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JPRS 81483

9 August 1982

Worldwide Report

TELECOMMUNICATIONS POLICY,
RESEARCH AND DEVELOPMENT

No. 231

19980828 119

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WORLDWIDE REPORT
TELECOMMUNICATIONS POLICY, RESEARCH AND DEVELOPMENT

No. 231

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JAPAN TO SUPPLY NEW ZEALAND FIBER OPTIC TELEPHONE CABLE

Wellington THE EVENING POST in English 16 Jun 82 p 33

[Text]

Work on installing New Zealand's first noise-free fibre optic telephone cable is expected to begin in Wellington in September.

The cable — the latest in communications technology recently arrived from Japan and will connect the Wellington central telephone exchange to Lower Hutt.

Wellington is linked to Lower Hutt by copper cables which are in ducts alongside the Hutt Road.

The Post Office's senior divisional engineer field section, Mr Lew Brennan, said problems had been experienced in the past from electricity from the nearby railway line.

This caused interference in the telephone lines served by the cable. The outer lead sheath of the cable was also being eroded and damage to the copper cable inside was caused by sea water.

The new fibre optic cable consists of fine glass fibres about the thickness of a human hair. Impulses will be sent down the fibres by laser.

The new cable cost about \$800,000, a lot

less than the cost of installing a new copper cable.

Because the new cable has no metal parts it is not susceptible to the effects of electricity so it is expected background noise on the telephone lines will be reduced.

Mr Brennan said the initial stage of putting in the new cable would involve about 15 men. The cable is in 16 lengths. It is expected to take a day to put each length into the duct.

Joining each length of cable is expected to take about four weeks. Then the cable needs to be made operational. Because some of the equipment needed is not expected in the country for some time yet, this may delay the process.

It is hoped to have the new cable working by next February, Mr Brennan said.

The small size of the new cable will allow more cables to be fitted into the roadside ducts in the future.

Mr Brennan said another advantage of the new cable was that it would be run on a more powerful wavelength which would not need an amplifier to boost the signal halfway down the 14.5 kilometre line.

CSO: 5500/9031

CUT-PRICE OFFER OF U.S. COMPUTERS HURTS LOCAL PRODUCT

Wellington THE EVENING POST in English 15 Jun 82 p 4

[Article by Richard Norman]

[Text]

The offer of cut-price computers to schools by Apple Computer Inc of the United States appears to be an effort to undermine the market of New Zealand's only locally-developed micro computer, the Poly.

The offer of quarter-price Apple 11 computers to all secondary schools comes at a time when the Poly, backed by the Development Finance Corporation, is struggling to make sales to schools because the Government has not yet established a national policy for computer education.

Until this week the \$3890 price tag for each Poly compared favourably with \$4812 for the Apple.

For the next six weeks, however, the Apple 11 is being offered to 420 New Zealand secondary schools

and tertiary education institutes at \$1200.

Price was not the only criterion for judging the local product, the chairman of Polycorp, Mr Murray Smith, said today.

The Poly was specifically designed for New Zealand classrooms and school subjects. It had programmes in subjects previously outside the computer field, he said.

To compare it with the Apple computer was like "comparing apples with pears." The two products were quite different in their applications.

Building up

The Poly enabled schools to start with one machine and build up to a full classroom set. It was designed to allow teachers to take a whole class, instead of individually.

School authorities in Singapore had said the Poly was the "Rolls Royce" of micro

computers available for schools. There was an opportunity for an order there and in other countries.

"But our marketing effort overseas is severely handicapped because we can't quote the endorsement of the New Zealand education system."

The Wellington Polytechnic, which developed the Poly initially, and 10 schools have bought about 80 Polys between them since late last year. More Polys are being assembled, using mainly local components, in a factory in Newtown, Wellington.

Sales of about 200 units a year would be needed to make Polycorp a fully going concern, Mr Smith said.

Polycorp is 75 percent owned by the DFC, and Mr Smith is the DFC's assistant general manager. The remainder of the shareholding is taken by Progeni Ltd, a Lower Hutt software company.

GROUP BOOSTS DEVELOPMENT OF LOCAL COMPUTER DATABASES

Christchurch THE PRESS in English 15 Jun 82 p 25

[Excerpts]

New Zealanders are becoming aware of the usefulness of access to the plethora of information in local and overseas computer databases.

Now a national effort is being made to discuss the need and use of databases in New Zealand.

Previously, interest in New Zealand has centred on gaining access to the large overseas databases which store immense amounts of information on almost any field of human endeavour.

Through the OASIS link run by the New Zealand Post Office any organisation or individual in the country can dial computers in the United States, Canada, Europe, and Australia managed by database suppliers who offer an information service, usually at modest cost.

At present there are no publically-accessible, commercial databases in New Zealand. In Australia commercial interests have built a database service called Ausinet which offers in-

formation on 17 different fields, with a particular emphasis on data related to Australia.

A survey by the D.S.I.R. recently documented over 50 databases in New Zealand, none of which are yet available to the casual public user. However, the Department of Statistics has recently announced the development of a statistical database which will be made available to all sectors of the community (who are able to afford the expensive terminals required to access the department's computer).

Earlier this year a group met informally in Wellington to discuss the steps necessary to encourage the development of local databases in New Zealand. Although it is now being run under the auspices of the National Library, the group includes representatives from other Government departments and from commercial organisations.

The group, calling itself the Local Data Base Forum, has set itself the job of

exploring nationally five major aspects of local database creation:

- Who wants to create databases and who has created them already?
- What computer systems are available to support these specialised needs?
- What database software is available?
- What are the implications for networking?
- Should specialised systems interface with the New Zealand Bibliographic Network, and if so, how?

The New Zealand Bibliographic Network is a major system planned by the National Library to provide a co-operative cataloguing service for libraries. It will use a large Facom mainframe in the Facom New Zealand Ltd. service bureau.

From discussions and meetings in the next six months the group wants to be in a position to plan and propose nationally available databases and to initiate the creation of local databases, where a need exists.

AUTOMATIC TELEPHONE SERVICE EXPANSION REPORTED

Hanoi KHOA HOC VA DOI SONG in Vietnamese 1 Jun 82 p 2

[Article by Hoai Nam, Post and Telecommunications General Department: "Polex 6 Brings Automatic Telephone From Provinces to Districts"]

[Text] Since it was not tropicalized, POLEX 6, a 6-line wave carrier made by the German Democratic Republic, often transmits spurious ringing signals when used on our communications network, and has a short operating range (about 40 km). Optimal use of POLEX 6 should require proper wires, matching electric resistance, and a number of other technological norms. It is very difficult to meet these requirements, given the present situation of our communications lines. For that reason, fairly large quantities of the POLEX 6 were in storage at a time when the communications and liaison network was short of equipment. Nguyen Dinh He, technical cadre at the Post and Telecommunications Equipment Repairs Enterprise, following research has successfully modified POLEX 6 for use as a carrier to transmit automatic telephone signals from provinces to districts, on a range exceeding 40 km. These alterations include:

- adjust its interior circuits to automatic telephone parameters,
- tropicalize its major parts, and
- add a guiding device to facilitate readjustment.

After being modified, POLEX 6 was assembled and installed for testing on the Thanh Hoa-Yen Dinh communications line. For nearly a year now, its performance has been stable and good. As a result, the Thanh Hoa Post and Telecommunications automatic telephone network has expanded by 40 km, without having to modify and upgrade the lines. This success has opened up prospects for using POLEX 6 to extend automatic telephone beyond cities or municipalities, and to automate district telephone without having to install additional automatic telephone exchanges. Encouraged by that initial success, technicians of both sexes now consider using POLEX 6 (or its equivalents) to bring automatic telephone signals from Hanoi to a number of provinces in the northern delta and the northern part of former Zone 4.

9213
CSO: 5500/5896

BRAZIL

BRIEFS

'PICOSECOND' OBTAINED IN LABORATORY--Campinas--Researchers of the University of Campinas [UNICAMP] have managed to obtain in the laboratory for the first time in Brazil the "picosecond" [pico segundo], a phenomenon which consists in a pulse of the laser light which lasts one trillionth of a second. The "picosecond" obtained so far only in the United States and Europe, will be used beginning next year by TELEBRAS [Brazilian Telecommunications, Inc] to study fiber optics, especially fibers with a high capacity to transmit information and which has not been possible to find so far with conventional methods. This research was begun 6 months ago by UNICAMP professors Marcos Scarparo and Carlos Henrique Brito, and by TELBRAS Prof Ramakan Scivastava. TELEBRAS and FAPESP [Foundation for the Protection of the Sao Paulo State Research--Fundacao de Amparo a Pesquisa do Estado de Sao Paulo] are financing the project. According to them, the "picosecond" will be used in the construction of electrical circuits, of semi-conductor crystals, in addition to other uses in biology and chemistry. The result of this work will be officially reported to the scientific community at the 34th annual meeting of the SBPC [Brazilian Society for the Progress of Science--Sociedade Brasileira Para o Progreso da Ciencia] to be held in Campinas next month. [Excerpt] [PY222351 Sao Paulo O ESTADO DE SAO PAULO in Portuguese 30 Jun 82 p 11]

CSO: 5500/2306

CUBA

BRIEFS

TESTING STATION OPENS--A radio and television transmissions technical testing station, the third in the country, has been opened at Loma del Yarey Municipality in Granma Province. Pedor Guelmes, member of the central committee and minister of communications, attended the opening of the station which was dedicated in commemoration of the 26th July. The station will measure the parameters of radio and television transmissions and will serve the five easternmost provinces. [Text] [FL231135 Havana Domestic Service in Spanish 1000 GMT 23 Jul 82]

CSO: 5500/2308

TELECOMMUNICATIONS PROJECTS NOTED

Algiers EL MOUDJAHID in French 1 Jun 82 p 12

[Article: "A Microwave Link at Tolga"7]

[Text] Biskra (APS)--Mr Becher Rouis, member of the Central Committee and minister of posts and telecommunications, made a working and inspection visit in the wilaya of Biskra yesterday.

Accompanied by his close collaborators and authorities of the wilaya, the minister inaugurated and visited several new projects coming under his ministerial department in the dairas of El Oued, Tolga and Biskra.

On his arrival, Becher Rouis visited the postal collection center of Guemmar, built by the communal enterprise of El Oued. The collection center will be operational in October. The minister visited the 600-line central telephone exchange, installed in temporary premises.

At El Oued, the minister visited the ground station for diffusion of television broadcasts. Mr Rouis then went to the construction site for the first-class collection center of the city of a thousand domes; the work on it, begun in 1981, will be completed in June 1983. The collection center, being built by the communal enterprise, required a financial package of DA 3.9 million.

The minister inaugurated the 4th-class postal collection centers in the localities of Zegoum-Hasskani Abdelkrim, Hadj Khelifa and Magran in the commune of Debila. Built in accordance with a type plan prepared by the design office of the Ministry of Posts & Telecommunications, these agencies suffer mainly from the size of the switchboards installed, which cannot handle the constantly growing subscriber demand.

On their return to El Oued, the minister and the delegation accompanying him were the guests of the daira for lunch.

In the afternoon, the minister laid the cornerstone of a 4th-class collection center at Ourlale in the daira of Tolga. A financial package of DA 1,015,000 has been provided for this center, which will be built, in a period of 18 months, by the Tolga intercommunal public-works association.

At Tolga, Mr Rouis inaugurated a microwave station. This station, which cost DA 5.1 million, makes it possible to connect all the dairas of the wilaya.

The minister, before chairing, in the wilaya chief-town, a working session that brought the wilaya's authorities together, visited the 5,000-line central telephone exchange.

The wilaya of Biskra, created in 1974 in the last administrative redistricting and extending over an area of 110,000 km², with a population--according to the 1977 census--of 544,798, divided administratively into 6 dairas comprising 22 communes, suffers from the distances that separate certain of its communes.

The Posts & Telecommunications administration in the wilaya rests on an infrastructure comprising 74 postal establishments: 7 at Biskra, 14 at El Meghaier, 24 at El Oued, 4 at Ouled Djellal, 13 at Sidi Okba and 12 at Tolga.

The post-office infrastructure (one per 7,362 inhabitants) will be improved by the numerous projects written into the 5-year development plan.

As regards telecommunications, the lag is considerable if the 9,062 subscribers who have service are compared with the 9,856 applications for service.

As regards automatic equipment, the present infrastructure is composed of a central telephone exchange at Biskra with 5,000 lines, 81-percent saturated, and one at El Oued with 2,740 lines. El Maghaier, Tolga, Ouled Djellal, Sidi Okba and Djemaa have a capacity of 500 lines each.

The wilaya of Biskra also has 1,600 manual lines in larger communes. The scope of the projects granted to the wilaya under the 5-Year Development Plan will enable it to catch up.

Thus it is planned to rebuild 11 post offices and build a new collection center at Biskra.

As regards telecommunications, it is planned to build seven new central telephone exchanges with capacity of 8,500 lines and to expand the exchanges of El Oued, whose capacity will be raised to 3,000 lines, and of Djemaa, Ouled Djellal and Sidi Okba, which will be raised to 2,000 lines each, which, between now and the end of the 5-Year Development Plan, will increase the wilaya's capacity to nearly 30,000 lines. Furthermore, fulfillment of the 5-Year Development Plan will make it possible to end the isolation of 22 distant localities of the wilaya.

We note that Mr Becher Rouis will pay a similar visit to the wilaya of Batna on Tuesday.

11267
CSO: 5500/5010

PREFORM PRODUCTION FOR FIBEROPTICS DEVELOPED

Jerusalem THE ISRAEL ECONOMIST in English May 82 p 17

[Article by L. Latcher]

[Text]

Fibronics, Israel's first and only vertically integrated company dedicated to fiberoptic communications, will begin manufacture of its own preforms for fiber production.

Fibronics is investing in the purchase of capital equipment for preform production utilizing the most advanced industrial methods available today. The staff at Fibronics has obtained preform manufacturing experience both abroad and through internal development projects over the past three years. Expected production capacity will exceed 2,000 km per year of graded, step index, and single mode fiber for telecommunications and data transmission. Other specialty applications are projected, to satisfy the growing demands of the Israeli communications market and the substantial export requests for quality optical fiber and cable.

Advances in optical materials technology and fiber fabrication procedures have altered man's communication patterns.

Today, millions of bits of information can be transmitted at the speed of light utilizing fiberoptics. The optical fiber, or optical waveguide, is a hair-thin strand which transmits information in the form of light waves. The fiber itself, both core and cladding, is typically made of glass (silica).

To make an optical fiber, one starts with a thin-walled silica glass tube, about 1/4" in diameter. Gases are then added which uniformly deposit a thin film of glass on the tube. Then the tube is heated to about 2,000° C so that it collapses into a glass rod called a preform. The preform is then pulled like taffy into fiber so fine that a great many high information band width fibers can be placed in a single pencil-thin cable.

Fibronics is also presently manufacturing fiberoptic cable, specialized optical components and the accompanying electronics for data, voice and video transmission systems. ■

L. Latcher

CSO: 5500/4731

NEW TELECOMMUNICATIONS CENTER TO BE BUILT

Muscat TIMES OF OMAN in English 10 Jun 82 p 1

[Article by Fermin D'Souza]

[Text]

A three storey telecommunications centre is to be built near the General Telecommunications Organisation building in Greater Muttrah.

Approximately 4,000 sq. metres in area, the building will be the nerve-centre of the extensive telecommunications network spreading across the Sultanate.

Exchange buildings will also be built in Muscat, Muttrah, Wattayeh, Al Khuwair, Qurm, and Azaiba. Four microwave link systems are to be set up, the longest being the Nizwa-Salalah system to be routed via Nizwa, Adam, Haima, Thumrait and Salalah.

The three other microwave link systems are the Capital Area system, the Nizwa-Ibri link and the Al Hajar-Qurayat link.

The RO 300,000 contract for the design and supervision of the first phase of the civil works was awarded late last month to the Omani architects and civil engineers, Ayoub Oghanna Associates.

Working to a very tight time schedule of two weeks, the architects submitted the preliminary submitted the approval, giving several alternatives two days before the deadline.

"You will appreciate from the extensive a mount of work produced at the shortest time

recorded in any civil consultancy service contract in Oman, that we have achieved a mini-miracle in the preparation of not only the sketch design of each building type but many alternative proposals along with technical details and a block model," Mr Oghanna told the Times of Oman.

"The spirit of the designs and the style of the buildings have been inspired by the glorious past and the national heritage of this country, he added "Our approach and priority have been to produce designs to match the local character."

The microwave repeater stations to be built on mountain tops, will take the form of watch-towers. This has been done to ensure they do not intrude on the environment and overall character of the mountains.

The Nizwa-Salalah microwave link system will have 25 to 28 transmission towers located within half a kilometre from the highway, and 26 microwave repeaters. The Nizwa-Ibri link will have three repeaters and four transmission towers within a kilometre of the highway.

The Al Hajar-Qurayat link will have three repeaters and five towers, again within a kilometre of the highway.

The Capital Area system will have seven to twelve transmission

towers to be set up at Greater Muttrah, Muscat, Muttrah, Wattayeh, Azaiba summit, Qurm, Al Khuwair, Seeb, Al Khodh, Mabella, and Rusail. The microwave link involves four passive reflectors.

- Our picture shows an artist's impression of the proposed TCC building to be constructed next to the GTO building at Greater Muttrah.

CSO: 5500/4728

MOZAMBIQUE

ABSENCE OF PARTS, TECHNICIANS HAMSTRING COMMUNICATIONS

Maputo NOTICIAS in Portuguese 30 Jun 82 p 3

[Article by Arnaldo Simao]

[Text] According to what our newspaper was able to learn in Inhambane Province, in spite of having used old parts since 1978 the communications system in that province lacks manual switching equipment and technicians.

Jose Manuel Canelas Perreira, automatic switching expert in that province, who granted us an interview, stressed that because of lack of this equipment the network of the Maxixe district is in danger of coming to a standstill.

"Two BC type switchboards, covering 147 subscribers each, were recovered. One was among the old equipment that was there and the other in Maputo. This happened in December last year. In the meantime these switchboards have not yet been installed for some reason and are being held in Maputo," he said.

According to our source, the lack of this equipment, all of it imported, is probably due to bureaucratic problems, since the orders abroad must be placed 3 years in advance.

Avelino Afua, the technician in charge of the manual exchanges in the southern region in Maputo, said that it is true there is a nationwide lack of accessories, which makes telecommunications difficult.

"We have a series of manual switchboards in the country that are disintegrating. It is quite difficult to use them because of lack of accessories. In Mozambique there are various makes of commutators, which means that for installation or replacement, long and careful studies are necessary. In the specific case of Inayambane, or better, of Maxixe, the equipment there came from Tete in 1970. It has been in use for over 25 years. Its replacement is awaiting the opinion of the Board of Experts about the composition of the telephone lines to be installed."

At this stage, Maxixe will benefit from the automatic exchange to Inahambane and Maputo.

These statements were confirmed at the Board of Exports by Engr Gilberto Fernandez, technical director of the southern region zone. In the meantime, at the Telephone Material Center the relays were adapted for direct dialing because the switchboards were semiautomatic.

Lack of Technicians

Among other problems affecting telecommunications in Inahambane is the lack of technicians for the manual exchange network lines which cover approximately 400 km (from Zavala to Mambone) with 25 exchanges. There is also another recently concluded line for the Homoine district via Inhamussua.

There is only one technician (the one we interviewed) to cover this network, one assistant and one officer helper.

Burning

Burning of the fields by the population near National Highway No 1 and on the district roads is another problem mentioned by Jose Canelas, who said that these are responsible for cuts of lines given the fact that the fire reaches the posts, most of which are wooden.

11634
CSO: 5500/5861

MINISTER OPENS KARMA GROUND STATION, REVIEWS COMMUNICATIONS PROGRESS

Niamey LE SAHEL in French 16 Apr 82 p 2

[Excerpts] Among the activities marking the eighth anniversary of the FAN [Niger Armed Forces] takeover, Minister of Posts and Telecommunications Mr Abdou Mallam Moussa inaugurated the Karma ground station at 10 o'clock yesterday morning.

In his speech, Mr Abdou Mallam Moussa first stated that "The developing society, the society that the vast majority of Nigeriens wants, can only be conceived and fully realized if our country possesses a more and more reliable [communications] network, of greater and greater extent, capable of permitting unison, consultation and dialogue."

"It is for this reason," continued the minister, "that in Niger, notwithstanding the proven economic profitability of the project, we give it a value which no calculation can assess, because it affects the overall development of the entire nation. Nigeriens have understood and we would like to persuade all of our friends that every investment in the domain which brings us together today serves above all else to unite Nigeriens and to link them to other peoples. Serving social peace, such an investment is beyond price."

"The first phase of the combined telecommunications extension and television project that we are opening today follows the microwave link project completed since FAN came to power and the 1978 inauguration of the Goudel ground station, gift of our sister republic Algeria, which has already permitted our country to begin breaking out of its isolation."

The minister of posts and telecommunications then revealed that this phase essentially concerned the telecommunications and television coverage of the northern and eastern regions of the country. The Karma station constitutes the key part and includes:

1. The A-standard station for international programming, with its 32.5-meter diameter antenna weighing 350 tons. It will insure emission and reception of television pictures and sound.
2. The B-standard station--called domestic--the national network control. Its antenna is 11.8 meters in diameter.

3. The technical equipment for these two stations, as well as the spare parts required for maintenance.
4. Power supply equipment, with notably two electrical generators, each of 400 kilovolt-amperes, insuring aid to the public power in times of shortage.
5. A pumping and treatment station to furnish potable water.
6. The outgoing microwave link, insuring the connection between Karma and the National Microwave Center at PK5 on Ouallam Road.
7. An administration building.
8. Ten housing units for the staff.
9. Four housing units for supervisors.

During the same phase, there was set up at Diffa:

- A B-standard ground station
- A 400-line automatic telephone exchange.
- A citywide network.
- A public electric power plant.

In Agadez, another B-standard ground station was set up, as well as additions and modifications to the telephone exchange.

In Arlit:

- The Agadez-Arlit microwave link, with its five relay stations.
- The automatic exchange.
- The citywide network of subscribers
- The In'Gall television receiver station.
- Radio stations in Air, El Mecki, Tinia, Tarrouadji.

Continuing his speech, the minister stated that "Nigeriens deeply appreciate the fact that henceforth cities like Agadez, Arlit and Diffa will be linked to the national network by telephone, telex and telegraph connections of unquestionable reliability."

"From now on, they will consider themselves above all else to be Nigeriens, and their ties to national life grow stronger each day since Diffa, Agadez, Arlit, In'Gall and their surrounding area can follow the news and entertainment broadcast on television. That has an inestimable value. It's a question of the profitability of this sector which no economic calculation can evaluate to its fullest and which Nigeriens value above all else."

Nevertheless, the minister noted several obstacles that remain to be overcome.

"There are still blacked-out areas to be covered. I'm talking about Filingue, N'Guigmi, Tchintabaraden and Bilma."

"The quality between Tahoua and Konni must be improved. We can hope that the effort will continue and that the 'broadcast gaps' will soon be filled. We must also find ways to make these transmission networks profitable by adding the needed network of urban trunklines."

Dealing with the problem of personnel training, Abdou Mallam Moussa declared that everything would be done to improve and perfect the training of the men responsible for the care and maintenance of the equipment.

"In the training area, the actions taken at the beginning of the project are already bearing fruit. In fact, if the Nigerien network is one of the most reliable in Africa, it's because the young Nigeriens educated in Europe, at suppliers' plants and on-the-job sites, made it a point of honor to show their ability to assimilate these ultra-modern techniques.

"There are nearly 125 technicians of all levels who have received the necessary training: 6 chief inspectors and inspectors, 60 controllers and 58 assistant controllers and technicians, in fields as varied as ground stations, microwave relays, switching, urban networks and power. Each of them has at his disposal at his center or station all the necessary documentation and above all the maintenance sheets allowing them to quickly intercede to repair and maintain the equipment."

The minister continued, indicating that, "This maintenance training program, which began in September 1980, will have cost, at its completion in 1983, nearly 1.5 billion francs to the Nigerien state."

Discussing the total cost of the first phase of the combined project of television and telecommunications extension, the minister indicated that it would reach 16,790,000,000 CFA francs, with financing made possible thanks to a 2.1 billion franc subsidy from the Aid and Cooperation Fund, a loan of 4.75 billion francs from the Central Fund for Economic Cooperation, private credits of 7.36 billion francs and a Nigerien matching grant of 2.58 billion francs.

9939

CSO: 5500/5771

BRIEFS

CHANGE IN RADIO LAW--Life on the outer islands of Seychelles is now safer with less danger of them being cut off, thanks to a change in the law on compulsory radio sets. Under a 1978 decree most inhabited islands had to have a radio for two-day communication with Mahe, but now a stand-by receiver/transmitter has to be provided as well in case the main set breaks down. The Radio Communications (Islands) (Amendment) Act, which came into force last month, says that stand-by radios must be set up on 18 islands and island groups, including all the Government-owned ones. Radios on the outer islands are seen by the Government as vital to development and to the safety of the residents, particularly in cases of medical emergency. Most of the main islands now have air strips and planes can be called quickly to take people off for treatment. On islands without airstrips the radio is the only means of frequent contact with Mahe and if the set broke down, the residents could be completely cut off for up to three months until the next scheduled call by the Cinq Juin. But with a stand-by set help could be called and sent using the airstrip on the nearest island or medical supplies could be dropped by plane. Radios are also a key part of the country's security network, including the monitoring of the exclusive economic zone. Under the amended law any island owner who does not install two radio sets or who fails to maintain or operate them could be fined up to R. 10,000 and jailed for up to a year. The islands covered by the law are the Aldabra, Cosmoledo, Farquhar, Poivre and Providence groups; Alphonse, d'Arros, Assumption, Astove, Coetivy, Desroches, Fregate, Ile Denis, Ile Plate, Ile aux Vaches (Bird), Marie-Louise, Silhouette and Ile du Nord. [Text] [Victoria NATION in English 5 Jul 82 p 10]

CSO: 5500/5866

BLACK TV PROGRESS REPORTED

Johannesburg SUNDAY TIMES in English 4 Jul 82 p 6

[Article by Kevin Davie: "Now Black TV Is Learning Fast"]

[Text]

WATCH out, TV1 . . . your black brother is about to change into second gear, and show you a trick or two.

Black television is now six months old, and plans are well-developed for the fledgeling service to move out of its initial stage where TV2 and TV3 share one channel to each operating its own channel.

Producers and organisers have been overseas studying the best Europe and America has to offer, so that when they begin their full service in January next year they'll have a few tricks up their sleeves.

TV2, the Zulu and Xhosa channel, for instance, have been closely studying the ABC television show "Good Morning, America" and have revealed that, from January, they'll be offering a form of visual broadcasting that up till now TV1 has approached reluctantly, and with care — live television.

"We'll have two hours of live television each night between 7 and 9pm," said Dr Pieter Erasmus, head of TV2.

Some of the other projects they're busy with are:

- Filming a number of shows by top overseas artistes, flown out specially under contract.

- Sending representatives to the Cannes festival.

- Commissioning top American screenplay writers to assist local scriptwriters on local series.

- Planning new major programmes such as a 13-part series on Shaka, and a biblical musical, "The Master's Plan".

The live actuality programme, which will be called "Jikelele", which roughly translated is "All Round", will feature news, interviews with newsmakers, and magazine items.

Some of the material broadcast will be pre-recorded, but basically the show has a live format.

"We'll be giving TV2 an identity of its own," said Dr Erasmus.

The organiser of magazine programmes for the channel, Mr Sox Kubheka, spent three days at the ABC studios in New York studying their "Good Morning America" show, which will be adapted to "suit local requirements".

"This will allow the channel to be much more actual than it has been," says Mr Theuns van Heerden, senior director of TV2 and TV3.

"We'll be involving people in direct broadcast, and also saving quite a lot of production time."

When black television first hit the air six months ago, it was broadcast on five transmitters.

Now, 11 transmitters and two gap-fillers reach an estimated audience of 500 000.

"I think our transmitters reach a potential audience of 5.5-million," said Mr van Heerden.

Next year five more transmitters will be erected, bringing the total to 18.

"The two channels will be broadcast on a regional basis. The Pretoria-Wits area will get both channels, but in other areas transmission will depend on the languages spoken there.

"For instance, in Durban, viewers will have a choice of TV1, and TV2, with Zulu and Xhosa programmes."

Mr van Heerden says the SABC estimates that 130 000 television sets have been sold to blacks.

"Obviously a factor here is whether the area has been electrified. This varies from region to region.

"In Pretoria about 80 per cent of black homes are electrified, while in Soweto the figure is probably about 30 percent."

TV2 said there was no shortage of talent for the channel, and if there was, "then we'll just fly in artistes from overseas".

For instance, they have four top American jazzmen in South Africa at the moment. Their two-week contract includes:

● A 90-minute special show recorded at the Royal Hotel in Durban

● Laying down the backing track for a new biblical musical series, "The Master's Plan".

Cowboy

Next week Joshua Sinclair, a top American screenplay writer, arrives to advise local scriptwriters on the scripting of a major production on Shaka, the King of the Zulus.

Mr Sinclair has written screenplays for many Hollywood epics, including "American Gigolo".

They've also bought popu-

lar American series like "Good Times" and "The Jeffersons", and are busy with a new project — dubbing a cowboy series.

"This is not so strange," says Dr Erasmus.

"I've seen cowboys speaking French and Japanese. Why not Zulu and Xhosa?"

TV2's Organiser of Translation and Dubbing, Mr Fez Wotshela, has spent three months studying television on the continent, including watching "Dallas" in Italian and Hebrew.

He says if overseas programmes were not translated from English, then "only the educated people would understand them.

"We can't only cater for the educated," he said.

Critics Cool, But Most Like TV 2/3

HOW many blacks watch television? The SABC admits that it's working in the dark when it comes to actual audience figures.

An independent survey of audience numbers and preferences is being completed, which, it says, "should be available within a few weeks".

The SABC has had to rely on letters and phone calls received, plus informal street interviews to assess the impact it has been making.

"I would say that 90 percent of the letters we've received have been favourable," says TV2's Dr Erasmus.

Criticism received includes:

- Not enough music.
- Broadcast hours too short.

- Not enough sport.
- Too much sport.

The Sunday Times spoke to some black viewers and critics to get their viewpoint. The critics were generally negative, saying that there was a lot of room for improvement, but the "man-in-the-street" seems impressed.

□□□

"It's a good thing. I really like it, and watch all the programmes," was the general reaction of black viewers.

Critics and viewers add these criticisms to those above:

- News full of propaganda.
- Not enough drama.

● Programmes too short.

● Broadcast hours not long enough.

● Too many repeat shows.

Quite a number said that they switched to TV1 for drama, and when the broadcast hours of black television finished at 9.30pm.

Senior men at the SABC all agree that the biggest problem they've faced so far, and which has probably led to the most criticism, is the shortage of broadcast time.

TV3 for instance, which caters for the North Sotho, South Sotho, and Tswana languages, has only managed four hours per language group per week. In January, however, when the two channels split, they'll both double the time on the air.

"We'll be able to provide more of every type of programme," says Mr Hein Kern, head of TV3.

"There'll be more music, three times the amount of drama, a programme on religion ... we'll have more time for all sorts of programmes."

□□□

The SABC also says that as more equipment becomes available, and staff improve through experience, the quality of the service will continually improve.

"We're still in the experimental stage," explains Dr Erasmus, head of TV2, "learning as we go along".

VIEWERS BLAMED FOR SA VIDEO PIRACY

Johannesburg THE CITIZEN in English 23 Jul 82 p 4

[Article by Sharon Li Green]

[Text]

VIDEO piracy in South Africa — which is considered to be the world's largest video pirate country — could be combated if sufficient video material was brought into the country to enable pirates to become legitimate operators, says Mr Michael Jay Solomon, a Hollywood television distribution company executive.

Mr Solomon, chairman of Telepictures Corporation, who returned to America yesterday after a week's stay in South Africa, said that with a greater amount of material being sent into the country, "video pirates won't have an excuse not to become legitimate.

"South Africa will be the first country to which we will release our product on the video

market, even before England. This will deter pirates," he said.

Telepictures Corporation, distributors of television programmes and feature and animated films, have put out such notable films as "World War III" starring Rock Hudson and David Soul, "Murder in Texas", and "Golden Moments". They all, as Mr Ron Fletcher, managing director of SA Video puts it, "have big names" starring in them.

Mr Solomon said he considered South Africa an important market for the home video market.

Mr Fletcher said: "Mr Solomon's products have been accepted exclusively by the Southern Sun Hotel chain. They are of good quality and content."

The incidence of video piracy in South Africa and elsewhere has led

to the intervention of the FBI in America.

"We are doing our very best to make sure that these pirates are either arrested by the FBI or followed on landing in the country.

"Every movement they make will be watched," Mr Solomon said. There were "strong laws" protecting copyright there.

He said about R2-million in royalties and copyright payments are lost every year to video pirates in South Africa.

"Making copies from master copies is not the main problem. Copying from programmes off-the-air is. And the quality is not good."

He said that the public was largely to blame for the high incidence of video piracy — they should not patronise the pirates.

BRIEFS

SABC MUM ON NEW CHANNEL--The SABC is remaining tight-lipped about speculation that another television channel for Whites is on the cards. An official statement issued yesterday stated the SABC had "noted" newspaper reports on the subject but could "naturally not react at this stage." "A firm plan or clear proposal will first have to be laid on the table before the SABC board can give any attention to such a matter," the statement said. However, it has been reported that Mr Regardt Steinmann, SABC's administration organiser who is in charge of broadcasting times, has confirmed that new developments are in the pipeline. It is believed that plans for the new channel have been initiated by certain organisations in the private sector who have an interest in the financial possibilities of television advertisements. Speculation some time ago was that the four major newspaper groups, Perskor, Argus, SAAN and Nasionale Pers would run the new channel in cooperation with the SABC. The latest speculation is that the proposed channel will more or less follow the pattern of the independent British TV station ITV. It would, however, have to hire facilities from the SABC whose board of control would probably have the final say on the control of the station. The question of an independent TV channel was indirectly raised in the report of the Steyn Commission of Inquiry into the Media. [Text] [Johannesburg THE CITIZEN in English 23 Jul 82 p 2]

CSO: 5500/5869

TPTC CHARGING FOR DEFECTIVE TELEPHONES UNREPAIRED FOR LONG TIME

Dar es Salaam DAILY NEWS in English 15 Jul 82 p 1

[Article by Balinagwe Mwambungu]

[Text]

THE Tanzania Posts and Telecommunications Corporation (TPTC) is cashing in on defective telephones which it has failed to repair for a long time now.

A survey conducted in Dar es Salaam has revealed that many telephones have been out of order for a period of more than six months but the Corporation keeps on billing the clients at a minimum of 40/- a month.

One client who claimed his phone had been out of order for over nine months now, said whenever he approached TPTC officials, they informed him that there were over 3,000 telephones out of order in Dar es Salaam alone.

If that were true, the client argued, then the Corporation was making some 120,000/- from its clients every month for services not rendered. He said if the Corporation was not in a position to service the telephones, then it should drop the 40/- charges for the telephone facilities.

The survey showed that among the 20 telephones tried, less than half of them were working. Some of the phones that were out of order included 63439 (Leyland

Albion), 64333 (National Engineering Company), 64779 (Chandaria Industries), 64689 (Afrimetal) 64117 and 64950 (Tanzania Baby Food Manufacturers) all situated in the Page Road industrial area.

"I did not want the phone installed in my house as a mere showpiece", the client said bitterly.

Others were 50612 (National Housing Corporation), 50310 and 50613 in Temeke area.

In Kinondoni District, telephones which were defective included 44132, 48168, 44304 and 44997 — all in residential areas.

Asked for comments, the TPTC Director General, Ndugu J. Maeda, said it was true that a number of telephones were out of order in Dar es Salaam and that the Corporation would soon issue a statement to explain the steps it was taking.

Ndugu Maeda promised to call a Press conference "sometime next week" to discuss the issue and other related matters affecting the Corporation.

NEW AFRICAN NEWS AGENCY SET UP

Harare THE HERALD in English 16 Jul 82 p 3

[Text]

NEWSLINK AFRICA, a pan-African features and photonews agency, has started its operations in London. It incorporates Harambee African News Service, which ceased business after six years on June 30.

Newslink Africa aims to provide full coverage of events in Africa for publication and broadcast worldwide each week, Mr Shamlal Puri, a Tanzanian journalist who is also managing director of the agency said. "We have transferred all business from the old firm to Newslink Africa."

He said Newslink Africa was planning to open bureaux in several capitals including Lagos and Harare, and will have correspondents in major African countries.

Established African journalists with solid experience in analysing events in their respective countries would also contribute to the news service, he said.

"We want to play our role in the new information order by projecting the true image of Africa. For far too long, Western journalists have given prominence to coups, hunger, corruption and war in Africa.

"We aim to report on the positive aspects of economic and social development in Africa. We will not be afraid to tackle controversial subjects. Our independence leaves us free to say what we think and feel," said Mr Puri.

Newslink Africa was not a propaganda part of some great multinational enterprise. It was owned and edited by a group of dedicated African journalists whose main aim is the dissemination of news features objectively.

Newslink Africa had a vast library of coloured and black and white pictures of events in Africa.

CSO: 5500/5867

BRIEFS

LARGEST COMPUTER ARRIVES--Zimbabwe's largest computer, worth \$1,5 million, arrived in Harare this week from America. The computer, one of the latest 1982 models, was ordered by the Ministry of Finance, Economic Planning and Development. It will be used for scientific data analysis by 17 government departments. A spokesman for the ministry said the computer would be first used to analyse data for the 1982 census. Initially the computer would be manned by 12 people and the various users would have to do their own programming. "In the past, scientific users of computers were left out in the cold. The computer will help scientific analysis," he said. In future the computer would be used to train University of Zimbabwe students in computer science. Its use will also be extended with more staff, to include other Government departments. The Herald yesterday incorrectly said the computer was Dutch. [Text] [Harare THE HERALD in English 9 Jul 82 p 9]

SOVIET TV, RADIO LINK-UP--The Soviet Union will soon be no further away than the switch on your television or radio set, following the signing of a new agreement in Harare yesterday. The vice-chairman of the USSR State Committee for Television and Radio, Mr Vladimir Popov, said in Harare the agreement would involve exchanges on cultural, economic and social affairs. Saying this was the first agreement signed between Zimbabwe and the USSR, since the establishment of diplomatic relations, Mr Popov added that the two countries had agreed to have special radio and television programmes on their national days. He said the agreement would also allow the exchange of films and documentaries on the various aspects of life in the two countries. Mr Popov who leaves next Monday said his delegation would use the remaining days to get to know Zimbabwe better. He said he hoped that the long distance between Zimbabwe and the USSR would be bridged by the agreement he had signed with his Zimbabwean counterparts. He said he wished Zimbabwe success in the new life being built under the leadership of the Prime Minister, Mr Mugabe. [Text] [Harare THE HERALD in English 3 Jul 82 p 7]

CSO: 5500/5865

BRIEFS

NEW TELEFAX SERVICE--The Cyprus Telecommunications Authority has recently introduced the Telefax service as part of its continuous effort to expand and modernise its services. A CYTA spokesman explained that this service enables the transmission of documents (graphs, handwritten or printed material) between facsimile machines over the telephone network both in Cyprus and overseas. These documents can be reproduced at the receiving-end in the form of "photocopy." The facsimile subscriber wishing to transmit documents must telephone to the distant-end subscriber. The Cyprus Telecommunications Authority at present can provide facsimile machines, Group II, which can be used for the transmission of documents on paper size A4 in a time of about 3 minutes. These machines can transmit approximately 30 sheets automatically and continuously. A CYTA spokesman said that a number of law offices, business establishments and big organisations have already installed such facsimile machines and demand is expected to grow further. [Text]
[Nicosia CYPRUS WEEKLY in English 16-22 Jul 82 p 8]

CSO: 5500/5347

NEW ANTENNA INSTALLATION FOR MONITORING FOREIGN BROADCASTS

Bonn RHEINISCHER MERKUR/CHRIST UND WELT in German 28 May 82 p 15

[Article by Michael Globig: "The New Ear of the Government. An Antenna Installation South of Bonn Monitors Broadcasting Stations All Over the World"]

[Text] Shortly before noon a happy melody and bird chirping filled the space: the call signal of Radio RSA, the broadcasting station of the Republic of South Africa. Then the voice of the announcer who was giving the news in English could be clearly heard. At this noontime hour it was also possible to tune in an Argentine station at the Federal Press Office's new receiving station which just a few days ago was presented to the public for the first time. Some 18 km south of Bonn near Ersdorf, in the past 3 years the most modern receiving installation of this kind in Europe has been under construction at a cost of DM27 million. Via a system of 138 antennas broadcasts and news agency reports from all over the world can be recorded here; in addition, it is possible to receive all ultra-shortwave and television stations which are within "sight."

The Ersdorf installation is the successor to a receiving station built in 1952 on Bonn's Kreuzberg which, because of the construction boom in the surrounding area, was exposed to increasingly greater interference and whose capacity, moreover, was no longer adequate to monitor the many newly established stations--principally in the Third World. But it is precisely this monitoring that is among the most important tasks of the Federal Government's Press and Information Office: as is stated in the procedures for Federal ministries, it is supposed to "provide information to the Federal Government about statements by domestic and foreign news sources (news agencies, press, radio and television) and by other agencies which shape public opinion (film, publications)."

In order to fulfill this task at the Federal Press Office 122 German and foreign newspapers and journals are read on a continuing basis, 66 radio and 7 television programs are watched and the radio services of 26 agencies evaluated.

At the site of the Ersdorf receiving station, which is 19 hectares in size, the AEG Telefunken Co buried in the ground an antenna cross consisting of two 100-m long lines for longwave reception--primarily news agencies broadcast on longwave. For middle-wave reception 8 32-m high antenna masts were arranged in a circle, 2 systems with a total of 122 antennas receive shortwave, and

the ultra-shortwave and television antennas are installed on a 70-m high lattice steel tower. With this equipment the entire reception range between 10 kHz and 900 megahz can be covered.

Whatever signals are received by these antennas run via underground cables to the antenna distributor and from there can be switched to 1 of the 52 receivers in the operations building. In these receivers the high-frequency oscillations of the broadcasts picked up are converted to low-frequency signals and sent on via normal postal communication to the Federal Press Office in Bonn for evaluation. Quality can be monitored from Ersdorf with a control device and be reregulated, if need be.

A central computer communicates to the distributor information as to which receiver is to be switched to which line at what time of the day. Without the personnel costs which were previously required to do this, a large number of foreign stations can thus be monitored around the clock. For example, the computer automatically switches German-language programs from Radio Moscow through to Bonn.

One of the difficulties is eliminating undesirable interference. For example, both Radio Beromuenster in Switzerland and a GDR station transmit at the same frequency. Normally both are far enough apart so as not to affect one another. In Ersdorf, however--in the "ear of the Federal Government," as the receiving installation is called--they overlap, producing a gibberish that can scarcely be understood. Yet in order to be able to receive both stations separately, the short-wave antennas can either be connected together so that their directional pattern (the range of their greatest sensitivity) is aimed strictly at one station. Or else they are combined in such a way that the range with the lowest reception capability points to that station which they would like to suppress. This capability of rotating the antenna reception ranges makes the new installation particularly efficient.

12124
CSO: 5500/2271

DEUTSCHE BUNDESPOST USER SERVICES IN OFFICE COMMUNICATIONS

Munich COMPUTERWOCHE in German 14 May 82 pp XXIV-XXV

[Article: "Office Communications 'Per Post'"]

[Text] Post Director Klaus Schenke summarized the office-communication services offered by the Bundespost (DBP) for the symposium "Initial Experiences with Teletex" sponsored by the Central Office for Telecommunications in Darmstadt. The article presents the most important statements from the Bonn Ministry.

If the services of the DBP for electronic transmission of text is to be written about here, then the discussion should be limited to just those services which permit person-to-person communication in standardized form. These services are designated in the CCITT (Comite Consultatif International Telegraphique et Telephonique: Advisory Committee of the International Telecommunications Union) as "regulated services" according to international deliberations. These are called user services if at least one of the two communication partners must use, for lack of his own end equipment, public facilities of the Post Office and or the Telecommunications Administration to enter a communication into the public telecommunication network or to receive a message from this network. One speaks of subscriber services when all of the communication partners have compatible telecommunications end equipment in their businesses which connect with the corresponding public telecommunications service.

Examples of user services are the telegram and the teletext; examples of subscriber services are telefax, teletex and CRT-text services.

The demand for public user services is usually for electronic text transmission when the sender desires to forward his text to the receiver faster than is possible with conventional mail. This means however that the physical transportation of the communication from the sender to the receiver on a piece of paper must be dispensed with: The text is forwarded in the form of electronic signals over the appropriate telecommunications network.

The telegram service which is tailored for the transmission of short, urgent written communications is the oldest user telecommunications service.

For economic reasons--to bring cost coverage above the 50 percent level--a central EDP system for the new "Telegram Service System" (TDS) is planned for operation after 1983. The system consists of the central computer, the end equipment such as data display equipment or teletypes and the required transmission network. Under cognizance of the DBP, post offices without teletypes and ultimately the telephone subscribers receive a copy of the telephone telegram via the public telephone network.

Teleletter for Urgent Texts

The teleletter service was introduced by the DBP on an experimental basis in mid 1980. It is intended to fill a gap for rapid text communication requirements which lies between the telegram and the express letter service (no limit on text, delivery within a few hours).

The teleletter involves ordinary letter-type material in which written information is transmitted over part of the route via telecommunications methods to save time. It is transmitted between post offices via telecopiers and is finally delivered in a sealed envelope as an express letter by a postal carrier. The text can be hand or machine written information, a graph or a drawing.

Telefax subscribers can transmit and receive teleletters directly over their own telecopiers. Nonsubscribers to the telefax service can be informed by the sender via telephone concerning the input of a teleletter so that the addressee has the opportunity to pick up the transmission himself directly at the receiving station.

During the test phase of the teleletter service, about 600 post offices under cognizance of the DBP have been equipped with special telephone circuits and facsimile equipment--such as is also used in the telefax service--just for this service.

Teletex Service Since 1933

Among the public subscription services for electronic text communication, the teletex service today holds the most important position. Introduced in 1933, it has since acquired over 1.3 million subscribers worldwide. With over 140,000 subscribers, the DBP maintains the largest network in the world.

After replacing the previously complicated and largely mechanical components by highly integrated semiconductor components, the teletype of today has become a quiet and rather trouble-free piece of office equipment which can be used right at the work station.

In the FRG the telex net is a component of the integrated text and data network.

Telefax Subscribers Number 5,000

The introduction of the telefax service under the auspices of the DBP goes back to a 1976 recommendation of the Commission for the Expansion of the

Technical Communications Systems (KtK). At that time, a sufficient demand for telecopiers between companies and government agencies had been identified. After intensive preparatory work, it was possible 3 1/2 years later for the DBP to introduce on January 1, 1979 the telefax service as the second subscriber service for standardized text communication. At the beginning of 1981 it had about 5,000 subscribers.

The subscriber's telefax connection consists of a telecopier certified for telefax service, an 8-pin connector for the telecopier and a telephone connector. The telefax equipment certified by the DBP for this service is based primarily on the 1976 CCITT telecopier recommendation for group-2 equipment.

At the end of 1980, the CCITT recommendation for group-3 equipment was also available. This is digital equipment: It samples a line with 1728 picture points; possesses a one-dimensional run time code for reducing redundancy (compresses information to be transmitted when adjacent picture points contain the same information) and makes possible a decrease in transmission time for a standard page, compared to group-2 equipment, of about 1 minute for a line resolution of 3.8 lines/mm and about 2 minutes for double line resolution, 7.7 lines/mm. Due to digital sampling, only black and white picture elements--no gray values--are transmittable.

The transmission medium for telefax is the public telephone network. Thus, telecopiers can be connected directly to the primary telephone circuit or to PBX equipment when such is installed. It is possible today for users in different countries to clear facsimile traffic when circuits and equipment conform to the same standards. However, regulated international telefax service does not yet exist.

From Memory to Memory: Teletex

International teletex traffic can start only after other countries have also undertaken the service; this is expected after 1982.

The subscriber's teletex end equipment can be communications-capable storage typewriters of text editing or processing types as long as they are certified for teletex service. Also, data processing installations with text functions can under certain conditions be attached to the main teletex circuit, provided that they satisfy the regulations for teletex service.

A teletex station equipped with the full keyboard of an office typewriter has two main sections: the local section and the communication section. In their local function, the machines are more or less conventional equipment for text composition and in this role are not subject to telecommunication administration specifications. Only when connected to the teletex network are the communications-related regulations of the teletex service relevant. The starting point for standardization is that the text must be completely stored in the local memory of such a machine before it can be sent. Instead of now being printed out, the teletex service provides for electronic

transfer of the sender-memory contents to the receiver memory of another machine participating in the service.

The requirement that the local mode of operation be entirely independent from the communication mode led to the standardization of a fully automatic communication process from memory to memory via the telecommunications transport system. Since such a communication process precludes human intervention in case of transmission errors, self-checking procedures such as those already used in data transmission were prescribed.

The high quality of the teletex service is due in part also to the internationally-agreed high transmission rate of 2400 bits/s. This permits the transmission of an A4-format page in an average time of less than 10 seconds.

The teletex service offers the subscriber the potential to electronically transmit in a matter of seconds a page of machine described text in standard or cross orientation--formats A4 and A4 L, respectively--using all characters of the respective national key boards in exact format and layout. It also offers from the beginning--via translation equipment in the transmission system--access to and from national and international teletex services to the extent that these are not manually operated. Thus, from the beginning of teletex service about a million teletex subscribers can correspond with one another.

For teletex service, no uniform type of telecommunications network has been prescribed for international use. It can be one or a combination of the telephone or the data network with forwarding by wire or parcel, depending on national availability of the networks. Since the DBP has available all three types of network, it could select the one most suitable for the task. In agreement with industry the data network with wire transmission--Dx-L 2400--was selected. Due to the special nature of the teletex service whose utilization opportunities are more pervasive than those of the other Datex-L services, a special teletex subnetwork was defined for a special class of users. The capability will be provided to make connections from the teletex network to the general datex network.

Linkage with the telex network will be effected via conversion equipment (TTU) which is physically located near the outgoing teletex transmission station. The converter takes from the teletex end equipment the complete, formatted teletext before it relays the text--after speed-code and protocol conversions--to the target telex station. In the reverse direction, these conversions must also be completed by the TTU; and, in addition, a page break must be made from telex endless to teletex A4 format.

CRT Text After 1983?

Among the public subscriber services for electronic text communication, CRT text is the only one which, because of economical end equipment, can address both the business and private sectors. Whether it will cover both sectors from the beginning in 1983 under the auspices of DBP or will initially serve

only the business sector will be shown by the field tests now underway in the Duesseldorf/Neuss and Berlin areas.

End equipment for CRT-text service is the home color-television set. For the CRT-text connection, it requires an add-on component, the decoder. With the decoder it becomes a data display station which is connected by a modem (modulator/demodulator) to the telephone network and via these links to an EDP system can pick up the CRT-text central.

The telephone link to CRT-text central is automatically made by the CRT-text modem when the CRT-text function is selected on the TV remote control unit. Finally, the modem relays a connection acknowledgement which is required for subscriber identification and billing. CRT-text central sends back via the telephone link text and graphic information as a coded data stream. At the receiving end this is converted into standing TV pictures called CRT-text pages by the modem and CRT-text decoder. The transmission rate to CRT-text central is 75 bits/s and the return rate is 1200 bits/s. Each page received, which can consist of text or simple graphics in seven colors rastered in 24 lines of 40 characters each, is electronically stored in the TV receiver. It can then be viewed as long as desired without having to maintain the telephone connection.

The user communicates with CRT-text central via the keyboard of his TV remote control unit or via an expanded letter keyboard. By pressing the number keys he selects, as from a menu, the information he desires. Thus he determines step by step what he wants to see on his picture screen. Operation is so simple that even novices have no difficulties; thus, a computer which talks to everybody, so to speak.

CRT-text applications can be related to three areas: information retrieval, information exchange and access to data processing systems.

Thus, data processing results can be reported directly to other subscribers.

Also, direct communications can be sent to other subscribers of the service, such as greetings, greeting cards, appointments or other general letter-type material.

If the communication path extends through CRT-text central into the data processing system of an information offeror, then the manifold applications of data processing are opened up within the framework of the CRT-text computer association. Every user can directly and without intermediaries make contact with booking, ordering and reservation systems; call comprehensive data banks or use offered data processing programs for computations or programmed instruction. And in the financial area for example it is possible to read one's bank balance, transfer funds and make credit and foreign exchange calculations via CRT-text.

Traffic between CRT-text subscribers and CRT-text central is cleared over the local telephone network. If communication requirements cannot be satisfied in one's own CRT-text central, then the other CRT-text centrals and

also external computers, which are all integrated into a computer system by the new datex network with parcel delivery, can be reached. This computer association developed by the DBP is an important constituent of the CRT-text concept. It makes it possible for a CRT-text subscriber to go on line with the data processing facilities of information offerors without having to be concerned about the make and model of computer.

Certainly, it will also be possible to link CRT-text with existing text communication services; however, no forecast can yet be made about how and when this will be realized.

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CSO: 5500/2273

FEDERAL REPUBLIC OF GERMANY

BRIEFS

TRANSATLANTIC FIBEROPTIC CABLE--The Federal German Post Office has plans to install a fiberoptic cable in 1988 as a transatlantic cable between the Federal Republic of Germany and the United States permitting 32,000 simultaneous telephone calls. According to an announcement by the Federal Post Office Ministry, another 4,000 calls can be made simultaneously via the transatlantic TAT cable opened in 1976, independent of satellite links. In 1983 the TAT7 cable providing for 4,200 calls, and in 1988 the above-mentioned fiberoptic cable will be added to the equipment [Text] [Wuerzburg ELEKTROTECHNIK in German 12 May 82 p 6] 9544

CSO: 5500/2280

HIGHLIGHTS OF APPROVED NATIONAL TELECOMMUNICATIONS PLAN

Rome POSTE E TELECOMUNICAZIONI in Italian Mar-Apr 82 pp 9-12

[Article: "National Telecommunications Plan Approved"]

[Text] In 1990 there will be 23 million telephone subscribers, with an annual increase of 1.2 million. The investments necessary for implementing the telephone-system development program will be on the order of Lit 2.725 trillion per year, 36.5 percent of which will be for switching installations, 26.8 percent for urban networks and 17.4 percent for interurban networks, while 19.3 percent will go for user terminals, real estate and equipment.

These are some of the data of greatest interest in the National Telecommunications Plan, presented by Minister of Post and Telecommunications Remo Gaspari and approved by the CIPE [Interministerial Council for Economic Planning] at its 24 March meeting.

Following is a summary of this important document.

The telecommunications plan submitted by the Ministry of PT [Post and Telecommunications] for consideration by the CIPE takes into account the multiyear programs presented to the ministry by the various managements and sets itself the objective of furnishing a series of chronological and economic quantitative indications, with regard to both the technologies and the services to be put to use for the coming decade.

From the technical point of view, a clear orientation as regards Italian TLC [telecommunications] policy is established; it can be summarized as follows:

- a) long-term objective of a network with high degree of integration of the various services, to be achieved with time-schedules and modalities in accordance with the necessary evaluations of an economic and managerial nature as well as with the progress of technology;
- b) the process of gradual numerization of the national, international and intercontinental networks (in the two functions of transmission and switching), as a primary factor for the subsequent integration of the services;

c) the use, if necessary, of specialized networks devoted to implementation of new services, to be considered temporary or "bridge" services while the integrated-services network is awaited, and to be designed, insofar as possible, to use techniques that can later be absorbed into the integrated services.

Especially as regards the numerization of the transmission lines and of the switching exchanges relative to telephone service, it is specified that it remains the necessary point of departure for achieving the integration of the various services, since the fact cannot be ignored that notwithstanding the considerable and at times "explosive" development that other services may certainly undergo, the telephone service (especially in areas that are far from saturation) will always represent the preponderant part of the entire TLC complex and will be the decisive sector and the one that governs all integration processes.

--As regards the transmission installations, in terms of overall need for circuits for the telephone network in relation to the design magnitude as of 1980, an increase of about 50 percent by 1985 and a doubling by 1990 are anticipated.

A considerable part of this imposing number of circuits will be of numerical type. The process of numerization will be faster at the lower levels of the network (urban hookups and district connections), and will then extend toward the higher levels.

--As regards switching, introduction of the new technologies, already begun, will proceed in a gradual manner and will then build up more and more steam, so that in 1985 numerical switches will be supplied in large quantities, more than was indicated in the CIPE resolution of 8 August 1980, which proposed for electronic switching a proportion of no less than 10 percent of total investments in 1985.

In order to accelerate this process, and in line with the CIPI [Interministerial Committee for Industrial Policy Coordination] resolution of 16 October 1979, the systems to be adopted will have to be reduced, with preference for the solutions (a tightly limited number of them) that are technically and economically better, with specific preference for those of Italian design that could also be produced for export.

The anticipated increase in telephone use will therefore have to take advantage of the contributions of technologies, for the following fundamental reasons:

- laying solid foundations for the integrated numerical network;
- raising the national industries to competitive levels of quality and quantity;
- laying the preliminary bases for subsequent gradual decreases in unit costs.

In the decade, the new switching equipment for local central exchanges should--taking into account the state of progress in the development of new technology currently under way, the indications supplied by the manufacturers, and the replacements necessary--evolve from the present technology to electronic technology that brings the newly supplied urban-exchange lines based on electronic technology to 1.45 million out of the total of 1.5 million expected for 1980.

A hypothetical accelerated program has also been considered that could be implemented if the national economy were to evolve in a positive direction, thus favoring a steady sustained market demand, and if the operators' economic and financial problems were to be resolved adequately, and that would definitely permit a better quantitative level of service from the point of view of the average demand anticipated.

In simpler terms, it could be possible, from 1987 on, to increase the previously indicated normal program of 900,000 subscribers by 20 to 25 percent, so as to achieve an annual increase of 1.2 million units. In this way, the number of subscribers in 1990 could exceed 23 million and replacement of electromechanical installations could also be accelerated, raising the number of old-technology lines replaced in the decade to about 1 million.

The investments needed for implementation of the development program for the entire telephone system (and excluding the greater part of the needs for development of the new services and for the satellite systems) are in the neighborhood of an average of Lit 2.725 trillion per year, at 1980 prices, with a slight growth in the second half of the decade to cover the replacement program.

Of the total investment, 36.5 percent will be devoted to switching installations, 26.8 percent to the urban networks, 17.4 percent to the interurban network, and 19.3 percent to the other categories, which include user terminals, real estate and equipment.

On the hypothesis of acceleration, the aforesaid investment would increase by Lit 500 billion (at 1980 prices) per year, on the average, for the years 1987-1990. Such a program would make it possible, among other things, to raise Italy to levels of development, for telephone use, comparable with those of the principal European industrialized countries.

As regards data service, development of the number of network installations is planned so as to raise the number of terminals to 330,000 in 1990, with growth greater than the forecasts of the Eurodata study and an investment of Lit 883 billion (at 1980 prices) in the decade.

Two network levels are provided for in the development plan:

- a) higher level (primary network) articulated with specialized central exchanges designed to perform the functions of international and national data transit, and processing of the user terminal traffic in the area of competence directly connected with the users, with dedicated lines;
- b) lower level (secondary network) articulated with central exchanges and installations for telephone-based data traffic, designed to perform the functions of collection of user input and concentration of that traffic, general processing of the traffic within the area of competence, and routing of transit traffic.

As regards the networks used, it can be said that while at present 76 percent of the data usage uses direct analog connections, as soon as the network specialized for data is available, with the circuit-switching and packet-switching

services, 1990 usage distribution can be hypothesized with 30 percent of the network using packet switching, 10 percent using circuit switching, and the rest on direct connections or on the telephone network.

As regards telex, the plan forecasts 150,000 users in 1990, with investments of Lit 1.06 trillion in the decade and reduction of the current backlog of hookup applications in the next few years through the entry into service of the latest new electronic-technology central exchanges, to provide a total of 60,000 new numbers by 1985.

As regards New Services, the plan provides, after the experimentation in progress, for further development when advanced levels of the public networks or specialized networks are developed, and, looking to the future, the integrated network with integrated technologies and services, which will facilitate interconnection between the different types of terminals (analog, numerical, etc).

As regards facsimile, teletex and videotel in particular, the following can be noted:

a) Facsimile: This service, which involves transmission of facsimile documents of the original and is presently done on switched telephone networks, with about 5,000 users, will be capable of considerable development with the introduction of low-cost terminals with higher transmission speed. As soon as the data network is available, it will be possible to offer the same service with terminals capable of doing numerical-type transmission with higher quality and speed (datafax).

b) Teletex-Telepost: The teletex service, for which interconnection at the international level is planned, consists in a service similar to telex but with higher transmission speed; with it, it will be possible to send written texts having the same characteristics as a letter rather than a telegram, and thus permitting electronic-mail service not typewriters [as published] (telepost).

It will be possible to implement this service, as soon as the standardized terminals are available, through use of the telephone network and of the telex electronic central exchanges, as emerges from the experiments already in progress in the FRG and Austria, with the collaboration of the Italian national industry. The availability of the data network (in 1983 in Italy) interconnected with the telex network, as well as with the telephone network and the foreign data networks, will also make it possible to offer the service on that network, on the national and international networks.

c) Videotel (international name: Videotex): Videotel, which is a service for interrogating data banks through the switched telephone network and uses the household television set, as well as special video terminals, has now been started up on the telephone network.

It will also be possible to use the packet-switching network in future for connections between other data banks and the videotel centers. The latter will govern the usage-connection operations, all the operational phases of the service, and collection of the elements necessary for billing. In any case, because of the delicacy of the questions relating to diffusion of information and

access to it, it must be pointed out that the administration will have to promulgate suitable norms in this matter with the operational action that will result from them, maintaining relations directly with the suppliers of information and with the owners of the data banks as regards admission to the service.

d) *Télévideo* (international name: *Teletext*): *Televideo* is an information service carried out on the broadcasting networks with the sending of data-bank pages in the television-picture transmission intervals and can be received on the standard television set, appropriately adapted. For this service also, experimentation is under way that takes into account the systems so far proposed or started up in Europe and makes it possible to deal with the problems of compatibility, at the television level, with the *Videotex* service.

e) *Videoconference*: This service permits connection between conference rooms remote from one another through video and telephone connections. The setting-up of the first connection between Rome and Milan is in progress. The service will subsequently be developed in the other cities with possibility of conferences among three or four rooms in different localities.

The Plan also devotes a chapter to satellites, pointing out that with the well-known "medium-term space plan," which provides, in the area of TLC, for the building and placing in orbit, in 1985-1986, of an experimental and preoperational satellite with extremely advanced technology and operating in the 20-30 GHz range, with on-board switching and designed for narrow-band numerical connections among many traffic centers, it is proposed first of all to develop the qualifications of the Italian space industry in the most complete manner possible.

The medium-term space plan, with these initiative in the area of TLC, is therefore to be considered as a research effort of broad scope that will be able to produce notable results, from the industrial point of view, even within the present decade.

As regards the operational use of a national satellite, though, to be considered as the logical and natural consequence of the research action undertaken, it is reasonable to take the 1990's as the reference point, even if the national network will be able to benefit from the preoperational phase that will develop at the end of the 1980's.

Direct broadcasting via satellite, characterized in Europe by the *TV-Sat* and *L-Sat* projects, raises the necessity and interest for Italy of starting up as soon as possible a national experimental service that could, in particular, serve as a stimulus to the national industry to begin as soon as possible the designing and production of terminals for the purpose, so as to keep the industry from being outstripped in both the domestic and foreign markets.

On the other hand, and also independently of that, the technical and economic advantages that can be foreseen for direct broadcasting via satellite make it advisable to start up some specific projects, even if experimental, during the 1980's. In this regard, a chapter of the Plan is devoted to development of TLC and its problem areas, and especially to the relationships between TLC services

and territory, the problems of research and development, and industrial and employment policies.

It is noted that the subscribers of the major urban networks (more than 100,000 subscribers), who in 1970 represented 50 percent of the total, have dropped to 34.7 percent, and it is expected that they will hit 28 percent in 1990, while distribution of usership by broad categories is expected to show a residential-family proportion of 83 percent in 1990.

Regarding the problems of research, an allocation of Lit 450 billion is hoped for, as an allocation reserved for TLC and to be drawn from the IMI fund for large-scale Applied Research, and another Lit 300 billion as an allocation reserved for TLC and to be drawn from the Fund for Technological Innovation that is to be set up.

The advisability of supporting intersectorial strategic areas such as software and components is also cited, and for components it is considered necessary to approve a normative instrument for the purpose--on the model of law 227/1977--that would appropriate about Lit 120 billion in 3 years.

As regards the problems of employment, according to a general estimate, in the area of manufacture and installation of TLC in Italy, there would be in 1990 as against 1979, in the absence of compensatory measures, an overall reduction of between 20,000 and 25,000 persons.

In the area of operations, though, on the assumption of steady and sizable increase in telephone use, there will be an increase that can be estimated at 10,000 to 15,000 persons for the next decade.

Therefore, mobility toward the operating companies, greater penetration of our products into the foreign markets, and development of new services must be anticipated.

Finally, a chapter is devoted to quality of service, and the need to adopt appropriate "main indexes of service quality" is underlined.

It is further mentioned that the organs of the Ministry of PT (which will be given the appropriate powers and the investigative means necessary) will periodically examine these indexes to determine the way they are going and program improvements of them.

Finally, the overall investments for the various services in the decade (at 1980 prices) are summed up in a table.

In approving the orientations and objectives contained in the Plan and the investment volumes related to them, the CIPE confirmed the necessity of a review of the agreement norms that govern the relations between the state and concessionaires and stressed the advisability of achieving balanced financing of the SIP with modification of the tariff-control procedures, recourse to credit, and recapitalization through large input from private savings also.

The approval of the National Telecommunications Plan (and of the programs of the STET Group for the 3-year period 1982-1984) by the CIPE has been greeted with broad consensus and satisfaction by important companies operating in the vast sector of telecommunications. This event represents a significant turning point for the entire telecommunications sector, declared Michele Principe, deputy administrator of the STET, who stated in a communique that the CIPE, "in addition to approving the fundamental document that sets out the telecommunications development objectives for the next decade, has drawn up a series of actions that will ensure to the firms of the STET Group, the SIP in particular, the enormous resources necessary, in investment terms, for achieving those objectives. These actions fall within the framework of an overall vision of revival and upgrading not only of the service firms but of the entire sector of the group's manufacturing firms. This means, in concrete terms, the safeguarding of the employment levels, and in prospect, a new dimension and a more significant role for the entire national telecommunications industry. The tariff-policy orientations also conform to criteria that are in line with the government's economic policy, which is aimed at containing inflation, and provide for a gradual increase in rates which for the year 1982 will remain well below the anticipated rate of inflation and also will not, in practice, affect private users." Marisa Ballisario, deputy manager of ITALTEL, spoke of "extremely positive example," stressing the fact that this is "the first time that a 10-year plan for telecommunications in Italy has been approved." In a statement released to the Italia agency, she said that for "ITALTEL this is an event of fundamental importance: the company strategic plan, laid down in 1981, indicates the approval of the national telecommunications plan as one of the basic conditions for the recovery, the revival and the very survival of a national company with autonomous planning capacity."

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END