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Telecommunications

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VIETNAM

FM Transmitter Inaugurated in Northern District

*BK0612112089 Hanoi Domestic Service in Vietnamese
1430 GMT 5 Dec 89*

[Text] This morning, 5 December, Hung Ha District of Thai Binh Province inaugurated an FM transmitter

capable of reaching 23 of the district's villages, all of which are now equipped with a wired-radio system. On this occasion, Hung Ha District held a get-together of the grass-roots units in charge of radio and wired-radio broadcasting work to ensure that they will satisfactorily carry out propaganda on party and state policies and positions and district and provincial directives and resolutions among the local people.

CZECHOSLOVAKIA

Telephonic Automation of Eastern Region Completed

90WT0021A Prague TELEKOMUNIKACE in Czech
No 10, Oct 89 p 150

[Article by Eng Pravoslav Valny, East Bohemia Administration of Telecommunications: "Areal Automation in East Bohemia Kraj Completed"]

[Text] Telecommunications in the territory of the East Bohemia Kraj are divided into two transit telephone circuits. The transit telephone circuit [TTC] in Hradec Kralove includes 18 central telephone exchanges and the TTE in Pardubice 15 central telephone exchanges.

In 1960 only two in a total of 33 central telephone exchanges [CTC], and only 18 in a total of 169 local telephone exchanges were automated.

Since 1960 and particularly after 1970 our telecommunications have expanded rapidly. Telephone communications have been fully automated in 169 local telephone exchanges [LTE]. The number of connected telephone lines exceeded 300 thousand. As compared with 1960, private telephones increased more than 20-fold—to 101,750. Every fifth residential unit in this kraj is furnished with a private telephone.

Decimal exchanges Nos III and IV in Hradec Kralove and Pardubice, telecommunications facilities in Chotebor, Havlickuv Brod, Svitavy, Policka, Hlinsko, Novy Bydzov, Jicin, Vrchlabi, Turnov, Nachod, Broumov, Nove Mesto nad Metuji, Vysoke Myto, Rychnov nad Kneznou and Dobruska, and the facilities for a transit telephone exchange in Hradec Kralove and in Pardubice have been built in our kraj since 1960.

The construction of technological facilities expanded the capacity of state telephone exchanges. Furthermore, the new capacities made it necessary to build both the long-distance and local telephone networks.

The construction of the transit telephone exchange in Pardubice began in July 1980. The principal contractor was the Prumstav [Industrial Construction] in Pardubice. During the construction there was a certain "freeze" in favor of construction projects with higher priority. While the construction was underway, the building was declared the Kraj's Youth Construction Project III and despite all difficulties, the project of exemplary quality was finished by the Prumstav in December 1986.

The whole construction project is divided into five departments:

* Service building—locker rooms, storage rooms, dining room, kitchen, cafeteria, computer center, the workers' union, radio center, workrooms.

* Technological building—its only purpose is to house the technological equipment; in it is the local and transit exchange with appropriate equipment for related technical operations.

* Power center—supplementary power source, exchanger, chemical water treatment, engine room for the cooling system, and transformer station.

* Underground garage—space for 24 service vehicles; parking lot is located on the roof.

* Radio telecommunications tower—with a 7 x 6.3 m base, 86 m high, with platforms for parabolic antennas.

Plans were drafted by the Strojprojekt [Engineering Planning] in Prague.

Chief subcontractors for the construction project were the Kovopodnik [Metal Works] in Pardubice, Stavebni izolace [Building Insulation] in Prague, Kutna Hora and Hradec Kralove, the OPOS in Chrudim, Stavomontaze [Construction Assemblies] in Pardubice, and ZUKOV in Prague. Other contractors who undertook the finishing works were the CKD [Czech-Moravian Kolben Danek] in Horovice, the Adast [Adamov Constructions] in Adamov, the TUS [Technical Center for Communications] in Prague, and Eram in Hradec Kralove.

The No 2 construction project of the building complex of the telephone exchange in Pardubice is the 5th +PDS/US 2 +SI.S. decimal exchange in the PK202 system. In addition to improving telephone operations, this local exchange will make it possible to add more party lines for the inner city and for the "Zavod miru" [Peace Works] housing project. Its costs amount to Kcs 67 million; the exchange has 10,000 line capacity, and its two-wire stage has 1,250 lines attached.

The No 3 construction of the building complex is the Transit Exchange proper. Its costs amount to Kcs 184 million; its communication system is ARM201/4, and its current capacity is 5,400 lines with potential expansion to 8,000 lines. The chief contractor of technology is the BHG of Budapest, and the contractor of assembly works is the MPSP [Communications Assembly Enterprise] in Prague.

The No 4 construction project of the building complex is the switchboard and the expansion of the local transit exchange in Pardubice at the cost of Kcs 17 million.

The last—No 5—building of the construction complex is a long-distance central in Pardubice which cost Kcs 75 million.

The above-mentioned building complex is connected with auxiliary facilities and annexes; the investor is the East Bohemia Administration of Communications. Furthermore, there are constructions of the Long-Distance Cable Administration in Prague. This whole project in its totality represents financial outlays of Kcs 630 million.

It was not a simple task to put such an extensive project in operation. Before that could be successfully done, good planning preceded, all participating organizations had to be coordinated, and a joint international socialist contract had to be concluded with a Hungarian contracting organization. During the construction new methods of economic management were put to test: a change from methods of volunteer teamwork in labor organization to a higher form of khozraschet management of operations and production centers was made with the use of computer technology.

The change itself was divided into two stages with an interval between them. The first stage (early July 1989) included the launching of operations in decimal exchange No 5, the switching of 4,300 participants to a new exchange, and a number of adjustments in the local network. This task took three days and for it the East Bohemia Administration of Communications engaged the assistance of assembly units from every district administration of communications in the East Bohemia Kraj. The eighty workers who participated in this endeavor received specifications of their individual tasks in a graphic form. The time-table for individual tasks was correlated so as to keep the interruption of services to customers as brief as possible. The dedication and achievements of the assembly workers were truly exemplary.

In the second stage (late August 1989) the telephone exchange began its test run and was integrated in the unified telecommunication network.

25 August 1989 was a historical date because on that day the automation of local and long-distance operations in all of the East Bohemia Kraj was completed whole five years ahead of the schedule stipulated by the task for the long-range development of communications in our kraj. The users of more than 158 thousand telephone lines gained automated local, long-distance and international services. In terms of our national economy, direct automated telephone connections is of particular importance to users in the northern and southern parts of the East Bohemia Kraj. Direct automated connections in international communications with 28 European and 9 non-European states are now available to users of the telecommunication circuits of Pardubice.

The test run of the telephone exchange in Pardubice started on 6 September 1989 and on that occasion a meeting of the builders took place at it, the first deputy minister of transportation and communications of the CSSR, Eng Jiri Jira, director in charge of the state enterprise Administration of Post and Telecommunications in Prague, Eng Jiri Necas, director of the East Bohemia Administration of Telecommunications in Pardubice, Eng Josef Lnenicka, and the general director of the BHG in Budapest, Kalman Kovacz, honored the workers who had contributed most to this building and to the launching of operations in the transit telephone central. Appreciation is due to all workers, assembly workers, foremen, engineers and planners who throughout the planning and construction proper

worked honestly and with dedication to put such an extensive project in operation and to public service.

YUGOSLAVIA

Pending Membership in INMARSAT Announced

90WT0034A Zagreb VJESNIK in Serbo-Croatian
22 Jan 90 p 8

[Article by Z. Gugic: "Satellites Guide Yugoslav Ships Too"]

[Text]

Telecommunications

Yugoslavia, through the JPTT [Yugoslav Postal, Telegraph, and Telephone Service] Cooperative, will soon be joining the International Maritime Satellite Organization, INMARSAT.

Belgrade—Finally, after many years of demands, hesitation, and preparations, Yugoslavia will soon become the 64th member of the fourth worldwide organization for satellite telecommunications, the International Maritime Satellite Organization, or INMARSAT.

The agreement will soon be signed with INMARSAT in London by representatives of the JPTT Cooperative in London, where the organization is headquartered, it was announced at a session of the general conference of the JPTT Cooperative in Belgrade, during consideration of information on the necessity of and preparations for Yugoslavia's accession to that worldwide telecommunications satellite organization, which is devoted to worldwide maritime navigation and aviation.

What is INMARSAT? Yugoslavia, as a maritime state with a maritime tradition spanning many centuries, a merchant fleet of nearly 500 ships sailing on all the world's seas, a diversified network of maritime lines between several hundred ports on every continent, and, generally speaking, a strong maritime economy, could not stay out of the aforementioned organization and fail to take advantage of its services, opportunities, and the numerous advantages that INMARSAT provides in maritime navigation worldwide.

No less important is INMARSAT's role in international aviation, to which the organization is devoting ever greater attention.

INMARSAT is an international organization—at present, more than 60 states are members—whose purpose, in the words of experts from the JPTT Cooperative, is "to provide the necessary space segment for maritime mobile satellite links in order to improve maritime and aviation telecommunications using a network of its own satellites and ground satellite stations."

The INMARSAT system is very similar to other international telecommunications satellite systems, especially

INTELSAT and EUTELSAT, as well as the biggest global system TELSTAR, in which Yugoslavia is also a member, since the JPTT Cooperative has signed agreements on its exploitation.

The Intergovernmental Convention on the International Maritime Satellite Organization INMARSAT was established in June, 1979, and at the same time it went into effect the Agreement on Exploitation of INMARSAT was proclaimed. The Convention is signed by states, while the Agreement on Exploitation is signed by either states or organizations designated to do so.

The top adviser for international telecommunications in the JPTT Cooperative, Avram Sion, said that INMARSAT has installed a satellite system with three so-called first-generation working satellites over the Atlantic, Indian, and Pacific Oceans. Within the system, there are some 20 ground satellite stations at work, through which telegraph and telephone connections are established with the more than 10,000 ships on all the world's seas that are equipped with on-board ground telecommunications stations. Using the INMARSAT satellite greatly improves and increases navigational safety, communication between ships and their operators (and therefore offers conditions for better, more economical use of shipping), and thus between the crews and passengers on ships and any conversation partners on land or on sea. The system also offers numerous other advantages, for example faster transmission of meteorological data, etc.

Financing

It is not only the shipping companies, but also the states that are aware of these advantages, and it is they who are

increasingly joining this fourth worldwide telecommunications satellite organization. Signatories to the Agreement on Exploitation become joint owners of the entire system, which they naturally also finance, since the entire organization operates on straightforward economic foundations.

The current value of INMARSAT is \$250 million, and for this amount there is an initial investment share allocated by new members, or users, in this case the JPTT Cooperative, whose investment share is allocated at \$80,000. Of course, members of INMARSAT are entitled to revenues based on the capital invested.

Recently, experimental work and a system for communicating with airplanes began within the framework of INMARSAT, and second-generation satellites will soon be supplied that are much larger and more efficient. Preparations are also being made for covering the Atlantic Ocean with two working satellites, instead of the one in operation today, and for land-based mobile satellite service.

Significance for Yugoslavia

Joining INMARSAT is of great significance for Yugoslavia, primarily because of the greater use of the merchant fleet and the development of the maritime economy as a whole. According to data available today, 40 transoceanic ships flying the Yugoslav flag are equipped with on-board ground satellite stations, and now, after Yugoslavia's accession to the Convention and signing of the Agreement on Exploitation of INMARSAT, it will be possible to actually use these on-board satellite stations; at the same time, such stations will be put on as many of our transoceanic ships as possible.

INDIA

Calcutta Site of International Satellite Station

*BK1502074990 Delhi Domestic Service in English
0240 GMT 15 Feb 90*

[Text] An international satellite station will come up in Calcutta by the end of this year. Disclosing this to newsmen in Calcutta, the communications and surface transport minister, Mr K.P. Unnikrishnan, said 100,000 new telephone connections will be available in the city by this year end. A task force has been set up to identify the problems of the entire telephone system in Calcutta.

Mr Unnikrishnan said the center is trying to streamline the port operations at Calcutta, Haldia, and Pradweep. He said following dredging operations, the depth of the River Hugli has increased both at Calcutta and Haldia.

Drive for Export of Telecommunications Equipment Planned

*55500048 Madras THE HINDU in English
1 Feb 90 p 17*

[Article by R. Krishnan, special correspondent in New Delhi: "Alluring Export Possibilities for Telecom Equipment and Services"]

[Text] The Government will shortly set up a Telecom Export Promotion Council and has designated the public sector Telecommunications Consultants India Limited (TCIL) as the nodal agency for catalysing the export of telecommunication equipment and services from India. The TCIL has been chosen because of its experience in this field gathered over the last few years in about 25 countries.

The council will provide directions to the telecom industry for making it competitive both technically and price-wise in the burgeoning global market. The TCIL which will act as the secretariat of the council will maintain a list of specialities covering the entire range of telecom systems. It will also suggest simplified and speedy measures including incentives to promote the export of products and services.

The TCIL which has contracts worth over Rs. 300 crores is hopeful of crossing Rs. 100 crores in turnover during 1989-90, up from Rs. 90 crores in the previous financial year. Though the jump may not look big, the fact that it is inching forward, according to the Chairman and Managing Director of the TCIL, Mr. Y. L. Agarwal, is good enough in view of the fierce competition from multinational giants.

Potential African Market

With the world telecom market acquiring a multi-billion dollar dimension, it is the right time for India to make its presence felt in an organised way. A factor in its favour is the need of many developing countries, particularly in Africa, for equipment and services, in which India has

sufficient expertise. The TCIL which had more or less finalised its pre-investment feasibility study for the ITU (International Telecommunication Union) sponsored Regional African Satellite Communication System (RASCOS) hopes that with proper homework, India can compete for a share of the \$400 million market that may emerge if the feasibility study is taken to its logical conclusion. This would call for a major diplomatic initiative by India on the African continent.

At a conference on national strategies and international cooperation for the telecommunications industry in Africa held in December at Arusha, Tanzania, the TCIL presentation on India's capability evoked keen interest among the 50 participant countries. Of particular interest was the C-DOT switch covering the 128 RAX, 128 port PABX and the 512 port exchange. The fact that these exchanges had been developed with much smaller expenditure and were also in line with those countries' requirements had enhanced India's image. This was in contrast to the presentation of a consortium of multinational companies which spoke of a \$3 billion investment in research for developing a state-of-the-art digital switch.

According to the UNIDO, the cost of expanding Africa's subscriber network with an additional 25 million lines in the next ten years has been assessed at \$50 billions. To meet this demand partially and also to save foreign exchange, a few African countries have chalked up production plans on a modest scale to manufacture cables, wires, switching and transmission equipment, telephone instruments and components including spares. This is precisely the time for India to seize the opportunity not as a seller but as a partner offering genuine transfer of technology. The TCIL is already operating in Zimbabwe, Nigeria, Libya, Mozambique, Somalia and Cameroon.

The basic strength of India is in its technology for telephone instruments, power plants and digital transmission systems. The African nations' requirement of switching equipment of less than 500 lines has been estimated at 1.75 million, between 500 and 5,000 lines at 2.91 millions and above 5,000 lines nearly six millions. There is tremendous demand for small rural earth stations and medium and large urban earth stations. In terms of subscriber apparatus, the demand has been placed at 10 millions inclusive of seven million new connections.

According to Mr. Agarwal, such a demand scenario perfectly fits into the Indian production pattern. Already, the TCIL has identified a number of items for export exploration. These include telephone instruments, EPABX, C-DOT 128 TAX and PABX, jelly filled cables, low power transmitters, TV receive only along with chicken mesh antenna and inclusive of vital attachments and intelligent terminals. It should be possible for India to take forward its exports of telecom equipment and services from nearly Rs. 400 crores at present to Rs. 1,500 crores in about five years.

C-DOT's 128 RAX has been received very enthusiastically by Vietnam, Zimbabwe, Mauritius and Nigeria. The bigger version of C-DOT's 512 port switch has evoked keen interest in Kuwait and Saudi Arabia. While Vietnam is already planning to set up a production unit based on 128 RAX technology, a team is expected to come from Zimbabwe with a similar request. A team of experts from Saudi Arabia assisted by an international consultant visited Bangalore to assess both the architecture and technology of the 512 port switch. While they are yet to make a final assessment, the TCIL has received requests for quotations. Kuwait has also shown interest in 5,000 line exchanges. All these years, when there was free flow of petro-dollars, West Asia was a happy hunting ground for multinational companies. In the changed economic scenario with petro-dollars flowing in not that easily, the focus has shifted to India.

But before these opportunities can be seized, it will be necessary to comply with the domestic requirements of those countries. The TCIL reportedly lost a Rs. 80-crore contract to a European telecom giant recently for a major job involving, among others, maintenance of telecom equipment and exchanges. A primary reason cited for this was India should have had a joint venture in Saudi Arabia with 51 per cent equity in Saudi hands for getting the contract. The TCIL has now decided to explore this possibility for being in place to get future contracts.

A similar move is also being made for a joint venture in Netherlands so that India is not left out in the race once "Fortress Europe" or the unified EEC takes shape in 1992. This particular joint venture would specialise in services and software.

The TCIL will be supplying to Iraq telecom equipment worth Rs. 2 crores and a turnkey contract for microwave towers is also under way. Recently, Bhutan had a feasibility study for microwave stations prepared by an Australian expert and subsequently a tender was also floated. Though the TCIL appeared to have good chances, for some reason it has got stuck. The need for a gentle diplomatic push assumed importance in such circumstances.

In India, the TCIL has been entrusted with the job of networking the Indian missions abroad, with New Delhi serving as the central point. All these years, the transmission of messages from the headquarters to Indian missions follows conventional systems which did have secrecy and was open to interception. The Government is now planning to install a computerised hi-fi system with frequency synthesiser that would provide a "sudden handshake" between the transmitter and the receiver ensuring total secrecy of the transmitted message. The initial phase would cost over Rs. 10 crores and it would be gradually extended to more missions. The tenders floated have been scrutinised and six bidders from Japan, Europe and the United States shortlisted. The necessary equipment would be imported shortly. The TCIL would coordinate the networking.

Optical Fibre System for Railways

The installation of a 900 km optical fibre system for the Indian Railways by the TCIL in three stretches of 300 km each between Durg and Nagpur, Nagpur and Itarsi, and Itarsi and Bushaval, will be completed by the year end. A section of it is likely to be energised by March 31. The project costing Rs. 25 crores got delayed because of unforeseen factors. In certain stretches, the duct covering the fibre and the insulations inside had been chewed by hair-sized rodents. Efforts are on now to re-lay and recover them with materials that should prove to be rodent resistant.

The TIDCO-TCIL joint venture, Tamil Nadu Telecommunications Limited, is expected to produce the first stretch of nearly 500 km of jelly filled cables in the third quarter of this year. This project got delayed because of late sanction of an official Italian credit which was subsequently changed to a suppliers' credit. It is reported that the market for jelly filled cables in Saudi Arabia and Kuwait alone may be over Rs. 300 crores.

One of the decisions taken at the Arusha conference was that the UNIDO and the UNDP would sponsor an engineer or a technocrat from each country in Africa to participate in the electronics exhibition to be held in Delhi in the third quarter of 1990. As Mr. Agarwal said, this decision was indicative of India's unique position to offer appropriate technology and all measures including aggressive marketing and diplomatic efforts would be necessary to make a dent in the global telecom market.

Workings of Telematics Center Under Scrutiny

55500042 Madras *THE HINDU* in English
12 Jan 90 p 11

[Text] An "inquisition" into the performance of the Center for Development of Telematics (C-DOT) began early this week by a 13-member committee headed by the former Secretary of the Department of Electronics, Mr K. P. P. Nambiar, which met here for the first time on January 8 after the announcement of its constitution in Parliament by the Communications Minister, Mr K. P. Unnikrishnan on December 29, 1989.

With the kind of lines drawn between the various powers and one of them carrying the prefix of "former," officials in the Department of Telecommunications (DOT) told *The Hindu* that though the conclusions would be obvious, the atmosphere in the Committee's first meeting, however, indicated a sharp division, with some in favor of imports, other pro-C-DOT and yet another set of members for striking a balance between the two. But the constitution of the Committee and its terms of reference have themselves raised some serious policy issues.

While, on the one hand, it was true that C-DOT had delayed in delivering its promised digital switch MAX 16000, was this delay a reason enough for preparing the

grounds for opening the doors for multinational corporations to the Indian telecom industry once again, they asked. They said more than the personalities involved, the system itself would be hurt in the process.

The Minister, while making a statement in both Houses of Parliament had said that more five years had passed since C-DOT started the project, but a commercially produceable MAX had not yet gone into manufacture.

Collaboration review: The committees of experts would, therefore, evaluate the ongoing schemes and the future progress of the C-DOT project. Against this background, the officials said while it was laudable to review the indigenous efforts, was it not justified to view similarly the foreign collaboration agreements entered into for the manufacture of push button telephones, EPABX, VSLI, small earth stations etc. which were yet to make an impact even four years after the tie-up and payment already made in foreign exchange for technology transfer.

Supporters of C-DOT pointed out that it had successfully designed the 512 port digital exchange which was functioning at Delhi Cantonment. Another 4000 lines exchange based on 512 port module loaded up to 2000 lines was functioning at Ulsoor in Bangalore and, in another three months, it would be loaded to its full capacity. They said it was true that C-DOT was behind schedule in designing the software for expanding the capacity up to 16000 lines, but this did not mean that it had failed. It was precisely here, the anti C-DOT section in the meeting pointed out that the original mandate was for producing MAX 16000 and no success could be claimed on the basis of smaller versions like either the 128 RAX or even the 2000 lines exchange comprising four 512 port modules.

Freezing the design: However, neutral observers in the Department agreed that the 512 port exchange was functioning without much problem, but C-DOT should now freeze the design for paving the way for its productionization. Earlier it froze the design mainly of the cards better would it be for the Center. The crunch precisely lay here as C-DOT had not yet been able to freeze the design. C-DOT supporters said it would be done in the next three months.

When contacted, a few private sector manufacturers of 128 PABX and RAX based on C-DOT technology said initially they did encounter some problems, but all of them had been debugged now. They expected a similar development in the 512 port version as well. In fact, they said, even the Mankapur E-10-B exchange based on Alcatel technology had to be adopted to Indian conditions.

Thus, between now and the time C-DOT was able to develop fully the MAX 16000, how does one meet the growing demand for telephones in the country. Officials in the DOT said that while in major cities where the demand was for exchanges of 10,000 lines and above there could be import. In other smaller towns and

districts where telephones were not accessible, the C-DOT version of 2,000 to 5,000 lines exchange could meet the requirement. In essence, what they said was that there should be a balance between the two and a dogmatic approach in favor of either indigenous version or imports would only hurt the system and the waiting list for telephones would grow further.

Cost per line: Official sources said C-DOT's 128 PABX compared favorably with any foreign technology and over 500 such exchanges were functioning in the country. Some of the manufacturers said the cost per line based on C-DOT technology was much below a comparable imported line. In fact, the import content was only around 30 percent as against nearly 60 to 70 percent in the case of EPABX being made with foreign technology even two years after productionization. The crucial issue, therefore, was self-reliance which the present Government wanted to promote.

Marshalling their arguments, the sources said a review of manufacture of push-button telephones based on three shortlisted foreign technology, Siemens of West German, Sweden's Ericsson and Face of Italy showed a miserable state of affairs. Indian companies that had gone into collaboration with foreign companies for manufacturing telephones had to struggle for over eight months to meet the international standards necessary for getting the waiver under "Receive Reference Equivalent." In another collaboration, the problem of press-button key still remained.

ITI's tie-up with Face: Regarding the collaboration with Face of Italy which only the public sector ITI had entered into, its telephone instruments had yet to reach the subscribers' ears. The fact that these collaborations had been entered into four years ago and payments made for technology transfer, nobody had thought of any review. Incidentally, a capacity for making 40 lakh push-button telephones had been created and money paid for in foreign exchange, not only for technology but also for import of capital goods. DOT itself was not in a position to take more than eight lakh instruments a year. In terms of cost-benefit analysis the investment made, therefore, appeared prohibitive.

In the case of EPABX, three technologies, Japan's Oki, J. Schneider of France and GTE of the Netherlands had been shortlisted and a number of Indian companies had entered into collaboration in 1985. While only Oki technology has succeeded in a large measure with Tata and Ballarpur Industries being the Indian partners, the French technology had not measured up to the expectations. The GTE technology was yet to make any impact even four years after the tie-up.

"Success stories": Similar "success stories" dot the Indian telecom scene like the collaboration ITI entered into with Equatorial Satcom of the U.S. for the manufacture of small earth stations. This collaboration actually took the cake with not a single station being delivered despite the payment made for technology transfer.

Now ITI has learnt that its foreign collaborator in this field has gone into liquidation and repeated telephone calls and messages on telex to them evoked no response. The same kind of experience was even faced by the Semiconductor Complex (SCL) at Chandigarh where a collaboration had been entered into with AMC of Austria for the manufacture of Very Large-Scale Integrated Circuits (VLSIC). Informed sources said though money had been paid for the import of capital goods, there was no record of its actual delivery and now everything was beyond assessment because of the fire at the SCL complex.

Impartial observers said a couple of members in the 13-member committee were a party to the sanction of foreign collaboration agreements mentioned and, unfortunately, they were involved in assessing the success of indigenous effort. But they however, cautioned against import of switching equipment with exchange capacity of more than 10,000 lines from the same European source. In this context, they said a comparison of C-DOT's per line cost with ITI's Mankapur factory clearly showed how much more India was paying in foreign exchange. If C-DOT per line cost was about Rs 5,000 with an import content of Rs 1,500, the import content in Mankapur was as high as Rs 3,000 per line, the overall cost of E-10-B line itself being twice that of C-DOT. Even the maintenance computer necessary for "diagnosis" in any exchange was being imported by ITI from its principal. A similar input-output panel for the 512 port exchange developed by C-DOT was facing some problems.

Status report sought: The Committee in its first meeting in Delhi had asked C-DOT to submit a status report of its various projects to be considered at the second meeting of the Committee to be held in Bangalore on January 22. The final report of the Committee is to be submitted before February 28, 1990. Incidentally, an assessment of the C-DOT switch had been gone into twice earlier by similar committees in 1987 and 1988. On both the occasions, the Center was blamed for the delay in its much promised larger exchange and problems relating to Busy Hour Call Attempts (BHCA). While this problem still remained, Mr Sam Pitroda, chairman of the Telecommunication Commission, had himself gone on record when he was not in the Commission that DOT had not subjected the imported switch to such rigorous exercise.

Board To Oversee Radio, Television Appointed

55500041 New Delhi PATRIOT in English
30 Dec 89 p 5

[Text] The National Front Government on Friday announced the setting up of a five-member board to supervise the functioning of AIR and Doordarshan with immediate effect as the initial step to "liberate the electronic media from the control of the Government."

Introducing the Bill in the Lok Sabha, Information and Broadcasting Minister P. Upendra said the board would be vested with sufficient powers to ensure the objectivity and fairness in the programme broadcast by the media.

AIR and Doordarshan would form the two wings of a new autonomous corporation, christened as Prasar Bharti (Broadcasting Corporation of India). It is likely to take a year to give effect to the Bill, Mr Upendra said informing the House that the intervening period would be used to gather views on various aspects of the introduced Bill.

Suggestions and ideas to improve upon the proposed measure would further enhance the objectives of the bill, the Minister said informing that these would be considered for setting up the corporation. He said the recent past had seen "brazen" misuse of these two media for "narrow, partisan purposes resulting in the total destruction of their credibility." The credibility of these institutions must remain the "most prized asset of any broadcasting system," he added.

Giving the background of the Bill, the Minister said it was based largely on the recommendations of the Akash Bharti report by the B. G. Verghese Committee in 1978, taking into consideration the changed circumstances and the present ethos. The Bill reflected the new Government's determination to ensure that these vital media functioned independently. The National Front had promised to the people that it would free them from Government control and now it was fulfilling that promise, Mr Upendra said amidst cheers.

Mr Upendra said the compact five-member board, being appointed in next few days, would have persons from the world of cinema, art, culture, scholarship, agriculture and rural development. The board would have no statutory powers, but would have enough powers to ensure the programmes of highest quality, he added.

The Minister said the intention of the Bill was that the corporation should function as a genuinely autonomous, innovative, dynamic and flexible structure. It must function in a democratic manner to enrich our democratic traditions and institutions keeping in mind the variegated traditions, languages and cultures of the country, he said.

IRAN

Assigning of 200,000 Telephone Numbers Announced

90010087Z Tehran KEYHAN in Persian
28 Nov 89 p 17

[Text] By the end of the current year 200,000 telephone numbers will be assigned, of which 50,000 will be allocated for Tehran. Also, in order to implement the cabinet-approved directive to allocate 20 percent of the communication facilities to government employees, so far 18,000 telephone numbers have been assigned to them. This will reach 30,000 by the end of the current year. The said allocation will be put at the disposal of the

Government Employees Welfare Headquarters which is a part of the President's office. This headquarters will be responsible for implementing the allocation in accordance with the share of ministries and governmental offices.

Engineer Ja'far Zabihi, the Islamic Republic of Iran's Telecommunication Company's deputy for maintenance and exploitation of urban communication, in an exclusive interview with KEYHAN, announced this news and answered our reporter's questions. In regard to assigning telephone numbers in Tehran he said:

The Telecommunication Company invited 130,000 applicants in Tehran last year. The telephone numbers of 86 thousand people were operational last year, and 25 thousand were operational during the current year, and the rest will start operation by the end of this year. In addition, 30 thousand new applicants have been invited this year. They, also, will be given telephone numbers by the end of this year.

He added: The types of telephones being assigned in Tehran this year will be six and seven digits. For instance, telephones of the RESALAT Center in the east of Tehran will be six digit numbers, and those of Center 69 (North Amirabad) will be digital seven digit numbers. These will begin operation by the end of the current year.

Engineer Zabihi then announced the names of Tehran regions—which will receive telephone numbers by the end of the current year—as follows:

- Three thousand numbers in Center 90 (Meydan-e Azadi)
- Four thousand numbers in Center 99 (beginning of Saveh Road, Azari three-way)
- Ten thousand numbers in North Amirabad
- Three thousand numbers in Martyr Chamran Center (Daryannow Street)
- Two thousand numbers in Center 57 (Helal Ahmar Street—Ghappan Intersection)
- Two thousand numbers in the Piruzi Center
- Five thousand numbers in East Tehran (Tehran Pars)

The Telecommunication company's deputy for maintenance and exploitation of urban communication continued this interview by saying that this year's assignment of telephone numbers scheduled by the Telecommunication Company will reach 200 thousand in towns and cities other than Tehran. So far 70 thousand telephone numbers have been put into operation and the rest will be eventually activated by the end of the current year. He said: Statistical studies show that towns with populations under 50,000 people have reached near saturation in terms of telephone numbers. Also, the telephone needs of cities with populations of between 50 to 90 thousand will be fulfilled by the end of the Five-Year Plan.

He then stated that the guideline for the increase in the cost of extended long phone calls is under preparation. In regard to the fee for telephone numbers that will be

assigned to applicants this year he said: The finished cost of telephone numbers for slip holders in Tehran, taking into account all the fees and deposits, will total 40,000 toman and there will be no change in the price of telephone numbers.

In regard to the malfunction in communication of some seven-digit lines, Engineer Zabihi said: The quality of digital type seven-digit telephones is much better than the six-digit ones and there are better facilities in regard to local as well as international connections. Minor difficulties in the connection of such telephones is due to the incomplete operation of some of the new centers which will be corrected shortly.

NEPAL

Building of Television Production Complex Begins

BK3101145890 Hong Kong AFP in English
1422 GMT 31 Jan 90

[Text] Kathmandu, Jan 31 (AFP)—Nepalese Prime Minister Marich Man Singh Shrestha on Wednesday [31 January] laid the cornerstone of a modern studio and programme production complex for state-run Nepal Television (NTV).

Mr. Shrestha told guests and reporters that the NTV complex, located in the grounds of the Singha Durbar Central Secretariat here, would cost 11.6 million Nepalese rupees (410,000 dollars) and take two years to build.

NTV, which celebrated its fifth anniversary on Tuesday, plans to reach the whole country within the next five years, Chairman Nir Bikram Shah. [sentence as received]

News Director Durga Nath Sharma said it also planned during the same period to expand from the current 31 and a half hours on air a week to a weekly 44 hours of programming, including sport and films.

This would enable it to compete with the more popular and sophisticated Doordarshan Television of India.

When set up in 1985, NTV served only Kathmandu.

Today it reaches 17 per cent of the country's 18.7 million people with transmission stations at Biratnagar, 290 kilometres (180 miles) southeast of here, and in the Pokhara Valley, 225 kms (140 miles) west of Kathmandu.

Mr. Shrestha, in his address, stressed the important role of television in education and entertainment and said that the government saw NTV playing a key role in both areas and in helping in the country's development.

PAKISTAN

Minister Denies License for Provincial Television Station*55004701A Karachi DAWN in English 11 Jan 90 p 5*

[Text] Islamabad, 10 Jan—The Minister of State for Information and Broadcasting, Malik Ahmad Saeed Awan, has said it is not the policy of the Federal Government to give licence for a provincial television station. He said the Federal Government believed in strengthening national unity, integrity and solidarity. In its view, a provincial television station held the potential of fragmenting the nation, he added.

In a policy statement issued here on Wednesday, the Minister said such provincial television stations could become a mouthpiece of divergent policies and propaganda by successive parties in power.

In our country, he said, "we have seen at different times how different parties have cloaked political differences in political chauvinism and spread provincial disaffection and venom against each other or against the Centre. Therefore, provincial TV stations not only hold the potential of fragmenting the nation but also spreading disaffection and projecting provincial identity."

The Minister called upon people and elected representatives of the four provinces to promote national unity.

Commenting on the permission granted to a TV transmission centre in the private sector, [he] said this was in accordance with the PPP manifesto, according to which a second TV channel [words omitted] not provincial governments. Therefore, the decision to grant a TV transmission centre in the private sector could not be compared to granting one to the provinces.

He said the agreement with a private company contained stringent clauses which the Federal Government could enforce through its agencies. However, short of dissolution, there was little a Federal Government could do against a provincial government, which chose to use provincial TVs for creating hatred or disaffection, the Minister added.

Provincial Governments, he said, had police and civil servants of their own. "Recently, we have seen how a provincial administration has tried to bring about a clash between the officers of provincial and federal agencies, of which the arrest of FIA officers is but one example. We have no intention of creating such a situation for further clashes, because such clashes would hinder the promotion of national unity, integration and harmony," he maintained.

The federal television was already telecasting programmes in local languages, and the second television channel would also run programmes in local languages, which would be controlled by the Federal Government to ensure that they conformed to a national outlook, the Minister added.—APP

Commentary Urges Reshaping of Policy*55004701B Lahore THE NATION in English
19 Jan 90 p 7*

[Article by Ghani Eirabie: "We Need a Fairer—Not Additional—TV Network"]

[Text] Instead of the Punjab threatening to set up a parallel TV Station, the IJI should go in writ to the Supreme Court, invoking the "equality" provision of the Constitution, to secure a fairer deal on the existing national network. Fundamental rights are justiciable; and in any democratic polity, this includes unfettered access to untainted information over news media financed out of public funds. The denial of the facility will be as untenable as a government bar to Opposition members travelling by state-owned PIA or drawing on WAPDA power supply. All citizens are equally entitled to government facilities including police protection, justice, education, health care and economic opportunities—in fact, to everything charged to the Exchequer.

Political parties, in particular, can invite judicial intervention. Having declared political parties to be central to any system of parliamentary democracy and having decreed specifically that the 1988 elections be held on party basis, the Supreme Court cannot now escape the obligation of ensuring that all political parties are provided an equal opportunity to present their programme and performance to the electorate. Any denial of such an opportunity could be cited as tampering with the legitimate electoral process or dubbed a corrupt political practice.

This applies especially to access to state monopolies like radio and television. The ban on establishment of parallel networks carries the inevitable corollary, the monopolies will be operated in the interest of the totality of the nation. This would be valid even if the government laying claim to radio-TV facilities were returned to power by two-thirds of the electorate; as it is, we seldom had a government representing more than one-third, but no matter what the plurality, no government has the right to usurp the state apparatus for partisan purposes. This is barred even in fields in which there is no monopoly situation, namely the print media, where despite the availability of competing newspaper chains, the National Press Trust Deed, signed 8 April 1964, enjoins "promotion of sound and healthy journalism, with truly national outlook, untainted by parochial, partisan or sectarian inclinations, so as to contribute to the making of the Press a truly objective and effective instrument." NPT's tax-free status is contingent on its honouring these objectives. RP and PTV's monopoly position postulates even a higher standard of fulfilment.

Unfortunately, however, both Pakistan Radio and Television have failed to rise equal to the occasion. There has been some improvement, some projection of dissent, but it is too meagre and too grudging, more like crumbs from the table than honest recognition of a democratic obligation. The government of the day undoubtedly, has

prior claim to time over the state media for presentation and elucidation of governmental policies, but that right also accrues to the provincial governments. Regrettably, the provinces are being denied an adequate opportunity and the worst hit are Punjab and Balochistan. The Federal concourse of Ministers, Ministers of State and Advisers is grabbing prime television time. There is even greater distortion in the proportion of political news. A commonly accepted criterion is relative strength in parliament. The official count of votes for and against government at the time of no-confidence motion showed PPP and COP barely 12 votes apart, but the political coverage on television is virtually monopolised by the Peoples Party. Worse, the monopoly-access is being used not only to promote the PPP but also denigrate and malign the Opposition, more specifically Nawaz Sharif.

The discrimination in favour of PPP-ruled provinces and the vendetta against Nawaz Sharif is too obvious to be missed. PTV mobilises experts to support the Sindh and NWFP budgets and development plans, but no such backup is provided for the other two provinces. On the contrary, no opportunity is missed to discredit the Punjab and Balochistan Chief Ministers; bye-elections, transport tragedies, dacoities and street brawls are frequently seized upon to suggest how ripe the Punjab is for Governor's rule, but comparable incidents from Sindh are blacked out. On quitting the Punjab cabinet, ex-Minister Leghari was given thrice as much time on television to vilify Nawaz Sharif as the Punjab Chief Minister was allowed to elucidate government policies. Ghulam Mustafa Khar who as NPP member of the National Assembly was virtually ignored now as a PPP convert appears on television almost every night, frequently getting precedence over the Punjab Chief Minister. Again, when the Awami National Party quit the coalition with PPP, little known ANP dissidents were paraded on television as VIP's to denounce Khan Wali Khan. PTV makes an instant celebrity of any politician crossing over from IJI to PPP.

Such blatant misuse of the state media understandably has created strong resentment among the Combined Opposition Party who last week staged a protest rally in front of the PTV headquarters in Islamabad and the Punjab Government who have launched a move for the establishment of a parallel radio and TV network in the provinces. The 70 legislators, led by top Opposition leaders, including PPP's erstwhile MRD colleagues, marching up the Constitutional Avenue, in the first demonstration ever against government media policies, offered an impressive spectacle. It signalled the Opposition's clear resolve not to permit the ruling party exclusive use of facilities that clearly belong to the nation as a whole. The Information Minister Ahmed Saeed Awan spoiled the goodwill gesture that his presence at TV House represented, by dismissing the rally as a means to justify Punjab TV.

If all the 70 legislators hailing from different provinces and representing a cross-section of the nation, have already been driven to the conclusion that there is no

alternative to a separate Punjab network, it is a sad reflection on the government. One fervently hopes most of the legislators were motivated by a desire to pressure the government into so modifying the state media policies that establishment of separate provincial networks was rendered unnecessary.

Let us face up to the fact that Pakistan is not yet ripe for a multiplicity of media networks, we are not rich enough or mature enough to afford or handle even one, not to speak of five. Colour TV transmitters, boosters, relay centres, studios, cameras and other equipment are extremely expensive and multiplying the expenditure five times over is a luxury we cannot afford. Worse, the babel of tongues broadcast simultaneously from five stations will create a cacophony of divisive noises. The Provincial TV Station in Peshawar may be projecting an Afghan policy at variance with the federal outlet; the Punjab network projection on the Sikhs may conflict with the Centre's; and Karachi Station may be trading insults with Quetta or Lahore. The provinces differences with one another and with the Centre will be aggravated immeasurably if they acquire radio and TV outlets of their own. From that point of view, the Federal Government is justified in asking the Punjab to reconsider its request for a separate Radio-TV set up. However, it is the Federal Government whose media policies that have pushed the Punjab into making the demand and it is the Federal Government that has cut the ground from under its own feet by clandestinely issuing a permit to a private company to set up another TV Station. It is morally reprehensible in three ways. One, it attracts all the objections that apply to the provinces setting up their parallel networks. Television is far too sensitive a medium to be left to private hands, certainly far more risky than when entrusted to provincial government control. Two, there was no public announcement of any decision to invite private enterprise into the mass media; such an announcement would have evoked a massive response from the country's top entrepreneurs and the sanction to establish the first TV Station in the private sector would have gone to the most qualified party.

And three, far from going to the most qualified entrepreneur selected on merit, the permit for a TV Station reported has secretly issued to an ex-Information Secretary, who according to an Islamabad daily, is associated not only with the Peoples Party but also with a close relation of the Prime Minister. He is to set up a People's Network and Pakistan warfare will assume frightening dimensions.

Those familiar with the operation of the news media predict that any addition to the existing Federal network, whether in the private sector or at the provincial level at the present stage of our financial resources and national maturity, will result in opening a Pandora's Box; and we shall not be able to handle the fallout. National integrity will be seriously jeopardised.

The answer lies in promptly re-shaping the state media policies in such a way that in addition to modestly

projecting the policy and performance of the Federal Government, reasonable requirements of the provincial administration and disciplined voice of the Opposition can also be accommodated. The task is not impossible; it has been accomplished before and can be done again. Contrary to the present governments oft-repeated claim that political dissent has never been reported in the past, there have been three golden periods in the Pakistan history when the Opposition received even fairer coverage than today—one, the pre-1958 era; two, the later part of the Ayub rule; and three, the entire presidential tenure of Yahya Khan. The coverage was left to the news judgement of the professionals, who carefully calibrated the space to each political party according to its strength in the legislature. The measure of freedom is illustrated by two events picked up at random: one, Radio Pakistan's uncensored broadcast in the 1950's of Maulvi Tamizuddin Khan's complaint, in the Sindh Chief Court against Governor-General Ghulam Mohammad, and two, Pakistan Television's broadcast of unedited scripts of 16 political leaders on the eve of 1970 elections, with each leader speaking directly to the people for a good half an hour.

These spurts of freedom need to be institutionalised. Both Radio Pakistan and Pakistan Television already are full-fledged corporations; therefore, no structural changes are required. All that is needed is a provision that the joint Chairman of the two corporations be a retired Judge of the Supreme Court, appointed by the President in consultation with the Chairman of the Senate and the speaker of the House and answerable to Parliament in the manner of the Auditor-General of Pakistan appointed for a fixed tenure, neither extendable nor terminable, the radio-TV Chairman may be assisted

by a Board of Advisers, representing a cross-section of the people, including Vice-Chancellors, Par Presidents, newspaper editors, farmers, industrialists, union leaders, and civil servants. The Chairman's basic responsibility will be to guarantee objectivity, impartiality, balance, promptitude and professional quality of news and comment broadcast by the existing radio and TV networks. He would need to be backed by a BBC-style Charter from competent authority.

That competent authority should be parliament and the Charter should be enshrined in the Constitution. But until our deeply riven National Assembly can bring itself round to hammering out an agreed document, any citizen or group of citizens, preferably a major political party, should move the Supreme Court for a writ, invoking the "equality" provision of the Constitution or the authority under which the Court mandated elections on party basis, to require Radio Pakistan and Pakistan Television to provide untainted and unbiased news and comment to the electorate to enable it to operate the prescribed party system of democracy intelligently and effectively. Even the President could intervene.

YEMEN ARAB REPUBLIC

France To Loan \$100 Million for Telephone Network

55004508 London AL-DUSTUR in Arabic
12 Feb 90 p 29

[Text] France will give North Yemen a loan worth \$100 million to contribute to the development of its telephone network.

CANADA

Spar To Build Radarsat Remote-Sensing Satellite

55200022 Vancouver *THE WEEKEND SUN* in English
27 Jan 90 p H8

[Text] Montreal—The Canadian Space Agency signed a \$146-million contract Friday with high-tech leader Spar Aerospace for the first phase of construction of an advanced remote-sensing satellite.

The satellite, known as Radarsat, is to be launched in 1994 and will provide scientists with high-resolution images of Earth from space using a highly-sophisticated radar.

"The satellite will provide invaluable information on environmental conditions worldwide...to monitor such natural phenomena as ice conditions in the Arctic and natural disasters such as oil spills," said Larkin Kerwin, president of the Canadian Space Agency.

The data recorded can also be used for ice information, mapping and geological information.

John MacNaughton, president of Tor

CRTC Chief Optimistic Broadcast Bill Will Be Amended

55200020 Toronto *THE GLOBE AND MAIL*
in English 11 Jan 90 p B5

[Article by John Partridge]

[Text] Ottawa is showing "some flexibility" over a contentious section of new broadcasting legislation that the industry's federal regulator fears could compromise its independence, the chief regulator says.

"I'm prudently, though not insanely, optimistic," Keith Spicer, chairman of the Canadian Radio-Television and Telecommunications Commission, said yesterday of the possibility the government may ultimately agree to amend the section. "I think the government is sensitive and my impression is that they are listening."

The broadcasting bill was tabled in the House of Commons in mid-October.

The section that has caused the storm would empower the government not only to review individual CRTC decisions—as it can under the existing act—but also, for the first time, to give the commission direct policy orders.

The CRTC is a quasi-judicial body. It fears the twin powers could enable a government to politicize and corrupt its operations.

Mr. Spicer said in an interview in Toronto yesterday that he thinks his discussions with the government will result in "some sensible changes."

One possible compromise, he said, would be for the government to limit itself to exercising only one of the two powers in any given case.

Several industry executives and observers interviewed yesterday do not share Mr. Spicer's optimism.

However, asked whether he feels he could continue to do his job if some sort of compromise cannot be reached, he would say only: "It depends."

Mr. Spicer took up his duties at the CRTC on September 1 and roundly criticized the contentious section at his confirmation hearing in November before the Commons standing committee on communications and culture.

He said yesterday that he plans to reiterate his opposition when the committee begins hearings on the bill next month.

His predecessor, Andre Bureau, also fought the section. It was included in a previous incarnation of the bill that died on the order paper in November, 1988, when the government called a general election.

Apparently mindful of the need for diplomacy, Mr. Spicer emphasized yesterday that the government, too, has "legitimate concerns" on the issue.

"This is not some unhealthy, pathological grab for power by a bunch of bureaucrats," he said. "And we're trying not to let it become a mere turf issue, because it is much more than that."

Ottawa inserted the section in part because it felt the CRTC, under Mr. Bureau, had in several of its decisions usurped the government's policy-making role.

Mr. Spicer was in Toronto for a series of private briefings from several major broadcast and cable-television industry players.

He said he met with officials of Rogers Communications Inc. and Maclean Hunter Ltd. on Tuesday and, yesterday morning, with I. H. (Izzy) Asper, who recently became the sole owner of Ontario's Global Television Network.

He added that most of the major players have been to see him in Ottawa since his appointment, and that "phase two" is meeting them "in their lairs to hear their plans."

He also said he plans to visit major Quebec broadcasters in the next few weeks.

As well, Mr. Spicer said he expects to meet several public interest groups—including the Consumers Association of Canada—within the next two months.

The groups have complained in the past that, under Mr. Bureau, the CRTC became a captive of broadcast and cable operators and largely ignored the interests of consumers and the public at large.

In recent interviews, however, officials of the CAC and other organizations have expressed optimism that the new CRTC chairman may pay more attention to their concerns.

Mr. Spicer would say little about his meeting with Mr. Asper, who still must seek CRTC approval for the transfer of voting control of Global to his Winnipeg-based Canwest Communications Enterprises Inc.

For example, he would not disclose the price Mr. Asper paid to buy out the 39 per cent stake his two estranged partners owned in Toronto-based Global Communications Ltd.—the TV network's holding company—in a court-ordered auction in Winnipeg on December 14.

Mr. Asper, who has consistently refused to disclose the price before informing the CRTC, said in an interview Tuesday that he planned to tell Mr. Spicer at their meeting.

He hinted broadly, however, that it was less than a figure of \$150-million quoted in the January 8 issue of PLAYBACK, a TV and film industry weekly newspaper.

Mr. Asper said one problem with various reported estimates is that they have not taken account of either the debt on Global's books or of some of the non-broadcast assets—such as real estate—that the deal included.

Whatever the actual tab, Mr. Spicer indicated yesterday that Mr. Asper and Canwest likely will have to lay out more cold, hard cash in connection with the deal, in the form of a so-called "benefits package."

Benefits packages consist of spending—over and above the purchase price—and other commitments that the CRTC demands buyers provide in return for permission to buy potentially lucrative broadcast and cable properties.

"Our policy is that any change in control triggers the benefits package," Mr. Spicer said.

CYPRUS

CYBC To Transmit Programs From U.S., Europe

NC0202095190 Nicosia CYPRUS MAIL
in English 2 Feb 90 p 3

[Text] The Cyprus Broadcasting Corporation [CYBC] will soon be able to retransmit satellite programmes from the United States and Europe.

According to the head of the Public and Relations Department, Nayia Roussou, the corporation has already installed a dish for the reception of satellite programmes.

"At the moment experts are preparing a feasibility study on how it is going to be done," she said. The dish was currently in use by experts who were monitoring programmes shown by various channels. "In this manner we

can distinguish the programmes of quality and those that will be suitable for the Cypriot public," she said.

When the scheme is finally launched the corporation will not limit itself to re-transmitting programmes strictly from one country or station. "There will be a varied selection from stations of Europe and the States," said Roussou.

DENMARK

Minister Announces Phone System Restructure

90WT0039A Copenhagen BERLINGSKE TIDENDE
in Danish 3 Feb 90 p 4

[Article by Michael Ulveman: "Helveg: Telephone Company Should be in Jutland"; first paragraph is BERLINGSKE TIDENDE introduction]

[Text] Economic Affairs Minister Niels Helveg Petersen (Radical Liberal) says the five telephone companies should be placed under one state holding company located in Jutland.

Economic Affairs Minister Niels Helveg Petersen (Radical Liberal) has now confirmed that the government wants to place the five telephone companies under one national holding company in which the state owns a stock majority.

The company should be located in Jutland, according to Helveg Petersen.

"There are many arguments for providing the five small Danish telephone companies with a joint management, so they can handle future competition with big strong international competitors like AT&T and Siemens. Compared with them the Danish companies will be very small," said Niels Helveg Petersen.

He added:

"We should not locate the company in Copenhagen out of habit but put it in Jutland. There has been a very good research and development environment in connection with Jutland Telephone. The prerequisite for doing well in the future is to locate research where the best development is found," he said.

However Helveg Petersen said the companies will continue to be independent in their everyday management.

Workers Oppose Holding Company

Employee associations say the telephone companies should be state-owned but financially independent.

Five associations representing 6,000 telecommunications workers warn against introducing a joint holding company for the Danish telephone companies. Instead they recommend that the telephone companies continue to be state-owned but maintain financial independence and mutual competition.

"Financially independent telephone companies should be able to compete quickly and effectively with other 'private' competitors," the five groups wrote in a communication addressed to the Folketing parties.

The present structure must be given a large share of the credit for the fact that Denmark has a smoothly functioning and cheap telecommunications sector, in the view of the Jutland TeleAssociation, the National Association of Managers and Specialists, Jutland Telephone Personnel With Advanced Degree, Jutland Telephone Engineers, and Jutland Telephone Technical College Engineers.

They point out that today each telephone company has its own profile and competitive merits. A joint holding company could lead to "equally good companies" and unmotivated workers, the five associations warn.

The telecommunications workers propose the establishment of an inspectorate for the telecommunications sector modeled on the finance sector.

In addition the telephone companies should have an opportunity to establish subsidiaries on their own or in cooperation with some of the other telephone companies. This will enable them to form jointly-owned companies where this is appropriate and compete where that is best, in the opinion of the five associations.

Foreign Orders Boost Data Communications Industry

*90WT0036B Copenhagen BERLINGSKE TIDENDE
SONDAG 25 Jan 90 p 15*

[Article by Henrik Damm: "Teledata Gets A Lift From Norway And Sweden"]

[Text] The market for the Danish telephone companies' data base service, Teledata, is getting a much needed boost from its counterparts in Norway and Sweden.

With barely 4,000 subscribers after two years on the market, the Danish Teledata system can hardly be called a success for the four telephone companies responsible for it: KTAS, JTAS, Fyns Telefon, and Tele Sonderjylland. It now appears, however, that help is on the way from our Nordic brother countries.

"We already have an agreement with the Norwegians and we expect to reach agreement with the Swedes during the spring. At present, we are testing means of access between the two systems, but I do not believe this will present any major problems," said Eigil Iversen, product chief at JTAS, Teledata.

One interesting new development for the Danish Teledata system is the agreement between IBM, Esselte, and Statens Televerk for extremely low prices for up to 50,000 subscribers.

"But we will be interested even if we have only 20,000. We can then approach companies that exchange data bases

with a far greater number of subscribers and thus create far more interested contractors," Eigil Iversen said.

Business Leader Says Country Lags in Data Communications

*90WT0036A Copenhagen BERLINGSKE TIDENDE
in Danish 11 Jan 90 p 13*

[Article by Kim Schaumann and Asbjorn Jorgensen: "Denmark Behind In Information Race"]

[Text] The government's new proposal for a large data network may create local initiative for a domestic information industry.

While no ordinary Danes care at all about data communications, every day five million Frenchmen, 200,000 West Germans, 30,000 Swedes, and even more people in other countries are aware of its possibilities.

This is the situation now, on the threshold of the information society, as year after year the domestic telephone companies lose pieces of their once-secure monopoly and the EC pushes for the greatest possible competition.

Here at home, interest in data communications is minimal among private individuals. "This is because no information is offered that can be used by ordinary Danes," said Niels Ralund, part owner of the small Danish firm, Belle, whose business it is to transmit information on the data network.

He believes, however, that the government could create the impetus needed for progress if it would just implement the plans published yesterday in BERLINGSKE TIDENDE.

The plans involve establishing a State Information Center, SIC, and making all the data bases of the national and local governments available to the public. At the same time, there are plans to establish an entirely new data system for the information.

"It is a great idea for the government to offer information that many people would be interested in," Niels Ralund said.

The telephone companies have already created a data system, Teledata, that is aimed at small businesses and individuals. But they have signed up only 4,000 customers in the almost three years during which the system has been in existence. That is so few that the assistant director of Maersk Data, Jan Zneider, has pronounced the system dead.

Niels Ralund does not agree. "With Teledata, a good system has already been put into place. Why not utilize the system that is already there?" he asks.

He does not believe it is necessary for the government to establish a new system for SIC.

So far, Teledata is the only Danish version of a videotex system, to use the international designation of data systems designed for private individuals and small businesses. It is these videotex systems that have sparked much interest in several other European countries. The largest system is Minitel in France.

"A massive offering of government information could give a lift to a totally new communications industry here at home," Niels Ralund said.

FEDERAL REPUBLIC OF GERMANY

Reorganization, Goals of Bundespost Agency Telekom

90WT0024 Munich HIGHTECH in German
Nov 89 pp 69-81

[Article: "High-Wire Act Over New Terrain"]

[Text] With a blast of innovation and an aggressive marketing concept, the newly formed Bundespost offshoot Telekom is preparing to do battle in the marketplace. However, the projected business, worth billions, with new services and terminal equipment threatens to become an uncertain high-wire act between free-market competition and state-owned monopoly.

Helmut Ricke has never lacked self-confidence or been unwilling to accept business risks. However, the designated chairman of the board of Telekom, which took over Kronach's Loewe-Opta GmbH in 1985 in a spectacular management buyout, is probably not entirely comfortable facing this new challenge. Nevertheless, this entrepreneur, owner of a mid-sized business with 1500 employees, must now lead a force of 216,000 people and at the same time deal with official councils, ministry heads and oversecretaries. For skeptics who do not think Ricke quite capable of such a leadership role, the combative, model of manufacturing skill has memorized a few aphorisms which he currently tosses out to anyone who will listen. Such as: "I am fully aware that a supertanker must be steered more carefully than a small speedboat."

In terms of depth of focus and double meaning, the picture painted by Ricke is hard to beat. When the head of Loewe takes the helm of the Bundespost tanker Telekom beginning on January 1, his primary task as helmsman will be to turn it into a maneuverable speedboat. The leaden bureaucratic image still weighs heavily on the reorganized yellow giant which Heinz Nixdorf, Paderborn's now-deceased model businessman, once berated as an "inflexible colossus with 500,000 lazy asses."

But even after the reorganization of the mammoth agency, Klaus Mueller, deputy national chairman of the VDPI (Association of German Postal Engineers) notes with great concern an increase in the number of guidelines and regulations, and fears that Telekom is heading for "chaos with its eyes wide open." "Total fear is everywhere," storms Mueller, "when you see how one

part of the administration continues to gun down another with such stoic calm." Shortly before the unofficial opening of Telekom on January 1, innovative postal employees assert, it was as though the entire apparatus was incapacitated.

Even though in Helmut Ricke a leadership figure has now been chosen for the reorganized company and a supervisory board has been established, chaired by communications consultant Rolf-Dieter Leister, all of the other slots on the planned eight to nine-member board have still not been filled. Approximately half of the first leadership team will be recruited from industry, the rest from the existing ranks of civil servants. This is also true for the second management level in which approximately 24 section heads will handle business operations. Within the current transition hierarchy, however, no one knows exactly where his desk will be in a few weeks or who his future superior will be. This situation hinders all activity and leads to frustration. "We cannot expect to hear a unanimous cheer from our employees regarding all our decisions," is how Christian Schwarz-Schilling, the minister for post and telecommunications, defends the awkward situation at his agency.

A big guessing-game is beginning among the young, market-oriented civil servants regarding whether the new management, with the minister protecting their flank, will now have the courage to correct the current misplacement of employees in the telecommunications sector and dispatch the protectors of the monopolistic Holy Grail to early retirement. Ricke knows that the coming round of roulette regarding personnel will be a test for him in his new job, because without the support of this powerful group of civil servants, he is bound to fail.

However, the startup conditions in the market do not look entirely bad for Telekom. After all, Ricke is taking over a business which, with a turnover of 37 billion marks last year, was able to make a profit of more than three billion marks. In terms of assets, there is the major advantage of trust on the part of the majority of customers, a high level of engineering competence, a broad-based service infrastructure and sales outlets in the form of 16,000 post offices. The course has already been set for business during the 1990s, and in new service areas solid double-digit growth rates are being recorded. With a war chest filled to the brim, this enterprise is also very well equipped for more difficult times.

But it will not likely come to that. Although Telekom will face stiff competition in the future in the terminal equipment market, in satellite communications, in the mobile telephone sector and with regard to networks and value-added services, the lion's share of its income over the long term will continue to come from the untouchable telecommunications monopoly. Example: With 29 million main telephone stations, the post office in 1988 earned around 34 billion marks in a stagnant market. This income is being used today to compensate for all the

deficits in the new text and data services area which, despite great growth, is for the most part still in the investment phase. Telekom's new marketing concept becomes more and more entwined with the old "cash cow," the telephone.

If the postal minister is to be believed, a real burst of innovation will take hold in the telephone business as early as next year. Together with progress toward digitization via the future integrated services digital network (ISDN), entirely new features are currently being developed for home and office. Following the example of the American telecommunications giant AT&T, telephone service in the future is to be of a more flexible design with different options. Planned, among other things, is a breakdown of fees according to user size.

The most important battle with competitors from industry, however, will involve the terminal equipment exempted by the monopoly. In the future, modern systems will be offered according to a retail sales concept in approximately 7000 suitable post offices, in the 160 old and newly planned telephone stores, in 90 sales vehicles traveling throughout the FRG, in department stores and mail-order houses, and in selected supermarkets. With a policy of offering designer models, Telekom marketing now wants to polish its corporate identity as an innovator to a high sheen. All devices which reach the shelves beginning in 1990 have accoutrements exclusive to the post office that no other competitor can provide. "The post office knows that it no longer has any chance with the common old, dusty design in a regulated market," says Juergen Garbade, head of marketing for telephone equipment at Siemens AG in Munich.

But there is also another reason for the restless activity of Telekom strategists in the terminal equipment market. If this state-owned enterprise does not cover the terminal equipment sector promptly with an attractive product line, business will go to competitors in industry. Market analysts believe that a well-prepared Telekom can maintain approximately two-thirds of its present 100 percent market share. The already liberalized British Telecom serves as a terrifying example to the German postal leadership. British Telecom stumbled into open competition unprepared and lost 65 percent of its prior monopoly of the terminal equipment business to foreign suppliers—primarily in the Far East.

Developments in the American market were downright catastrophic as all national telephone manufacturers halted production within a few years, and today obtain approximately 90 percent of their products from Asian suppliers. Approximately 40 million telephones were delivered in 1989 by the Southeast Asian "tiger nations" alone—not even including Japan. With world-wide production of 100 million telephones, that already adds up to 40 percent.

Klaus Krone, chairman of the board of telecommunications equipment supplier Krone AG of Berlin, views this

development with considerable concern: "German telephone suppliers cannot withstand this production and pricing pressure over the long term." Krone believes that for medium-sized firms in particular there is only one chance—to prop up the insides of these systems by means of joint production and to package them in individual designs specific to each company. Count Matthias Lambsdorff, CEO at Munich's Friedrich Reiner Telekommunikation GmbH & Co. KG, knows that he and his 156 employees can survive only if he approaches the market with high-quality, convenient telephones or fills individual market niches. Hans Reich, manager of telecommunications at Standard Elektrik Lorenz AG (SEL) in Stuttgart, does not share this view entirely. "I would doubt," says the SEL manager, "that there are enough niches to keep smaller German companies alive." In this regard, Munich's Count Lambsdorff knows exactly what the problem is: "Our main concern is cheap products from the Far East; medium-sized German companies have very little to counter them with."

In view of the impending pricing pressure in the expected cut-throat competition, managers at the Bundespost are already swinging a club: "In order for Telekom to develop market viability and in order to ameliorate its disadvantages with respect to private suppliers, we must buy our systems wherever they are most affordable, even in the Far East," emphasized Peter Bross, who, as one of the "New Guard" of marketing strategists, was instrumental in determining the regulatory policies of postal reform. Developments in the facsimile business show that these are not just empty words. Today, Japan already meets all of Telekom's system requirements. And in other business sectors there is already a developing Far East trend.

According to a study by Prognos AG in Basel, optimistic estimates are that the terminal equipment market will triple within the next ten years to 4.5 billion marks. In the view of Prognos project manager Holger Delpho, the primary driving force behind this growth, in addition to fax machines, will be mobile phones which are expected to drop in price because Far East suppliers have already geared up their production facilities. According to Delpho, investing in ISDN as an alternative ought to be profitable in the long term in the Telekom business—digital PBXs and intelligent telephone terminals, plus multifunctional workstations based on the PC. The deregulated state-owned enterprise Telekom now wants to become fully involved in all these markets. Karl-Heinz Rother, chairman of the board of Deutsche Telephonwerke und Kabelindustrie AG (DeTeWe) in Berlin, is already predicting a sharp drop in prices. But the head of DeTeWe is nevertheless hopeful: "We really expect that the terminal equipment market will open up following deregulation and that additional volume with many Telekom innovations will arise."

Hefty growth spurts are also to be expected from the so-called VANS (value-added network services). This still relatively small service sector, with sales of 700

million marks, will literally explode in the 1990s and, according to estimates by Prognos, will have achieved a sales volume of up to 20 billion marks by the year 2000. The Bundespost has also laid the competitive groundwork in this area with a broad assortment of new text and data services from the Telebox to Temex (HIGHT-ECH, October 1989). The newest baby in the not exactly well-defined VANS market is the international radio paging service "Euromessage," which will be offered at the beginning of 1990 and which will link the paging services of Great Britain, France and Italy, which are currently designed for use within their national boundaries, with Germany's "Cityruf" paging service.

Gonzalo Lopez-Diaz, Telekom expert and a manager at the consulting firm of Roland Berger & Partner GmbH, sees a completely new area of competition arising in conjunction with the value added network services, with suppliers from all sectors of industry. Banks and insurance companies, traditional service providers, publishing houses and manufacturers in the computer industry—especially computer-giant IBM—but also the traditional Bundespost suppliers Siemens, Philips and SEL-Alcatel, have new VANS concepts on the back burner and are waiting for the go-ahead. "Telekom has great opportunities for proving itself in this environment because with its fee structure it can control the competition and hold it in check," says this Munich consultant.

In the meantime, a number of private VANS providers had their first experiences with in-fighting at the Bundespost. The Siemens offshoot Vascom GmbH, which was founded in 1988 and is expected to have sales of 50 million marks this year with its new value added services such as Vasedi and Vasmal, has already experienced the faster pace of Telekom's marketing department. In competition with the Datex-P product of the state-owned enterprise, Munich's Vascom is cheaper by approximately half, but when it comes down to driving this private competitor out of the market, the Bundespost brutally undercuts Vascom prices by nearly a third. At least that is what numerous VANS customers claim. Due to the precarious situation of its parent company Siemens, which is at the same time a competitor and the Bundespost's largest supplier, Vascom CEO Goetz Huttel gnashes his teeth and has no comment. Nevertheless, he concedes: "If Telekom is to prevail over the competition in the future, it must provide more customer-oriented solutions—otherwise it will not get out of the starting blocks."

Bundespost managers are apparently well prepared for the future round of pricing poker. "We will have the same pricing structure as Siemens or IBM, by all means, if there is a basis for making a deal," admitted Telekom idea man Bross. How something like this comes about is impressively demonstrated by the Bundespost with their marketing of digital PBXs. Dieter Steuer, a telecommunications consultant in Hanover, who also provides support for his clientele regarding the purchasing of equipment, currently sees "extremely aggressive competition" in Telekom's marketing, particularly in terms of

small systems. According to Steuer, Bundespost prices—which vary according to region—frequently lie far below even the dumping prices of Nixdorf, although the same systems are involved. Competitors are already talking angrily about blatant crippling of the competition.

Heinz Thielmann, the head of telecommunications at Philips Kommunikations Industrie AG (PKI) in Nuremberg, however, sees the current price war only as a transitional process: "Even Telekom cannot cross-subsidize over the long term—at some time or other they will have to sharpen their pencils." But balance is also required of the managers of Bonn's state-owned enterprise due to their difficult hybrid position as administrators of the monopoly and as competitors. Telekom's list of priorities thus encompasses both the legal requirement to be the best possible provider of modern telecommunications services to its customers, as well as the demand for profit-oriented entrepreneurial action—akin to walking on eggshells and with the potential for a great deal of conflict. In order not to leave behind an investment debacle in the hard-fought growth markets, the Bundespost must come out just as aggressively as its opponents in industry. But since Telekom is at the same time the largest customer of its competitors, in the final analysis, open competition becomes a farce.

Bonn's managers try to open up the way for new business sectors, while at the same time trying to expose the least possible surface area to attack. In so doing they do not even shy away from entering gray areas of the basic definition of the term telecommunications. Within the Bundespost, preparations are thus currently underway for entry into the point-of-sale market which up to now has progressed rather haphazardly. This is where Telekom intends to provide and manage future networks which will link cash-register terminals in warehouses and retail outlets with banks and S&Ls. Serious consideration is also being given to the establishment of traffic control systems during the 1990s—an area which originally only the automobile industry had in mind. Kurt Trampedach, the German manager at Northern Telecom in Frankfurt, is overjoyed at the change in attitude on the part of the one-time "yellow giant": "As a hardware supplier, we have well-founded hopes of profiting in every way from the expansion of Telekom's business."

But Trampedach could also be mistaken. Management at the Bundespost today is purchasing supplies on all sales fronts in order to keep the systems business largely under its own control. Thus far there has been no lack of ideas. Telekom has in the meantime worked out new conditions for its offerings in terms of rental, leasing and sales which are expected to flow into a mail-order concept. Beginning in the middle of next year, the customer will be able to order anything from telephones to fax machines to small PBXs from his own sofa through a catalog, which will be sent out with the phone book via the infrastructure of the Bundespost's parcel post service. Videotex users will simply use their terminals for this purpose. In both cases, payment is via automatic monthly account debiting for telephone service.

In terms of direct marketing in specific business sectors, as well as regarding further separation into private, large-scale and business customers, the Bundespost is still way behind. The same is true regarding the development of an effective marketing organization. Those to answer to Schwarz-Schilling are still far too preoccupied with internal structural changes. "We are world-wide masters in the areas of engineering-related thought processes and implementation of technical ideas, but in terms of marketing and sales we have a lot to learn," admits a self-critical Gerd Tenzer, section head at the postal ministry who was intimately involved in the development of the new Telekom structures.

The postal minister also knows this from the bitter lessons of marketing Videotex and ISDN. With the help of Duesseldorf's McKinsey consulting firm, he had his men briefed on the competitive market but is still waiting in vain for suitable interested parties from the marketing and sales departments in industry. Although this state-owned enterprise can pay salary bonuses initially for special achievements, the earning potential is still far below that of the open market. Only the executive board and the second level of management receive private contracts: "And in those cases, too, the salaries are not out of sight," admitted postal manager Tenzer.

Telekom director Helmut Ricke, who is said to earn 600,000 marks annually, in any case could earn at least twice as much in industry. The same is true for the remaining members of the board who are at around the 400,000 mark level. Critics doubt that at those salaries the desired level of competence will be drawn into the upper echelons of Telekom. Ricke's concept is entirely dependent upon a market-oriented team, however, and within the Bundespost he would be served only by a circle of younger management types. But in so doing he would turn the older civil servants entrenched in the old-boy network against him. A member of the Telekom board of directors advises: "Ricke now has to put on the gloves and first take up the fight within his own ranks prior to any market offensive."

The New Telecom Management Structure

According to preliminary planning as of October 1, the chairman of the board will be Helmut Ricke who will be responsible for centralized tasks, strategy and research. Under him will be the departments for preliminary testing and for centralized control, as well as the offices of the personnel adviser and his committee and the employee's representative for the handicapped and his staff. Other departments under Ricke are as follows: 1. Networks (land based and broadcast), satellites, maritime cable; 2. Mass communications (cable and broadcast), public mobile radio; 3. Marketing, information processing, sales, technical customer service, terminal equipment, legal aspects of telecommunications; 4. Personnel, organization, information processing, matters relating to wage scales and benefits, remuneration, vocational training, management school; 5. Finances, purchasing, real estate, buildings, business economics; 6.

Voice and non-voice services (competitive), non-voice engineering, international matters; 7. Telephone services, call processing, voice services (monopoly).

Man with Moderate Tone

After eleven years of employment with Loewe-Opta, a television manufacturer in Kronach, Helmut Ricke, 52, is taking over as head of the Telekom branch of the Bundespost.

This son of an electronics dealer in Oberhausen began his career with an internship at Philips. In his early thirties, he was already a managing partner in a large industrial marketing and sales organization before becoming the marketing and sales manager at Nordmende in 1975.

Three years later he became a member of the management board at Loewe-Opta and revitalized the small entertainment electronics company in the face of strong competition from Asia. In a classic management buyout of which Ricke bore the heaviest load, this product of the Ruhr district proved his willingness to take risks and showed considerable entrepreneurial ability.

With an ability to spot trends, Ricke, though no technology freak, was able to breathe new life into the common, middle-class borderline areas with modern designs, and skillfully carved out a niche in the consumer market. This marketing expert's successful entry into the videotex business was a logical result of the conversion from individual to mass production combined with the search for new product areas.

Hoping for a steadfast policy regarding acquisitions, the business community also applauds Ricke's neutrality compared to the other individuals involved. Whether Ricke, as a technical advisor and confidant of the postal minister, will be playing a home game in the battle for future responsibilities remains to be seen: As things stand now, Helmut Ricke is sitting on the narrow managers' bench, while Schwarz-Schilling holds the whistle.

FRANCE

Ariane Launches Spot-2 Satellite

90WT0035A Paris LE MONDE in French
23 Jan 90 p 14

[Article by Jean-Francois Augereau: "Spot-2: New Look at the Earth"]

[Text] In its 35th mission, the European Ariane rocket launched France's second earth observation satellite into orbit. The satellite, called Spot, is capable of distinguishing features on the ground as small as 10 to 20 meters. It was launched the night of 21-22 January at 0235 hours (French time), after a 24-hour delay caused by poor meteorological conditions. Taking off from the Kourou center in Guiana, the Ariane also put six scientific microsattellites into orbit.

Though satellite launchings have become commonplace, the latest Ariane mission was unique in more than one respect. First of all, it marked the debut of a new version of the European launch vehicle, the Ariane-40, the least powerful of the six models in the Ariane-4 series.

For obvious economic reasons, Arianespace has been obliged—like automobile and airplane builders—to develop different models of the same launch vehicle to accommodate client needs and keep satellite launching costs as low as possible.

The Ariane-40 used for this 35th mission is limited to a payload of 1,998 kg, while the biggest member of the family, the Ariane-44, can easily loft a 4,200-kg payload into geostationary orbit (36,000 km altitude). Obviously the 1,870-kg Spot-2, which was put into polar orbit at an altitude just over 800 km, accounted for the lion's share of the payload. But the second novel feature of this flight concerned the other 128 kilograms of cargo. In addition to Spot, launch officials put into orbit for the first time a string of six small satellites, providing a test of the Ariane auxiliary payload system (ASAP) used to launch them. The system will put Arianespace in position to take advantage of the apparently growing market for microsatellites.

The first two "midgets" in this large family are of British origin. Weighing about 46 kg each, these two satellites (which bear the charming names UoSat-D and UoSat-E) are designed to test experimental telecommunications systems and record data about cosmic particles and radiation in their orbital paths. The others, which weigh 12 kg each, are American technological satellites for use in educational programs and telecommunications.

Pragmatism Reigns

The third component of this mission was the launching of France's second earth observation satellite, the Spot. This program—for which the Europeans, except for Sweden and Belgium, once had little enthusiasm—passed its "final exam" with distinction. The test was crucial since Spot competes against the United States, which had a formidable lead in earth observation, due to technologies developed initially for spy satellites and later adapted to the Landsat series for civilian uses.

Today it seems clear France made the right technological choices (10-meter ground detail resolution and stereoscopic optics for relief mapping) in the program, even though sales of Spot imagery are only picking up gradually and will not come close to paying for the project anytime soon. One example: Spot Image, the company responsible for Spot imagery sales promotion, had gross earnings of only Fr 130 million in 1989 (up 25 percent), while Matra, as general contractor for the Spot-2 satellite, grossed Fr 500 million.

Gone are the days when the Americans could make the flamboyant claim that investment in the Landsat program would quickly pay for itself tenfold. Today pragmatism reigns supreme, in France as well as on the other side of the Atlantic.

The private American firm Eosat, which handles sales and promotion of Landsat imagery, has said that unless the federal government provides more financial support for future civilian observation satellites, the United States will lose its lead in the field.

That lead was shortened considerably with the advent of Spot-1, and even more yesterday with the launching of Spot-2. Also, the French and their partners, by guaranteeing continuity for their own image distribution service, are benefiting from American equivocations on the subject—as happened before with the Ariane itself.

Incidentally, Spot-1 will also remain in operation, even though Spot-2 has set out on its career in the skies. Still "alive and kicking" despite its age (it was launched in February 1986), Spot-1 is nevertheless showing "certain clinical signs of senility." It is not completely reliable now, since only one of its two image recorders is still functioning—the other one malfunctioned shortly after launch—and from time to time it loses some data.

With Spot-2, which is not much different from its illustrious predecessor, service should again be faultless, though there is some concern about the notorious fragility of those recorders, one of which recently had to be replaced prior to the launch, resulting in several days' delay in the countdown. (Problems with Ariane's inertial guidance system also contributed to the delay.)

With its two high-resolution cameras, however, Spot-2 should be able to stand watch in space now and "thumb its nose" at its Landsat rivals. Spot, like Landsat, records both visible and infrared images, though it has a more limited spectrographic range. On the other hand, it gets better resolution than its American competitor, distinguishing details as small as 10-20 meters (compared to a 30-meter resolution for Landsat) and is capable of capturing the same view from two different angles (stereoscopic imagery).

All these advantages should help Spot Image consolidate its position in the market, since 85 percent of its imagery sales are to foreign clients. It is hoped Spot-2 will perform as well as its predecessor, which by the end of December had transmitted close to 1.5 million photographic images for the use of cartographers, agronomists, geologists and land developers. Spot-4, developed in conjunction with the Helios military surveillance program, should open up even more exciting prospects.

Matra Gets Satellite Contract With Spain

90WT0035B Paris *LES ECHOS* in French
24 Jan 90 p 10

[Article by Jose Alves: "Matra Signs Hispasat Contract"]

[Text] The contract for the construction of the two Hispasat satellites the Spanish Government ordered from Matra Space was signed in Madrid yesterday at a ceremony attended by the minister of transport and

communications, Jose Barrionuevo, who said the satellites will be launched in July and November of 1992.

It is a 25.557 billion peseta contract (Fr 1,345 million), 6 billion pesetas higher than initial projections. But "Matra will provide more services, and the satellites will weigh more," Barrionuevo said.

The Spanish space industry will produce more than 30 percent of the system, a fact which Matra President Jean-Luc Lagardere, in renewing the company's "Latin profession of faith" in Madrid yesterday, described as most gratifying.

"Matra must not be viewed as a French group, but rather as a Latin group or a Spanish group in Spain," said Lagardere, recalling that his consortium was the first to complete a "European" merger by going in with GEC to establish Matra Marconi Space NV.

Lagardere admits, however, that with the Hispasat project (the two Spanish satellites will be the most advanced and powerful of their kind in the 1990's, offering 16 television channels as well as telecommunications) Matra Space is staking out an even more impressive claim to leadership in the European space industry.

It is estimated that in 10 years Hispasat user charges will bring in more than Fr 8 billion. Barrionuevo added that negotiations are nearly completed with Ariane on a launch agreement for the satellites, and the contract will cost about 120 million ECU's [European Currency Units].

Large Investments Planned for Mobile Phones

90WT0049A Paris *LIBERATION* in French
6 Feb 90 p 10

[Article by Paul Loubiere: "Handset: 1990, Year When French Telephone Line Is Cut"]

[Excerpts] The mobile telephone continues to be the weak point of France Telecom, which plans to invest Fr 2 billion in its development this year. Priority will be assigned the cellular phone, for which the demand is greatest. The objective: To be able to communicate by radio throughout all of Europe by 1991.

"To phone from anywhere," is the slogan of France Telecom, which has launched several mobile phone projects. While cellular phones are beginning to become widespread in France, they are still much too expensive (up to FR 30,000, not counting subscription to the network) and the waiting list is long: Over 10,000 persons are waiting to be assigned a frequency, especially in Ile-de-France.

But airplane passengers are already dreaming of the next mobile phone conquest, the possibility of making in-flight calls. Pedestrians, in turn, may expect to be able to make calls soon without entering a phone booth. For the mobile phone, 1990 will be a turning-point year.

While France Telecom ranks at the top in overall communication techniques, the mobile phone continues to be its weak point. Far behind in comparison with the North European countries, we are at an almost prehistoric stage in comparison with the United States and Japan. [passage omitted]

In 1990 France Telecom will be investing Fr 2 billion in mobile phones. Three-quarters of this sum will be devoted to the radio telephone alone. It is in fact in this sector, launched in November 1985, that public demand is the greatest. Unfortunately, it is also in this sector that the wait is the longest. The reason: The frequencies are overloaded. As a result: One has to put one's name on a waiting list and... patiently wait for many months before one can expect to join the fortunate ones who have been selected, especially in densely populated regions like Ile-de-France.

The solution lies in the development of a high-density network in Ile-de-France that should make it possible to double the number of subscribers. As of March 1990, a type of subscription, "Northeast France," covering the main highway arteries of Paris-Lille, Paris-Strasbourg, Paris-Le Havre, and Paris-Orleans, will be offered drivers.

True freedom will be achieved when a driver can travel throughout all of Europe and carry on conversations from London, Turin, Frankfurt, or Amsterdam. To accomplish this, first, all European countries had to reach agreement on a common standard. The CEPT (European Post and Telecommunications Conference) has assigned two transmission bands (890/915 MHz and 930/960 MHz). Thanks to this agreement, the Special Mobile Group (GSM) has laid the foundation for the future European system. As of 1991, the countries of Europe are to begin to implement a numerical system designed in accordance with the same standards. At the same time, a new radio communications network is to be established in France, operating on a frequency compatible with that of the European network to avoid any interference.

In England the PCN (Personal Communication Network) allows pedestrians to make phone calls if they are within 200 meters of a relay terminal. It is a new concept: a wireless telephone, a radio phone for slow-moving people. It constitutes a phase [in the conversion] to wireless communication. Pointel, the French equivalent, is to be launched, in theory, in 1991. A pedestrian will be able to make calls from the street with a portable phone weighing barely 200 grams as long as he is near a relay terminal.

At first, the military would not hear of Pointel. Quite simply because they were afraid that it would create interference. Finally, they accepted the principle of a real trial, which took place in Valence last fall. Now that the tests have apparently been completed, the system can be developed as of 1992.

NETHERLANDS

First Crossborder ISDN Net Being Tested

90AN0084 Rijswijk PT/AKTUEEL in Dutch
18 Oct 89 p 1

[Article by Marjolein Roggen: "PTT Starts Up ISDN Pilot for Rotterdam Business Community"]

[Text] Last week the Dutch PTT gave the go-ahead for a 3-year test of the integrated services digital network (ISDN) in Rotterdam. Approximately 400 companies are eligible for a connection to the digital network that integrates, improves, and accelerates communication with the West German hinterland. For the first time in international history, ISDN has crossed national borders.

The PTT has selected Rotterdam for its ISDN pilot because of the intensive relations between the port of Rotterdam and the German hinterland. Pending the international standards to be implemented in 1992, the PTT has "borrowed" a West German exchange that is directly linked to the Duesseldorf exchange. From there, the latter is through-connected to seven other West German cities which were integrated in West Germany's ISDN network early this year.

During 1992, the PTT will begin connecting the whole of the Netherlands to the ISDN network, starting with the four major cities. By the end of 1995, the whole country should be accessible through ISDN.

Application

So far, the business community's interest in a possible connection to the ISDN infrastructure has not been great. About 20 to 30 companies have expressed their wish to be connected to the ISDN exchange. Most of them are transport companies or financial institutions. This lack of interest is partly due to the late availability of peripheral equipment from West Germany, and partly to the insufficient number of services offered. The ISDN pilot's main objective is therefore to develop applications and test them in practice, says P.P. 't Hoen, PTT Telecom's managing director. Priority will be given to applications involving the transmission of photographs and drawings in combination with speech and text.

During the test, the user will be linked to the ISDN network through an (intelligent) Network Termination accepting up to eight special ISDN peripherals. This equipment will be rented by the PTT. During the test, connection charges and fees for communication traffic will be the same as current telephone fees; and monthly subscription rates will be four times higher.