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JPRS-TTP-84-016

12 June 1984

# Worldwide Report

TELECOMMUNICATIONS POLICY,  
RESEARCH AND DEVELOPMENT

19980826 131

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Current JPRS publications are announced in Government Reports Announcements issued semi-monthly by the National Technical Information Service, and are listed in the Monthly Catalog of U.S. Government Publications issued by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

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12 June 1984

# WORLDWIDE REPORT

## TELECOMMUNICATIONS POLICY, RESEARCH AND DEVELOPMENT

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CHINA ORDERS TWO ARIANE LAUNCHES FOR ITS TV SATELLITE

Paris AFP SCIENCES in French 26 Apr 84 p 16

[Text] Paris--Arianespace, the company responsible for marketing the European launcher, announced on 25 April that China has reserved two European Ariane rockets to place in orbit, in 1987 and 1988, its future indirect television satellites.

The Arianespace announcement indicated that an agreement was signed on 20 April between Arianespace and representatives of the China Broadcasting Satellite Corporation (CBSC) to reserve two launch windows during the two years, for the Chinese indirect television satellite project.

Arianespace points out that CBSC is entirely responsible for the acquisition, creation, and management of this indirect television satellite system.

The signing of this new agreement brings to 19 the number of firm reservations for Ariane rockets, made with Arianespace for launchings until 1988-1989.

Among these satellites are nine telecommunication satellites (two INTELSAT-VI of the International Organization for Satellite Communications, two American Rainbows, one Australian AUSSAT, one Canadian ANIK, two German DFS, and one Italian ITALSAT), six direct television satellites (three American--one STC and two DBS, two British UNISAT, and one French TDF-2), and two satellites of the European Space Agency (ESA) (the astronomical satellite Hipparcos, and the remote detection satellite ERS-1).

The European rocket has also been ordered for launching between now and 1987, 27 satellites belonging to 14 different customers, five of which are outside Europe, all of these orders representing 6.1 billion francs on 17 February.

11,023  
CSO: 5500/2680

OFFICIALS TO INSPECT ARABSAT FACILITY IN FRANCE

Paris AFP SCIENCES in French 26 Apr 84 p 18

[Text] Paris--Three PTT ministers, including those of Saudi Arabia and Jordan, will inspect at the end of the month at the Cannes plant of Aerospatiale, the future Arab telecommunication and semi-direct television satellite ARABSAT, which is being assembled there.

This visit by Louis Mexandeau (France), Dr Alawi Darweesh Kayyal (Saudi Arabia), and Dr Mohammed Al Zaben (Jordan), was organized at the initiative of the director general of the ARABSAT organization, Dr Ali Al Mashat. Henri Martre, president and director general of Aerospatiale, will conduct the visit.

The two Saudi Arabian and Jordanian PTT ministers play a key role in the ARABSAT organization: its offices are located in Riyadh, capital of Saudi Arabia, and the Jordanian minister chaired its Seventh General Assembly on 25 April in Amman, where the 22 countries of the Arab League were being represented.

On 25 May 1981, the French company Aerospatiale was selected as general contractor for the development and construction of the ARABSAT satellites, following an international call for bids. The contract covers three satellites (one of which will remain on the ground as a spare) which will provide telecommunication and television services to the 22 countries of the Arab League.

The first satellite, which the ministers will see during their visit, will be launched in November in a geostationary orbit (36,000 km), where it will be placed between 15 and 30 degrees of longitude by a European Ariane rocket, with the second to be handled later by the American Space Shuttle.

The three satellites assembled by Aerospatiale are built in collaboration with the American company Ford Aerospace and Communications Corporation, but many other companies, German ones such as AEG Telefunken and MBB, Italian ones such as Selenia and MDAC, and one more American firm, supply a certain amount of equipment.

The satellites weigh either 1170 kg (Ariane version) or 1270 kg (Shuttle version) at launch, but only 588 kg in orbit. They are large parallelepipeds 2.26 m high, 1.64 m long, and 1.49 m wide. Their deployed solar panels give them a span of 20.7 m. They are designed to operate for seven years in orbit, providing 8000 simultaneous telephone circuits or an equivalent traffic of other transmissions, and a television repeater.

11,023

CSO: 5500/2680

## BRIEFS

FRG SATELLITES FOR CHINA--Hamburg (VWD). A German consortium led by the air and space firm Messerschmitt-Boelkow-Blohm (Munich) will probably build two TV satellites for the People's Republic of China, according to beliefs at AEG-Telefunken (Frankfurt), a member of the consortium. In connection with the visit of the Chinese Space Minister Zhang Jun, AEG-Telefunken Space Division Director Heinz Koebel said that the company is expecting a decision by the end of 1984. The total value of the 2 satellites is about DM 250 million; each will transmit 1 TV program and about 12 radio programs nationwide. According to company information, AEG, Europe's largest supplier of satellite power systems, could equip the 2 TV satellites with polar panels and wiring valued at DM 120 million within 3 years. [Text] [Munich COMPUTERWOCHE in German 16 Mar 84 p 20] 9160

CSO: 5500/2673

## AUSTRALIA

### BRIEFS

SPACE TECHNOLOGY RESEARCH PROGRAM--Australia's leading research organisation, CSIRO [Commonwealth Scientific and Industrial Research Organization] is considering setting up a major space technology research program in collaboration with industry. The aim would be to establish the technological base for a space industry capable of providing ground and space hardware for the domestic communications satellite as well as expertise in other space applications such as remote sensing and meteorology. CSIRO has set up a top-level study group in cooperation with industry to investigate potential commercial opportunities and areas of research and development best suited to Australian needs, skills and industrial capability. It is headed by the chairman of CSIRO, Dr Paul Wild, and includes four representatives from manufacturing and user industries and four from CSIRO. It will hold its first meeting next week. [Excerpt] [BK160613 Sydney THE AUSTRALIAN in English 2 May 84 p 3]

CSO: 5500/4385

GOVERNMENT COMPANY TO RUN TELECOMMUNICATIONS SYSTEM

Kuala Lumpur NEW STRAITS TIMES in English 7 May 84 p 11

[Text]

**KUCHING, Sun. — The Government will set up a company early next year to operate the telecoms service on a commercial basis.**

Announcing this here today, the Minister for Energy, Telecommunications and Posts, Datuk Leo Moggie, said the decision was made in March this year.

### **Funds**

"Initially, the Government will own and run the company until such time when the private sector will be allowed to join," he told newsmen here.

The establishment of the company was the first step towards "privatising" the service in the country, he said.

As for the staff of the Telecoms Department, Datuk Moggie said the Government anticipated that they would opt to join the company.

"As far as the services of the staff are concerned, we are now working out the details," he said.

Datuk Moggie assured them that their position would not be jeopardised.

The Government would ensure that the company is run as a viable business venture operating on its own funds.

"This will help ease the capital outlay from the Treasury," he said.

With the setting up of the company, the Telecoms Department's role might be the "regulation" of telecommunications services in the country.

However, the Government has not decided yet on whether to assign this task to the department or form a new body for the purpose. —

Bernama

## MICROWAVE SYSTEM CONTRACT AWARD PLANNED FOR JULY

Kuala Lumpur BUSINESS TIMES in English 12 May 84 pp 1, 14

[Article by Vong Nyam Ming]

[Text]

FOLLOWING a shock re-tender order to international suppliers three weeks ago, the Telecommunications Department is expected to award a massive turnkey package for the supply of microwave stations by July.

It is expected that the award of the tender will hinge on cost estimates for civil works — the thrust of the re-tender exercise which Telecoms summarily announced to the five shortlisted suppliers on April 25.

*Business Times* understands the tussle is now mainly between GTE and Fujitsu. ITT is a closely ranked third — mainly because of its technology lead.

With the apparent dropping out of the French group, Thomson CSF, all the remaining four suppliers — Fujitsu, GTE, NEC and ITT — have technical references in Malaysia and the contest for the crucial package — worth between \$400 million and

\$800 million — will be fought on closely shared grounds.

After missing out on the megabucks public switching contracts in the early 1980's, Fujitsu badly needs to win a big job to maintain its presence in Malaysia.

In order to meet the two-week deadline, it is understood that ITT flew in on short call a technical team from its subsidiary, Standard Elektrik Lorenz AG of Germany.

All the suppliers concerned are known to have spent the last 30 hours to deadline in their offices reworking their tender quotes. At least one supplier is known to have made it with only minutes to spare.

Civil engineering contractors like Sri Kinabalu are also known to have kept their people at their drawing boards until the early hours of the morning as the tender deadline, May 9, drew nearer.

The original tender exercise allowing a three-

month preparation period, closed in late 1982 and was not heard of until the re-tendering call last month.

The intrigue which shrouded the re-tender notice closely resembles the days when Philips, Siemens and NEC were jousting for Malaysia's \$1 billion telecommunications contract in 1980.

At their April 25 meeting on the 9th floor of the Telecoms headquarters, the bidders were given until May 9 to re-submit the second half of a turnkey package.

Even though Thomson CSF attended the meeting, it did not re-tender its bid.

In the one and a half years since Telecoms closed the original tender exercise, Thomson CSF has gone through a radical corporate transformation.

Early this year, Thomson CSF was merged with CIT Alcatel, combining two of France's leading electronics and telecommunications

companies.

Telecoms has embarked on an ambitious programme to totally revamp Malaysian telecommunications and has awarded two major public switching contracts worth about \$1 billion each to Pernas-NEC and Perwira Ericsson.

Contracts worth \$2.5 billion have been awarded to local contractors to install junction cables and subscriber cables in towns.

The current microwave tender exercise is the final component of Malaysia's entry into international standard telecommunications.

The programme to upgrade and expand Malaysia's microwave stations will make available the full potential of the electronic switching systems that Telecoms will be cutting in over the next six years.

The package calls for the laying of a fibre optic network, the construction of about 50 new stations and the complete renovation of about 200 existing stations to take on the newest technology in digital and analogue microwave transmitters. The tender schedule calls for commissioning three years from the day of award.

The most readily apparent benefit is that trunk congestion will be a thing of the past and that inter-city and international calls will be successful on the first try.

The validity of the bids re-submitted by the tenderers expire in July unless Telecoms requests for an extension, something which industry sources consider unlikely as the department is already way behind schedule.

Officially called the Long Link Transmission Turnkey Contract, the

turnkey project comes in two portions — an equipment supply package and a civil works package.

The civil engineering portion calls mainly for the erection of transmitter towers, building of stations, approach roads and fencing of perimeters.

All the four suppliers quoted for the civil works via local construction companies.

GTE teamed up with Sri Kinabalu Construction — owned by prominent local businessman, Encik Mohd Abdullah Ang — and an Australian firm for the erection of transmission towers.

ITT quoted its civil works portion via Treego Bina Construction company.

Fujitsu teamed up with Mara Putra Construction Company, a subsidiary of Ipoh Gardens Bhd.

CSO: 5500/4386

PEOPLE'S REPUBLIC OF CHINA

TIANJIN'S CHEN WEIDA MEETS SATELLITE PERSONNEL

HK101414 Tianjin City Service in Mandarin 2330 GMT 28 Apr 84

[Text] Yesterday afternoon [28 April], leading comrades of the city CPC Committee and government Chen Weida, Li Ruihuan, Wu Zhen, Yang Jingheng, Liu Zengkun, and Wang Xudong, at a small theater of the Friendship Club, met with 19 representatives of scientific and technical personnel taking part in the launch of the communications satellite from the No 18 research institute of the Ministry of Electronic Industry, from the No 707 research institute of the China State Shipbuilding Corporation, from other relevant units in the city, and the responsible comrades of these units.

Chen Weida and other leading comrades shook hands with all the representatives and enthusiastically inquired about their experiments and their daily life, and listened to work reports by the responsible comrades in the No 18 research institute and the No 707 research institute.

Comrades Chen Weida and Li Ruihuan made speeches. They first expressed their congratulations and gratitude to the scientific and technical personnel for their achievements and hard work. They said: We must, on the premise of guaranteeing the fulfillment of scientific and technical tasks in national defense, shift the scientific and technical tasks in national defense, shift the scientific and technical achievements in national defense industry to the civil industry and promote the development of the civil industry so that our civil industry can catch up with the world's advanced level. In turn, the development of the civil industry will promote the development of the national defense industry.

They hope that scientific and technical personnel in the national defense industry will bring into full play their role in actively helping various localities in training talented people, in digesting and absorbing imported advanced technologies and equipment, and in other fields.

CSO: 5500/4130

PEOPLE'S REPUBLIC OF CHINA

SHAANXI WELCOMES PEOPLE WHO LAUNCHED SATELLITE

HK080924 Xian Shaanxi Provincial Service in Mandarin 0330 GMT 8 May 84

[Excerpts] Yesterday afternoon the Northwest Electronic Equipment Research Institute held a rally to warmly welcome the triumphant return of 40 scientists, technicians, cadres, and workers from the launching site of China's communications satellite and to celebrate the successful launching of the communications satellite.

At 1920 on 8 April, China successfully launched an experimental communications satellite. The Northwest Electronics Equipment Research Institute was one of the units participating in the launching of this experimental communications satellite. The Central Military Commission praised them in a citation it issued and the provincial CPC committee and government sent them a letter of congratulations.

Amid an ebullient atmosphere, (Liu Xuyue), director of the Northwest Electronics Equipment Research Institute, addressed the meeting. He said: Our institute's three projects in participating in the launching task have made contributions for the successful launching of China's experimental communications satellite. In the whole process of the three-stage rocket launching the satellite into space and the satellite independently regulating its course, our institute's three sets of equipment have all undertaken important and special tasks. Finally, leading cadre (Liu Xuyue) said: All units have the confidence and determination to lead the comrades throughout the institute in overcoming all difficulties, creating favorable conditions and winning greater victories to greet the 35th anniversary of the founding of the PRC with new and outstanding successes.

The representatives of such units as the provincial defense industrial office and the provincial department of electronics industry attended the meeting and extended greetings. The representatives of the technical and administrative personnel and workers of the Northwest Electronics Equipment Research Institute spoke at the meeting.

CSO: 5000/4130

PEOPLE'S REPUBLIC OF CHINA

PRC OFFICIAL SAYS NEW SATELLITE TO BE LAUNCHED

BK170859 Delhi Domestic Service in English 1830 GMT 17 May 84

[Text] China is planning to launch a new satellite for exclusive use by its electronic media. The secretary general of China's Radio and Television Ministry said this to UNITED NEWS OF INDIA in Shanghai. He said a separate satellite is necessary in view of the limited availability of the communications satellite. He said the Chinese television will be happy to exchange programs with India. Indian films will be acceptable if they are short with less songs, he said.

CSO: 5500/4130

PEOPLE'S REPUBLIC OF CHINA

BRIEFS

JIANGSU GROUND STATION SUCCESS--The Nanjing radio plant held a meeting yesterday to celebrate the success achieved at its satellite communications ground station in Nanjing in testing the nation's first communications satellite. After China's first experimental communications satellite was launched on 8 April, the radio plant and other units in Jiangsu coordinated with each other and successfully tested telecommunications with ground stations in Beijing and other places. The plant also sent its staff to Beijing and Urumqi to take part in telecommunications experiments at ground stations there. (Zhang Guanglin), director of the provincial Electronics Industry Department, attended the meeting to greet all the units and technicians who took part in the tests. He also urged everyone to continue their hard work and make new contributions to the development of China's satellite communications. [Text] [OW230039 Nanjing Jiangsu Provincial Service in Mandarin 1100 GMT 19 May 84]

CSO: 5500/4131

## BRIEFS

U.S. RADIO MARTI APPOINTMENTS--Spokesmen for the U.S. Information Service have reported that two U.S. citizens of Cuban background have been appointed to executive positions in Radio Marti, which is reportedly to go on the air next spring to broadcast anti-Cuban propaganda. (Humberto Medrano), former director of the now defunct Cuban newspaper PRENSA LIBRE, was appointed deputy director for information and publicity, while (Ernesto Betancur), who has held positions in the OAS and the World Bank, was appointed director for research and policy. Radio Marti, which will have offices in Miami, Washington, and New York, will broadcast programs against the Cuban revolution under the auspices of the Voice of America and the U.S. Information Service, which are two U.S. Government agencies. [Text] [PA222014 Havana International Service in Spanish 1800 GMT 22 May 84]

ANTI-CASTRO RADIO STATION--Miami (U.S.), 21 May (EFE)--An anti-Castro station belonging to the "CID" group (Cuba, Independent and Democratic), which is headed by former commander Hubert Matos, will begin daily programs for the Cuban troops in Ethiopia and Angola next month. According to the CID General Secretariat, the recently inaugurated "Radio Camilo Cienfuegos" will be intended for members of the Cuban Armed Forces and the people of Cuba and "will report extensively on the wars of liberation in Angola and Nicaragua, as well as on the situation in El Salvador." This new radio station, inaugurated yesterday, is the eighth station in the "La Voz del CID," radio network, which began transmissions 3 years ago and which is heard in Cuba, Venezuela, Central America, and the United States. The "CID" is led by former commander Hubert Matos, a close aide to Fidel Castro in the early days of the Cuban revolution. He was sentenced to 20 years in jail for "protesting communist infiltration in the revolutionary ranks," according to the CID organization. [Text] PA222016 Madrid EFE in Spanish 0054 GMT 22 May 84]

CSO: 5500/2042

FRG TO COOPERATE IN INSTALLATION OF DIGITAL PHONES

Dhaka THE BANGLADESH TIMES in English 17 Apr 84 pp 1, 8

[Text] Bangladesh will introduce new digital technology in telephone network with West German assistance.

The Federal Republic of Germany (FRG) and Bangladesh are expected to reach an understanding in this respect by the end of 1984, the visiting FRG Minister for Posts and Telecommunication Dr. Christian Schwarz-Schilling said here on Monday in an exclusive interview.

The digitalisation of the telephone system will be one of the biggest projects in Bangladesh the FRG Minister said.

Dr. Schwarz-Schilling said that the two countries would have to continue discussions in future on the appropriate choice of the type of digital technology to be introduced in Bangladesh.

He said that a team of Bangladesh telephone experts would be visiting West Germany soon to see for themselves the technology available and hold discussions with concerned private sector and government officials there.

The FRG Minister who had more than two hours of formal talks on Monday with Deputy Chief Martial Law Administrator and Minister for Communications Rear Admiral M. A. Khan on the entire gamut of bilateral co-operation in post and telecommunication sector said that the two countries agreed to expand the production capacity of Telephone Shilpa Sangstha (TSS) at Tongi.

Dr. Schwarz-Schilling who visited the factory earlier in the day said that it was in a very good condition and was running beyond its installed capacity of production.

He agreed that for enlarging the production facilities a certain amount of money should be available for import of new machinery and tools.

The FRG Minister also agreed to a Bangladesh proposal for modernisation and balancing of the Bangladesh Cable Shilpa Ltd set up in 1967-68.

Dr. Schwarz-Schilling said that the agreement for the work of the German project consultants with the T. & T. Board which is expected to expire in mid 1983 was likely to be extended further.

He also disclosed that two postal experts from his country would be coming to Bangladesh in May to make a short feasibility study to find out how modern techniques could be introduced.

For the first time FRG and Bangladesh will be co-operating in the postal services sector in Bangladesh.

CSO: 5550/0008

BRIEFS

NEW STD SERVICE--The DCMLA and Minister for Communication, Rear Admiral M. A. Khan, yesterday formally inaugurated the Dhaka-Jamalpur and Dhaka-Tangail Subscribers Trunk Dialling (STD) service from his Secretariat Chamber, reports BSS. Dhaka subscribers would now call Jamalpur and Tangail by dialling 989 and 97 respectively. Jamalpur and Tangail subscribers will get Dhaka by dialling 91. With the introduction of service with Jamalpur and Tangail, all erstwhile districts headquarters are now covered under the STD network with the capital. The newly formed districts (former outlying sub-division) are expected to be brought under the STD system by July this year, a T and T source said. [Text] [Dhaka THE NEW NATION in English 17 Apr 84 p 3]

CSO: 5550/0009

## SOLAR POWERED AUTOMATIC EXCHANGE DEVELOPED

Madras THE HINDU in English 21 Apr 84 p 9

[Text] NEW DELHI, April 20--A computerised PABX (private automatic branch exchange) that runs on solar energy and functions through the telephone has been developed for the first time in the country by the Central Electronics Limited (CEL) at Sahibabad near here, according to Mr. U. V. Warlu, CEL Managing Director.

Talking to newsmen at Sahibabad on Thursday, Mr. Warlu said the in-built computer gave the exchange user new facilities like "ring-when-free," and "add-on-conference," "hold-and-consult" and "attendant call back". The 48/96 lines exchange was extendable up to 192 lines and was priced at Rs. 2.5 lakhs. A basic advantage was that it could be operated either with mains or solar power in remote areas.

The microprocessor-based system could serve as an intercom device, and give wake-up musical alarm at any time for which a subscriber need not pay extra.

With the 'ring-when-free' facility, an operator avoids time and energy in repeated dialling of a number, which is engaged. Dialling a simple code ensures that as soon as both the called and calling parties are free, the two will automatically ring and get connected.

With the "add-on-conference" facility the head of an organisation can hold a conference with various members of his staff. At any stage, any member not required in the meeting can be deleted by simply dialling a code. Similarly, a new member could also be introduced by dialling his extension number.

Its other salient features are central office lines accessed by zero dialling, no operator intervention, selective STD barring, hold out and consult, "operator call back" and "tie lines".

Since the cabinet, including all printed circuit cards, power supply and junction box are mounted on rollers, the system is mobile.

Mr. Warlu said CEL's solar energy unit was conducting field trials on a solar powered cyclo-rickshaw on the lines of the already marketed rickshaws for handicapped people. Since the present cost was prohibitive, CEL engineers were redesigning the photo voltaic solar panel, which was mounted on the rickshaw like a canopy.

Solar-powered street lighting: A successful product of the unit was the solar-powered street lighting system. The "stand alone, pole mounted" street light supported a 20 watt fluorescent tubelight and eliminated the need for laying expensive transmission and distribution lines from centralised power generating systems. Recently, the Tamil Nadu State Electricity Board installed 28 such systems in five remote and electrified villages in the State.

Rly. safety equipment: Mr. Warlu said CEL had designed and produced railway safety and signalling equipment this year in collaboration with the Indian Institute of Technology (IIT), Delhi.

An ambitious project of CEL in the Seventh Plan period would be the protection of the country's extensive oil and gas pipelines from corrosion. Pipelines without a "cathodic protection system" tended to explode after 10 years.

Rs. 16.17 lakhs profit: Mr. Warlu said CEL registered a gross profit of Rs. 16.17 lakhs in 1983-84. Also, it was on the threshold of major breakthroughs in marketing indigenous high technology items.

PTI reports:

New colour TV: CEL will shortly market a new colour television, which will have an automatic switch-on and shut-off facility.

The television, based on knowhow from the Central Electronics Engineering Research Institute, Pilani, will have a dual purpose digital clock. It will switch on the set at a pre-determined time, and also shut off accordingly, besides indicating the time. It is expected to cost Rs. 6,000 and will hit the market in August, according to a CEL official.

CSO: 5550/0005

## STATE-OWNED COMPANY TO ASSEMBLE TELEPRINTERS

Madras THE HINDU in English 20 Apr 84 p 6

[Text]

NEW DELHI, April 19.

Mr. V. N. Gadgil, Union Minister of State for Communications, told a news conference here today that the State-owned Hindustan Teleprinters Ltd., Madras, would produce electronic teleprinters in technical collaboration with Sagem of France. The HTL's Hosur unit would manufacture the parts and the Madras unit would assemble them.

Eight thousand teleprinters would roll off the assembly line in Madras a year initially and the capacity would be stepped up to 12,000. The cost of the project would be Rs. 5 crores and the project was expected to be completed in 18 months.

Mr. Gadgil further said the State-owned Indian Telephone Industries (ITI) would produce in collaboration with Face of Italy new model telephones at its factories in Naini (Allahabad) and Bangalore, and the two units would each have a capacity of five lakh telephones a year. The investment on the project would be Rs. 17 crores and it would be completed in 18 months.

**National communication policy:** His Ministry had decided to present to Parliament during the next session a study on a national communication policy. The aim was to have a telecommunication facility within five km of every village.

The Minister said the Government had decided that henceforward a person already having a telephone at his residence could have a second telephone only under the "own your telephone" category. These decisions were taken at a meeting of the heads of posts and telegraphs circles presided over by Mr. Gadgil.

Mr. Gadgil said that the telecom sector had set up a record in 1983-84 by providing 2,01,905 new telephone connections. The Tamil Nadu Circle topped the list with 12,654 new lines followed by Maharashtra with 12,165.

CSO: 5550/0003

## COMMUNICATIONS MINISTRY REPORTS PROGRESS IN 1983-84

New Delhi PATRIOT in English 21 Apr 84 p 9

[Text]

All the four units under the Ministry of Communications achieved all-round progress during 1983-84, reports PTI.

The units include Wireless Planning and Coordination wing (WPC) Overseas Communication Service (OCS) Indian Telephone Industries Ltd (ITI), and Hindustan Teleprinter Ltd (HTL).

The WPC continued to play an effective role in the international radio communications in close coordination with the user departments, the International Telecommunication Union (ITU) and bodies affiliated to the ITU, according to the annual report of the Ministry for the year 1983-84.

The OCS continued its progress for the provision of improved and secure international telecommunication services. Its total gross revenue is expected to increase from Rs 88.72 crore in 1982-83 to Rs 100.10 crore in 1983-84. The net profit is also expected to go up from Rs 61.25 crore in 1982-83 to Rs 69.07 crore in 1983-84.

The ITI, which has production units at Bangalore, Naini, Rae Bareilly, Palghat and Srinagar and a new unit coming up at Mankapur in Gonda in UP, has set up a production target of

Rs 235 crore during 1983-84. It was making all out effort to achieve the target.

ITI has entered into collaboration with M/s Citalcatel of France for manufacture of electronic switching (exchange) system at Mankapur, and Palghat. ITI has also entered into collaboration with M/s Face Standards, Italy, for technology transfer for manufacture of new telephones at Naini and Bangalore. The Government has decided in principle to set up second electronic switching system factory at Bangalore with an annual production capacity of five lakh lines.

The Madras-based HTL proposes to set up facilities for the manufacture of electronic teleprinters. The committee set up for evaluation of the tender proposals has submitted its report to the Government and the same is under Government's consideration.

The HTL manufactures teleprinters, ancillary equipment, data models and electric typewriters. The HTL manufactured 8896 units of teleprinters in 1982-83 and the target for 1983-84 is 8500. The target for electric typewriters of 2600 units is expected to be achieved during 1983-84. Its sale rose from Rs 817 lakh in 1982-83 to Rs 976 lakh in 1983-84.

CSO: 5550/0006

## COMMUNICATIONS EXPANSION COVERED IN SEVENTH PLAN

Madras THE HINDU in English 23 Apr 84 p 6

[Text]

NEW DELHI, April 22.

The Union Ministry of Communications has projected the total investments required for the telecommunications sector during the Seventh Plan at Rs. 12,625 crores which will be nearly five times the investments likely to have been made at the end of the Sixth Plan.

This does not include an additional investment of Rs. 725 crores required for bridging the gap between the original Sixth Plan targets and expected achievements. It does not also include an investment of Rs. 285 crores required for the upgradation of the metropolitan telecommunication network. The projected investment of Rs. 12,625 crores is expected to take care of the needs of the local and long distance network of 76.63 lakh direct exchange lines.

The expansion programme for the implementation of which the communications ministry is seeking such a massive investment calls for accelerating the rate of expansion from the present level of about two lakh to around 1 million telephones a year towards the close of the Seventh Plan period.

The State-owned Telecommunications Consultants India Ltd. (TCIL) has submitted an interim report to the Government to identify the demand in India for high speed data communication facilities and the technology for setting up a public data network.

It will submit its final report next month. An experimental project of the Telecommunications Research Centre (TRC) for switched data network with indigenous equipment is under finalisation for implementation by the TCIL. This experimental network will have 'nodes' at Bombay, Delhi and Madras for linking data subscribers between these cities using packet switching techniques.

The Communication Ministry is considering various proposals for introduction of new telematic services for text communication in the form of letter, messages and other official documents, picture communication for transmission of documents and for video picture transmission and data transmission of binary digital signal at very high speeds for computer communication during the Seventh Plan. Apart from the demand for leased circuits for data communication, the demand for switched data communication is also growing rapidly with the indigenous manufacture of computers. These demands could be met by two technological options, the first being circuit switched networks and the second by packet switched networks. A market survey report on public data network carried out by the TCIL has recommended the choice of the packet switching technology and a pilot network for India with packet switching equipment and concentrators located at eight centres.

CSO: 5550/0001

## INFORMATION MINISTER DISCUSSES PLANS FOR TELEVISION

Calcutta THE TELEGRAPH in English 18 Apr 84 p 5

[Text]

**New Delhi, April 17 (PTI):** About 180 television transmitters would be installed in various parts of the country by the end of the year as part of an ambitious TV expansion programme, the minister for information and broadcasting, Mr H.K.L. Bhagat, announced in the Lok Sabha today.

Replying to a discussion on the demands for grants relating to his ministry, Mr Bhagat said an amount of Rs 233.32 crores would be spent on hardware expansion and for setting up of transmitter.

He described it as one of the most unprecedented TV expansion programmes in recent times.

Mr Bhagat said an amount of Rs 39.04 crores had been sanctioned recently for the northeast plan under which 80 per cent of the population in the region would get TV coverage. Each centre opened in the northeast would be equipped with facilities for local programme production.

The centres, as a result, would get programmes from Gauhati and the national hook-up in addition to the local ones, he stated.

The information and broadcasting minister said 70 per cent of the urban and rural areas in the country's borders would be covered with television viewing facility.

He said his ministry proposed to present the various aspects of the country's struggle for independence. To ensure objectivity, a high power editorial board had been constituted with the former Union home minister, Mr

Uma Shankar Dikshit as chairman. The board comprising politicians, historians and others, would approve the script and preview the documentary before its release for general viewing.

**Colour OB Van**

Future requirements of colour outdoor broadcasting vans were proposed to be met from indigenous sources, the Union minister for information and broadcasting, Mr H.K.L. Bhagat, informed the Lok Sabha today. There were eight electronic vans operating at present.

Mr Bhagat said the government proposed producing some new films on India's freedom struggle. Though the schedule was yet to be finalised, some of the films in this series might be screened this year itself.

**Video:** As per the notification amending the Cinematograph (Certification) Rules issued on February 28 this year, video films will be certified separately, he said.

**Advertisement:** Mr Bhagat said the gross advertisement revenue earned by All India Radio and Doordarshan during 1982-83 was Rs 15.51 crores and Rs 15.89 crores respectively. He reiterated that there was no approved project for starting a separate channel for advertisement and sponsored programmes.

**Ban sought**

Opposition and ruling party members asked the government in the Lok Sabha today to stop the exhibition of obscene films and scenes on Doordarshan.

Speaking in the resumed debate on the demands for grants of the ministry of information and broadcasting, they pointed out that the type of films shown on television had a very bad influence on the young people. Some of the scenes screened in the Chitrahari and Chitramala programmes were so obscene that it was embarrassing for parents to view them along with family members.

Mr Bishnu Prasad (Congress-I) said the feature film shown on Thursday should be stopped or be shown after 9 pm.

He demanded a full-fledged television station at Gauhati and also a permanent studio to cater to the needs of the north-eastern region.

Mr Daulat Ram Saran (Lok Dal) complained that rural people were not benefited by the radio and television programmes.

Mr K.T. Kosal Ram (Congress-I) demanded that the setting of a power television transmitter at Kodaikanal should be expedited.

CSO: 5550/0002

## BRIEFS

HINDI NEWS AGENCIES--NEW DELHI, April 20--The Labour Minister, Mr. Veerendra Patil in the Lok Sabha on Thursday ruled out the take-over of the two Hindi news agencies and reaffirmed the Government's commitment to a free press. Replying to a two-and-a-half hour special discussion on the financial crisis in Samachar Bharati and Hindustan Samachar, the two agencies, he said it was up to the management and workers of the agencies to decide whether they wanted a merger to ensure viability. "If they want to come together, the Government will welcome it. We, however, cannot force it," the Minister said. [Text] [Madras THE HINDU in English 21 Apr 84 p 7]

INSAT DATA CENTERS--VISAKHAPATNAM, April 25--Twenty centres are being set up to analyse data obtained from INSAT-1B for dissemination of meteorological information, Dr. U. V. Gopal Rao, Director General of General Satellite Meteorology, said here today. He told newsmen experimental transmission was going on in 10 centres of which two were at Visakhapatnam and Hyderabad. INSAT-1B was being used for constant mapping of weather over India and neighbourhood, Mr. Gopal Rao said. The satellite photographed the earth every 30 minutes providing consistent watch over weather developments. The pictures provided the height of the clouds, their temperature, distribution and stage of development. [Text] [Madras THE HINDU in English 26 Apr 84 p 9]

AGREEMENT WITH USSR SIGNED--India and the Soviet Union have signed an agreement on intersystem coordination of the Soviet geostationary satellite network with those of the Indian INSAT system. The agreement was signed by the Soviet deputy chief of external relations, Dr (B.I. Chirkov) [position and name as heard] and the wireless adviser to the Government of India, Mr T.V. Srirangan, in New Delhi yesterday. According to the agreement, the two sides will make suitable adjustments and modifications in the systems to facilitate harmonious coexistence. [Text] [BK270948 Delhi Domestic Service in English 0830 GMT 27 May 84]

CSO: 5500/4728

## ISRAEL

### COMMERCIAL, SCIENTIFIC SATELLITE LAUNCHES PLANNED

Tel Aviv MA'ARIV in Hebrew 10 Apr 84 pp 1, 11

[Article by Avraham Peleg: "Israel To Launch Two Satellites -- a Commercial and a Scientific One"]

[Text] Israel is planning to launch two satellites -- a commercial and a scientific one. The commercial satellite will be used for communications, and there is no basis for the claims of Saudi Arabia that it will interfere with the functioning of the Arab satellite, Arabsat.

The coordinator of the Israeli space agency, Prof Dror Sadeh, made these comments in reacting to the complaint that Saudi Arabia submitted to the International Telecommunications Union (ITU) which claimed that the Israeli satellite will be launched in the orbit of Arabsat and will disrupt its operation. The Saudis also claimed that the launching of the Israeli satellite is a violation of international law. They added: "We are opposed to the penetration of the Jewish intellect into space."

Prof Sadeh explained that the Israeli Space Agency requested the approval of the ITU for the launching of the communications satellite. The ITU, the headquarters of which is in Geneva, approved the request in principle since the broadcast frequency of the Israeli satellite is different than that of the Arab satellite and will not interfere with its operation.

The Israeli communications satellite will be launched by the American consortium, Fairchild. Experts estimate the investment at \$250 million. The satellite will enter a geosynchronous orbit (hovering at a fixed point above the earth). The funding will come from American entities and countries in the Middle East, not only Israel, in that the satellite will serve other countries in the Middle East.

The scientific satellite will be used for experiments in space, and the required investment in it is \$1 million in that it will be launched at no cost by the American space shuttle.

Dror Sadeh signed the agreement in the United States with the heads of the American space agency for Israeli experiments within the framework of the

American space operations. Among others, there will be an experiment involving the launching of hundreds of Israeli bees in the shuttle that will go into space this year. This experiment was suggested by Prof Ya'aqov Yishai of Tel Aviv University. The flight of the bees in space is designed to determine why astronauts are stricken with space sickness. Prof Yishai is also trying to determine if the bees can lay eggs in space without the force of gravity. He has already discovered in his research that these insects are equipped with a mechanism that senses the forces of the earth's gravity that is better than any scientific instrument.

5830

CSO: 5500/4511

PAKISTAN

BRIEFS

SATELLITE PRELIMINARY DISCUSSIONS--Preliminary discussions on the reservation of the launching date for the Pakistan's telecommunication satellite to be placed in orbit some time in 1987-88 have been initiated. The chairman of Pakistan's Space and Upper Atmosphere Research Commission said in Karachi today that in choosing an agency to launch the telecommunication satellite, all possible options would be explored. He said the satellite design studies being carried out by Pakistani scientists and technicians were progressing well. [Text] [Karachi Domestic Service in English 1005 GMT 20 May 84 BK]

CSO: 5500/4727

PAN-AFRICAN NEWS AGENCY ANALYZES FIRST YEAR

AB251228 Dakar PANA in English 1052 GMT 25 May 84

[PANA Feature: "PANA: One Year On"]

[Text] Dakar, 25 May (PANA)--It is now exactly a year since the PAN-AFRICAN NEWS AGENCY (PANA) started its trial news operations.

The continental news agency was launched in Dakar at a ceremony presided over by Senegal's minister of information, Djibo Ka, on 25 May 1983. Approximately, this coincided with the 20th anniversary of the founding of the Organization of African Unity: For the idea of a continental news agency is intimately linked with the OAU, and was first raised at the OAU's founding session in Addis Ababa back in 1963.

At PANA's takeoff a message of goodwill, received from the then OAU chairman, Daniel Arap Moi of Kenya, described PANA as "an agency that would voice African intents and aspirations, and correct the distorted image of Africa, its countries and peoples, resulting from partial and negative information published by foreign news agencies."

For Edem Kodjo, then OAU secretary-general, PANA was an instrument that might enable the various countries of Africa, on a basis of equality and sovereignty, to defend their national interests and present a common African point of view.

For UNESCO's director-general, Amadou Mahtar M'bow, PANA was "a primordial instrument for the establishment of a new world information and communication order."

One year later, to what extent has PANA lived up to these expectations?

The past year could be characterized as one of steady expansion and consolidation. On the first day, five national news agencies (from Congo, Angola, Zaire, Cameroon and Sudan) contributed stories to PANA. In all, the first day's output consisted of 25 news items totalling 5,460 words.

Within the first three months PANA had transmitted a million words. An average of 70 stories a day was being transmitted, amounting to between 15,000 and 20,000 words.

The number of news agencies participating has tended, slowly, to rise. Today some 15 of the continents' news agencies send stories daily to PANA. In all, 40 African countries have at one time or another sent stories to PANA.

In addition, the information departments of liberation movements (SWAPO of Namibia, and the ANC of South Africa) have contributed news. PANA has also been supplied with stories from specialized agencies of the United Nations, such as UNESCO and FAO, as well as retransmitting about 1,500 words daily from the pool of nonaligned news agencies.

On 14 February 1984, for the first time PANA transmitted over a hundred stories in a single day (101, to be precise), totaling 25,000 words. Since then, the hundred story mark has been passed on four other occasions.

The obstacle to further expansion in this direction is transmission time. PANA is supposed to transmit for eight hours a day (1000 to 1800 GMT), but regularly this is exceeded. Even with an additional hour of transmission it has frequently proved physically impossible to retransmit all that PANA has received that day.

Not all the countries that have participated in PANA have yet signed that PANA Convention. But the number of signatories is now more than half of the OAU membership. With Zimbabwe signing the convention today, the number has risen to thirty.

PANA has not as yet employed any permanent editorial staff of its own. Instead the journalists working at PANA headquarters have been seconded from more than ten national news agencies.

This system has its drawbacks, in that each journalist is only with PANA for a few months. On the other hand, the journalists working at PANA widen their own experience of the continent. When they return to their own agencies they have a clearer understanding of PANA and its problems, and can function as "PANA desk" editors.

In addition to the daily news service, PANA has been transmitting features with some regularity since 1983. Initially they were transmitted at the average rate of one a week. That has now been stepped up to two or three a week. Among the wide range of topics covered in the PANA feature service have been drought in Zambia and Mozambique, the Mano River Union, South Africa's nuclear capacity, refugees in Africa, and fighting leprosy in Tanzania. The features either come from the national news agencies, from United Nations bodies or other international organizations with which PANA has relations, or from the pens of PANA journalists themselves.

PANA special reports, dealing with major political, economic or cultural events, have included the 1983 OAU and ECOWAS summits, last December's Guinea earthquake, the 22nd general conference of UNESCO, and January's abortive meeting on national reconciliation in Chad. Inadequate funding and shortage of staff prevented the in-depth coverage of as many subjects as PANA would have liked.

On the drawing board for the future are a photographic service, a statistical and documentation service, and the establishment of a data bank.

In the second year of its activities, PANA hopes to expand its daily news service to include Arabic as well as English and French, and to push up the total number of words transmitted per day to about 30,000.

Naturally, there are plenty of problems. The first is that PANA's service is transmitted from Dakar by short wave radio teletype, and there remain many countries in Africa that cannot pick it up. These news agencies lack the necessary equipment to receive PANA properly (or at all, in some cases). PANA's regional pools (with offices in Lagos, Tripoli, Khartoum, Kinshasa and Lusaka) provide a partial solution. The regional offices can select items from each day's newscast and retransmit them by telex to those countries which cannot receive the Dakar transmission directly. This is an expensive business--particularly since post and telecommunications authorities all over the continent continue obstinately charging commercial rates for media communications.

The problems will only be fully overcome with the installation of new equipment: UNESCO has promised to deliver such equipment to about 20 African news agencies. Hopefully this will all be installed by 1985.

Finance is another headache. As with many other international organizations, PANA cannot rely on its member states paying their contributions on time. Given the dramatic financial difficulties facing many African governments, it is perhaps hardly surprising that funds for information activities are hard to procure.

The financial report presented to PANA's inter-governmental council in February of this year showed that the total contribution arrears of member states stood at well over two and a half million U.S. dollars. Not knowing when money will arrive makes planning difficult and PANA has had to operate a conservative banking policy, basing expenditure on the availability of funds, and refusing to resort to overdrafts. Shortage of funds makes both the recruitment of staff and the upgrading of equipment difficult.

PANA's raw material, the news submitted to it by the national news agencies, is not without its problems. A PANA style book exists in both French and English, and has been circulated to all the continent's news agencies. They have been urged to adopt it as a basic document for their work, and to act on its recommendations.

Language can be a formidable barrier. PANA operated in French and English, but not all news agencies have staff who are proficient in these languages. Agencies may make valiant attempts to send stories in a language they do not dominate, thus obliging PANA journalists to rewrite them to eliminate grammatical and syntactical errors. The problem can be particularly acute for some of the journalists who normally work in Arabic or Portuguese.

In most cases, the content of the stories sent to PANA is reasonably news-worth--but some agencies have insisted on sending items that have no chance of being used outside their country of origin. They are stories that are parochial, or downright trivial, or merely announced events (such as meetings or conferences) without giving the background necessary to understand them. The birth of triplets in a provincial hospital (the subject of one recent dispatch received by PANA) may be news in the provincial capital, but is hardly likely to hit the headlines anywhere else.

Every now and then, agencies have tried to use PANA as a vehicle for attacks on other OAU member states. While it is perfectly legitimate to cite one head of state criticizing another, it certainly is not so when the news agency itself descends to insulting language. Fortunately such instances (which PANA will not retransmit since they are in breach of its convention) are relatively rare.

In the final analysis, the success of a news agency has to be gauged by how much of its material finds its way into newspapers, or radio broadcasts. Unfortunately, a complete picture of how much PANA's material is picked up by the rest of the African media is far from available, since not all countries have responded to requests for feedback. However, there are encouraging signs. The press in several countries (Zambia, Mozambique, Senegal, Kenya) are known to be regularly citing PANA. For example, the PANA desk established at the KENYA NEWS AGENCY has been so successful that Kenya radio intends to run special five-minute slots devoted exclusively to items from the PANA news-cast. The true extent of PANA's impact will always be difficult to know, thanks to the habit of many newspapers of not citing the sources of their stories.

PANA enables Africa to speak to itself directly rather than via Western agencies. The network of national agencies which is the backbone of PANA should mean that the mass media in Africa are no longer obliged to rely on someone outside the continent to select and to package African news. That many still do reflects, on the one hand, the strong hold that colonized attitudes still have in editorial offices throughout the continent, and on the other, the genuine weaknesses of the national news agencies.

PANA, in fact, presents an awesome challenge: For PANA to realize its full potential, African news agency journalists will have to strive for a level of competence and professionalism at least equal to that of the regional delegations of REUTERS or AGENCE FRANCE PRESSE. This is no easy task, given that so many of the continent's news agencies are relatively young, and that training opportunities for journalists are often scanty. Nonetheless, it is only through such sharpened professionalism that PANA will ensure for itself a respected place in the highly competitive world of reporting.

In the past, news coverage of Africa has tended to concentrate very heavily on the sensational--disasters, wars, assassinations. Seen through this prism, Africa appears a threatening and irrational place. PANA can help straighten this distorting mirror by providing a detailed and continuous coverage of all aspects of life on the continent. Only this type of coverage can begin to make sense of Africa.

A survey of one month of PANA casts (October) gave some indication of the sort of topics to which the national news agencies, and through them PANA itself, attach priority. It showed that 31 percent of stories transmitted dealt with cooperation (inter-African, and between African states and other countries or institutions). Other major areas covered were politics (10.2 percent), conferences and meetings (7.5 percent), trade, commerce and economics (5.8 percent), development areas (5.4 percent) and sports (5 percent).

The type of all-round coverage provided by PANA is of benefit not only to African countries themselves, but also to international and regional news organizations. Discussions have already started with certain of the major international news agencies (most notably with ASSOCIATED PRESS) to examine possible forms of cooperation--possible ways of extending PANA's influence to other parts of the world.

Already PANA extends a "courtesy service" to the main international news agencies, sending them certain PANA exclusives with an embargo note. This has so far met with a generally favorable response.

Within the framework of South-South cooperation, discussions are also due to be held with other regional agencies in the Third World.

Speaking at February 's inter-governmental council, PANA's director general, Cheick Ousmane Diallo, declared that the agency was trying "to build methodically a structure capable of constituting and integral part of that major task of changing mentalities, reducing the forces of inertia, as well as developing attitudes and reflexes which will make each son and daughter of Africa a productive force in an endeavour which is organized and continuous."

That structure is not yet built, but after its first year of operation, PANA can at least claim to have laid some of the foundation stones.

CSO: 5500/74

## INFORMATION MINISTER INAUGURATES COASTAL RADIO STATION

Brazzaville MWETI in French 8 Mar 84 p 3

[Article by J. T.: "Pointe-Noire: Minister Daniel Abibi Inaugurates Coastal Radio Station"]

[Text] The Minister of Information and of Posts and Telecommunications Services, Comrade Daniel Abibi, made a quick trip last 28 February to Pointe-Noire, during which he proceeded with the inauguration of our country's coastal radio station. The public ceremony took place at Siafoumou, 15 km from Pointe-Noire, on the Bas-Kouilou Road, where the building stands which now houses the receiver. The completion of all the work is an outstanding example of the cooperation between the German Democratic Republic [GDR] and the Congo.

This work includes a transmitting center at Pointe-Noire and a receiving station at Saifoumou, installed by the East German (FRG) firm [as published]. The two centers make up the coastal station of our country, which like other stations throughout the world, has the mission of serving as a link between floating units (ships) and land, as much for their own security as for other communications, whether by telephone, telegraph or telex. In this way it is capable of connecting a member of a ship's crew with a subscriber on land or hooking up a ship with another coastal station or with its country of origin.

The transmitting center has been installed in the former telecommunications building, opposite the Poaty Bernard Technical Institute in Pointe-Noire. It includes three transmitters, two of one-kilowatt capacity and one of five-kilowatt. Of the first two, one emits medium waves in the frequency scale from 400 to 535 kilohertz, over a range of about 500 km, or 270 nautical miles. It is used in telegraphy. The second is mixed (emitting medium and short waves), with a frequency from 1.6 to 30 megahertz. Its range is about 1,080 nautical miles, or about 2,000 km. It serves for telegraphy, telephony and telex. The third, the one powered at five kilowatts, is for short wave. Transmitting in the scale of frequencies from 3 to 30 megahertz, it allows the operator to attain intercontinental distances, provided directional antennae are used. This transmitter serves both telegraphic and telex needs, with further telephonic possibilities.

In conjunction with the transmitting center, there is a receiving station up at Siafoumou. It is equipped with eight receivers, including two that are automatic and six that have variable scales.

The two automatic receivers ensure safety for maritime navigation, much as does a control tower in the case of aviation. To elucidate this function more clearly, let us say that when a ship is in difficulty, it emits distress signals which are automatically intercepted by the closest coastal stations. The latter, after determining the position of the ship in question, then alert Geneva, which has the responsibility of coordinating rescue operations.

As may be seen here, we are concerned with a universal responsibility, devolving to the greatest degree upon coastal nations. By installing these new facilities, our country has just shown once more that it will always answer its international calling with head held high.

8117

CSO: 5500/71

COMMUNICATIONS MODERNIZATION TO BE ACCELERATED

AB172000 Lagos NAN in English 1652 GMT 17 May 84

[Text] Lagos, 17 May, (NAN)--The minister of communications, Lt Col Ahmed Abdullahi, said in Lagos today that the Federal Military Government would accelerate the expansion and modernisation of telecommunications facilities to keep pace with the demands of Nigerian and global technological advancement in telecommunications.

Lt Col Abdullahi said in a broadcast on "telecommunications' expanding horizon," to mark this year's world telecommunications day, that Nigeria had advanced from the installation of manual exchange through the automatic to the crossbar exchange. He said that the possibility of an early introduction of the digital system was being considered.

The minister said that Nigeria had moved toward the optimal use of satellite in its domestic and international telecommunications services and that the NTA [Nigerian Television Authority] network news and other national programmes were transmitted live via the domestic earth satellite system.

The minister condemned the attitude of some dishonest Nigerians and foreigners who embarked on the abuse of the national frequency spectrum through illegal emission of radio waves. He appealed to all radio operations without licenses or with expired ones to obtain the required licences, adding that his ministry was determined to bring offenders of the wireless telegraphic act to book.

He further appealed to all member nations of the International Telecommunications Union, particularly developed countries, to cooperate in the exploitation of technological advancement in telecommunications, adding that they should also use the outer space for the peaceful and mutual benefit of all mankind.

CSO: 5500/75

## BRIEFS

BROADCASTING REGULATORY BODY--The National Committee on the proposed Broadcasting Commission is meeting in Benin to discuss the coverage, regulatory, and monitoring systems for radio broadcasts in the country. The committee was set up by the Organization of Radio Chief executives in Lagos last month to look into ways of preserving valuable materials used in radio broadcasting. Meanwhile, its chairman, Ziola Gbolonkyor, who was the general director, Federal Radio Corporation of Nigeria, described the Organization of Radio Chief Executives as very unique because it provided a forum for all radio stations in the country to come together to discuss common problems and explore areas of cooperation. [Text] [AB172200 Lagos Domestic Service in English 2100 GMT 17 May 84]

CSO: 5500/75

ZAIRE

BRIEFS

KANANGA TV RESUMES BROADCASTING--Kananga, 14 May (AZAP)--The Kananga television center resumed its programs on Saturday after a year's break, following the technical breakdown of one of its two relay stations in the Llunga and Tshimbau Districts. The television center, having been repaired, the telephone link between Kinshasa and Kananga has been restored. [Text] [AB142100 Kinshasa AZAP in French 1805 GMT 15 May 84]

CSO: 5500/73

## COSTS, SERVICES OF NORDIC MOBILE TELEPHONE SYSTEM

Helsinki FORUM in Swedish 29 Feb 84 pp 8-11

[Article by Christer Ekebon: "The Nordic Mobile Telephone System: Unique in the Whole World"]

[Text] Mobile telephones have been in use since the 1950's, but not until the 1960's, when semiconductor technology began to replace the old tube technology, did radio telephones begin to come into use on land as well. On board ships the radio telephone has been in existence since it was invented! Toward the end of the 1960's the demand for mobile telephones suitable for highway traffic became so great that the Nordic countries in earnest began to contemplate building a joint telephone network for the Nordic countries. The reason for this was, of course, that considering the future, a joint Nordic mobile telephone network was the most expedient alternative. In 1969 the so-called NMT [Nordic Mobile Telephone] committee was then appointed, the task of which was to work out the guidelines for a joint Nordic system. At that time people already realized that the work would take a long time, and the project was initiated by planning a new manual system which was then put into service in Denmark, Norway and Sweden, namely the NTD [expansion unknown] system. This network system works in the same frequency range as NMT and is being gradually abolished as NMT is expanded.

## Finnish ARP Will not Be Scrapped

In Finland we did not join the NTD system but built our own ARP system in a different frequency range, which today means that our manual telephone network by no means needs to be eliminated when NMT is expanded. NMT operates at 450 MHz, while ARP operates at 150 MHz. Those who today own a radio telephone for ARP therefore do not need to worry about the future--the system will continue to be in use despite NMT.

The planning of NMT gradually got under way in earnest and in 1977 the first network was ready to be tested in the Stockholm region. At an early stage it was already assumed that the Nordic mobile telephone network NMT would be expanded with the use of the most recent technology available. Very high quality criteria were established and extremely high demands for the functioning of the system: In principle an NMT telephone should function in the same manner as an ordinary telephone. The rate policy was also the object of thorough analyses before a rate structure acceptable to everyone was arrived at. It costs the same to call from a Finnish NMT telephone no matter

where you are in the Nordic countries. When calling an NMT telephone from an ordinary telephone, the usual telephone call charges are added, of course.

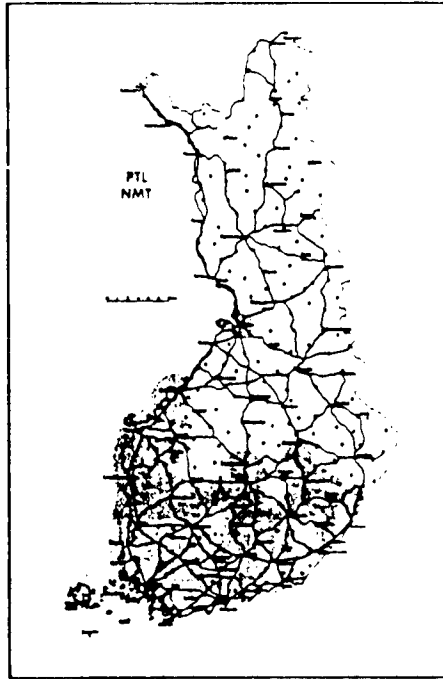
#### The Telephone Network of the 1980's

NMT can definitely be called the telephone network of the 1980's: On the whole, it is technically superior to the fixed telephone network, and the features NMT possesses today are what most of us will still have to wait a while for in the fixed telephone network! This is naturally due to the fact that the NMT exchanges are completely digital, while most fixed telephone exchanges still operate "mechanically." As a matter of fact, two features are new to the user, compared to other mobile telephones; first, the telephone network is completely automatic, which means that no exchange has to be called and asked to connect the call to the desired number, but the desired number is dialed directly, just as with a home telephone! With the minor difference that an NMT telephone has a set of buttons instead of the still common rotary dial and, second, NMT operates with duplex traffic instead of simplex or half-duplex, as in older mobile telephone systems. Duplex means that one can speak and listen at the same time (just as at home, that is to say) and can avoid pushing a button each time something is said, which is the case if the mode of traffic is simplex or semi-duplex (in which case one conversation partner does not need to switch between transmission and reception).

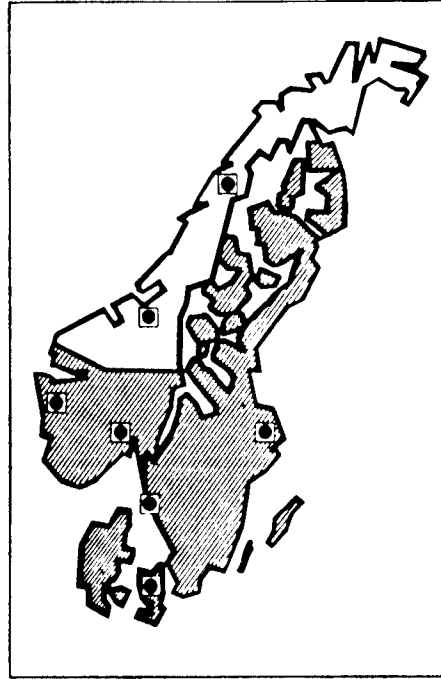
NMT also has various interesting and useful features either built right into the telephone sets or in the network itself. The set is equipped with a microprocessor which controls its basic functions, but a great deal more is included "in the bargain," such as the number memory. A so-called short number selection can be used by storing a certain number in advance and giving it an "address" in the form of one or a few digits. If someone calls FORUM very often, he might perhaps want to have FORUM's number in the memory: The number 90 658144 is stored and this is done under the address 3, for example. When he then sits in his car and wants to get in touch with FORUM, he merely presses a call button and the digit 3; the set automatically dials the whole number, and all you do is wait for someone to answer. Most telephone sets have at least 10 memory positions for this purpose, but memories actually exist that can store up to 100 positions!

If the person you are talking to asks you to call a certain number after the call, this number can immediately be dialed into the memory and when the call is over all you do is tell the set to dial the programmed number. The set also remembers the number last dialed, so that if the number is busy or does not answer, you do not have to dial the whole number again: Press a button and the set redials the number.

The built-in services of the network can be utilized in a similar manner. One such service is the telephone answering service, a "secretary." The "secretary" then informs the subscriber what calls arrived during the period the service was used. But this can also be handled in a different way: You can program the center to automatically connect all incoming calls to the NMT



Today about half of Finland is covered by NMT, but the expansion continues all the time. The shaded area of the map shows NMT's coverage as of 1 March 1984.



NMT in the other Nordic countries. Denmark is practically completely covered, as is Sweden (except for the mountain regions and northern Norrland) while only the southern parts of Norway are as yet covered.

telephone to another number, for example the office or the home! It should be noted that all of this can be done merely by dialing a digital code on your own NMT telephone--which is transmitted as an ordinary number to the exchange.

#### Call Around the Whole World!

Since NMT is a part of the ordinary telephone network because the two networks have been connected through the NMT exchanges, it is possible to call any place from an NMT telephone which can be called from an ordinary home telephone. The only requirement that must be fulfilled is that the NMT telephone in question must be located within the geographical area covered by NMT. In contrast to what is the case when a manual mobile telephone is contacted, the caller need not even know what country the NMT telephone he or she is calling is located in. The NMT system automatically finds the telephone in question!

NMT is primarily intended for use in cars and other vehicles. This is why use of the telephone has been planned so that the telephone can also be used when the car is on the road and in traffic. Obviously, it must be possible to place the telephone conveniently in the car, which normally means that the telephones are divided into two units: a control unit and a radio unit. The control unit consists of the telephone receiver itself and the set of buttons (usually built into the handle of the receiver) as well as a holder for the receiver which contains additional operating and control units such as signal lights of various kinds and a small loudspeaker. The radio unit is usually placed under a seat or in the trunk, but efforts are already being made to build the apparatus so small that it can fit into the car radio slot. That placement will probably become most common in the relatively near future, since it ought to be quite clear that the physical dimensions of the telephones will be significantly reduced. The equipment contains a number of circuits which today are made up of discrete components but which from a technical viewpoint it should be possible to integrate, whereby their dimensions will drastically decrease. One could probably even assume that the unit itself will gradually become so small that it can be contained in the receiver in its entirety and that the loss of power in the initial step of the transmitter will be so small that the cooling need not be an obstacle to this. The human being does not get any smaller, however, which in turn means that the receiver and control units cannot be reduced to any significant extent without becoming impractical to use!

Most of the telephones in the market are portable, meaning that with a few simple steps they can be removed from their usual place in the car and placed in a specially constructed shoulder bag, which is equipped with an accumulator. In this manner the telephone becomes completely portable (weight under 10 kilograms) and it can be brought to the boat, to the summer house, into the forest when picking berries or to the logging site etc. One manufacturer even contends that his telephones are dust- and water-proof. Meaning you can take the telephone with you in the bathtub?

#### Demand Surpassing Expectations

The price of an NMT telephone may seem high when you hear that it costs nearly 20,000 [Finnish] marks. It is certainly not a matter of a cheap toy. Demand is dictated partly by need and partly by the price, and if any conclusions are to be drawn concerning the correctness of the price level based on demand, the conclusion may very well be that it is appropriate. The need is great and from all appearances people are prepared to pay what it costs, because demand today is generally three times what had been anticipated. This has caused certain problems: The system is periodically overloaded and, as a newspaper in mainland Sweden expressed it, in the process of collapsing. The reason for all this is naturally that too many units are in use at the same time, whereby the capacity of the base stations is no longer sufficient. The Posts and Telecommunications Agencies have formulated a plan for the expansion of the system, but at the moment that plan is too slow relative to the increase in telephone units. The problem is obviously of a financial nature: The resources are not sufficient for more rapid expansion. The NMT committee did

know that there was a need for this type of telephone network, but it evidently estimated that need too cautiously.

### Advanced Technology

As was already mentioned, the price of an NMT telephone is in the neighborhood of 20,000 marks. The price might seem high, and many are certainly asking what it is that actually costs that much and thinking of other electronic equipment, such as microcomputers and other such things. How can it be that a relatively small unit, such as a radio telephone, can cost so much? APR telephones can be bought for under 10,000 marks and an ordinary marine VHF telephone costs about 5,000 marks, not to mention the ordinary shortwave telephone for the 27 MHz range, which can be bought for a few thousand. But when taking a closer look at an NMT telephone, one realizes that it involves very advanced equipment. The quality requirements imposed by the authorities for these telephones are high, to say the least, but the intent was obviously to achieve well-functioning and, as far as possible, interference-free telephone traffic within the network. In order to succeed, it is necessary to demand a great deal of the telephones. So much, in fact, that the manufacturers sometimes regarded the requirements as nearly unreasonable! One NMT telephone is a combined radio transmitter and receiver; radio amateurs usually call this a transceiver. When comparing all the abovementioned telephones and an amateur transceiver, the NMT telephone differs on one essential point: It can both transmit and receive a signal at the same time (duplex traffic). The power of the transmitter is 15 watts, and the power of the received signal may be a few microwatts or even lower. This does not pose a problem for the sender, but it means enormous problems for the receiver. In this connection we will not go into details of why this is so; suffice it to say that this is the case. However, this means that the receiver must be so constructed that it can cope with it, and it means that very expensive technical solutions must be employed. Only the best is good enough--no compromises are acceptable. We are therefore dealing not with toys but with radio equipment of the highest professional category. If a shortwave telephone with similarly excellent features were to be constructed (which is entirely possible), it would cost just as much....

### Base Stations and Exchanges

In principle, NMT consists of the mobile telephones and an network of fixed so-called base stations connected to an MTX [mobile telephone exchange] exchange, through which the traffic between the mobile telephones and the other telephone network takes place. When calling from a mobile telephone to a fixed telephone, the signal is received by the nearest located base station. Which station gets to handle the traffic depends on the audio quality, and that detail is automatically monitored by the system. From the base station the signal is passed on to an NMT exchange, an MTX, from which the signal is connected to the ordinary telephone network and finally to the desired telephone. The signal from the fixed telephone to an NMT telephone goes in the reverse order, of course. In Finland we have only one MTX and it is located in Lahtis. There are considerably more base stations, and more are

constantly being built. Of course, one NMT telephone can contact another NMT telephone and then the signal goes to the base station, after which the MTX exchange calls up the dialled telephone. The NMT telephones "talk" to the exchanges and report their actual positions. Each telephone is given a home address, which is known by its own MTX exchange. When the telephone is moved geographically it contacts the base station which is most audible at the moment and reports its actual position (in fact within what traffic area it is located) and this information is passed on to the home exchange. In this manner the network constantly knows where a certain telephone is and the system can rapidly find it if a call for it comes in. The owner and user of the telephone does not need to worry about this; it is done completely automatically. Since a car moves relatively rapidly, it might very well happen that a base station must be exchanged during an ongoing call. This also takes place automatically and without interrupting the call. A short pause of a second or so occurs, after which the audio quality improves! The telephone itself also reports if it cannot contact a base station (this might happen if you get outside the covered area). In moving from one country to another the unit must change country code, so that it is contacting the base stations of the country in question and is not trying desperately to get in touch with the stations of the home country. Actually, this is the only thing that needs to be done manually in order for the contact to function!

#### New Models!

Up to now, NMT telephones have been manufactured with two power levels (15 watts and 1.5 watts) but as of this spring the new telephones must be equipped with yet another power level, 150 milliwatts. This is necessary with a view to the future, when "small cell systems" will be developed in major population centers; in other words, the area in question will receive many small base stations with a relatively short range. This has to be done in order for the existing channels to suffice.

Something else which must be remembered when acquiring or using an NMT telephone is that it involves radio transmission. This means that someone else besides the one you are speaking to can listen in on the call, since it is not particularly difficult to listen to the conversation if one happens to have a radio receiver which can receive that particular frequency. Telephone secrecy can therefore not be guaranteed under any circumstances in the NMT network.

11949  
CSO: 5500/2665

## BRIEFS

L-SAT SOLAR PANELS PRODUCED--In AEG-Telefunken's New Technologies, Space, Division in Wedel near Hamburg, the first solar panels for the world's to-date most powerful telecommunications satellite were recently fabricated. The L-Sat (wherein L stands for large) is being built under a contract from the European Space Agency (ESA); AEG-Telefunken's deliveries will amount to DM 18 million. A total of 43,000 solar cells are mounted on the gossamer-thin foils of the 2 solar panels which can be folded together; each has a span of 10 m. The solar cells themselves are only 0.18 mm thick, so that a complete panel with a weight of just 26 kg folds for launching into a package 2.90 m long, 30 cm wide and 3.5 cm high. The solar panels will begin supplying power for L-Sat in space in 1986. The initial power will be about 5 kW; after 10 years in orbit, the panels will still deliver about 3 kW. The satellite, as a space relay station, will relay TV pictures, data, and telephone and radio voice signals. Experts figure that at least 150 powerful communications satellites of this class will be circling the globe by the year 2000. Chances for the Europeans to capture a large market share are viewed as good. AEG-Telefunken itself has been involved in providing power equipment for 80 national and international satellites since the beginning of the German space age in 1966 with the Azur research satellite. Figure 1 caption: L-Sat with its two solar panels spans more than 26 meters. AEG-Telefunken supplies these solar generators which generate about 5 kW of electrical power from 43,000 solar cells covering 60 square meters. The versatile L-Sat space relay station offers the capability to relay TV pictures, data and telephone and radio voice signals starting in 1986. Figure 2 caption: This 10-m long solar panel which was recently fabricated at AEG-Telefunken in Wedel near Hamburg for the European telecommunications satellite L-Sat weighs just 26 kg. Twenty-one thousand five hundred solar cells with a thickness of just 0.175 mm were bonded on a gossamer-thin foil and interconnected. For launching into space the panels can be folded together into a package 2.50 m long, 30 cm wide and 3.5 cm high. At mission start in 1986, the two solar panels will supply the space relay station with a power of about 5 kW. [Text] [Bern TECHNISCHE RUNDSCHAU in German 6 Mar 84 p 7] 9160

CSO: 5500/2673

## RESULTS FOR 1983, MARKET PROSPECTS FOR NORTHERN TELECOM, MITEL

Munich COMPUTERWOCHE in German 16 Mar 84 p 26

[Article: "Canadians Are on the Trail of Progress"]

[Text] Munich (CW)--For the Canadian computer and telecommunications industries 1983 was a lackluster year. Of course, the figures from the last quarter are not yet in, but it can be read from the results of the first 9 months that the recession in North America had as big an impact on Canadian industry as it did on the American and German industries. As the Canadian consul general in Munich further related, the northern neighbor of the United States expects new bouancy from its first-time participation in this year's Hannover Fair with a national booth.

Last year, the Canadian market for communication equipment reached the same level as in 1982, \$2.5 billion; but in the process deliveries sank by 3 percent to \$2.1 billion. Exports and imports climbed against one another by 10.6 and 14.8 percent to \$1.3 billion and \$1.6 billion, respectively.

Domestic business in the DP area was marked by a noticeable drop, 10 percent to \$2.2 billion, during the first 9 months. The consul general charged this up to the recession and constraints on capital budgets. Exports dropped by 13 percent to \$728 million; imports were unchanged at \$2.4 billion. Somewhat surprising to insiders was DP exports which climbed by 12 percent to \$1 billion.

With this Canada has become the fifth largest market for and the eighth largest exporter of DP systems. The hardware market amounts to an estimated \$4.7 billion; software and services add another \$1.4 billion. About \$3 billion of this market represents imports; over 90 percent of Canadian production, about \$1 billion, is exported to other countries.

In 1983, focal areas for development were wireless-telephone networks, cable networks for computers, satellite telephone relays, VLSI technology and satellite communication traffic. Further, according to statements by the consul general, the official introduction of teletex between the FRG and Canada was one of the most important international happenings in the DP market. Teletex,

which utilizes digital technology, now makes it possible to transmit a business letter between the two countries in about 10 seconds.

### EDP Integration

Northern Telecom introduced worldwide the Special Program Open World (Open Protocol Enhanced Networks) which will require 5 years and \$1.2 billion for completion. The objective of this development is to completely integrate data processing into the business process. In it, speech communication and data communication are weighed as heavily as text processing and picture communication. Open World is based on the SL family of digital PBX equipment from Nortel and on the new DMS-100 family of digital switches. One of the newest products of the SL family is the SL-15. It was introduced last July and is, according to the manufacturer's information, a fully digital PBX unit specially developed for customers who require 30 to 120 telephone lines. Even though this switching system is small according to today's standards, it has all of the characteristics of the larger SL-1 units including the capability to operate display phones for speech and data. According to the vendor, about 7000 SL-1 systems have been sold in more than 50 countries to date.

### No Cooperative Programs Planned

In spite of the trend toward joint programs between producers in the telecommunications business, Nortel will continue to work alone. This was recently reiterated by Northern Telephone President Edmund Fitzgerald: "Combinations with others tend to brake one's own efforts."

The other large Canadian manufacturer of digital switches and customer equipment, Mitel, began delivering its new SX-2000 digital PBX unit last year. The present production rate is 10 units per month; by the end of the year, the rate will climb to 50 units per month. With a price of about \$800 per unit, it offers a capacity of from 150 to 10,000 connections. Canadian experts place considerable value on the fact that speech is transformed into data--not data into speech--as is the case for older PBX equipment.

Both manufacturers have shown up in the German market. Mitel offers several versions of its SX-100 PBX installations; the German Postal Service uses the Datex Packet Transmission System from Nortel.

### Third Place in Satellites

Canada, as the third nation after the Soviet Union and the United States, has launched 14 satellites. Two of these, units of the Anik series, were launched from the space shuttle in 1983. (In the language of the Original inhabitants of Canada, the Inuits, "Anik" means brother.) The Anik satellites C1 and D2 will be launched from the space shuttle in 1984 with the aid of the Canadarm.

An example of international cooperation in space for peaceful purposes is SARSAT (Search and Rescue Satellite-Aided Tracking). This is a satellite-based search and rescue system, which was also put in orbit in 1983. As a joint undertaking of Canada, France and the United States, this artificial earth

satellite works jointly with the Soviet Cospas satellites. In the first 12 months of use they have helped to rescue 97 people. The signals of the Emergency Locator Transmitters (ELTs) were picked up by SARSAT which relayed the exact positions to ground stations. The frequencies presently used are 121.5 and 242 MHz; soon however a switch will be made to the 406 MHz band which permits the use of digital methods.

#### Microcomputer With Nose out Front

Even though the microcomputer market as a whole was somewhat flat in 1983, the lower end showed strong growth, and the upper end was marked by a noticeable expansion of the product spectrum. The growth in microcomputers amounted to about half of the growth in the entire computer market. For 1984, insiders predict an increase of twelve percent, compared to 10 to 20 percent for the entire computer market in Canada. Digital Equipment Ltd. with a market share of 25 percent is the leading supplier of minicomputers. The lower end of this market is being strongly assaulted by Apple's Lisa and the upper end by IBM's 4300. Knowledgeable industry observers predict that Hewlett-Packard's Series 9000 will make strong inroads into the minicomputer market in the technical-scientific area.

Thus, 1984 offers Canada many opportunities in the data processing and telecommunications markets. Signs of economic recovery, the dissolution of the AT&T monopoly and developments toward international standardization are evaluated by the Canadian consul general as signs of a successful year for the industry. However, Canadian offerors will have to place greater weight on technological progress if they are to secure their position in international competition.

9160

CSO: 5500/2673

DOMESTICALLY DESIGNED ANTENNA FOR DIRECT BROADCAST SATELLITES

Copenhagen BERLINGSKE TIDENDE in Danish 30 Apr 84 p 2

[Article by Michael Rastrup Smith: "Satellite TV Into Living Rooms Via Mini-Antenna"]

[Text] The first antenna for DBS [direct broadcast satellite] satellites, which will be able to be received legally everywhere in Denmark as of next year, is now coming. The antenna is no bigger than a "soup tureen."

It will now be possible to see satellite TV through an antenna which is only 35 centimeters in diameter. The antenna, which is exceptionally small, can be used for direct broadcast satellites (DBS's), the first two of which are to be put up by next year.

"The antenna has been developed for home owners, who in Denmark will be able to receive two countries' satellites by means of the antenna," Chief Engineer Roland Ekinge of Philips' satellite division in Norkøping says, who is the man behind the new antenna.

The DBS satellites have, in contrast to the much talked about communications satellites which are already now broadcasting TV, not been much talked about. While it is illegal to receive communications satellite broadcasts here at home, there is no prohibition against seeing TV from DBS satellites, when they begin to broadcast as of the end of next year. For the DBS satellites will broadcast in a frequency band which is internationally approved for radiotelephone purposes.

The first DBS satellite over the equator will be a German one, which is to be sent up at the end of next year. From German quarters it is reported that the satellite will possibly be experimented with as long as two years. For they are having difficulty with choosing the system which the satellite is to broadcast with.

"Our antenna is designed for the CMAC system, which up to now only the English have selected for their DBS satellite, but if the Germans go over to this system, German satellite TV will be able to be received with a 35-cm antenna in Denmark," Roland Ekinge says.

A short time after the German antenna [as published] has been shot up, France and Luxembourg will send their DBS satellite up. This is expected to take place at the end of 1985 or the beginning of 1986. This in the beginning will broadcast through the PAL and SECAM systems, which are the TV signals which are used today in Europe. But later it will go over to the new CMAC system. A one-meter parabolic antenna must be used in order to receive this satellite in Denmark.

England will send its DBS satellite up in 1987. This will from the beginning broadcast through the CMAC system and can be received here at home with a 1-m parabolic antenna.

The Scandinavian Tele-X satellite, which will broadcast Swedish, Norwegian and Finnish TV, will be sent up the same year. This satellite will be able to be received with a 35-cm antenna.

8985

CSO: 5500/2677

DEBATE CONTINUES OVER MERITS OF 'HYBRID' GRID, WIDE-BAND NET

Copenhagen INFORMATION in Danish 30 Apr 84 p 1

[Editorial: "Glass Under Denmark"]

[Text] The optical fiber technology has developed within the last 20 years. Concomitantly, electronics and laser technology have been discovered and refined, and out at the Technical University of Denmark, north of Copenhagen, the Electromagnetism Institute has specialized in combining these technologies into united systems. In this field Denmark is included, like light beer, in the front line of international research.

Our telephone companies are, too. Already at the beginning of the 70's JTAS [Jutland Telephone Company] saw the possibilities in the new optical-fiber cable technology, and the remaining telephone companies have since experienced the truth of the fact that they must get the wheels rolling in order to keep up. P&T [Postal and Telegraph Service] feels threatened by the telephone companies' attempts to monopolize the postal service's traditional fields and therefore P&T has also joined the front line today. Nordisk Kabel & Tråd [Scandinavian Cable and Wire], the factory which produces telephone cables, has also taken on speed, for the Danish telephone system is in good condition and the factory will have very little work in a few years. That is, if it does not find a new product.

And so it is, the parties concerned figured out, that Denmark is just to be cabled again. With the new optical fibers, light guides. This will give the companies new life and strengthen their power.

The idea was forwarded to the Media Commission, which to a great extent based its cable report of February 1983 on data obtained via the telecommunications administrations. The electronics industry also quickly saw the possibilities for future sales and, inspired by promises of new jobs and progress in exports, the government in May 1983 then joined the Media Commission's proposals for a cable network.

This was a year ago. At that time the government asked the telecommunications industry to make plans for recabling of the country of Denmark--and it was to happen quickly. For the top men in the telephone companies, P&T, industry and

some of our research institutions said themselves that it was an urgent matter, if Denmark was to be included in the front line, not just like light beer, but as a showcase for the rest of the world.

The telecommunications administrations were ready on time, in November 1983. But the government was quiet. This made the Planning Administration under the Environment Ministry come out with a report in which some consequences of the telecommunications administrations' plan are pointed out in gentle phrases. Denmark will be split lopsidedly, for the network will not reach the 400,000 people who live in sparsely populated areas. It will be too expensive.

The government remained silent. But some Social Democrats got something to think about.

For this reason the Social Democratic Party on Friday came with its own proposal for a cable network in Denmark. Partly to put pressure on the government, which is still silent, and partly to ensure greater equality in execution of the plan.

"The driving force of our proposal is the industrial policy concern and the possibilities for Danish industry. How early we get on with it is decisive," Ritt Bjerregaard said at the presentation.

What is so terribly urgent for the Social Democratic Party, the telecommunications administrations, industry, and the Media Commission's Chairman H.P. Clausen, and what the government also is for in principle, is, then, to lay hair-fine glass cables in the Danish sod.

The optical-fiber cables will make it possible to transmit 2-way TV communications, to shop from your own display terminal, to work from home, etc. But if every house is to have such a glass gadget in the wall it will come to cost something in the area of 50 billion kroner. This is called the wide-band network, by the way. And this is an incredible lot of money in a time with cutbacks in almost all areas. Therefore, the telecommunications companies have proposed an austerity model, the hybrid network, which they promise at the same time can be used for a later wide-band network. It will cost 5 billion, but then, also, it can be used only for the distribution of TV received centrally from foreign satellites.

Even 5 billion is a lot of money, but the chief attraction of the plan is that the Danes' hunger for more television will make them pay for such an austerity network. Therefore, TV viewers will become the spearhead of a Denmark built on glass, Denmark as an information society.

There is apparently nothing wrong with the visions of those who hold the power. "We will aim at a nationwide wide-band network," as both the government and the Social Democratic Party put it. But why must we have one?

Some say it will benefit industry, help unemployment and ensure exports. Others say the opposite. And no one has studied it more closely.

Will Danish TV viewers pay for the hybrid network? Right away city dwellers in shared antenna clubs will be able to get less expensive TV with parabolic antennas, but this can be prevented through legislation. Then the question is to what extent Danes are at all interested in more TV, when we get TV-2--no one has made a study of this.

The wide-band network's many services are then hauled forth as an argument for the hybrid network as the first stage. But what are the unemployed, retired people, housewives and children to do with advanced reference sources where they can get fancy information on this, that and the other? And who is to decide which information is to be accessible and whether it is true? And will we pay to access this information?

Will the labor market's brains and organizations help the labor force to move home into their living rooms? And which work can be moved home? Do we have homes which can be the setting for everyday life? Do we have social relations to survive with?

First let everyone get an opportunity to take a position and express himself on these questions; first let just some of the many questions be studied and answered; first we must not fall over the glass cables. We are risking making a bad investment and stumbling over the wires. As in so many other areas, the fact that the technology exists must not imply that we absolutely must have it. It depends on how. And that we need to discuss.

8985

CSO: 5500/2677

COMMUNICATIONS WORKERS UNION BACKS WIDE-BAND NET

Copenhagen INFORMATION in Danish 1 May 84 p 4

[Article by a/s: "FTF [Joint Council of Officials and Public Servants] Wants Alternative to Hybrid Network"]

[Text] The society of the future must be discussed and the hybrid network must be part of a total assessment.

"Alternative solution proposals must be worked out with a view toward information technology development in Denmark," the Joint Council of Officials and Public Servants, FTF, writes in a communication to Minister of Transport Arne Melchior.

The joint council believes that the existing plan from the telecommunications administrations for a hybrid and later a wide-band network ought to be evaluated on the basis of its consequences, in competition with possible alternative proposals for the Denmark of the future.

Such an assessment of the consequences is to take place */before/* [in italics] the Folketing makes a decision about any hybrid network.

FTF also points out the necessity of a public debate. "The debate must include the possibilities and dangers in future information technology development, which the hybrid and wide-band networks are an essential part of."

Finally, FTF thinks that any decision regarding a hybrid network for TV broadcasting, or a wide-band network, which enables 2-way video communication, is to enter into a total assessment and prioritizing of how the Danish community will use its resources in the years to come.

"A fully developed wide-band network can very well approach a combined investment of 100 billion kroner," the joint council writes.

Last week the Social Democratic Party came with a proposal for a hybrid network in which the objective is pointed out: a fully developed wide-band network. The hybrid network is estimated to cost 5 billion kroner, and in this form it will not be able to reach out to residential areas which are smaller than 100 to 250 households.

In a report from the Planning Administration it is feared that 400,000 households, constituting a scant million people in Denmark, will not gain access to the hybrid network's TV distribution.

FTF, too, finds it alarming that a million Danes will not get an opportunity to be hooked up to the hybrid network in case the plans are carried out as the telecommunications administrations outline them.

8985

CSO: 5500/2677

## REVENUE, RESTRUCTURING OF MATRA TELECOMMUNICATIONS BRANCHES

Paris INTER ELECTRONIQUE in French 27 Feb 84 pp 6-7

[Article by J.P. Jolivet]

[Text] After an all-around diversification in recent years and a realignment of the parent company's activities in the military and aerospace fields, the MATRA [Mechanics, Aviation, and Traction Company] group is now involved in restructuring. Its restructuring began in 1983 and should lead to a new start around 1985. The result was a "slow year" in 1983, since the group's operating results totaled only 30 million francs. The two main reasons were an 11-percent increase in revenue (13.3 billion francs for the group as a whole) and, especially, the efforts to restructure and modernize (in telecommunications, automatic systems, auto electronics, components, and so on) combined with R&D investments, which totaled over 1.6 billion francs. Growth is expected to total 7.5 percent in 1984, with consolidated operating results on the order of 100 million francs.

Having diversified over the past several years in high-tech sectors, the MATRA group is maintaining its position in electronics, even though some specific branches (peripheral telephone equipment, data processing, and so on) are either being abandoned or placed on hold and despite the high cost involved. Besides the restructuring of its 180 subsidiaries around 10 branches, the group's two other strategic lines of action are decentralization (automatic systems in Mulhouse, aerospace in Toulouse, and telecommunications in Brittany) and internationalization. As far as growth technologies, and particularly electronics, are concerned, internationalization will mean partnerships with the best U.S. or Japanese competitors and possibly with Europeans to deal with specific problems (synergy, strategic objectives, market size, and so on).

In Jean-Luc Lagardere's view, it is a strategy that must be situated in the medium term and one that must be maintained.

Components: Disappointing Year

For the MATRA group, it was the components branch which experienced "a disappointing year." MATRA Harris Semiconductor (MHS) posted a loss of some 180

million francs on revenues of 145 million francs in 1983. Officials at the MHS as well as at MATRA explain the loss by the current phase of starting up production and developing manufacturing equipment. The two companies have decided to increase the capital of the MHS by 400 million francs, to be financed by the two firms equally. And if the technological choices regarding the CMOS are confirmed, the MHS strategy will be oriented toward the medium term, with the signing of contracts to supply sizable quantities of components--for minimum periods of 5 years--to large worldwide firms. This would enable the MHS to obtain 50 percent of its revenues from exports. With revenues of 254 million francs, the objective of the MHS is to reduce its losses to about 70 million francs in 1984 and then break even in 1985. Among the other subsidiaries in the components branch, CIMATEL is continuing to adapt INTEL's NMOS technology to CMOS and to design circuits for the carrier market (telecommunications). As part of the restructuring, MATRA-GCA (photolithography), which has sizable potential despite losses of 20 million francs (it will employ 1,000 people within 3 years, compared to 140 this year), will be transferred to the automation branch.

#### New Structure for Telecommunications

After abandoning peripheral telephone equipment (PERITEL) last year, the telecommunications branch is being completely restructured around a holding company (SOFIMATEL, which is open to foreign capital) and two industrial subsidiaries in which MATRA owns a 65-percent interest. They are MATRA Communication (under TEMAT), which will devote itself to telephone terminals and telematics terminals, and MATRA Switching and Radiotelephony, which will bring together the in-house switching activities of Picart Lebas Telephone (TPL) and MATRA's radio-communications.

This means that following the big maneuvers of last summer that brought Thomson-CGE [General Electric Company] into telecommunications, the MATRA group is now turning to the promising sector of cellular radio. As one of its first moves, MATRA is completing development of its 400-MHz RTA professional cellular radio system (ordered by the DGT [Directorate General of Telecommunications] in 1981). This service, which will cover the entire national territory, is to be operational in 1985 and will have a capacity of from 200,000 to 250,000 equipped vehicles. In a second phase, MATRA intends to fill the slot represented by the 900-MHz European cellular radiotelephone (with a capacity of 1 million equipped vehicles), which will be developed by the French and West German postal and telecommunications administrations. As a consortium, MATRA and Bosch will respond to the call just issued by those two administrations. In-house switching (TPL) and radiotelephones should bring in revenues of 440 million francs in 1984. It should be recalled that the TPL has won a contract in the United States worth about \$30 million for the distribution of 100,000 lines for its PL20E intercom between 1984 and 1986.

For its part, the new subsidiary MATRA Communication (TEMAT's revenues in 1983 totaled 583 million francs, with a profit of 19.5 million francs) expects revenues of 750 million francs in 1984, chiefly from its TM1 telephone sets (10,000 delivered in 3 months) and T83 sets, but also from its CRT terminals built to MINITEL or ASCII standards. In the United States, the agreement with Tymshare

covers the distribution of 560,000 terminals, while in France, MATRA is currently delivering 100,000 MINITEL's. On the French market, the firm also offers a hybrid Videotex-ASCII terminal (its 820 model). As a result, MATRA expects eventually to be producing 20,000 terminals per month.

#### One Foot Still in Data Processing

After 15 years in the professional data processing field, MATRA withdrew from that activity in 1983, but it has kept one foot in the door, since the French group owns 20 percent of the capital of Datapoint MATRA Data Processing. With revenues of 255 million francs from data processing activities, 1983 was not a brilliant year. This explains the need, reaffirmed by the officials in that branch, to look for agreements in the slot provided by up-market microcomputing and technical or industrial data processing. The MATRA group is expected to submit a plan on that subject to the Ministry of Industry within the next few months (negotiations are underway with Norsk Data).

On the other hand, the automation branch--over half of whose projected revenues of 1 billion francs in 1984 will come from new subsidiaries brought into its sector--shows very strong potential. Datavision (computer-aided design) should double its revenues for a total of 140 million francs in 1984. For example, the EUCLID software for three-dimensional CAD/CAM [computer-aided design and manufacturing] has over 300 customers, nearly 80 percent of them abroad--chiefly IBM and the MIT. For their part, SORMEL-Jaz Industry (70 million francs in 1983 following their merger), Robotronics, and Manhurin Automatic constitute a genuine pole for assembly-work robotics within the automation branch.

The auto electronics branch has been a big worry to the MATRA group. The group's Solex and Jaeger subsidiaries posted losses of some 192.5 million francs on revenues of 1.64 billion francs in 1983. The objective this year is to achieve revenues of 2.8 billion francs and limit losses to 60 million. Since the West German VDO is no longer willing to invest in Jaeger, MATRA and the stockholders will put up 135 million francs in fresh money. This will reduce the VDO's interest in Jaeger to 10 percent. But a cross agreement between the VDO and Jaeger will make it possible to continue the development of microelectronic products.

For its part, Solex will beef up its R&D effort (12 percent of revenues) in the field of electronic ignition. Parallel with that, the firm is on the verge of signing an agreement with Renault and Japan's Stanley in the field of liquid crystal displays.

#### Big Investments for New Start in 1985

Restructuring and modernization have had a burdensome effect on the MATRA group's operating results. Consolidated revenues of 13.3 billion francs in 1983 yielded a profit of 30 million francs. Investment in physical plant totaled 680 million francs and should rise to 940 million francs in 1984 (primarily in defense, aerospace, components, and Manhurin). In addition, R&D investments totaled 1.65 billion francs

(including 40 percent for the firm), representing 12 percent of the group's revenues. In 1984, they will total 800 million francs, plus 1.1 billion in foreign financing. On the other hand, the parent company's order book grew thinner, dropping from 13.5 to 11.7 billion by the end of 1983. This phenomenon was especially noticeable in the military sector (2 billion in 1983), while the aerospace sector doubled the total in its order book (to 1.1 billion).

The forecast for 1984 calls for orders worth 7 billion francs for the group as a whole, including 5 billion in military orders, and a 7.5-percent rise in revenues (to about 14.3 billion).

11798

CSO: 5500/2674

RTE JAMMING OF SUNSHINE RADIO AROUSES OPPOSITION

Condemnation in Dail

Dublin IRISH INDEPENDENT in English 30 May 84

[Text] THE jamming of Sunshine Radio in Dublin by RTE technicians was condemned in the Dail yesterday by the Fianna Fail spokesman on Posts and Telegraphs, Mr. Terry Leyden.

He said that he understood the frustration felt by people in RTE because of the Government's delay in bringing in legislation on local broadcasting.

"But I must appeal to them to desist from this action," he declared.

RTE, said Mr. Leyden, was a semi-State organisation and did not have the authority to get involved in a battle of the airwaves. Only Government and the Oireachtas had the power to ensure that the law was kept.

Stations' Comments

Dublin THE SUNDAY PRESS in English 1 Apr 84 p 2

[Excerpts] THE WAR of the airwaves between RTE and pirate Sunshine Radio is jeopardising a £40,000 fund raising event in aid of the Central Remedial Clinic in Dublin.

The jamming of the frequencies used by the Portmarnock based illegal stations threatens to stymie the two-day auction which has raised more than £45,000 for the CRC over the past four years.

The aucfition is due to take place on April 27/28 and the owner of Sunshine Radio, Mr. Robbie Dale, said that so far £10,000 worth of goods and services had been pledged.

He went on, however: "The jamming is blocking our FM frequencies on a daily basis and we believe RTE are working on a device to block our medium wave transmissions. If this happens we will be wiped out and there will be no auction."

A spokeswoman for RTE said that the station would be continuing to test frequencies allotted to it. "We consider it unfortunate that illegal operators tend to use charitable organisations like the CRC for fund-raising," she added.

She declared: These pirate stations are flaunting the law. RTE are legally entitled to use these frequencies and if there is a squatter on the wavelength it is not our fault that their signal is affected."

Robbie Dale described the RTE comments as "sick" and came from an organisation which had no confidence to compete with Sunshine. Since its foundation four years ago Sunshine Radio had raised more than £300,000 for charity.

CSO: 5540/001

GOVERNMENT DEFENDS GDL TELECOMMUNICATIONS SATELLITE PROJECT

Luxembourg LUXEMBERGER WORT in French 28 Apr, 2 May 84

[28 Apr 84, p 4]

[Text] Yesterday, Friday, the Presidency of the Government published a 15-page memorandum giving answers to six important questions on the subject of the satellite program called "GDL."

In view of the vital significance of this project for our country's future, we here publish the full text of the very interesting document.

[Question] Who is the promoter of the GDL satellites system?

The GDL satellites system project was developed by Dr Clay Whitehead of Los Angeles, an American expert of high reputation to whom the government granted in August 1983 negotiation priority effective for 6 months and subsequently renewed.

Mr Whitehead studied at the Massachusetts Institute of Technology (MIT), where he earned a BS and MS in electrical engineering, as well as a doctorate (PhD in management). In 1969 and 1970 Mr Whitehead was special assistant to the President of the United States, specifically responsible for the Atomic Energy Commission and NASA. In 1970 he was appointed director of the U.S. Office of Telecommunications Policy, responsible for regulation of broadcasting, cable communications, and public transport. It was on his initiative that the policy favorable to development of telecommunications by cable and satellite was introduced.

In 1974, Mr Whitehead was assigned by Vice President Ford to organize his accession to the presidency following Richard Nixon's resignation. Leaving public service, Whitehead was for a year a visiting fellow at the Institute of Politics of Harvard University and at the Center for International Studies at MIT. From 1976 to 1978 he was general manager of Allison Technical Services in Santa Monica, California, a consulting company involved in commercial application of the new technologies and related problems of regulation.

From 1979 to 1983 Mr Whitehead was general manager of Hughes Communications Inc., a new subsidiary of Hughes Aircraft Company, the big manufacturer of electronics and advanced technology equipment. Under the leadership of Mr

Whitehead, Hughes Communications designed, financed, and produced the Galaxy and Leasat satellite communications systems and marketed their capacity. The Galaxy satellite was the first American project developed specifically for television broadcasting, and it won the main U.S. television programs.

For the present, Dr Whitehead is general manager of National Exchange Inc and Coronet Research Inc, the latter company having been established by him specifically to develop the Luxembourg Coronet/GDL project.

[Question] What economic effects can the country expect from project Coronet?

Coronet plans to invest in Luxembourg more than 1.2 billion Luxembourg francs for construction and equipment of a ground station composed of two parts: a tracking, telemetry, and command station to control the satellite, and a communications connection station for transmission of television programs. After the project gets underway, the Coronet project will create between 50 and 100 permanent jobs. Preparation and completion of programs, along with related services, should also create several hundred additional jobs in Luxembourg, in companies using the satellite or subcontractor and supply companies. Among the areas of activity that might show significant development, we could mention, in addition to program production, activities relating to various administrative services, advertising, subtitles, and postsynchronization of films (programs in different languages on the satellite), the new techniques of computer generated pictorial animation, etc. The project promoters plan to make a particular effort, in cooperation with the public authorities, to train qualified personnel by establishing a specialized center.

The need to supply millions of European homes with new receiving equipment opens new trade and industrial prospects in Europe from which Luxembourg will try to gain maximum benefit. The government is in contact with industrial groups familiar with the technical characteristics of the GDL project with the idea of establishing a unit in Luxembourg for assembly or production of parabolic antennas and other receiving equipment.

Though the GDL project is already in itself important to our economy, its real significance will probably be in the stimulating effect that it is likely to produce. It is not possible at this time to estimate precisely its potential for long-term development. Since telecommunications is generally regarded as one of the higher growth-rate sectors in the coming decades, it is not unreasonable to hope that this project will offer outstanding prospects for our economic future.

In the public financing area, the activities based on concessions for satellite exploitation of orbital locations and frequencies that will be acquired by Luxembourg are likely to become a very significant income source, providing, in addition to specific fees, considerable resources in form of duties and taxes. However, this will not be the case until the project has completed the start-up phase. Nevertheless, the fee calculation formula was designed so that a concession fee is due beginning with the first year of operation.

[Question] Does not the Coronet project endanger CLT jobs?

The government has never regarded the GDL project as an operation that might compete with Compagnie Luxembourgeoise de Telediffusion/CLT. Also, it has kept the CLT fully informed of the project since 1983 to keep it up to date on the progress. For this purpose, the president of the government has met periodically with the general manager of CLT, while the technical aspects have been discussed at several meetings between CLT and P&T technicians. The developer and his advisers have also had numerous contacts with CLT.

It is not impossible that some users of the satellite will have some activity relating to that of CLT, though a number of the transmitted programs will not be for advertising, and others will be aimed at markets not exploited by CLT. In order to protect CLT's interests, the government has requested that the promoter not plan any commercial program aimed specifically at the French public (other than the CLT program), and it is in a position to impose this restriction because all the users must be approved by the government. It should be emphasized that CLT cannot in any way be protected by the Luxembourg Government from competition by programs from other satellites. Need we point out that currently there are already several television programs by satellite broadcast in Europe, including in particular Sky Channel and PKS, designed to be financed by advertising income. Several other programs of the same nature will be added in the next few months.

The government cannot consider that in order to facilitate possible participation by a Luxembourg company in operations of a foreign satellite, the Grand Duchy should categorically decide not to launch any Luxembourg satellite. It is worth emphasizing the difference between the two satellites. The French TDF satellite falls under the regulations of the Worldwide Administrative Conference for Broadcasting of 1977, and has to conform to the restrictions planned for the Satellite Broadcasting Service, while the GDL satellite does not fall under the same restrictions. The GDL satellite, as a medium-power satellite of an entirely new type, offers remarkable prospects for our country that the government cannot let pass out of excessive respect for ill-defined private interests.

Throughout the birth process of the GDL project, the government has paid attention to CLT's specific interests, since this company is among the country's major taxpayers and employers. In addition to the care in keeping CLT constantly informed, as previously noted, the government has had included in the agreements to be signed by Coronet a provision requiring the latter to reserve three transponders for CLT. Moreover, ever since the beginning of the project, the project promoter has showed interest in active cooperation with CLT on the GDL project. Thus, he has invited CLT to participate as a shareholder in Coronet, an offer that still stands, and he offered to CLT leasing of up to five transponders on the first satellite, independent of the outcome of the CLT negotiations with France on the TDF satellite.

The government also recalls that the promoter proposed to CLT that it offer to other users of the satellite its production and postproduction services, thus benefiting from the CLT knowledge and facilities and creating new jobs while increasing security of existing jobs. The CLT should agree to study these

possibilities for new activities. Such an outcome would not in any way conflict with reaching of agreements on simultaneous use of the TDF satellite.

[Question] Why is the government simultaneously promoting two purportedly competitive projects? Is it a matter of ultimately keeping only the best of the two?

Luxembourg has a long tradition in radio and television broadcasting dating back to the beginning of the 1930's. The desire to strengthen for the decades to come our country's European vocation in this field, the certainty that the CLT will not be able without considerable investment to retain its present position in Europe in face of the offensive of the new media, and the need to strengthen and diversify the Luxembourg national economy to assure full employment: these are some reasons that early on led the government to encourage CLT to take advantage of the new technologies of communications by satellite.

Though encouraged by a bargaining priority granted to it in 1973, formal notice by the government in 1982 to exercise this option or lose the priority, enjoined again in 1983 by the Chamber of Deputies to take action or the government would contact other interested parties, the CLT has not carried out its LUXSAT project, underway for a number of years. The concern to make up for this lack of decision by CLT was at the basis of the GDL project.

Since 1983, it has been CLT's approach to give up the idea of a Luxembourg satellite and to use the French TDF satellite for broadcasting its programs as well as the frequencies allocated to France in 1977. The Luxembourg Government announced its agreement to negotiation with France to carry out this idea. The government is conducting these discussions in all seriousness and with great determination, hoping that this project so much desired by CLT can be implemented. It should be emphasized, however, that despite the progress in the negotiations, at this time the project remains uncertain for the two reasons that the final institutional and financial conditions for implementation are still under discussion and that the CLT shareholders have not yet made any financial commitment to carry out the project.

The LUXSAT satellite projects are no longer being actively pursued, and will no doubt not be revived in case of agreement with France. The CLT is thus, for the moment, not promoting the idea of a Luxembourg satellite. The GDL project is for the present the Grand Duchy's only opportunity to acquire a Luxembourg satellite. It should also be noted that the two companies are not competitive and that the two satellites are not of the same type. The CLT is a company that is active in creation, production and broadcasting of radio and television programs, while the Coronet company will limit itself to operating one or several satellites and making them available, as a means of transmission, to television program producers such as the CLT. The respective satellites are based on different technologies, use different frequency bands, and are subject to different international regulation in regard to coordination procedure, transmission capacity (number of programs), geographical coverage, broadcast power, and necessary ground receiving equipment.

The GDL project was certainly not conceived as a means of pressure in the negotiations with France, which deal basically with exclusive rights regarding television programs with commercial advertising.

The government has never left any doubt about its determination to carry out the GDL project if the various obstacles can be worked out. Agreement in principle has been reached on the technological and commercial concept and on the terms of the concession contract and specifications, and the government will sign the documents if a general agreement can be reached with the promoter and shareholders.

As for the TDF project, the Luxembourg Government is continuing to do its best to achieve it, since the two projects can perfectly exist side by side. Also, the government has made every effort to assure that CLT gains access to the GDL satellite, regardless of the progress of the TDF project.

[Question] What are the technical characteristics that distinguish the Luxsat, TDF and GDL satellites?

The first Luxembourg satellite of the GDL system will be a medium-power satellite using direct and low-power radio broadcasting frequencies. It would be useful to note these basic characteristics in relation to the other two types of satellites.

High-power satellites, also known as "DBS"/"direct broadcasting satellites," use frequencies that the World Administrative Conference on Radio Communications (CMR), held in 1977 in Geneva, specifically reserved for the Broadcasting Satellite Service (BSS). In these frequency bands, each European country has been assigned five different channels. The broadcasting power, broadcast area, and the other technical characteristics were decided on in 1977 on the basis of the technological situation in 1975. Neither in Europe nor the United States does there currently exist an operational satellite of this type. Given the broadcasting power and the amount of energy required for it, these satellites can only have a very limited number of transponders, which reduces the number of programs a satellite can handle. The Luxembourg Luxsat satellite was designed to have five programs. The TDF satellites under construction, TDF (France) and TV-SAT (FRG) are designed for a maximum of three programs. Since the costs of production and launching of the satellite must be spread among a limited number of channels, the costs per program are high.

Recently, direct broadcasting satellites have been criticized, in particular in the Thery Report, for being uneconomical and technically outdated. However, in comparison to the telecommunications satellites currently in use, they do have the advantage of being suitable for individual reception, since their programs can be received by small-dimension parabolic antennas, i.e. diameter of 60 to 90 centimeters, while telecommunications satellite signals are picked up by antennas some 3 meters in diameter, and in view of the cost of the latter they are only suitable for broadcasts relayed by cable system.

Telecommunications satellites or low-power satellites, which use the frequency bands of the Fixed Satellite Service (FSS), are used primarily for

telecommunications (telephone, telex, etc). They were also used very early on for transmitting television programs between broadcasting stations (Eurovision, Mondovision). These satellites can also be used to transmit television programs to the public through common antennas of cable networks. This approach has been used in the United States for a number of years, and was introduced also in Europe last year. A few weeks ago the number of programs broadcast by satellite increased from two to five: "Sky Channel," produced in London by Satellite Television, a company controlled by Rupert Murdoch, must now compete with TVS, coproduced by the three French television networks and the French language networks of Belgium and Switzerland; the German PKS programs of the Programmgesellschaft fur Kabel und Satellitenrundfunk, and ZDF 2; as well as in the United Kingdom with the program TEN/The Entertainment Network. For telecommunications satellites the cost of a transponder is relatively low, whereas reception of the signals requires rather expensive equipment. These satellites thus remain subsidiary within the efforts to extend cable use, and they are less suitable for reception areas with low-density population and thus not promising for cable distribution.

The Luxembourg satellite to be used by the Coronet company will use the frequencies of the Fixed Satellite Service to transmit medium-power signals. With 16 transponders, it will be able to reach individual receiving equipment little larger or more expensive than that for the Direct Broadcasting Satellite (DBS). It thus combines the advantages of the two other competing systems while avoiding their drawbacks. However, during the first few years of operation of the Luxembourg satellite, just as for the DBS satellites under construction, we will have to expect programs to be received mainly by common antennas and cable systems, since mass production of individual antennas in large numbers is for the moment only in process of preparation.

The differences we have pointed out among the various types of satellites should not make one forget their very numerous common features. For example, the fact that all these satellites are vehicles placed in geostationary orbit, in which they are fixed, with relation to the earth's surface, above a given point on the equator, and that reception of their signals requires a parabolic antenna and sophisticated receiving equipment. Also, any Luxembourg satellite, regardless of its technical specifications, will only have the Grand Duchy as its service zone and possibly areas of other countries that agree to this protection, that is as a zone for which we can request international protection against any interference.

[Question] How does the government know that the technology of the GDL satellite is reliable?

The performance of these new, medium-power satellites is the result of scientific progress achieved simultaneously in various aspects, both in the satellites and the receiving equipment. The exact nature of these improvements has been shrouded in secrecy in the space industry and the telecommunications industry, and is only revealed little by little. When the promoter presented his technical concept to the government last summer, he had to overcome a degree of skepticism, since his assertions ran counter to general opinion on the state of the technology. Today, the specialized press

already fully reflects the technological turning point that has occurred, and specialists are unanimous in recognizing the technological superiority of the medium-power satellites.

In its concern not to take excessive risks, the government arranged for eight officials, including several engineers, to make an 8-day study trip at the beginning of the year to Canada and the United States (New York, California, Florida) where they had intensive discussions with the managers and experts of various companies, witnessed various tests, and visited in particular factories producing satellites and receiving equipment as well as ground stations (tracking, telemetry, and telecommand, on the one hand, and communication links, on the other).

In the design of the project, the promoter used the expertise and counterexpertise of several American and Canadian consultants of high reputation.

The government also contacted experts having no connection with Dr Whitehead in order to confirm the reliability of the proposed technology. It is interesting to note that the investors include some Europeans with special experience in the field of electronics and telecommunications.

[2 May 84, p 4]

[Text] Who will be the users of the GDL satellite? What television programs will this satellite broadcast?

In his exploratory contacts in various European countries, the promoter of the GDL project encountered, beginning last year, a lively interest in use of the 16 active transponders of the space vehicle that will be able to transmit simultaneously, over the major part of West Europe, programs in several languages for cable networks, common antennas, and individual antennas. The Coronet company will not itself produce television programs, but will limit itself to making the transponders of the Luxembourg satellite available to interested program producers.

Thus far, no channel has been allocated or definitely promised to an interested company, but the contract terms require the company to offer CLT at least three channels. Several groups that are ready to invest in the Coronet company have also already indicated their interest in use of one or several of the satellite's transponders.

Under the contract terms, the decisions on selection of users will require formal approval by the government. This will enable the government to check on the destination and character of the programs. At the same time, it will be able to determine whether certain commitments and the conditions of the general contract terms are being observed. These decisions will not be taken until the second half of the year, according to current plans. Thus, no further details can be provided at the moment on users of the satellite.

It is planned to transmit both programs financed by advertising revenue and programs without advertising financed by viewer contributions in the form of

subscriptions or "pay-TV," "pay-per-view." Some programs will be of the traditional variety type, while others will have a more specialized nature (e.g. sports channel, movie channel, news channel, classical music channel, youth music channel, etc). It is technically possible to broadcast the sound of each of these programs in several languages simultaneously, with the receiving equipment enabling selection of the desired version.

In order to assure supply of quality programs for the channels, it will be essential to develop European audiovisual production and intensify activities in translation, postsynchronization and subtitling. As a result, Coronet is likely to increase opportunities for producers of European programs.

The programs transmitted by the GDL satellite must conform to Luxembourg laws and to existing international conventions, abstain from racist or antireligious propaganda, respect public intellectual and moral sensibilities, apply in news handling a spirit of impartiality and objectivity, etc. In respect to advertising, the program producers will have to implement a code of good conduct based on the recommendations of the Council of Europe.

[Question] Who will be the owners of the companies assigned to operate the GDL satellite? Are we not turning over our future to foreign capitalists?

The government has asked the promoter in charge of developing the GDL satellites system to establish in order to operate it companies of Luxembourg registry with majority holding by Luxembourg and European interests. After the government had indicated its agreement in principle on the general tenor of the concession contract and terms, a number of major European companies were contacted by the promoter and several made conditional commitments to subscribe to substantial shares in the Coronet operating company. Others are on the verge of making such a decision. These are companies with interests in electronics and television receiving equipment, in the mass media and audiovisual fields, as well as in financing in general. A limited portion of the shares will be open to subscription by non-European companies. However, American companies whose activities are concentrated in space technology or the telecommunications field will not be admitted.

When the list of investors has been closed, the decisions will have to be made on the exact division of shares among the partners accepted. In the meantime, the necessary legal structures have been studied and decided on. The various investors mentioned will together hold a majority of the Coronet operation company, but will not control the management of the company. This role will fall to a control group, including as majority partner Luxembourg public institutions, and as minority partner the promoter, since the government desires to retain Dr Whitehead's cooperation and experience for the long term, while on his part he is committed not to develop a competing project in Europe.

The control group will be the sole proprietor of the Societe Luxembourgeoise des Satellites, which is to be the government concessionary. The control group will hold only a minority share of the Coronet capital, but will have a majority in the decision-making bodies.

This legal arrangement, for which the final details are still being worked out, should enable our country to exercise an influence in the commercial and management decisions greater than the extent of Luxembourg participation in the risk capital. Also, the government will obviously have a kind of review right, with various decisions requiring its agreement. One or several monitor commissioners will have a veto right, to assure respect for the laws, contract terms, and the country's interests.

When one day it becomes possible to use the frequencies and orbital slots for applications other than transmission of television programs, the foreign investors in Coronet will not be able to prevent the state from moving ahead, though Coronet's exclusive rights extend only to television applications. It will thus not be possible for Coronet shareholders to delay or block effective exercise of Luxembourg's sovereign right regarding use of frequencies and satellites.

The government has foreseen the need to modify the negotiated documents prior to signature, particularly to accommodate advice by the Council of State and reactions of the relevant committee of the Chamber of Deputies and the public in general. The decisions in this connection have not yet been taken and, when they are taken, will have to be communicated to all the potential investors, so it will not be possible to decide on and publish the final list for some time yet.

[Question] Is the state going to invest in the Coronet project? What will be the effects of the project on public finances?

The government is not investing budget resources in the share capital of the companies to be established. Luxembourg public institutions are, however, prepared to participate as shareholders in the project. The government looks favorably on this participation because it would enable our country to retain active control over future developments. It is also possible that other Luxembourg investors, specifically some private banks, might join the shareholders.

One must be aware of what a risk investment involves, but the prospects for profit are promising. The financial commitments for our economic future made in this area remain very modest compared to efforts approved in various other sectors.

It should also be remembered that on implementation of the CLT's satellite projects (TDF or LUXSAT), the Luxembourg treasury will feel the direct consequences of the considerable start-up costs and the resulting losses during the first years, given that the share of the loss that CLT will have to bear will be fully deductible on its income tax. Obviously, Coronet will be able to benefit, if need arises, from deferral of losses (which is possible up to a limit of 5 years) before having to pay taxes on income of its operations. At any rate, the incentives to be granted to the company for its investments in Luxembourg will in no case exceed what is provided for normally in the legislation .

As of the time the GDL satellite goes into operation, the public treasury will receive a concession fee of 2.5 percent of the Coronet turnover. A basic fee, also 2.5 percent of the turnover, will be due beginning with the 61st month of operation, while an additional fee varying between 5 and 20 percent, will be due on the taxable income. Considering these fees, taxes and duties, the Coronet company could become during the 1990's one of the largest taxpayers in the country. Additional public revenue will be provided by indirect taxes and those paid by the personnel.

[Question] What public will the GDL satellite be able to reach? Do foreign governments have to approve its reception?

It will be possible to receive the programs transmitted by the Luxembourg satellite through cable networks, common antennas, and individual antennas throughout Western Europe. Individual reception is technically possible for more than 200 million Europeans.

Formally, the Luxembourg satellite is a satellite that uses the frequencies of the Fixed Satellite Service. Reception of its signals and installation of the receiving equipment will require in most, if not all, countries specific approval by the relevant authority, normally the P & T administration. At this time, no European country has yet authorized reception of television programs by satellite, however, in the few months since the appearance of the first programs about 10 countries have already agreed to one or several of these programs being received on their territory and retransmitted by cable.

The service area, that is, the area for which Luxembourg can officially, on the international level, claim a formal right against interference, is limited to the area of the Grand Duchy. This is true not only for the GDL satellites but also for any satellite (LUXSAT) operating on the frequencies of the Broadcasting Satellite Service, as well as for use of the ground wavelengths of our radio and television programs. Legal protection of our frequencies on the international level is a tenuous matter. From the beginning, the promoter has known about and been aware of this situation. However, the GDL system's technical characteristics contribute to its protection, as well as the good neighbor arrangements that these systems lead to.

[Question] Will not the Coronet project serve as the Trojan Horse for American interests in Europe? Why does the government refer to it as a European project?

It is wrong to present the GDL project as an American initiative to break into the European market. In fact, the Luxembourg Government is the initiator of the project, advised by an American expert. The government has also taken care to keep the non-European influence in the enterprise within very strict limits. Although it is desirable, for the effective operation and development of the project, to ensure the long-term personal participation of Dr Whitehead, the government has made sure to exclude any major participation by non-European groups. Coronet shareholders will not include any American companies whose activities are concentrated in space technology or the telecommunications field. Also, the government does not plan to approve allocation of transponders to American program producer companies.

European shareholders, particularly companies with interests in electronics and television reception equipment, in the mass media and audiovisual field, as well as in general financing, will hold a capital share much larger than half. It is understood that Luxembourg will participate in the capital and have a decision-making power greater than its proportional share of risk capital.

As for the technology and the equipment to produce the first satellite of the GDL project, obviously a substantial part of the components will be American. This is not the doing of either the promoter or Luxembourg. The fact is that European technology in medium-power satellites is currently significantly behind that of American industry. On the other hand, there is no such lag in respect to reception equipment. Efforts under underway to achieve extensive cooperation of the main European producers, some of which have already been contacted. Also, there are continuing discussions with them to agree on the norm to be used.

Launching of the satellite by a European Ariane rocket is considered a possibility, if the technical and scheduling issues can be resolved.

Clearly, there is no desire to favor American technology, unless it is superior in performance or price to European technology. The government took care to include in the contract terms the following provision: "In respect to supply of equipment and services, Coronet will give preference to European companies to the extent that they offer equipment and services under conditions equal to those of other companies with respect particularly to their capabilities, suitability, quality of products, as well as price and other conditions, such as delivery time and guarantees."

[Question] Does the project involve broadcasting or telecommunication? Does it not conflict with the P & T monopolies in Europe, thus earning us considerable animosity?

In the range of frequencies available for space communications, some frequencies have been reserved for the Broadcasting Satellite Service, more commonly known as the Direct Broadcasting Service. In contrast to the LUXSAT and TDF projects, the GDL project will not use those frequencies, but rather those of the Fixed Satellite Service, that is, the frequencies also used by the low-power telecommunications satellites. The GDL satellite, while having higher power output, thus falls under the regulations governing this type of space vehicle and this range of frequencies.

The GDL satellite's frequency use will fully conform to the pertinent international agreements. Also, it is not accurate to say that foreign states have in one way or another protested against the GDL project. The Luxembourg Government, through its P & T Administration, has requested frequencies for three orbital slots (19 degrees East, 1 degree East, and 20 degrees West). The request for advance notification has been accepted by the International Frequency Registration Board of the International Telecommunications Union in Geneva. During the 4-month period following advance notification, eight national administrations or international bodies have requested to

participate in the frequencies coordination procedures, which are intended to avoid interference with existing or planned satellites.

In regard to the transmission of signals to the satellite (upward communications) it is planned to do this from Luxembourg territory, and any use, even brief or occasional, of a foreign ground station will require, under the Coronet terms of contract, not only prior and written approval by the Luxembourg Government, but also the formal agreement and even participation of the administration of the foreign government involved.

Also, reception of television programs transmitted by the GDL satellite will obviously have to be carried out in accordance with the laws of the respective country, particularly in regard to approval of reception antennas. In the last few months, an increasing number of European countries have given permission for installation of such antennas, and the promoters are very confident of seeing this trend accelerate in the coming months and years. It should be noted, therefore, that the GDL satellite is not the first satellite to raise for foreign governments the issue of approving television reception antennas.

Far from seeking to violate the national and international laws and regulations on telecommunications, the GDL satellite thus seeks only to benefit to the maximum from the developments taking place in Europe, as they occur. The use of the satellite is strictly limited to unidirectional transmission of television programs. It thus in no way conflicts with the activities and monopolies of the national P & T administrations. To the extent that it becomes possible, in strict respect for international law, to develop the Luxembourg frequencies and orbital slots by applications other than transmission of television programs, nothing will prevent the Luxembourg Government, through new terms of contract, from authorizing the Coronet company, or another subcontractor of the SLS company, to use the Luxembourg frequencies and orbital slots for such purposes. Obviously, the state could also develop these opportunities itself, without going through the Societe Luxembourgeoise des Satellites. However, for the moment, use of the GDL system is strictly limited to transmission of television programs.

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CSO: 5500/2683

PHILIPS ANNOUNCES NEW OFFICE AUTOMATION CONCEPT

Paris ZERO UN INFORMATIQUE HEBDO in French 19 Mar 84 p 47

[Article by Anne Bohy]

[Text] Facilitating data communications of all kinds (voice, text, picture, and so on) not only between individuals but also between heretofore incompatible systems seems to be the main thrust of the office automation concept announced recently by Philips (see ZERO UN INFORMATIQUE HEBDO No 792) under the name of Sophomation (Synergetic Open Philips Office Automation).

For the moment, no new products are being announced (although some are being promised for the near future). Instead, what we have is a statement of intention indicating the desire to supply an interface common to the various systems that Philips has developed to date and to combine those systems into a more coherent and compatible whole while also providing means of communication with the outside and with large systems--IBM in particular.

Philips' new office automation strategy is based primarily on what already exists: it is not a matter of rebuilding everything but of integrating previous systems, all the more since "Philips wants to develop the experience gained in various fields," according to Gert Bindels, managing director of Philips International.

#### Application-Oriented System

As far as software is concerned, therefore, the concept calls for an office automation system oriented toward sectoral applications. In particular, an integrated system designed for banking applications will be presented at the Hanover Fair next month. Other solutions are also being proposed for a later date in the field of insurance, industry, and so on.

But beyond those sectors of activity, Sophomation will not be a closed system, since it will also be equipped with a software development kit called Memphis, making it easy to incorporate specific applications.

Integration of the various types of information (voice, text, picture, digital data, business graphics, and so on) within a single medium known as the document constitutes another important feature of this office automation strategy.

Thus another standard communication structure has been defined: known as COACS (Common Office Automation Communication Structure), it conforms to level 7 (applications) of the ISO's OSI standard and makes it possible for data to be exchanged between units using software in different formats.

#### P3100: Compatible With IBM-PC

Being designed to provide communication between differing hardware and systems, Sophomation also includes the solutions proposed recently by Philips: Sopho-LAN (a wide-band local network using "jeton" bus technology) and especially Sopho-NET (architecture for packet-switching networks in conformity with the OSI standard).

Compatible with the various data communication modes currently available (private lines, switched network, X21 and X25 links, and local networks), this "distributed-intelligence" network (seeing that it incorporates 16-bit microprocessors in each node) handles adaptive routing and will also convert protocols, thus allowing communication between the various existing Philips systems as well as with the big IBM installations.

With that implicit acknowledgement of the standards imposed by "Number 1" both in communications and in microprocessing, Philips should soon announce its P3100, a new personal computer compatible with the IBM-PC. The P3100 will complete the company's series of announcements on the hardware level.

#### To Each His Own Standards

Even though the Dutch firm prefers to try to impose its own standards, especially as regards document definition and in the field of digital optical disks, announcement of the P3100 will be somewhat surprising, since this new hardware will communicate directly with IBM computers but will not be compatible with those of its own manufacturer except through an emulator. .

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