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TRANSLATIONS ON TELECOMMUNICATIONS POLICY,
RESEARCH AND DEVELOPMENT
No. 3

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BRIEFS

ETHIOPIAN, GDR NEWS AGENCIES SIGN ACCORD--The Ethiopian and the GDR news agencies have signed an agreement for increased cooperation between them. The agreement is to facilitate the regular exchange of news services between the two national agencies free of charge. The postal department of the GDR news agency, the ADN, and the Ethiopian news agency exchange regularly and free of charge their press photos by airmail. The agreement was signed here by Ato Bealu Girma, permanent secretary in the Ministry of Information and National Guidance, and by Mr Gerhard Weilhan, director general of ADN. The two agencies have also agreed to assist correspondents of each other and extend experience in the field of journalism, communication engineering, and organization. [Text] [Addis Ababa Voice of Revolutionary Ethiopia in English 1630 GMT 12 May 77 LD/EA]

RADIO AGREEMENT WITH USSR--An agreement on radio broadcasting cooperation and exchange was signed on 13 May between the State Committee for Television and Radio Broadcasting of the Soviet Union and the National Radio of the LPDR. Based on the agreement which was signed by Mamedov, first deputy chairman of the Soviet State Committee, and Chaleun Vongsam-ang, director of the Lao National Radio, the two sides will exchange documents and radio programs regarding social, political, economic, scientific, cultural, and sports affairs, as well as programs for women, children, and youths. The agreement also covers the exchange of programs dedicated to national festivals, such as the anniversary of the LPDR and the 60th anniversary of the Great October Revolution. [Moscow Radio in Lao to Laos 1400 GMT 13 May 77 BK]

INDIA-USSR TELECOMMUNICATION LINK--An official Indian delegation leaves for Moscow 18 May to finalize with the Soviet authorities matters relating to the establishment of the troposcatter telecommunication link. The delegation is being led by S. B. Lall, additional secretary, the Ministry of Communications. The visit is a followup of the agreement between India and the Soviet Union signed in New Delhi last month. During its stay in Moscow, the delegation is scheduled to finalize matters on the supply of equipment, technical know-how, deputation of Soviet engineers and training of Indian technical personnel for the project. The project, which will be implemented by the Overseas Communications Service of the Ministry of Communications, envisages two terminals--one on the Indian side near Srinagar and the other near Tashkent. The link makes use of the troposphere, which is the lower portion of the atmosphere, to send the signals. It also takes advantage of two high mountain peaks to diffract the signals. [Text] [Delhi ISI in English 0926 GMT 18 May 77 BK]

GDR, LAOS, BROADCASTING AGREEMENT--Berlin--An agreement was concluded in Berlin on Monday between the State Broadcasting Committee of the GDR Council of Ministers and Radio Laos. It envisages the further strengthening and deepening of cooperation between both broadcasting organizations. Besides the exchange of musical programs and the spoken word both parties will support the further training of broadcasting staffs. On behalf of the State Broadcasting Committee the agreement was signed by its deputy chairman, Rolf Weissbach, and on behalf of Radio Laos by its director, Chaleun Vongsammang. [Text] [East Berlin ADN International Service in German 1812 GMT 16 May 77 LD]

CSO: 5550

INTER-ASIAN AFFAIRS

SINGAPORE, PHILIPPINES SIGN SUBMARINE CABLE CONTRACT

Singapore Domestic Service in English 1130 GMT 12 May 77 BK

[Text] Singapore and the Philippines signed a contract today to build the first segment of the ASEAN submarine cable network costing \$116 million. The 1,380-circuit segment is to be completed in January 1979. The remaining segment of the network involving other ASEAN countries will cost some \$360 million. The whole network is expected to be ready by 1982.

Today's contract was signed by the chairman of the Telecommunications Authority of Singapore [TAS], Mr Frank Yung Cheng Yung and the president of the Eastern Telecommunications Philippines Incorporated, Mr Manuel Neto Jr. It was witnessed by the minister of state for communications, Mr Ong Teng Cheong and the Philippine ambassador, Mr Delfin R. Garcia.

In his speech, Mr Ong said that, apart from involvement in this project, TAS has also planned other projects to improve and increase the range of Singapore's communications services. The project, costing a total of about \$1 billion over a 5-year period, will include the extension of the Sentosa earth station facilities [words indistinct] by 1981, and the construction of a [word indistinct] service which will provide audio-visual contact between people in different countries via two-way close-circuit television.

Mr Garcia said the submarine cable network will bring benefit to all communications in Southeast Asia and bring them closer together.

CSO: 5500

INDIA

BRIEFS

SECOND TV REBROADCAST UNIT--Delhi, 18 May, TASS--A ground TV rebroadcasting station has started operating in Raipur, India. This is the second commissioned station of the 6 that India is building in a TV rebroadcasting system for the states of Rajasthan, Karnataka, Andara Pradesh, Madhya Pradesh, Bihar, and Orissa. The Raipur station's range of action is 40 kilometres and it will service 400 villages. [Text] [Moscow TASS in English 0840 GMT 10 May 77 LD]

CSO: 5500

BRIEFS

RADIO NETWORK CONSTRUCTION--According to radio director Tomas Sugito on 7 May, all 139 construction projects under his directorate, which were scheduled for completion before the 2 May 1977 general elections, met the deadline. The construction of the projects, which included the construction of buildings and the installation of studios, mobile transmitters, permanent transmitters and SSB networks was financed with 7.7 billion rupiah, a 2.8 billion yen Japanese loan through IGGI, a \$10 million loan from the United States, the United Kingdom and France and 533,000 pounds. Sugito said that, with the completion of the projects, audibility of Radio Republik Indonesia [RRI] broadcasts in all provinces had been vastly improved. Work is currently underway to improve the audibility of RRI-Jakarta broadcasts throughout Indonesia. [Jakarta Domestic Service in Indonesian 0700 GMT 7 May 77 BK]

REGIONAL TELEVISION BROADCASTING--The director general of radio, television and film has instructed the television service director to let several regional television stations, which are entering the final stage of construction, relay the Jakarta television broadcast through the domestic satellite communications system. The regional stations concerned are Banda Aceh, Padang, Pekanbaru and Bengkulu in Sumatra; Banjarmasin, Pontianak and Samarinda in Kalimantan; Ambon and Jayapura in east Indonesia. [Jakarta Domestic Service in Indonesian 1200 GMT 6 May 77 BK]

CSO: 4913

BRIEFS

ASIAN TELECOMMUNICATION NETWORK--The Fourth Meeting of the National Coordinators of the Asian Telecommunications Network for subregions 3, 5, and 6 will be held in Kathmandu, Nepal on 2-8 March 1977. The coordinators will represent Nepal, India, Bangladesh, and Sri Lanka plus the regional specialist for the ITU unit and ESCAP (Economic and Social Council for Asia and the Pacific areas). The third meeting was held in Dacca, Bangladesh 13 months before this. [Excerpts] [Kathmandu GORKHAPATRA in Nepali 1 Mar 77 pp 1, 10] The Asian Telecommunications Network meeting is to be opened by Rabindranath Shara, Minister of Communications, Nepal. The regional ITU and ESCAP coordinator is K.B. Pai. Since 1973, the UN development program, ESCAP, ITU, and the World Bank have been working to establish a telecommunications network to link this area with 16 countries stretching from Iran in the West to Indonesia and the Philippines in the East. Nepal is working in linking the short distance between Birgunj and Raxaul, India to tie Nepal with the other countries. It is also planning a tie-up with Bangladesh via Bhadrapur and Thakurgaon. India has installed a 1,000-line crossbar 'pentaconta' telephone system in Biratnagar, thus bringing the total to 2,000 lines. The World Bank is aiding Nepal in the microwave repeater project, estimated to be completed in 3 years. In Kathmandu, the International Telecommunications Union and the UN will construct a building for 10,000 automatic telephone to boost the automatic lines from 5,000 to 6,000. An air agreement for jet service signed recently between Nepal and Sri Lanka will increase the need for telecommunications link up between the two countries. [Excerpts] [Kathmandu GORKHAPATRA in Nepali 3 Mar 77 pp 1, 10] The closing address was given by The Nepalese Communications Secretary Tirtharaj Tuladhar. Others who were identified included (a) S. Shankararan representing India, (b) K. A. Rauf, representing Bangladesh, and (c) Bhupraj Pande, the regional coordinator of the Nepalese telecommunications organization, who chaired the meeting. [Excerpts] [Kathmandu GORKHAPATRA in Nepali 9 Mar 77 pp 1, 10]

CSO: 5500

VIETNAM

TEXT OF SRV NATIONAL ASSEMBLY 12 MAY COMMUNIQUE

Hanoi Domestic Service in Vietnamese 1430 GMT 12 May 77 OW

[Communique from the SRV National Assembly Standing Committee on its session of 12 May 1977]

[Excerpt] On 12 May 1977, the National Assembly Standing Committee held its routine session under the chairmanship of Truong Chinh. Present at the session were representatives of the Council of Ministers, People's Supreme Court, and People's Supreme Procurate.

1. According to the proposal of the Council of Ministers, the National Assembly Standing Committee approved the transformation of Dai Phat Thanh Tieng Noi Vietnam [Voice of Vietnam Radio Station] into Uy Ban Phat Thanh Va Truyen Hinh Vietnam [Vietnam Radio and Television Commission], and placing it directly under the Council of Ministers.

2. According to the Council of Ministers' proposal, the National Assembly Standing Committee approved the change of the name Vietnam Thong Tan Xa [Vietnam News Agency] to Thong Tan Xa Vietnam [News Agency of Vietnam] placing it directly under the Council of Ministers.

CSO: 5500

BRIEFS

CSSR TELEX STATIONS--Prague, 22 May, CETEKA--The number of Telex stations in Czechoslovakia is rising by some 500-600 every year, and stands at present at 7,500. Telex is slowly replacing telegraph both in domestic and international use. Connection in Europe is automatic. Overseas connections involve the use of most sophisticated telecommunications equipment, from submarine cables to cosmic links through the Intersputnik system of satellites. The growing use of computers and data-processing equipment contributes directly to the expansion of the network of Telex subscribers. The advantages of the fully automated Telex connections are diminished by the still relatively low number of Telex subscribers--50 for every 100,000 people. There are 18,200 telephones for the same number of people in Czechoslovakia. [Text] [Prague CTK in English 1750 GMT 22 May 77 LD]

CSO: 5500

CUBA

CUBANACAN: NEW COAXIAL CABLE TRANSMISSION SYSTEM PLANNED

Havana BOHEMIA in Spanish 15 Apr 77 pp 16-23

[Text] One of the thesis approved by the First Congress of the Communist Party of Cuba held in 1975 states that during the present 5-year plan the process of industrialization of our economy must be undertaken, an economy that has primarily had agriculture as the strategic kingpin of its basic development.

Of course the communications branch, vital for any economic-social progress, is implicit in the context of this thesis.

That is why an increase in the number of telephone, through an increase in the capacity of centrals in cities and rural localities, as well as the installation of microwaves and transmitters that will allow an increase in the transmission capacity of national television, are proposed as primary tasks in that aspect during the period. It is also planned to increase the capacity of medium wave transmission, with a view to the development of national radio networks, not excluding the provincial networks. It is also planned to expand and modernize radiocommunications, improve international broadcasting and continue the work already begun for the use of technical means via satellite.

Among the tasks enumerated--which are not all of them--there is the need to advance as much as possible in the installation of approximately 1,800 kilometers of coaxial cable, a base that guarantees the introduction of national automatic dialing during the 5-year plan.

This cable, together with the long-distance network, should be prepared to handle the increase in telephone traffic in that period.

Brigades from the Ministry of Communications are working in the construction of the underground conduits or channels for the telephone cable through urban areas, through which the cable will run from Havana to the rest of the country.

Part of the work is being done through the expansion of the conduit along Rancho Boyeros Avenue toward Santiago de las Vegas. Also in progress is a plan of civil construction and auxiliary buildings, as well as the expansion of the telephone centrals where the cable passes, for which the Ministry of Construction is lending its assistance.

In the phases of surveying and compiling preliminary information, and in the process of preparing the plans, there was an outstanding technical contribution by more than 40 Soviet communications specialists who worked together with the Cuban technicians, and who for this purpose toured and analyzed the possible alternate routes for the coaxial cables.

Also participating in this work were technicians of the Physical Planning Institute, Urban Hydrology, Hydraulic Group, National Road Group, General Directorate of Social Works of the former DESA; various institutes of the Academy of Sciences such as Soils, Geography, Geology, Meteorology, the Geodesy and Geography Institute of the Ministry of the Armed Forces, organizations such as the former National Institute for Agrarian Reform (today Ministry of Agriculture), the Center for Technical Assistance, and the National Institute of Tourism [INIT], all of which, with the support of the Party at all levels, collaborated to conclude this first extensive and complex contribution to the project successfully.

Before delving further into the significance of the coaxial cable from the operational point of view, let us set the background for it. Let us say first of all that the development of the country in the years of the revolution has resulted in a demanding increase in the needs for long-distance communications service because the present systems are insufficient for satisfying the large volumes of telephone traffic.

Cubanacan Project--In view of this situation, the governments of the Soviet Union and Cuba signed agreements in Moscow in December 1972 and later in April 1976, for economic collaboration in the planning of a communications line via coaxial cable of approximately 1,800 kilometers in length that would run from the city of Pinar del Rio to Guantanamo, linking the 14 provincial capitals, with telephone channels branching off to other important cities: San Cristobal, Artemisa, Guanajay, Guines, San Antonio de los Banos, San Jose de las Lajas, Jaguey Grande, Mayari, Palma Soriano....

With the name of "Cubanacan Project," the main transmission system for long-distance communications is the largest investment made in the country in matters of communications up to now.

The agreements completely cover the execution of the project ranging from the phase of surveying and compilation of preliminary information, technical and executive plans, supply of equipment, construction and installation to the placing in operation.

The executive plans for various stretches of the project have already been completed and the first machinery from the USSR arrived at the end of 1976.

Although the complete system will be completed in the next 5-year plan, its execution has been planned in such a manner that it can be placed in operation in sections. This means that when the cities are linked and they have the necessary equipment installed, it is possible to have the channels and telephone links between those two points put into service.

Why the coaxial cable? Long-distance telephone service, which means that service provided between cities and towns, can be operated manually or automatically.

Manual service is provided by female operators who are responsible for routing or connecting the customers, while in automatic service, any subscriber can communicate with a distant telephone without requiring the services of an operator by merely dialing the desired number after first dialing the number that identifies the city he is trying to call.

To automate telephone service, a dialing system is required that will allow doing away with requests for help with long distance calls, since with this system the customer is not subjected to the delay that originates when circuits are busy. Studies made internationally show that this telephone traffic grows incessantly in keeping with an exponential law.

To continue, we can say that a base or adequate means of transmission is necessary to provide the large numbers of telephone channels needed because the backbone of any system of communications is the means by which telephone calls are transmitted.

Transmission may be made by several means, one of them being the coaxial cable.

Among the technical advantages of the coaxial cable is the possibility of transmitting a broad band of frequencies, and subsequently, a large number of telephone channels. It also offers great protection from interference and great security in communications.

The System--The coaxial cable system consists of the coaxial cable itself, unattended repeater stations, semiterminal stations and terminal stations.

The coaxial cable consists of two conductors, one a small-diameter solid conductor which fits inside the other, which is hollow in the form of a tube and surrounds the former.

The internal conductor is kept in the center of the outside tube by small spacer discs made of insulating material placed at short intervals.

Several of these coaxial lines are placed within a cylindrical container, other pairs of ordinary conductors being added which are used for supervision and coordination [order or engineering wires].

The entire bundle is then covered with a thick coating of insulating material, and finally with an exterior sheath of lead. Other materials may be placed over the lead to give the cable greater protection against corrosion, electrical line interference and atmospheric discharges.

To increase the efficiency of the coaxial cable, it is necessary to install the multiplexes or carrier wave equipment, which are pieces of electronic equipment whose function it is to take each conversation and assign it a specific frequency or time division, mix it and amplify it so that hundreds of them may be transmitted simultaneously along the coaxial cable.

In Cuba, the unattended repeater stations will be placed every 6 kilometers in telephone inspection manholes similar to the ones used in the underground telephone cable runs in our cities.

By unattended, they mean that no personnel are required for their constant attention because they have a control and alarm system that is monitored from the semiterminal stations where possible failures can be detected so that they may be repaired if necessary.

The semiterminal stations will have a main building very similar to a telephone central, in whose interior will be installed the transmission and multiplex equipment linked to the coaxial cable, as well as the equipment for remotely powering and controlling the unattended repeater stations.

The terminal stations are the buildings (telephone centrals) in the cities that carry the communications lines for that particular city, linking those lines with the semiterminal station where they are joined to the main transmission system. It is in these centers that the terminal coaxial cable equipment is found.

Planned Capacity--Through each coaxial pair may be transmitted 1,920 telephone channels. However, in case a larger number of channels is required within two or more decades, it is possible to increase that number by inserting repeater stations, increasing the number of semiterminal stations without the need for replacing the coaxial cable.

Although the coaxial cable and multiplex equipment represent a large expenditure, their use is economical if used in lengths of 10 kilometers or more due to savings in telephone pairs.

At this time development of technological research has managed to increase the capacity of coaxial cables considerably, reducing costs significantly.

Internationally, today there are tens of coaxial cables of 960; 1,920; 2,700; 3,600 and 18,000 telephone channels.

Infrastructure Projects--The execution of the Cubanacan Project requires the construction of 14 building complexes for semiterminal stations, 260

inspection manholes and huts for unattended repeater stations, 15 auxiliary buildings and approximately 80 kilometers of 6 or 12 conduit runs.

It will require excavation of 866 kilometers of trenches, using machines and explosives, 80 kilometers of trenches using jackhammers, the laying of 888 kilometers of cable and approximately 113 kilometers of cables in buried conduits. In addition, 235 rivers and dams of different sizes will have to be crossed and 650 road crossings will have to be made.

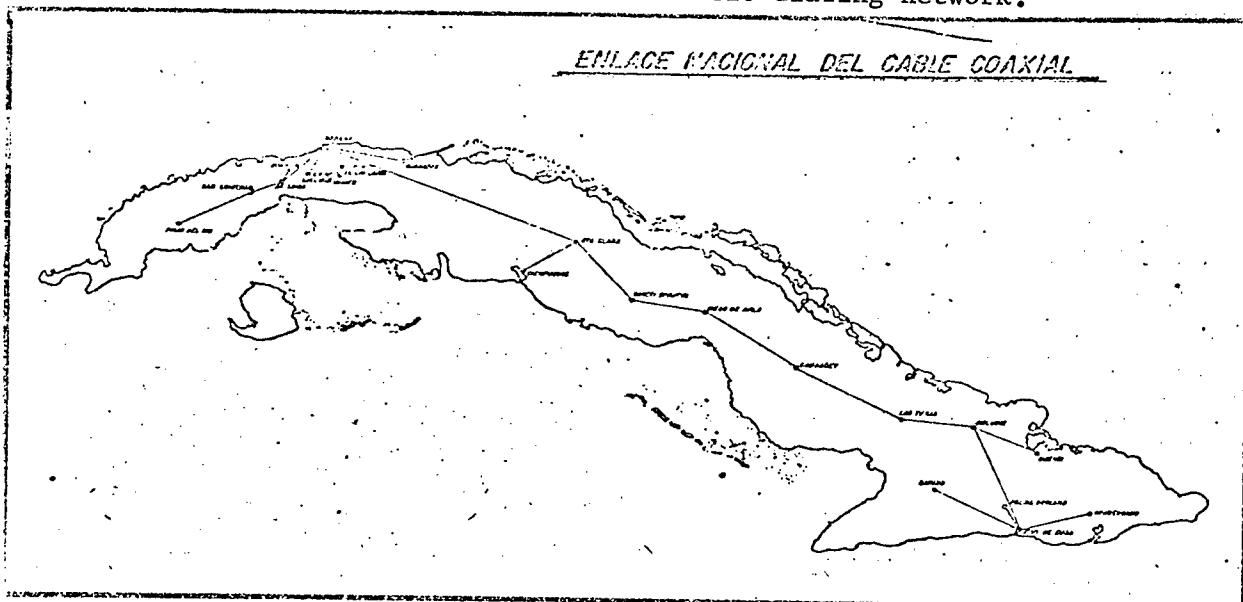
Objective of the Coaxial Cable--Its primary objective is to satisfy the needs for long-distance telephone and telegraph communications and data transmission in our country.

In turn, it will be used as a backup for the television transmission system, whose main support will be the new microwave system now being installed, which will be devoted basically for this purpose and for the other needs of national radio broadcasting.

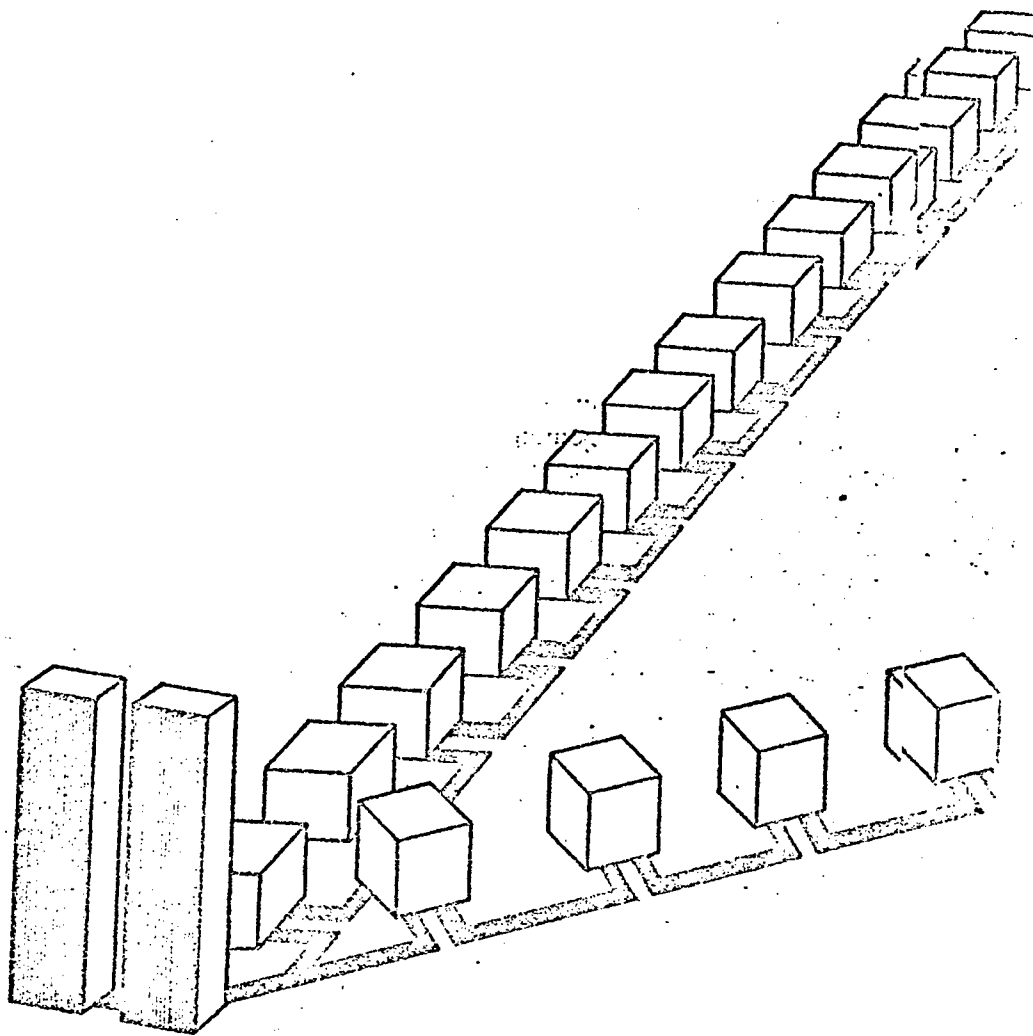
In the case of a malfunction in a section of the microwave system, a television channel--audio as well as video--can be transmitted on the coaxial cable. In like manner, in case of an interruption in the aforementioned cable, 960 telephone channels can be transmitted by the new microwave system.

The cable will satisfy the need for circuits of the main cities of the country until 1990 and the capacity for expansion of the system will be able to cover the demands that originate in the years after 1990.

The installation of this system, whose conception, planning and execution will be possible in large measure because of the help given by the Soviet Union, will place Cuba at the level of the developed countries with respect to long-distance communications facilities and with it will establish the foundations for the future national automatic dialing network.



p. 23--The Long Distance Transmission System by Coaxial Cable will be approximately 1,800 kilometers long, linking the 14 provincial capitals as well as other cities and localities.



Legenda:

- ① ② Equipos MULTIPLEX o de ONDAS PORTADORAS.
- ③ REPETIDORAS NO ATENDIDAS (no requiere personal).
- ▬ CABLE COAXIAL

p. 16--The primary objective of the main system of transmission by coaxial cable will be that of satisfying the needs for long-distance telephone and telegraph communications and data transmission, guaranteeing, in turn, the gradual introduction into the nation of automatic dialing.

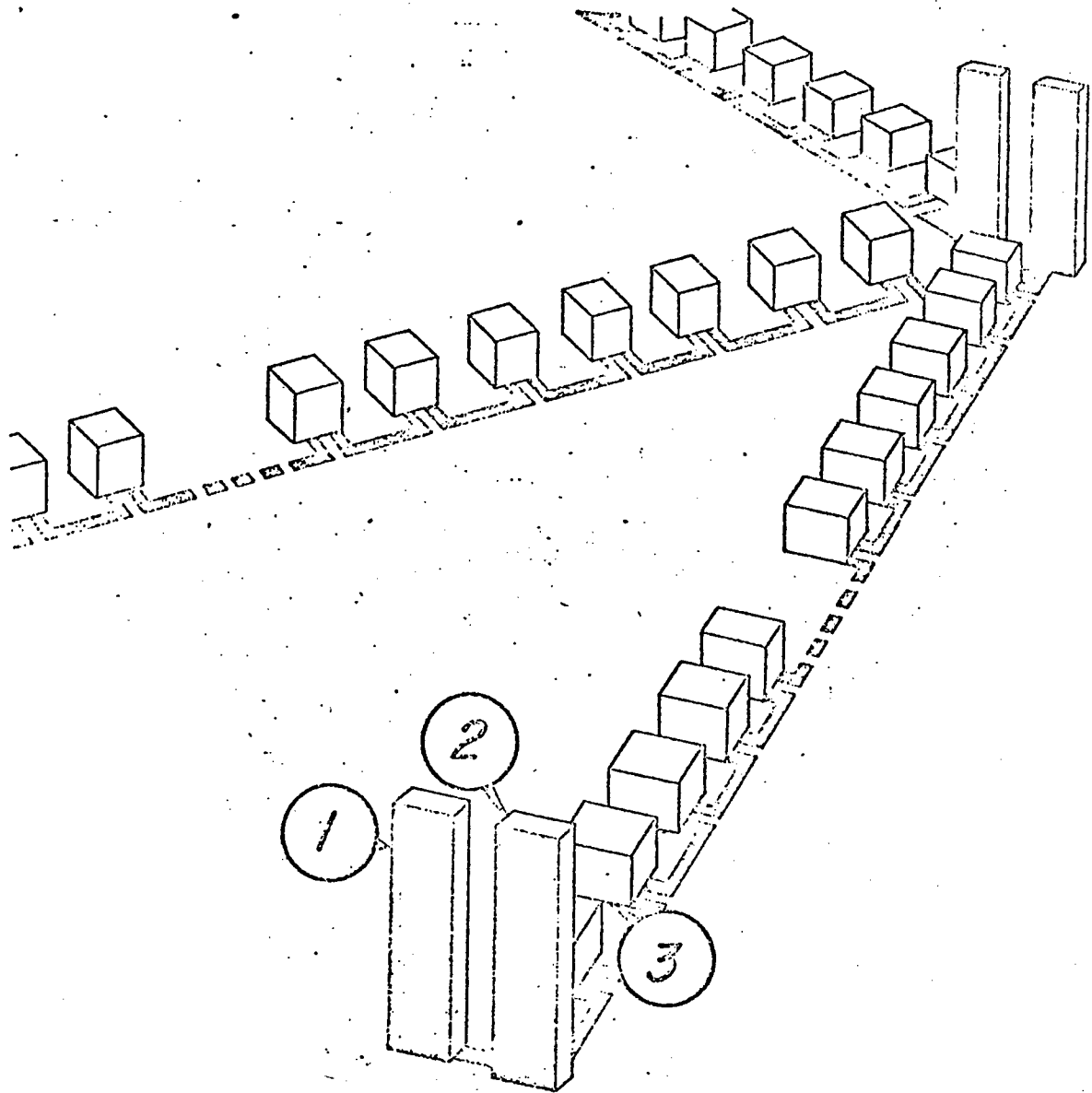


PHOTO CAPTIONS

1. p. 16--Legend: 1 and 2, multiplex or carrier wave equipment; 3, unattended repeater stations and ===== coaxial cable.
2. p. 18--Cable laying machines in action.
3. p. 19--The use of mechanical equipment is necessary for accomplishing such an extensive project.
4. p. 20--Installation of conduits in an underground-cable trench.
5. p. 22--Preparation of trenches for underground telephone cables.
6. p. 22--At this depth will be installed telephone inspection manholes for the long distance main system of transmission by coaxial cable.
7. p. 22--One of the trenching machines in the construction of the underground telephone routes.

8908

CSO: 5500

RADIOS SUSPEND PROGRAMMING, PRIESTS SEEK ASYLUM

Panama City Domestic Service in Spanish 1730 GMT 11 May 77 PA

[Excerpt] Latin American political analysts believe that the death of Salvadoran Foreign Minister Mauricio Borgonovo Pohl, announced in the Salvadoran capital this morning, could lead to serious political consequences in that Central American nation of 4.5 million persons.

A few hours after radio stations urgently reported the discovery of Borgonovo Pohl's body, it was announced that several persons, including various priests, had requested political asylum at embassies in San Salvador.

In statements to ACAN this morning, Gen Omar Torrijos Herrera expressed regrets over Foreign Minister Borgonovo's death. The Panamanian chief of government had previously offered to serve as mediator in obtaining the foreign minister's release.

On its part, the Farabundo Marti Popular Liberation Forces [FPL], which executed the foreign minister, said that it made this decision because Col Arturo Armando Molina's regime refused to release 37 political prisoners, which was the only way to save the foreign minister's life. The FPL charged that the Salvadoran Government was not interested in its foreign minister's release since the political prisoners who were to be involved in the exchange were already dead.

A few days ago, the FPL warned that it was not demanding money in exchange for Borgonovo's life but the release of the political prisoners.

Salvadoran radio stations this morning suspended their regular programs and have been playing classical music. It was indicated that reports on the Borgonovo case had been banned while police and security forces undertake a thorough investigation of the events.

In San Salvador there is a climate of tension and uncertainty regarding the immediate political future of the country. According to political analysts, Borgonovo's death will cause a serious problem for Colonel Molina's government since the foreign minister directly handled the border problems between his country and Honduras.

Observers indicate that in the domestic sphere, Molina will now have to show greater government unity. The Borgonovo family is one of the wealthiest in the country. It has financial interests in banking and industry. It is believed that the family's influence extends to certain levels of the government in El Salvador.

International news agencies this morning were expecting a statement from the Salvadoran Government.

CSO: 5500

EL SALVADOR

BRIEFS

CATHOLIC STATION WARNED--San Salvador, 11 May--Msgr Andres Rivera y Damas, Episcopal conference secretary, said today that the slaying of Foreign Minister Mauricio Borgonovo has caused great concern among Salvadorans. Regarding another matter, Msgr Andres Rivera y Damas said that a meeting of the Episcopal conference will be held to discuss a government warning to the Catholic radio station to watch its programming because it is felt that the station has been attacking the regime. The interior minister has summoned the manager of the Catholic radio station to discuss the warning and has also sent him a letter to study and reply to. [Text] [San Jose Radio Reloj in Spanish 1730 GMT 11 May 77 PA]

CSO: 5500

GUATEMALA

BRIEFS

NEW TELECOMMUNICATIONS AGENCY--The Guatemalan telecommunications enterprise (guatel) opened a modern telecommunications agency in the town of (Melchoca Adentro) in El Peten. Gen David (Cantiros) Barrios, chief of Army General Staff dedicated the new agency in the name of President Laugerud.
[Guatemala Domestic Service in Spanish 1800 GMT 11 May 77 PA]

CSO: 3010

BRIEFS

ISLAMIC CONFERENCE ENDS--Abu Dhabi, 9 May--Concluding its 2-day meetings in Abu Dhabi tonight, the general assembly of the Organization of Islamic Broadcasting Stations conveyed thanks to Saudi Arabia for establishing the Voice of Islam broadcasting station in Mecca. The assembly decided that the member states will set up relay stations for the Voice of Islam and will provide Islamic programs in joint coordination. The assembly approved the formation of the executive council of the organization consisting of nine members, eight of whom will be elected by the general assembly while the ninth member will be the organization's secretary general by virtue of his post. In the light of this, it was decided that the new executive council will be composed of Saudi Arabia, the UAE, Morocco, Pakistan, Malaysia, Mali, Niger, Iran, and the organization's secretary general or his representative. [Excerpts] [Cairo MENA in Arabic 2138 GMT 9 May 77 NC]

CSO: 5500

SAUDI ARABIA

BRIEFS

CABINET APPROVES MICROWAVE PROJECT--Riyadh, 17 May--The Saudi Cabinet has decided to expedite the implementation of the microwave project for telephone, telegraph and television communications among the kingdom's towns at the cost of 1,536,179,000 Saudi rials. Announcing this, Saudi Information Minister Dr Muhammad 'Abduh Yamani said that the cabinet, during its meeting last night under Crown Prince and Deputy Prime Minister Emir Fahd ibn 'Abd al-'Aziz, also approved giving the contract to implement the project to an American group of companies which are represented by the Western Electric Company. [Text] [Doha QNA in Arabic 0716 GMT 17 May 77 NC]

CSO: 5550

INTER-AFRICAN AFFAIRS

BRIEFS

SOUTH AFRICA DENIES JAMMING--Johannesburg, 17 May (AFP)--The National Radio (SABC) today denied it was jamming broadcasts received in South Africa from Radio Mozambique in Maputo. The denial of an official SABC spokesman came after Portuguese listeners who monitor the Mozambique radio complained this week of "interference" and difficulty tuning in Mozambique. "Confusion on the air could be caused by two stations using frequencies which are very close to each other. It is not the policy of the SABC to jam. All the frequencies we use are registered internationally," the spokesman said. One man was quoted in the JOHANNESBURG STAR tonight as saying it was difficult at present to pick up news broadcasts from Maputo, where more than 80 countries are currently represented at a United Nations conference in support of the peoples of Zimbabwe (Rhodesia) and Namibia (South-West Africa). [Text] [Paris AFP in English 0022 GMT 18 May 77 PA]

CSO: 5550

MADAGASCAR

BRIEFS

SOVIETS ACTIVE--Moscow is making progress in the Indian Ocean. Soviet technicians are currently installing a radio station [i.e., transmitter] in Madagascar, and some advisors from Moscow are expected in Tananarive to provide aid to certain government ministries. [Text] [Paris LE POINT in French 16 May 77 p 71]

CSO: 4400

NEW SATELLITE GROUND STATION

Bamoko L'ESSOR in French 16 Mar 77 p 1

[Text] Yaya Bagayoko, our minister of information and telecommunications, yesterday morning dedicated the Satellite Telecommunications Ground Station at Sulimambougou, a place situated some 10 kilometers from the capital on the Koulikoro road.

Members of the government who were present and members of the diplomatic corps attended this ceremony which was marked by two addresses, given, respectively, by Yaya Bagayoko and Mr Selosse, president-director general of the Societe France-Cables et Radio, who made the trip especially for the occasion and to visit the facilities.

In his address, the minister of information and telecommunications emphasized in particular our geographical situation--and inland country without direct acces to the sea--on the one hand, and government policy, which is making no effort to overcome the drawbacks of this handicap which weighs heavily on the development of the country. He also stressed the importance of this station, which is the result of open, straightforward cooperation between the Mali Office of Posts and Telecommunications and the Societe France-Cables et Radio through their common subsidiary company, TIM, (Telecommunications Internationales du Mali).

Yaya Bagayoko described the amjor effort made by this company whose founding members are the Office of Posts and Telecommunications and the Compagnie Francaise de Cables Sous-Marines et de Radio (FCE) during the period 1965-1976, when it carried out a large investment program involving a total of 730 million Mali francs for modernizing the decameter wave radio installations.

Mr Selosse, director general of the Societe France-Cables et Radio, especially stressed cooperation between France and Mali and the strengthening of it.

The Sulimambougou Satellite Telecommunications Ground Station

The installation work, the adjustment, and the testing, which lasted 10 months (15 March to 22 December 1976) cost about 850 million Mali francs, in addition to 90 million Mali francs for Mali's participation in INTELSAT (International Telecommunications Satellite Organization). It was

financed through loans from Credit Commercial de France (CCF) for 350 million and from the Caisse Centrale de Cooperation Economique (CCCE) for 210 million, and the rest from self-financing.

Its construction enables Mali to have high-quality telephone and Telex communications and to eliminate the delay in the routing of international relations traffic.

At the present time, there are eight circuits to Paris, and this number can be increased to 24 if the traffic volume justifies it.

The modulation process used at the present time will be replaced in the near future with another, improved system, which will permit direct connections with various correspondents without going through Paris.

Another advantage of this achievement is that it makes it possible to receive a television channel which will eventually enable Mali to re-transmit world telecasts on its own network.

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CSO: 5500

NIGERIA

BRIEFS

NIGERIAN COMMUNICATIONS DEVELOPMENTS--A long-range circuit network using automatic telephone exchanges is to be introduced soon in Nigeria. The federal commissioner for economic development, Mr O. Adewoye, announced this in Lagos yesterday at a lecture organized to mark this year's anniversary of the World Telecommunications Day. He also announced that an automatic TELEX (?JANTEX) system would be introduced. Mr Adewoye added that existing automatic telephone exchanges would be expanded, while subscriber trunk dialing would be extended to all automatic exchanges. Domestic satellite communications stations with facilities for simultaneous countrywide transmission, the commissioner said, were being established. This is to enhance the efficiency and coverage of the conventional transmission system in the country. The number of TELEX (?JANTEX) lines will be increased from the present 750 to 4,500 during the current plan period. [Text] [Lagos International Service in English 0800 GMT 18 May 77 LD]

CSO: 5550

USSR SCIENTISTS EFFECT TV TRANSMISSION BY LASER

Moscow TASS International Service in Russian 0605 GMT 7 May 77 LD

[Text] Moscow, 7 May, TASS--Hundreds of thousands of people visiting the exhibition of national economic achievements in Moscow have the opportunity to become acquainted with an operational test installation where a laser transmits television programs.

Not so long ago, television transmission by laser beam seemed a distant dream, writes SOTSIALISTICHESKAYA INDUSTRIYA in connection with Radio Day, which is being celebrated in the USSR today.

The work of Soviet scientists has significantly extended the possibilities of holography. At present, in the USSR laboratories are working systems of volumetrical television, reflecting the world in the three-dimensional form we are used to, preserving its spatial forms and all the richness of its colors.

Television transmissions from outer space have become possible through the discovery of Leningrad scientists. They were successful in obtaining a new type of semiconductor glass in which oxygen atoms are mixed with sulfur, selenium, and tellurium atoms.

In contrast to silicon and germanium semiconductors, the glass-like semiconductors are absolutely simple. They are able to stand up to all possible radiations.

Making use of their outstanding photoelectric properties and the wide spectrum of emanations they transmit, specialists have designed television tubes of the "Vidikon" type. In comparison with earlier existing models, the dimensions of these instruments have been reduced ten-fold, and their sensitivity increased by the same amount.

CSO: 5500

INTERVIEW WITH MURMANSK RADIO, TV CENTER CHIEF

Moscow Maritime Service in Russian 1300 GMT 6 May 77 LD

[Summary] Tomorrow is Radio Day. Our correspondent interviewed Vladimir Stepanovich Shugayev [phonetic], chief of Murmansk Radio and TV Center.

[Correspondent] It is clear from the map we are looking at that television programs are now received in many distant parts.

[Shugayev] All major populated centers on the Kola Peninsula receive central television programs as well as our local programs. In Murmansk Oblast TV programs reach 98 percent of the population. Central television programs are received in full. Our local programs are transmitted for two hours a day; and during the evening we get Moscow fourth program via the satellite.

At the present time the ministry is renewing the radio-relay line between Kandalaksha and Murmansk, which will enable them to receive central television color broadcasts with good quality. We hope that this will also make it possible for our Murmansk programs to reach towns on the Kola Peninsula.

[Correspondent] What can you tell us about the technical equipment of your center? What is new?

[Shugayev] In recent years we have replaced practically all our equipment. Among other things we have obtained a mobile television station, new video recorders and lots more. As far as radio is concerned, everything there has been replaced. We have a new mobile sound unit. So we are now in a position to conduct live outside broadcasts on both radio and television. Mobile video recorders are now being produced and mounted in a vehicle. These can be used instead of a mobile TV station. Construction of a cine-complex is now almost complete, and this will improve the technical quality of our productions.

[Correspondent] I believe that there is a new TV relay station operating in Kirovsk. What is the reason for this, and what else is to be done?

[Shugayev] The area around the Kirovsk 'Apatite' Combine is very broken relief, and the ministry is to build a powerful television station near the town during the present five-year plan, which will provide two-channel television broadcasting and radio broadcasting. This will make it possible to bring quality color broadcasts to this economically important region and increase the area of reliable reception.

CSO: 5550

USSR

ACADEMICIAN SPEAKS ON COMMUNICATIONS DEVELOPMENTS

Moscow Domestic Service in Russian 1900 GMT 17 May 77 LD

[Excerpt] A scientific session, devoted to the problems of the development of radio engineering, radio electronics and communications, opened in Moscow today.

Vladimir Ivanovich Siforov, director of the Institute of Problems of Information Transmission and corresponding member of the USSR Academy of Sciences, spoke at the session.

[Siforov stated:]

The problems which our session is discussing are of very great scientific and practical significance. The institute is developing a system of extracting information from a computer's memory by means of the human voice. This is very important. Here, man and machine, as it were, are beginning to form one single whole. This system is now in experimental operation in the Central Control Directorate of the power grids of the Soviet Union.

In our country work is being carried out on a wide scale to set up a single automated communications network. This work will make it possible to satisfy more fully the fast-growing needs for various kinds of communications, both of industrial enterprises and of our citizens, a great role in solving all these problems is played by the [All-Union] Scientific and Technical Society of Radio Engineering and Electronics Communications, imeni A. S. Popov, the great Popov, the inventor of the radio, a society which now unites 440,000 specialists.

CSO: 5550

USSR

BRIEFS

TELEVISION RELAY STATION--A so-called "overground minitransmitter" to relay Moscow television broadcasts via the TV satellite for Siberia and the Far East has started operating at Turukhansk, a village on the Yenisey River. The effective radius of this cheap and simple relay station is over 5 kilometers. During the Tenth Five-Year Plan period the whole of Frasnoyarsk Kray will be covered by central television. [Moscow Domestic Service in Russian 1200 GMT 15 May 77 LD]

CSO: 5500

RADAR CONTROL OF MEDITERRANEAN STRENGTHENED

Paris LE FIGARO in French 22 Apr 77 p 10

[Article by S.B.]

[Text] The STRIDA [Air Defense Data Processing and Display System] Visu IV system of the Nicé Mont-Agel CDC [Detection and Control Center], which has been operational since it was first opened on 30 March, is the result of work that has been going on since 1956, designed to give the CODA [Operational Air Defense Command] high performance and reliable equipment to provide coverage and immediate transmission of air traffic data for the Mediterranean area. The Mont-Agel Air Force Base 943, located at an altitude of 1,150 meters, 4 kilometers from the Italian border, towering above Monte Carlo, performs three essential missions, using data supplied by its radar network.

The first is an alert and detection mission. As soon as an echo is acquired, its course, speed, altitude and the number of aircraft or missiles which might be violating France's air space must be identified. When this is done, the echo becomes a "track," which is immediately classified as friend, unknown, doubtful, or foe.

This permanent evaluation of threats is centralized at the Taverny CODA and at the Lyon Mont-Verdun center which, if it is not functioning, is replaced by the Mont-Agel CDC.

In addition to control of military air traffic and special training missions, the closely related second and third missions attempt to provide air safety in cooperation with the Italian center and the French center at Aix-en-Provence. The Mont-Agel station is in close contact with the Ares radar stations of NATO's Nadge network, and with the civilian Cautra system;

this overlapping of data decreases any risk of uncertainty and increases the warning period. In case of need or in the event of a serious threat, the Mont-Agel station can order the take-off of Mirage F1 aircraft from the Orange base. Depending on the gravity of the situation, these aircraft will either inspect and interrogate or destroy the enemy aircraft.

The growing importance of electronic warfare has given the Mont-Agel center a fourth mission: radio and radar jamming. In addition, a civil defense mission will soon be added. This is known as CEDAR [Radioactivity Detection and Alert Office]. Operating through the General Alert Office, this system will notify departmental prefectures of the risks of radioactive dangers in case of a conflict.

An Instantaneous Knowledge of the Situation

The types of equipment used to provide this control are divided into three categories. One part consists of the radar antennas which sweep through space. A second category consists of the computer calculations. And thirdly, there are the tracking displays shown on consoles which can be interrogated by the traffic controllers.

The STRIDA system has two different types of radar which can each operate independently.

There is a primary two-dimensional radar used in association with a "sytometry" radar. This enables the precise position in direction and altitude to be determined. A second, three-dimensional radar, the Palmier G, was installed in 1971; it has a range of 350 km over the sea, and about 250 km to the north of the station.

The Palmier radar's shadow area in low altitude coverage, which had been estimated at 125 km, has been reduced to about 18 km because of the sytometry radar's antennas which can be beamed in the direction desired. The complementary nature of the two systems, evident already, is further increased by the fact that if one radar is unavailable, the other is activated.

Computer work is done by an IBM 370/158 which processes the station's programs in real time. This computer also has many other functions; it transmits flight parameters to the operator, thus giving the interceptor the best possible firing conditions, or, in its traffic control function, it warns of collision risks.

The tracking display is done on Sintra Visu IV tabular screens and scopes. Each of these consoles is fully autonomous and independent of the others. However, each console can still replace a nearby console when so ordered by the controller.

The Mont-Agel STRIDA Visu IV system's start of operation, which is already connected to the Narbonne radar facility, the Sainte-Baume, marks the third phase in a program to be completed in 1980 when the Tours station gets its Visu IV equipment, and when the system is connected with the SENIT / Naval Tactical Data Handling System / system developed by the French Navy.

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CSO: 5500

FUNDING SEEN PROBLEM IN TELECOMMUNICATIONS RACE

Paris L'USINE NOUVELLE in French 5 May 77 pp 38-39

[Article by Michel Jaeger: "Telecommunications Competition Is in Space"]

[Text] The goal is to establish a truly European continental communications satellite system by 1980, a system with its own launch vehicles and ground stations. But can the necessary funds be provided to successfully meet international competition?

On 16 June, an American Thor Delta 3914 rocket will launch the European OTS (Orbital Test Satellite) communications satellite from Cape Canaveral in Florida. The objective is to install a truly continental system, the ECS (European Communications Satellite) network, as of 1980-1981, utilizing a series of European-built high-performance satellites launched by the European Ariane rocket, satellites communicating with a new type of ground station and utilized to meet Europe's own satcom requirements.

The OTS is an experimental satellite described as "pre-operational by the ESA (European Space Agency). It is 2 meters high and has an in-orbit weight of 440 kilograms. It consists of a service module used to properly position the satellite and a communications module.

The OTS was built by the Mesh consortium: Matra, ERNO, Saab, and Hawker Siddeley Dynamics. The latter was the prime contractor. Matra was responsible for satellite integration and production of the stabilization system. Telefunken and Selenia have furnished some of the electronic components. Tests of the different models were conducted by the Toulouse Test and Space Environment Laboratory. As forerunner to the European satellite telecommunications system, OTS will be used to conduct a certain number of tests and experiments designed to qualify and evaluate technology, systems and the satellite's operational effectiveness.

OTS is the first link in a program established at the most recent ministerial level ESA council meeting in Paris 14-15 February 1977. This program calls for construction and launching of the first two operational ECS with which to establish a "European regional satellite telecommunications system" (telephone, television, telex and telegraph).

The ECS will be derived from the OTS and weigh 460 kilograms. Each ECS will cost 115-120 million accounting units, about 580-590 million francs.

The first ECS is to be launched from the French space center at Kourou, Guyana in 1981 by an Ariane rocket. The second is scheduled for launch a few months later. Once operational; both satellites will be exploited by the various national European telecommunications administrations. Last March in Paris these administrations formed a single organization--the interim Eutelsat--to handle these exploitation tasks.

The ministers of ESA member countries also made another most important decision, namely to build a European direct-broadcast satellite coupled to a "heavy technological platform." This 950-kilogram satellite is also to be launched by an Ariane rocket from Kourou in late 1980 or in 1981. It will provide European countries with five additional TV channels allowing direct reception in such communal facilities as schools, hospitals, large apartment-building complexes, or even individual homes.

This project has aroused considerable interest among manufacturers. Aerospatiale, Messerschmitt-Boelkow-Blohm of Germany, and ECTA [Aerospace Engineering Research and Manufacturing] of Belgium have formed an "economic interest group" (GIE) called Eurosatellite to submit their proposals for the heavy satellite platform known as Phebus. This GIE is competing with the aforementioned Mesh consortium. The European Space Agency is expected to make its decision on this project sometime in the latter half of this year. Between now and the end of this year, ESA member governments will also have to make decisions on production of six operational Ariane launch vehicles, funding of the ECS program, and reactivation of the Kourou space center.

Will they be able to provide the funds needed to avoid being completely out-distanced in a vital area of international competition? Europe is already lagging considerably behind the United States which in addition to a certain number of conventional satellites already has two experimental direct-broadcast satellites, NASA's ATS-6 [Applications Technology Satellite] and Telesat's (U.S. and Canada) Hermes CTS [Communications Technology Satellite].

This Hermes satellite was launched 17 January 1976. It is a forerunner of tomorrow's satellites.

Its energy is furnished by a pair of solar arrays consisting of 27,000 solar cells capable of providing some 1,200 watts of power. It is equipped with a 200-watt traveling wave tube (TOP) of novel design with an efficiency of 50 percent. It is currently the world's most powerful communications satellite. Its power is such that it permits the use of small ground stations equipped with antennas as small as 1 meter in diameter.

Some 30 American and Canadian users are dividing use of the Hermes spacecraft on experiments. The European Space Agency is associated with the project through a special agreement with Canada.

Specific applications have already been found for this direct-broadcast type of satellite in the Far North and other remote regions of Canada. They involve medical and educational uses, transmission of television programs, plus exchanges between scattered local communities. Hermes heralds a new stage in the history of human relations.

Japan also recently entered the race with a brilliant achievement. On 23 February 1977, it launched a 130-kilogram satellite into a synchronous orbit with a launch vehicle of entirely Japanese construction. It is the third country to have achieved such a feat. Europeans should, therefore, ponder this lesson and do their utmost lest they remain behind.

OTS Characteristics

Weight: at launch, 866 kilograms, in orbit, 444 kilograms.

Height: 2.1 meters. Width: 9.26 meters with solar panels deployed.

Orbit: synchronous at 10 degrees east longitude.

Service life: from a minimum of 3 years to 7 years.

Principal contractors: Hawker Siddeley Dynamics for the Mesh consortium: Matra, ERNO, Saab, Selenia, AEG-Telefunken and Thomson-CSF.

Launch date: mid-1977 by a Thor Delta 3914 rocket.

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CSO: 5500

SPAIN

BRIEFS

EFE, MIDDLE EAST OFFICES--Madrid, 13 May--The new EFE office in downtown Jerusalem has been opened. Journalist Don Elias Zaldivar, who speaks both Spanish and Hebrew well, will be in charge of directing the new EFE office. In addition to its office in Jerusalem EFE also has a correspondent's office in Tel Aviv. The new EFE office in Beirut, whose chief will be Don Nemesio Rodriguez Lopez, was also opened. New EFE offices in Amman, Cairo and Damascus will open in coming weeks, so as to have complete news coverage of the Middle East which is an important part of the world. Up to now, EFE had covered the Middle East by means of stringers, correspondents or special correspondents. [Text] [Madrid EFE in Spanish 1755 MGT 13 May 77]

CSO: 5550

END