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ACADEMY FOR EDUCATIONAL DEVELOPMENT, INC. - AED

INTERNATIONAL DIVISION

RURAL COMMUNICATIONS SERVICES PROJECT PERU

FINAL FIELD REPORT

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Aid Rural Satellite Program

RURAL COMMUNICATION SERVICES PROYECT  
FINAL FIELD REPORT

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## EXECUTIVE SUMMARY

The Rural Communications Service Project in the Department of San Martín in Perú, has demonstrated the effectiveness that the satellite communications can provide for the improvement of the quality of social services for development: agriculture, health and education.

The effective integration of audioteleconference (ATC) in long-distance training activities, in the administration of programs and the supervision of the same, in different coordinations in the support of emergencies and campaigns with the communities, in the promotion of ideas and programs and other valuable supports to the sectors and the communities, generated during the two years of the ATC program and improvement in the conditions, opportunities and quality of the planning, exchange and transference of knowledge and technology and development processes of programs in the field of action.

The experience gained by all the participating institutions, but particularly by Entel Perú in charge of the project's implementation, points out an interesting future in the employment of communications as support tools for the socio-economic development of rural areas, integrating technologies with methodologies, concepts and appropriate social strategies according to the demands of specific individuals and groups. In these cases and effective communication may become a key element in terms of costs and impact.

In the first part, the planning and development process of the ATC program is summarized emphasizing the organization and rol of the participating ministries, the activities of social applications and a qualitative behaviour of the primary and secondary networks. In the second part,

a communication model based on ATC taking into account the variables that had taken part in its development process is presented.

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## RURAL COMMUNICATIONS SERVICES PROJECT PERU

### FINAL FIELD REPORT

#### FIRST PART

#### I PURPOSE

Under AID's Rural Satellite Program, the Academy for Educational Development (AED), assumed in Peru the responsibility of giving advice to the Empresa Nacional de Telecomunicaciones del Perú - ENTEL-PERU- in the direction, planning and execution of a pilot program of social applications of Audio Telecommunications ATC. The objective of this program is to provide experiences in communications for development, based on the potentiality of satellite, small earth-stations and land radio links.

The final field report concerning the Rural Communications Services Project (RCSP), is in direct relation with the ATC system in 5 provinces of the department of San Martín: San Martín, Bellavista, Mariscal Cáceres, Huallaga and Tocache. There are three sectors participating in the ATC pilot program: the Ministry of Public Health, the Ministry of Education and the Ministry of Agriculture. The basis of the applications has been constituted by the programs they carry out in their administrative-operative areas in that region. Different uses of the system concerning administrative, instructive, coordination and supervision aspects etc., have been the content of the ATC programming, and the use of the latter was considered as a support tool for improving the coverage, opportunity and coordination of the ministerial programs in accordance with the rural development process in the Central Huallaga region.

The report has two main sections. In the first one a descriptive and summarized table showing the organization

and development process of applications program is given. The table includes the systematization and analysis of the variables involved, as a result of the planning work of RCSP. Likewise there are commentaries and analysis concerning other variables that have emerged during the very execution, in response to the presence of the rural communications system and its interactions with policies, programs, needs and strategies of the participating ministries.

Which initial strategies were developed by the RCSP in order to clear the way for the application? How did the first ones emerge and which ones were they? What other strategies were necessary in connection with the organization of the groups of audiences and their access as such to the use of the system? What were the implications of each sector concerning their participation, in terms of organization, availability of resources, responsibilities etc? Which were the priorities established in each group concerning the achievement of their objectives with the support of ATC? What problems did they face? What were the changes that came up in the pace and quality of the services to the community and what are the lessons obtained from the experience in the use of a rural communications system for development? These are some of the many questions whose analysis gives form to the first section of this report.

The objective in the second section is to generalize the set of experiences achieved projecting them towards a communication model based on the use of the ATC.

The idea of including this section is not to present a rigorous and scientifically treated model. Rather it consists in obtaining a table of interactions between different variables resulting from the experience of planning, applying and administering the development of a programming of social uses of ATC. The model aims at the optimization of

the experiences, considering the possibility of a replica of ATC pilot program, thus clearing the way for other future analysis and programming initiatives.

Finally, the Final Report incorporates, as annexes, material, documents, cards that are the result of the work done in its different stages.

We are aware we have carried out an extensive work of quantitative and qualitative analysis in collaboration with Florida State University (FSU) responsible for the evaluation of the RCSP in what concerns the evaluation of the ATC program and its results, especially in terms of impact. This document provides and specifies information about strategies used during the process.

## II RURAL COMMUNICATIONS SERVICES PROJECT

### A Nature of the Project

The RCSP was defined as a cooperative project between the Empresa Nacional de Telecomunicaciones del Perú and the Agency for International Development of the United States of America. It is one of the three pilot experiences within AID's Rural Satellite Program along with Indonesia and the Carib. It was executed with the purpose of giving effective support to the socio-economic development policy of the peruvian government, by means of satellite communications to integrate remote rural areas; thus multiplying in them the efficacy of local resources, improving public administration of the basic social services, agriculture, health and education as well as supply in terms of a wider capacity and opportunity of those services in what concerns the demand and the needs market, establishing close links between producers and consumers and providing improved opportunities for persons as such, to establish a better perspective of satisfaction of needs.

### B Field of Action

The project was located in the Department of San Martín in the wide and dynamic Central Huallaga region of the peruvian high jungle (selva alta). The department has a population of 320,000 inhabitants, a density of 5.5 inhabitants/Km<sup>2</sup> with a population growth rate of 3.8% between 1972-81. Sixty percent of that population is located in towns and villages and forty percent of it in scattered hamlets and small settlements. The economically active population of the department constitutes 27% of the total, about 70% of it works in the primary sector (agriculture cattle raising, hunting, fishing and others), 7% in the secondary sector and 23% in the tertiary sector (transport services, commerce, communications and others). Nowadays, the department has 9 provinces. Of

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**RURAL SATELLITE PROGRAM**  
O PERU RURAL COMMUNICATIONS SERVICES

them, San Martín, Huallaga, Mariscal Cáceres, Bellavista and Tocache constitute the field of action of the RCSP.

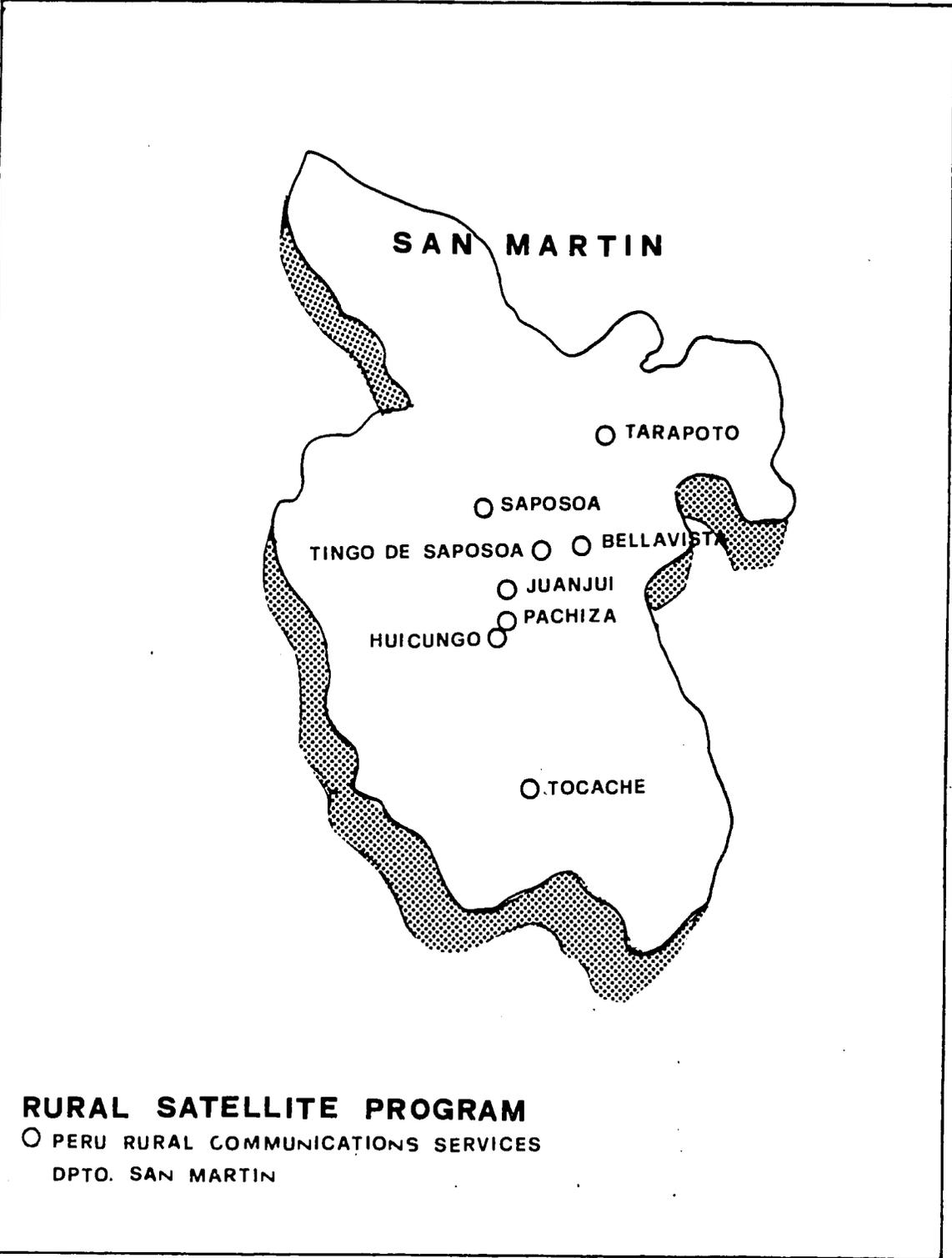
### C Participating Sectors

Three ministries: Agriculture, through the Instituto Nacional de Investigación y Promoción Agropecuaria -INIPA\_ (National Institute for Research and Agricultural Promotion). Health and Education and its corresponding administrative and operative levels in the department of SAN Martín, were selected as key institutions within the pilot program of the use of the ATC. Operative agreements of conjoint action between ENTEL-PERU and each of them established agreements concerning the responsibilities of planning and execution of the programming.

The presence of rural communications system in the area pointed out through the provision of individual and group communication services based on the use of Telephone and ATC, was historically assumed by the groups as the best alternative for facing a series of obstacles and limitations in the planning, administration and coordination of the development and welfare programs going on at the region. A situation that allows to realize the magnitude of the Sector's problem, which is defined if one observes the case of the Health Sector. In 1983, 5 provinces of the Department: Huallaga, Mariscal Cáceres, Picota, Bellavista and Tocahe,- the most typical rural area of the Department - 39% of the population had a limited access to medical care services. The total number of personnel throughout the Department were 75 doctors, 6 obstetricians, 74 nurses and 2 health teachers. But they were mainly centralized in the capitals of the provinces in a 62%. In that year, the health budget assigned to the

Department only attained 01.1% of the global ministerial budget.

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**RURAL SATELLITE PROGRAM**

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### III THE TECHNICAL COMPONENT: THE RCSP TRANSMISSION NETWORK

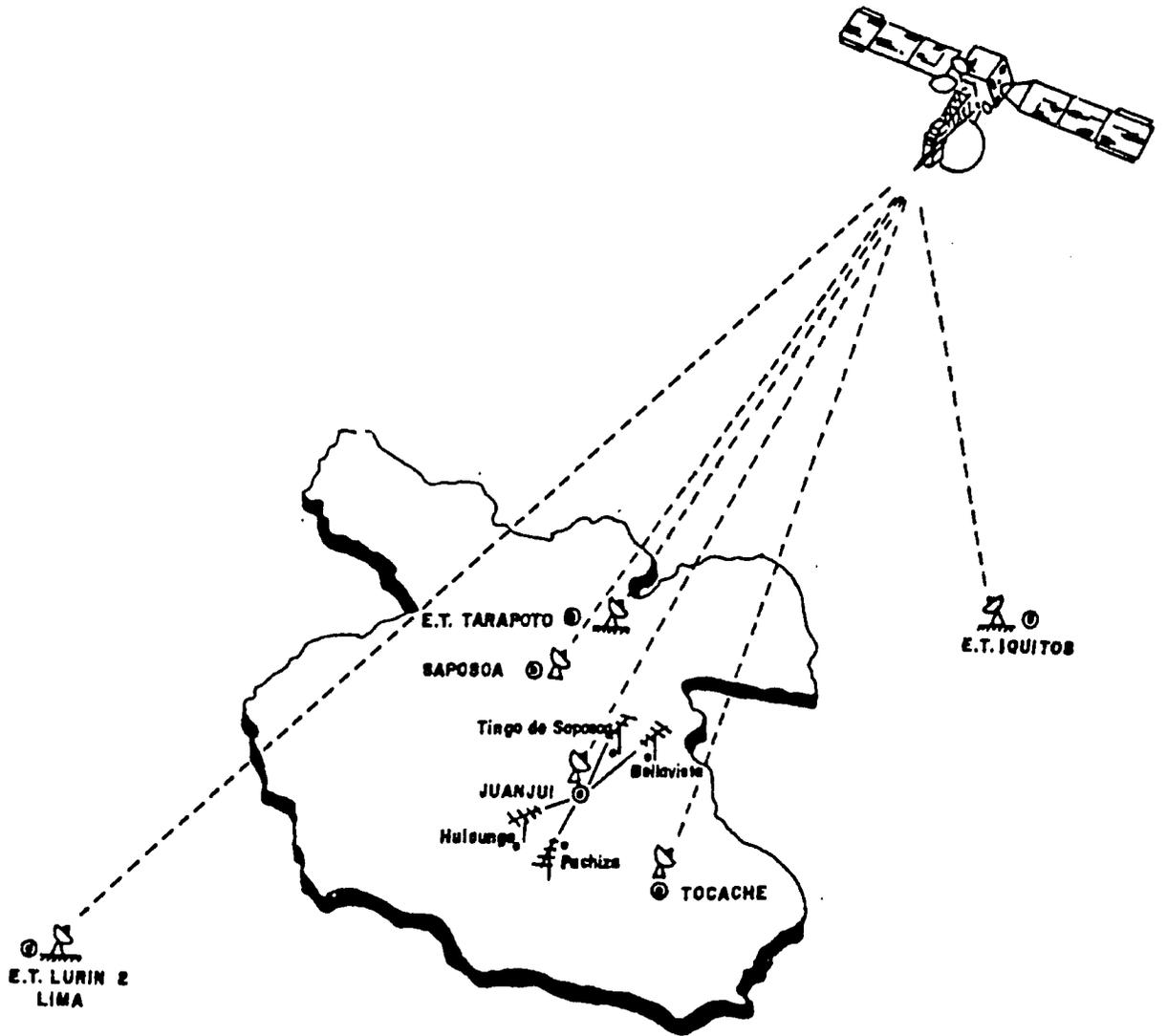
#### A Configuration and Location

The RCSP Network was established from the interrelation of a satellite primary subsystem of earth stations (6.20 meters of diameter at the antenna) and a VHF earth radio link secondary subsystem. The earth stations were provided by Harris Co. of the United States and were located at Juanjui, Saposoa and Tocache. The criteria for the selection of these localities were the technical statements of Entel Perú and also politic-governmental decisions, associated with the demands of parliamentary members who represent the Department of San Martín.

Under the same criteria, the secondary network was established in Bellavista, Tingo de Saposoa, Pachiza and Huicungo, with Hungarian "Budavox" VHF radio links; which were provided by Entel Perú.

The localities have different ranges regarding population, services and productive activity. The populations of the primary subsystem are particularly urban centers, with a great capacity in terms of money circulation, business activity and a concentration of the limited resources and infrastructure of basic social services available in the Department. However, their economies and interregional relationship have different orientations in terms of market demand and supply. This is enhanced not only by the organization and administration of the governmental model in practice, but, by the presence of the Marginal Highway of the Amazon jungle, which runs throughout the Department and establishes conditions of greater or lesser access to dynamic or depressed regional markets. Likewise, the production of coca, that prevails in the area has an important role too. Any analysis in terms of production activity and development should consider this particular situation

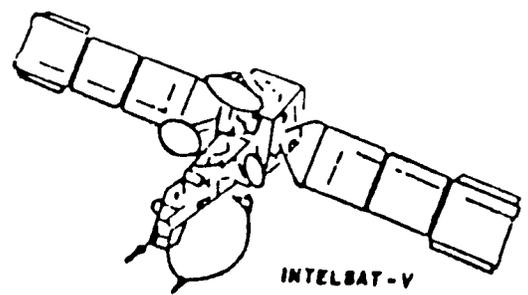
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CONFIGURACION DE RED TERRESTRE DEL  
PROYECTO - PILOTO SCR  
DPTO. DE SAN MARTIN

**SISTEMA DOMSAT  
Y PROYECTO PILOTO  
ENTEL-AID**

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**SISTEMA DOMSAT**

-  ESTACIONES OPERATIVAS
-  ZONA PROYECTO ENTEL-AID

**SISTEMA INTERNACIONAL**

-  ESTACIONES LURIN I Y HUANCAYO I

**SISTEMA TERRESTRE**

-  RED DE MICROONDAS
-  REDES SECUNDARIAS

and model. Juanjui, Tocache and Saposoa - in lesser extend- should be considered in this situation. The other populations that belong to the secondary network subsystem, except Bellavista - which has similar characteristics as the localities of the primary network-, have a lesser population range. The people of the inner areas of Pachiza, Tingo de Saposoa and Huicungo is mainly devoted to self-consumption agriculture activities, the cultivation of coca and an incipient and rudimentary commercial activity.

#### B Installation and Operation

In the primary network (PN) the mounting works of the Harris earth stations were finished during the last semester of 1983. Since then, only the earth station of Tocache obtained the approval of INTELSAT so as to operate according the required standards. Up to now, the other two earth stations are operating with a temporary permit. Design and mounting problems are pointed out as the main causes of this situation. Entel Perú and Harris have discussed the solution of the problem, but they still do not find a comprehension level. The earth stations of Juanjui and Saposoa need the reconditioning of the antenna retrofits. Harris Co. has worked on the elaboration of proposals for carrying out such reconditioning. However, Entel Perú can not assume the costs. Finally, there had been disagreements between Entel and Harris Co. regarding the interpretation of the aims of the responsibilities stated under the contracts of purchase and sale, installation works and technical operation trials.

In the secondary network (SN) the mounting works and the trials for the VHF Budavox equipments in Bellavista, Pachiza, Huicungo and Tingo de Saposoa were begun during the last months of 1983, and were finished during the first

semester of 1984. Initially, 3 SN posts had a VHF channel that was shared by the telephone and ATC utilizations. Bellavista, the fourth telephone post, received two VHF channels that enabled the autonomy of those services.

Initially, the primary network of Juanjui and Tocache had a capacity of 4 channels (3 for telephone and one for ATC), Saposoa had 3 channels (2 for telephone and one for ATC). However, the autonomy of the ATC and Telephony systems was achieved just in the second semester of 1984 since at the beginning the channels were alternatively used by both services due to imperfections in those units.

Once the installation and operation works of the different technical components of the RCSP Communication Network were finished, Entel Perú attempted to endow the transmission-reception systems with a higher reliability and technical optimization, within the conditions and constraints already imposed by the presence of a new communication service in rural areas. At the same time, Entel Perú tried to reduce the operation costs of the new services through the simplification of the satellite link system and the rational use of telephone channels, from 10 to 2, so as to save operation costs by the lesser use capacity of the channels in the satellite. With this, the system gained a greater flexibility range and it was necessary to move Tarapoto's ATC bridge to the earth station of Lurin, in Lima.

Particularly during 1985, and considering a growing telephone demand in the centrals of Juanjui, Saposoa and Tocache; Entel Perú extended the capacity of the channels, providing 2 additional channels so as to facilitate the telephone traffic of these localities and link them with the rest of the country and world. Saposoa, the central with the greatest telephone traffic received the signal

routed from Bellavista, thus clearing up the telephone traffic in Jaunjui, from where it was formerly being transmitted. This increased, at the same time, the yield function of the earth station of Saposoa through a better cost-benefit relation.

#### IV THE TECHNICAL COMPONENT: THE TELECONFERENCE NETWORK

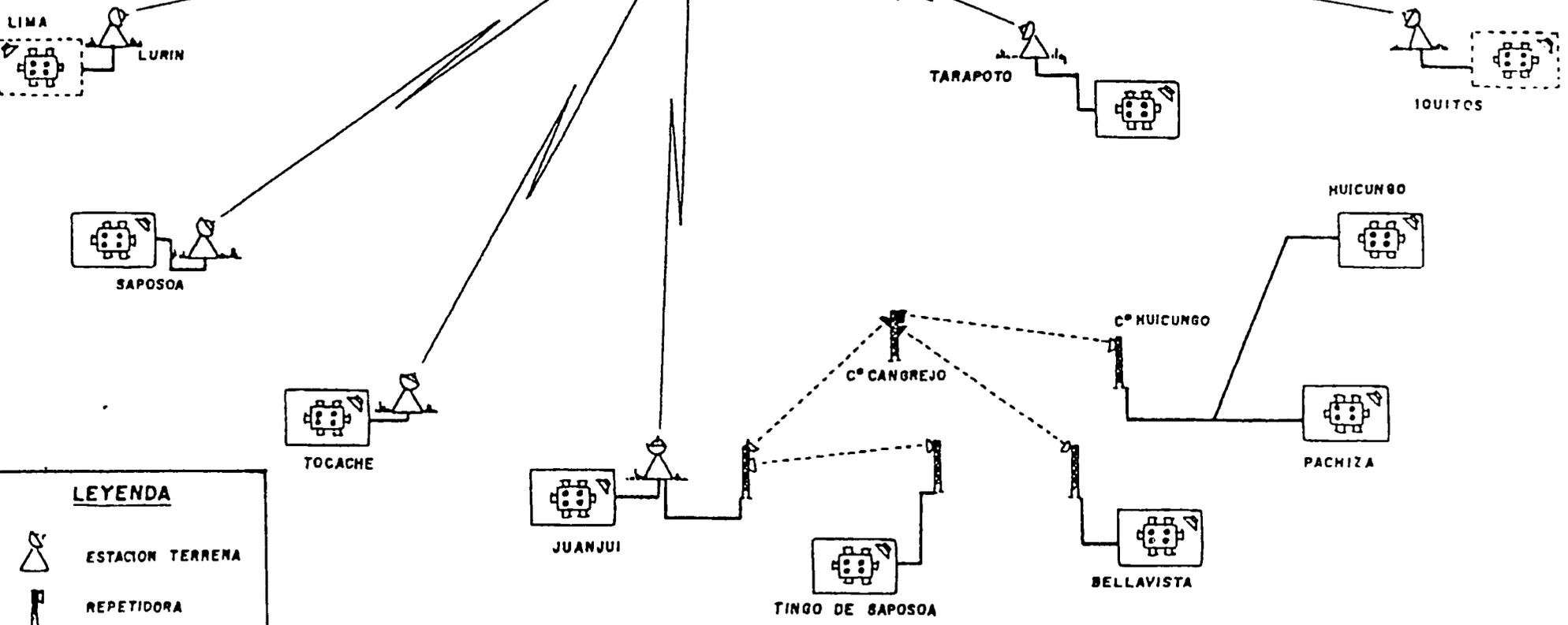
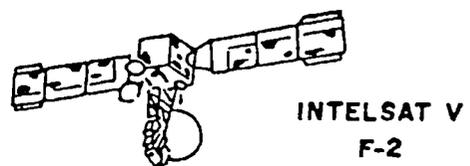
##### A Configuration

When finishing the installation and operation work of the satellite and earth transmission systems (second semester of 1983 and first semester of 1984 respectively), the works concerning the installation of the components Dantel-Darome began to give ATC services. In December of 1983 and June of 1984 there were already in existence services installed in the PN and SN, including the terminals of Lima and Tarapoto.

The initial outline of the network was changed in the beginnings of the installation process by the decision of the Director of the Project in Entel Perú. In the beginnings of the second semester of 1984 a Dantel-Darome terminal was installed in Entel Peru's office in Iquitos. The ATC module was initially planned for MOYOBAMBA, the capital city of San Martín. However, the absence of capacity of the reception-transmission channel of ATC and on the other hand the bureaucratic requirements posed by CORDESAM concerning the possible control of the service, led to the decision of changing the headquarters to Iquitos, the higher rank office in the administration of the telecommunication services of the peruvian eastern region.

Rooms of ATC were installed following different procedures and forms. In Tarapoto, Juanjui and Tocache they used new settings although with different characteristics. This way, in this first city the room offers a capacity for 40 people and it is cooled and well illuminated. In Tocache, on the contrary, the room is small as for 8 people. When there is none ATC it is used as a work room for the engineers of the earth station, it is not well illuminated and is very

**ESQUEMA SIMPLIFICADO DE LA RED DE COMUNICACIONES EN RELACION CON EL SERVICIO DE TELECONFERENCIA Y TELEFONIA**



**LEYENDA**

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	TERMINAL
	JGO. DE MICROFONOS
	PARLANTE

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uncomfortable. In Saposoa, the actual setting for ATC was given by the City Hall by means of an agreement of usage. Continuous changes of the rooms in the municipal setting and in Entel itself characterized the activities. In general, the room is not comfortable and is also small and hot.

In the secondary network, following the same procedure there were rooms offered by the local town halls. These settings did not have any conditioning as to work as ATC rooms. In Iquitos, the module was installed in the meeting room of Entel's office and the same happened in Lima: at the beginnings of the activity in the setting of the International Affairs' office and then in the first half of 1985 in the setting of the Commercial Management office.

Starting from this configuration, it was expected to carry out interactive sessions within a dynamics of flexibility and group participation at the same level, specially in terms of the generation of ATC. In more concrete terms and in relation to the sectorial development plans, a flow of continuous dialogue between different administration and operative levels in each one of the three participating sector was expected to arise, which would support the coordination of strategies and other priorities in the local ambit and in projection to the development of the region as a whole. To this effect, Entel Perú beyond the implementation of rooms, installed a field office under a coordinating supervision, with headquarters in the Administrative offices in Tarapoto, with the responsibility of making the sectorial activity in its entire field of action more dynamic, to obtain an effective participation in the use of the ATC network. It was expected that the network formed this way would act also in terms of an integrating element of the efforts and capacities available in the area but spread out or desintegrated by the lack of a communication service for development.

## V PERFORMANCE OF THE ATC AND TRANSMISSION NETWORKS

One could affirm that the major problems of the project had a direct connection with the technical components in satellite, earth connections and energy system and also with the mounting process, operation and maintenance of these.

In the primary network, from the start, in the installation and trial period, one could observe limitations imposed by the lack of measuring equipment, the presence of unstable local supply of energy with voltage variations of up to 12 volts and lack of spare parts, in a great degree due to the transmitters were mainly the most affected units and the three earth stations failed constantly during 1983 and 1984. The Harris channel suffered constant burn outs, decalibration and frequency drifts in the transmission as well as in the reception. Even the continuous dragging and readjustment operations determined premature wearing off and weakenings in the contacts. With low frequency converters same happened. Continuous changes of temperature and energy generated flaws in the units of the three stations. Later on, Entel Perú stated problems in the design of earth stations demanding the reconditioning of Retrofits specially in Juanjui and Saposoa's stations. Until now, this problem is not solved in spite of AED and AID's efforts for attaining definite agreement between Harris and Entel-Perú.

Results were immediately obtained, specially during 1984:

1. Continuous interruption of Telephone and ATC services.
2. Unnecessary wasting of time and resources caused by the displacement of components between earth stations for trying to improve the interrupted signal.
3. Interruption of ATC service for using its channels for telephonic traffic.
4. Continuous technical deficiencies in the quality of the Telephone and ATC services: noises echo, interruptions etc.

A second type of problem in connection to the poor performance and reliability of the satellite transmission system concerns:

1. The lack of adequate knowledge and experience about satelite technology on the part of the peruvian engineers contracted to be in charge of the RCSP's earth stations. (Entel contracted young men just graduated.)
2. Entel's excessively bureaucratic system for attending the repairing and maintenance of units, which obliges to take them to Lima where such works are centralized. On the contrary, Tarapoto's administration did not have the resources, measurement equipment, tools and spare parts for the work derived from the RCS Program.
3. The lack of a continuous and preventive supervision in the field on the part of the engineering personnel of the RCSP's office in Lima.

Beyond all of this, the most important lesson, specially for Entel-Perú, has been to try out its capacity for generating communication services in rural areas, reliability and profitability in the face of extreme high temperature and and moisture conditions.

In the secondary network, problems are very critic. Pachiza, Huicungo, Tingo de Saposoa and Bellavista had BUDAVOX VHF radio link equipment receiving and transmitting their telephone and ATC signals through Juanjuí. Once completed the installation and testing work, this was administered by the Long-distance Management Office in Lima through its respective section in Tarapoto. The office in Tarapoto did not have a staff to carry out the preventive and maintenance work. It was not until November of 1984 that a technician was contracted.

BUDAVOX radio links immediately present some problems in the Multifrequency Transmitters and the area did not have

the corresponding spare parts. These had to come from Lima. Something similar happened to the energy transmitters in both the posts and "Cerro Cangrejo" (linking point with Juanjui's earth station). Some problems with transistors, magnetos etc., provoked constant interruptions of the Telephony and ATC services. Finally, due to the fact that in every secondary post electric energy is restricted some hours, it was necessary to install batteries. The cost of this system was very high and tiresome for Entel's administration in Juanjui. The consequences of these problems were the following:

1. A very poor performance and reliability of the Telephony and ATC services.
2. High costs of maintenance and operativeness in relation to profitability, particularly in what concerns Telephony.
3. Incompatibility of the BUDAVOX VHF system with the digital technology, in what concerns the ATC system, which determined the exclusion of any secondary system out of the ATC programming, after a short period of activities between June and December of 1984.
4. Alarming level of inoperativeness.

At an ATC network level, i.e. concerning the performance of the Dantel-Darome Module, there were no technical failures. Rather there were some problems as a result of flaws in the satellite transmission networks and earth links.

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## **VI THE SOCIAL COMPONENT OF THE PROJECT: COORDINATION AND PARTICIPATION**

The most simple definition of the term in the context of the RCSP is that which refers to the common uses of ATC in correlation with group needs of social communication, which in turn allows to plan contents that are worked out interactively by groups of people actuating within a common circumstance of time, interest and projection.

Once established the ATC network for providing interactive communication, the first steps taken in the attempt of defining a use programming were aimed at:

- A Obtaining a minimum organization of the user groups in terms of coordination and participation (audiences) in all the localities of the PN and SN.
- B Providing information and training in the use of the interactive technique of group communication.
- C Diagnosing communication needs according to the existent priorities in the plans of action going on in each sector.
- D Planning altogether with the sectors a programming of ATC.
- E Organizing and administrating the execution of a regular program of ATC with transmitters based on its typical flexibility.
- F Organizing a system of formative evaluation for the planning and executing process of ATC.

### **A Sectorial Organization for Coordination and Participation (Audiences)**

#### **1. Coordination System**

During 1981 and 1982, with RCSP's office already established in Lima, the efforts of the team of social

applications were aimed at obtaining conjoint agreements with the sectors concerning:

- The establishment of responsibilities and roles that facilitate the execution of the work concerning the ATC program.
- The establishment of mechanisms and proceedings of regular interchange of intra-sectorial and inter-sectorial information.
- The establishment of stable working groups for the tasks concerning analysis, planning, coordination etc.

Since the beginning of the project, the establishment of a new strategy in the regional planning was proposed, taking as basis the integration of the sectorial action (health, education and agriculture) for promoting and supporting an integrated administration and management of the development in San Martín.

Although at a Ministerial level, these works were successful by the end of 1983 with the signature of operative agreements between Entel and each one of them, this did not produce a flowing interaction between the RCSP and the regional offices of that same sectors in San Martín. The central and regional levels of each sector were expected to integrate in one strategy of coordination for the establishment not only of a local programming of ATC but also an intraregional one between Lima and San Martín. That interaction seemed necessary for the coordination in Lima and specially in the country. The RCSP project assumed, for its part, the role of promoter in San Martín when observing the difficulty of integration of different levels of a same sector. For central headquarters to work with regional headquarters obliges to make changes in the priorities and strategies of plans of action and resources. It seems like the cost of not doing it is more appropriated for the ministerial policy

and the use of the resources.

Having then the support of the three sectors represented by the Educational Area of Tarapoto, San Martín's Health Region and the Research and Agriculture Promotion Center of San Martín, a coordination with the Project was organized in each locality. First there were 24 persons (3 for each branch) in all the area.

For that personal the responsibilities regarding coordination were added to their common tasks with their sector. Since then, the staff of coordinators was a key element in the course of the pilot program and in the obtention of qualitative achievements.

Some basic functions of the coordinators were among others the following:

- To promote communicational diagnostics and priorities.
- To establish a minimum of applications of ATC for their sector.
- To organize their audiences according to the programming.
- To give to the coordinator of Entel, the requirements of use of the system.
- To keep Entel and its sector informed about any changes in the programming etc.
- To coordinate the delivery of materials for ATC.
- To carry out follow-ups to the participation of their colleagues.
- To motivate an attitude of participation in their group during the sessions.

The fact that each sector had the opportunity to appoint its own representatives as coordinators, generates a great amount of the required confidence for establishing reliable interchanges of information for the proposal of conjoint purposes.

The criteria each sector used for selecting their representatives were leaderships conditions and empathy and

knowledge of the communication problems of the sector. The establishment of a regular system of coordination between sector and Entel-Perú became the spiral column on which important successes, benefits and projections of the system rested, and probably the most solid element in terms of a future institutionalization of the system, from the users' point of view.

## 2. Audiences

Accordingly to the main purpose of the RCSP, the ATC system used for the three sectors, should give them better opportunities for coordinating their programs, training the personnel, administrating with greater efficacy and information, the developing process and supervising the course of programs with the community. However, since the initiation of the project, some questions concerning who would be the real user and/or beneficiaries of the system emerged: the groups of sectorial workers, the communal groups of both of them. Soon it was seen that the most concrete strategy would be to encourage the sectorial group through the use of ATC, to carry out a work plan in relation to development, starting from a better information, opportunity and velocity in the tasks regarding research, promotion, planning, development of strategies and supervision.

Under these premises, audiences formed on the basis of specialization, administrative roles and responsibilities attributable to different categories of workers at service. Thus, doctor, nurses, elementary or highschool teachers, specialists, sectorists, managers, planners, constitute the system's audiences. Potentially, the entire staff of the central and peripheral offices was considered as user of the ATC system, during 1984, the first year of the service. The next year it would widen progressively to the universe of users as new

groups of people integrate, although they should be related to activities concerning agriculture, health and education, particularly in the country.

In spite of the efforts of the applications planners, the formation of audiences could not be attained at Lima for the system always functioned from the center towards the periphery. This means that Lima and Tarapoto would function as emission centers of ATC, which generated the following doubt: Would the ATC system restate the Peruvian development model typically bureaucratic and traditional methods in order to obtain such development.

At first, and without having the operative system, number of contacts with potential users through simulation sessions and other stimulative exercises provoked immediate response of a great communicational content, clearing the way for the establishment of diagnostics and selection of priorities in the use of the system in correlation with plans of the sectorial work.

## B Training of Groups for the Use of ATC

The General Plan for Social Applications of ATC started in 1983. It developed, throughout the entire field of action an intensive training work for coordinator, administrators, service professionals, technicians and promoters from the three sectors, by means of training workshops following a procedure of modular instruction. In the second semester that year, six theoretical-practical workshops were carried out in Tarapoto, Juanjui, Saposoa and Tocache. These workshops brought together 169 participants who were led to know and apply techniques and methodologies in the investigation necessities, in the planning of uses, the presentation of ATC and evaluation of the use process, in an attempt to make them acquire the abilities, attitudes and perception favorable to the use

of the ATC service. A special emphasis was given to the teaching of the self instructive material designing technique, in support of the application of self-bearing. To attain self-efficiency on the part of the groups to plan, execute and evaluate their own system of applications of ATC, was another objective.

During the next two years, 1984,1985, the requirement of training new workers from the sector decreased. Other five workshops were carried out through the entire area, these focused on more specific points such as: preplanning of the session, techniques for improving participation during the session and post-conference, the way for improving qualitatively the presentation style of ATC and the program's feedback.

Continuos changes of persons and rols in the sectors, determined the necessity of constantly giving new persons the adequated information about the features and potential of ATC, by means of training workshops.

The experience in training in the use of ATC, showed that the more the information for users regarding the technique and methodology of presentation and participation, the more not only the learning but the interest in participating.

#### C Diagnostic of Necessities of Use of the System

With the requirement that the use of the ATC system should respond to the necessities of the sectorial programs, the need for identifying communication problems related to the course and management of the health, educational and agricultural services was as first stated. Another premise was to determine within the frame of group problems a set of priorities that could possibly be attended to within a regular programming of the ATC service. At first none of the groups

established in each locality had the opportunity of stating their priorities and these were indicated by the main officers established in Tarapoto.

The result was a chart of priorities that responded more to the lineaments of the latter than to Juanjui, Saposo and To-cache. At this level, the project's main challenge, especially during the first year (1984) was to try to promote a usage programming according to a wider and representative chart of the problems throughout the areas.

The communication diagnostics were worked out altogether with members of the team of applications of the PCSR and planners and coordinator from CIPA X, from the Health Area of San Martín and Juanjui and from the Education Zone of Tarapoto. The results allow the appreciation of qualitative differences in the priorities of each locality, which not always were in accordance with that which stated the regional officials of Tarapoto. From here on this would be a very delicate appeal in face of the planning of applications. However, during the second year, the diagnostics of needs lead a greater representativeness due to:

1. A change in the strategies and priorities of programs, focused more towards peipheric areas of the social services, as a result of the presence of new governmental equipment in Perú.
2. The implementation of a methodology of analysis of needs and problems based on a local work with each group.
3. The grouping of necessities regarding the use of ATC according to sets of themes and not loose themes, allowing a more organized and functional response from the Rural Communication System.
4. With the participation of some of Lima's Ministries in the statement of necessities of use of ATC, the opportunity of establishing a new flow of attention to

local specific problems within the project's area was given.

Beyond the strategies and problems, the diagnostics carried out allowed to identify applications in support of:

1. The need of an on-the-job training and updating.
2. Regular activities of administrative type: personnel's situation, benefits, work conditions, payment of wages, etc.
3. Coordination regarding the implementation and follow-up of instructions, plans and sectorial programs.
4. Preparation of new education and griculture plans and campaigns.

#### D ATC Programming

During the training stages of groups in the use of ATC and elaboration of diagnostic of communicational needs, users were led to present one hour sessions of ATC for applications of long distance training. However that time was taken as example for any type of applications, excluding only the spontaneous or the emergency ones.

Sector determine the ATC schedule within the daily working time. ATC in the afternoons or night were rejected for a simple reason; integrated as a new communication strategy within activities and sectorial plans. In other words, it became part of the "daily work routine".

Rapidly, the necessity of preparing a monthly plan for ATC appeared. This would allow the organization of time, to meet the requirements of the three sectors, to coordinate the assistance of speakers and lectures and in general to control the program.

The result was the structuring of a monthly schedule of ATC, containing dates, hours, sectors, themes, coordination and emission responsibilities, participating groups, planned time and estimated objective of assistants.

The monthly chronogram, prepared at the end of each month and distributed at the beginning of the next one in the entire project's area, contained the ATC called "PROGRAMMED". This was a category formed by applications planned in advance. Another ATC categories termed "NGN-PROGRAMMED" were related to the applications arisen during the development of the chronogram, in response to sub-themes that appear during the course of the programmed month or that arise from emergencies.

During the first year the programming and the chronogram were elaborated in situ under the responsibility of Entel's coordinator and as a result of the initial direction of the applications with emissions from Tarapoto towards the rooms in Juanjui, Saposoa and Tocache. In the second year as a result of the moving to Lima of the planning and emission center, the monthly chronogram was done under the responsibility of the main coordination level in the RCSP's office of International Affairs.

## VII DEVELOPMENT OF THE ATC PROGRAMMING

### A. The Two Years of Social Application

The develop teleconferences about health, education or agriculture was the most important activity of the sectors in charge of those programs during the last two years in the Department of San Martín. Nevertheless, this development was critical due to the presence of unexpected technical, organization and sectorial participation factors.

Between January and March 1984, the audioteleconferences activities started with a programming of exploratory and demonstrative character. This was planned in this way to give the opportunity to:

- . the users; to gain experience in the presentation of ATCs,
- . the designers; to observe the dynamics and behavior of the groups, the coordination and interaction in order to look for a major organization and flexibility, and
- . the engineers; to observe the behavior of the units at a a transmission and ATC network level.

It is interesting to show a table of the results of that first exercise, as it determines a guideline of the future behavior of the users and the equipment:

1. The program was initiated from a technical point of view, integrating only the rooms of the primary network: Juanjui, Saposoa and Tocache, with emissions from Tarapoto. The works of installation of the secondary network would only be completed in June of the same year.
2. The channels devoted to ATC and the frequency of use of the satellite were not available at the beginning. The procedure for obtaining the satellite capacity made by Entel was very complex. The channels used for telephony were shared by the ATC implying the suspension of the telephonic system when that occurred. At this level, it was necessary and tiresome to make daily adjustments of the channels, as well as to have the hours of ATC beginning

coincide with the suspension of the telephonic service. Definitively, the telephonic calls did not have to be suspended and 90 percent of the ATCs of the initial period delayed because they had to wait for the finishing of the telephonic traffic and because of the adjustments of channels and the balance of the ATC system.

3. The transmitted ATCs had a promotional contents preferably based on administrative topics.
4. The duration of the sessions varied: the education sector used almost two hours per session, while the health sector and CIPA X used one hour.
5. In most of the cases, agendas nor educational materials nor other aids were used and the sessions were characterized by long lectures without interactions between rooms. Some pamphlets about the topic were distributed but they did not arrive on time to the other rooms.
6. The schedules of the ATC selected by the sectors were not the most suitable, as a result the attendance of participants was limited.

After that period, the sectors were advised in order to formulate a programming for the following months. New incidents occurred then:

1. The installation works and the ATC secondary network trials produced the cut off of the service.
2. The strikes of the sectors, specially education and agriculture, withdrew them temporarily away from the program.

Just during the second semester of 1984 the ATC activity attained satisfactory levels when the brief integration of the secondary network was produced and the whole network began to work, although with technical problems of system unbalance.

During the year, 425 ATCs were registered, from which

85.4% correspondes to the Programmed category and the rest to the Non-Programmed category. 62.1% were executed and the remaining 37.9% was canceled.

The cancellations were produced because of technical, participation and coordination problems of the groups. These last ones reached a 63.4% level and the first ones a 36.6%. The common problems within the category of "participation" were: absence of participants or lecturers, strike of the sectors, lack of coordination and change of schedules, downpours, local holidays, etc.

During the period, the ATC support in applications of instructive, training, actualization character in the work, was the activity that prevailed over other types of administrative, coordinating applications. The ATCs emissions were mainly emitted from the room of Tarapoto; as a result of the initial control of the application program by the regional offices of the sectors in that locality, 7 out of 10 ATCs were emitted from this room. The secondary network emitted 1 out of 10 in six months of operating work with interruptions and the remaining 2 out of 10 were emitted from Lima. The delays at the beginning of the ATCs, typical of the period, were due to the already known works of adjustment of the channels and the audio signals in the equipment as well as to the delays of the participants' arrival to the rooms due to labor or weather factors, etc.

The enthusiasm of the participants, the technical delays at the beginning, the lack of previous exposure to an interactive communication media for supporting the work, their lack of experience as communicators, the opening of the service and the comprehension of the necessity of communication on the part of the project led to excesses in the use of the ATC channel beyond the scheduled 60 minutes. In the first semester, the average of the used time reached 70 minutes and in the second semester, it diminished to 54, as a result of a

more rigorous discipline and control of the program.

When observing the behavior of the user sectors, Entel Perú among them, Health and Education sectors had the greatest demand of ATC use during the first year of the program. 39.3% corresponded to the first one and 34.1% to the second one. On the other hand, the Agriculture sector with a weekly emission, was the one who had the lowest demand of the system. The principal reason of this situation had a structural nature. The specialists, cultivation technicians and sectorists, who conform the audiences in the localities should accomplish farming activities whether of promotion and/or crop control with the farmers from monday till thursday. Only on fridays, they make office work, preparing reports and the plan of the following week. And a part of the time of that day is devoted to attend to the ATCs. For that group, that frequency and methodology allows it a better feedback of the use of the ATC system and a better functioning of the extension program.

Observing the effectiveness of the sectors , it could be seen that among all of them, the Education sector reached the best effectiveness in the fulfillment of what was programmed with 40.2% The highest percentage of cancellations was for the Health sector with 41%.

At the end of that first year and beyond the difficulties on planning and operating a project in a rural area, the participative evaluations with the users allowed to get a significant and expective order or benefits of qualitative character starting from the presence of the RCS in the dynamics of the sectorial work and the development of the region:

1. The frequency and quality of the contacts and exchanges of information among the different levels of the administrative and operative sectorial structure noticeably increased: health centers and posts, extension agencies,

- administrative supervisions of education and schools.
2. The planning process of local development programs involving health, education and agriculture became more fluent through the ATC support to the decision taking process.
  3. The traditional scheme of sectorial programs centralised planning was gradually changed for a more opportune and effective presentation of problems of local development and administration from the peripheral areas (Juanjui, Saposoa, Tocache and secondary network) to the central office in Tarapoto.
  4. The presence of ATCs began a modification of the working technics and styles incorporating group strategies in the production of ideas and programs.
  5. The ATC created necessities in the sectors regarding the organization, working rols and allocation of resources, which led to the restatement of the sectorial capacity to fulfill its engagements as participants in the RCSP. The second year of ATC applications brought out significant changes in the ATC planning, programming and execution.
- Thus:

1. In what concerns planning, in view of a greater demand of representativeness of the necessities of use of the system by the sectors, the RCSP's application team carried out a diagnosis with each group in each locality, including those in Tarapoto. The information was qualitatively extended in Lima adding suggestions of the respective Ministries. Thus, the program obtained a greater representativeness in terms of the needs and greater integration regarding the participation of the three levels: local, regional national, in the elaboration of the ATC sectorial program.
2. Consequently, the application team of the project in Lima, assumed the responsibility of the program coordination, and structuring and distribution of the monthly

- ATC chronogram throughout the zone.
3. The ATC transmission center was moved to the room of Lima and as a consequence, new groups of participants from that place joined as lecturers. Among the new participants were the Medical School, Nursery School, Veterinarian School, Hospital del Niño, Special, primary, secondary and superior Education Administrations Agricultural Extension Division, etc.
  4. The secondary network was not considered in the program definitively because of the already-known technical problems and it began to be dismantled by the end of the year according to the decision of the Director of the project of Entel Perú.
  5. In the zone, as a result of the presence of the APRA government in Perú, changes occurred in the direction and nature of the sectorial programs of development. At the same time, the several changes of personnel in the Headquarters and coordination offices obligated the project to make new presentations of the objectives and to promote leaderships in order to continue the dynamics of the ATC program.
  6. During the year, it was also observed an improvement of the technical quality of the system based on a diminution of devoted channels and on the relocation of the ATC bridge from Tarapoto to Lurin. This helped to increase the effectiveness of the program and to attain a better satisfaction of the users.
  7. In regard with Entel Perú, we observed its concern about trying to institutionalize the ATC system, transferring the control of the room to the Commercial Area while the needs for studying the Commercial use of the system were stated.
  8. Farther on, the controversies between the International Affairs Office and the Commercial Management about the future control and promotion of the use of ATC would

originate obstacles for AED to attain its objective.

9. In connection with the above mentioned, Entel Perú impelled its participation as a user, occupying greater part of the time in numerous administrative, coordination and training applications.

Regarding last year, that is 1985, the number of ATC use requirements in Programmed (P) and Non-Programmed (NP) applications increased by 136, making a total of 561 P and NP ATCs. The percentage of developed transmissions was also increased, reducing the number of cancellations on a percentage basis with regard to 1984.

Technical problems as cancellation factors, decreased noticeably, but the cancellations due to the lack of participation increased in a significant way (84.8%) because of the strikes in sectors, absences of lecturers, lack of coordination, etc. The uses for supporting training and coordination of programs and other activities prevailed over the uses for administrative activities or promotion and/or propagation of activities.

The room in Lima doubled its work as an ATC transmitter with regard to Tarapoto, and in general the following was noticed:

1. A better organized development of the sessions due to an effective coordination of necessities and demands.
2. A better discipline in the use of the time and in the preparation of the sessions by the coordinators and lecturers, also, a better distribution of the time for activities of lectures, dialogues and round-tables during the sessions.
3. A better, although not excellent, use of instructive material and agendas, but without covering all the RCSP area.
4. In spite of the non necessary changes in the responsibilities of the ATC coordination among the personnel of the project by decision of the Director, the program

was directed in a proper and aggressive way from Lima,  
5. The intervention of Iquitos in Entel Perú's programming was another significant fact, remarkable because the project did not need the training of the personnel and the ATC material which was distributed at that level was minimal.

In the two years, 1984-1985, 986 ATCs could be accounted for P and NP categories. 67.6% of that programming was developed and the 32.4% was canceled. The predominant type of application was for training ATC. Lima and Tarapoto shared in a balanced way the transmissions. The Education sector was the most intensive user of the system, although the ATCs of best impact and of qualitatively best presentation were those of the Health sector and of Entel Perú.

TABLE 1

PERU RURAL COMMUNICATION SERVICES PROJECT  
ATC PERFORMANCE 1984-1985

	<u>1984</u>	<u>1985</u>	<u>TOTAL</u>	<u>%</u>
TOTAL ATC	425	555	980	100.00
. Schedules	363	365	728	74.28
. In addition to Schedules	62	190	252	25.72
Completed ATC	264	398	662	67.55
Cancelled ATC	161	157	318	32.45
Delayed ATC	144	216	360	54.38

TABLE 2

PERU RURAL COMMUNICATION SERVICES PROJECT  
 ATC PERFORMANCE 1984-1985

	<u>AGRICULTURE</u>		<u>EDUCATION</u>		<u>HEALTH</u>		<u>ENTEEL-PERU</u>		<u>TOTAL</u>
	<u>1984</u>	<u>1985</u>	<u>1984</u>	<u>1985</u>	<u>1984</u>	<u>1985</u>	<u>1984</u>	<u>1985</u>	
TOTAL ATC ( * )	46	75	145	202	167	114	67	164	980
Completed ATC	32	57	106	115	101	88	25	138	662
Cancelled ATC	14	18	39	87	66	26	42	26	318
Delayed ATC	22	35	45	70	61	56	16	55	360

( \* ) Schedules and in addition to schedules

TABLE 3

PERU RURAL COMMUNICATION SERVICES PROJECT  
ATC PERFORMANCE 1984-1985

	<u>AGRICULTURE</u>		<u>EDUCATION</u>		<u>HEALTH</u>		<u>ENTEL-PERU</u>		<u>TOTAL</u>	
TOTAL ATC	121	(12.35 %)	347	(35.41 %)	281	(28.67 %)	231	(23.57%)	980	(100%)
Completed ATC	89	(13.45 %)	221	(33.38 %)	189	(28.55 %)	163	(24.62%)	662	(100%)
Cancelled ATC	32	(10.06 %)	126	(39.62 %)	92	(29.84 %)	68	(21.38%)	318	(100%)

TABLE 4

PERU RURAL COMMUNICATION SERVICES PROJECT  
 COMPLETE ATC BY APPLICATION TYPE 1984-1985

	<u>1984</u>	<u>1985</u>	<u>T O T A L</u>
IN-SERVICE TRAINING	134 (50.76 %)	235 (59.05 %)	369 (55.74 %)
ADMINISTRATION	44 (16.67 %)	37 (09.30 %)	81 (12.24 %)
COORDINATION	52 (19.70 %)	105 (26.38 %)	157 (23.71 %)
PROMOTION	34 (12.87 %)	21 (05.27 %)	55 (08.31 %)
<u>T O T A L</u>	264 (100.00 %)	398 (100.00 %)	662 (100.00 %)

TABLE 5

PERU RURAL COMMUNICATION SERVICES PROJECT  
 ATC CANCELLATION PROBLEM BY 1984 AND 1985

	<u>1984</u>	<u>1985</u>	<u>TOTAL</u>	<u>%</u>
TECHNICAL PROBLEMS	59	24	83	26.10
ABSENT PARTICIPANTS	11	15	26	8.18
ABSENT LECTURER	20	62	82	25.79
SECTOR STRIKE	19	22	41	12.89
ABSENT COORDINATION	12	26	38	11.95
ANOTHER REASON	40	98	138	43.09
<u>T O T A L</u>	161	157	318	100.00

TABLE 6

PERU RURAL COMMUNICATION SERVICES PROJECT  
COMPLETE ATC BY SITES

	<u>1984</u>	<u>1985</u>	<u>TOTAL</u>	<u>%</u>
LIMA	46	270	316	47.73
TARAPOTO	186	114	300	45.32
JUANJUI	28	08	36	05.44
SAPOSCA	02	01	03	0.45
TCCACLE	02	05	07	1.06
SECONDARY SITES	--	--	--	----
<u>T O T A L</u>	264	398	662	100.00

## B Greater Impact Applications

### 1. ATC and Video Tape: "Science within reach of everybody"

The initiative to organize this application emerged in the first semester of 1984. The Natural Sciences specialists of the Education Zone of Tarapoto perceived the ATC as a training alternative for teachers without academic degree and as an updating opportunity for teachers with academic degree in Natural Sciences through the organization of a program with the tittle of "Science within reach of everybody". 4 ATCs were carried out in July and October.

The program was designed according to the following outline:

- . Production of a Video Tape of a model class concerning a specific topic in the Natural Sciences.
- . Transmission of the Video Tape through the Commercial TV channel in the Project area. Its signal reached some of the RCSP participating localities such as Juanjui and Tarapoto. Tocache and Saposoa were receiving the tapes to be watched through VTR.
- . Application of a Formative Evaluation chart for teachers after watching the video.
- . Utilization of ATC for the evaluation of the TV program concerning the model class so as to feedback the program in terms of its contents and technical aspects as well as to feedback the capacity of the teacher formation. At the same time, doubts and questions made by the participating teachers were resolved.

The program was planned to be broadcasted twice a week, but actually it was broadcasted 4 times during 4 weeks. 4 ATCs were carried out.

This was an interesting and good idea, but it faced some constraints:

1. The scattering lack of the TV signal in Saposoa and Tocache hindered its synchronized participation. The limited resources of the Education Zone did not allow to send them on time a copy of the Video, so that the teachers in those locations could watch it in a VTR before the ATC was carried out.
2. The technical problems in the ATC network and the non participation of the Secondary Network did not allow to use the system as a continuous, useful and effective means for all the teachers in that field.
3. The attitudes of the personnel in charge of the broadcasting and coordination in the Education Zone were negative since there were breaches in the agreements and a lack of responsibility in the development of the works.

Anyhow, these constraints did not allow a real impact. However, it certainly is a very interesting application which might be very effective if the participating elements are considered, such as the coverage of the TV network, the available resources and the technical reliability of the ACT system.

## 2. Long distance Medical Consultations

Taking into account the nature of the RCS as a rural communication project, and the fact that the health personnel of the Secondary Network localities lacked qualified professionals and staff, and considering that the Hospital area of Juanjui could not assume supervision visits; the presence of the ATC as considered as important to link the Health area with the Health posts and give professional support for the treatment, supervision and following-up of long distance medical consultations for the peripheral posts

such as Pachiza, Huicungo, Tingo de Saposoa and Bellavista.

Initially, Bellavista and Tingo de Saposoa were scheduled to participate on Mondays, and Huicungo and Pachiza on Fridays. But afterwards, it was noted that Tingo de Saposoa had few patients because Bellavista withdrew from the consultations since it had its own physicians. In order to avoid ATCs cancellations due to the absence of participants, the three localities were scheduled to participate on Mondays and Fridays.

This experience was held from June to November 1984, and 14 ATCs were carried out out of the 5 scheduled ATCs. Such a large number of cancellations was due to technical problems that came up in the active bridge linking Juanjui's earth station with the secondary network, as well as the deficient technical performance of the VHF equipments used at this network level.

The ATCs were coordinated from Juanjui. On the scheduled date and hour, a doctor of Juanjui's hospital went to the ATC room and gave assistance and professional medical support regarding patients treatment to the health technician of the faraway locality. The presentation methodology was the following:

- . The health technician of the post described the symptomatology of the patient.
- . The coordinating Doctor of Juanjui made some comments or questions in order to extend the receipt information.
- . The patient made a brief exposition about his/her clinical history and the symptoms that induced him/her to go to a consultation.
- . The coordinating Doctor gave instructions to the health technician for the application of a treatment. And

considering the gravity of the case, the patient's transferring to Juanjui was requested.

The impact of this course of action was great within the community and the Health Sector, since it allowed the patients from faraway localities to have access to Medical Consultation free of charge. Without being transferred, the patient gained time and avoided annoyances. The inter-consultation between the technician and the professional was another advantageous impact for this application.

Unfortunately, this could not be continued due to the technical problems that cut the program.

Some of the elements that were perceived as lessons during the development of Medical Consultations were:

- . The ATC rooms, where patients described their cases, need private and isolation conditions, so as the patient may feel comfortable since sometimes they have intimate diseases.
- . The health technicians should have a number of pharmacological resources to allow them to apply the treatments recommended by the physician.
- . The doctor that gives his/her professional support should have the ability to transmit human warmth through his/her voice in such a way the patient might talk freely and confidently regarding the instructions of the doctor transmitted from a long distance.

Even when the medical consultations were carried out between Juanjui and the secondary network localities, this could also be done among Juanjui, Saposoa, Tocache and Lima, since the first three localities do not have specialists in the different fields of Medicine. But the doctors and professionals of the zone did not have the time, training

and academical base for the elaboration of their case reports.

### 3 ENTEL ATCs: Administrative Support and Long Distance Training

The ATCs of Social and Technical Coordination at the beginning of the RCSP that opened up a potential use of the system for Entel was the guideline that established its incorporation. However, its participation as an User Sector with a better sense organization and search of impacts in accordance to the own requirements of Entel in the field of action of the project, was long time delayed.

It was in May 1985 that 10 ATCs about Human Relations for the personnel of the zones of the Project and Iquitos were organized through coordinations with the Training Office of Entel.

Although the pedagogical aspect of the Program showed deficiencies, a widespread impact was obtained since the users of the zone perceived that the ATC system was a wide and feasible alternative for training, and training requirements regarding different administrative - operative fields were sent to Lima.

The RCS application team made arrangements with Entel's management offices for the elaboration of training programs. Since September 1984, Entel entered to the ATC Service as a regular user sector up to the end of that year.

In terms of work hours, Entel surpassed the time used by the other sector, not only for the access to the technical infrastructure, but due to the fact that Entel was the best organized and organic sector. Through the ATC, the access of local administrations to the different levels of Entel became more common.

The causes for the increment of Entel's ATCs were:

- . Propagation of the Project at an administrative level with operative, administrative and technical areas.
- . Coordination initiatives of the Project in the country and Lima provided the first experiences. Entel Users were provided with an interactive communication means; therefore, the ATC services becomes a training and communication alternative and a consistent and fast means to let know the problems at a higher administrative level. (Tarapoto, Iquitos and Lima).
- . Long Distance Training potenciality, with the advantage to achieve the reduction of training costs. The traditional training program with meetings was very expensive.
- . We realize that it was opportune to show Entel the ATC system utilization potenciality in the technical and administrative applications and long distance training.
- . Need to exploit the installed technical capacity, i.e. the satellite capacity payed by Entel for the use of ATC's exclusive channels. A better cost-benefit relation for the investments was tried to be achieved.

It is worth to underline Entel Perú's effort to present the ATCs in a variety of styles and to implement the participating personnel of all the localities with materials, booklets and agendas which even though arrived out of time, showed, in some cases, that success could be achieved with a better logistical support.

#### 4 Long Distance Teachers Training: ATC and Broadcasting

From early 1985, the RCSP designers attempted to organize

Special Education Programs so as to meet a demand of the teachers in that area. This could not be consolidated until April 1985, because the Special Education Director of the Ministry of Education did not perceived and was giving importance to the ATC system. Moreover, the promotion of specific initiatives for a single area of the country generates problems in the program administration for the Ministry.

Just in April of 1985, the Special Education Director of the Ministry of Education in Lima, traveled to Tarapoto and came in contact with the system, noting the ATC's potenciality as a means for long distance training.

Coordinations with the Director of the Centro de Diagnóstico del niño Excepcional ( Handicapped Children Diagnosis Center) were arranged and a program with the participation of the Hogar Clínica San Juan de Dios and the Special Education Directorate of the Ministry of Education.

The emission of ATCs began in July and finished in December. Topics such as Prevention and Detection of the Handicapped Child, Elaboration and Evaluation of Admission Tests, Curricular Program of Occupational Education for the Handicapped, Early Stimulation, and the handling of the different kinds of infantile handicaps were dealed.

Paralell to the development of the ATCs, it was considered as strategic the fact that the user teachers apply a Detection Chart to the Handicapped. The results were analysed in Lima, and one of the conclusions - the most important one- was the statement to create a Special Education Center in Juanjui to attend to the different detected cases.

The impact of these 37 ATCs in the users and the population of the localities was widespread. For the first time the opportunity to go beyond the limits of the sectorial group through the ATC so as to try to bring a support and advice service to the community regarding the handicapped children was proposed. Firstly, the Parents Associations were invited to the ATC sessions to ask questions about this topic. Then spots were broadcasted through the local radio by the Coordinator of Applications of Tarapoto. Afterwards, interviews with officials of the broadcasting stations of Tarapoto so as to obtain broadcasting spaces for ATCs during the sessions were held. Radio San Martín offered a free space. From November to December 1985, 4 sessions following this strategy were carried out and the impact was advantageous. The public was suggested either to make telephone calls during the ATCs or to attend the ATC sessions, or to send a letter with questions or through other mean. Few persons attended the sessions and another few ones telephoned during the ATCs to ask questions. What could be readily determined was that the strategy of using the radio to extend the communication benefits of the ATC was advantageous, particularly if it is considered that the people of these localities use to listen the radio. Some of the technical problems that appeared during this kind of exercise constrained the experiences. But one experience was rescued : a group of students of the Instituto Superior Pedagógico de Tarapoto (Tarapoto Pedagogical Institute) carried out an audience group dynamic around a transistor radio and afterwards the audience attend the session to ask questions.

In Juanjui the experience of dealing the problem of Handicapped people promoted a study of its scope. Likewise, arrangements were carried out with the Audition

and Language Center and the Special Education Directorate of the Ministry of Education, so as to obtain support for the endowment of a Treatment and Rehabilitation Center for Handicapped Children.

#### 5 Agriculture ATCs: Agriculture Extension through ATC

The first year the ATCs were used by the Agriculture Sector, a series of unexpected problems were faced. However, the unfavorable results allowed the whole restatement of the programs for the second year, with fairly satisfactory results.

Some of the elements that explain such situation were:

- The first element, of structural character, was related to the methodology that the agricultural promoters use as a teaching system for the promotion and development of crops. The training-visit method implies a direct contact between promoters and farmers; supposing that the first ones have enough training and technological knowledge so as to transmit them to the farmers. In 1984, the CIPA X faced problems regarding the fulfillment of the training stage for extension specialists, due to the lack of resources. However, in this context the ATC system was not regarded as a training and contact alternative among such levels, and as an instrument to provide the resources required by CIPA for the travels of the specialists to the training localities of the sectorists. On the other hand, the dates and hours scheduled for the Agriculture ATCs (Tuesdays and Thursdays at 10 a.m.) were not compatible with the training-visit programs. since if the sectorists attend the ATC, then they could not go to the country to work with the farmers, and that was the primary role of each user.

A second element was the lack of leadership of the Coordinator of CIPA X of Tarapoto and his labor situation. This situation did not allow him to give coherence and organicism to the participation of his sector, and to somehow explain the structuring problems of the scheduling and selection of the lecturers. Finally, this was reflected on the poorness of the transmitted contents and the lack of responsibility of the lecturers that did not prepared their lectures or simply did not attend the sessions. All this result in a total lack of motivation of the audience and almost became a failure of the program during the first year of ATC utilization.

The last element, although a unique one, was the moving of the ATC Programming of the Extension Agency of Tocache, in mid 1984, because it belonged to other CIPA. (Huánuco-Tingo María).

In late 1984, Formative Evaluation meetings were organized. In this meetings the users of the Sector in all the localities said unanimously that the elements already discussed had been the determinant factors for the lack of participation. In this way, the results of these meetings allow to application plan designers to carry out a whole restatement.

- . The Sectorial Coordinator of Tarapoto was replaced by a more dynamic and interested person.
- . The ATC Emission Center, was moved from Tarapoto to Lima in order to facilitate the participation of the Central Offices of the participating Ministries.
- . The programs were made considering the training requirements of the users of the zone.
- . A new schedule, Fridays at 11 a.m., was decided so as to

do not interfere with the training-visit activities in the country.

In order to meet the training requirements, a close coordination with INIPA's representative in Lima was established. He was informed about the schedules arranged by the Sector Users of the RCSP zone, for their discussion and approval. Then, coordinations with other professionals of INIPA in the required specialized fields and with Agricultural Research Centers, such as the Artificial Insemination Center and the Universidad Agraria de La Molina were arranged. Administrative replacements in the Direction of the Research, Promotion and Extension principles finally determined a very advantageous opportunity for a re-interpretation of the rol of the Sector as an ATC User.

All the efforts had the expected impact, and the Users of the ATC service relied on the system again. Although this success resulted from a team work, the rol of INIPA's coordinator in Lima was of great importance. In 1985, he began the programming with a set of 8 ATCs of Extension methods. His participation was fundamental since performing the double rol of Coordinator and Lecturer, he assembles the ideal characteristics that a Lecturer for long distance training through ATC should have. His contribution was capital due to the following reasons:

- . He prepared clear, didactic and simple materials that were distributed in the zone with the necessary period of anticipation.
- . He extended the knowledge about the dealed topic.
- . He showed ability for the communication and transmission of contents through the audio, thanks to a very good presentation style and humanization of his lectures, which motivated the participation of the audience.

Utilization of an ATC presentation dynamic system where theoretical lectures were adequately complemented with practical examples and the participation of the Users.

6. ATCs Medical School: Continuous Medical Long-Distance Actualization.

By the end of 1984 and beginning of 1985, something important happened: the professionals from the Health Sector of the zone of the RCS requested the participation of speakers from Lima, arguing that the training ATCs that were emitted from Tarapoto did not have the appropriate professional level to provide medical actualization. In fact, Tarapoto does not have Specialization centers and there is a deficit of highly specialized professional. Parallel the RCSP Unit of Social Applications in Lima, initiate an intense coordination work to meet this requirement.

First, the participation of the Health Ministry through the Department of Health Education was considered and an attempt was made to organize a programming. This attempt failed since many ATCs of the previous year were repeated and the zone requested the cancellation of the programming. It was then that coordinators of the RCSP in Lima became aware of how it is difficult to work with the Ministry. The immediate alternative was to look for professional institutions in the field of health care that would assume that responsibility and that at the same time would meet the training requirements of the users. Coincidentally, in that Dr. Walter Vásquez a professional that had been just incorporated to the sector in Tarapoto, in coordination with the project, made a strategic contact with the Peruvian Medical School, stating the possibility that this institution could assume the responsibility of training and actualizing physicians in the Central Hualgalla.

The programming elaborated for the users of the project's zone was presented to the CMP representatives for its approval. They accepted to assume such responsibility through the integration of the requirements of the SCR and the sector with the

programming of Continuous Medical Education, already functioning by means of visits from professional physicians to the department capitals throughout Perú.

The training necessities cover a great range of specialties and themes. For 1985, annual programming is being organized in four blocks:

1. Internal Medicine: April and May
2. Pediatrics: June and July
3. Gynaeco-Obstetrics: August and September
4. Primary Health Care: October, November and December

The ATCs were programmed for Thursdays at 12 o'clock in the morning, with a total of 31 ATCs during all the year.

The results of this experience can be summarized in:

- At a qualitative level and according to the interviews made to participants, the program had a great impact for the medical staff that followed the ATCs, for almost none of them had had contact with a training element since their arrival to the Huallaga localities.
- However, at the same time some degree of dissatisfaction was noticed in the technical and auxiliary personnel that participated in the ATCs because of the highly technique language used, which did not allow them to follow appropriately the learning.
- The number of physicians assisting to the session was not so favorable due to different factors, from which the most important was the amount of work regarding the attention of patient.
- Instructive material was prepared and delivered to the zone as a support tool for the ATCs; however, problems regarding delay in its elaboration, delivery and distribution could not be avoided.

- For the Peruvian Medical School, this experience was of a great value because it could have for the first time an initiative and direct communication strategy to develop the program of Long Distance Continuous Education, that it had been working on with the sending of specialists to different points in Perú. The great amount of resources this modality was implicating and the limited coverage, compared to the significant saving and the wider coverage that were attained through ATC, give the application a great prestige and value with important projections to the future.
- Besides, the series of the Peruvian Medical School were the best structured package since the ATC left Lima.

7. PROMULCAD: Long Distance Training for Primary Level Language Teachers.

During the coordination meetings with personnel from the Educational Sector in Lima, at the beginnings of 1983, the Instituto Nacional de Investigación y Desarrollo de la Educación (INIDE) was invited to participate as user of the system. During this time, INIDE developed the PROMULCAD Project, which was a Multinational Project (Chile, Perú, Panamá and Venezuela) of teaching training, aimed at identifying alternative strategies of training for teacher at service. The PSCR and the Coordinating Office of PROMULCAD established the basis for the development of a programming of a long distance teaching training through ATC, which was consulted and coordinated with the Education Zone of Tarapoto and the Provincial Supervisions of Juanjui, Saposoa and Tocache, and produced an immediate and positive response.

The modality PROMULCAD had been developing until its contact with the PSCR was a methodology of presence training and supervision in different education zones in the country.

Thus, the ATC service was taken immediately as an alternative for:

- Developing an evaluation of the cost/benefit of the use of ATC as alternative of long distance training.
- Studying local realities in terms of identification of cultural patterns associated with the use of teaching-learning methods, as a base for the design of texts culturally adequate to specific realities such as the peruvian jungle.
- Actualizing and training 1st and 2nd grade teachers in the Language speciality.
- Supervising the application of instructions from the speciality aimed at obtaining the generalization of strategies for 4th grade of Elementary School.

However, it was not until one year later (March 1984) that the coordination for the development of the programming. The delay was due to the slowness in the implementation of the Primary Red of ATC, finally completed towards December of 1983.

During March and April 1984, the selection of participating teachers was done, for which PROMULCAD in coordination with Tarapoto's Education Zone, administered the selections tests.

Admission Tests were immediately administered in order to measure the academic preparation and experience of teachers and to identify their deficits in these aspects.

From the point of view of programming, the development of the application was planned following these steps:

- Teaching actualization with ATCs from Lima by a specialist in Language from INIDE-PROMULCAD.
- Analysis of traditional Teaching-Learning methods within the CRSP's zone, by each participant and presentation of results by ATC.,

- Strengthening of the strategy of Teaching Actualization and long distance supervision from Tarapoto of the progress of teachers concerning the utilization and internalization of instructive material.
- Analysis of information regarding problems and experiences in the teaching-learning process with individual or group teaching participation by ATC.
- Design of didactic material for teaching, follow up and supervision of its application by ATC, tending to a final generalization of the strategy.

Since May of the same year, the programming began with many interruptions due to technical problems and strikes in the Education Sector. The first sessions were of a great im pact between teachers. In the CRSP's zone, the great part of teachers do not have any professional degree and just assist to actualization course, during summer, taking advantage of school holidays (January-March). To have a direct alternative of training with, specialist of a high level of academic preparation and experience at no cost, determine a massive assis tance of teachers eager to acquire knowledge about technology of language teaching for the first grades.

Soon it was noted that the expectations of the teachers were too high compared to the quality and amount of the knowledge received and also that the initial objectives stated by PROMULCAD concerning the experience of using ATC as alternative of long distance communication for teaching training, were too ambitious for the available resources, for their capacity of response to the teachers' expectations, for their capacity of supervision and control of the individual follow up of learning.

An effort to restore the interest of participant and to supervise in each site the achievements and problems noted by ATC, led to the coordination group of PROMULCAD to a

journey throughout the entire zone of the Rural Communication System. Personal contact restored the interest, however it was noted that:

- Teachers did not read nor assimilate the instructive and lecture material delivered.
- They did not have a system of team work nor discipline of study.
- For many teachers without profession background, teaching was an occupation just as any other.
- Teachers expected, in concrete terms, to be instructed directly in the teaching technique and methodology and not to be given more general contents, with history, and educational lineaments and processes that were difficult to them to be understood due to their poor preparation.
- The Education Zone and Supervisions of Huallaga made a selection on a subjective basis.

When the ATC session began once more, PROMULCAD was in a difficult administrative and economic situation. The specialist in Language ended her contract, and it was not renewed, thus the programming being suspended without having completed the proposed stages.

To summarize the experience of 35 ATCs developed in the program indicated the following:

- Through the few sessions of training and actualization the potential ATC as an alternative of long distance training was proved.
- ATC has its limitations when facing rigorous instructive processes and it is necessary to consider its utility within a set of means and alternative strategies. As an example, the training work must also include presence sessions of strengthening and direct supervision of learning, supervised use of materials and even support with techniques involving study groups, etc.

- It let know specific problems of the country and the challenge of planning and alternative as a response to an evident need of training.
- It led to the necessity of considering a better relation between parts of a same system, (Education Zone and PROMULCAD) under explicit instructions specifying responsibilities and functions.

#### 8. Coordination of a National Vaccination Campaign VAN 85

Due to the National Vaccination Campaign for Children, that has been carried out throughout the country in 1985, Dr. Walter Vásquez, when working in Tarapoto and being Department Coordinator of the Campaign, requested the ENTEL's support for the use of the ATC System because of the knowledge and experience he had about it as a fast support tool for long distance coordinations.

The request for ENTEL's support was based on a multisectorial agreement established in meetings convoked by Dr. Vásquez in Tarapoto, Juanjui, Saposoa and Tocache.

In these meetings, particularly in Tarapoto and Juanjui, Entel Perú by means of its representatives, formally offered the use of the ATC System for supporting the campaign. Immediately, the coordinator of the campaign used the system for: showing his own program of visits to the localities of the Department, presenting commentaries about the strategies of the Campaign, and as a mean of motivation and organization of the program of the work to be done allowing to coordinate the Program's logistics (amount of vaccinations, coolness chains, syringes and all that is necessary). All this is done in the stage previous to the campaign.

During the campaign, the system was used for obtaining information of advances, coverage and effectivity of it, and

also for the analysis and stating of alternatives for the problems presented.

Later on, when the campaign was ending, the ATC system was used for analysing the efficacy of the actions in face of the problems; the objectives attained and its efficacy as a mean of open interchange of experiences and of elaboration of statistic tables regarding the progress.

## C Styles of ATC presentation

Within the methodological technics adapted to the presentation of an ATC, the most adaptable to the system are those which favor the interaction and the dialogue through long distance. As the audioteleconferences permit the users the employment of the audio-phonative sense, the presentation must be clear and simple. According to experience, the ATCs presentations with an appropriate combination of lectures and dialogues among the participants should allow reaching objectives easily.

During the RCSP users training process a simple and basic guideline was given to them. This consisted in:

- . Initial humanization of the session by means of greetings and introductions among the participants of all the rooms.
- . Presentation of the lecturer and his topic and the instructions about the handling of the materials.
- . Questions and answers session or sessions.
- . Summary and appointment of homeworks or projects for the next session.
- . Farewell and close of the session.

According to the type of application, the guideline can be more or less flexible. The time devoted to each phase should be fixed taking into account that a great part of the session must be devoted to the interaction of the participants.

During the first year of applications, the sessions were characterized by long and tedious lectures without any participation through questions and answers.

Farther on, the users could make more varied and flexible styles of presentation based on a better experience and knowledge of the means, also because of a closer following of the participation in order to improve its quality. Sessions with the intervention of tutors, monitors and lecturers at the same time, arose more attention and stimulus for participation.

In some ATC blocks, Entel Perú and the Health sector incorporated a variety of technics with questions addressed to specific participants, stimulating the presentation of typical cases for their discussion among all the participants in the rooms.

In those sessions it could be observed that the interactivity among participants increased noticeably. The ATC presentantions required a strategic handling of the participant stimulation. The long distance presentations through a media will always involve constant challenge and risk. Thus, the quality and success of an ATC should be measured not in terms of an excellent presentation of lectures. But, in terms of its capacity for stimulating the discussion and consequently, the interaction of participants until attaining the set goal, be it an agreement, the opportunity to carry out an idea, a strategy, etc.

#### D Use of Instructive Material

As the audioteleconferences do not transmit the image to the participants, they have to be provided with agendas, posters or another type of auxiliar material. Dealing with applications of long distance training, the participants of the programs should necessarily have instructive material which can be handled as support for the self-learning before, during and after the ATC session. The instructive material becomes in this way the most important element for the student since it can offer more extensive sensorial experiences than the sole presentation of a concept through the ATC. This one is just the initial vehicle of the long distance training process.

During the development of long distance training applications in the RCSP the following was noticed:

1. The use of plentiful informative material whose form and contents were not designed so as to stimulate the

self-learning.

2. The training didn't suppose in most of the cases the immersion of the participant in a gradual process of acquisition of knowledge and the gain of experiences.
3. The materials supplied to the participants were mostly the summary or the complete contents of the lecture of the specialist.

In August 1983 and after in April 1986, the RCSP made two specific workshops for the acquisition of knowledge and control of the design and use of instructive material technics for the application in the ATCs. Almost 40 persons of the three sectors in Tarapoto received the learning-workshop. The problems that this group faced explains in a great way why the instructive materials were not used:

1. The administration of the sectors in Tarapoto and Lima couldn't have a budget for the purchase of printing materials.
2. The already trained people did not receive the support of their sectors for devoting themselves to the production of instructive material.
3. The change of the ATC planning and transmission center from Tarapoto to Lima at the beginning of 1985 left aside the capacity and experience already obtained by the trained personnel.

#### E Interactivity among Audiences

In the RCSP the interactivity among audiences must be seen under two aspects:

1. as a spontaneous activity of the participants,
2. as an activity directed or made by lecturers or monitors from the transmission room.

As a spontaneous activity, low participation among the rooms and between these and the transmitter was observed.

Generally, the user showed a passive attitude and receptivity of the message. Antropologically, the inhabitant of the peruvian jungle is communicative par excellence. Nevertheless dealing in this case with interactions among members of the same sector and participansts of different levels, bosses and subordinates, the self- control of the message functioned automatically. Many of them did not express their ideas or experiences fearing for showing faults in their works which could create them problems. Others passively accepted the messages because they were given by their superiors or bosses.

The great part of ATCs concerning administrative, coordination or supervision work subjects was characterized by this feature.

As an activity directed or generated from the transmission room, the interactivity occurred under technics of specific questions to specific participants or open questions addressed to any of them:

"What are the remarks of Pablo Fasanando in Tocache about the subject..."

"What does Marcial del Aguila in Saposoa thinks about what was said by Pablo in Tocache..."

"José Panduro in Tarapoto, could you briefly tell us what were the results of the introduction of "Tropical 28" corn variety in regard to the quality of the grain and its adaptation to the climate, etc.

Sometimes, many of the participants said that they did not pose any question nor made any commets because their questions were answered when the problems of their colleagues of other rooms were solved.

CONSOLIDADO MENSUAL DE ATC MES DE JUNIO 1986 SALAS PARTICIPANTES LIMA (1) TARAPOTO (2) JUAN DE LOS RIOS

TOCACHE (4) SAPOSOA (5) IQUITOS (10)

Nº	FECHA	HORA	SECTOR	TIPO	CLASE		TEMA O AGENDA	RESPONSAB. ATC	SALA EMISION	SALAS PART.	TIEMP.	METAS	
					S	M						TIPO USUA.	MES
01	Lun.2	12md.	Entel Seg.	CAP	X		Evacuación	Sr.Oscar Cruz	Lima	Todas	60	Pers.en gral.	20
02	Lun.2	15:00	Educ.	CAP	X		Curricular Básico de Alfabetización	Srta.Chauca	Lima	Todas	60	Espec.de Alfabet.	08
03	Mar.3	08:45	Entel P.Ext.	DIF	X		Difusión Normas Técnicas	Ing.R.Carhuayo	Lima	Todas	60	Ings.y - Técn.P. Ext.	15
04	Mar.3	12:00	Salud Col.de Enfer.	CAP	X		Cuidados Internsivos	Srt.R.Sán - chez	Lima	Todas	60	Enfer.y técn.sa-lud.	30
05	Mar.3	14:00	Agric. Col.Méd. Veterin.	CAP		X	Enfermedades transmisibles de los animales al hombre : Vigilancia Epidemiológica.	CMV	Lima	Todas	60	Médicos Veterin. Comunid.	30
06	Mie.4	15:00	Salud	DIF.		X	Convulsiones	Dr.Yalán	Lima	Todas	60	Médicos enf.técn. padres de fam.comun.	60
07	Jue.5	08:45	Entel P.Ext.	DIF.	X		Difusión Normas Técnicas	Ing.C.Rojas	Lima	todas	60	Ings.y técn. de P.Ext.	60
08	Jue.5	12md.	Salud CMP	CAP	X		Paludismo (clínico) (I Parte)	Dr.Carrasco	Lima	todas	60	Médicos y personal de salud	60
09	Vie.6	08:30	Agri.	CAP	X		Insectos y plagas en el Dpto.San Martín	Ing.Cárdenas	Tpto.	2,3,4, 5	60	Ings.téc. agropec. del CIPA X	20
10	Vie.6	12md.	Entel Seg.	CAP	X		Evacuación	Sr.O.Cruz	Lima	Todas	60	Personal en gral.	20
11	Vie.6	15:00	Educ.	CAP	X		Curricular Básico de Alfabetización	Srta.Chauca	Lima	Todas	60	Espec.Su-perv.prov. y sect.	08
12	Lun.9	12:00	Entel Seg.	CAP	X		Evacuación	Sr.O.Cruz	Lima	Todas	60	Pers. en Gral.	20
13	Mar.10	08:45	Entel P.Ext.	DIF.	X		Difusión Normas Técnicas	Ing.R.Carhuayo	Lima	Todas	60	Ings. y técn.P. Extern.	15
14	Mar.10	12:00	Salud Col.Enf.	CAP	X		Fiebre Amarilla		Lima	Todas	60	Enf.y técn. salud	20
15	Mar.10	14:00	Agric. CMV	CAP		X	Brucelosis y tuberculosis. Bovina.Epidemiológica y Control. Repercusión	CMV	Lima	Todas	60	Médicos ve-terin.téc. comunidad	30
16	Mie.11	15:00	Salud	DIF		X	Niño con fiebre	H.del Niño	Lima	Todas	60	Pers.de sa-lud.Comun.	30
17	Jue.12	08:45	Entel P.Ext.	DIF	X		Difusión Normas Técnicas	Ing.Carhuayo	Lima	Todas	60	Ings.y técn. P. Externa	08
18	Jue.12	12:00	Salud CMP	CAP	X		Paludismo (Tratamiento y Control) (II Parte)	Dr.Ventocilla	Lima	Todas	60	Médicos y pers. de salud	20
19	Jue.12	15:00	Entel SS.AA.	CAP	X		Trámites de Contratos de arrendamiento y renovaciones de los mismos.	Sr.T.Peña	Lima	Todas	60	Pers. de ABS	10
20	Vie.13	08:30	Agri.	CAP	X		Uso de semilla mejorada del maíz	Ing.Cancino	Tpto.	2,3,4, 5.	60	Ings.téc. agropec.del CIPA X	30
21	Vie.13	12:00	Entel Seg.	CAP	X		Charla sobre Identificación Personal	O. Cruz	Lima	Todas	60	Pers. en Gral.	20
22	Vie.13	15:00	Educ.	CAP	X		JUPCE	JUPCE	Lima	Todas	60	Dir.Zonal Espec.	15
23	Lun.16	12:00	Entel Seg.	CAP	X		Identificación Personal	O.Cruz	Lima	Todas	60	Pers. en General	20
24	Lun.16	14:00	ENTEL TEL	CAP	X		Lectura de la máquina registradora en Intis	Ing.Montes	Lima	Todas	60	Personal de Tel.	10
25	Lun.16	15:00	Educ.	CAP	X		Educación Primaria y Secundaria de Menores		Lima	Todas	60	Dir.Zonal espec.super vis.Prov.y Sect.	10
26	Mar.17	08:45	Entel P.Ext.	DIF.	X		Difusión Normas Técnicas	Ing.Carhuayo	Lima	Todas	60	Personal en General	10
27	Mar.17	11:00	Entel RR.HH.	COORD.	X		Alcances del Dpto. de Promoción Social		Lima	Todas	60	Jef.de área y Jef.de Ofj.cina.	15

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29	Mar.17	12:00	Salud Col. Enf.	CAP	X		Programa de Tuberculosis Infantil	Srta. Oyague	Lima	Todas	60	Enf. y Téc. de Salud	15
29	Mar.17	14:00	Agric.	CAP	X		Rabia Bovina	Dr. Málaga	Lima	Todas	60	Salud, Méd. veter. Zoot.	2
30	Mar.17	15:00	Entel Serv. A.	CAP	X		Medidas de Austeridad sobre alquileres de locales	Sr. Pena y Sr. Gioler	Lima	Todas	60	Pers. ABS	10
31	Mie.18	14:00	Agric. CMV	CAP	X		Producción Avícola en Trópico	Dr. Hans P.	Lima	Todas	60	Téc. Agron. Zoot. M.V.	10
32	Mie.18	15:00	Salud	CAP		X	Deshidratación en el Niño	H. del Niño	Lima	Todas	60	Pers. Salud Comunidad	30
33	Jue.19	08:45	Entel P. Ext.	CAP	X		Difusión de Normas Técnicas	Ing. Carhuayo	Lima	Todas	60	Ings. y Téc. P. Externa	15
34	Jue.19	11:00	Entel RR. HH.	COORD.	X		Relaciones Laborales	Dr. Terry	Lima	Todas	60	Jefes Ofic. Jefes Area	10
35	Jue.19	12:00	Salud CMP	CAP	X		Leishmaniasis Clínico. I Parte	Dr. Tejada	Lima	Todas	60	Méd. y per. de Salud	30
36	Jue.19	14:00	Entel Tel.	COORD.	X		Indicación para completar llamadas Internacionales	Ing. Coronado	Lima	Todas	60	Pers. de - Telef.	10
37	Vie.20	08:30	Agric. Tpto.	DIF.	X		Programa Piloto de desburocratización del INIPA CIPA X	Lic. Tejada	Tpto.	2,3,4,5	60	Pers. de Func. Tpto.	10
38	Vie.20	12:00	Entel Seg.	CAP	X		Actitud frente a los riesgos	O. Cruz	Lima	Todas	60	Pers. en General.	30
39	Vie.20	14:00	Entel Tel.	COORD.	X		Indicación para completar llamadas internacionales	Ing. Coronado	Lima	Todas	60	Pers. de Telefonía	10
40	Vie.20	15:00	Educ.	CAP	X		Educación Primaria y Secundaria		Lima	Todas	60	Dir. Zonal esp. superv. prov. sect.	10
41	Lun.23	12:00	Entel Seg.	CAP	X		Actitud frente a los riesgos	O. Cruz	Lima	Todas	60	Personal en General	30
42	Lun.23	15:00	Educ	CAP	X		Educación Primaria y secundaria		Lima	Todas	60	Dir. Zonal espec.	10
43	Mie.25	14:00	Entel CAP	CAP	X		Relaciones Públicas y la imagen de la Empresa		Lima	Todas	60	Personal en Gral.	30
44	Mie.25	15:00	Salud	CAP		X	Anorexia-Higiene y Nutrición Infantil	H. del Niño	Lima	Todas	60	Pers. de Salud y Comunidad	30
45	Jue.26	08:45	Entel P. Ext.	DIF	X		Difusión Normas Técnicas	Ing. Carhuayo	Lima	todas	60	Ingenieros y Técnicos	10
46	Jue.26	11:00	Entel RR. HH.	COORD.	X		Planeamiento de Recursos Humanos		Lima	Todas	60	Jefes de - Ofic. y de Area	10
47	Jue.26	12:00	Salud CMP	CAP	X		Leishmaniasis (Tratamiento y diagnóstico) (I Parte)	Dr. Tejada	Lima	Todas	60	Méd. Pers. de Salud	30
48	Jue.26	14:00	Entel CAP	CAP	X		Relaciones Públicas y la imagen de la Empresa		Lima	Todas	60	Personal en Gral.	30
49	Jue.26	15:00	Entel SS. AA.	COORD.	X		Servicios Municipales de funcionamiento	Sr. Peña y Sr. Gioler	Lima	Todas	60	Personal de ABS	10
50	Vie.27	08:30	Agric. Tpto.	DIF.	X		Programa Piloto de desburocratización del INIPA CIPA X - Tpto.	A. Tejada	Tpto.	2,3,4,5	60	Pers. de Funcion.	10
51	Vie.27	12:00	Entel Seg.	CAP	X		Actitud frente a los riesgos	O. Cruz	Lima	Todas	60	Personal en Gral.	30
52	Vie.27	14:00	Entel CAP	CAP	X		Relaciones Públicas y la imagen de la Empresa		Lima	Todas	60	Personal en Gral.	30
53	Vie.27	15:00	EDUC. Alf.	CAP	X			Dir. Alfabetización	Lima	Todas	60	Pers. Espec. de Alf. Superv. Prov.	10
54	Lun.30	12:00	Entel Seg.	CAP	X		Actitud frente a los riesgos	O. Cruz	Lima	Todas	60	Personal en Gral.	30
55	Lun.30	15:00	Educ.	CAP	X			Dir. Alfabetizac.	Lima	Todas	60	Espec. de Alf. Superv. prov. y sec.	10
56	Mar.01	08:45	Entel P. Ext.	CAP	X		Difusión Técnica P. Externa	Ing. Carhuayo	Lima	Todas	60	Ing. y Téc. de Pl. Ext.	20
57	Mar.01	12:00	Salud Col. Enf.	CAP	X		Balance Hídrico	Sr. Lévano	Lima	todas	60	Enf. y téc. de Salud.	20
58	Mar.01	14:00	Agric. CMV	CAP	X		Enfermedades Vesiculares	Dr. Quintana Dra. Mattos	Lima	Todas	60	Méd. Veter. técn. agron.	10
59	Mar.01	15:00	Entel SS. AA.	COORD.	X		Régimen de alquileres vigente de locales comerciales		Lima	Todas	60	Personal de ABS	10
60	Jue.03	12:00	Salud CMP	CAP	X		Cisticercosis	Dr. Portillo	Lima	Todas	60	Méd. Pers. de Salud	30
61	Vie.04	12:00	Entel Seg.	CAP	X		Seguridad Personal	O. Cruz	Lima	todas	60	Personal en Gral.	15
62	Vie.04	15:00	Educ.	CAP	X			Dir. Educac. Prim. y Sec.	Lima	Todas	60	Especial. Dir. Zonal	10

HORARIOS DE ATC

	9	10	11	12	13	14	15	16	17
Lunes									
Martes									
Miérc.									
Jueves									
Viernes									

	9	10	11	12	13	14	15	16	17
Lunes									
Martes									
Miérc.									
Jueves									
Viernes									

	9	10	11	12	13	14	15	16	17
Lunes									
Martes									
Miérc									
Jueves									
Viernes									

GUTA DEL PARTICIPANTE PARA LA TELECONFERENCIA

NUMBRE \_\_\_\_\_

NUMBRE DEL MATERIAL IMPRESO LEIDO : \_\_\_\_\_

FECHA DE LA AUDIO-TELECONFERENCIA : \_\_\_\_\_

- INSTRUCCIONES :
- . Del material leído, anota brevemente lo que se pide en el numeral 1 y 2.
  - . Prepara tus intervenciones para la ATC en los numerales - 3 y 4.
  - . Completa los numerales 5 al 8

PRACTICA - SE BREVE - RESPETA A LOS DEMAS - COLABORA - PARTICIPA .

	1	2	Desacuerdos, ideas, reflexiones, - dudas, etc.
	3	Preguntas a ser Formuladas ( usar información de 1, 2 )	
	4	Comentarios ( usar información de 1 y 2 )	

AGENDA DE AUDIOTELECONFERENCIA

(PARA SER LLENADO Y ENTREGADO ANTES DE LA ATC AL COORDINADOR)

1. Sector Participante: \_\_\_\_\_

1.2. Salas Participantes:

Lima	<input type="checkbox"/>	Juanjuf	<input type="checkbox"/>
Tarapoto	<input type="checkbox"/>	Tocache	<input type="checkbox"/>
Iquitos	<input type="checkbox"/>	Saposa	<input type="checkbox"/>

2. Establecimiento de la Agenda:

2.1. Propósito de la Reunión: \_\_\_\_\_

Tema: \_\_\_\_\_

Sub-Tema 1. \_\_\_\_\_

Sub-Tema 2. \_\_\_\_\_

Sub-Tema 3. \_\_\_\_\_

2.2. Nombre de Expositores / Monitores de la Sesión:

a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_

2.3. Nombre del Presentador / Moderador de la Sesión:

a. \_\_\_\_\_ es de ENTEL   
 del Sector

2.4. Se han preparado y repartido materiales entre los Participantes en todas las Salas ?

SI

NO

Cuáles ? a. \_\_\_\_\_  
 b. \_\_\_\_\_  
 c. \_\_\_\_\_

3. Organización de la Sesión y Distribución del Tiempo:

Tiempo Planificado:

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

3.1. Bienvenida e Introducción al Tema.

3.2. Propósito y Objetivo de la Sesión.

3.3. Revisión de la Agenda y Metodología.

3.4. Estilos Presentación Tema:

- Exposición
- Cambios de Expositor en la Sesión
- Introducción de Ayudas Visuales
- Preguntas y Respuestas
- Mesa redonda de Discusión
- Asignación Problem. a Particip.
- Preg. Específicas a Particip. Especf.
- Presentación Casos por Particip.

3.5. Resumen de Resultados y Conclusiones.

3.6. Cierre y Despedida de la Sesión.

TOTAL 60 Minutos.

REGISTRO DIARIO DE ATC

DIA Y FECHA: .....

COORDINADOR ATC: .....

TEMA: .....

EXPOSITOR: .....

PROGRAMADA: ..... NO PROGRAMADA: ..... REPROGRAMADA: .....

HORA DE INICIO: ..... HORA TERMINO: ..... DURACION: ..... MINUTOS

<u>SALAS PARTICIPANTES</u>	<u>Nº DE PARTICIPANTES</u>		<u>OBSERVACIONES:</u>
	H. I.	H. F.	
LIMA .....	.....	.....	.....
TARAPOTO .....	.....	.....	.....
JUANJUI .....	.....	.....	.....
TOCACHE .....	.....	.....	.....
SAPOSOA .....	.....	.....	.....
IQUITOS .....	.....	.....	.....
TOTAL:	.....		

O C U R R E N C I A S

1. INICIO DE COORDINACION TECNICA, EN QUE MOMENTO EMPEZARON: .....
2. ATC INICIADAS CON RETRASO ..... MINUTOS: MOTIVO: .....
3. SALAS CON QUE SE INICIO LA ATC: .....
4. SALAS QUE NO PARTICIPAN..... MOTIVOS: .....
5. CARACTERISTICAS DE LA COMUNICACION DURANTE LA ATC: .....
6. HORA EN QUE SE INTEGRAN LAS DEMAS SALAS.....
7. HORA EN QUE SE CANCELA LA ATC: ANTES..... DURANTE..... MOTIVO: .....

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FICHA PARA USUARIOS DE ATC EN LIMA

NOMBRE : .....  
SECTOR : .....  
PROFESION : .....  
CARGO : .....  
FECHA : .....

\*\*\*\*\*

1. Qué rol ha desempeñado en la Audioteleconferencia?

.....  
.....

2. Qué orientación y/o información recibió acerca del uso de la Audioteleconferencia por parte de los profesionales de Entel?

.....  
.....  
.....

3. Qué expectativas tenía sobre este medio de comunicación?

.....  
.....  
.....

4. Qué impresión le produjo este medio de comunicación?

.....  
.....  
.....

5. Qué tareas realizo para poder desarrollar su participación en la Audioteleconferencia? (Lectura, discusiones de grupo, preparación de materiales, etc.)

.....  
.....  
.....

6. Qué objetivos espera lograr con su participación? (Como expositor, observador, etc.)

.....  
.....  
.....

7.Cuál es su opinion sobre la participación de las salas de Audioteleconferencia?

.....  
.....  
.....

8. De no existir Audioteleconferencia, Qué otro medio de comunicación utilizaría para hacer llegar esta información?

.....  
.....

9. Qué diferencias encuentra entre el uso de este medio de comunicación y otros para transmitir estos contenidos?

.....  
.....  
.....

10. Qué sugerencias podría darnos para mejorar las Audioteleconferencias?  
(participación, calidad técnica, metodología, etc.)

.....  
.....  
.....  
.....  
.....

!!!! GRACIAS POR SU COLABORACION !!!!

## VIII USERS ATTITUDES REGARDING THE RCSP AND ATC

During the development of the ATC Program, many participating people expressed their opinion in the open interviews held as a part of the follow-up process, formative evaluation and feedback of it.

Initially, the administrators of the sectors, as well as the users were aware of the fact that they were having a fast and opportune communication system. Although the several initial technical problems in the transmission network, the certainty those could be resolved, kept the interest, and, moreover, enhanced the concept of regarding the value and opportunity to have an interaction level.

Even though it was difficult to translate the benefits given by the project into values; not only in terms of saving economic resources but also regarding the support given so as to fulfill the goals of the sectorial programs, the RCSP challenged a new methodology and strategy to immediately attend the need to:

- . Plan the development integrating local needs in an opportune way.
- . Offer representativeness and flexibility to decision-taking processes associated with the administration of development programs in the region.
- . Extend the supervision and control of the fulfillment of the programs and the administration of the services.

The advantage of the groups of San Martín - when compared with the other Peruvian regions- i.e. the fact that it had a communication instrument for development, was noted from the beginning by the administrators of the main offices of the 3 Ministries of Lima and was also perceived by a large number of users. That is why the attitude of the users was constant, enthusiastic and persistent during the experience although the continuous problems.

For many people, the presence of the system and its utilization meant the following:

- . The first opportunity to interact with colleagues and chiefs, and discuss common problems and strategies.
- . The presence of an actual alternative to obtain training or updating services , which was not feasible in the past due to the limited resources in the serctors.

Sectors of persons also presented a critical attitude toward the system. The arguments were based on:

- . The huge costs of the satellite communication process for a rural area, particularly if the project was assuming all the costs.
- . The presence of an interaction sophisticated technique for the customs and abilities of the people.
- . The lack of flexibility of the system to reach people , particularly during work hours. The user has to attend the sessions, and this means that he/she has to interrupt service activities.
- . The small scale group coverage, since the ATC, for its characteristics, leads to small work groups.

Finally, what it is feasible to recover from all the previous points is that the presence of a rural communication system gave to the majority a new way to face the structutal constraints of development, and an opportunity to try to achieve goals at a lower cost through the opportunity, celerity and interactivity given by the ATC.

The endurance of the customs and strategies gained at the end of the pilot experiment will not depend on the people who used the rural communication system at the begining,

but on the Entel Perú's ability to systematize the experience integrating the system within the demand for communication services and extending the possibilities of use for other groups. All this will be the challenge of institutionalizing a service that has demonstrated its validity and flexibility to adapt itself to the needs of definite groups, in terms of their necessities.

## SECOND PART

### I TOWARDS A COMMUNICATION MODEL FOR DEVELOPMENT USING AUDIOTELECONFERENCE

During the course of the RCS Project, many were the lessons learned. On their basis, Can an interactive communication system improve its condition as an element that provides dynamics to the activities of an specific area?

If we were to state this question in a more global way it would be the following: Can the conditions of a rural communications service for development be improved and provide greater benefits for persons and the socio-economic context? Of course, a positive answer to this question seems easy. What would one have to do in order to optimize the strategies used and that this could result in qualitative uses in relation to the structural needs of development rather than those of individuals as such? What has to be added? What interpretations are necessary regarding the used model so as to attain the rural communications service for sectors in San Martín or possibly in other areas?

As it was stated in the first part of this report, the idea of including this section is due to the fact of trying to think about the steps taken by the RCSP and to see if this can lead us to present a chart in which, starting from a better relation between variables, better results could be expected in terms of organization and dynamics of the process, attainment of goods and impacts on development.

#### A Selection of the Project's Field of Action

As it is the case a social communications project in which public institutions for development and workers from these organisms take part, it will be necessary that:

1. Services, health, education and agriculture and their representative bodies: health centers, educational supervisions or extensioned agencies from a geographical,

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# MODELO DE UN SERVICIO DE COMUNICACIONES PARA EL DESARROLLO CON AUDIOTELECONFERENCIA

ORGANIZACION SECTORIAL FLEXIBLE

CONVENIOS OPERATIVOS ACCION CONJUNTA CENTRAL/REGION

INVESTIGACION PARTICIPATIVA NECESIDADES COMUNICACION

ORGANIZACION GRUPOS TELEAUDIENCIA

ENTRENAMIENTO EN USO ATC

DISENO PROGRAMACION ATC

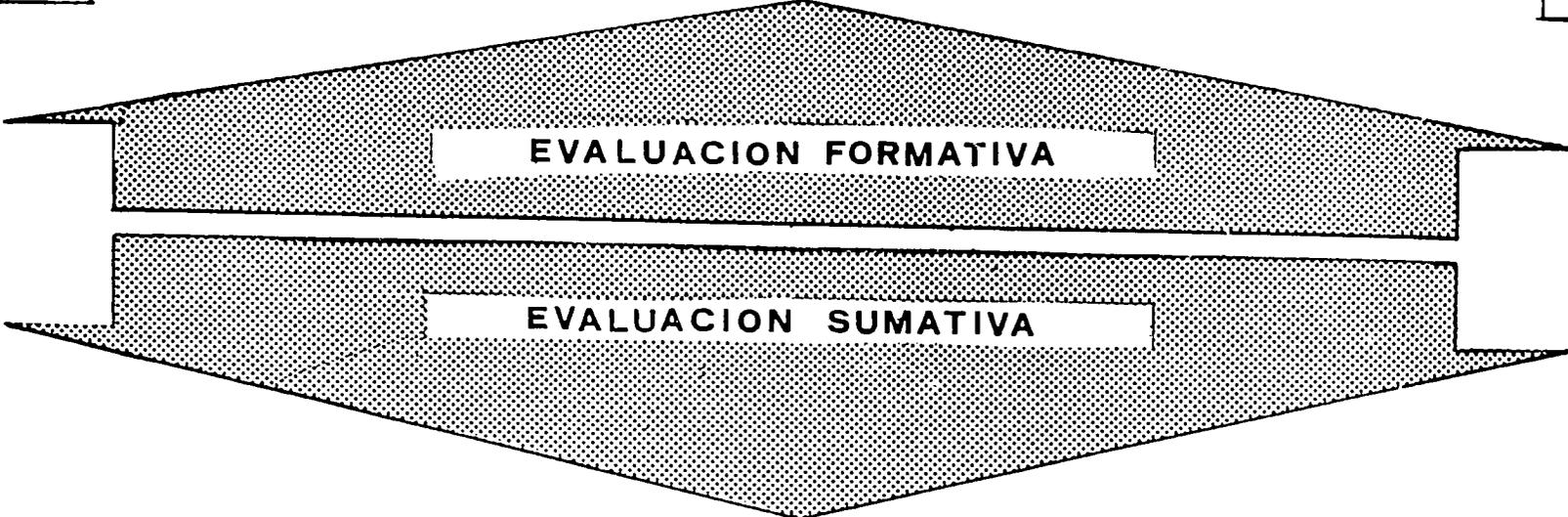
SISTEMA DE INTERCAMBIO INFORMACION

DESARROLLO DE LA PROGRAMACION

SISTEMA DE SEGUIMIENTO

AMPLIACION BENEFICIOS SERVICIO ATC

DISEÑO SISTEMA EVALUACION FORMATIVA SUMATIVA



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- administrative and operative unity.
2. Problems and/or needs must have representativeness in the entire field of actions so that future interactions have a same starting point and shared problems. Also the homogeneity of the participating communities, in terms of development, socio-antropology and culture are basic for the "use" of a common language in what concerns the identification of problems and proposition of alternatives. This may help further on, to perform more homogeneous audiences and may be taken as a principle of structuration of the programming. To have heterogeneous problems and needs within the same field of action may lead to duplicate efforts and resources.
  3. The field of action, its institutions and persons, must recognize that a communication service like ATC must be one of their priorities concerning development.

B The Transmission and Service Network: Response Capability

As well as the CRSP, the social communication services depend on a trasmission network. The reliability and stability of the technical component is considered as fundamental. The persistance of problems involving links, audio balance etc. will result in the de-motivation or absenteeism of audiences. Therefore, beyond technology, which is an important factor, the following aspects must be taken in account:

1. The need of establishing a permanent monitoring system for detecting problems, a coordinator system for the follow-up of the equipment's technical performance, and a preventive and corrective maintenance system. Therefore, the benefits or limitations of a specific type of communication technologies and the response capacity of the administration in charge of its operation, should be two constants of a same process.

2. The experience and knowledge of the people in charge of the mounting and operation of different componenets at a via satellite level, land links and others, sould be one of the requirements, particularly when it is the case of pilot experiences, in which the performance of equipment and co-services under extreme environmental and administrative-operative conditions is being tested.
3. A careful and planned process of transference of technology should be developed throughout the project, but particularly in the initial stage of implementation.
4. A fluent system of supply of equipment and spare parts by suppliers and a a local level by the administration in charge of the operation, should be taken in account specially decision power. An auxiliary group of technicians to work not only in one place but in all the field of action would be ideal. Exessive centralization of human resources and technology as well as in what concerns decision making would reduce the efficiency and flexibility required, specially in the case of rural communication services which may rapidly become an economical, quick and opportune alternative for people.

The idea of having the PSCR project's main office in Lima and not in Tarapoto did not help in what concerns economic resources and opportunity of responses for problems.

#### C Executer or Coordinator Field Organism

The idea of a field office for the project, responds not only to the fact of having "representation" in the area but for:

1. Coordinating and/or executing actions on a granted responsibility basis and with the attribution of articulating

the different components of the implementation program, the inter-institutional relations, the communications requirements and the responses of the system, as well as the program's expansion in qualitative and experimental terms.

#### D Operation Agreements

The idea of establishing agreements is for having formal engagements between institutions concerning responsibilities, roles and resources that should be shared to successfully carry out the program.

The experience with these instruments in the RCS indicates that:

1. They should be precise in what concerns the specification of who has certain responsibility and roles and what sections, units, departments etc. must investigate, plan, execute, supervise whether at a local, regional or central level.
2. They should specify the resources: goods, infrastructure, budget and staff that each sector will assign as counterpart for the project to the development of the program.
3. Finally the agreement must be representative for the sector at a central, regional and local level. The peculiar bureaucratic conditions in which public sectors work oblige to formal actions at least at the first two levels mentioned, at the same time.

#### E Basic Sectorial Organization: Coordination

A project like the RCS, that is based on operation agreement with the public sectors related to development, requires, at this level, not only the wills of its members. The sector must respond to its engagements in a conjoint and organized way. In order to do this:

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1. It must appoint throughout the entire field of action, full-time coordinators, devoted exclusively to the development of the project. Sharing activities or give functions to others does not give good results.
2. This coordination must be dynamic during all the process: investigating needs, providing information about the benefits of the project and the use of the system, promoting the organization of audiences, motivating the participation and interactions during the transmissions and cooperating to the follow-up the process for the feedback of the communication system and the sectorial program etc.

#### F Diagnosis of Needs

The diagnosis of communication needs should start from:

1. Knowledge about the institution: its organization, functioning system, structure for decisions, rationality and normativity, problems and organization channels etc.
2. Knowledge of the programs, priorities, possible strategies, and available resources.
3. Knowledge of priorities and/or communication requirement and use of the services.

The diagnosis of needs must be the most representative fact of the problems needs of the entire field of action. The diagnosis should allow to systematize the information, grouping the problems for giving place to the planning of representative sets of themes.

#### G Organization of Audiences

Audiences are specific groups in terms of their communication needs, information, training, coordination etc.

The rol of audiences by ATC is not only receptive but it has a double rol: it emits and receives at the moment.

The homogeneity of each group in terms of identification of a

same problem, professional education, and experience, administrative hierarchy and responsibilities, should not only favor the organized satisfaction of needs but simplify the planning of the same.

#### H Training in the Use of the System

1. The training must be considered as a process and not as an activity at the beginning of the ATC programming.
2. It is one of the elements that provides the dynamics, that the promoters and coordinators of the project may count on.
3. The periodic training sessions allow the continuous feedback of the process of use of the communications system, since it facilitates the conditions for a formative evaluation of it.
4. The permanent training must be aimed at satisfying the information requirements. New personnel incorporated in the case of eventual changes of personnel rotations.
5. The training work shops during the development stage of the programming should be aimed at the perfectionment of the technique and methodology of planning, presentation etc.

#### I Design of the ATC programming

The relation between previous variables must lead to the obtention of a programming that satisfy the requirements concerning organization and representativeness of communicational needs.

In what concerns organization this should include:

1. The list of themes for its weekly, twice a month and monthly presentation.
2. The list of speakers, lectures and monitors.
3. The times of emission selected on the basis of free time of the users.
4. The coordination responsibilities of emissions and logistics of the elaboration and distribution of instructive material.

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In what concerns representativeness:

1. It should include in a priority order the needs concerning the support of the communication services, this, on the basis of participative diagnosis.

#### J Design of Formative and Summative Evaluation Plan

Since the beginning of the planning of the rural communications services program, the following must be implemented:

1. A system of interchange of local, regional and central information aimed at making easier the coordination between the different levels and participating group, as well as the program's feedback. The interchange system should be initiated within each user sector and be projected as such to all of the participating groups.
2. A system for following up activities and strategies that allow to point out the critic route followed, the qualitative and quantitative results and the measurements of the impact of use of the communications service.

The formative and summative evaluation activities are complementary, the first one being addressed to the process and its optimization while the second one is in direct relation to the measurements of final impacts, on the basis of qualitative and quantitative results of the ATC program.

For making possible these two kinds of evaluations, it will be necessary to establish information registration systems based on the application of forms and instruments of qualitative and quantitative registering:

1. Agenda of Incidents in every participating room: a registry of every incident whether normal or not.
2. Cards and surveys for qualitative and quantitative registrations of the process.
3. Open interviews to participants.
4. Monthly systematizations of information for correcting the program's process

11'

The conclusion from this situation is that:

1. It is a non rigid scheme of relation of variables.  
The sequency in which they present is just a way for indicating the logical order that imposes the planning of a program. The flexibility of the scheme must be validated according to, on one hand the specific structural of circumstantial problems and on the other hand it the requirements of the groups.
2. The development strategies based on communications programs should have a series of pre-requisites. Organization and coordination based on a fluent exchange of information at every level of the participation system are fundamental.
3. The communications for development should be based more on the use of a combined strategy of means rather than on the use of a unique tool, as ATC.

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