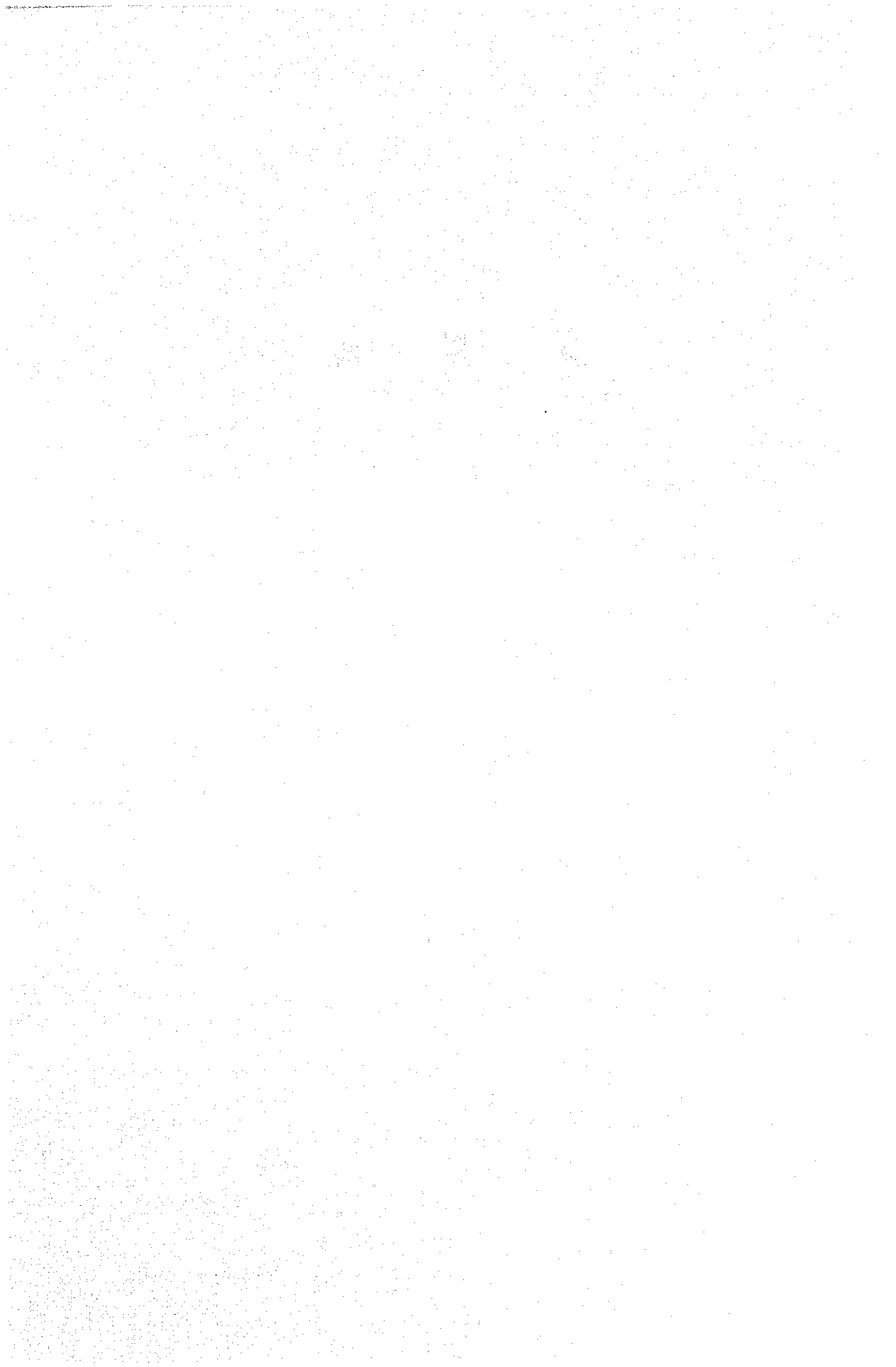


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資料4. 現地新聞

現地の新聞は有用な情報を我々に提供して呉れる。帰国研修員の好むと好まざるとにかかわらず、帰国者はその国の持つ特殊情報下にあつてその様々な制御を受ける。

現地駐在事務所は斬様な特殊事情を熟知しているであろうか。フォローアップミッションメンバーは必ずしもこれに通暁しているとは限らない。極端には初めての海外出張（旅行）の場合も生ずる。対象地域に関する情報ギャップを事務所員が埋めてくれるとしても、短時間内の対話の中での情報は十分ではない。従つて、現地新聞・雑誌を可能な限り現地に於いて読破し、現地感覚をシャープにしてその上で帰国研修員との対話の中から敏感に真実をキャッチする必要がある。

勿論、新聞公開情報のすべての精度が高いとは限らないが、少く共、そうした中からミッション活動のみならず、各種のJICA事業活動に有用な事実をつかむ努力が必要である。例えば一枚の写真でも観察の方法如何によっては色々な事実情報を与えてくれる。

今回のミッション期間中に得た情報は僅かであるが、参考として収録した。これらは、別記“国際研修事業活動の論理構築（0版）”の内容を今後考えてもらうための一助となれば幸甚である。

French telecom giant plans joint venture in Thailand

by Kowit Sanandang

Paris — French telecommunication giant Alcatel-Thompson will early next year set up a joint venture in Thailand with Italthai Co.

The move was seen by the firm as necessary to compete more effectively in the field of telecommunications including joint venture, to be named Alcatel-Thompson (Thailand) Co, will definitely be set up early next year although the firm has not yet received Bol support.

Alcatel-Thompson will hold 49% in the joint venture and Italthai 51% in the initial equity which is digital telephone system here.

It has already applied for promotional privileges from the Board of Investment to produce and supply telecommunications equipment.

Alcatel-Thompson Asia area manager Patrice Blanchet said the expected to be about 100 million baht.

The firm's main objective is to find a partner to produce, operate and develop its telecommunications products and systems according to the country's requirements. It also means the transfer of technology, Mr Blanchet said.

He said that if the company "is to compete effectively, it has to be stationed in that country on a permanent basis so as to prove itself."

He admitted that the firm lost to NEC and Ericsson recently in its bid to provide digital switching telephone system to Thailand. This was because it was not wellknown here, even though it was well-established internationally, he said.

Mr Blanchet said: "We were absent about two years ago in Thailand. When we learned that Thailand wants to have a digital system, we want to be more active here."

"After careful consideration, we decided to team up with Italthai which has become our agent in Thailand since then."

"The Telephone Organisation of Thailand then called its first bid

ding for the digital switching system. We were not well-prepared. It was too early for us," he said.

Three firms — Ericsson, NEC and Alcatel-Thompson — were short-listed with NEC winning with a price nearly 50% lower than Alcatel-Thompson's.

In the second bidding, the three firms were again shortlisted and this time NEC and Alcatel-Thompson offered about the same price, but Ericsson won with an offer which was 18% lower. Ericsson's price became cheaper because the Swedish had just devalued their currency," Mr Blanchet said.

The firm, however, believes that there is still enough room in Thailand for Alcatel-Thompson in the future.

Mr Blanchet said there is now only about 800,000 telephone lines — considered low for a country of Thailand's size and rate of economic development. The Thai authorities, he said, have also realised this fact.

The TOT plan to provide an additional 1.5 million lines has now been delayed.

"Such a small addition in telephone lines is not an ambitious plan as such a supply will never catch up with the fast rise in demand."

There should be something like a self-sufficiency plan so that Thai

land can expand its telephone network fast enough with some of the products being produced locally. It should not rely only on obtaining the supply through bidding every time it wants more lines.

He said Thailand could not afford to have a bad telecommunications system as its economy and banks would not be able to function properly. Telecommunications is a strategic field of economic development and Thailand will sooner or later have to give it high priority, he added.

"We have enough resources and experiences to help Thailand as we were able to increase our lines in France from 4 million to 22 million within a decade or so," he said, speaking of what was once France's chronic shortage of telephones.

On the TOT's plans to allow the private sector to assist with the installation of telephones, as re-

ported in Bangkok Post yesterday, he said: "Our permanent entity in Thailand will be a starting step for us as we will then be ready to take any kind of telecommunications development here."

We also believe that within the next few years an opportunity to supply digital switching in Thailand will open again. The big room cannot just be filled by one or two firms."

Asked what projects the firm are interested next year apart from the digital switching system, Mr Blanchet said it will take part in the country's two biddings.

The first one involves the supply of transmission equipment for a long-distant call, Jink which is included in the country's budget plan.

The second bidding is for the supply of a ground station for satellite telecommunications.

Regarding satellite, he

said: "We are ready to compete with others to provide a national satellite system (payload)."

In its bid to gain a bigger share of the telecommunications market in Thailand, Alcatel-Thompson is fully backed by the French Government through its Ministry of Post, Telecommunications and Broadcasting.

The ministry includes the National Research Centre for Telecommunications Development. When the centre has developed a new invention, it will give it to the private sector to manufacture and become a major purchaser of the item.

The ministry, through its Telecommunications Department, is backing private firms by arranging attractive financial packages and offering training to countries in which they are competing with other telecommunications giants like NEC, Ericsson, AT&T, ITT and Siemens.

The ministry, through the state enterprise SORRECOM, has actually taken part in the bidding to provide consultant services and the country's next telephone development plan.

The result will be known early next year and according to Mr Blanchet, the firm expects heavy competition from 10 of the world's top telecommunications firms which have already passed the first round of evaluation.

Among the most important rivals is AT&T, said Mr Blanchet.

THAI TELEPHONE SYSTEMS

THAI TELEPHONE SYSTEMS (THATS) has been established as a joint venture between Alcatel-Thompson and Italthai Co. The company is expected to start operations in early 1980. Its main objective is to produce, operate and develop telecommunications products and systems according to the country's requirements. It also means the transfer of technology. Mr Blanchet said that if the company "is to compete effectively, it has to be stationed in that country on a permanent basis so as to prove itself." He admitted that the firm lost to NEC and Ericsson recently in its bid to provide digital switching telephone system to Thailand. This was because it was not wellknown here, even though it was well-established internationally, he said. Mr Blanchet said: "We were absent about two years ago in Thailand. When we learned that Thailand wants to have a digital system, we want to be more active here." "After careful consideration, we decided to team up with Italthai which has become our agent in Thailand since then." "The Telephone Organisation of Thailand then called its first bid

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The world at your fingertips

A new phase of telecommunications begins today in Thailand as the country steps into the world of International Subscriber Dialling, literally giving phone users fingertip access to the rest of the world.

The service will, initially, be available only in Bangkok but it will not be too long before the link-up is made with the rest of Thailand. Through new digital phones, both private and company subscribers can automatically connect themselves with numbers overseas, bypassing, in the process, the need for an operator.

International Subscriber Dialling is the result of joint cooperation between the country's two communications authorities — the Communications Authority of Thailand (CAT), which is responsible for the international telephone service, telex and telegraph, and the Telephone Organisation of Thailand, which is responsible for the country's domestic telephone service.

However, also playing a vital role in this historic achievement is the Ericsson Telephone Corporation Far East AB, which supplied the equipment for and supervised the installation of the Communications Authority of Thailand's digital International Transit Switching Centre in Bangkok.

Winner of CAT's international bid

Having introduced domestic automatic trunk dialling (technically known as Subscribers Trunk Dialling) it was obvious that the next step was a system which would link subscribers automatically with other countries.

Realising the need for such a centre, the Communications Authority of Thailand called an international tender for such an exchange. Only two companies participated in the tender, mainly because the CAT's specifications were extremely advanced.

One of the two companies was Ericsson and it won the contract with a more favourable bid that complied with all the stated specifications. A contract for the project was signed by Ericsson and the Communications Authority of Thailand on September 30, 1982.

Installation of 2,000 circuits (1,000 national circuits and 1,000 international circuits) for the ITSC began in early 1984 and took approximately 10 months to complete. The entire project was implemented in three stages — site preparation, then installation, including cabling and wiring and, finally, testing of the package to ensure that it could work with local exchanges.

Installation was, in the main part, undertaken by CAT staff trained by Ericsson in Sweden.

The new exchange can presently handle 1,000 international phone calls simultaneously and the capacity can easily be increased.

How ISD works

The programme involves both the Communications Authority of Thailand and the Telephone Organisation of Thailand.

From now onwards, every new TOT subscriber will be linked to the TOT's Store Programme Control exchange, which in turn is linked to CAT's International Transit Switching Centre.

Present subscribers wishing to go onto ISD must have their phones and phone numbers changed. The new phones with a special tonal feature will be connected to the new digital local exchange. There are at present 300,000 subscribers linked to the old crossbar system which will eventually be phased out.

ITSC does not do away with the operator, who will still be on hand to make international connections for subscribers who do not have direct access to ISD. ITSC will, however, drastically shorten the wait from the time a call is booked until the connection made.

Benefits of ISD

Basically, ISD does away with the time factor because the caller is automatically linked to the second party as soon as the connection is made.

Second is the cost factor: ISD calls are not subject to the minimum charge unless the subscriber uses the services of an operator. Each ISD call, made directly by the subscriber, is charged to the last second, unlike the present system where calls are charged to the

minute. Both factors will definitely prove a boon to individuals and companies who need to make numerous overseas connections.

CAT's car connection

The first to actually benefit from the ITSC have been the Communications Authority of Thailand's car phone subscribers.

Push-button car phones were introduced about two years ago, but on December 5 these phones were able to make automatic international calls because CAT's mobile telephone network was already linked directly with the new exchange. The system works perfectly and has already been tested and proven by several mobile telephone numbers.

Ericsson in Thailand

Ericsson, with 98 years in Thailand, has always featured prominently in the country's telecommunications development. Today's achievement marks the latest result of the long cooperation between the company and Thailand's communications authorities.

Ericsson obtained its first contract in Thailand as early as 1886, soon after establishing itself in Thailand and only 10 years after the birth of telephony.

The first telephone exchange, the local battery system, was installed at the then Memorial Bridge Telephone Office and served 100 subscribers. This was followed by many more orders over the next 50 years for both private and public manual exchanges.

A giant step forward

In 1959, Thailand entered a new era of telephony with the introduction of a new switching technique — the crossbar system. Ericsson installed the first crossbar switches in the Krung Kasem switching centre and it comprised of 10,000 subscriber lines.

In 1965, Ericsson established a local subsidiary, Ericsson Telephone Corporation Far East AB, to meet the growing need for local representation resulting from the breakthrough of the crossbar system.

The Sixties and Seventies saw the installation of Ericsson crossbar exchanges in as many as 130 cities and towns through the length and breadth of Thailand, connecting more than 150,000 subscribers to automatic telephone exchanges.

Equipment for the Subscriber Trunk Dialling (STD) was delivered by Ericsson to the Telephone Organisation of Thailand in 1980, making automatic long-distance dialling possible in Thailand.

Ericsson, in earlier contracts, also supplied equipment for the International transit telex exchange in 1973, and in 1977 the company supplied the equipment for the international transit switching centre in Bangkok.

First for Chiang Mai

In 1982, the Telephone Organisation of Thailand called an international tender, which was won by Ericsson, for an advanced digital switching system. Chiang Mai was chosen as the location of the first digital exchange.

Installation of the advanced AXE 10 digital switching system in Chiang Mai marked the beginning of a turn-key project which will result in an additional 130,000 subscriber lines in 82 locations for the country's telephone network.

The introduction of AXE makes available several new subscriber services:

- Abbreviated dialling: Use of a short code, instead of a whole number, which simplifies dialling;
- Automatic dialling of a "hotline" number simply by lifting the handset;
- The transfer of incoming calls when a line is busy or unattended;
- Malicious call tracing: the system makes it possible to trace a malicious or nuisance call;
- Conference calls: the possibility to connect more than two parties to a conversation on the phone; and
- Automatic alarm calls.

AXE 10 — an advanced and powerful digital telephone switching system developed by Ericsson — was launched on the world market in the mid-Seventies and marked a tremendous step forward in telephone technology, simply because digital switching is a must for the development of telecommunications and society as a whole.

The new ideas in AXE have since become industry standards because AXE is a future-proof and uniquely versatile system that can be used for practically any type and size of exchange. It offers an exchange easy manageability and the lowest possible total operating cost.

The entire AXE switching system is defined in terms of functions. So, for a new exchange, a telephone authority just specifies the functions and not how they are to be implemented. From an operational point of view, functions can be added, deleted or modified on all levels without disturbing other parts of the system.

The AXE 10 switching system consists of a number of subsystems, each performing a specific role. In addition to the switching subsystems, an AXE exchange also includes a control system. The ability to build up an exchange using various combinations of

modules/subsystems, enables the AXE 10 system to be used for almost any type of exchange — small Remote Subscriber Switches to very large international exchanges.

In choosing the AXE system, Thailand joined more than 80 telephone administrations in 56 countries which have already selected AXE. There are over 10 million Ericsson exchange lines on order or in service around the world, the latter totalling more than four and a half million lines — proof that AXE is the leader in public switching.

Technology transfers

Ericsson's policy of transferring technological know-how and skills has, over the years, become a very integral part in contracts.

Realising the need to make the best available use of the wealth of local talent, Ericsson has been providing training programmes both within Thailand and abroad. The company firmly believes that support activities help to create high-technology jobs, for instance in centralised operation/maintenance and repair of printed board assemblies.

A perfect example of Ericsson's technology transfer policy is the Remote Subscriber Switch container assembling plant in Bangpli located in the suburbs of Bangkok.

(RSS is used either as an extension unit in a rural network or to save primary cable equipment in an urban area. The RSS is extended in modules of 128 subscribers each. Maximum capacity is 2,048 subscribers per RSS and in emergency situations, the RSS is self-sufficient in basic telephony services because when there is a link failure to the main AXE exchange, internal communication between the RSS's own subscribers are not interrupted.)

Activities at Bangpli include the installation and testing of air-conditioning equipment, power equipment and switching equipment into the complete RSS container.

Ericsson will also establish at Bangpli field support activities, including technical support, fault simulation, I/O service and repair and spare parts handling.

A name to be reckoned with

Ericsson is among the leaders in the world telephony industry and has been an international driving force in public telecommunications networks for more than a century.

Today, there are over 40 million lines of Ericsson switching equipment in service or on order in more than 80 countries worldwide.

Over 95 per cent of the company's switching equipment is destined for use outside Sweden, where the mother company is based, while Ericsson has local manufacturing operations in 25 countries.

Ericsson's remarkable standing in the world telephony industry can be attributed to an unrivalled international experience which has given the company and all its affiliates a unique understanding of the complete network needs of public telecommunications authorities in different countries.

Ericsson has, in fact, been the world

leader for international exchanges for more than 20 years.

The best that money can buy

Ericsson's experience is matched by a range of advanced technology products, systems and ideas that ensure networks will adapt and contribute to the changing telecommunications needs of administrations well into the future.

The International Transmit Switching Centre is one example of the best that money can buy because no other piece of equipment produced by anyone else in the industry comes close to it, in terms of functions and future possibilities.

The Future

The International Transmit Switching Centre is prepared for the Integrated Service Digital Network (ISDN) — networks with the ability to transmit and switch voice data, telex and video over the same circuits. For example, a subscriber can, through this facility, use his phone to connect himself to a very large computer bank of which he is a member for whatever information he requires.

ISDN is of immense benefit to banks, companies, home users... in fact, anybody. Of course modules are needed to extract this facility but the basic requirement is the International Transmit Switching Centre. Definitely something to look forward to in the 1990s!

Telephony in Thailand today

With a little bit of help from Ericsson, Thailand has stepped into a new era, one with vast and limitless possibilities. Telecommunications has come a long way in Thailand and the authorities must be congratulated for their persevering efforts to give Thailand a share of this unique technology.

Ericsson is proud to be associated with such an achievement. And why shouldn't it be after all, Ericsson are the experts in telecommunications. **ADVERTISEMENT**

Dec 17 '84 Home News

Calls flood new phone centre

MORE than 3,500 subscribers called the four repair centres of the Telephone Organisation of Thailand on Friday — the first day the TOT launched its expanded repair service.

Previously all requests for telephone repairs had to go through the only repair centre at Krung Kasem. But since last Friday, subscribers could also call three new repair centres at Phra Khanong, Laksi and Thon Buri.

TOT sources said that since the service expansion, the number of calls for help received by the Krung Kasem centre had gone down to only 1,200.

To contact any of the four repair centres, subscribers must first dial "17", then dial the first three digits of their own numbers. They will be directly connected with repair units which will immediately send their men out to do the necessary repair work.

Dec 17 '84 Bangkok World News

Private firms allowed into TOT project



Prateep

THE Telephone Organisation of Thailand has decided to allow the private sector to take part in a project to install over 276,000 telephone lines next year.

In an interview with *Business Post*, TOT managing director Prateep Chai-pranee said the TOT board of directors approved the plan at its meeting last month.

This is the first time that the TOT has agreed to allow private participation in telephone line installations, as the management is aware of the fact that the organisation cannot achieve the target with its own resources, Maj-Gen Prateep said.

"We have to accept the fact that it will be very difficult for the TOT to install all these telephone lines in one year. In realising this fact, the TOT will be able to provide better services for the public," he said.

"We may not be able to install all the 276,000 telephone lines by the end of next year, but we will do our best to meet this target, as we sincerely sympathise with the public who have long been waiting for telephone services."

Asked about the scope of work that the TOT will allow the private sector to do, Maj-Gen Prateep said the TOT has to first determine its own actual capacity before making a decision.

"For example, if our maximum capacity is about 40% of the entire project, 60% will go to the private sector," he noted.

The TOT will, however, maintain the

responsibility for laying telephone cables and switching systems, as this needs highly qualified personnel to ensure proper and efficient operations.

"It is like electricity line installations. The Metropolitan Electricity Authority will take care of everything up to electric meters; qualified persons can take care of the rest. The TOT has selected over 10 firms from all parts of Bangkok as being eligible to participate in this project."

However, Maj-Gen Prateep noted that these firms will have to send their personnel for a special training session to be organised by the TOT to qualify for the job.

"This project, expected to be launched early next year, will set an example for more private participation in TOT projects in the future," he said.

In the long run, the TOT may set up a body to screen qualified companies or personnel who will be recognised by the TOT to install telephones for the public, Maj-Gen Prateep said. "They will have to maintain their reputation as TOT will reserve the right to revoke their licences."

The private sector's participation will not affect the status of TOT personnel as their union has feared. There will be enough work to go around. The TOT plan for the private sector will enable it to go ahead with other development projects," he said.

General Telephone upset by TOT plan to review bids

GENERAL Telephone Directory Co (GTDC) plans to submit a strongly-worded note to the Telephone Organization to protest against a plan by TOT to ask the three major contenders vying for the rights to publish the country's telephone directory to submit new offers within 15 days.

Informed sources told *The Nation* yesterday that GTDC General Manager William M. Anderson was expected to write to TOT's Acting Managing Director Maj Gen Prateep Chairpranee to challenge TOT's decision to repeat the directory bid.

The GTDC, whose contract with TOT to publish the telephone directory is due to expire at the end of this month, was said to have felt that the review of the tender by TOT had not been fair. The sources said that GTDC will inform the TOT director that one of the bidders did not meet the basic qualifications and conditions of the bidding and that the reopening of the bid might offer an opportunity for an allegedly unqualified bidder to revise its position.

The other two major contenders in the tender are American Telephone & Telegraph International Inc (AT & T) and Siam Telephone Directories Co Ltd.

Maj Gen Prateep told *The Nation* last Thursday that he will ask the three companies to submit new offers within 15 days after they are notified so that a final decision could be reached. He said he had to seek a "new bid" because of the difficulty in making a final judgment based on several factors, including the high benefits offers by AT & T (1,673 million

baht over five years compared to GTDC's 400 million baht and Siam Telephone's 500 million).

Sources said that GTDC is expected to express its "utmost concern" over the TOT's decision to call a new bid, and to threaten to directly appeal to Communications Minister Samak Sundaravej and the Prime Minister's Office over the issue if it does not get a satisfactory reply from TOT soon.

GTDC has been making it a point to underscore the fact that it is the largest fully integrated telephone directory publisher in the world and has for 17 years served TOT and Thailand in publishing telephone directories here. It also claims to have over the past 17 years paid substantial royalties to TOT from income through advertising revenues.

Informed sources at the TOT said that the letter to all three contenders will go out this week and that the matter is expected to be concluded in one month so that the new directory can be completed in time.

The TOT board of directors originally set Dec 20 as the deadline for reaching a decision on the tender but due to the hot race among the three top firms, the committee in charge of screening the bids had found it difficult to reach a decision, the sources said.

Maj Gen Prateep said he wanted to call the new bid in order to be fair to all parties concerned and to avoid any criticism. He said he had carried out the new move to get the best benefits for the government and to let every party concerned have an opportunity to improve on its original offer.

3 new hotels for Chiang Mai next year

THREE new hotels are to open in Chiang Mai next year and this will further increase the number of surplus rooms in this northern province, a Tourism Authority of Thailand source said.

The three hotels which are currently under construction and will have a total of 600 rooms are the Chiang Mai Phukham, Chiang Mai Plaza and Sri Tokyo, he said.

"Despite a TAT request to hotel investors to suspend their projects, they decided to proceed with their plans because they forecast that the demand for rooms will rise beyond the existing level in the next two to three years," he said.

With the planned opening of the three new hotels, the total number of rooms in

Chiang Mai will go up from 5,300 to 5,900.

The source said the number of rooms now available in Chiang Mai is already more than enough because of the unfavourable tourism situation this year.

Besides, the mushrooming of guest houses posed another major problem for the hotel industry in this province, he said.

"These guest house operators have sharply reduced their room rates to attract tourists, and this has seriously hurt hotel operators," he noted.

However, the tourism industry in this northern province is expected to pick up next year as Thai Airways International has started its Chiang Mai-Bangkok-Hong

Kong-Taipei and Osaka flights.

Moreover, a large number of investors from Bangkok have moved to Chiang Mai in anticipation of brisk business next year, he added.

In addition, the TAT will develop the hot springs found in San Kam Phaeng District.

A proposal has been made to Chiang Mai hoteliers to enter a joint venture with the TAT and San Kam Phaeng cooperatives to develop more hot springs for the exclusive use of each hotel's guests.

These hot springs have attracted a large number of visitors, and this has led to the TAT and San Kam Phaeng earning substantial incomes since their opening about two months ago.

Government invests Rp. 513.9 billion in communications sector

The Indonesia Times
Dec. 13, 84

Government investment in the communication sector from year to year has been substantial. For the 1984/1985 fiscal year it reaches Rp 513,895,000,000.

This was stated by Communications Minister Roesmin Nuryadin in his keynote address at the opening of the working meeting of the Ministry of Communications here Wednesday.

The meeting which would last until December 15 was attended by top officials of the ministry of communications, including the provincial communications office chiefs throughout Indonesia.

The allocation of substantial funds, on the one hand, is very gratifying enabling the implementation of various deve-

lopment programs in the communications sector.

"On the other hand, it implies also great challenges for

the ministry officials to carry out the scheduled development to provide the necessary communications services", Roesmin told the working meeting participants.

Reality has shown that, out of the projected programs, many went through obstacles or were even not carried out immediately, which was reflected in the substantial unspent budgets for the 1981/1982, 1982/1983 and 1983/1984 fiscal years, reaching a total of Rp 139,178 million, Roesmin said.

1984-1989) is expected to increase by about 5 to 6 per cent.

To achieve this level of economic growth the communications sector is expected to show a growth of about nine per cent per year, Roesmin said.

Development in various sectors are directed to improve production and distribution centres as well as carrying out continuous efforts to develop various isolated, but economically potential areas.

The current growth of production should have the full attention of the ministry, mainly the increase in industrial, mining and plantation products for domestic as well as export demands, Roesmin said.

At the end of Pelita III, plantation products reached 10.5 million tons, fertilizers 2.4 million tons, coal 615,000 tons and cement eight million tons.

Increase in non-oil/non-gas exports in 1983 reached 1.87 million tons with Japan, South Korea, North and South Europe, the Middle East and the US as countries of destination.

The opening of trade with the countries of East Europe in the coming years is expected to increase the demand for transport abroad.

To face the production growth and the export increase correct planning is necessary of the available transport facilities to increase Indonesian commodities' competitiveness at international markets, the Communications Minister said. (Antara)*

NINE PER CENT ANNUAL GROWTH

Indonesia's economic prospects in the second year of Pelita IV (fourth five-year plan,

Most project officers stay far from project sites

The Indonesia Times
Dec. 13, 84

Chief of the State Audit Board, M. Jusuf, had a meeting with BAPPENAS (National Development Planning Board) Chairman, J.B. Sumarlin, in Jakarta Wednesday, discussing development matters, including the question of SIAP (Remainder of Development Budget).

Sumarlin, in response to press questions, said after the meeting, that a number of factors had caused the occurrence of SIAP, including: the problem of provision of land, and lack of availability of adequate workers at the time of working out the project planning or at the time of preparing DIP (Fill-in Project Forms).

"Also, SIAP may occur, due to the absence of Project Officer at Project site. Many of the project officers are based in Jakarta, whereas, according to the relevant stipulation, the farthest distance that a Project Officer may stay away from Project site is in a regental capital," Sumarlin said, adding that, Project officers may not later be based in Jakarta, but, must be staying in the field, at Project site.

Sumarlin suggested that, if a certain Project happens to maintain a great amount of SIAP, and, what's more, if such a state of affairs has lasted for two years, the Project should be halted.

Asked about the occurrence of SIAP, involving up to 90%, and affecting a Project of the Education and Cultural Department, Sumarlin confirmed the matter, saying that, the question was now under study and investigation for proper measures to be taken.

The BAPPENAS Chairman was also asked about the fate of the Rp 33-billion special ocean fishery port at Muara Baru, which turned out to have not been utilized so far. He said that the question was also being under investigation and would be discussed together with the Vice-President.

After meeting the BAPPENAS Chairman, State Audit Board Chief Jusuf also had talks with Transmigration Minister Martono on transmigration problems. According to Jusuf, Minister Martono has stressed on the importance of

the observance of the aspect of the migrant's rights, so as not to make the migrants concerned disappointed. Martono, in the meantime, told reporters that, regarding Project Officers at Transmigration Projects, they must move from Jakarta to the regions concerned, or, they must transfer their post to people in the regions.

Eventually, Jusuf had a talks with Saleh Affil, State Minister for the Promotion of Efficiency of the State Aparatus, concurrently Deputy Chairman of BAPPENAS. Topics of the discussion between the two centered on control and supervision matters. Affil told reporters that control and supervisory system prevailing now in the country is better, especially, with the functioning and activities of the State Audit Board, and the attention given by the Vice President, who would be willing to make trips to the regions for local inspection and control. (KNI)*

04.12.84

Indonesian astronaut to take part in NASA space flight

An Indonesian astronaut will hopefully join the flight of the US Space Transportation System which will carry the B-3 satellite in 1986, said Minister of Tourism, Post and Telecommunications Achmad Tahir Monday.

He said Indonesia has received an offer from the United States to despatch an Indonesian for the NASA project in 1986.

The US government through its ambassador here, John Holdridge, on September 20 conveyed the offer for an Indonesian astronaut to take part in the US space flight. The Indonesian astronaut will act as payload specialist in the NASA program.

Concerning this offer, President Soeharto has advised that an intensive study be made by the proper authorities to decide whether Indonesia will benefit by this opportunity, said Achmad Tahir, who was accompanied by the chairman of LAPAN Dr. Sunaryo and director of USIS William Payeff on behalf of Ambassador John Holdridge.

By accepting this offer, In-

donesia will be the first developing country to take part in the NASA program.

"It is an actual evidence of cooperation between Indonesia and the United States", said William Payeff. (Ant)

British Council to hold seminar on microcomputers

The British Council will present a public seminar on MICROCOMPUTERS IN EDUCATION at 1.30 hours on Thursday 13th December. This will be held in the Rooftop Theatre, 11th Floor, S. Widjojo Centre, Jln. Jendral Sudirman 57. The presenter, Maurice Edmundson, is a former Inspector of Schools in Britain where the government has sponsored a highly successful programme, the "Microcomputers in Education Project". Under this project every public sector school in Britain, from the primary level up to the equivalent of Senior Secondary, has received assistance for the purchase of microcomputers, the provision of software and the training of staff.

A point which has to be kept

BANDUNG — More than 40 villages in several sub-districts in Bandung regency, West Java, were inundated by flood water Monday morning.

Flood water inundated over 7,500 houses and 3,000 ha of ricefield depth of 10 cm to 1.5 m in the sub-districts of Rancaeke, Majalaya, Dayeuhkolot, Buah Batu, Pameungpeuk and Cicadas. (Ant)

in mind when considering the use of new information technologies (NITs) in education, is the variety of national education systems which exist throughout the world. Each country will of necessity relate the problems of the NITs in education and their solution to the system with which they are most concerned. Nevertheless, experience gained in one country can be helpful to another even though the latter will in the end, have to approach the problems in a different way.

This seminar will refer to the experience of the UK and will relate to education of children aged 5 to 18.

The Seminar will include demonstrations on the BBC Microcomputer of which several sets will be available.

IT

資料5 出張者のローカル感覚

(1) 現地語

三ヶ国のうち、インドネシアではアルファベット文字により表示が行われているため、出張者は音読可能であり、必要に応じ現地人に意味をたずねる事が可能である。

一方、スリランカ及びタイ国は独自の文字文化を持つため、地域の事情を知るために現地人に文字を介して意味をまくには、大きな壁がある。特に、新聞等で報道される様な問題地域に出張する場合、たとえ外見上平穏に見える処であっても、その地域の異文化の浸透度を察知し必要に応じ不測の事態に対処する心構が必要である。

スリランカの場合、毎日、新聞のトップをシンハリ・タミール人間の斗争に関する記事で埋めており、又現地駐在の日本人社会から様々なマイナス情報・事実を聞かされ、不測事態に備えて、ホテルのマネージャ・ボーイ・ドライバの人々にお願いして文字の読み方に関する一夜漬け学習をおこなった。

この結果、各建築物等に表示している看板類を一読して、タミール系、シンハリ系等の影響度を判断することが出来た。看板の表示文字を整理すると

- ア タミール文字のみ
- イ シンハリ文字のみ
- ウ タミール・英文字 (表示の順序 上→下)
- エ シンハリ・英文字
- オ シンハリ・タミール・英文字
- カ タミール・シンハリ・英文字
- キ シンハリ・タミール・英文字
- ク 英文字

となる。実際に車で通過した町村についてみると、夫々の地域の持つ文化的特色は一目瞭然である。尚学習過程で夫々の系に属する人々との親ばくも言語の学習を通じて得られる。これは業務活動の上で大いに役立つ。

別紙にはスリランカ・タイの文字について“小学1年生教科書を元に文字をえらび出し、文法らしきものを深夜整理し、翌日早朝前記の人々に確認する”形をとってまとめた。タミール語については接触の機会が少く、文字のパターン認識に止まったため、本資料には掲載していない。

勿論独学であるから誤りも多いであろうが、今後、別記の日常会話の一部リストとも併せて出張者が利用し、デバッグをしていただければ幸である。

尚、タイ音標文字については、モンクット王工科大学教授よりタイ人の考え方の一端を伺い得たので併記した。

(スリランカ シンハリ系音標文字)

ශ්‍රී ලංකා සිංහල හෝඩිය

AH 	ANA 	Á 	Ā 	ඉ 	ඊ
ඊ 	උ 	ඌ 	ඍ 	ඎ 	ඏ
KHA 	ඟ 	ඞ 	ඟ 	ච 	
ච 	ඡ 	ජ 	ඣ 	ඤ 	
ඤ 	ඦ 	ට 	ඨ 	ඩ 	
ඩ 	ඪ 	ණ 	ඬ 	ත 	
ඬ 	ද 	ධ 	න 	඲ 	
඲ 	ඳ 	ඳ 	ඳ 	ඳ 	

註 は筆順

	A	I	U	E	O	CHAI
	အ	ဇ	ဉ	ဠ	ဝ	စေ(ဝ)
က	KA	KI	KU	KE	KO	CHO
ခ	ခာ	ခိ	ခု	ခေ	ခော	စေ
ဂ	GA	GI	GU	GE	GO	CHAU
ဃ	ခာ	ခိ	ခု	ခေ	ခော	စေ
င	TA	TI	TU	TE	TO	CHAN
စ	တ	တိ	တု	တေ	တော	စံ
ည	NA	NI	NU	NE	NO	CHAK
ဋ	တ	တိ	တု	တေ	တော	စံ
ဌ	HA	HI	HU	HE	HO	
ဍ	တ	တိ	တု	တေ	တော	
ဎ	MA	MI	MU	ME	MO	
ဏ	တ	တိ	တု	တေ	တော	
ဏ	YA	YI	YU	YE	YO	
ဏ	ယ	ယိ	ယု	ယေ	ယော	
ဏ	LA	LI	LU	LE	LO	
ဏ	လ	လိ	လု	လေ	လော	
ဏ	WA	WI	WU	WE	WO	
ဏ	တ	တိ	တု	တေ	တော	
	PYA	PYU	PYO	SHA	SHU	SHO
	ပိယ	ပိယ	ပိယ	ရှာ	ရှု	ရှော
	GYA	GYU	GYO	CHA	CHU	CHO
	ဂ	ဂ	ဂ	ချာ	ချု	ချော
	MYA	MYU	MYO	NYA	NYU	NYO
	မိယ	မိယ	မိယ	နိယ	နိယ	နိယ
(က) (ခ)	BYA	BYU	BYO	JA	JU	JO
	ဗိယ	ဗိယ	ဗိယ	ချာ	ချု	ချော
	KYA	KYU	KYO	HYA	HYU	HYO
	နိယ	နိယ	နိယ	ဟိယ	ဟိယ	ဟိယ
	(-a)	(-i)	(-u)	(-e)	(-o)	
	အ	အ	အ	အ	အ	

(タイ音標文字)

วิธีเขียนพยัญชนะไทย

KOKAI	KHOKAI	KHOKUD	KHOKWAY	
KHOKHUN	GONGU	JOJAN	CHOCHING	CHOCHAN
SHOSHO	SHORACHER	YOPHUYING	DOCHADA	TOPATAK
THOTAN	THOHANGMOUTO	THOPHUTO	NONAN	BOODAK
TOTUI	TAHAN			
		PHOPHING	PHOPHA	PHOFING
PHOFAN	PHOSAMPUN		(R3) THOTONG	
		ORANG	HONOKHOOP	

註は筆順

วิธีเขียน สระ และวรรณยุกต์ไทย

Handwritten musical notation showing Thai vowels and tones on a five-line staff. The notation includes various symbols for vowels and tones placed above and below the notes.

วิธีเขียนเลขไทย

Handwritten musical notation showing Thai numerals from 1 to 10. Each numeral is written on a staff with a corresponding Thai label and a circled number in parentheses above it.

NUNG (1) SOH (2) SAM (3) SAE (4) HA (5)
 HOK (6) JAD (7) PAD (8) KOW (9) SIB (10)

วิธีเขียนเลขอารบิก

Handwritten musical notation showing Arabic numerals from 1 to 10. Each numeral is written on a staff with a circled number above it.

	A	I	U	E	O
၂	၂	၂	၂	၆-ေ	၆-ေ
	KA	KI	KU	KE	KO
၂	၂ေ	၂ေ	၂ေ	၆ေ	၆ေ
	SA	SI	SU	SE	SO
၂	၂ေ	၂ေ	၂ေ	၆ေ	၆ေ
	TA	TI	TU	TE	TO
၂	၂ေ	၂ေ	၂ေ	၆ေ	၆ေ
	NA	NI	NU	NE	NO
၆	၆ေ	၆ေ	၆ေ	၆ေ	၆ေ
	HA	HI	HU	HE	HO
၆	၆ေ	၆ေ	၆ေ	၆ေ	၆ေ
	MA	MI	MU	ME	MO
၆	၆ေ	၆ေ	၆ေ	၆ေ	၆ေ
	YA	YI	YU	YE	YO
၆	၆ေ	၆ေ	၆ေ	၆ေ	၆ေ
	RA	RI	RU	RE	RO
၆	၆ေ	၆ေ	၆ေ	၆ေ	၆ေ
	WA	WI	WU	WE	WO
၆	၆ေ	၆ေ	၆ေ	၆ေ	၆ေ
	PA	PI	PU	PE	PO
၆	၆ေ	၆ေ	၆ေ	၆ေ	၆ေ
	(-a)	(-u)	(-u)	(-e)	(-o)
	၆ေ	၆ေ	၆ေ	၆ေ	၆ေ

Dec. 18-84

Thai 文字について……………King Mongkut 大学副学部長

我々はこの文字に限りない愛着を感じている。その理由は沢山あるが

1. 700 年前に King Seotai が独自に発明した。
2. 世界の文字は何らかの外国の言語の影響を受けているが、タイ文字は決して受けていない。
3. 戦後 700 年間連綿と続き、色々と文字が変わっていく国々もあろうが、我々は決して文字を変えない。

注 これは中国・日本に対して漢字の変化を指して云うのか。

4. 基本文字は 47 文字である。独得な〇〇を持っている為に、外国人は覚えにくいかも知れないが、一旦覚えればどこの国の文字でもそうだと思うが簡単。
5. 小学一年生の教科書で勉強されることにつき、大変評価する。何ならば、一つでも我々の……そして大部分の人々が気の付かない我々自身の文化を少しでも学ぼうとする外国人がいるという事実。そして始めての official mission team 自らが学ぼうと云う姿勢を示されたことに大変尊敬と感謝の気持を抱いている。
6. 文字から意味論の問題迄深めていくことは、機会の問題、その他色々あろう。

シンハリ語会話

I am Mr.	MAMA Mr. ...
You are Mr. ...	OYA Mr. ...
Good morning	SUBA UDASANAK
Good day	SUBA DAWASAK
Good afternoon	SUBA DAHAWALAK
Good evening	SUBA SANDYAWAK
Good night	SUBA RATHRIYAK
How do you do ?	OBAGE SAPA SONIPA KOHOMADA ?
Thank you very much	BOHOMA ISTUTHI
My name is Mr. ...	MAGE NAMA Mr. ...
See you again	OBAWA NAWATHA HAMUCOENNAM
Congraturation	OBATA ASIRI PATHUM
Yes	OW
No	NAHA
This is	NEKA
That is	ARAKA
How much is it ?	MEKA KIYADA ?
Where is a restaurant ?	KOHODA HOTEL EKA TIYENNE ?
I want to get something	MOTA BONNA MONAHARI ONNE
- to drink	
- to buy	MOTA MONAHARI GANNA ONNE
Do you understand ?	OBATA TERUM (OR, GANNA PULUWANDA ?)

1	EKA	9	WAMAYA	50	PANAHA
2	DEKA	10	DAHAYA	100	SIYA
3	TUNA	11	EKOLAHA	600	HAYA SIYA
4	HATARA	12	DOLAHA	1,000	EK DAHAK
5	PAHA	13	KAHATUNA	5,000	PAHAN DAHAK
6	HAYA	20	VISSA	10,000	DAHA DAHAK
7	HATA	25	VISI RAHA	100,000	LAKSAYAK
8	ATA	30	THIHA	1,000,000	LAKSA DAHAYAK

インドネシア語会話

・私

・あなた

・おはようございます

・こんにちは

・こんばんわ

・おやすみなさい

・ごきげんいかがですか

・有難う、元気です

・私の名前は～です

・さようなら(去り行く人が)

(送る人が)

・またいづれ

・おめでとう

・はい

・いいえ

・これ

・あれ、それ

・これはいくらですか

・レストランはどこですか

・(ジュースが)欲しい

サ ヤ

相手によって使い方が非常に難か

しいので、相手の名前を呼んだほ(アンダ)
うがよい。

スラマツト・パギ(早朝～10時)

スラマツト・シアン(10時～15時)

スラマツト・ソレ(15時～18時)

スラマツト・マラム(18時以降)

スラマツト・ティドゥール

アバ・カパール

テレマカシ・バイク・バイク・ザジャ

ナマ・サヤ・アダラ～。

スラマツト・ティンガル

スラマツト・ジャラン

サンパイ・ジュンパ・ラギ

スラマツト(あまり使わない)

ブトゥール(その通り)

ティダ(Noの意)、ブカン(wrongの意)

イニー

イトゥー

プラパ・ハンガ・イニ

ディマナ・カ・レストラン

ミンタ・ジュース

- (眠り、行き)たい
- (大変)ありがとう
- どういたしまして
- (ぶどう酒よりビールのほうが)よい
- どうぞ
- すみませんが

- マウ (ティドゥール、ペルギ)
- テリマカシ (バニヤック)
- クン・バリ (感謝を返すという意味)
- ビール・ルビ・バグース
- ダリ・ワイン
- シラカン
- ミンタ (飲食物を欲するとき)
- トロン (何かを頼むとき)
- マアアフ (前を横切るときなど)
- ペルミシ (Perdon に相当)

0	ノル	12	ドゥア・ブラス
1	サトウ	13	ティガ・ブラス
2	ドゥア	20	ドゥア・プル
3	ティガ	25	ドゥア・プル・リマ
4	ウ (ア)ンパット	30	ティガ・プル
5	リマ	50	リマ・プル
6	ウ (ア)ナム	100	スラトス
7	トゥジュ	600	ウ (ア)ナムラトス
8	ドゥラパン	1,000	スリブ
9	スンビラン	4,000	ウ (ア)ンパット・リブ
10	スプル	100,000	スラトス・リブ
11	スブラス	1,000,000	スジュタ

タイ語会話

男性が云う時は、「クラブ」、
女性が云う時は「カー」を語尾に
つけると、上品な言葉になる。

例えば、日本語の「こんにちわ」
にあたる言葉は、「サワディ」で
あるが、男性なら「サワディ・ク
ラップ」、女性なら「サワディ・
カー」と云うと丁寧になる。

- おはよう
- こんにちは
- さようなら
- おやすみ
- ごきげんいかがですか
- ありがとう
- そうです、はい
- いいえ
- わかりました
- ごめんなさい

サワディー
サワディー・ルー
コープ・クン
チャイ
マイ・チャイ
カウ・チャイ
コート・トート

- どういたしまして
- いいですか
- 私 (男)
- (女)
- あなた
- これ
- あれ
- ここ
- そこ
- あそこ
- どこ

- マイ・ペン・ライ
- ダイ・マイ
- ボン
- ディチャン
- クン
- アン・ニー
- アン・ナン
- ティー・ニー
- ティー・ナン
- ティー・ノーン
- ティー・ナイ

- ○○さん (Mr)
- (Miss)
- (Mrs)
- 日本人 (タイ人)
- 私の名前は～です
- あなたはとても美しい
- ゆっくり話して下さい
- よくわかりません
- それは素晴らしい
- 元気です

- ナイ○○
- ナンサオ○○
- ナン○○
- コン・ジーブン (コン・タイ)
- (男) ボン・チュウ・～
- クン・スエイ・マーク
- プロー・プー
- チャン・マイ・カオ・チャイ
- ナン・スアイ・ディー
- サバイ・ディー

- これは何ですか
- これはいくらですか
- これを下さい
- とても高い
- まけて下さい
- 大変いいです
- 良くないです
- 水を下さい
- タバコを下さい
- ~欲しい

- 冷しコーヒー
- お茶
- ご飯
- 熱い、暑い
- 冷たい
- 乾杯

- 1 ヌン
- 2 ソーン
- 3 サーム
- 4 シー
- 5 ハー
- 6 ホック
- 7 チェット
- 8 ペート
- 9 カオ
- 10 シップ
- 11 シップエット

- ニー・アライ
- アン・ニー・タオライ
- コーン・アンニー
- ペン・マーク
- ロット・ダイ・マイ
- ディー・マーク
- マイ・ディー
- コー・ナム
- コー・ブリ
- ポム・トン・カン

- オーリェン
- ナムチャー・ローン
- カオ
- ローン
- ジェーン
- チャイ・ヨー

- 12 シップ・ソーン
- 13 シップ・サーム
- 20 ジー・シップ
- 21 ジー・シップ・エット
- 22 ジー・シップ・ソーン
- 30 サーム・シップ
- 40 シー・シップ
- 50 ハー・シップ
- 100 ヌン・ロイ
- 1,000 ヌン・パン
- 2,000 ソン・パン

U S Telecommunication Training Institute (USTTI) 概要

昭60.3.20

1. 初めに

本概要は、昭和59年12月に派遣された巡回指導班（電話交換技術 I, II）が、インドネシア電話公社より入手した資料を元に作成したものである。

2. 設立 1982年

主要電気通信関係会社及び米国政府によって設立された。

International Division of Academy for Education Development によって援助されている。

本部は、Washington D.C.

3. スポンサー

AT&T International

Collins Transmission Systems
Division/Rockwell International
Corporation

COMSAT

International Telephone and
Telegraph (ITT)

Merrill Lynch & Company

MCI Telecommunications
Corporation (MCI)

Motorola, Inc.

GTE International

Harris Corporation, Broadcast
Group

International Business Machines
Corporation (IBM)

Northern Telecom Corporation

RCA Global Communications

TWT Telecommunications
Corporation

Wall Street Journal

The Western Union Telegraph
Company

Westinghouse Corporation

Xerox Corporation

4. 理事会 以下によって構成されている。

スポンサー会社の代表 (ATT International 社長, MCI 会長, Western Union 他)

商務省通信情報担当次官

国務省科学技術担当次官

連邦通信委員会会長

元上院議員

5. 受入実績

1982会計年度 200人 65か国から

6. 応募者

Level 1 から Level 7 まであり、各コースでLevel を指定している。

Level 7 - Senior executives in government, ministry or private industry involved in
to-level policy and management decision making.

Level 6 - Directors, senior engineers, or middle managers with decision-making
authority and budgetary responsibilities involved in planning and/or
management of a telecommunications agency

- Level 5 Engineers or technical professionals engaged in analyzing developing managing specific telecommunications services
- Level 4 Senior Technicians
- Level 3 Technicians
- Level 2 Technical assistance
- Level 1 Unskilled Personnel

7. 選考プロセス及び費用

USTTI 及び各コースのスポンサーとなっている会社又は団体が選考する。

往復航空券，米国内旅費，滞在費等は，参加者の負担（通常，参加者がITU，USAID，世界銀行，APT等からフェローシップを得てくるが，USTTIでもフェローシップを用意している）

研修経費は，USTTI又はスポンサー団体が負担する。ただし，管理費として1コース当りUS\$ 150を参加者は負担しなければならない。（2つのコースを受講する場合は2コース目は，US\$ 75）

ホテルはUSTTIが到着指定日より5日前から予約している

8. コース名

Course Number and Title	Orientation Begins	
84-101/High Frequency Broadcasting	May 31	第一 四 半 紀
84-102/Store and Forward Switching Systems, Operation and Management	June 21	
84-103/Management and Supervisory Techniques	June 21	
84-104A/Information Systems for Telecommunications Management	July 19	
B/Uses of Microcomputers in Telecommunications	—	第二 四 半 紀
84-105/Telecommunication Planning and Economic Decision Making	August 2	
84-106/Broadcast Systems, Operations, and Management	August 16	
84-201/Broadcast Systems, Operations, and Management (same course repeated)	September 6	
84-202A/Satellite Communications Management, Applications, and Technology	September 6	
B/Satellite Systems for Rural Communications	—	
84-203/Circuit Switch Systems Operations and Management	September 27	
84-204A/Radio Spectrum Management	September 27	
B/Spectrum Management for Land Mobile Radio Services	—	
84-205/Telecommunications Transmission Systems and Technology	October 25	
84-206/High Frequency Broadcasting (same course repeated)	October 25	

9. スポンサー会社・団体

Sponsoring Organization	Location	
Voice of America	Washington, D.C.	June 4-22, 1984
TRT Telecommunications Corporation	Fort Lauderdale, Florida	June 25-July 6, 1984
Western Union	Atlanta, Georgia	June 25-July 20, 1984
IBM Corporation	Raleigh/Durham, North Carolina,	June 23-July 27, 1984
Systems Service Division, AED	Washington D.C.	July 30-August 3, 1984
AT&T	Princeton, New Jersey	August 5-17, 1984
Harris Corporation, Broadcast Group	Quincy, Illinois	August 20-31, 1984
Morris Corporation, Broadcast Group	Quincy, Illinois	Sept. 10-21, 1984
COMSAT	Clarksburg, Maryland	Sept. 10-21, 1984
AID Rural Satellite Program, AED	Washington, D.C.	Sept. 24-28, 1984
TRT Telecommunications Corporation	Fort Lauderdale, Florida	October 1-12, 1984
FCC and NTIA	Washington D.C.	October 1-19, 1984
Motorola, Inc.	Washington D.C.	October 22-26, 1984
Collins Transmission System Division/ Rockwell International Corporation	Dallas, Texas	Oct. 29-Nov. 16, 1984
Voice of America	Washington D.C.	Oct. 29-Nov. 16, 1984

10. 終に

米国では、USAIDが援助ベースで研修員受入を行っており、又民間会社もコマーシャルベースの研修員を受入しているが、何故USTTIが作られたのか、及び上記とのデマケは、入手資料からは不明である。さらに、これらのコースはインドネシアに対してオファーされたものであり、他の発展途上国に対して、どのようなオファーがなされているのかも不明である。

別紙資料

電気通信関係コース概要

**B4-104A Information Systems for
Telecommunications
Management**

Course Description: Among the topics to be included in the course are: Introduction to data communications; concepts of teleprocessing, relationships between information systems and telecommunications; concepts of communications network architecture; enhanced network services; standards for telecommunications and interconnected systems; industry applications of telecommunications systems; enhanced central office equipment and services; and communications trends.

Recommended for upper to middle management and senior staff personnel who are responsible for planning and deciding on telecommunications equipment and services in support of data communications and information processing systems.

Participant Learning Objectives: To be able to 1) Define, understand and discuss principles of data communications and teleprocessing and the complementary relationship between information systems and telecommunications; 2) Identify and evaluate the needs and limits of telecommunications services; and 3) Make informed judgments about the application and use of information processing systems, including related equipment and services.

Level: 6, 7 Class size: 15

Dates: July 23-27, 1984

Orientation: July 19-21

Location: Raleigh/Durham, North Carolina

Sponsor: IBM Corporation

**B4-104B Uses of Microcomputers
in Telecommunications**

Course Description: This course provides an understanding of the use of microcomputers in telecommunications activities. It is designed to acquaint top-level personnel with new cost-effective options from use of smaller computers in managing and operating a telecommunications operation. Included in the course will be use of microcomputers for: economic and network analysis, in local area networks linking either minicomputers or microcomputers, in packet switching networks under protocols such as X2-5, SNA, or broad-band and in remote or satellite billing and administration applications. Also, it will include software and services issues and the characteristics of appropriate training in telecommunication uses of microcomputers. This course is recommended specifically for Level 6 participants.

Participant Learning Objectives: Participants will 1) have used microcomputers in test applications for analytical purposes; 2) understand their role in modern communications networks and administrations, and 3) be capable of outlining the basic questions necessary for an effective request for bid from major vendors.

Level: 5, 6, 7 Class Size: 12

Dates: July 30-Aug 3, 1984

Location: Washington, D.C.

Sponsor: System Services Division,
Academy for Educational
Development

84-105 Telecommunication
Planning & Economic
Decision Making

Course Description: This course will include discussions of the decision-making process and economic analysis. Emphasis will be placed on life cycle versus first cost techniques. Participants will practice these techniques in classroom exercises and group case activities. Among the topics to be covered are: introduction to the telecommunication network and network planning functions; deriving and comparing alternatives; economic analysis; true value of money; derivation of long- and short-term economic indicators; plan documentation and monitoring.

This course is recommended for Level 6 participants with responsibility for long-range planning studies (including economic studies) or for making decisions based on these studies. A four-year engineering degree is strongly recommended.

Participant Learning Objectives: To be able to develop a basic long-range technical plan using the planning process and economic analysis techniques addressed in the course.

Level: 6 Class Size: 12

Dates: August 5-17, 1984 ✓

Orientation: August 2-4

Location: Princeton, New Jersey

Sponsor: AT&T

84-202A Satellite
Communications
Management,
Applications and
Technology

Course Description: This course will cover three related areas in satellite technology. The initial portion will address fundamental questions related to the management of satellite networks and services, earth station trade-offs, system performance, measurement and evaluation, and future trends. The second portion will address multi-disciplinary planning, design, implementation and evaluation of rural satellite systems and services. It will examine advances in earth station design and solar power. The third portion will stress satellite technology, including spacecraft, orbit control, synchronous orbit, link analysis system design, and traffic engineering. This course is recommended for directors and managers responsible for the technical operations of satellite communications, or the planning of satellite systems and services.

84-203 Circuit Switch Systems,
Operations and
Management

Course Description: Overview of the structure of a stored program controlled circuit switch, to include electrical signal interfaces, distributed hardware and software techniques, and program versus user-definable table controls. Typical operator controls, alarm conditions and indications, peripheral operations and support, on-line versus off-line functions, preventive and on-demand maintenance requirements and techniques, line monitoring and trouble-clearance procedures, and recover/restart processes. Physical and environmental requirements, network interconnections. Quality of service management techniques. Emphasis on automatic telex exchanges.

Participant Learning Objectives: To be able to 1) Obtain a detailed working knowledge of the architecture, hardware and software employed in a modern digital circuit switching system. 2) Obtain comprehensive hands-on knowledge of message processing, network control and computer operations in a modern digital circuit switching system.

Level: 4, 5 Class Size: 4

Dates: October 1-12, 1984

Orientation: September 27-29

Location: Fort Lauderdale, Florida

Sponsor: TRT Telecommunications Corporation

Participant Learning Objectives: To be capable of 1) Performing satellite link calculations (G/T, C/N, Noise Temperature, Path Loss, etc); 2) Making informed decisions

on system design trade-offs; 3) Making informed decisions on earth management functions such as personnel, operations, and documentation control.

Level: 4, 5, 6 Class Size: 15

Dates: September 10-21, 1984

Orientation: September 6-8

Location: Clarksburg, Maryland

Sponsor: COMSAT

84-203 Satellite Systems for Rural Communications

Course Description: The course will provide an overview of satellite systems and applications, focusing on how satellite technologies can be applied to national development needs. It will include a review of selected experimental and operational programs with development applications, the role of operational requirements in designing and choosing satellite-based technologies, and the issues surrounding training, evaluation, institution-building, financing, and tariff structures for rural systems. Technological considerations will also include advances in small earth station design and alternate power sources.

Participant Learning Objectives: To be able to address the multidisciplinary processes of planning, designing, implementing, and evaluating rural satellite systems and services with a development orientation.

Level: 4, 5, 6 Class Size: 15

Dates: September 24-28, 1984

Location: Washington, D.C.

Sponsor: AID Rural Satellite Program (Academy for Educational Development)

84-192 Store and Forward Switching Systems, Operation and Management

Course Description: Overview of local distribution networks and long-haul aggregates. Placement and use of direct subscriber modems and dial-up modem interfaces, hubbing, frequency/time division multiplexing, concentrators, high-speed multipoint modems, and terrestrial and satellite links. Network distributed processing, numbering plans, and flow control. Network engineering for prescribed grades of services, its impact on network size and cost, and the interconnection with other networks. Emphasis on telex and telex-related services.

Participant Learning Objectives: To be able to 1) Obtain a detailed working knowledge of the architecture, hardware and software employed in a modern digital message switching system; 2) Obtain comprehensive hands-on knowledge of message processing and store and forward computer system operations.

84-205 Telecommunications Transmission Systems and Technology

Course Description: This course will provide an overview of the technology, systems engineering and transmission equipment involved in the design and implementation of a terrestrial transmission system. The course will include tutorials on high density analog and digital microwave systems, multiplex hierarchies, lightwave transmission technology, digital voice encoding systems, and line termination systems. The thrust of this course is the design of microwave and lightwave transmission systems.

Participant Learning Objectives: To be able to 1) Understand the current technology used in the design of microwave and lightwave transmission systems; 2) Understand the application of analog and digital microwave transmission systems within the telecommunications infrastructure; 3) Participate in the design of a microwave and lightwave transmission system; 4) Understand and apply microwave frequency coordination procedures.

Level: 5, 6, 7 Class Size: 20

Dates: October 29-November 16, 1984

Orientation: October 25-27

Location: Dallas, Texas

Sponsor: Collins Transmission Systems Division/Rockwell International Corporation

Level: 4, 5 Class Size: 4

Dates: June 25-July 6, 1984

Orientation: June 21-23

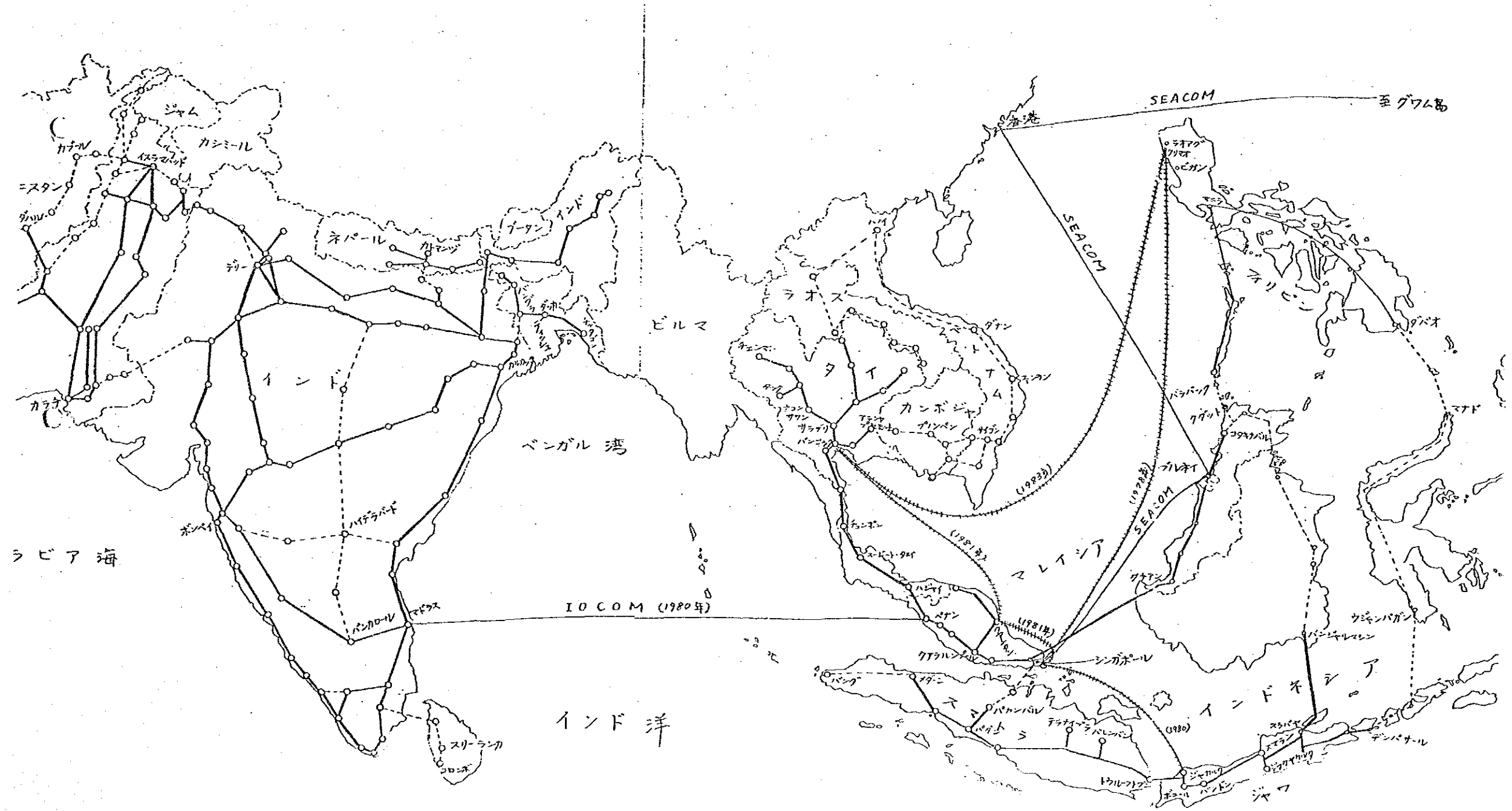
Location: Fort Lauderdale, Florida

Sponsor: TRT Telecommunications Corporation

東南アジア諸国間伝送網

凡例

- 既設マイクロ又は同軸ルート
- - - - 計画マイクロ又は同軸ルート
- ASEAN海底同軸ケーブル
- +++++ 英連邦東南アジアケーブル (SEACO)
- 英連邦インド洋ケーブル (IOCOM)
- 国境



cebelec

Ministère des
Relations Extérieures

LES TECHNIQUES NOUVELLES EN TELECOMMUNICATIONS

PARIS
1985

12 Février — 30 Mai

International programme of specialized training
An international programme of specialized training
Un programme international de formation spécialisée

Ecole Nationale
Supérieure des
Telecommunications

Ecole
Nationale
des Telecommunications

Le CESELEC

Centre d'études supérieures en électricité, électronique et informatique

presented under
the name of

**MINISTÈRE DES
RELATIONS
EXTERIEURES**

an international programme of specialization specialized for engineers, prepared in close cooperation with the Direction Générale des Télécommunications du Ministère des P.T.T. (D.G.T.) and with the professional cross industry concerned (M.R.E. and S.I.I.) This programme, which benefits equally from the support of the Direction des Relations Economiques Internationales (Ministry of Economy) and jointly by

offers under the
sponsorship of the

**MINISTRY
OF FOREIGN
AFFAIRS**

an international programme of specialization specialized for engineers, prepared in close cooperation with the Direction Générale des Télécommunications du Ministère des P.T.T. (D.G.T.), with French industrial firms through the "Direction des Industries Techniques et Technologiques" (D.I.T.) and with the professional cross industry concerned (M.R.E. and S.I.I.) This programme, which also benefits from the assistance of Direction des Relations Economiques Internationales (Ministry of Economy) for its execution, is carried out jointly by

presented by the
name of

**MINISTERIO
DE ASUNTOS
EXTERIORES**

an international programme of specialization specialized for engineers, prepared in close cooperation with the "Dirección General de Telecomunicaciones del Ministerio de P.T.T." (D.G.T.) y las empresas industriales técnicas e industriales de la "Dirección de Industrias Técnicas y Tecnológicas" (D.I.T.) y de los sindicatos profesionales involucrados (M.R.E. S.I.I.) Este programa, que beneficia igualmente para su ejecución el apoyo de la "Dirección de Relaciones Económicas Internacionales" (Ministerio de Economía) se realiza conjuntamente por

L'Ecole nationale supérieure
des télécommunications
(E.N.S.T.)

et l'Ecole supérieure
d'électricité
(E.S.E.)

L'ENST* et L'ESE*

occupant une position privilégiée dans l'enseignement de la communication, de l'électricité et des domaines qui s'y rattachent.

L'une et l'autre des deux écoles ont un corps professoral riche et varié: environ cent enseignants permanents dans chaque établissement auxquels s'ajoutent quelques centaines de spécialistes travaillant dans l'industrie ou dans les grands laboratoires de recherche.

Au sein même de chaque école, existent divers laboratoires d'enseignement et de recherche spécialisés qui participent aux développements scientifiques et techniques actuels en collaboration avec les organismes publics ou industriels. Chaque école dispose d'un centre de calcul doté de nombreux terminaux.

hold a leading position in communications, electricity and its related fields. Both schools have a rich and varied teaching body: approximately 100 permanent teachers in each institution, plus a few hundred specialists working in industry or in research laboratories.

Within each School there are various specialized teaching and research laboratories which participate in current technical and scientific developments, in collaboration with industrial or public organizations. Each School utilizes its own computing facilities, including a large number of terminals.

ocupan una posición privilegiada en la enseñanza de la comunicación, de la electricidad y de los áreas relacionadas.

Cada escuela posee un cuerpo docente especializado y compuesto: aproximadamente 100 profesores permanentes en cada establecimiento, más unos 400 especialistas que trabajan en la industria o en los grandes laboratorios de investigación.

En cada escuela existen diferentes laboratorios especializados de enseñanza y de investigación que participan en los desarrollos científicos y técnicos actuales, en colaboración con los organismos públicos o industriales. Cada escuela cuenta de un centro de cálculo dotado de numerosos terminales.

* ENST: 46 rue Bonaparte 75634 PARIS Cedex 13, tel (1) 589 66 66. Responsable du Programme: Pierre Ha 44
* ESE: Plazeta de Moulon 21490 Gif-sur-Yvette, tel (6) 943 83 40. Responsable du Programme: Antonio J. 4466

programme international de formation spécialisée

Les Objectifs

Le programme vise à former des experts hautement qualifiés dans les techniques nouvelles utilisées en télécommunications et propose :

un bilan des possibilités actuelles offertes par les développements de l'informatique, l'électronique, l'électromagnétisme.

Une analyse de leurs effets conjugués appliqués aux télécommunications.

Une familiarisation très poussée avec les technologies de pointe et la projection des applications de ces technologies à l'avenir.

Cette formation trouve naturellement sa place entre les stages d'information proposés par l'ACTIM* et les spécialisations post-diplôme d'une durée d'un an offertes par les écoles d'ingénieurs et les universités.

Les Participants

Le programme s'adresse à des ingénieurs exerçant une activité professionnelle depuis quelques années et qui seraient délégués par leur organisme employeur.

Organisation

Le programme bénéficie de l'expérience privilégiée de l'EN.S.T. et de son expertise en matière de formation continue pour les ingénieurs de l'industrie et les cadres de l'administration française. Les deux, ces écoles accueillent plus de 3.000 stagiaires par an pour une durée d'environ 1 semaine.

L'enseignement et l'encadrement sont assurés par des ingénieurs de haut niveau choisis dans le corps professoral des écoles et parmi les cadres des entreprises électroniques et des laboratoires nationaux de recherche en télécommunications (CNET et CCETT).

Le programme s'étend sur 14 semaines et comprend 197 modules d'une durée de 1 h 30 consacrés à des conférences, à des travaux dirigés et à des travaux pratiques, auxquels il convient d'ajouter des visites d'industries et de centres de recherche (4 journées environ).

Le programme de perfectionnement linguistique et d'animation culturelle prévu pendant toute la durée du stage.

Une documentation abondante sera mise à la disposition des stagiaires (textes photocopiés, revues de librairie, notices...), et l'envoi pour qu'il en soit assuré par l'administration française.

Un stage en entreprise, de courte durée, pourrait être mis en place selon les demandes particulières faites par les stagiaires au cours du cycle.

An international programme of specialized training

The Aims

This programme is aimed at training highly-qualified experts in the new techniques used in telecommunications, and offers :

1 - the current state of the possibilities of computer science, electronics, electromagnetism.

2 - an analysis of their joint effects as applied to telecommunications.

3 - a familiarization with highly advanced technologies and a projection of their potential applications towards the future.

This programme naturally takes place between ACTIM*'s information sessions and one year post graduate specializations offered by engineering schools and universities.

The Participants

The programme is designed for engineers who have been engaged in professional activities for some years, and who would be commissioned by their employers.

Organization

This program benefits from the unique experience of ENST and ESE in the field of continuing education and professional training for engineers in active duty and French civil servants. Between the two of them, these schools enroll over 3,000 trainees per year for a one-week period each.

The teaching and tutoring are done by select engineers from the schools' faculties, and from the executive management of electronic industries or national research laboratories (CNET, CCETT).

The program extends over a period of 14 weeks and includes 197 one-and-a-half-hour units in the way of lectures, tutorials and practicals. In addition, around 4 days are devoted to technical visits of industrial achievements and plants, research and development laboratories.

Cultural and linguistic activities are organized throughout the duration of the cycle.

Each participant will be provided with abundant documentation mimeographed textbooks, books, specification sheets.... the forwarding of which can be ensured by the French authorities. A short industrial training period can be arranged on the request of trainees during their stay.

Un programa internacional de formación especializada

Los Objetivos

Este programa tiene por objeto formar expertos altamente calificados en las nuevas técnicas utilizadas en telecomunicaciones y propone :

1 - un resumen de las posibilidades que ofrece la informática, la electrónica y el electromagnetismo actualmente.

2 - un análisis de sus consecuencias en las telecomunicaciones.

3 - una familiarización profunda con las tecnologías de vanguardia y una proyección de las aplicaciones de estas en el futuro.

Esta formación encuentra naturalmente su lugar entre los cursos de información propuestos por el ACTIM* y las especializaciones de post grado con duración de un año ofrecidas por las escuelas de ingenieros o las universidades.

Los Participantes

Este programa está destinado a ingenieros que ejercen una actividad profesional desde hace ya algunos años y que hayan sido postulados por el organismo al cual prestan sus servicios.

Organización

Este programa beneficia de la gran experiencia de ENST y ESE en la formación continua de ingenieros de la industria y personal ejecutivo de la administración francesa (estas dos escuelas acogen, por una semana, más de 3000 cursillistas cada año).

El claustro de profesores está formado por ingenieros de gran nivel escogidos en el cuerpo docente de las escuelas, las Industrias electrónicas y los laboratorios nacionales de Investigación en Telecomunicaciones (CNET y CCETT).

El programa de 14 semanas consta de 197 módulos de 1h30 (conferencias, sesiones de problemas y de prácticas) y de aproximadamente 4 días de visitas a industrias y centros de investigación.

Durante el cursillo está previsto un programa de perfeccionamiento lingüístico y animación cultural.

Se proporcionará una documentación abundante (apuntes, libros, instrucciones técnicas...) que puede ser enviada por la administración francesa.

Podrán organizarse estancias en empresas, de corta duración, según las peticiones hechas durante el cursillo.

* ACTIM: Agence pour la Coopération technique, industrielle et économique.

Les techniques nouvelles en télécommunications

Electronique
Informatique
Electromagnétisme

Commutation électronique

Techniques temporelles.
Informatique adaptée aux grands systèmes.
Evolutions technologiques et évolution des performances.

Faisceaux hertziens - Satellites de télécommunications

Développement des systèmes d'antennes.
Compatibilité des communications.
Modulation et codage dans les satellites de la seconde
génération (système AMRT).
Le programme TELECOM 1.

Ingénierie - optimisation des réseaux

Architecture des réseaux, écoulement du trafic.
Application de l'informatique à l'optimisation et à la
planification.
Possibilité de réseaux multiservice.

Réseaux numériques Intégrés

Conséquences de la numérisation, perspectives.
Hiérarchisation des réseaux et des services.
Téléinformatique - vidéocommunication.

Télécommunications optiques

Optique guidée : fibres, connectique, électronique
d'extrémité, composants spécifiques.
Appareils matériels des technologies optiques à la
transmission, à la distribution et à la commutation.
Technologies pour la visualisation.

Télématique

Les réalisations d'aujourd'hui :
• vidéotexte (expérience TELLIL), annuaire électronique,
télécopie...
Vers les télécommunications de demain :
• développement du logiciel.
• mutation des réseaux.
• nouveaux services.

Une actualisation des connaissances des participants sur
les disciplines et les technologies utilisées aujourd'hui et
demain dans les télécommunications sera intégrée dans
le programme en particulier sur les thèmes suivants :
- notions prospectives en électronique et opto-
électronique
- Informatique et microprocesseurs en
télécommunications
- Problèmes spécifiques en traitement du signal (parole,
images)
- Propagation des ondes.

<p>Electronics Computer Science Electromagnetism</p>	<p>Electrónica Informática Electromagnética</p>
<p>Switching New switching techniques. Digital processing in large systems. Technological advances and performance assessment.</p>	<p>Commutación electrónica Técnica adaptada a los grandes sistemas. Informática adaptada a los grandes sistemas. Evoluciones tecnológicas y evaluación de las realizaciones.</p>
<p>Wave links Communication satellites Recent trends in antenna system design. Electromagnetic compatibility. Selection and coding for second generation satellites (TELECOM AMRI). TELECOM 1: a programme for domestic purposes.</p>	<p>Redes de micro ondas Satélites de telecomunicaciones Desarrollo de los sistemas de antenas. Compatibilidad electromagnética. Modulación y codificación en los satélites de la segunda generación (sistema AMRI). El programa TELECOM 1.</p>
<p>Planning - Network optimization Flow of networks, traffic flow. Applying data processing to the planning and optimization of networks. Service networks.</p>	<p>Ingeniería - optimización de redes Arquitectura de redes, flujo del tráfico. Aplicación de la informática a la organización y a la planificación. Posibilidad de redes multiservicio.</p>
<p>Integrated digital network Prospects of digitalization. Allocation of services in a network. Computer networks, videocommunication.</p>	<p>Redes numéricas integradas Consecuencias de la numerización, perspectivas. Jerarquización de las redes y de los servicios. Teleinformática, videocomunicación.</p>
<p>Optical communications Fiber optics: fibres, connectors, interface electronics, components. Improvements in transmission, distribution and switching by optical technology. Optical technology.</p>	<p>Telecomunicaciones ópticas Óptica guiada: fibras, conectores, electrónica de interfaz componentes específicos. Aportes materiales de las tecnologías ópticas a la transmisión, a la distribución y a la conmutación. Tecnologías para la visualización.</p>
<p>Telecommunications Recent achievements. Text, electronic directory, telecopy... Trends in the telecommunications of tomorrow: Recent developments. Evolution in networks. New services.</p>	<p>Telegrafía Telegrafía Las realizaciones de hoy: • videotexto (experiencia TELETEL), anuario electrónico, telecopia... Hacia las telecomunicaciones del futuro: • desarrollo del "Software" • mutación de la red. • nuevos servicios.</p>
<p>The programme emphasizes the updating of the participants' competence in the technologies and related fields of today and tomorrow as applied to telecommunications, particularly along the following lines: - prospects in electronics and opto-electronics - computers and microprocessors in telecommunications - specific problems in signal processing (speech, image propagation).</p>	<p>Una actualización de los conocimientos de los participantes en las disciplinas y tecnologías utilizadas hoy y mañana en telecomunicaciones será integrada en el programa, en particular sobre los temas siguientes: - nociones y perspectivas en electrónica y opto-electrónica - informática y microprocesadores en telecomunicaciones - Problemas específicos de tratamiento de la señal (palabra, imágenes). - Propagación de ondas.</p>

Informations pratiques

1 - Les dates

Le programme débutera le mardi 12 février 1985 et se terminera le jeudi 30 mai 1985.

2 - Le lieu, l'hébergement

L'enseignement sera dispensé tantôt dans les locaux de l'ESE, tantôt dans ceux de l'ENST. Le logement sera assuré, en liaison avec le CESELEC, à Paris ou dans la banlieue proche de manière à permettre un accès facile aux deux écoles par métro ou autobus.

3 - La langue de travail

L'enseignement sera dispensé en Français. Une bonne connaissance de cette langue est donc indispensable. Pour les participants désirant se perfectionner, un stage linguistique d'une durée de 1 mois sera organisé.

4 - Le financement

Les frais de participation au programme s'élèvent à 38 000 FF, par stagiaire. Ce coût ne comprend pas les frais de voyage, ni les frais de séjour pour lesquels il est nécessaire de prévoir 5 500 FF par mois.

Une aide financière pourra être accordée aux personnes qui en feront la demande auprès des conseillers culturels et des conseillers de coopération technique des Ambassades de France.

Les frais de participation à la formation linguistique sont pris en charge par la France.

Les candidatures

Les personnes intéressées doivent faire acte de candidature en renvoyant la demande d'inscription à laquelle sera jointe une lettre de recommandation de l'organisme employeur préscant notamment l'intérêt que ce stage représente.

Y. Tanguy, secrétaire général du CESELEC recevra les candidatures, fera une réponse aux demandes et informera les candidats en temps utile de l'organisation de leur séjour en France (logement, accueil, couverture sociale...).

Pour tous renseignements complémentaires prendre contact avec le :
CESELEC - 2, avenue Hoche
75008 PARIS - FRANCE
Tél. 33 (1) 766.03.08
Télex : FNEGE 280-271 F

Practical information

1 - The dates

The programme will begin on Tuesday February 12, 1985, and will end on Thursday May 30, 1985.

2 - The location, the accommodation

The programme will take place in turn on the premises of ESE and of ENST. Accommodation for the participants will be arranged with the help of CESELEC in Paris or in nearby suburbs, in order to make transportation convenient to both schools either by bus or by the underground.

3 - The working language

The course will be given in French. Therefore a good working knowledge of this language is vital. For those students wishing to improve their French a one-month language course will be organized.

4 - The financing

The cost of participating in the programme amounts to FF 38 000 per person.

This cost does not include travelling expenses, nor expenses connected with the stay in France. The latter would amount to FF 5 500 per month. Application for financial aid should be sent to the cultural and technical cooperation Attaches at the French Embassies.

The cost of the language course is paid by the French authorities.

5 - The applicants

Interested persons should apply by returning the attached form duly filled out, together with a letter of recommendation by their employer stating what sort of interest lies in the stay for the candidate.

Y. Tanguy, "Secrétaire Général" of CESELEC to whom applications should be sent, will acknowledge receipt of applications, and inform applicants in due time of the arrangements made for their stay in France (accommodation, reception, insurance...).

For all further information, please contact:
CESELEC - 2, avenue Hoche
75008 PARIS - FRANCE
Tél. 33 (1) 766.03.08
Télex : FNEGE 280-271 F

Informaciones prácticas

1 - Las fechas

El programa se inicia el martes 12 de Febrero de 1985 y termina el jueves 30 de Mayo de 1985.

2 - El lugar, el alojamiento

Los cursos se llevarán a cabo en los locales de la ESE y en parte en los de la ENST. El alojamiento tendrá lugar en colaboración con el CESELEC, en Paris o en las cercanías con el objeto de asegurar un fácil acceso a ambas escuelas mediante autobús o metro.

3 - El idioma de trabajo

Los cursos se llevarán a cabo en francés. Es indispensable, por consiguiente, poseer buenos conocimientos de este idioma. Para los participantes que deseen perfeccionarse, se organizará un cursillo lingüístico con duración de 1 mes.

4 - El financiamiento

Los gastos de participación al programa se elevan a 38 000 FF por candidato. Este costo no incluye los gastos de transporte, ni los gastos de estancia para los cuales es necesario prever 5 500 FF por mes.

Una ayuda financiera podrá dispensarse a las personas que lo soliciten a través de los consejeros culturales y los consejeros de cooperación técnica de las embajadas de Francia.

Los gastos de participación a la formación lingüística serán patrocinados por Francia.

5 - Las candidaturas

Las personas interesadas deberán presentar su acta de candidatura enviando el formulario anexo, al cual se incluirá una carta de postulación del organismo en el cual el candidato presta sus servicios indicando particularmente el interés que este programa representa.

Y. Tanguy, secretario general del CESELEC recibirá las candidaturas, responderá a las solicitudes e informará a los candidatos a su debido tiempo sobre la organización de su estancia en Francia (alojamiento, recepción, seguro social...)

Para cualquier informe complementario ponerse en contacto con el:
CESELEC - 2, avenue Hoche
75008 PARIS - FRANCE
Tél. 33 (1) 766.03.08
Télex : FNEGE 280-271 F

Le ceselec ?

Une structure souple de liaison entre partenaires français et étrangers en matière de formation de cadres et techniciens de l'industrie, de la recherche ou de l'université dans les secteurs de l'électrotechnique, de l'électronique, des télécommunications, de l'automatique et de l'informatique.

• Quelle structure ?

Le CESELEC est une association créée en 1976 et qui réunit en son sein des représentants :

- des établissements de formation (dont la totalité des écoles d'ingénieurs ayant une action significative dans les secteurs précités),
- des industries essentiellement par l'intermédiaire de la Fédération des Industries Électriques et Électroniques (FIEE),
- des administrations et plus particulièrement le Ministère des Relations Extérieures et le Ministère de l'Éducation Nationale.

• Pour quelles actions ?

D'une manière générale le CESELEC est susceptible de mettre en œuvre toute action contribuant à la promotion et au développement de la formation de cadres et techniciens étrangers par la France pour les secteurs qui le concernent. Mais plus précisément ses lignes d'action s'ordonnent selon quatre axes :

• Informer et conseiller

— en réalisant des présentations générales concernant les formations françaises (ingénieur, docteur ingénieur, spécialisation...) et aux thèmes de recherche développés dans les laboratoires ;

— en répondant à des questions précises en matière de formation ou de recherche en France (orientation pour des études, mise en relation avec des professeurs ou chercheurs de spécialité donnée, préparation de programmes de visite d'établissements...)

• Organiser et gérer des programmes
— offrant un service de gestion pédagogique aux étudiants et de stagiaires étrangers en France pour le compte du gouvernement français, d'une administration ou organisation étrangère. Ce service entend : sélection éventuelle des candidats, orientation vers les meilleurs établissements (tant en formation linguistique que scientifique), suivi pédagogique tout au long des études (rapports bi-annuels, examen des cas particuliers...)

— en mettant en œuvre des formations continues qui sont, soit adaptés à des besoins spécifiques du pays demandeur, soit de caractère généralement international, sur des thèmes technologiques avancés ;

— en participant à la conception de programmes d'études, à la création à l'étranger de laboratoires d'enseignement ou d'instituts de formation d'ingénieurs, et en organisant la formation, le personnel d'encadrement ;

de telle sorte que le CESELEC rassemble la double capacité :

- d'informer et de mettre en relation des partenaires français et étrangers ;
- d'organiser, de structurer une réponse à une demande étrangère en matière de formation, réponse assurant une réelle concertation, au plan français.

What is ceselec ?

A flexible structural link between foreign and French partners for the training of executives and technicians in industry, research and universities in the fields of electrical engineering, electronics, telecommunications, automatic control, and computer sciences.

• What kind of structure ?

CESELEC is an association founded in 1976 that brings together representatives of :

- Educational institutions, among which all the engineering schools with a significant activity in the above mentioned fields.
- Industries, mainly through the Federation of Electrical and Electronic Industries (FIEE),
- Government administrations, and in particular the Ministry of Foreign Relations and the Ministry of Education.

• For what purposes ?

As a general rule, CESELEC endeavours to implement any activity tending to the promotion and the development by French authorities of curricula for foreign executives and technicians in its fields of interest. More precisely, it works along the following two axes :

• Information and counsel

— Through the publication of documents of general interest on French formation (engineering degrees, engineering PhD's, special syllabuses) and on research carried out in laboratories.

— With answers to precise questions relative to formation and research in France (advising on syllabuses, establishing contacts with professors or research people in a given field of specialization, preparing programmes and itineraries for the visit of places of interest...)

• Setting up and running curricula :

— Offer of an academic management service of foreign students and trainees in France, to the French government or to foreign administrations or organizations. This offer comprises: possibly the selection of candidates, their orientation to the most suitable institutions both in terms of linguistic and scientific training, the academic follow-up throughout the period of study, with bi-yearly reports, tutoring of individual cases...

— Implementation of further education programmes either suited to the specific needs of the applying country, or with a definitely international character, on technologically advanced subjects.

— Joint assistance in the design of study programmes, in the setting-up of laboratories or engineering institutions abroad, in the organization of staff training.

So that CESELEC has the twofold capability of :

- informing and gathering partners from France and from abroad ;
- organizing and implementing responses to foreign needs in terms of education and training, also ensuring genuine concertation at the French end of the operation.

¿ El ceselec ?

Una estructura flexible de enlace entre asociados franceses y extranjeros en materia de formación de ejecutivos y técnicos para la industria, la investigación o la universidad en los sectores de electrotécnica, electrónica, telecomunicaciones, control automático e informática.

• ¿ Cómo está estructurado ?

CESELEC es una asociación creada en 1976 y que reúne en su seno representantes de :

- Establecimientos de formación (entre los cuales la totalidad de las escuelas de ingenieros que ejercen una acción significativa sobre los sectores previamente citados),
- La industria, esencialmente por medio de la Federación de Industrias Eléctricas y Electrónicas (FIEE),
- La Administración Pública, particularmente el Ministerio de Relaciones Exteriores y el Ministerio Nacional de Educación.

• ¿Cuáles son sus funciones ?

De una manera general CESELEC es susceptible de realizar toda acción que contribuya a la promoción y al desarrollo de la formación de ejecutivos y técnicos extranjeros, por Francia, para los sectores concernientes. Pero más específicamente sus líneas de acción son encaminadas según dos ejes :

• Informar y aconsejar

— Redactando los documentos de los diferentes formaciones francesas (ingeniero, Doctor-ingeniero, Especialización...) y los temas de investigación desarrollados en los laboratorios.

— Respondiendo a preguntas precisas en materia de formación o investigación en Francia (orientación en los estudios, relación con profesores o investigadores de una especialidad dada, preparación de programas de visitas a los establecimientos...)

• Organizar y administrar los programas :

— Ofreciendo un servicio de administración pedagógica de estudiantes y practicantes extranjeros en Francia a cargo del gobierno francés, de una administración o de una organización extranjera. Este servicio comprende: la selección eventual de candidatos, orientación hacia los mejores establecimientos (tanto en formación lingüística como científica, asesoría pedagógica a lo largo de los estudios, reportes bianuales, examen de casos particulares...)

— Realizando los programas de formación continua que están sea adaptados a las necesidades específicas del país que los pide, sea de carácter internacional en temas tecnológicos avanzados.

— Participando a la concepción de programas de estudio, a la creación de laboratorios de enseñanza en el extranjero o de institutos de formación de ingenieros y organización la formación de personal.

De tal manera que CESELEC tiene la doble función de :

- informar y relacionar a los asociados franceses y extranjeros ;
- organizar y estructurar una respuesta a una petición extranjera en materia de formación, respuesta que asegura un efectivo acuerdo al nivel francés.

Programme
détaillé

Detailed
Programme

Programa
Detallado

Les techniques nouvelles en télécommunications

1985

Ecole Nationale
Supérieure des
Télécommunications

Ecole
Supérieure
d'Electricité

- Le programme scientifique détaillé dans ces pages comprend 197 modules d'une durée de 1 heure 30 - à raison de 4 modules par jour en règle générale.
- Un programme de perfectionnement linguistique et d'animation culturelle est de plus prévu tout au long du cycle - à raison de 3 modules par semaine en moyenne.
- 4 journées de visites d'industries ou de centres de recherche seront programmées en Avril et Mai. Des stages en entreprise, de courte durée et faisant suite au cycle, pourront être mis en place selon les demandes particulières.

Traitement du signal

TRANSMISSION DE SIGNAUX

- Messages analogiques
Modulations : amplitude, phase, fréquence
- Messages numériques
Codes de transmission - Propriétés spectrales
Modulations : soit d'amplitude, de phase, de fréquence
Récepteur optimal - Probabilités d'erreur
- Récupération de porteuse, récupération de rythme
- Transmission de données - Filtrage et égalisation adaptative
Applications à l'annulation d'échos

CODES DETECTEURS ET CORRECTEURS D'ERREURS

- Codes linéaires - Hamming - Golay
- Codes cycliques - B.C.H. - REED SOLOMON
- FIRE
- Codes convolutifs
Comparaison et perspectives

FILTRAGE NUMERIQUE

- Filtrés récursifs, non récursifs
- Filtrés à réponse impulsionnelle finie, infinie

- Filtrage en temps réel, en temps différé
- Techniques de réalisation
Application au codage de la parole

TECHNIQUES NUMERIQUES EN TELEVISION

- Problèmes et perspectives

19 MODULES

Electronique

INTRODUCTION - PRESENTATION GENERALE

AMPLIFICATION

- Amplification radiofréquence sélective et à large bande
Influence du bruit sur les performances
Amplificateur paramétrique
- Amplification à fort niveau
Amplificateur à transistor
Amplificateur à TOP
- Adaptation de la technologie aux performances : transistors AsGa

MODULATEURS, DEMODULATEURS, CONVERTISSEURS DE FREQUENCE

- Différents types : mélangeurs pour fréquences élevées
Cas particulier des faisceaux horizontaux
- Application : convertisseur pour réception directe par satellite

CONVERSION ANALOGIQUE - NUMERIQUE

- Différentes familles de convertisseurs
- Influence de la technologie sur les performances

SYNTHESE DE FREQUENCE

- Principes de synthèse : stabilité de fréquence, pureté spectrale, rapport signal à bruit
- Synthèse de fréquence dans les faisceaux horizontaux

FILTRAGE DES SIGNAUX

- Nouveaux composants et nouvelles structures
- Performances comparées : perspectives

19 MODULES

Optoélectronique

INTRODUCTION - PRESENTATION GENERALE

- Généralités sur les transmissions optiques
- Caractéristiques typiques des systèmes
- Evolution des systèmes

OPTIQUE GUIDEE

- Théorie de la propagation dans les fibres optiques : types de fibres, caractéristiques et performances
- Mesures et caractérisation des fibres optiques : propriétés optiques et mécaniques - spécifications
- Optique intégrée : perspective d'avenir

SUPPORTS DE TRANSMISSION

- Fabrication des fibres optiques
- Propriétés et fabrication des câbles
- Connectique

COMPOSANTS SEMICONDUCTEURS

- Bases théoriques
- Sources de lumière
- Détecteurs de lumière
- Intégration des composants d'extrémité dans les systèmes

VISITES ET DEMONSTRATION EN LABORATOIRE

- Démonstration en laboratoire
- Visite d'un laboratoire
- Visite d'un industriel

SYSTEMES

- Systèmes de transmission optique
- Systèmes de vidéocommunication

18 MODULES

Techniques numériques

INTRODUCTION - PRESENTATION GENERALE

NOUVEAUX CIRCUITS D'USAGE GENERAL

- Evolution des familles logiques : PL rapide, ECL, MOS, MOS complémentaires, PL, AsGa...
- Technologie des circuits VLSI
- Mémoires à semi-conducteurs - mémoires à bulles

- Microprocesseurs : différentes familles
- Circuits programmables

TRANSMISSION DE L'INFORMATION NUMERIQUE

- Liaisons parallèles - structure de bus
- Liaisons séries - modes synchrone et asynchrone - modem

CIRCUITS D'USAGE SPECIFIQUE

- Opérateurs adaptés au filtrage numérique

- Circuits périphériques graphiques
- Application aux systèmes graphiques

17 MODULES

Réseaux numériques intégrés

PRESENTATION DU RESEAU NUMERIQUES INTEGRE (RNI)

- Le réseau cible - les services

NUMERISATION DU RESEAU TELEPHONIQUE Outils de la NUMERISATION

- Systèmes de transmission
- Outils de commutation
- Réseaux spécialisés des données

RESEAU INTEGRANT LE TELEPHONE ET LES DONNEES (RITD) NUMERISATION DE LA LIGNE D'ABONNE

- Synchronisation du réseau
- La ligne numérique d'abonné
- Le RITD

EVOLUTION VERS LA VIDEOCOMMUNICATION

- Réseau de vidéocommunication Les services
- Le signal vidéo - sa numérisation
- La technologie des réseaux de vidéocommunication

SYNTHESE

22 MODULES

Ingénierie et planification des réseaux

PRESENTATION GENERALE DE LA PLANIFICATION DES RESEAUX METHODES ET TECHNIQUES

- Le réseau téléphonique, télégraphique et de données
- Collecte des données
- Méthodes et programmes de prévision du trafic
- Influence des nouvelles technologies sur l'acheminement et règles de dimensionnement des réseaux
- Méthodes de calcul d'évaluation économique

GRANDS RESEAUX

- Elaboration de schémas directeurs de réseaux urbains
- L'optimisation de l'acheminement du trafic dans un grand réseau (méthodes et programmes)
- Impact de la numérisation sur la structure du réseau interurbain français
- Planification des réseaux de transmission : routage, groupage, choix des investissements
- La sécurisation d'un grand réseau
- Etude de cas de planification complète d'un réseau urbain d'un pays en voie de développement

RESEAUX LOCAUX

- Conditions et problèmes posés par les télécommunications rurales
- Elaboration des schémas directeurs de réseaux locaux
- Etude d'un projet de planification en milieu rural

RESEAUX DE DONNEES

- Planification des réseaux de données
- Dimensionnement des réseaux à commutation de paquets
- Etude de cas

18 MODULES

Télématique

TELEINFORMATIQUE ET TELEMATIQUE

- Présentation générale des techniques, services et réseaux télématiques

LES PROTOCOLES TELEMATIQUES

LES SERVICES DE VIDEOGRAPHIE INTERACTIVE ET DIFFUSEE

LES SERVICES DE COMMUNICATION PAR L'ECRIT Télétexte, Télécopie

DEMONSTRATION ET VISITE DE LABORATOIRES DU CCETT

UN EXEMPLE DE PROJET TELEMATIQUE : l'annuaire électronique

RESEAUX ET SERVICES DE VIDEOCOMMUNICATIONS

RESEAUX LOCAUX D'ENTREPRISE ET SERVICES BUREAUTIQUES

- Démonstration

18 MODULES

Techniques microondes

ANTENNES

- Régime d'émission : champ, puissance rayonnée, gain et directivité
- Régime de réception : réponse à une onde plane, générateur équivalent, température de bruit
- Équations des liaisons en espace libre
- Application aux transmissions par satellites

PROPAGATION EN ESPACE LIBRE

- Influence du sol, zones de Fresnel, diffraction par arêtes

- Influence de la troposphère : réfraction, courbure des rayons, notions de la diffusion
- Liaisons ionosphériques

CIRCUITS MICROONDES

- Rappels et généralités sur la propagation guidée
- Fonctionnement et utilisation des lignes triplaque, à ruban, coplanaire et à fente
- Applications actuelles des guides d'ondes métalliques rectangulaires, circulaires, elliptiques, à nervure

- Fonctionnement et application des diélectriques
- Principaux éléments de circuits : couples, résonateurs, filtres, dispositifs à grille
- Éléments actifs en microondes : mode d'emploi des tubes et semi-conducteurs

TRAVAUX PRATIQUES DEMONSTRATIONS

18 MODULES

Commutation électronique

LA COMMUTATION ELECTRONIQUE

- Présentation générale
- Services offerts aux abonnés
- Spécifications

LES UNITES DE COMMANDE

- Les différentes architectures de commande et leur évolution
- Structure des machines et sécurité du logiciel

LES RESEAUX DE CONNEXION

- Les réseaux de connexion temporels
- Le raccordement des abonnés en commutation temporelle

SIGNALISATION ET COMMUTATION ELECTRONIQUE

- Signalisation voie par voie
- Signalisation par canal sémaphore
- Traitement de la signalisation en commutation électronique

LE LOGICIEL OPERATIONNEL

- Contraintes et architectures possibles
- Performances des logiciels opérationnels

LE LOGICIEL DE SUPPORT

L'INGENIERIE DES SYSTEMES DE COMMUTATION ELECTRONIQUE

L'EXPLOITATION ET LA MAINTENANCE DES COMMUTATEURS ELECTRONIQUES

LE SYSTEME E 10

LE SYSTEME MT

LES PERSPECTIVES D'AVENIR

22 MODULES

Faisceaux hertziens et satellites de télécommunications

FAISCEAUX HERTZIENS

- Présentation générale des faisceaux hertziens
- Plan de fréquence et propagation
- Faisceaux hertziens analogiques
- Faisceaux hertziens numériques
- Agencement des faisceaux hertziens : qualité, surveillance, commutation
- Bureaux d'études : études de cas concrets

TELECOMMUNICATIONS SPATIALES

- Présentation des systèmes de télécommunications spatiales
- Les systèmes d'accès multiple (par répartition en fréquence, dans le temps, avec ou sans affectation à la demande)
- La mise et le maintien à poste : questions associées aux lanceurs
- La charge utile et ses interfaces avec le véhicule spatial

- Les stations terriennes (de 32 m à 1 m de diamètre Pt radioélectrique, mécanique, poursuite)
- Les systèmes de service fixe et du service mobile
- Les systèmes de demain et de la prochaine décennie (Télécom 1 et les satellites de deuxième génération)

26 MODULES

DEMANDE
D'INSCRIPTION
au programme

LES TECHNIQUES NOUVELLES EN TELECOMMUNICATIONS

12 Février au 30 Mai 1985

Nom :		PAYS :			
Prénom :		Prénom :			
né(e) le à		Adresse personnelle :			
.....				
.....				
Université		Diplôme		Délivré en	
.....			19	
.....			19	
Connaissance du français : lu :		parlé :	
Stage linguistique (1 mois) souhaité ?		oui		non	

ACTIVITES PROFESSIONNELLES

Nom et adresse de votre organisme employeur :

N° de téléphone : Télèx :

Domaine d'activité de cet organisme :

Vos fonctions au sein de cet organisme :

Quels sujets souhaiteriez-vous voir particulièrement développés au cours de ce programme ?

.....

.....

.....

Joindre à cette demande
la lettre de recommandation
de votre organisme
employeur
et envoyer le tout avant
le 1^{er} Décembre 1984 au

CESELEC
2, avenue Hoche
75008 PARIS
FRANCE

Date :
Signature :

Detailed
Programme

New technics in telecommunications 1985

National High School of
Telecommunications

High School
of Electricity

Scientific programme detailed in this page contains 197 modules of each duration of 1 hour and half, at the rate of 4 modules per day in general regulation.

A programme of linguistic improvement and of cultural life is also organized through the course - at the rate of 3 modules per week in average.

4 days of factory visit or visit of research centre will be arranged in April or May. In-plant training of short duration and extension of the course will be settled according to special requests.

Signal processing

SIGNAL TRANSMISSION

- Analogue message
Modulation, amplitude, phase, frequency
- Numerical message
Transmission code - Special properties
Modulations: except of amplitude, of phase, of frequency
Optimul receiver, error probability
- Carrier recovery, rythm recovery
- Data transmission - Screening and adaptive equalization
Applications at the echo cancellation

DETECTING CODES AND ERROR CORRECTING CODES

- Linear codes, Hamming-Golay
 - Cycle codes, B.C.H. REED SOLOMON FIRE
 - Convulsive codes
- Comparison and views

NUMERICAL SCREENING

- Reductive screening, non-reductive screening
 - Screening to pulse response, finite, infinite
 - Screening at actual condition, at different conditions
 - Operation technics
- Application to word coding

NUMERICAL TECHNIQS IN TELEVISION

- Problems and views

19 MODULES

Electronic

INTRODUCTION - GENERAL PRESENTATION

• AMPLIFICATION

Selective radio frequency amplification and large band amplification
Influence of noise at the performances
parametric amplifier

- Amplification at strong level
Amplifier of transistor
Amplifier of TWT
- Adaption of performance technics; AsGa transistor

MODULATORS, DEMODULATORS FREQUENCY CONVERTERS

- Different types; mixer for raised frequencies
Special case of microwave links
- Application : converter for direct reception by satellite

CONVERSION ANALOGICAL \leftrightarrow NUMERICAL

- Different groups of converters
- Influence of performance technology

SYNTHESIS OF FREQUENCY

- Principles of synthesis: stability of frequency, spectral purity, relation between signal and noise
- Synthesis of frequency in the microwave links

SCREENING OF SIGNALS

- New components and new structures
- Compared performances : views

19 MODULES

Optoelectric

INTRODUCTION - GENERAL PRESENTATION

- Outline of optic transmission
- Typical characteristics of the systems
- Process of the systems

GUIDANCE OF OPTIC

- Theory of the propagation in the optical fibres, types of fibres, characteristics and performances
- Measures and characterization of optic fibres: optic properties and mechanics - specifications
- Integrated optic : future view

SUPPORT OF TRANSMISSION

- Production of optic fibres
- Properties and production of cables
- Connectors

SEMICONDUCTOR COMPONENTS

- Theoretical bases
- Light sources
- Light detectors
- Integration of interface components in the systems

VISIT & DEMONSTRATION IN LABORATORY

- Demonstration in laboratory
- Visit of laboratory
- Factory observation

SYSTEMS

System of optic transmission
Systems of video-communication

18 MODULES

Numerical technics

INTRODUCTION - GENERAL PRESENTATION

NEW CIRCUITS OF GENERAL USAGE

- Process of logical groupes: rapid PL, ECL, MOS, Complementary MOS, AsGa PL.
- Technology of VLSI
- Semiconductor memory, bubbles memory
- Microprocesser: different groupes
- Programmable circuits

TRANSMISSION OF NUMERIC INFORMATION

- Parallel links - structure of bus
- Series links - synchronous mode and asynchronous mode -modem

CIRCUITS OF SPECIFIED USAGE

- Adapted operator to numeric screening
- Peripheric circuits of graphics
- Application of graphic systems

17 MODULES

Integrated numerical networks

INTRODUCTION OF INTEGRATED NUMERIC NETWORKS

- Possible networks - the services

NUMERIZATION OF TELEPHONE NETWORK: EQUIPMENTS FOR NUMERIZATION

- Transmission system
- Equipments for switching
- Special network of data

NETWORK INTEGRATING TELEPHONE AND DATA (RITD)

NUMERIZATION OF SUBSCRIBED LINES

- Synchronization of network
- Numeric line of subscriber
- Network integrating telephone and data (RITD)

PROCESS TOWARDS VIDEOCOMMUNICATION

Network of videocommunication

The services

Video signal - the numerization

Technics of video-communication network

SYNTHESIS

22 MODULES

Engineering and planning of networks

General outline of network planning, methodes and technics

- Network of telephone, telegraphic, and of data
- Collection of data
- Methods and schedules of traffic prediction
- Influence of new nechnology of conveying and measuring rulesles of microwaves
- Culculation of economic evaluation

LARGE SCALE NETWORK

- Elaboration of directive diagram of urban network
- Optimization of network routing in a big scale network (Methodes and schedules)
- Impact of numerization concerning of French inter-city network structure.
- Planning of transmission networks: routing, grouping, selection of investments
- Security for big scale network
- Case study of complete planning of urban network in a developing country

LOCAL NETWORK

- Conditions and problemes in the rural telecommunications.
- Elaboration of directive diagram of rural networks
- Study of a project of planning in rural environment

NETWORKS OF DATA

- Planning of data networks
- Measuring of network at packet switching
- Case study

18 MODULES

Telematic

TELECOMPUTER AND TELEMATIC

- General presentation of technics, services, and telematics

TELEMATIC PROTOCOLES

INTERACTIVE AND BROADCAST VIDEOGRAPHY SERVICES

SERVICES OF COMMUNICATION BY LETTERS

Teletex, telecopy

DEMONSTRATION AND VISIT OF CCETT LABORATORIES

AN EXAMPLE OF TELEMATIC PROJECT:

Electronic directory

NETWORKS AND SERVICES OF VIDEO-COMMUNICATIONS

LOCAL NETWORKS OF ENTERPRISES AND OFFICE SERVICES

- Demonstration

18 MODULES

Microwave technics

ANTENNES

- Transmitting system, field, radiation power, gain and directivity
- Receiving system
- Response to plain wave, corresponding generator, temperature of noise; equation of links in free space - application to transmission by satellites

PROPAGATION IN FREE SPACE

- Influence of earth, Fresnel zone, diffraction by stops
- Influence of tratosphere: refraction, curve of rays, notions of distribution
- Ionosphere relations

MICROWAVE CIRCUITS

- Review and outline of propagation
- Operation and utilization of triplate lines, strip lines, coplanar lines

- Actual application of rectangular metallic wave guide, circular wave guide, elliptic wave guide, curved guide
- Operation and application of dielectric guide
- Principal elements of circuits, couplers, ferrite devices
- Active elements in microwaves - Fields of applying tubes and semiconductors

PRACTICE AND DEMONSTRATIONS

18 MODULES

Electronic switching

ELECTRONIC SWITCHING

- General introduction
- Service given to subscribers
- Specifications

CONTROL UNITS

- Different architecture of control and its process
- Structure of machines and security of software

CONNECTION NETWORK

- Network of temporary connection
- Connecting of subscribers in temporary switching

SIGNALIZATION AND ELECTRONIC SWITCHING

- Channel by channel signalization
- Signalisation by semaphore canal
- Processing of signalization in electronic switching

OPERATIONAL SOFTWARE

- Restrictions and possible architectures
- Performances of operational software

SOFTWARE OF SUPPORT

ENGINEERING OF ELECTRONIC SWITCHING SYSTEMS

RUNNING AND MAINTENANCE OF ELECTRONIC SWITCHING

E10 SYSTEM

MT SYSTEM

FUTURE VIEW

22 MODULES

MICROWAVE LINKS AND TELECOMMUNICATION SATELLITES

MICROWAVE LINKS

- General presentation of micro wave links
Frequency plan and propagation
- Analogic microwave links: . . .
- Numeric microwave links
- Arrangements of microwaves: quality, error control, switching
- Office study: study of concrete case

SPACIAL TELECONNUMICATIONS

- Presentation of spacial telecommunication system
- Multiple access systems (by dividing into frequency, time, with or without request allotment
- Setting and maintenance of station, questions related to launching rocket
- Useful load and the interfaces with special vehicle
- Terrestrial stations (from 32m to 1m of diameter, radioelectric, mechanic lead (=Pb) , pursue)
- Fixed service system and mobile service system
- System of tomorrow and system of next decade
(Telecom 1 and satellites of second generation

26 MODULES

Application form
for training course

NEW TECHNICIS
IN TELECOMMUNICATIONS

February 12 to May 30, 1985

Country:
Name: First name:
Born on at..... Home address:
.....

University	Diplomas	Acquired on
.....	19.....
.....	19.....

French ability: written:..... spoken:

Linguistic course (1 month)request? Yes, No.

PROFESSIONAL ACTIVITIES

Name and adress of the employer of your organization

Telephone No.: Telex:

Field of activity of the organization:

Your present post in the organization:

What subjects do you want specially in this course?
.....

Attach to this form
the letter of recommandation of
your organization or the employer
and send certainly before
the 1st of December 1984 to

GESELEC
2, avenue Hoche
75008 PARIS
FRANCE

Date:
Signature:

JICA