications services, seminar
Syria	TA	1968	1970/71	1/1	U.K.	Local telephone networks
	TA	1970	1970	1/1	I.T.U.	Frequency management, seminar
	TA	1970	1970	1/1	Morocco	Space communications, seminar

Country	Programme component	Year of award	Implemented in	Man/ months in 1970	Host country(ies)	Field of study/remarks
Western Samoa	TA	1970	1970	1/1	Thailand	Organization and management of telecommunications services, seminar
Singapore	TA	1970	1970/71	1/2	U.K., Sweden	Traffic engineering
	TA	1970	1971	—	U.K., Sweden	Traffic engineering
	TA	1970	1970	1/1	Thailand	Organization and management of telecommunications services, seminar
	TA	1970	1970	1/1	Malaysia	Technical aspects of broadcasting, seminar
	SF	1970	1970	1/1	Thailand	Feasibility studies for Asian telecommunications
	SF	1970	1970	1/1	Thailand	Feasibility studies for Asian telecommunications
	SF	1970	1970	1/1	Thailand	Feasibility studies for Asian telecommunications
Thailand	TA	1969	1971	—	Australia	Telephone traffic engineering
	TA	1968	1969/70	1/2	U.K., Singapore, Malaysia	Telephone operation
	TA	1969	1969/70	1/4	U.K., Sweden, U.S.A., Singapore	Telephone operator supervision
	TA	1969	1970	1/7	U.S.A.	Satellite earth stations
	TA	1970	1970	1/1	Malaysia	Technical aspects of broadcasting, seminar
	SF	1969	1970	1/6	Japan	Telegraphy
	SF	1969	1970	1/3	Japan	Telecommunications techniques

Tonga	TA	1970	1970	1/1	Malaysia	Technical aspects of broadcasting, seminar
	TA	1970	1970	1/1	Thailand	Organization and management of telecommunications services, seminar
Viet-Nam	TA	1970	1971	—	Switzerland	Telecommunications operation
	TA	1970	1971	—	Switzerland, U.K.	Frequency management
	TA	1970	1971	—	Switzerland	Telecommunications techniques
	TA	1970	1970	1/1	Thailand	Organization and management of telecommunications services, seminar
	TA	1970	1970	1/1	Malaysia	Technical aspects of broadcasting, seminar
	SF	1970	1970	1/1	Thailand	Feasibility studies for Asian telecommunications
	SF	1970	1970	1/1	Thailand	Feasibility studies for Asian telecommunications
	SF	1970	1970	1/1	Thailand	Feasibility studies for Asian telecommunications
Yemen Arab Republic	TA	1970	1970	1/1	Morocco	Space communications, seminar
Yemen (People's Democratic Republic of) (Southern Yemen)	TA	1970	1970	1/1	Morocco	Space communications, seminar

Country	Programme component	Year of award	Implemented in	Man/ months in 1970	Host country(ies)	Field of study/remarks
4. EUROPE						
Bulgaria	TA	1969	1969/70	1/4	France	Telephony
	TA	1970	1970	1/3	France	Telephone service
	TA	1970	1970	1/3	F.R. of Germany	Colour television
	TA	1970	1970/71	1/3	U.K.	Acoustics
	TA	1970	1971	—	France	Colour télévision
	TA	1970	1971	—	France	Colour television
	TA	1970	1971	—	Sweden	P.C.M. system
	TA	1970	1971	—	European country	Telecommunications networks
	TA	1970	1971	—	France	Telephone traffic
Spain	TA	1969	1970	1/3	France, Italy	Radio
	TA	1969	1970	1/2	France	Telex
	TA	1969	1970	1/2	France	Accounting
	TA	1970	1971	—	Belgium	Telecommunications management
	TA	1970	1971	—	France	Economics in telecommunications
Greece	TA	1969	1970	1/5	F.R. of Germany, U.K.	Coastal radio centres
	TA	1969	1970	1/5	F.R. of Germany, U.K.	Coastal radio centres
	TA	1970	1970/71	1/4	Italy, U.K.	Computers in telecommunications
	TA	1970	1971	—	Italy, U.K.	Computers in telecommunications
Hungary	TA	1970	1970	1/4	Sweden	Crossbar exchanges
	TA	1968	1969/70	1/4	France	Switching
	TA	1970	1971	—	France	Radio, T.V.
	TA	1970	1970	1/1	I.T.U.	Frequency management, seminar
	TA	1970	1970	1/1	I.T.U.	Frequency management, seminar
Poland	TA	1969	1971	—	Italy, U.K.	P.C.M. system in radio-relay links
	TA	1970	1971	—	France	Telecommunications systems
	TA	1970	1971	—	Switzerland	Telecommunications exchanges technique
	TA	1970	1970	1/3	U.K., Sweden	Electronic telephone exchanges
	TA	1970	1970	1/2	Sweden	Telegraph operation
	TA	1970	1970	1/2	Sweden	Telegraph operation
Roumania	TA	1969	1971	—	U.S.A.	Data transmission
	TA	1970	1971	—	Italy	Data transmission
Czechoslovakia	TA	1969	1971	—	F.R. of Germany, France	Radio relay systems
	TA	1969	1971	—	France	Data transmission and collection
	TA	1969	1971	—	Switzerland	Work methods
	TA	1969	1971	—	European country	Mobile radio services
	TA	1969	1971	—	Switzerland	Management techniques
	TA	1969	1971	—	European country	Mobile radio services
	TA	1969	1971	—	Switzerland	Trunk and international traffic
	TA	1969	1971	—	Italy	Data transmission and collection
	TA	1969	1971	—	F.R. of Germany, France	Radio relay system
	TA	1969	1970	1/2	Switzerland	Trunk and international traffic
Turkey	TA	1970	1970	1/1	Morocco	Space communications, seminar
	TA	1970	1970	1/1	Malaysia	Technical aspects of broadcasting, seminar
	SF	1969	1969/70	1/5	Canada	Telephony
	SF	1969	1970	1/4	Sweden, Netherlands, France	Telephone exchanges
	SF	1969	1969/70	1/3	Ireland	Telegraphy
	SF	1970	1970	1/4	Canada, Italy, I.T.U.	Transmission and carrier
	SF	1970	1970	1/4	I.T.U.	Transmission and carrier

\*) Inter-American Development Bank.

TABLE 3

Projects approved by the U.N.D.P. (S.F.) for which I.T.U. is Executing Agency as of 31.12.1970  
(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 (U.S. \$)		
				No. experts man/months	No. fellowships man/months	Value of equipment (U.S. \$)	UNDP Governing Council earmarkings	Government counterpart contribution	Total
1	2	3	4	5	6	7	8	9	10
Approved projects in operation:									
Iraq*)	Telecommunication Training Centre, Baghdad . . . . .	Jan. 1962	5	9/414	8/78	315,000	1,137,200	2,209,000	3,346,200
Venezuela	Training Centre for Telecommunications, Caracas (Phase 1) (Field work completed in June 1970) . .	Jan. 1963	4	7/417	11/81	245,000	1,110,100	3,768,000	4,878,100
Algeria*)	National School for Telecommunication Studies, Algiers . . . . .	Jan. 1964	8	9/397	11/147	195,000	1,420,000	6,184,000	7,604,000
Colombia	Electronics and Telecommunications Training and Research, Popayan and Bogota . . . . .	Jan. 1964	5	8/372	20/240	380,000	1,220,300	3,630,000	4,850,300
Ghana	Telecommunication Training Centre, Accra. . . . .	Jan. 1964	5	8/360	8/90	245,000	1,100,100	1,773,000	2,873,100
Madagascar*)	National Institute of Telecommunications and Post, Antananotibé . .	Jan. 1964	7¾	6/387	11/158	279,000	1,188,900	1,987,000	3,175,900

1	2	3	4	5	6	7	8	9	10
Congo (Kinshasa)	National School of Telecommunications, Kinshasa . . . . .	Jan. 1966	6	9/552	11/156	245,000	1,800,900	2,874,000	4,674,900
Saudi Arabia	Telecommunications and Broadcasting Training Centre, Jeddah . .	Jan. 1967	5	11/372	12/144	45,000	1,081,400	3,810,000	4,891,400
Chile	Telecommunications Training Centre, Santiago . . . . .	Jan. 1967	5	8/324	9/126	295,000	1,152,100	1,258,000	2,410,100
Malaysia	Telecommunications Training Centre, (Phase II) . . . . .	Jan. 1967	3	9/270	—	74,000	683,600	677,000	1,360,600
Turkey*)	National Telecommunications Training Centre, Ankara . . . . .	Jan. 1967	5	10/420	15/180	320,000	1,819,000	3,718,000	5,537,000
Indonesia	Telecommunications Training Centre, Bandung . . . . .	Jan. 1968	3	8/204	8/60	543,500	1,156,000	1,204,000	2,360,000
Pakistan	Telecommunications Staff College, Haripur. . . . .	Jan. 1968	5	6/192	15/96	332,600	894,600	2,461,000	3,355,600
Sudan	Post and Telegraph Centre, Khartoum (Phase II) . . . . .	Jan. 1968	3	9/294	8/66	150,000	913,400	850,000	1,763,400
Nigeria	Post and Telecommunications Training Centre, Oshodi . . . . .	Jun. 1968	3	9/240	16/108	295,000	962,900	4,883,000	5,845,900
Paraguay	Assistance in the implementation of the National Telecommunication Plan . . . . .	Jun. 1968	3	4/78	5/66	4,000	229,200	107,000	336,200
Asia Regional	Asian Telecommunication Network—Feasibility Study . . . . .	Jun. 1969	2	5/96	104/156	80,000	476,500	42,000	518,500

1	2	3	4	5	6	7	8	9	10
Thailand	Telecommunications Training Test and Development Centre, Bangkok (Phase II) . . . . .	Jun. 1969	3	9/192	10/60	65,000	608,800	928,000	1,536,800
U.A.R.	Technical Training and Research Inst. for Telecommunications, Cairo . . . . .	Jun. 1969	4	5/168	27/132	400,000	952,200	2,651,000	3,603,200
Afghanistan	Telecommunications Training Centre, Kabul (Phase II) . . . . .	Jan. 1970	5	11/513	12/72	115,200	1,420,200	228,000	1,648,200
India	Expansion of the Experimental Satellite Communication Earth Station, Ahnodabad . . . . .	Jun. 1970	4	1/48	4/48	665,000	1,068,900	1,085,000	2,153,900
Iran	Telecommunications Training Centre, Teheran . . . . .	Jan. 1970	5	8/402	10/156	363,000	1,512,200	1,798,000	3,310,200
Venezuela	Training Centre for Telecommunication Technicians (Phase II) . . .	Jun. 1970	4	9/360	20/104	40,000	1,120,200	9,130,000	10,250,200
Africa Regional	Pre-Investment Survey for the African Telecommunication Network	Jun. 1970	2	<sup>1)</sup> /161	7/21	—	552,300	30,000	582,300

\*) Includes supplementary earmarkings approved by the UNDP Governing Council.

<sup>1)</sup> 7 experts and 2 teams of consultants.

ANNEX 7

**SITUATION OF THE DEBTORS TO THE UNION  
AT 31 DECEMBER 1970\*)**

	Amounts due Swiss francs	For the years
Argentine Republic . . . . .	14,475.40	1967-70
Bolivia . . . . .	1,981,598.35	1950-70
Brazil . . . . .	327,791.95	1968-70
Burundi (Republic of) . . . . .	30,084.10	1967-70
Cameroon (Federal Republic of) . . . . .	25,572.30	1969
Ceylon . . . . .	14,202.25	1966-69
Chile . . . . .	851,453.05	1962-70
Colombia (Republic of) . . . . .	15,633.40	1964-70
Costa Rica . . . . .	337,513.55	1959-70
Dominican Republic . . . . .	1,200,608.05	1959-70
El Salvador (Republic of) . . . . .	1,431,124.65	1961-70
Equatorial Guinea (Republic of) . . . . .	11,950.—	1970
Haiti (Republic of) . . . . .	567,443.25	1955-70
Honduras (Republic of) . . . . .	23,329.72	1965-70
Indonesia (Republic of) . . . . .	55,336.95	1969-70
Iran . . . . .	10,870.85	1969
Iraq . . . . .	50,036.—	1969-70
Khmer Republic . . . . .	57,342.16	1969-70
Lebanon . . . . .	5,994.90	1969-70
Liberia (Republic of) . . . . .	51,215.—	1969-70
Liechtenstein (Principality of) . . . . .	24,975.50	1970
Nepal . . . . .	6,119.75	1969-70
Nicaragua . . . . .	138,203.30	1967-70
Panama . . . . .	130,146.27	1962-70
Peru . . . . .	355,298.35	1966-70
Philippines (Republic of the) . . . . .	87,873.20	1966-70
Spanish Provinces in Africa . . . . .	49,951.—	1970
Somali Democratic Republic . . . . .	140,115.96	1967-70
Sudan (Republic of the) . . . . .	55,150.—	1969-70
Uruguay (Oriental Republic of) . . . . .	430,299.56	1962-70
Venezuela (Republic of) . . . . .	9,322.90	1968-70
Yemen . . . . .	341,393.90	1961-70
Southern Yemen (People's Republic of) . . . . .	23,705.85	1969-70
Colombia, Empresa Nacional de Telecomunicaciones . . . . .	26,649.30	1962-69
ENTEL, Rio de Janeiro . . . . .	28,070.40	1964-68
Singer — Telesignal Corporation New York . . . . .	6,789.65	1970
Iskra-Kranj, Ljubljana . . . . .	13,372.60	1969-70
	8,930,963.17	
Other debtors . . . . .	452,642.11	
	9,383,605.28	

\*) Not including amounts due for publications supplied in 1970 which are required to be settled in 1971 only.