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Economic Commission for Latin America

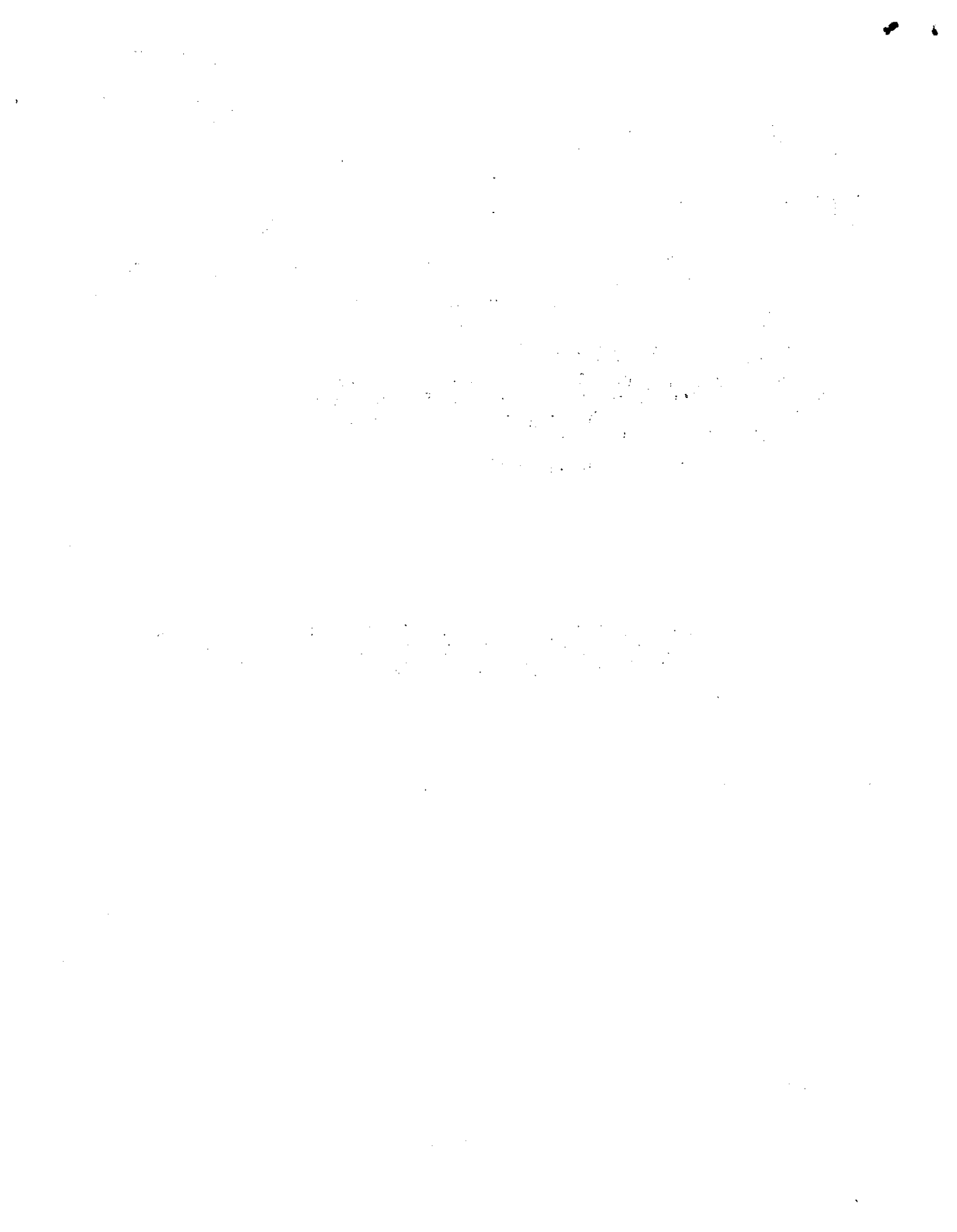
United Nations Regional Seminar on Space Applications  
in Consideration of the Results of the Second United  
Nations Conference on the Exploration and Peaceful  
Uses of Outer Space (UNISPACE 82)

Sao José dos Campos, Brazil, 2-6 May 1983



THE ECONOMIC COMMISSION FOR LATIN AMERICA AND THE SECOND  
UNITED NATIONS CONFERENCE ON THE EXPLORATION AND  
PEACEFUL USES OF OUTER SPACE (UNISPACE 82)

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THE ECONOMIC COMMISSION FOR LATIN AMERICA  
AND UNISPACE 82

I. INTRODUCTION

1. The Second United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE 82), held in Vienna, Austria, from 9-21 August 1982, came after 14 years of intensive development of space technology and its applications since the first United Nations Conference held in 1968. The increasing use of space for scientific experimentation and technological applications over this period necessitated a fresh look by the global community at the possibilities, potentials and implications of these developments.

2. The objectives of UNISPACE 82 were different, therefore, from those of the first Outer Space Conference, which did a great deal to promote awareness of the potential of man's use of outer space. UNISPACE 82 was convened because it was decided that it was time to take appropriate measures for the wider and fuller utilization of space technology. In order to do this the objectives established were:

(i) to "examine how the United Nations system could play a more effective role in stimulating the peaceful uses of outer space so as to benefit all countries but especially the developing ones, - and how the United Nations can promote and co-ordinate international efforts to this end";

(ii) to "allow wider participation of Member States in the activities of the United Nations in outer space matters and assess the new developments, to exchange information and experiences on their present and potential impact, and to assess the adequacy and effectiveness of institutional and co-operative means of realizing the benefits of space technology".<sup>1/</sup>

3. As part of the preparations for UNISPACE 82, six seminars were organized to assist in fostering as wide a participation as possible on the part of Member States. Two of these seminars were held in Latin America. The first seminar, "Remote sensing Applications and Satellite Communications for Education and Development", was held in Buenos Aires from 7-14 April 1981 and the second, on "Space Applications in Preparation for UNISPACE 82", was held in Quito from 5-9 April 1982.

4. Following the UNISPACE 82 conference, the thirty-seventh session of the General Assembly in resolution 37/90 on the Second United Nations Conference on the Exploration and Peaceful Uses of Outer Space, endorsed the recommendations of the Conference.

II. UNISPACE 82 RECOMMENDATIONS ADDRESSED TO THE ECONOMIC COMMISSION FOR LATIN AMERICA

5. In endorsing the recommendations of UNISPACE 82, the General Assembly specifically drew attention to "the recommendations of the Conference regarding the establishment and strengthening of regional mechanisms of co-operation and their promotion and creation through the United Nations system;"
6. The recommendation in UNISPACE 82 to this effect was as follows: "It is urgent to encourage countries to set up appropriate regional mechanisms designed to achieve international co-operation among them for the purpose of joint preparation, implementation and financing of space technology, research and application projects. The United Nations should promote initiatives aimed at establishing regional mechanisms and should encourage regional economic bodies to carry out studies that will facilitate their establishment".<sup>2/</sup>
7. At the regional seminar held in Quito in April 1982, the participants agreed, following a presentation made at the seminar by the Government of Chile, that ECLA should, with the assistance of the United Nations, carry out with all possible speed a technical and feasibility study for the establishment of a Latin American Space Agency.
8. On other matters, the Quito seminar also recommended that:
  - (a) the United Nations and its Economic Commission for Latin America should technically and financially support projects aimed at establishing receiving stations for the region and in particular for the Ecuadorian project which envisages the conversion of the satellite tracking station at Cotopaxi into a remote sensing data receiving station and processing centre;
  - (b) the United Nations and ECLA should establish a technical information centre for remote sensing for Latin America, as proposed by the Society of Latin American Specialists in Remote Sensing (SELPER). This centre should be jointly organized and administered by the Inter-American Photointerpretation Centre (CIAF) and the Inter-American Institute of Agricultural Co-operation (IICA) under the aegis of the United Nations and ECLA;
  - (c) the United Nations and ECLA should undertake studies for the creation of a Latin American council on remote sensing, also proposed by SELPER;
  - (d) the United Nations and ECLA should support and increase the technical and economic capacity of existing education and training centres (including universities in the region) which can be used to provide necessary specialized categories of training for the citizens

/of Latin

of Latin America and the Caribbean, because the scarcity of appropriate specialized technicians in the region has seriously hampered the transfer as well as the application of remote sensing technology in the region.3/

### III. ACTIONS TAKEN BY ECLA TO IMPLEMENT THE RECOMMENDATIONS MADE AT UNISPACE 82

9. In responding to the recommendations made to it, the ECLA Secretariat wishes to clarify the limits of its possibilities for working on this topic and the general limitations of ECLA as an organization. In the first place, ECLA has no technical expertise in outer space matters, and secondly it is not a financing institution but part of the United Nations Secretariat. It is not possible, therefore, for ECLA to offer technical or financial support for projects or institutions related to space activities. It cannot directly carry out the recommendations made to this end but can, of course, help to transmit the recommendations to more appropriate institutions. In this respect, on the specific recommendations for the establishment of a technical centre for remote sensing, ECLA has begun consultations with the Food and Agricultural Organization (FAO) on the best means of response. Logically, it would appear that FAO would be a more appropriate agency to take the initiative in this area, as it has already developed a remote sensing programme of some magnitude. ECLA is, however, willing to collaborate in any way it usefully can in the establishment of such a technical centre other than provide financial and technical assistance.

10. ECLA does, however, have considerable resources for assisting in the creation of regional institutions and considerable experience in so doing. The bulk of the discussion in this part of the paper will, therefore, concentrate on how ECLA could assist in the creation of a regional mechanism for outer space questions and on some preliminary ideas regarding study of the feasibility of alternative formulas for such a mechanism. In preparing this discussion it has been assumed that the recommendations for the study of the creation of a Latin American council on remote sensing and for increased support for training can be followed up under the broader question of the Latin American Space Agency.

11. ECLA has concentrated its activities on the evaluation of a technical and feasibility study for the establishment of a Latin American Space Agency. Conversations have been held with the Outer Space Affairs Division of the United Nations and the Chilean mission to the United Nations, as well as with the Department of Technical Co-operation for Development. In these conversations it was agreed

/that ECLA

that ECLA could convene, if requested to do so by the governments of the region, a meeting of experts from the respective government departments responsible for outer space. Such a meeting could make a scientific and technical evaluation of the specific needs and ways for developing collaboration among countries through specific projects which would be managed by a regional mechanism of some kind.

12. Such a meeting could be held at ECLA headquarters in Santiago, Chile, later in 1983.

13. Further, it has emerged from these discussions that the general opinion is that a lengthy evaluation of the feasibility of establishing a regional mechanism is not required at this stage if there is already sufficient support among governments to further explore the proposal made at Quito. An expert meeting on the scientific, political and economic aspects of the issue would seem to be a more effective means of assessing the degree of interest and potential commitments of the Latin American countries now and to remit additional instructions to ECLA or other institutions to evaluate the idea further.

14. It would be expected that invitations to attend the expert meeting would be sent to all interested agencies of the United Nations, the appropriate institutions of the Inter-American system, the European Space Agency (ESA), SELPER and other organizations of ECLA members.

15. A more difficult question is the proposed form for the regional mechanism. It is perhaps premature to suggest specific attributes for a mechanism which has yet to be agreed upon, but the bare idea of the mechanisms must be given some flesh if any meaningful discussion is to take place.

16. The recommendations made at Quito, proposing a study of the feasibility of a Latin American Space Agency, imply an inter-governmental organization similar to the model provided by the European Space Agency, (see Annex 2).

17. The European Space Agency is an inter-governmental organization set up as a result of the signature of a convention which has as its purpose the promotion, for exclusively peaceful purposes, of co-operation among European States in space research, technology and applications. In 1982, the Agency had 11 Member States, two Associate Member States, and a special agreement with one non-European State. There is close co-operation in several programmes with the National Aeronautics and Space Administration (NASA) of the United States.

18. The ESA budget is financed with contributions, based on national income, for the general budget, as well as voluntary contributions to optional programmes.

19. The ESA programme includes satellite development, both for scientific and applied purposes, for communications, meteorology and remote sensing, and space transportation development.



20. While in the case of ESA all the Member States are developed countries with substantial technological and industrial capacity, the basic principle of pooling resources to achieve otherwise unattainable objectives could be applied in Latin America.

21. The actual dimensions of a Latin American Space Agency as a regional mechanism for co-operation in space matters cannot be defined here or even by ECLA. To proceed further ECLA requires more instructions.

22. Such instructions could come directly from governments or as already suggested through the expert meeting should it be decided to hold one.

#### Notes

1/ United Nations, Report of the Second United Nations Conference on the Exploration and Peaceful Uses of Outer Space, Vienna, 9-21 August 1982, A/CONF.101/10.

2/ A/CONF.101/10, para. 353.

3/ The complete set of recommendations is given in Annex 1.

Annex 1

RECOMMENDATIONS OF THE REGIONAL PREPARATORY SEMINARS HELD  
IN LATIN AMERICA FOR THE SECOND UNITED NATIONS  
CONFERENCE ON THE EXPLORATION AND PEACEFUL  
USES OF OUTER SPACE (UNISPACE 82) 1/

II. RECOMMENDATIONS OF THE UNITED NATIONS REGIONAL SEMINAR ON  
REMOTE SENSING APPLICATIONS AND SATELLITE COMMUNICATIONS  
FOR EDUCATION AND DEVELOPMENT (Buenos Aires, Argentina,  
7-14 April 1981)

A. Remote sensing

15. During the current seminar for the Latin American region, the scope, flexibility and use of remote sensing in natural resources surveys were made clear. The following recommendations were made:

(a) It was recognized that it would be useful to concentrate efforts on utilizing all the existing arrangements for technical co-operation, in particular those for technical co-operation among developing countries, with a view to better exploiting the region's available resources.

(b) Research work should be co-ordinated, methodologies developed and more training provided, including training for the region's professionals.

(c) In the interests of more efficient remote sensing systems it is necessary to intensify the co-ordination mechanisms in order to make orbits, frequencies, formats, resolutions and the like compatible and complementary.

(d) It was recognized that there is a need to establish in Latin America remote sensing training centres in the following fields:

- (i) Data collection, processing and dissemination;
- (ii) Utilization of remote sensing data.

(e) Participants took note of the importance of establishing a Latin American commission to put forward proposals for the creation of a remote sensing system for Latin America. It is therefore necessary, for the time being, to ensure that present and future satellite systems are continued by the countries providing such technologies.

(f) Recognition was given to the need to pool efforts with a view to establishing a third LANDSAT receiving and processing station to cover the area of Latin America not now covered by existing stations.

/(g) The

(g) The Working Group took note of the facilities available at the various United Nations international centres and other international, regional and national centres and of the programmes being carried out at such centres. It recognized the effective work done by them and recommended that their future activities should be strengthened.

#### B. Communications

16. The following recommendations were made:

(a) Information on satellite education projects implemented in Latin America should be updated and studies on those projects should be made in greater depth, so that the region's future needs can be identified and new space technologies made accessible.

(b) Space research centres and communications centres should be co-ordinated with educational and other related institutions, so that they can pool their efforts for the development of technologies suited to the needs of the region.

(c) Future space technologies should be compatible with the systems now in use in Latin America.

(d) The organizations of the United Nations system should provide technical assistance in formulating methodologies and education programmes.

(e) It should be borne in mind that modern space technology facilities should benefit all aspects of development in the social, educational, cultural, economic, scientific, technical, health and other sectors. Co-ordination between the various interested agencies of the State and of the relevant institutions should be promoted.

### III. RECOMMENDATIONS OF THE UNITED NATIONS REGIONAL SEMINAR ON SPACE APPLICATIONS IN PREPARATION FOR UNISPACE 82 (Quito, Ecuador, 5-9 April 1982)

#### A. Remote sensing

32. Member States of the Economic Commission for Latin America (ECLA). The seminar participants carefully examined the status of remote sensing technology in the world and in particular in Latin America and, after a careful consideration of the strength of trained manpower in the several areas of application of this technology in the region, agreed and recommended as follows:

(a) That Member States should analyse their national long- and short-term needs, including the type of manpower, areas of specialization and the levels of training essential to meet these needs. It is apparent that training programmes should be planned and organized by Member States using the assistance of the United Nations as appropriate in order to provide necessary exposure and training for decision makers, managers and planners, scientists and technologists as well as for technicians.

/(b) That

(b) That Member States should be active participants in the development of remote sensing technology within the region and should encourage and promote active collaboration not only between individual countries and the industrialized world but also among themselves.

(c) That Member States should establish appropriate mechanisms that will assist them to disseminate in their respective countries the knowledge as well as the techniques of applications of this technology.

(d) That Member States should avoid the "technical enchantment" that seems to pervade the commercial spread of remote sensing technology and should use their meagre resources judiciously when taking decisions on the acquisition of equipment and in making necessary investments in all aspects of the technology.

(e) That Member States should consider the application of remote sensing technology as an integral part of the development process; thus it is essential that decisions should be made at the appropriate stage in which to initiate and incorporate this tool in the development process.

33. United Nations. The participants agreed that:

(a) The United Nations should assume the leading role in the development and transfer of remote sensing technology to the developing countries. The United Nations has to assume this responsibility in order to promote, without bias, international co-operation in the exploration and peaceful uses of outer space.

(b) Because many countries do not by themselves have direct access to the data that have been acquired over their territories, it is imperative that the United Nations establish a mechanism that will grant these countries access to the data on their territories, thus minimizing the exploitation that currently pervades the utilization and application of the technology in the developing countries as well as demystifying the artificial market that has been created by commercial interests.

(c) That the United Nations should financially support the establishment of new receiving stations in order to guarantee the optimum utilization of this technology for the betterment of all mankind since many developing countries are currently not covered by satellite receiving stations for remote sensing data acquisition. This lack of coverage clearly forestalls the accessibility of these areas of the world to data that could be acquired over their territory. The problem is further magnified by the fact that most space systems that are now in operation, currently planned or envisaged for the future may not have any on-board recording systems.

34. In this connexion the seminar participants reviewed the existing infrastructure for the reception of remote sensing data in Latin America and, having noted that a large portion of Central and South America, including the Caribbean, is not covered by the existing stations in the region, strongly recommended that the United Nations and its Economic

Commission for Latin America should technically and financially support projects aimed at establishing receiving stations for the region and in particular for the Ecuadorian project which envisages the conversion of the satellite tracking station at Cotopaxi into a remote sensing data receiving station and processing centre.

35. The participants recommended:

(a) That the United Nations and ECLA should establish a technical information centre for remote sensing for Latin America as proposed by the Society of Latin American Specialists in Remote Sensing (SELPER). This centre should be jointly organized and administered by the Inter-American Photointerpretation Centre (CIAF) and the Inter-American Institute of Agricultural Co-operation (IICA) under the aegis of the United Nations and ECLA.

(b) That the United Nations and ECLA should undertake studies for the creation of a Latin American council on remote sensing also proposed by SELPER.

(c) That the United Nations and ECLA should support and increase the technical and economic capacity of existing education and training centres, including universities in the region, which can be used to provide necessary specialized categories of training for the citizens of Latin America and the Caribbean because the scarcity of appropriate specialized technicians in the region has seriously hampered the transfer, as well as the application of remote sensing technology in the region.

(d) That fellowship programmes be established to support candidates that will participate in the proposed training programmes in order to support educational institutions in carrying out their tasks.

(e) There is a need to institutionalize national co-ordination and training in each country in order to accelerate the development of indigenous capability within the region because the level of remote sensing technology in the region is very diverse and the standard of competence varies considerably from one country to another.

(f) A number of developing countries that are currently investing in remote sensing hard and software systems should make use of the technical advisory services of the United Nations Programme on Space Applications in order to correct, forestall or minimize such problems since the affected developing countries are not fully conscious of the different technical specifications for data transmission, acquisition and processing and the array of equipment that is available to carry out these tasks today.

(g) The United Nations should establish some mechanism in order to ensure not only the compatibility and complementarity of these systems, but also to facilitate the participation of the developing

/countries with

countries with less technical know-how and economic capability in the development and optimum utilization of this technology.

36. The participants noted that, to date, activities of the United Nations agencies are limited to application and the transfer of technology, with little effort being made to assist the developing countries in the evolution of basic research concepts to solve their own specialized problems, and agreed that in order to ensure that developing countries can actively participate in this technology, it is important that an arm of the United Nations system, such as the Outer Space Affairs Division, and in particular its Space Applications Programme, be mandated to undertake research as may be necessary and of interest in the area of remote sensing for the benefit of Member States in the developing countries. On the other hand, the agencies, while carrying out their operational programmes, would need to provide Member States with an updated inventory of the type of services they are capable of offering these countries.

#### B. Communications

37. Having noted the importance and capability as well as the influence that can be generated through the introduction of direct broadcasting by satellite, the participants recommended:

(a) The establishment of necessary legal guidelines under which such transmission can take place. This is essential in order to safeguard the sovereignty as well as the cultural values of Member States. Such a legal guideline should establish the necessary basis of agreement between the transmitting State(s) and the State(s) to which such broadcasts are directed. In the event that direct television transmission by satellite is being beamed at a State without its prior consent, the transmitting State will be held internationally responsible for such an act. International organizations and societies carrying out similar acts will equally be similarly liable.

(b) That ECLA Member States should consider the Plenipotentiary Conference of the International Telecommunication Union (ITU) (Nairobi, September 1982), the National Administrative Conference of Broadcasting by Satellite (region 2, to be held in 1983) and the sessions of the United Nations Committee on the Peaceful Uses of Outer Space as appropriate forums where these legal guidelines should be established.

38. The participants recommended:

(a) That the United Nations should provide the necessary mechanism for alerting Member States to the availability of the services of ITU and should encourage them to take full advantage of these services, especially for the purpose of optimizing their domestic and international telecommunication services, be it terrestrial or by satellite, since (i) Member States in Latin America and the Caribbean wish to improve their present telecommunication facilities with a view to

/facilitating adequate

facilitating adequate flow of information among their respective countries; (ii) some of these countries in the region do not have the necessary technical and financial resources to accomplish these tasks; and (iii) ITU has acquired vast experience in the field of telecommunications which should be made available to all Member States in the region.

(b) That because of the importance of rural telecommunication in national development, the United Nations should encourage Member States in the region to develop their rural telecommunication facilities in parallel with other phases of rural development since (i) the economies of most countries of Latin America and the Caribbean are based on either agriculture or mining; (ii) the gross national product of these countries is largely derived from these activities; (iii) these operations take place in rural areas; (iv) infrastructural developments and rural telecommunications are largely substandard when compared with facilities in urban communities; (v) the inability of Member States to develop functional rural telecommunications has created total rural neglect which is contributing to the detriment of the national economy as a whole.

(c) That Member States that are currently or are planning to implement tele-education programmes by satellite should acquaint themselves with the necessary planning mechanisms in order to ensure that the goals of the broadcast system are achieved in an efficient manner because programmes in satellite communications for education purposes are still experimental and limited in nature, that there is a high degree of commercial interest in the application of this technology, and that when adequately planned, educational programmes via telecommunication channels can yield positive results in the social and economic development of a State.

(d) That the United Nations, through its Committee on the Peaceful Uses of Outer Space, as well as ITU, should note the observations made below and take all necessary emergency measures to correct the imbalances indicated thereafter in order to promote global peace: (i) the United Nations and its specialized agencies place a secondary priority on the flow of information, especially by way of satellite communications; (ii) this flow of information is vital to the development of the countries of the Caribbean and Latin American region, especially in the areas of education and community welfare; (iii) facilities exist globally for the international exchange of information by satellite; (iv) in the development of a new world information and communication order, there is a need to use this technology in a manner that will not aggravate but will reduce the imbalance in the flow of information between developed and developing countries; (v) the industrialized countries have a distinct advantage in the ownership and utilization of the new technology, and (vi) high tariffs are an obstacle to the dissemination and flow of information within countries and among nations of the region.

/C. Others

C. Others

39. Militarization of outer space. After a careful consideration of the importance of the exploration and peaceful uses of outer space and the applications of space technology for the benefit of mankind, the participants expressed their concern about the danger being created by the militarization of outer space and recommended that the UNISPACE 82 Conference should implore the General Assembly of the United Nations to find all means of eliminating such dangers.

40. The geostationary orbit. The participants agreed that:

(a) The geostationary orbit is a limited natural resource which is in danger of saturation because of its present utilization, based on the principle of "first come, first served". The participants also observed, as stated in background document A/CONF.101/BP/7, that

"due to the limitations with respect to the placing of satellites, these are not uniformly distributed throughout the geostationary orbit, and it is not probably that they will be in future. In particular, some portions of the orbit which serve large areas with heavy communications traffic will become congested long before the entire orbit is saturated."

(b) The equitable utilization of the geostationary orbit is of interest as well as of major concern to all States and that it is therefore essential that the orbit be preserved for use not only to support the interests of the industrialized countries that are currently exploiting this orbit but, more significantly, for the developing countries in the future, since their current scientific and technological capacity limits their access to this orbit on equal terms with technologically more advanced countries. Thus, technical and legal regulations governing the equitable use of this valuable resource by all countries as provided for in General Assembly resolution 2222 (XXI) - the Space Treaty - will have to emerge.

41. Latin American space agency. Following a presentation made at this seminar by the Government of Chile for the establishment of a Latin American space agency, the participants discussed and evaluated the technical, scientific and economic merits of the proposal and concluded that an organization of this kind would be useful and important for the technological and economic advancement of Latin America because it would, among other things, permit the channelling of co-operation among countries in the region and subsequently encourage the optimization of the development of space science and technology as well as enhance the economic and social progress of all the Member States. Accordingly, the participants agreed that ECLA should, with the assistance of the United Nations, carry out with all possible speed the technical and institutional feasibility study. The participants also agreed that this recommendation be sent to the ECLA Executive Secretary as well as to the United Nations Outer Space Affairs Division and UNISPACE 82 in advance.

Notes

1/ These recommendations are taken from document A/CONF.101/BP/13. The paragraph numbers refer to that document.



Annex 2

EUROPEAN SPACE AGENCY (ESA)

- Director-General: Erik Quistgaard
- Address: 8-10 Rue Mario Nikis  
F.7573, Paris CEDEXIS
- History: Founded on 14 June 1962, on signature of a convention which came into force on 20 March 1964. Preceded by European Preparatory Commission for Space Research (COPERS), set up at conference at Meyrin, Switzerland, 1 December 1960. Operating as ESA since 31 May 1975, on signature of new convention.
- Objectives: To promote collaboration among European States in space research and technology, exclusively for peaceful purposes, by elaborating and implementing a European space programme; to seek to co-ordinate European and national programmes; to contribute to harmonization of space programmes for peaceful purposes of the Member States.
- Structure: Council consisting of two delegates from each Member State; Programme Boards, Administrative and Finance Committees, Science Programme Committee, Industrial Policy Committee.
- Finance: Scaled contributions from Member States.
- Activities: Development and launching of satellites in the telecommunications, meteorological and aeronautical fields. Designing and developing Spacelab Unit to be launched by US-NASA. Developing a European Launcher "Ariane".
- Members: Belgium, Denmark, France, Federal Republic of Germany, Ireland, Italy, Netherlands, Spain, Sweden, Switzerland and United Kingdom.  
Observers: Canada, Austria and Norway.

