

013124

JPRS 82357

1 December 1982

Worldwide Report

TELECOMMUNICATIONS POLICY,
RESEARCH AND DEVELOPMENT

No. 250

19990507 098

DISTRIBUTION STATEMENT A
Approved for public release;
Distribution Unlimited

FBIS

FOREIGN BROADCAST INFORMATION SERVICE

REPRODUCED BY
NATIONAL TECHNICAL
INFORMATION SERVICE
U.S. DEPARTMENT OF COMMERCE
SPRINGFIELD, VA. 22161

5
57
A04

NOTE

JPRS publications contain information primarily from foreign newspapers, periodicals and books, but also from news agency transmissions and broadcasts. Materials from foreign-language sources are translated; those from English-language sources are transcribed or reprinted, with the original phrasing and other characteristics retained.

Headlines, editorial reports, and material enclosed in brackets [] are supplied by JPRS. Processing indicators such as [Text] or [Excerpt] in the first line of each item, or following the last line of a brief, indicate how the original information was processed. Where no processing indicator is given, the information was summarized or extracted.

Unfamiliar names rendered phonetically or transliterated are enclosed in parentheses. Words or names preceded by a question mark and enclosed in parentheses were not clear in the original but have been supplied as appropriate in context. Other unattributed parenthetical notes within the body of an item originate with the source. Times within items are as given by source.

The contents of this publication in no way represent the policies, views or attitudes of the U.S. Government.

PROCUREMENT OF PUBLICATIONS

JPRS publications may be ordered from the National Technical Information Service, Springfield, Virginia 22161. In ordering, it is recommended that the JPRS number, title, date and author, if applicable, of publication be cited.

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

Correspondence pertaining to matters other than procurement may be addressed to Joint Publications Research Service, 1000 North Glebe Road, Arlington, Virginia 22201.

WORLDWIDE REPORT
TELECOMMUNICATIONS POLICY, RESEARCH AND DEVELOPMENT

No. 250

CONTENTS

WORLDWIDE AFFAIRS

ITALY

Overview of UNESCO's New World Information Order
(Luca Balestrieri; POLITICA INTERNAZIONALE,
Jul-Aug 82)..... 1

ASIA

AUSTRALIA

Contract Awarded for Two Satellite Ground Stations
(THE AUSTRALIAN, 7 Oct 82)..... 15

Government Warns TELECOM It May Lose Some of Its Monopoly
(THE AUSTRALIAN, 11 Oct 82)..... 16

Overseas Computer-Controlled Telex Exchanges Planned
(Don Maddocks; THE AGE, 12 Oct 82)..... 17

Briefs

 Austpac Launch..... 18

 TELECOM Improvement Costs..... 18

INDIA

Inadequate Planning Delays Use of Satellite Facilities
(BUSINESS TIMES, 1 Oct 82)..... 19

Briefs		
	ITU Panel Membership	20
	Palghat ITI Unit	20
	Television Building Plans	20
	Electronics Purchases From France	20
	Malda Earth Station	21
	Durgapur Relay Station	21
INDONESIA		
Briefs		
	Irian Jaya TV Station	22
NEW ZEALAND		
	Three-Year Remote Sensing Mapping Project Completed (THE PRESS, 26 Oct 82).....	23
PEOPLE'S REPUBLIC OF CHINA		
Briefs		
	Urumqi Satellite Station Completed	24
LATIN AMERICA		
BOLIVIA		
	Old Stored Equipment Used To Install Telephone Lines (PRESENCIA, 9 Oct 82).....	25
Briefs		
	Telecommunications Rural Project	26
NICARAGUA		
	'Radio Sandino' Director on Broadcasting Role (Radio Sandino, 10 Nov 82).....	27
SUB-SAHARAN AFRICA		
IVORY COAST		
Briefs		
	Foreign News Agencies Scored	29

MOZAMBIQUE

Portuguese Cooperation in Improved Phone Service
(Narciso Castanheira; DIARIO DE MOCAMBIQUE, 30 Sep 82).... 30

Briefs
Chicualcuala, Massinga Tropospheric Stations 31

NAMIBIA

Briefs
Bel tel Videotext System 32

SENEGAL

Atlantis Project Put Into Service
(LE SOLEIL, 22 Oct 82)..... 33

SOUTH AFRICA

Country To Begin Exporting Computers
(SUNDAY TIMES-BUSINESS TIMES, 31 Oct 82)..... 35

SWAZILAND

Telecommunications Satellite Station Building Begins
(Jabu Matsebula; THE SWAZI OBSERVER, 21 Oct 82)..... 36

WEST EUROPE

INTERNATIONAL AFFAIRS

Denmark Developing Computer Data Link System for EC, U.S.
(Erik Bendt Rasmussen; BERLINGSKE TIDENDE, 14 Oct 82)..... 38

DENMARK

Phone Network Soon To Undergo Digital Revolution
(Sv. Aa. Jensen; BERLINGSKE TIDENDE, 2 Nov 82)..... 41

Computer-Controlled Telephone Expected To Be Marketed Soon
(Ejvind Olesen; BERLINGSKE TIDENDE, 15 Oct 82)..... 43

DENMARK/GREENLAND

Briefs
Fifteen Towns Now Receive Television 45

FRANCE

SAT, CIT-Alcatel, Thomson Win Contracts in Africa (D. Levy; ELECTRONIQUE ACTUALITES, 22 Oct 82).....	46
---	----

FINLAND

Briefs Finland Joins Euronet	50
---------------------------------	----

OVERVIEW OF UNESCO'S NEW WORLD INFORMATION ORDER

Florence POLITICA INTERNAZIONALE in Italian Jul-Aug 82 pp 144-153

[Article by Luca Balestrieri: "The Conditioning of the Big Western Agencies and UNESCO's Activities"]

[Text] Among the three areas which the world's information system can be divided into--the area of the OECD countries, the area of countries with planned economies, and the area of the Third World--there was a clear lack of balance to the disadvantage of the South until a few years ago. Efforts to modify power relationships. The structure of information. The role of the large Western agencies. The relationship between the monopoly of information and the technological revolution. Action by the international community, in particular by UNESCO. The South's attempts to overcome their dependent position, in the belief that there is a close connection between information and development. The South also has the problem of defending the cultural identity of its countries.

There is a profound lack of balance, to the disadvantage of the developing countries, in the flow of information between the areas of the world. The production and circulation of information is in the hands of the industrialized North. The perception of this lack of balance led, in the 1970's, to the developing countries' request for a "new international information order." Although it is certainly less dramatic than the food crisis, the energy crisis, or the crisis of the balance of payments, the South's subordinate position in the world with respect to the flow of information has a strategic importance which these countries are aware of.

No economic, political and social (and military) system can be defined in theory (or in practice) without a model for the production and circulation of information. The production, distribution and use of information is a fundamental element in any model of economic and political organization. In the concept of "information systems" we must include both the mass media (news-papers, radio, television), which we can call nonselective, or circular, information distribution systems; and devices for the production and transmission of information aimed at selected targets, mainly persons who make

economic and political decisions: these are noncircular communication systems. The diversity of the various systems of production and distribution of information can make us lose sight of the fact that they form a unified sector which is of strategic importance in the existing balance of power among nations. Indeed, the centers of technological innovation are the same, the economic interests involved are interwoven, and there has been a general divergence of interests, in recent years, between North and South in the world.

The technological revolution of the 1980's is rapidly modifying the reality of information systems. Telecommunication devices and the mass media are overlapping, changing, and creating new problems and new challenges for the countries in the South of the world, which are in danger of sinking into an even more subordinate position.

Direction and Volume of Flows

It is perhaps impossible to make an exhaustive quantitative analysis of the composition, volume and direction of the flow of information between the areas of the world. Although some research has been done, mainly by UNESCO, on different sectors, countries and types of information, it is still extremely difficult to obtain a precise and acceptable picture of the quantity and composition of flows of information, both because of the increasing differentiation of the channels and means of transmission of information and because of the proliferation of sources emitting flows of information.

Despite this uncertainty about quantitative evaluations, it is possible to identify three areas, relatively homogeneous internally, which characterize the structure of the flow of information:

1. The area of the OECD countries, where the major structures for the production of information are concentrated; this is the point of departure for currents of technological innovation. In this area, huge financial resources are concentrated in the information sector. The greatest volume of production is here. The major flows of exchange of information take place within this area; and massive one-way flows of information leave it for the information markets of the South of the world;
2. The area of the planned economy countries of the North, characterized by high levels of production and concentration of production structures and resources in the information sector, but having more limited exchanges of information with the world and within the area; this area is behind the OECD with respect to the processes of technological transformation;
3. The area of the South of the world, characterized by a small production of information (concentrated in a few countries, around which regional subsystems are formed), with a fair amount of exchange within the area, little input from the northern planned economy countries, and massive imports of information from the OECD area.

This same structure characteristic of the flow of information can be found in certain sectors about which more research is available, with quantitative data.

Thus we find, for example, three systems for the electronic transmission of information: that of the news agencies, that of the TV news agencies, and the circulation of nonjournalistic television programs (meaning sales, or exchange of programs, not broadcasting).

Until 1975, there was a crushing imbalance in favor of the Western countries in the news agency sector. The decision (Lima, July 1975, meeting of the foreign ministers of the nonaligned countries) to create a news agency pool of non-aligned countries pooled, and therefore multiplied, resources, infrastructures and professional capabilities.¹

There is no questioning the supremacy of the large agencies of the Western countries, however. Anywhere in the world one can receive at least 600,000 words per day by telex; of these, 250,000 are transmitted by the four big agencies: AP (United States), UPI (United States), REUTERS (Great Britain), and AFP (France); 220,000 are transmitted by the agencies of the socialist countries (mainly TASS and NEW CHINA); 110,000 are transmitted by all the agencies of the Third World taken together. The rest is transmitted by other Western agencies, including ANSA, which covers 77 foreign countries and has a privileged position in the Latin American market.² The agencies of the South of the world transmit less than 20 percent of the news which comes over the world network; the four major Western news agencies alone transmit more than 40 percent.

The size of the big Western agencies is translated into qualitative superiority (coverage capacity, speed of transmission); this enables them to control the market.

Behind this superiority is a greater capacity for investment, above all in new technologies; for example, AP's budget was \$120 million in 1979. (TASS has a budget of the same order of magnitude, but it is put at a disadvantage by its different concept of professionalism and of professional autonomy.)

The TV news distribution sector is simpler. The dissemination of televised journalistic material is controlled by a few agencies: VISNEWS (Great Britain), UPI-TN (United States), CBS-NEWS (United States), followed at a distance by DPA-ETS (FRG). These four agencies control almost all the flows of this type of televised material; not only the countries of the South, but also those of the Soviet bloc depend on them for world video journalistic information. Regional organizations for the exchange of programs, like URTNA (African National Radio Television Union), do not affect this oligopoly.

The structure of the flows of nonjournalistic television programs is complex. The available data,³ which have been incorporated in UNESCO's partial research projects, identify the main exporters of programs in the 1970's: (1) the United States, which exported 150,000 program hours per year, almost three-quarters of it within the OECD area; (2) the United Kingdom, which exported 30,000 hours per year, two-thirds of it within the English-speaking OECD area (United States, Australia, New Zealand, Canada) and the rest mainly to the West Indies, to English-speaking parts of Africa, and to the Far East; (3) France, which exported 20,000 hours per year, mainly outside the OECD area (two-thirds to French-speaking parts of Africa, the rest to the Middle East,

Haiti, Brazil and Mexico); (4) the FRG, which exported 6,000 hours per year, mainly to other parts of Europe (Austria, Switzerland, Scandinavia, Netherlands, United Kingdom and Italy); outside of Europe the flow is divided so that one-third goes to South America (especially Brazil), one-third to Asia, one-fifth to Africa, and the rest to non-European OECD countries.

As we can see, except for France most exchanges occur within the OECD area. Nevertheless, the quota of programs flowing toward the South--without there being any noticeable flow in the other direction--suffices to dominate the southern markets.

In the South there is local production for export concentrated in a few countries, which supply regional markets (Egypt in the Middle East, Brazil and Mexico in Latin America), but exchanges within the South are greatly inferior to one-way flows from North to South (Mexico, Latin America's main producer, exports only 1,300 program hours; Egypt exports only 1,100).

Italy exports about 4,000 program hours per year--a little less than the USSR--to 42 countries (in 1970). Italian exports go to the United States, Canada, South America, the FRG, France, Belgium, Switzerland, and the Netherlands. The Italian share of the Middle Eastern, African and Australian markets is growing.

We repeat that these figures were arrived at with difficulty, and change every year. Other sectors, like commercial, industrial, and financial information, are almost impossible to quantify. This is serious because it is this type of information that is going through the new information systems. We believe, however, that one can accept--with possible quantitative variations--the above-mentioned structure of the flow of information, divided into three areas.

The Technological Revolution

The scenario of the 1980's is dominated by the introduction of new technologies destined to radically transform mass communications and systems for the production and circulation of information. These technological innovations are: the industrial use of optical fibers, the advent of the third generation of microprocessors, the integration of television sets, computers and telephone cables, and direct broadcasting via satellite (DBVS). DBVS, teletext, videotel, the integration and juxtaposition of various information systems, new media and new ways of using the existing ones: in view of the present accelerated tempo (which, what is more important, is likely to continue in the foreseeable future) of the technological revolution in the information sector, one must ask oneself what the overall consequences will be for the world information system.⁴

We can take the following as a hypothetical scenario for the near future: (1) exponential increase in the amount of information available, and increase in the speed of circulation; (2) collapse of the unified cost of information, but large increase in the amount of capital absorbed by the sector; (3) the services of the information and telematic sector will constitute a post-industrial sector of great importance to economic development; (4) the

production of information hardware and software technologies will become a propelling industrial sector (with its connections with other strategic industries like the aerospace industry).

Let us also assume that this technological revolution is destined to transform the very structure of the systems of production and circulation of information. One can in fact expect: (1) the formation of microsystems (systems for the production and circulation of information within limited territorial confines or production units, mostly integrated as a function of the production of goods and services); (2) the formation of a global system and regional (transnational) subsystems for the dissemination of information based on multi-purpose satellites (with various functions: radio signals, TV, telex, telephone, digital signals for computer communication, etc.).⁵

It is possible that all this will spill over onto the worldwide level, restructuring flows and exchanges of information among nations and regional groups and perhaps aggravating to a critical point the subordination of the southern countries.

The new technologies, which have been invested and implemented in the OECD countries, will probably accentuate a functional center-periphery relationship between North and South, above all because they are technologies which have been produced for the needs of developed economies.

The Interests of the International Community

During the 1970's the southern countries perceived the strategic importance of the information problem and its political nature with respect to the affirmation of substantial national independence; the international community took the matter up, therefore, at various levels in the United Nations system. But the perception of the problem's political aspect has often induced the southern countries to seek a dangerous solution: the subordination of systems of production and circulation of information to the political authorities in charge of the territories where the information circulates, or political responsibility on the part of governments for the information produced under their jurisdiction which circulates abroad. The view of the West has been that if this request were acceded to, it would limit or even kill freedom of the press.⁶ The UNESCO discussion was therefore marked by a mutual exchange of accusations between the West and the countries of the South, the latter suspecting the former of wishing to protect their privileged position and the former suspecting the latter of wishing to destroy freedom of the press by legitimizing all kinds of authoritarian regimes.

The conflict became even more heated due to the tactical alliance between the countries of the South and the Soviet bloc, which wanted to turn the question of any interference in its closed and selective information distribution system into a political-diplomatic issue. (Consider, for example, the operation of the diversified system of information transmission by TASS, from the news bulletin for all subscribers, through the various and increasingly reserved editions, up to the red TASS, only a few hundred copies of which are available, and only to the leaders of the regime. This system of control and

selective dissemination of information has as its weak point information from outside the system.)

Starting in 1973, the fourth conference of the heads of state and governments of the nonaligned countries, held in Algiers, considered the problem of mass communications as an element of national policies. As an answer to the impasse the discussion had reached at UNESCO, in 1975, in Lima, the foreign ministers of the nonaligned approved the setting up of a news agency pool. Also in 1975, in Helsinki, the Western and neutral countries succeeded in inserting three pages guaranteeing freedom of information into the Final Act. In 1976, in Nairobi, in 1978, in Paris, and in 1980, in Belgrade, the general conferences of UNESCO registered deep splits, until the attempted mediation of a commission chaired by Sean McBride in a report which was presented in Belgrade in 1980 in its final version. But conflicts began to emerge again immediately afterward, in May 1981, when the Director General of UNESCO, the Senegalese M'Bow, again proposed the issuing of a government "license" allowing people to engage in the journalist profession.

In brief, while the southern countries' unilateral initiatives achieved some degree of success (like the news agency pool of the nonaligned, or--in the case of initiatives of individual countries--the information reform in Peru in 1971, or the Algerian rules on the importing of television programs), the initiatives proposed at the United Nations merely gave rise to statements and documents, but nothing in practice. Meanwhile this immobility allows the technological revolution to proceed and the South's subordination to increase more and more.

There is only one sector in which the international community has succeeded in intervening, tackling the problem of the distribution of the elements of information systems which can be identified as nonrenewable goods existing in limited quantities. Radio and television broadcasting frequencies and geostationary orbits are in this category. There was a real danger that the industrialized countries of both East and West might take them over to the detriment of the southern countries. To prevent this, in 1971 the WARC (World Administrative Radio Conference), convened in Geneva by the ITU, divided the broadcasting frequencies by satellite transmission among the states. A second conference (Geneva, February 1977) assigned a share of orbits and a limited number of frequencies to each state.

Investments for Information in the South

In the South of the world, there are no resources to be found on internal markets that would permit the production of information which would be competitive, on the world market and within the developing countries themselves, with the information provided by the North. In the last analysis, the disparity in the flows of information between the various areas of the world depends on the ability to offer a growing body of useful information (i.e. for which there is a demand) at decreasing unified prices and at an increasing rate of dissemination. This implies an increasingly broad mobilization of technical and human resources (professionalism, organization, mastery of technologies) and, above all, of financial resources. It is the lack of adequate financial resources

which is the major obstacle to the growth of information systems in the developing countries.

Amounts and sources of financing of information systems vary in different regions of the South. Financing can be obtained on the market or by the state, or via a mixed system. In general, the market provides financing for the mass media by means of expenditures for advertising and financing for telecommunications systems with noncircular dissemination by means of the purchase of services by private or government-owned firms. State financing, on the other hand, subsidizes the mass media either by means of direct contributions, or through indirect facilitations, or by means of fees set by law. Noncircular information systems are supported by direct investments made by the state, or by means of a preferential policy of orders placed by government-owned firms. There are certain regional variations in the South in the means of obtaining investment funds for information.⁷ Although the most widespread is a mixed financing system, in Africa there is a prevalence of government financing while in South America the market component is larger (advertising).

In general, in developing countries the market is not strong enough to channel into the information sector a share of the domestic product comparable to that devoted to it in the countries of the North; this difference is even greater if one compares absolute figures rather than percentages of GNP.

In the South there is a widespread weakness of firms producing services, and these are the principal users of noncircular information systems. Even where the tertiary sector is better developed, as in certain Latin American countries, the modern services sector which uses the new telecommunications systems in the North is absent. Even the mass media have trouble finding financing on the market. Even in those southern countries (excluding the OPEC countries with the highest per capita income) where the portion of GNP spent on advertising is the highest (Mexico and Brazil: 0.44 percent), it is less than that spent in the OECD countries (United States 2.03 percent, United Kingdom 1.16 percent, Japan 0.97 percent, FRG 0.75 percent, France 0.73 percent, according to data for the late 1970's. Italy trails with only 0.33 percent). The distance between developing countries and OECD countries is obviously even more significant if we consider absolute figures. At the beginning of the 1970's the percentages of funds spent on advertising in the world were divided among the various regions as follows: United States and Canada, 61 percent; Europe, 24 percent; Asia, 8 percent (including Japan and the newly industrialized countries of the Far East); Latin America, 4 percent; Oceania, 2 percent; Middle East and Africa, 1 percent.

The total amount spent on advertising is constantly growing, and in the last two decades the United States' share has decreased. In 1960, the world total spent on advertising was \$18 billion, about \$12 billion of which in the United States; in 1970, it was \$35 billion, \$20 billion in the United States; in 1980, the total was estimated at \$110 billion, \$55 billion of it in the United States, \$10.5 billion in Japan, \$7.5 billion in the FRG, \$6.14 billion in the United Kingdom, \$4.5 billion in France, and \$1.1 billion in Italy. In other words these 6 OECD countries absorbed 77 percent of world expenditures on advertising.⁸

If the market does not provide the information sector with sufficient financing, the government must intervene to guarantee a minimum level of investment. Political factors can be added to market weakness. Both forms of financing have negative aspects, and in the developing countries they have implications which differ from those which may exist in countries whose social structure is less lacerated by imbalances.

In any case, this amount of investment is insufficient to create productive structures which are competitive with those of the industrialized countries. We have mentioned the budgets of the big news agencies, which guarantee their technological and commercial supremacy. Another example of this insufficient level of investment is the invasion of television markets in the South by programs from the industrialized countries. At present, the low level of investment causes a wide gap between production budgets in the North and South. In 1975, the cost of producing one television hour was, on the average, \$150 in Nigeria. In the same year, the BBC spent an average of \$30,000 per hour of fiction broadcasting. But the British product--obviously qualitatively superior, given this level of investment--was more than amortized by internal consumption and sales in the OECD area. In 1975, \$60 sufficed in Nigeria to purchase one unit of an average U.S. or British serial. The industrialized countries' product is not only qualitatively superior, it is also competitive on southern markets. But since the southern market is marginal, the product is tailored to the cultural and ideological needs of the public in the industrialized countries, which is the principal market. Thus the South receives culturally foreign products.

The result of this competitiveness of foreign programs is an invasion of southern markets. For example, in 1973-74 in Nigeria, out of 100 hours of television broadcasting, 55 percent were imported; 75 percent were imported in Senegal, and 60 percent in Peru. Even Brazil imported 57 percent of its programs (imports which were not compensated by exports). In comparison, the United States imported 1 percent of its programs, Japan imported 4 percent, France 9 percent, the United Kingdom 12 percent, and Italy 13 percent; at the same time they exported on a large scale.⁹ In these circumstances, the southern countries' defense of their cultural identity often takes the form--since it is impossible for them to compete successfully on the market--of "cultural protectionism"; this has happened in Algeria, which has placed a ceiling on imports of foreign television programs, and in India, which has favored one of the mass media--the radio--which is less costly and better adapted to rural realities; it is also, and above all, impervious to imports because of its very nature. The problem of cultural identity is even more complex in multilingual countries. Control of the mass media can be used to safeguard subregional languages and cultures (as it is in India, where All India Radio broadcasts news and programs in 20 languages and 34 dialects of the subcontinent), or it can be oriented toward homogenization, squeezing out languages and cultures of ethnic minorities (Algeria's case is paradoxical: the replacement of French by Arabic as the official language of the administration and the media was accompanied by the repression of Berber linguistic groups).

The situation of Africa south of the Sahara is almost desperate from this standpoint: broken up into 2,000 dialects and languages, it leaves dominance

of the mass media up to French and English, which are spoken by not more than 10 percent of Africans. A noteworthy example is the failure of Kenya's attempt, from 1974 to 1979, to replace English with Swahili (the koine of Eastern Africa) as the language of the mass media.¹⁰ This failure limits the use of communications systems in rural areas.

The inadequacy of investment is even more serious when it comes to new technologies. Cut off from the development and production of the new micro- and macrosystems in the information sector, the developing countries are active users of these systems only occasionally (we can recall India's DBVS experiment, the Site program, from August 1975 to August 1976, for broadcasting educational programs to 2,400 isolated villages via a NASA ATS-6 satellite).¹¹

This trend may be partially offset by regional cooperation. Thus ASBU (Union of Arab Countries for Radio Broadcasting) and URTNA (African National Radio-Television Union), in their regions, promote the concentration of resources necessary for the use of advanced technologies. But except for the Arab countries, which are certainly not short of resources, these countercurrents cannot change the general picture.

In general, the access of developing countries to noncircular telecommunications systems is hindered by the high cost of users' rates for macrosystems; these rates are not only high on the average, they are graded to the disadvantage of minor or peripheral users. The 21st UNESCO General Conference urged the two key organizations in this sector--INTELSAT and INTERSPUTNIK--to work for a reduction of rates for developing countries. But these strangling rates remain in effect.¹²

Information and Development

The relationship between information and development differs radically in the North and South. While in OECD countries the tertiary production sector (information and telematics) is a key sector for economic development, in the South information systems mainly serve the purpose of contributing to agricultural transformation and basic education (literacy, health education). Their contribution to development is indirect, and is apparent only in the long run, so there is no immediate return on investment. To put it simply, we can say that in the North, the information sector is a leading sector in itself, whereas in the South it is auxiliary to long term transformations in the traditional production sectors.

But information technologies are developed bearing in mind the nature, tempo and modalities of development of the industrialized countries. It is often impossible to apply them to the South without reworking both hardware and software. It is important to stress the fact that the imbalance the South suffers from is not merely a matter of quantitative lack of balance in the exchange of information. The fact that flows of information are under the control of the developed countries leads to a misfit of information systems with respect to the economy and the political and social organization of the countries of the South.

Every operational economic model includes systems for the production and circulation of information: (1) in relation to the mechanisms of the formation of macro- and microeconomic choices; information systems are tailored to the requirements of the structures and integration of decision-making circles; (2) in relation to the need for the dissemination and development of technical and professional knowledge required by a given production apparatus: in this connection information systems complement or replace educational institutions; (3) in relation to the creation of needs: as a means of swaying, restraining or orienting consumption, an instrument for the selection of needs.

Micro- and macrosystems for the collection, processing and circulation of information needed for economic decision-making are usually geared to the needs of firms, which are their most frequent economic unit of application--firms which conform to the OECD countries' model. The transfer of such systems to the South runs up against a different structure, and different rationalization problems, in the centers of economic decision-making.

Above all as regards information macrosystems, problems of cost come into play, i.e. the volume of available financial resources. Let us take, for example, the application of information macrosystems to the primary sector. Satellites for the identification of crops, forestry resources, and mineral resources, and related systems for the discovery, processing and distribution of information, are financed, planned and managed by a few countries--the United States, Canada, the European countries and Japan. The information these systems provide is available, as a service offered on the market, to the multinational corporations of the appropriate sector; these corporations' production policies do not necessarily coincide with the programs of the governments of developing countries. The apparently paradoxical situation exists of information useful to the developing countries being made available not to their governments but to multinational corporations in the agriculture or mining sectors, which are thereby put in a position to plan their interventions in these same southern countries. The cost of this information system is prohibitive, so most governments of southern countries are unable to gain access to the information they need. This affects these countries' ability to make macroeconomic decisions apart from the conditioning of the multinational corporations active in the sector; this is especially true of the smallest and poorest countries.

As for the role of information systems as a complement or substitute for educational institutions which impart a level of knowledge throughout society consonant with the needs of development, there are problems involved in applying systems developed in the industrialized North to the South. The developing countries' main problem is not the applicability of systems for the transmission of information to the areas occupied by the users; DBVS systems, for example, can serve scarcely equipped areas in the Rocky Mountains and the Canadian Northwest, the Congo Basin, and India's desolate rural areas equally well (we have already mentioned the Site project). The real problem is the relationship between the cost of producing and transmitting a unit of information and this unit's economic utility. In other words, it is the problem of the relationship between the amount of investment required and the length of time it takes to see results. Literacy programs, basic health education, and

the dissemination of knowledge applicable to agriculture are necessities for the development of the South, especially in the poorest countries; but they require vast, flexible, and costly information systems, and results can only be evaluated in the very long term--many years.

The South is therefore in need of flexible but inexpensive systems which favor the capacity for diversification (from village to village, in extreme cases) and a low production cost and users' cost relative to the complexity of the information transmitted: for example, favoring the radio rather than television for educational purposes. A radio program costs less to produce; it costs less to build a reception network; and a very high number of radio stations can fit into the frequencies occupied by a single television channel.

But the technologies of the North favor the complexity of a unit of information, and allow substantial reductions in cost per unit only in the case of markets with the capacity to absorb an exponentially growing quantity of information. Where this capacity is absent (as it is in developing countries), there is nothing but a growing need for greater investment.

Finally, information systems are tools for orienting consumption, and are therefore of primary importance for all development; we are referring to circular dissemination telecommunications systems. The central place of television in the production of the social image is yet to be studied; this image entails partly the reorganization and partly the creation of needs. If a certain model for development in the southern countries must also take into consideration the structure of consumption, and bring about--at least temporarily--choices between individual and collective consumption, the problem is bound to arise of the influence of the mass media on the propensity to consume as a component of cultural identity.

An example of this can be found in the above-mentioned Peruvian law for the reform of information (1977). According to the report of Meza Cuadra, Peru's minister of transport and communications, who submitted the law, advertising occupied up to 37 percent of television program time. Of 390 hours broadcast weekly, in the years before the reform, 146 were advertising.¹³ This advertising was purchased mainly by big U.S. multinational corporations, which transmitted a propensity for private consumption aimed at upper income viewers; the tastes they encouraged were a function of the status symbol and were basically alien to the needs of independent development. Furthermore, advertising is only the most visible part of the stimulation of a certain consumption structure; it is also inherent in telefilms and imported programs from the North shown in developing countries. All this causes a misfit between the consumption structure stimulated by advertising and the requirements of development.

Cultural Identity and Power

The southern countries' subordinate position in the world information system contrasts with the tension for the maintenance (or reconstruction) of their cultural identity. The possibility of having an independent socio-cultural order is hindered by this bombardment by values, ideologies, models, and

images from outside. In these circumstances there is a transmission of information among areas of the world in the strictest sense of the mathematical theory of information, namely the transfer of an order from one system to another.

One of the functions of the mass media is to shape cultural and linguistic identity and produce a social image. By production of a social image we mean proposing models and ideologies (like systems of values) for the organization of society, proposing an image of the social space that is interwoven with values and functions. Moreover, another thing is at stake: the legitimization or delegitimization of the political authorities in the collective consciousness--the representation or undermining of the sacred nature of authority through the media.

Thus information systems are factors of stabilization or destabilization of a society's cultural order and government (its legitimization). On this terrain, the attitude of the southern countries is ambiguous, and the motives of the commune front formed in the international organizations are more complex.

The invasion of southern markets by information produced in the North and by the ideologies this information is a vehicle for is a factor of instability for the cultural order of the southern countries. In itself, instability is not negative; one must see if the destabilized system has the capacity to absorb the novelties coming from the outside in its own dynamics or if, on the contrary, the instability carries dependence with it. One should not overestimate the capacity for "semiological guerrilla warfare," or the inclination of subordinate social groups in the southern countries to interpret in an "aberrant" way (aberrant with respect to the sender's intentions) messages produced in accordance with a code and semantic order that are alien to the receiver.¹⁴

Information coming from outside also has destabilizing effects on the political system, in cases where that system is based on a selective distribution of information, with the authorities having access to more information, and information for the masses being censored or manipulated according to "pedagogical criteria." The free flow of information from outside the system gives the whole population the information which political decision-making can be based on. From this point of view, a history of Latin American information systems during the transition from the populist experience to military regimes would be interesting.

We have two separate sets of problems here: the defense of a country's cultural identity, defined as its capacity to absorb information from outside without falling into a dependent relationship; and the defense of the existing power system and its legitimization in cases where it is based partly on selective access to information.

The ambiguity of certain stances of the southern countries, for example at UNESCO, arises from this dual nature of the problem. Defending oneself from cultural dependence can mean imposing the supremacy of political decisions over the regulation of the flow of information. Also, the defense of cultural

identity from flows coming from outside can be used as a pretext for the defense of the existing power order. An example can be found in Zaire's legislation about the press and information in general--highly nationalistic in its motives, substantially repressive.¹⁵ Unless the problem of this ambiguity is solved, the outlook for a different world information order is destined to remain confused.

FOOTNOTES

1. For a summary of the activities of the news agency pool of the non-aligned, see Pero Ivacic (president of the pool's coordinating committee), "The News Agencies Pool of Nonaligned Countries and Mechanisms for Dissemination and Exchange of Information" (report dated 23 October 1981, mimeographed).
2. For an overview of the world's news agencies and for data about the major agencies' daily production, see the monograph edition of L'EDITORE, No 28, year III, April 1980.
3. See Kaarle Nordstreng and Tapio Varss, "La television circule-t-elle a sense unique? Revue et analyse de la circulation des programmes de television dans le monde" [Does television travel in only one direction? Review and analysis of the circulation of television programs in the world], Paris, UNESCO.
4. See OECD, "Conference sur les politiques en matiere d'informatique et de telecommunications," (4-6 February 1975), Paris, OECD.
5. See COMUNICAZIONI DI MASSA No 1, year II, January/April 1981; also see Glen Robinson editor, "Communications for Tomorrow," New York, Praeger, 1978.
6. The battle continues, and the Western editors have even threatened to persuade their countries to withdraw from UNESCO: see FIEJ BULLETTIN, editorial, June 1981.
7. See Elihu Katz and George Wedell, "Broadcasting in the Third World," Cambridge (Mass.), Harvard University Press, 1977.
8. Source: Starch Inra Hooper.
9. Besides the above-mentioned Katz and Wedell (1977) see W. Sydney Head, editor, "Broadcasting in Africa," Philadelphia, Temple University Press, 1974; and John Lent, editor, "Broadcasting in Asia and in the Pacific," Philadelphia, Temple University Press, 1978.
10. See Peter Mwaura, "Les politiques de la communication au Kenya," Paris UNESCO, 1980.
11. See M. U. Desai, "Les politiques de la communication en Inde," Paris, UNESCO, 1977.

12. See "Contribution de l'Unesco a la creation et au developpement des mecanismes regionaux de diffusion et d'echange de l'information," mimeographed, document drafted for the colloquium on the regional and international mechanisms of the dissemination and exchange of information held in Paris in 1981.
13. See Carlos Ortega and Carlos Romero, "Communication Policies in Peru," Paris, UNESCO, 1977.
14. See Armand Mattelart, "Televisione, commercializzazione, rivoluzione," in COMUNICAZIONI DI MASSA, No 2, year I, May/April 1980.
15. See the text of the "Ordonnance-loi" of 28 October 1970 and the resolutions of Zairian editors in Botombele Ekanga Bokonga, "Les politiques de la communication au Zaire," Paris, UNESCO, 1978.

9855

CSO: 5500/2347

CONTRACT AWARDED FOR TWO SATELLITE GROUND STATIONS

Canberra THE AUSTRALIAN in English 7 Oct 82 p 14

[Text]

THE first contract giving Australian industry a stake in the national communications satellite system has been signed.

The \$5 million contract has been awarded by Hughes Communications International to Amalgamated Wireless (A'Asia) Ltd of Sydney.

The Australian company will design and manufacture two ground-station sub-systems concerned with satellite tracking and monitoring.

Hughes Communications International is building three satellites and two ground-control stations for Australia's satellite system due to come into operation in 1985.

In a joint statement yesterday, the Minister for Communications, Mr Brown, and the Minister for Defence Support, Mr Viner, said: "This contract is the first awarded by Hughes against its commitment to in-

volve Australian industry in the satellite project under the Australian Government off-sets program.

"The early involvement of local industry in this high-technology field is particularly pleasing, and reflects creditably upon its capabilities."

Under the contract, AWA would design, manufacture and supply two sub-systems for primary tracking and monitoring stations, they said.

One of the systems, a communications monitor developed by AWA, was an advanced product with considerable export potential.

Because of this, there was provision in the contract for further systems to be built by AWA and incorporated in overseas satellite systems supplied by Hughes.

Australian companies.

CSO: 5500/7512

GOVERNMENT WARNS TELECOM IT MAY LOSE SOME OF ITS MONOPOLY

Canberra THE AUSTRALIAN in English 11 Oct 82 p 1

[Text]

TELECOM, one of the biggest semi-government employers, looks certain to lose some of its functions to private enterprise soon.

The Minister for Communications, Mr Brown, has warned Telecom that changes in the organisation are "almost inevitable".

Mr Brown foreshadowed yesterday the tabling in Federal Parliament in the next few weeks of the long-awaited and controversial Davidson Report into telecommunications.

The Davidson Committee, headed by Mr Jim Davidson, a businessman, has been investigating the extent to which the private sector could be more widely involved in the provision of existing or proposed telecommunications services, either alone, or in competition or conjunction with Telecom.

Expansion

Mr Brown said the issue under consideration was whether more efficient and economical services would be provided for the public through private enterprise involvement in areas of Telecom's activities now protected from competition.

He told the 52nd annual convention of the Federation of Australian Radio Broadcasters in Melbourne he did not know what the recommendations of the inquiry would be.

But he said: "I will go this far and say that telecommunications, like all forms of communications, are expanding and developing so rapidly that change of some sort or other is almost inevitable.

"The challenge to us is to accommodate change and to handle it rationally."

The Australian Telecommunications Employees Association has commissioned its own study, which concluded that Telecom would face ruin if its monopoly was broken.

OVERSEAS COMPUTER-CONTROLLED TELEX EXCHANGES PLANNED

Melbourne THE AGE in English 12 Oct 82 p 33

[Article by Don Maddocks]

[Text]

The Overseas Telecommunications Commission (OTC) is to spend \$7 million over the next few years on two new computer-controller telex exchanges.

Announcing the decision, the Minister for Communications, Mr Neil Brown, said usage of the OTC's overseas telex service was growing at a rate of about 20 per cent a year.

"This growth is likely to be sustained in the foreseeable future, even allowing for the introduction and growth of new information transfer services," he said.

The first of the new exchanges, which are being supplied by L M Ericsson, is expected to be in operation by early 1984. Mr Brown said the new exchanges would replace the existing 1800-line and 2500-line exchanges in Sydney.

"The new equipment will keep Australia's telecommunications services in line with the most advanced in the world," the Minister said. "It will enable improvements to be introduced to the overseas telex service and give OTC the capacity to meet increased overseas telex demand until the 1990s."

Mr Brown said the second of the two exchanges would be operational by the middle of 1985.

Each of the new exchanges will have an initial capacity of 4000 lines, and either of the exchanges will be capable of handling Australia's entire overseas telex requirements in an emergency situation.

The new equipment will also have the capacity to automatically "store and forward" telex data, in the event that a receiver's machine is tied up when the information is transmitted.

This capability will help keep telex abreast of its growing competitor in the communications field — electronic mail.

Commenting on that competition, OTC engineer Mr Graham Markey, who has been working on the project, said he thought telex still had a bright future.

He said electronic mail was certainly a "competitor" to telex, but added that with enhancements like "store and forward", telex would be around for a long time to come.

"We're taking the attitude in OTC that there are a lot of people out there using telex. It's got an existing network, and that's one big advantage over the data systems," Mr Markey said.

"We have gone into this contract specifically to buy some enhancements, like 'store and forward'. And at this stage that is an OTC exclusive," he added.

Mr Markey said the OTC was still deciding whether the new enhancement would be offered to all users, or just on a restricted basis initially.

He said OTC would also be going to provide the Ericsson "operator system", which is a back-up sub-system which helps operators handle enquiries.

OTC will also be installing a special "abbreviated address" system, which will allow subscribers to use an abbreviated two-letter code, perhaps, to replace a dialling sequence of up to 15 digits.

BRIEFS

AUSTPAC LAUNCH--TELECOM's packet switched data service, Austpac, is on target for public launch in December. At the Austpac User Group's recent meeting, Mr N.R. Crane, Telecom's data division manager, announced that the first customers would be connected to the service by December 30. He said application forms would be available from Telecom's major sales office from November 22 and applications would be accepted in all States from November 29. Mr Crane also announced a special introductory tariff package for Austpac. During the early months customers would not be charged for national traffic carried on Austpac, but normal access charges would apply. For customers with medium to large Austpac data applications, Telecom's data marketing manager, Mr David Gannon, stressed the need to negotiate an agreed development program. This program would enable a customer to develop, field trial and implement his system in an agreed time frame while allowing Telecom to provide network capacity and facilities to meet the program. Facilities and charges for protocol testing were also announced at the user group meeting. From December 15 Telecom would offer a protocol test service using portable equipment which would be available for use within a customer's computer centre. [Text] [Canberra THE AUSTRALIAN in English 12 Oct 82 p 25]

TELECOM IMPROVEMENT COSTS--TELECOM is placing forward orders worth \$84 million for local telephone exchange equipment as part of a drive to expand and improve the communications network. The Minister for Communications, Mr Brown, said yesterday he had approved Telecom placing these orders which were for equipment to be delivered in 1983-84. He said: "The orders will be most valuable in helping maintain manufacturing levels in Australia's telecommunications equipment industry." The equipment would be installed in some of about 50 new and extended local telephone exchanges, part of Telecom's \$1500 million 1982-83 capital works program. Mr Brown said the firms to be awarded contracts were: Standard Telephones and Cables Pty Ltd of Sydney, \$30 million; L.M. Ericsson Pty Ltd of Melbourne, \$28 million; Pessey Australia Pty Ltd of Sydney, \$23 million; Centre Industries, of Sydney, \$3 million. [Text] [Canberra THE AUSTRALIAN in English 14 Oct 82 p 3]

CSO: 5500/7512

INADEQUATE PLANNING DELAYS USE OF SATELLITE FACILITIES

Kuala Lumpur BUSINESS TIMES in English 1 Oct 82 p 19

[Excerpts]

THE fate of India's first multi-purpose satellite seems to be well "still in orbit."

After INSAT 1A was launched from Cape Canaveral in the United States early this year, the satellite is yet to become operational. Though its jammed C-band antenna was released by Indian space scientists, its "solar sail" remains stuck. The solar sail is designed to counterbalance the array of solar panels on one side of the satellite and give it stability.

The 1,150-kilogramme INSAT 1A is the first of two identical satellites of the first generation Indian National Satellite System. It is the first multi-purpose satellite to be put in geostationary orbit (it remains fixed above a certain area on earth, like India in this case, and remaining above that area even as the earth revolves).

It combines three functions in one. It will route long-distance telephone calls, relay radio and television programmes and keep an eye on the weather — all at the same time.

The satellite was built by an American firm, but its design is essentially the brainchild of Indian space scientists. Its triple function capability is based on an internal study by the Department of Science and Technology. The satellite was built according to specifications provided by the

Indian Space Research Organisation.

High quality

Hopefully the snags will not have any substantial effect on the usefulness of INSAT. At most, they will reduce the satellite's life, originally set at about seven years, by a few years because of faster depletion of the thruster fuel needed for periodic orbital adjustments. However, a second satellite which was originally to be a spare, INSAT-1B, will be up next year.

At the moment, INSAT is parked in its pre-assigned slot in geostationary orbit, 36,000 kilometres above the equator at 74 degrees east longitude. According to Indian space officials at the Master Control Facility at Hassan, all systems of the satellite are in perfect health.

The satellite's telecommunication and TV transponders have been successfully tested. Its meteorological equipment has already relayed high quality cloud pictures. Unfortunately, there appears to be some delay in setting up the necessary ground facilities for the commissioning of INSAT.

INSAT has 12 transponders for telecommunication needs and two transponders for TV. It also carries a very high resolution radiometer for meteorological observation and a

meteorological data relay channel. It is a joint venture of the Department of Space, the Posts and Telegraphs Department (P & T), the Indian Meteorological Department, Doordarshan and All India Radio.

The INSAT ground segment comprises 31 earth stations and terminals set up by the P & T Department. Five of the large telecommunications earth stations are located at Delhi, Bombay, Calcutta, Madras and Shillong. There are also 13 medium earth stations, 11 remote area terminals and three transportable emergency terminals.

Meteorological data from INSAT is to be received and processed at the Meteorological Data Utilisation Centre (MDUC) in New Delhi. The India Meteorological Department is setting up a network of over 100 unmanned Data Collection Platforms in remote areas which will send meteorological data to the MDUC via INSAT.

The greatest benefit from INSAT will perhaps be reaped by the P & T Department. The satellite will provide more than 4,000 high grade two-way telephone channels for inter-city traffic. At the moment, trunk traffic between major cities is carried mainly by microwave and underground coaxial cable systems. INSAT provides a third network of high-

grade trunk circuits.

A major function of INSAT will be television broadcasting. Technically the satellite is capable of providing television service to the entire country for 12 hours daily. But inadequate planning will initially limit it to 45 minutes of educational programmes and one hour of "development" programmes. This, many feel, would be a colossal waste of resources.

INSAT is equipped with a high-power S-band antenna for television signals which can be picked up by specially designed TV receivers. The advantage of such a facility is that TV service can be provided to any part of the country without a TV transmitter. This, says N.L. Chawla who has been actively involved with the INSAT project, "opens up tremendous possibilities for a country like India."

Initially, INSAT will provide TV service to selected village clusters in six states — Andhra Pradesh, Orissa, Maharashtra, Bihar, Gujarat and Uttar Pradesh. The plan is to install 8,000 direct-reception sets and about 7,000 conventional sets for community viewing in the six states.

The possibilities with INSAT are many. But most will remain unused for a long time because of inadequate planning. — Depthnews Science

BRIEFS

ITU PANEL MEMBERSHIP--Nairobi, October 23 (PTI)--India has been re-elected to the administrative council of the International Telecommunications Union (ITU) topping the list of 11 winners from Asia and Australia region in the poll held at the plenary here last night. India polled 111 votes representing the support of more than 80 percent of the member countries. China and Japan followed India with 108 and 105 votes, respectively, while Pakistan managed the last place in the list with 65 votes. Bangladesh was among the five countries from the region voted out by the plenary. [Text] [Bombay THE TIMES OF INDIA in English 24 Oct 82 p 9]

PALGHAT ITI UNIT--New Delhi, Oct 19--The cost of expanding the Palghat unit of the Indian Telephone Industries (ITI) for producing electronic switching equipment with a capacity of 1.5 lakh lines per annum has gone up to Rs 33.72 crores with an exchange component of Rs 15.83 crores at current prices from the estimate of Rs 15.95 crores (foreign exchange component Rs 8 crores). [Excerpt] [Madras THE HINDU in English 20 Oct 82 p 7]

TELEVISION BUILDING PLANS--New Delhi, Oct 19--A full-fledged TV centre with studio facilities and a 10 kW transmitter is expected to come up in Bangalore by 1984-85, the Information and Broadcasting Minister, Mr N.K.P. Salve, said in the Lok Sabha today. The equipment had been ordered, the site acquired and building plans finalised, he told Mr S.N. Krishna. In Trivandrum: Mr V.S. Vijayaraghavan was informed that a low-power TV receiver-cum-relay system was being set up at Trivandrum before the Asian Games. The construction of buildings for a TV centre in Trivandrum was in progress and an expenditure of Rs. 173.44 lakhs had been incurred up to September. It was expected to be commissioned by 1984-85. Asiad events: Separate items of producers, cameramen, commentators had been constituted to cover each of the events in Asia, Mr Salve told another member and denied that there was any confusion in this regard.--UNI & PTI [Text] [Madras THE HINDU in English 20 Oct 82 p 6]

ELECTRONICS PURCHASES FROM FRANCE--New Delhi, Oct 19--Mr Yogendra Makwana, Minister of State for Communications, today denied in the Lok Sabha that the French offer for setting up a digital electronic equipment factory at Gonda in UP was accepted without floating a global tender. The tenders were invited and evaluated before the French offer, which was examined and

found reasonable, was accepted, he said in reply to a question by Mr K.K. Goyal. Mr Makwana said global tenders were also invited for the expansion of the Palghat unit of the Indian Telephone Industries. The tenders were high in view of the financial constraints. A rebidding was done. Meanwhile, the offer from France with the backing of the French government was made. This was under examination and no decision had still been taken. Mr Vijay N. Patil, Deputy Minister of Communications, said the Government had decided to set up two large factories for the manufacture of digital electronic switching equipment with an annual production capacity of five lakh lines each. One of the proposed factories would be set up under Indian Telephone Industries of Gonda. The Government had also decided to augment the present manufacturing capacity of the Palghat unit of ITI from 10,000 lines per annum of small electronic exchanges to 1.5 lakh equivalent lines per annum by including the manufacture of electronic trunk automatic exchanges, rural automatic exchanges and private automatic branch exchanges. The construction of the proposed large digital electronic switching factory at Gonda was likely to start during 1983-84, Mr Patil said.--PTI [Text] [Madras THE HINDU in English 20 Oct 82 p 7]

MALDA EARTH STATION--Calcutta, October 19--Malda is going to have an earth station to relay television programmes on the Asian games beamed through Intelsat within a range of about 20 miles. Equipment for the station has been despatched from Delhi. This makes Malda the only district town in West Bengal to get an opportunity to watch the Asian games on TV throughout the day. [Text] [Bombay THE TIMES OF INDIA in English 20 Oct 82 p 7]

DURGAPUR RELAY STATION--Durgapur, Oct 30--As things stand, there is no possibility for TV set owners in Durgapur, Asansol and Dhanbad to see the Asian Games because of the inordinate delay in setting up the TV relay station at Asansol. Signals from the Calcutta TV station are extremely weak in this industrial complex. The plan to set up the relay station at Asansol was adopted four years ago. According to the present rate of progress, the relay station will not be ready before April. A memorandum has been sent to the Union Information and Broadcasting Ministry to install a booster system at Asansol for the time being to enable TV owners in the above areas to see the Asiad. When it is possible for the Ministry to install a booster at Malda, there is no reason why it cannot be installed at Asansol, the memorandum says. [Text] [Calcutta THE SUNDAY STATESMAN in English 31 Oct 82 p 12]

CSO: 5500/7029

INDONESIA

BRIEFS

IRIAN JAYA TV STATION--Nabire, Irian Jaya, 21 Oct (ANTARA/OANA)--Irian Jaya Governor Isaac Hindom, in the name of Information Minister Ali Murtopo, Tuesday inaugurated a television relay station here built at a cost of RP 130 million (about U.S.\$1,500,000). With the new installation, TVRI [Republic of Indonesia Television] has now 159 relay stations in different parts of the country. Colonel Samilan, the project officer, said with its 27-meter high antenna, the station for the time being can cover only Nabire and nearby areas. There is a plan to extend the antenna to 40 meters next year. [Excerpt] [BK220553 Jakarta OANA in English 1240 GMT 21 Oct 82]

CSO: 5500/4309

THREE-YEAR REMOTE SENSING MAPPING PROJECT COMPLETED

Christchurch THE PRESS in English 26 Oct 82 p 33

[Text]

An era in the science of remote sensing has been reached in New Zealand on the completion of a three-year Earth Resources Management Project, jointly sponsored by the Government and I.B.M.

This is according to the Minister of Science and Technology, Dr Ian Shearer, who handed over the report to the managing director of I.B.M. New Zealand, Ltd, Mr Basil Logan, in Wellington recently.

The report demonstrated the use of computerised data from satellite and aircraft multispectral scanning cameras for flat land agricultural and oceanographic mapping, assessing land use in hilly inaccessible terrain, and monitoring exotic and indigenous forests in the King Country and Canterbury.

Using I.B.M. computer software and I.B.M.'s Sydney-based facilities, the project established a New Zealand multi-disciplinary remote sensing group with members from the Government departments of Scientific and Industrial Research, Lands and Survey, Agriculture and Fisheries, and the Forest Service.

The remote sensing section at the D.S.I.R.'s physics and engineering laboratory in

Lower Hutt, which was first established in 1974, was the co-ordinating group.

The project was conducted in two phases. Information from the Landsat Two satellite, launched by the United States National Aeronautics and Space Administration in 1975, gave a large regional view from a height of 920km, of the King Country and Canterbury.

An 11 channel multispectral scanner gave a more localised perspective as an aeroplane flew over the same areas.

All information was recorded as numbers on magnetic tapes. These were converted by computer into a colourful display on a visual display unit or a hard copy photograph, each colour having a different meaning for the "informed" user.

For example, the Landsat photographic maps showed green healthy pasture in red forests in brown, and water sediment as varying shades of blue.

However, this is an oversimplification, according to a D.S.I.R. botanist, Ms Susan Timmins, who said the numbers were processed and analysed according to their reflectance values.

She said the satellite information was recorded in four wavelengths, two in the

visible and two in the infrared. Aircraft scanner information was recorded in 11 wavelengths.

"As only three wavelengths can be displayed at any one time, the ones we use depend on what we want to analyse," she said.

Ms Timmins believes remote sensing is a valuable addition to a map maker's tool kit. It is a seventh of the cost of conventional ground surveys.

"We manipulated data from the aircraft scanner to simulate that of future satellites and produced a Darfield map showing barley, wheat, potatoes, peas, dry and green pasture, and bare ground," she said.

"If New Zealand had an earth resources satellite receiving station we could have this sort of information 'on line' and thus be able to supply farmers, foresters, land managers, environmentalists and fisheries people with up-to-date information."

The question of a receiving station had been put to a Government interdepartmental committee which would report to the Minister of Science and Technology soon, and communications aspects had been referred to the Communications Advisory Council, Ms Timmins said.

PEOPLE'S REPUBLIC OF CHINA

BRIEFS

URUMQI SATELLITE STATION COMPLETED--The Urumqi satellite ground communications station was recently completed and handed over for experimental use. According to investigations by experts and engineers of State Council departments concerned, such as the television (?engineering) department, the equipment fully meets the demands of the design. The Urumqi satellite ground communications station is a permanent ground station in China's first satellite telecommunications network. It will handle telecommunications, radio and television relays and newspaper fascimile transmission. All the equipment was designed and made in China. Work on constructing the station began in 1978. The preparatory construction was completed in October 1979. Installation of equipment began on 27 July last year. The engineers and technicians taking part in the work overcame many difficulties, worked hard with concerted efforts, and completed the installation work 2 weeks ahead of schedule. On the afternoon of 5 November responsible comrades of the regional party and government and the Urumqi PLA units Wang Enmao, Xiao Quanfu, Tan Youlin, Tomur Dawamat, Huang Luobin, and Janabil met in the [word indistinct] guesthouse the representatives who had taken part in acceptance work for the station. Comrade Wang Enmao thanked them on behalf of the people of all nationalities in the region, and wished them new success in science and technology work. [Text] [HK060310 Urumqi Xinjiang Regional Service in Mandarin 1300 GMT 5 Nov 82]

CSO: 5500/4107

OLD STORED EQUIPMENT USED TO INSTALL TELEPHONE LINES

La Paz PRESENCIA in Spanish 9 Oct 82 p 6

[Text] Cochabamba, 7 Oct--The administrative board of the Automatic Telephone Directorate has formally praised general manager Fernando Cabrerizo; technicians Victor Hugo Jaimes, Rolando Lanza and Eduardo Arce; and also Francisco Baldi and other assistants who, according to plan, have completed in the span of 3 months the installation of 1,000 telephone lines in the central hippodrome of this capital city.

In addition, the representative of the private shareholders appeared before the administrative board and Carlos Morales Paz Soldan, vice president of the Automatic Telephone Directorate, to praise the technicians highly for the work they have done and to emphasize the shareholders' ability to pay for completing the project and thus in a short time solve the problem created 4 years ago when subscribers to the tenth series cancelled their contracts.

Insofar as the automatic telephone workers themselves are concerned, they have made known to the full board their endorsement of the work of manager Cabrerizo who had given instructions that all the materials which had been stored for years be utilized and that they install the missing lines. They noted that he had done this at the risk of displeasing managerial employees who were of the opinion that the ground floor should be solely for the installation of new telephone lines. For Cabrerizo's purposes, a large room was then set aside to house the stored equipment.

These measures saved the firm approximately 1,000,000 dollars which the installation of the 1,000 telephone lines otherwise would have cost. The employees did the work in their free time for only 7,000 Bolivian pesos.

Fernando Cabrerizo pointed out that, after installation of the equipment is completed, then the work of making the outside connection to the power distributional centers will start and next the installations for houses. Cabrerizo indicated that he was counting on continuing these other projects in the same way so as to overcome the problems caused 4 years ago by the subscribers who had inexplicably liquidated all their shares of stocks. But he said this was not affecting the installation work in spite of the fact that all of the stored materials had deteriorated.

A representative from the auditor's office also has released his report on Cabrerizo's work, stating that the results achieved have been very good.

BRIEFS

TELECOMMUNICATIONS RURAL PROJECT--Authorities of the Rural Telecommunications Administration have reported that they are awaiting a shipment of modern equipment from La Paz to connect the town of Mina Bolivar to the national rural telecommunications network. Authorities and campesino leaders of this town located approximately 180 kilometers from Cochabamba along the border with Oruro Department protested the lack of cooperation by authorities of the Directorate General of Rural Telecommunications to see that they have dependable communications services. Authorities in Mina Bolivar stated that at present they do not have any means of communications since not even a highway exists to link their town with Tacopaya. They noted that the Directorate General of Telecommunications, through its representative Benjamin Fernandez, had promised to install this service several months ago, but that absolutely no work has been done to date. Benjamin Fernandez, the district director of rural telecommunications, noted that the installation of a modern system of communications between Mina Bolivar and Cochabamba and with the rest of the interior had not yet been carried out for economic reasons. He said that they are now only awaiting the shipment of radio equipment from La Paz to install this rural telecommunications service. [Text] [Cochabamba LOS TIEMPOS in Spanish 12 Oct 82 p 6] 9972

9972

CSO: 5520/2008

'RADIO SANDINO' DIRECTOR ON BROADCASTING ROLE

PA112055 Managua Radio Sandino in Spanish 1830 GMT 10 Nov 82

[Text] Miguel Blandon, known as Chuno, director of Radio Sandino and Nicaragua's representative at the ninth meeting of the Nonaligned Movement's Radio Broadcasting Organizations, which is taking place in Havana, Cuba-- has pointed out the importance of broadcasting in Nicaragua under the threat of imperialism's ideological campaigns.

Blandon said that Nicaragua is interested in any kind of cooperation that the nonaligned countries may give our country in the broadcasting sphere, which he characterized as having fundamental value because of the social and cultural characteristics of Nicaragua.

PRENSA LATINA's (Walfredo Angulo) interviewed Miguel Blandon:

[Begin recording] [(Angulo)] We are at Havana's conventions center, where we will interview Miguel Jesus Blandon, who is Nicaragua's delegate to the ninth meeting of the Nonaligned Movement's Radio Broadcasting Organizations, meeting here in Havana.

Blandon, we would like to know the main subjects that Nicaragua is bringing to this meeting.

[Blandon] One of the most important subjects, as we see it, is the use of radio broadcasting as a means of aggression against our countries. Nicaragua, being a weak country, does not have much technology and therefore cannot defend itself in the broadcasting field, and it is the victim of flagrant attacks from the United States, a very rich world power that can afford the luxury of installing transmitters in neighboring countries along our border in order to penetrate and try to influence the most backward sectors of the population.

Therefore, this is, for us, one important and hot issue, because it is very much linked with the military attacks that we are suffering, especially from the northern border. As we all know, these attacks are always linked with counterrevolutionary radio broadcasts that prepare the conditions so that these people may operate more easily.

This is why we say that the topic of radio broadcasting, as a factor of imperialist aggression against our countries, is a key subject and very important to us.

[Question] Blandon, what other subject do you find of interest in this meeting?

[Answer] We see whatever the nonaligned movement can do to promote broadcasting cooperation as an important subject. Radio broadcasting is the primary communications means because it can reach masses throughout the territory.

As you know, the literacy campaign recently fought the problem of illiteracy that Somozism left us. This is why radio broadcasting is a factor of great importance in our country. It is a means of communicating the ideas of the revolution to all Nicaraguans. Therefore, whatever the nonaligned countries can do to cooperate with us in the development of broadcasting is of much interest to us and very important for the development of our process.

[Question] We thank Miguel Jesus Blandon, who is director of Radio Sandino, in Nicaragua, for his statement to PRENSA LATINA's radio service.

CSO: 5500/2017

BRIEFS

FOREIGN NEWS AGENCIES SCORED--The minister of legal and parliamentary affairs, Comrade Zvobgo, today announced that his ministry is working on a program of constitutional changes, which he hopes will be completed in 3 years. Some of the proposed changes include having an executive president as well as having one house of Parliament, instead of the present two. Comrade Zvobgo said that any envisaged changes will come about at the end of the life of the present Parliament. Comrade Zvobgo, who was speaking to the ZBC after his return from a holiday abroad, also referred to what he termed lies being spread by enemies of Zimbabwe abroad. He said foreign news organizations are painting a bad picture of the country, but noted that Zimbabwe's information attaches have been able to correct this image. [Text] [CA161126 Harare Domestic Service in English 1600 GMT 15 Nov 82]

CSO: 5500/38

PORTUGUESE COOPERATION IN IMPROVED PHONE SERVICE

Beira DIARIO DE MOCAMBIQUE in Portuguese 30 Sep 82 1,3

[Article by Narciso Castanheira]

[Excerpt] CENTREL, an Automatic Electrica Portuguesa company, is in the process of installing new equipment for 600 more subscribers in the Beira Telephone Exchange. According to Eduardo Martins, who is in charge of the undertaking for the Center and North zone, the work which will be completed within 2 months, will make it possible to establish telephone connections by December for the 600 subscribers.

Meanwhile, the same company has already very recently installed new equipment in Maputo for 1,200 subscribers in the Alto-Mae telephone exchange, and an additional 2,400 in the Baixa Automatic Telephone Exchange.

On the other hand, in view of their present poor condition, CENTREL technicians have already undertaken a study of the country's telephone exchanges to determine all the material needed for their repair.

Questioned about the company's other activities, Eduardo Martins said that several projects are being carried out both in the South and in the Center and North of the country. One of its outstanding works is the installation of the first double-wire electronic exchange in the North zone for the TEXMOQUE factory in Nampula.

In Sofala, CENTREL, which has been operating under this name in our country for about 2 years, has been responsible for 37 restoration projects, that is, the installation and maintenance of automatic telephone exchanges.

One of the problems it has encountered is the lack of equipment for establishing branches in Quelimane and Nampula, to help the country's North provinces.

8870

CSO: 5500/18

BRIEFS

CHICUALCUALA, MASSINGA TROPOSPHERIC STATIONS--Four years after having been the target of enemy action which destroyed the telephone exchange, three generating groups, which previously functioned in the Chicualacuala tropospheric station in Gaza Province, have been restored. The equipment is functioning perfectly at the Massings a tropospheric station in Inhambane Province, where it was first tested by the technical engineer Iglesias, who for several years has been working in the electrical sector. According to data received there, by restoring this material, they have saved about 10,000 contos in foreign exchange, which would have been necessary to import new equipment. With three generators, the Massinga tropospheric station, also known as a repeater station, has begun to function as a transmission signal which enables it to establish better communications between Maputo-Beira Tete-Quelimane. "For the best possible use of communications, it finally remains only to obtain more spare parts for the transmitters, a project introduced into Mozambique Telecommunication plans for the coming year," said Alfeu Matola, radio communications technician, who for about 8 years has been working in the sector. He is in charge of that station. [Text][Beira DIARIO DE MOCAMBIQUE in Portuguese 27 Sep 82 p 14] 8870

BRIEFS

BELTEL VIDEOTEXT SYSTEM--THE SWA Post Office has taken a massive step towards offering better service to the public when they introduced the so-called Beltel system yesterday. With an ordinary telephone and the standard TV set found in almost every home, only a small relatively cheap terminal can be bought and at a moderate fee the prescriber can tune call up various kinds of information on his TV screen. With this piece of technology one can get almost instant information on the gold price, the weather forecast, hotel and flight bookings and even one's horoscope. The computer is in Pretoria and by merely dialing the Pretoria number one can get all the information necessary on the TV screen. This way of communication has been implemented in West Germany, Britain, France and various other countries. At the moment the cheapest terminal costs around R600 according to Mr A Rooke, the Post Office engineer in charge of the project. But with mass production this can drop to R250 or R300 in time. Mr. Rooke said the unoccupied time on TV could be used for this purpose by those who had the terminal and needed the information. [Text] [Windhoek THE WINDHOEK ADVERTISER in English 28 Oct 82 p 2]

CSO: 5500/26

ATLANTIS PROJECT PUT INTO SERVICE

Dakar LE SOLEIL in French 22 Oct 82 p 3

[Article by D.D.: "Atlantis Inaugurated: Europe-Africa-South America Telephone Connection"]

[Excerpts] Dakar, Brasilia and Lisbon connected simultaneously by telephone; this was the event long awaited by the three capitals since the intention agreement was signed in Rome in September 1978 by Brazil, the Ivory Coast, Italy, France, Portugal and Senegal, providing for development of the Atlantis project, which was inaugurated and put into service yesterday afternoon. At 1500 a telephone conversation took place between the three countries' ministers of Telecommunications. It had been preceded some moments earlier in the morning by one between President Abdou Diouf and President Eanes of Portugal.

According to Alassane Dialy Ndiaye, the president and general manager of TELE-SENEGAL [expansion unknown], this 21 October is a great day for international telecommunications. "This is in fact the first time in the history of the world that an underwater telephone cable has been inaugurated which connects three continents, South America, Africa and Europe."

In his speech he listed the characteristics of the Atlantis system, which consists of two sections: Recife (Brazil)-Dakar, 3,427 km, and Dakar-Burgar (Portugal), 2,919 km. The capacity of the two sections is 1,320 and 2,580 4-kilohertz telephone circuits. The total cost is known to be 54 billion CFA francs, divided between the 10 countries initiating the plan. Senegal's share of the financing is 2.5 billion.

Measures have been taken for the maintenance of Atlantis, since an underwater cable is not protected from the effects of a natural cataclysm or normal use. This was done with the agreement of all partners. Today, therefore, our country "ranks high among countries of the continent possessing an advanced international telecommunications network."

Posts and Telecommunications Minister Kouassi Apete of the Ivory Coast pointed out in his speech that completion of the project sets an example of cooperation between Third World countries and industrialized nations on the one hand, and between countries of the south on the other hand. This shows, in his opinion, that "cooperation is not just an empty word. And we are certain that the arrangements that prevailed throughout the negotiations and during development of

the project will be extended to other contexts." He also expressed his belief that cooperation between South and South has not been exploited as it should have been, and that it offers tremendous possibilities.

The underwater cable, the Ivorian minister went on to say, is a complement to the optimal use of communications satellites. It offers a diversity of methods of conveying information between the African, European and American continents. It also enables Africa to open itself up to other parts of the world. For his part, Djibo Ka, our minister of Information and Telecommunications, said that in international relations today, telecommunications are "a factor of stability and peace, thanks to the communication they make possible between nations, with mutual understanding as the goal."

There is no doubt about the economic importance of such communications. On that subject, quoting a celebrated speaker from the World Bank, Djibo Ka emphasized that they are "the nervous system of both the economy and society." For this reason, Senegal has developed various projects to strengthen its network: from the Gandoul Atlantis station (1972) to the underwater cables between Morocco and Senegal to the first section of the PANAFTEL [expansion unknown], etc.

Because of such projects our international telecommunications traffic has increased from 800,000 telephone minutes in 1972 to 13 million 1981; from 1 million telex minutes in 1972 to 3.5 million minutes in 1981; and from 5.9 million words in 1972 to 10 million words in 1981 [as published]. The Atlantis cable will be capable of contributing to the establishment of a "new order of information and communication based on more democracy and equilibrium and on the gradual elimination of every form of tendentious distortion of information." The inauguration of the cable ended with a visit to the Medina power plant.

8946

CSO: 5500/34

COUNTRY TO BEGIN EXPORTING COMPUTERS

Johannesburg SUNDAY TIMES-BUSINESS TIMES in English 31 Oct 82 p 7

[Text]

SOUTH Africa is about to export computers.

The package will include locally developed software for the multi-billion-dollar confirming houses sector overseas.

The unprecedented move to sell South African computers comes after collaboration between two Reef-based companies, Maule Computer Systems and Punch Line, which have assessed the vast potential in penetrating the international shipping and airfreight business.

"Confirming houses handle virtually all international trade with methods that haven't changed much since the days of sailing ships. They are grossly behind most other business sectors," says Punch Line managing director Barry Schechter.

Maule Computer Systems managing director Alex Payne says: "We're looking at sales round the world.

"Every country doing international trade has confirming houses, and as far as we can tell there is no other computer system dedicated to their highly specialised work."

Mr Schechter, a chartered accountant who spent 18 months in shipping before starting his computer bureau and software import business in Johannesburg, says he discovered several confirming houses which could not guess within R500 000 what they were owed without spending days on masses of paper-work.

With Maule's Saturn and Tornado computers and Punch Line's new software, Mr Schechter claims that any confirming house will be able to keep a daily, even hourly, tally.

A system for worldwide use has been designed solely for confirming houses. A maximum of four months will be spent on monitoring a local installation before trying to market the system overseas.

This is the second time in a few weeks that Maule has put its sights on the overseas high-technology market.

Its computer application for the furniture industry, already in operation at some chains, is also aimed at overseas markets.

TELECOMMUNICATIONS SATELLITE STATION BUILDING BEGINS

Mbabane THE SWAZI OBSERVER in English 21 Oct 82 p 4

[Article by Jabu Matsebula]

[Text]

WORK on the construction of the ultra modern international communications satellite earth station has commenced with the construction of the building to house equipment.

The satellite earth station is being constructed at Ezulwini, at a site only kilometre from the Tea Road, and the building is being put up by D. Morrera who won the tender for the E13, 364.72 building last week.

The whole project which is financed through a loan by the Canadian Government, with the Department of Posts and Telecommunications putting up 15 per cent of the E4 million, is expected to be commissioned in July.

According to the acting Director of the Posts and Telecommunications Mr.N.R. Manana, Swaziland's present telecommunications network is heavily reliant on the South African network for transit facilities for all

By *JABU
MATSEBULA*
Features Editor

international calls either through South Africa's submarine cable network, or through South Africa's microwave system.

This means that for the planning of any circuits for Swaziland, the co-operation of the South African Post Office is required. Planning and implementation of development projects for the Swaziland telephone and telex facilities thus depends heavily on the preparedness and capabilities of the South African Post Office.

Also a important consideration is that the lion's share of the revenue for international calls from Swaziland through the South African network, goes to the South African Post Office with Swaziland only getting a minimal share of between 6 to 15 per cent of total revenue from outgoing and incoming calls.

With the advent of a satellite communications facility, which will be of the standard Type B class with an antennae diameter of 12 metres equipped for 24 channels (twenty four different lines can be in use at the same time for international telephones and telexes) with ultimate capacity of sixty channels, Swaziland will now be to a large extent, independent for its international communications from any country.

The new satellite communications network will also mean some changes, and a great boon for our television network, as the Swaziland National Television Broadcasting will be able to arrange for live telecasts for local viewers of world news activities like the world soccer cup, important boxing matches or functions like the recent wedding of the heir to the British throne, Prince Charles and Lady Diana.

For this, SNTBC will have to install equipment capable of receiving programs beamed direct from the earth station, and according to

acting Posts and Telecommunications director Manana, Government has already made an undertaking on behalf of SNTBC for the service.

The new development in the telecommunications of Swaziland means that the country can now link directly with other African countries with similar facilities, in line with the hopes of the Pan/African Telecommunications Network.

The equipment for the station will be provided by the Canadian electronic company Spar who will also send in a team of engineers to install it as soon as the building at Ezulwini is complete.

According to a study conducted by a Swedish engineer requested by the Government, the station is extremely viable. It is scheduled for commissioning by July next year (1983).

Also according to the Department of Posts and Telecommunications, the system to be installed is less vulnerable to long term outage because of breakdown

and according to a study by the international satellite telecommunications association-INTESAT, the system has a 99.9 per cent reliability.

Though at the moment it is not known by how much, the rates for telephones and telexes will go up for the Swaziland consumer. Rates for overseas calls through the satellite network are regulated by the INTELSAT, but are likely to be higher than those within Swaziland, as according to Mr.B. Homberg, a Swedish telecommunications expert working on the satellite project, Swaziland's telephone and telex rates are one of the cheapest in the world.

CSO: 5500/41

DENMARK DEVELOPING COMPUTER DATA LINK SYSTEM FOR EC, U.S.

Copenhagen BERLINGSKE TIDENDE in Danish 14 Oct 82 Sect V p 1

[Article by Erik Bendt Rasmussen]

[Text] Datacentralen in Denmark has established the world's largest data bank at the request of the EC Commission. Anyone with a computer terminal and a telephone can become a subscriber. Every 14 days the data bank is fed the latest statistics from the EC countries. The new service also will be sold to the United States and Canada.

CRONOS-EUROSTAT is the name of a new data bank at I/S Datacentralen in Valby. Anyone with a computer terminal and a telephone can pay to gain access to hundreds of thousands of facts on the EC and 200 developing countries with which the EC works. CRONOS is relatively new, but a dozen or so Danish export-oriented firms, public administrations, and ministries already have become subscribers.

New information comes in every 14 days from the Statistical Office of the European Communities in Luxemburg in the form of magnetic tapes. They are sent by plane to Datacentralen. The information is quickly fed into the data banks. It then is ready to be displayed on computer screens or printed out at the companies, administrations, and ministries that subscribe to the service. In this way, information on the EC and the 200 developing countries can be obtained 3 to 6 months before it is available in printed form.

Export Of CRONOS

Consultants Elizabeth Henning Jensen and Torben Friis of Datacentralen will travel this week to New York, Atlanta, and Ottawa to introduce CRONOS to businesses, public institutions, and ministries.

"The American food industry, for example, could benefit greatly from CRONOS," Elizabeth Henning Jensen said. "If an American company wanted to export goods to the EC or establish production in an EC country, it first would analyze the market. The figures required for the analysis could be gathered by a consulting firm. Statistics could be ordered from embassies or employees could be sent to Europe to gather information. This is expensive and difficult, however. With CRONOS the desired information could be obtained at a computer terminal

the instant it is desired and if a printer is used information such as graphs, tables, and charts could be printed.

✓ Analysis Of Industry

The American food industry could find out, for example, how much food is produced in the EC countries, how much is imported and exported, consumption trends, wages in the food industry, which branches of the food industry are expanding, and whether or not the industry is plagued by strikes. With this and much more information that can be retrieved by CRONOS, the American food industry could decide whether to export its products or establish a company in the EC.

✓ Information On Developing Countries

"The American industry also can gather information country by country and find out where it would be most advantageous to establish a plant," consultant Elizabeth Henning Jensen said. "CRONOS can provide information on state subsidies, local subsidies, tax credits, energy prices, financing arrangements, etc. An American firm that wants to gain access to CRONOS contacts Datacentralen in Denmark through an American computer center, which sends inquiries via satellite to Stockholm from which the connection with Datacentralen is made."

Consumers who contract with Datacentralen pay 1,000 kroner for the search manuals. They are ring binders with information on the following main items: general statistics, agriculture and fishing, industry and service, national finances, foreign trade, and state investments in research. The cost of using CRONOS is 360 kroner per hour plus 10 kroner per time series. A time series is, for example, the number of newly registered automobiles in Denmark over a certain number of years.

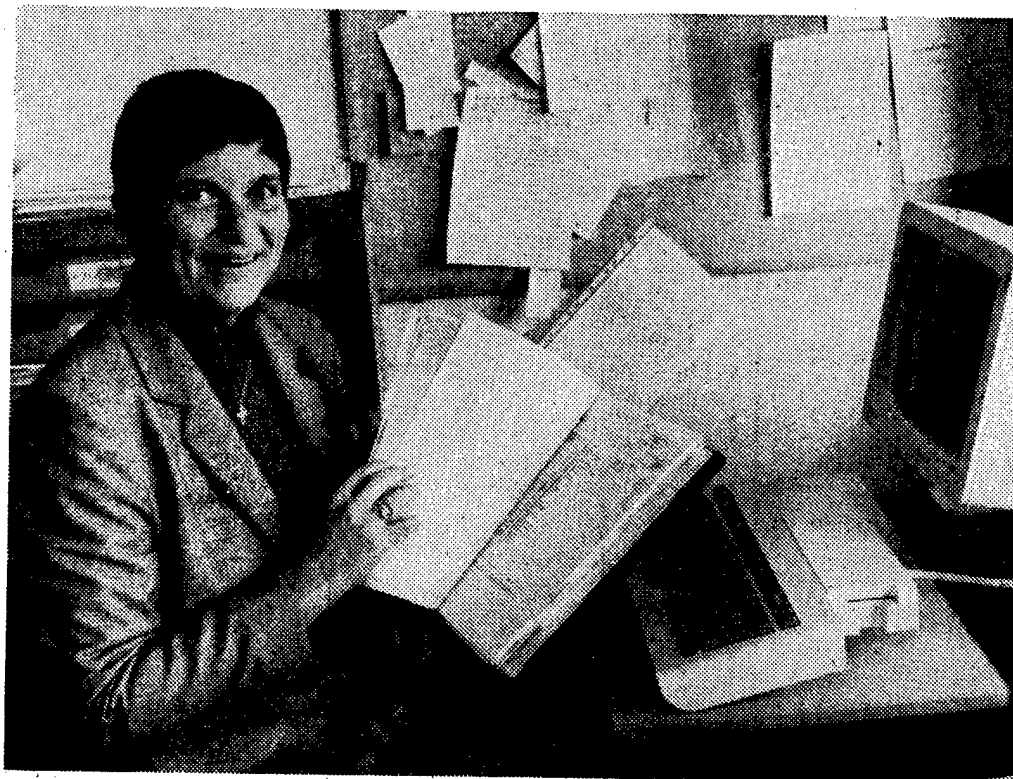
"One special service available from CRONOS is information on the 200 developing countries with which the EC works. If Danish or foreign firms wish to export goods to or establish plants in Nigeria, for example, they can obtain all the relevant information on that country from CRONOS. Information can be obtained on the number of inhabitants, the number of inhabitants in large cities and in villages, consumer trends, consumer education, production, imports, exports, gross national products, energy, highways, etc.," Elizabeth Henning Jensen said.

✓ Customers In Many Countries

CRONOS-EUROSTAT at Datacentralen also has customers for its information bank in Sweden, Finland, Germany, Holland, England, Ireland, France, Italy, Switzerland, Australia, Canada, and the United States. All the information can be ordered in German, English, or French.

CRONOS-EUROSTAT was established at Datacentralen in Denmark because Datacentralen is one of the largest computer services in Europe. When the EC Commission

decided to establish the CRONOS-EUROSTAT data bank based on information from the Statistical Office of the European Communities, it was only natural that Datacentralen was chosen. CRONOS-EUROSTAT also has been established in France where it competes on an equal footing with Datacentralen for the sale and distribution of economic and social information on the EC.



Consultant Elizabeth Henning Jensen, CRONOS-EUROSTAT at Datacentralen, with search manuals for finding information. It is possible to find out, for example, how much shrimp is caught in the Danish section of the North Sea or what the dollar has done with respect to the Danish krone.

9336
CSO: 5500/2520

PHONE NETWORK SOON TO UNDERGO DIGITAL REVOLUTION

Copenhagen BERLINGSKE TIDENDE in Danish 2 Nov 82 p 6

[Article by Sv. Aa. Jensen: "New Telephone Numbers and Higher-Class Equipment in Few Years; Denmark on Threshold of Age of Digital Technology"]

[Text] It will be an exciting time for telephone users when Denmark in the near future enters the age of digital technology. It will completely revolutionize the way in which we communicate with one another over the telephone system. Along with this KTAS [Copenhagen Telephone Co.] is about ready to change its number system for reasons of lack of space. The space is to be increased tenfold and this entails the fact that all Danish telephone exchanges will get new 2-digit call numbers.

As soon as 1984 we will have to dial eight digits regardless of where we call in the country. If you are in the 01 area these two numbers will also have to be dialed. As of 1990 all the new exchange numbers will have been worked in and we will say goodbye to area numbers from 01 to 09. Prior to this time the old exchange area in Copenhagen City, for example, will get the digits 33 and it will thus be necessary to dial 33 15 75 75 in order to call BERLINGSKE TIDENDE. Aarhus will have 80, Aalborg 90 and Odense 60.

Conversation Becomes Numbers

"As of 1984 digital technology will be introduced at telephone exchanges and it will be more exciting for users in 1986 when it reaches individual telephone sets instead of starting and ending at exchanges," says Section Engineer Ole Bertram of KTAS.

What is digital technology?

"Said in a nutshell, a telephone conversation requires more than 64,000 pulses per second in both directions. The new optical fiber cables can transmit 140 million pulses per second and thus they can manage something under 2000 conversations at a time. That is digital technology."

"Conversation is converted in the telephone to electrical oscillations. They follow the voice's intensity all the way from one party to the other. But with the new technology oscillations can also be converted into speech. A computer at the exchange measures the voice on a scale which goes from plus 128 to minus 127. Not fewer than 8000 times per second the equipment comes in and checks the voice's

oscillations on the scale. A number with the digits 0 and 1 is written out each time. At the receiver's exchange the pulses are again converted to oscillations which are transmitted to the telephone in the ordinary manner."

More Data Than Telephone Conversations

Distortion and muffling of conversations will almost disappear. There will no longer be "two on a line." It will be possible to see who is calling and if you are out traveling it will be possible by means of a simple procedure to let an acquaintance at another number take calls without the caller's being aware of it. It will be possible to connect computer systems and data teleprocessing systems to the telephone and KTAS is counting on such rapid development in this area that as of the turn of the century (with 1.7 million subscribers versus 1.1 million today) this will become a more important source of income than normal conversations. There will be 48 advanced special services in all. Subscribers who are opposed to the brave new world can console themselves with the fact that KTAS is keeping the old equipment alongside the new up to the year 2000. At this point it will all be converted to digital equipment and then the old system will be scrapped.

The new telephone number system, which will have been completely worked in by 1990, will be more logical than the old from a purely geographical standpoint. It will be possible to see by a number where subscribers live in the country. Østerbro will have the call numbers 35, Valby 36, Frederiksberg 38 and Ryvang 39. Denmark's first telephone subscriber, Privatbanken [The Private Bank], (C.F. Tietgen, KTAS's founder) in its time had the number 1, and even when six digits were introduced it was given all ones. Now with the new exchange number 33 will come before the six ones.

8985

CSO: 5500/2532

COMPUTER-CONTROLLED TELEPHONE EXPECTED TO BE MARKETED SOON

Copenhagen BERLINGSKE TIDENDE in Danish 15 Oct 82 p 3

[Article by Ejvind Olesen]

[Text] Denmark will receive new telephones--if KTAS (Copenhagen Telephone Co.) has its way, in any case. Their price will make them available to most people--and in this way they will get a taste of the computer age. Next spring the Danmark 1, 2, and 3 models will make their entry into Danish homes. The least expensive model of the new computer-controlled telephone costs 325 kroner, the intermediate model costs 555 kroner, and the most expensive model presumably will cost about 1,200 kroner.

The new phones are computer-controlled so that they operate as minicomputers and can function without being connected to the mains. They contain synthesized speech and two of the models can take messages. One of the models can be programed to request that the caller punch in his number. The phone owner then can retrieve and call the number when he comes home. Another model can be programed to give and take messages or refer the caller to a neighbor's number. It can be operated remotely from any push-button telephone and it can be converted to a car telephone.

All the models have new signals with a total of 20 variations, compared to four at present. They also have soft cords, cords with plugs, and bright colors (10 different colors), and monitoring capabilities. Model 2, which now appears to be the best buy for a private customer, contains a call maker with 10 numbers that can be encoded and 20 additional numbers can be added.

It is not necessary to remove the receiver to speak over the telephone. Calls can be forwarded to any other number, including car telephones, with actual forwarding and not simply instructions to call the other number. The Danmark line uses the same eight numbers for 80 percent of all calls.

The new phones can be connected to older technology and old-fashioned switchboards. They cannot be ordered, but will be available beginning in May. The most expensive model will be available in the spring of 1984.

Rates Up

KTAS has just raised rates by an average of 13 percent. It still costs 1,220 kroner to obtain a telephone for the first time. Rates for short-distance calls were raised slightly more than those for longer distances. The highest increases will hit the 7 to 8 thousand customers who have their phone disconnected temporarily to save money. Ninety percent of these people are repeats from quarter to quarter. The cost of this will rise to 150 kroner--a 200 percent increase. The special services number eventually will pay for itself. This is not the case at present. It costs KTAS 5 kroner to make a wakeup call, while the company receives 2.50 kroner for this service. Now the price will rise to 3 kroner. The good news is that after 2000 rates still will be reduced by half.



9336

CSO: 5500/2520

BRIEFS

FIFTEEN TOWNS NOW RECEIVE TELEVISION--Monday at 1930 hours local time Greenland will enter the TV age for real, when the population of 15 towns and settlements on the west coast will get the opportunity for the first time to see television, which is transmitted simultaneously from Nuuk (Godthab). Programs will be transmitted centrally from Nuuk via a radio link which is also being used for radio telephone, telephone and Telex communications. When the towns Narsaq and Qaqortoq (Julianehab) are hooked up to the TV signal on 1 May three quarters of the people in Greenland will have the opportunity to see simultaneously broadcast programs. In addition, programs will be transmitted to a number of farther away places on videotape for transmission over a closed-circuit network. In recent years TV has made its entry into Greenland in the form of local television clubs which on a pirate basis have recorded programs on videotape from Danish television, which were transmitted to members over a closed-circuit cable network. The new simultaneous TV broadcasting section of Greenland Radio's management has the job first and foremost of putting a stop to the illegal pirate company. Individual Greenland-produced broadcasts will be transmitted but the majority will still originate from Danish television. But the tapping will now take place with the necessary permission and payment to copyright holders. Introduction of simultaneous television broadcasting has cost a good 4 million kroner for establishment of a TV studio in Nuuk and the purchase of technical equipment. On top of this were 10 million kroner for making the radio link ready for TV use. [By RB] [Text] [Copenhagen BERLINGSKE TIDENDE in Danish 1 Nov 82 p 6] 8985

CSO: 5500/2533

SAT, CIT-ALCATEL, THOMSON WIN CONTRACTS IN AFRICA

Paris ELECTRONIQUE ACTUALITES in French 22 Oct 82 pp 1, 11

[Article by D. Levy: "French Telecommunications Make Entry into the East African Market"]

[Text] Nairobi--In connection with the UIT (International Telecommunications Union) Conference in Nairobi (see our last issue), the contract obtained by SAT (Societe Anonyme de Telecommunications) in Kenya to install five digital radio links, the delivery of CIT-Alcatel time-switching centrals to Uganda, and the order received by CIT/Thomson/Cables de Lyon/LTT (Ligne Telephonique et Telegraphique) from Somalia, represent the first successes achieved by French telecommunications manufacturers in East Africa. Access to this region has long been difficult for our industry, because of the British influence at first, and then because of the influence of Japanese ambitions.

However, and in particular thanks to our digital transmission and switching equipment, which despite what some people say, is well adapted to African utilization conditions, our industrialists seem to be in a position to confirm their present breakthrough in the region as long as financing obstacles can be overcome.

Kenya is an interesting country for telecommunications for two reasons: on one hand, it is aware of the need to invest in this sector (the second program for communications expansion, 1982-1986, is estimated at 125 million dollars, 44.7 million of which are financed by the World Bank); and on the other hand, it has decided to adopt digital technology. However, Kenya is a preferred Japanese area for telecommunications: Fujitsu for analog transmission, and Hitachi for electromechanical switching, have been awarded most of the projects financed by the World Bank, thanks to equipment offered at prices that defy all competition, combined with exceptional financing (such as 30-year loans at 3 percent, with a 10-year grace period). Only GTE, with the installation of a radio link within the Panafel network, and Philips, with the Kenya-Sudan link (financed by the Netherlands), have countered to some extent the activity of the Japanese.

This will provide some idea of the importance assumed by the 68 million francs SAT contract (financed by the second Franco-Kenyan negotiations of last year) to supply five digital radio links that add up to 1180 km. This network will be operational in 1985. As the first French manufacturer to obtain an order from the Kenyan PTT (KPCT), SAT can reasonably hope to participate in the planned expansion and in projects in other neighboring countries, given the leading role played by Kenya in the area.

Quite recently, Thomson-CSF succeeded in gaining access to KPCT through a 4 million francs contract awarded to LTT for 7000 km of urban telephone cables. This first opening appears to be fundamental for ongoing projects, such as an international call for bids issued by Kenya for seven subscriber time-switching centrals (32,400 lines) and transit exchanges (3192 circuits). Thomson-CSF, the only French company to respond with its MT-20 and MT-25 installations, is competitive with the Japanese, Plessey (System X), LM Ericsson, and maybe Philips and ITT, for this 22 million dollar project financed by the World Bank. In addition, Thomson-CSF has sold four P-40 private exchanges to Kenya, and has just received acceptance for its P-20.

From Uganda to Ethiopia

In Uganda, CIT-Alcatel landed a 100 million francs contract for restoring the Kampala telephone network, which includes two E-10 centrals with a total of 30,000 lines (to be placed in service in 1984), and for installing a city network (given to Cables de Lyon). In that country, Thomson-CSF has also obtained a 50 million francs contract to provide FH150 radio beams for remote operation of signals on the Uganda railways.

In Somalia, a concern that includes CIT-Alcatel (for E10 exchanges), Thomson-CSF (for radio beams), as well as Cables de Lyon and LTT (for cables), has signed almost one year ago, a 450 million francs contract to modernize that country's telecommunications network by converting entirely to digital technology. A financing problem which blocks the deal still has to be solved. The manufacturers involved believe that this will happen before the end of the year.

In Djibouti, SAT has installed a 600 km radio link network that was inaugurated last May, which consists of FHD 234's on a 30-channel path, with extensions of 60 controlled channels and plans for installing a TV channel. In this country, CGCT (General Company for Telephone Construction) has obtained an order for an international switching center, while Thomson-CSF is conducting negotiations for military and civilian telecommunications (radio beams as part of Medarabtel), and Telspace is in the running for ground station projects.

The other French business in East Africa is rather marginal. TRT for instance, supplies mobile radio beams to Kenya's TV, Telspace has installed a ground station in Burundi, CGCT will deliver an international switching center to Aden (financed by Medarabtel) and has proposed the same equipment to Rwanda, while La Signalisation is installing a cable network in Nigeria.

The French manufacturers are pursuing other projects in East Africa, notably in Ethiopia and Botswana. After an abortive first attempt, the formulation of Franco-Ethiopian negotiations is being considered once more. It would assure the financing of a large telecommunications project (switching and radio links) whose call for bids is expected for early 1984. Another call for bids will come from Botswana next November, for supplying an entire digital network (transmission and switching). This project will be financed by the African Development Bank.

The SAT Radio Project in Kenya

The SAT radio project in Kenya consists of five digital links for the country's northwest; in its entirety, it will form an 1180 km linked network composed of SAT's FHD 234 radio beams, operating at 2 GHz and 34 Mbits/sec (480 channels). The major original feature of the project is a 1+1 network configuration (one normal and one emergency channel) with the placement of a 34 Mbit/sec digital TV channel on the emergency beam. This is a world first. Another notable feature is that 17 of the 34 radio stations will be solar powered, at a peak power of 2880 W per station, which will make the network the largest installed power solar installation. The final receipt of the equipment is planned for the beginning of 1985.

The frequency plan adopted for this project consists of two sidebands to optimize the utilization of the frequency plan, and to allow future expansion up to a 5+1 configuration. This means that the network will eventually have five 480-channel telephone carriers (amounting to about 2000 telephone channels) and a TV channel.

For the signalization interfaces, all the channels will be equipped with a bi-directional, multiple-usage GAS (signalization adaptation system) which offers five modes of utilization. Therefore, while KPTC plans to install manual exchanges in all the demodulation stations, these exchanges will eventually be replaceable with automatic (if not digital) systems by simple card strapping; the bi-directional GAS makes it possible to change utilization without changing equipment, thus evolving with the customer's needs. Just as for the system's capacity, SAT has opted for long range engineering.

These possibilities are characteristic of the FHD 234, designed as a system that could meet all the configurations encountered in exportation. In addition to the transmitter-receiver, SAT has developed for this radio beam a sophisticated automatic switching device which allows the monitoring of 32 stations (and 32 events per station) and offers five remote controls. As another example of flexibility, the manufacturer has provided the network with digital handling capabilities (at 2 Mbits/sec) of channels in the network nodes, for (manual) rerouting in case of failure in one branch.

With the KPTC project, SAT has thus shown that it is capable of handling a complex network, at the same time solving problems that were not particularly in its specialty (such as optimum location of solar panels in this equatorial region, as well as the design of buildings to assure the best possible natural ventilation). So much for the technical features. In another context, Mr Boulin, chief executive of SAT, did not fail to point out the very difficult working conditions that will face the technicians who will install the network, notably the region's insecurity--hence the request for military escort in Kenya--and the total autonomy of the installers at work sites. Installation of this radio equipment will be started early in 1983 by seven SAT engineers, each accompanied by four Kenyan technicians, responsible for one station.

11,023

CSO: 5500/2350

FINLAND

BRIEFS

FINLAND JOINS EURONET--The data processing network, Euronet, which went into joint operation in mid-February 1980, is to be linked to the corresponding network in Finland. This had been proposed by the European Community Commission to that body's Council of Ministers. Similar agreements had been signed in 1979 and 1981 with Switzerland and Sweden. The agreement calls for Finland to assume a prorated share of the investment costs for the Euronet after receiving initial financial and technical assistance. [Text]
[Wuerzburg ELEKTROTECHNIK in German 9 Jul 82 p 6] 9878

CSO: 5500/2508

END