

FIRST MEETING OF THE PERMANENT
CONSULTATIVE COMMITTEE PCC.III:
RADIOCOMMUNICATIONS
August 22-26, 1994
Ottawa, Canada

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FINAL REPORT

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I. INTRODUCTION

The First Meeting of Permanent Consultative Committee III: Radio Communications (PCC.III) of the Inter-American Telecommunications Commission (CITEL), was held in Ottawa, Canada, from August 22 to 26, 1994, at the Government Conference Center.

Participants in the meeting:

~~CITEL member countries:~~ Antigua and Barbuda, Argentina, the Bahamas, Barbados, Brazil, Canada, Chile, Colombia, Costa Rica, Dominica, Grenada, Mexico, Paraguay, Peru, Suriname, the United States, Uruguay, and Venezuela.

~~Associate Members:~~ Argentina: Telefonica Argentina and Compañía Ericsson; Brazil: Ericsson Telecomacoos; Canada: Northern Telecom and Teleglobe; Mexico: Teleindustria Ericsson and Motorola of Mexico; United States: COMSAT Corporation and Starsys Global Positioning Inc.; Venezuela: Ericsson and Telecomunicaciones IMPSAT.

~~International and regional organizations:~~ International Telecommunications Union (UIT) and Caribbean Telecommunications Union (UTC).

II. BACKGROUND

Permanent Consultative Committee III: Radio Communications (PCC.III) was established by the First Regular Assembly of CITEL at the Ministerial Level (February 21-25, 1994, Montevideo, Uruguay), which designated Mexico as its headquarters in resolution CITEL/RES.8 (I-94): Establishment of the Committee on Coordination, the Permanent Consultative Committees, and their Mandates.

On June 20, 1994, the government of Mexico appointed Ing. Luis Manuel Brown Hernandez, Deputy Director for International Affairs of Mexico's Secretariat for Communications and Transportation, to chair PCC.III.

III. CONVOCAATION

The Chairman of the Permanent Executive Committee of CITEL (COM/CITEL) and Vice-President of the Telecommunications Administration of Uruguay, Mr. Juan de la Cruz Silveira Zavala, in a note of July 19, 1994, asked the OAS General Secretariat to convene the First Meeting of PCC.III for August 22 to 26, 1994, based on prior consultations with the Chairman of PCC.III, the government of Canada, and the General Secretariat.

On July 19, 1994 the OAS Secretary General invited the member countries, permanent observers to the OAS, and international and regional organization interested in CITEL's activities to attend the First Meeting of PCC.III.

IV. AGENDA

The following agenda was adopted for the First Meeting of PCC.III at its first working session:

1. Approval of the agenda.
2. Opening statements.
3. Appointment of a group to draft the Final Report.
4. Consideration of resolution CITEL/RES.8 (I-94): Mandates for Permanent Consultative Committee III: Radio Communications.

5. Consideration of resolution CITEL/RES.10 (I-94) concerning CITEL's action plan for the 1994-1998 period.
6. Comments on PCC.III's methods of work.
7. Comments on encouragement of participation by Associate Members.
8. Comments on possible changes in the Statute and Rules of Procedure of CITEL, with a view to carrying out suggestions of COM/CITEL. These documents were not distributed during the meeting because of their size.
9. Action on the following points, among others, taking into account continuity in activities undertaken by PCC.III:
 - 9.1 Regional data base on utilization of the radio spectrum, in order to promote its orderly, shared use, including frequency sharing.
 - 9.2 Low orbit satellites, under 1 GHz.
 - 9.3 Mobile service satellites and low orbit satellites above 1 GHz, including regional systems for satellite mobile service in 1.5/1.6 GHz.
 - 9.4 System of geostationary orbiting satellites.
 - 9.5 Very Small Aperture Terminals (VSATs) and similar ones.
 - 9.6 Personal communication systems and related ones.
 - 9.7 Prospects for roaming cellular systems in the Americas.
 - 9.8 Putting into practice the World Maritime Aid and Safety System (SMSSM), including regional systems for satellite mobile service on 1.5/1.6 GHz that are involved in it.
 - 9.9 Amateur radio service.
10. Comments on the organization of seminars on the introduction and implementation of new technologies.
11. Reports on the results on the PCC.III seminar on applications of low orbit satellites operating under 1 GHz, and the PCC.I/PCC.III seminar on personal communication service.
12. Review of information concerning the results of the voluntary group of experts on simplification of the rules of the radio regulations, and the forthcoming World Radio Conference in 1995.
13. Human resources.
14. Agenda, site, and date of the Second Meeting of PCC.III.
15. Other related matters.
16. Approval of the meeting's report.

V. PARTICIPANTS

The list of participants in the meeting is contained in Appendix A of this report.

VI. DOCUMENTS

The list of documents considered during the PCC.III sessions appears as Appendix B of this report.

VII. OFFICERS OF THE MEETING

Chairman of PCC.III:	Mr. Luis M. Brown Hernandez, Mexico
Chairman of the Final Report	Mr. Jose J. Hernandez G., Mexico
Drafting Group:	
Secretary:	Mr. Roberto Blois Montes de Souza, Executive Secretary of CITEL, OAS

VIII. WORK SUMMARY

1. Inaugural session

On Monday, August 22, at 10:30 a.m., in the Government Conference Center in Ottawa, there was a joint inaugural session for the First Meeting of PCC.III along with CITEL's PCC.I: Public Telecommunications Services, and PCC.II: Radio Broadcasting, as well as seminars on personal telecommunications systems, signaling systems seven, digital radio broadcasting, and low orbit satellites under 1 GHz.

The ceremony was presided over by Mr. Michael Binder, Vice-Minister for Technology, Telecommunications Spectrum, Industry Canada.

The chairmen of the three committees and the Executive Secretary of CITEL then spoke.

2. First Working Session

Date: August 22, 1994.

Time: 11:30 a.m.

Chairman: Mr. Luis Manuel Brown Hernandez (Mexico)

Participants: ~~Member countries of CITEL:~~ Antigua and Barbuda, Argentina, the Bahamas, Barbados, Brazil, Canada, Chile, Colombia, Costa Rica, Dominica, Grenada, Mexico, Paraguay, Peru, Suriname, the United States, Uruguay, and Venezuela.

Other participants were Associate Members, Permanent Observers to the OAS, and observers from international and regional organizations.

A. Approval of the agenda (Point 1 of the agenda)

The Chairman referred to the informal coordination meeting of the heads of delegation and submitted to the Committee document PCC.III-02/94 rev.1, which has the draft agenda. It was approved without comment.

B. Opening statements (Point 2 of the agenda)

The Chairman reported that points 9.7 and 9.9 of the agenda will be considered at the end of the morning session on Tuesday the 23rd, following the seminar on applications for low orbit satellites under 1 GHz. He announced his intention to establish two Working Groups to consider the documents presented on these subjects and report back to the Committee, in order to facilitate its work.

C. Consideration of resolution CITEL.RES.8 (I-94): Mandates for Permanent Consultative Committee III: Radio Communications (Point 4 of the agenda)

The Chairman called attention to resolution 8, presented in document PCC.III-12/94. He noted that the Committee's mandate is found in operative point 1.3 of that resolution.

D. Consideration of resolution CITEL/RES.10 (I-94) concerning CITEL's plan of action for the 1994-1998 period (Point 5 of the agenda)

The Chairman noted that in light of CITEL's plan of action contained in resolution 10 (published as document PCC.III-12/94), he has drawn up a proposed work plan for the Committee for 1994-1996 (published during the meeting as document PCC.III-27/94). He

stressed that this plan offers flexibility for updating to include seminars, new topics of study, and Working Groups. Finally, he encouraged participants to study the document and make any comments they wish.

E. Comments on PCC.III's methods of work

The Chairman commented on the standards governing PCC.III's methods of work, which are contained in Article 93 of CITELE's Rules of Procedure. There were no comments. He said PCC.III will operate under those guidelines, which permit the necessary flexibility.

Before closing the session, the Chairman announced his intention to deal with points 9.3, 9.4, 9.5, and 9.8 of the agenda at the afternoon session.

There being no further business, the session ended at 1:10 p.m.

3. Second working session

Date: August 22, 1994

Time: 2 p.m.

Chairman: Mr. Luis M. Brown Hernandez (Mexico)

Participants: ~~Member countries of CITELE:~~ Antigua and Barbuda, Argentina, the Bahamas, Barbados, Brazil, Canada, Chile, Colombia, Costa Rica, Dominica, Grenada, Mexico, Paraguay, Peru, Suriname, the United States, Uruguay, and Venezuela.

Other participants were associated members, Permanent Observers to the OAS, and observers from international and regional organizations.

The following were the points discussed and decisions taken:

A. Appointment of a group to draft the Final Report (Point 3 of the agenda)

The Chairman referred to the informal coordination meeting of heads of delegation and proposed that the group consist of Mexico, Canada, the United States, and a second Spanish-speaking country. Taking into account a proposal by the representatives of Uruguay and Antigua and Barbuda, the drafting group was constituted as follows:

Chairman: Mr. Jose J. Hernandez G., Mexico

Members: Mr. Bruce Gracie, Canada

Mr. Henry Morris, Shillingford, Dominica

Mrs. Cecily Holiday, United States

Mr. Hector Bude, Uruguay

The group was reminded that in accordance with procedures applied recently, the report will consist basically of the summary minutes of the sessions, and the resolutions and recommendations adopted.

B. Mobile service satellites and low orbit satellites above 1 GHz (Point 9.3 of the agenda)

The representative of the United States presented document PCC.III 20/94, which contains information on activities in his country in this field. He also gave some details of the work undertaken by groups of the ITU. The representative of Canada announced that he had

presented a paper to the Secretariat on activities in his country with regard to the use of VSATs, which notes the use of bands above 1 GHz. The Chairman proposed that the discussion be postponed to allow time for translation and distribution of the documents.

C. Very Small Aperture Terminals (VSATs) and similar ones (Point 9.5 of the agenda)

The Chairman said that it will be necessary for the Working Group on this topic to meet again during this session. He asked the representative of Venezuela to coordinate it, in view of the excellent work so far. The representative of the United States agreed, and proposed that the report done by Venezuela be transmitted to COM/CITEL with the endorsement of PCC.III as a useful undertaking, although it needs to be updated.

The representative of the United States presented documents PCC.III-14/94 and PCC.III-23/94, and gave some details from document PCC.III-22/94, which will be published. The representative of Canada referred to his document PCC.III-29/94, which will also be published.

The Chairman asked the representative of Venezuela to call the group together to consider the foregoing documents and report back to the Committee on Thursday. The representatives of Argentina, Brazil, Canada, the United States and Mexico were invited to cooperate with the Coordinator of the group.

D. Putting into practice the World Maritime Aid and Safety System (SMSSM), including regional systems for satellite mobile service on 1.5/1.6 GHz that are involved in it (Point 9.8 of the agenda)

The representative of the United States mentioned that his delegation's document PCC.III-17/94, not yet published, deals with this matter. He invited attention to the first three pages. He noted that the International Maritime Organization has to set the guidelines, and that INMARSAT and INTELSAT can share these bands. Finally, he suggested that CITEL continue to study the subject.

The Chairman asked the representatives of Argentina, Brazil, Canada, and Mexico to meet with the representative of the United States to review the document before it is discussed by the Committee. He said the matter would be dealt with in the afternoon of Wednesday the 24th.

The representative of Antigua and Barbuda reported that the Secretariat is processing a document that refers to resolution 7 of the World Conference on Development of Telecommunications (CMDT) of the ITU, which was held in Buenos Aires in March 1994. He asked that the minutes of the meeting reflect that the countries in CITEL will carry out that resolution. The Chairman said it is necessary for the Committee to have the document in order to take any decision on a recommendation or a notation in the minutes.

E. System of geostationary orbiting satellites (Point 9.4 of the agenda)

The Chairman proposed dealing with this topic on Wednesday the 24th in the afternoon.

He also announced his intention to take up points 9.2, 9.7, and 9.9 of the agenda on Tuesday between 11 a.m. and noon, after the seminar.

The session was adjourned at 5:30 p.m.

4. Third working session

Date: August 23, 1994.

Time: 11:50 a.m.

Chairman: Mr. Luis Manuel Brown Hernandez (Mexico)

Participants: ~~Member countries of CITELE~~: Antigua and Barbuda, Argentina, the Bahamas, Barbados, Brazil, Canada, Chile, Colombia, Costa Rica, Dominica, Grenada, Mexico, Paraguay, Peru, Suriname, the United States, Uruguay, and Venezuela.

Other participants were Associate Members, Permanent Observers to the OAS, and observers from international and regional organizations.

A. Amateur radio service (Point 9.9 of the agenda)

The Executive Secretary presented document PCC.III-11/94, which contains the Inter-American Agreement on Amateur Radio Service "Lima Agreement," with a change in Article 7, as well as information on countries that have signed it, ratified it, or adhered to it. Mr. Italo Mazzei (Chile), Coordinator of the ad hoc group on establishment of an international amateur radio permit, presented document PCC.III/-04/94, which contains a draft Agreement for the Adoption of an International Amateur Radio Permit, a joint proposal of the group and Region 2 of the International Amateur Radio Union. The representative of the United States presented document PCC.III-19/94, which contains his government's comments on the proposed permit.

After some comments emphasizing that the agreement must ensure continued adherence to the Lima Agreement and contain the necessary protocolary clauses, the Chairman asked the Coordinator of the ad hoc group to meet with the representatives of Antigua and Barbuda, Argentina, Ecuador, and the United States to review the documents presented and present a report at the Committee's next session.

B. Other matters (Point 15 of the agenda)

The representative of the United States said that since the International Telecommunications Union has planned a World Radio Conference every two years, CITELE should ensure continuous treatment of the subject. The Chairman noted that his work plan and calendar in document PCC.III-27/94 contemplate this situation, providing for continuity of the Working Group responsible for preparation of the ITU World Radio Conferences. He added that this matter will be discussed during the current meeting.

The session was adjourned at 12:15 p.m.

5. Fourth working session

Date: August 24, 1994.

Time: 3 p.m.

Chairman: Mr. Luis Manuel Brown Hernandez (Mexico)

Participants: ~~Member countries of CITELE~~: Antigua and Barbuda, Argentina, the Bahamas, Barbados, Brazil, Canada, Chile, Colombia, Costa Rica, Dominica, Grenada,

Mexico, Paraguay, Peru, Suriname, the United States, Uruguay, and Venezuela.

Other participants were associated members, Permanent Observers to the OAS, and observers from international and regional organizations.

At the start of the session, the Chairman thanked Dr. Sabah Towajj (Canada) for inviting the Committee to take part in the seminar on personal communication systems held on the previous afternoon. He said that associate member Teleindustria Ericsson of Mexico will make a presentation during this session because he was not able to do it during the seminar.

A. Low orbit satellites, under 1 GHz (Point 9.2 of the agenda)

The Chairman recalled that during the seminar on low orbit satellites (LEOS) that operate under 1 GHz Mrs. Cecily Holiday (United States), Coordinator of the Working Group on this subject, was asked to serve as rapporteur. Her report will become part of the report of this meeting.

The representative of the United States presented document PCC.III-26/94 which covers measures contained in resolution 46 of the ITU's CAMR-92, on mobile satellite service on bands under 1 GHz, with emphasis on calculations for coordination. The representative of Canada presented document PCC.III-43/94 (document PCC.III-44/94 in English), which notes the limited spectrum of the LEOS and urges CITELE members to consider modifying the bands with a view to the 1995 World Radio Conference. The representative of Mexico presented document PCC.III-32/94 on prospects for the use of these satellites in developing countries, noting the advantages of these systems. The representative of the United States presented document PCC.III-18/94, in which he proposed assignments for the Working Group on the mentioned service. Finally, the representative of Canada reported that he had given the Secretariat a document (which will be published with the number PCC.III-30/94) concerning the activities of the ITU Conference Preparatory Meeting (RPC/CPM), which deals with this point.

During an exchange of views the Coordinator of the Working Group on low orbit satellites under 1 GHz (LEOS) was asked to revise document PCC.III-18/94 to incorporate the ideas expressed, particularly a fourth point relative to Working Group 8D ITU-R. The delegations of Brazil, Canada, the United States, Mexico, Uruguay, and Venezuela were invited to assist in this task, and with the drafting of the report of the seminar on LEOS. It was also decided that the group on low orbit satellites under 1 GHz will continue its work by fax to prepare a report for the Second Meeting of PCC.III.

B. Personal communication systems and related ones (Point 9.6 of the agenda)

As announced at the start of the session, the Chairman invited the representative of Teleindustria Ericsson (Mexico) to present his contribution to the seminar on personal communication systems. Next there was a presentation of document PCS.EM-06/94, Strategic Vision of Hemispheric Integration.

The following documents were then presented: PCC.III-13/94 of the United States, PCC.III-47/94 of the United States, PCC.III-22/94 of the United States (previously presented during the seminar on personal communication systems), PCC.III-25/94 of the United States, which contains a draft recommendation on uniform provisions for the Americas, PCC.III-47/94 of Canada (unavailable) and PCC.III-31 of Mexico, which is an information document.

After some comments it was decided that the Working Group on mobile land services would meet under the coordination of Mr. Joao Carlos Albernaz (Brazil) to study these documents and prepare a report, giving special attention to the draft recommendation. The group's report is appended hereto (Annex 1).

C. Prospects for roaming cellular systems in the Americas (Point 9.7 of the agenda)

The representative of Canada presented document PCC.III-46/94 concerning the establishment of digital cellular service in his country. The representative of Mexico presented document PCC.III-35/94, which contains a draft recommendation relative to the introduction of digital technology in cellular systems and its impact on provision of services for visiting subscribers (roaming).

It was decided that Canada's document, of an informational nature, will also be considered by Mr. Albernaz's Working Group. As regards Mexico's document, in which the draft recommendation was approved, the Chairman invited delegates who had any improvements to suggest to meet with the representative of Mexico so that the proposal could be reconsidered at another session if need be.

The session was adjourned at 6:50 p.m.

6. Fifth working session

Date: August 25, 1994.

Time: 3 p.m.

Chairman: Mr. Luis Manuel Brown Hernandez (Mexico)

Participants: ~~Member countries of CITEL:~~ Antigua and Barbuda, Argentina, the Bahamas, Barbados, Brazil, Canada, Chile, Colombia, Costa Rica, Dominica, Grenada, Mexico, Paraguay, Peru, Suriname, the United States, Uruguay, and Venezuela.

Other participants were Associate Members, Permanent Observers to the OAS, and observers from international and regional organizations.

A. Comments on the organization of seminars on the introduction and implementation of new technologies (Point 10 of the agenda)

The representative of Mexico presented document PCC.III-33/94, which suggests the possibility of organizing the following seminars:

- Regulatory requirements and applicable standards for interfacing terminals in Public Telecommunications Networks.
- Regulatory requirements and applicable standards for operating radio equipment that utilizes the radio spectrum.
- Regulation and standards governing interference and electromagnetic compatibility.

The proposals were approved. It was decided that the Chairman will consult with the members to glean their suggestions for organizing the next seminar during the Second Meeting of PCC.III, which in principle is planned for mid-March 1995 in Caracas.

B. Reports on the results of the PCC.III seminar on applications of low orbit satellites operating under 1 GHz, and the PCC.I/PCC.III

seminar on personal communications service (Point 11 of the agenda)

At the invitation of the Chairman, Mrs. Cecily Holiday (United States), Coordinator of the Working Group on low orbit satellites (LEOS), presented a verbal report, of which due note was taken. After some comments, the Coordinator of the group was asked to prepare a work plan and circulate it in order to continue the group's work by mail. The Coordinator's report is appended to this report by way of information (Annex 2).

The Chairman again thanked Dr. Sabah Towajj for his invitation to participate in the seminar on personal communications systems.

C. Human resources (Point 13 of the agenda)

Mr. Sergio Vinals Padilla, Coordinator of the human resources topic for PCC.III, presented document PCC.III-34/94, which reports on activities since October 1, 1993. It refers to the Institutes in Paraguay and Chile, the activities of the Regional Training Center in Mexico and its courses, as well as communications on these courses from the Chairman of COM/CITEL, the head of the Regional Office of the ITU, and the Executive Secretary of CITEL.

The Chairman thanked Mr. Vinals Padilla for the information and underscored the importance of publicizing the courses to encourage participation in them.

D. Amateur radio service (Point 9.9 of the agenda)

Mr. Italo Mazzei (Chile), Coordinator of the ad hoc group on an international amateur radio permit, reported that his group had undertaken the assignment given in the third session and prepared a new draft agreement for an international amateur radio permit, which appears as appendix 2 of document PCC.III-04/94 rev. 1, and a revised draft resolution that appears in document PCC.III-39/94 rev. 1, which were submitted for the Committee's consideration.

As a result of the discussion, the group was asked to review the texts once again, taking into account that the draft agreement should include a prototype permit. The procedure shall be as follows:

- PCC.III directs its Chairman to present the draft agreement to the next meeting of COM/CITEL.
- PCC.III instructs the Executive Secretariat to circulate the revised draft among the members, so it can be reviewed by their legal specialists.
- PCC.III asks the Chairman of COM/CITEL to include this item in the agenda of its next meeting.

E. Very Small Aperture Terminals (VSATs) and similar ones (Point 9.5 of the agenda)

Mr. Carlos E. Pérez Roguez (Venezuela), Coordinator of the Working Group on VSATs, reported that his group reviewed the documents assigned to it and asked what procedure should be followed: Should they be attached to the group's report prepared during the Third Meeting of the PCC.III (Buenos Aires, September 27 to October 1, 1993), or should that report be revised and updated? The representative of the United States said there was agreement in the group that the report should be submitted to COM/CITEL and that it is important to distribute it to governments and corporations.

The Chairman asked the members to think about the matter and come back to it the next day.

F. Personal communication systems and related ones (Point 9.6 of the agenda)

Mr. Joao Carlos Albernaz (Brazil), Coordinator of the Working Group on mobile land services, presented document PCC.III-51/94, which contains a draft recommendation on designation of a spectrum for personal communication services in the Americas, indicating that this was the result of his group's deliberations.

After brief discussion, the document was approved subject to the introduction of small changes. The Coordinator was asked to present a revised version at the next session.

The session was adjourned at 6 p.m.

7. Sixth and Final Working Session

Date: August 26, 1994.

Time: 2 p.m.

Chairman: Mr. Luis Manuel Brown Hernandez (Mexico)

Participants: ~~Member countries of CITEL:~~ Antigua and Barbuda, Argentina, the Bahamas, Barbados, Brazil, Canada, Chile, Colombia, Costa Rica, Dominica, Grenada, Mexico, Paraguay, Peru, Suriname, the United States, Uruguay, and Venezuela.

Other participants were Associate Members, Permanent Observers to the OAS, and observers from international and regional organizations.

A. Putting into practice the World Maritime Aid and Safety System (SMSSM), including regional systems for satellite mobile service on 1.5/1.6 GHz that are involved in it (Point 9.8 of the agenda)

The representative of Dominica, referring to the statement of the representative of Antigua and Barbuda in the second session, presented document PCC.III-36/94 (which is erroneously listed as presented by the delegation of Mexico). It contains a proposal for the Plenipotentiary Conference of the ITU in Kyoto on actions of the ITU General Secretariat and administrations concerning the application of resolution 7 "Emergency communications in disaster situations" of the ITU's World Telecommunications Development Conference. The representative of Dominica added that he had presented a revised text of the document, which had not been distributed. Given the difficulties in reviewing a text not yet available, and taking into account that CITEL's ad hoc group to prepare for the Plenipotentiary Conference was meeting, the representative of Dominica was invited to present his document to that group.

The representative of the United States, referring to the decision taken in the second session with regard to document PCC.III-17/94, reported that the small group modified the draft recommendation included and presented to the Committee a new text, reflected in document PCC.III-52/94 "Regional Satellite Systems that Operate on the 1530-1544 and 1626.5-1645.5 MHz Bands in the World Maritime Aid and Safety System (SMSSM)." The draft recommendation was approved (Recommendation PCC.III/Rec 1).

B. Low orbit satellites under 1GHz (Point 9.2 of the agenda)

The Coordinator of the Working Group on low orbit satellites under 1 GHz, referring to the mandate received during the fourth session, presented document PCC.III-18/94 rev. 1, which contains the work program for her group with regard to mobile service under 1 GHz

through low orbit satellites (LEOS). The program was approved, and it was decided to circulate it among the members of CITELE (Annex 3).

The representative of Canada referred to document PCC.III-47/94 concerning wireless digital telephone systems that operate under 1 GHz in Canada, explaining their content briefly. The Committee took note of this document, which several delegations had not yet received.

C. Regional data base on utilization of the radio spectrum, in order to promote its orderly, shared use, including frequency sharing (Point 9.1 of the agenda)

The Committee took note of Uruguay's information document PCC.III-40/94 on the use of the spectrum between 960 and 2690 MHz. It also took note of document PCC.III-41/94 (erroneously published on the 25th as number 40), in which the Mexican delegation presents a program for consultation on allocation of international and Mexican frequencies. Both documents were presented to the joint session of PCC.II/PCC.III, held on the morning of the 25th.

The Committee also took note of document PCC.III-55/94, which summarizes the discussion of this topic in the above-mentioned joint session.

D. Very Small Aperture Terminals (VSATs) and similar ones (Point 9.5 of the agenda)

The Coordinator of the Working Group on this topic, referring to the decision in the previous session, presented document PCC.III-42/94 rev. 2, which contains the group's work plan. On point 3 (modified during the discussion) it was recommended to the Coordinator that the group update the report prepared in the Third meeting of PCC.III and return it to the Chairman of PCC.III so that he can compile the comments of the CITELE members on it. If possible, the Chairman will then submit an updated report to the next meeting of COM/CITELE. A change was also introduced in the final paragraph (point 6), which encourages CITELE members to develop their regulatory systems, including criteria for interfacing, with a view to "contributing to greater regional integration based on principles of equity."

With the amendments indicated, the document was approved. Finally, as requested by the representative of the United States, the Chairman invited him to submit directly to the Coordinator of the group the changes he would like to introduce in the report prepared in 1993 (Annex 4).

E. Personal communication systems and related ones (Point 9.6 of the agenda)

The Coordinator of the Working Group presented document PCC.III-51/94 rev. 1, which contains the changes agreed upon in the previous session in the text on the recommendation "Designation of the Spectrum for Personal Communication services in the Americas." The recommendation was approved (Recommendation PCC.III/Rec 2).

F. Prospects for roaming cellular systems in the Americas (Point 9.7 of the agenda)

The Chairman referred to the draft recommendation "concerning the introduction of digital technology in cellular systems and its impact on the provision of service to visiting (roaming) subscribers in the Americas," which was contained in document PCC.III-35/94 presented in the fourth session and remained pending at the request of the representative of the United States. Since no amendments were offered, the recommendation was approved (Recommendation PCC.III/Rec 3).

G. Amateur radio service (Point 9.9 of the agenda)

The Coordinator of the ad hoc Working Group on the international amateur radio permit presented document PCC.III-39 rev. 2 with the draft resolution "International Amateur Radio Permit." He read the paragraph that was missing in the Spanish text. After an exchange of views the Committee approved resolution PCC.III/Res 1, whose operative part is as follows:

RESOLVES:

That the Chairman of PCC.III present the draft Agreement on the International Amateur Radio Permit (IARP), which is appended to this resolution, to the next meeting of COM/CITEL;

ASKS:

The Chairman of COM/CITEL to add this point to the agenda of the next meeting of COM/CITEL; and

DIRECTS:

The Executive Secretary of CITEL to send a copy of the draft Agreement to the members of CITEL.

The Chairman noted that the Draft Agreement, appended to the resolution, is Annex 2 of document PCC.III-04/94 rev. 1, and added that, as noted during the discussion of the topic, it would be desirable to have a legal opinion from the OAS on the draft. Finally, the Chairman invited the Coordinator of the group to prepare a prototype permit for consideration during the meeting of COM/CITEL.

H. The Committee's Work Plan (Point 5 of the agenda)

The Chairman recalled that during the first session he invited the participants to study document PCC.III-27/94, which contains the Committee's work plan, activities, topics for study, and Working Groups, and to comment on it in due course. At the suggestion of the representative of the United States, it was agreed to add to the study topics (point 5) the subjects of shared frequencies and use of regional satellite systems in emergencies and for safety. In response to a question by the representative of Dominica, the Chairman indicated that the order in which the topics appear does not indicate any particular priority. The Work Plan was approved as it appears in Annex 5.

I. Review of information concerning the results of the Voluntary Group of Experts on simplification of the radio regulations, and the forthcoming World Radio Conference in 1995 (Point 12 of the agenda)

The representative of the United States presented document PCC.III-53/94, which contains two draft resolutions on preparation for the radio conferences.

- Resolution XXX, concerning the establishment of a Working Group for CITEL's preparation for the regional and world conferences, was approved with some changes, among them the following in the operative part:
- Addition of a new paragraph 5 (changing the numbers of paragraphs 5 and 6): "That adequate coordination be established between PCC.II and PCC.III."
- To amend paragraph 6 (old paragraph 5) so that it reads: "That PCC.II be invited to designate a Coordinator to facilitate coordination concerning the radio broadcasting subjects to be covered in the World Radio Conferences, so that PCC.III can distribute the information among members of CITEL."
- The resolution was approved and appears in this report as Resolution PCC.III/Res 2.
- The Committee also approved resolution YYY, dealing with the work plan of the Working Group responsible for CITEL's preparation for regional and world radio conferences. Operative paragraph 3 was amended to read: "That the Chairman of the Working Group coordinate with and report to the members of CITEL on which countries have decided to take positions on the topics in the agenda for the 1995 World Radio Conference."
- This resolution named Luis Manuel Brown Hernandez (Mexico) as Chairman of the Working Group, and Cecily C. Holiday (United States) as Vice-Chairman.
- The resolution was approved and appears in this report as Resolution PCC.III/Res 3.

J. Agenda, site, and date of the Second Meeting of PCC.III (Point 14 of the agenda)

The chairman presented document PCC.III-58/94, which contains a draft resolution PCC.III/Res (I-94) "Agenda, Site and Date of the Second Meeting of Permanent Consultative Committee III: Radio Communications" It was approved.

The Committee next considered document PCC.III-54/94, which contains the draft agenda for the Second Meeting of PCC.III. It was approved after agreeing to add point 10 in point 7.4, renumbering points 11 through 18.

The two documents approved were combined and appear as Resolution PCC.III/Res 4.

K. Other matters (Point 15 of the agenda)

Taking into account Article 23 of the CITEL Statute and Article 77 of the Rules of Procedure, the Chairman announced that after consulting some of the members he had decided to submit for the meeting's consideration the appointment of a Vice-Chairman for the Committee--a position in which Brazil had expressed an interest. The representative of Brazil confirmed his interest and said that if the Committee agrees, his administration will indicate

later the name of the person designated to occupy the post. By acclamation Brazil was chosen to hold the vice-presidency.

L. Approval of the meeting's report (Point 16 of the agenda)

The Chairman said that for reasons well known to the members it had not been possible to prepare the report. It will be written in Mexico and sent to the Executive Secretariat for translation, so that it may be approved by mail.

M. Closing of the meeting

The Chairman thanked the staff assigned to support the meeting--especially the interpreters--adding that despite the difficulties that arose, the cooperation of the participants made it possible for the Committee to complete its work. The representative of Brazil thanked the Canadian administration for its hospitality, and noted that the meeting had produced positive results. The representative of Dominica thanked the Chairman for his conduct of the work.

The meeting was closed at 5:50 p.m.

VIII. RESOLUTIONS

RESOLUTION PCC.III/RES. 1 (I-94)

INTERNATIONAL AMATEUR RADIO PERMIT¹

**The First Meeting of Permanent Consultative Committee III:
Radiocommunications**

CONSIDERING:

That the temporary Working Group has completed its draft of the International Amateur Radio Permit document in accordance with PCC.III Res. 8/93;

RESOLVES:

That the Chairman of PCC.III is to present the draft of the Convention on the International Amateur Radio Permit (IARP) document at the next COM/CITEL Meeting;

REQUESTS:

The Chairman of COM/CITEL to add this matter on the agenda of the next COM/CITEL Meeting.

INSTRUCTS:

The Executive Secretary to send copies of the draft Convention to CITEL members.

Attached: Convention Draft²

¹Published as Doc. PCC.III-39/94 Rev.2 and approved with amendments in the Sixth Session.

²Published as Annex 2 in Doc. PCC.III-04/94 Rev.1.

ANNEX
INTERNATIONAL AMATEUR RADIO PERMIT

The Member States of the Inter-American Telecommunication Commission (CITEL):

Taking into account the spirit of the Charter of the Organization of American States (OAS), the provisions of the CITEL Statute, and the provisions of the Radio Regulations appended to the current International Telecommunication Constitution,

Convinced of the benefits of the Amateur Radio activities, and having regard for the interest of CITEL Member States in allowing citizens of any member state who are authorized to operate in the Amateur Service in their state to operate temporarily in the Amateur Service in any other CITEL member state,

Have agreed to enter into the following agreement on the International Amateur Radio Permit:

Article I
General Provisions

1. While reserving its sovereignty over the use of the radio spectrum within its jurisdiction, each Signatory Administration agrees to permit temporary operation of amateur stations under its authority by persons licensed by another Signatory Administration without further examination. An Administration shall issue permits only to its own citizens.
2. Signatory Administrations recognize the principle of the International Amateur Radio Permits (IARP), issued under the conditions specified in this document. Administrations of the countries visited will levy neither fees nor taxes thereon. Only the issuing Administration may do so.
3. This Convention does not modify customs regulations concerning transportation of radio equipment across national borders.

Article 2
Definitions

1. Expressions and terms used in this Convention shall carry the definitions commonly accorded them by the ITU Radio Regulations.
2. The amateur and amateur-satellite services are radiocommunication services according to Article I of the International Telecommunication Union (ITU) Radio Regulations, and are governed by other provisions of the Radio Regulations as well as by national regulations of the Signatory Administrations.
3. The term "IARU", shall mean the International Amateur Radio Union or any of its three regional organizations.

Article 3
Provisions Relating to the International Amateur Radio Permit

1. The IARP will be drafted in the national language and in English, French, Portuguese and Spanish; it will not be valid in the country of residence; it will be valid for one year in countries having adopted the Convention, but not in any case beyond the date of expiration of the national license of the holder. Radio amateurs holding only a temporary authorization issued in a foreign country shall not benefit from the provisions of this Convention.

2. The IARP shall indicate the following: a) a statement that the document is issued in accordance with this Convention; b) the name and mailing address of the holder; c) the call sign; and d) the name and address of the issuing authority; e) expiration date of permit; f) country of issuance; g) the valid IARP operator class; h) operation is permitted only for the bands specified by the visited Administration; and i) a statement that the permittee must abide by the regulations of the visited country.

3. The IARP will be issued in accordance with the following classes of operating authority:

Class 1. Use of all frequency bands allocated to the amateur service and amateur-satellite service and specified by the country where the amateur station is to be operated. It will be open only to those amateurs who have proved their competence with Morse code to their own Administration in accordance with the requirements of the ITU Radio Regulations.

Class 2. This class permits utilization of all frequency bands allocated to the amateur service and amateur-satellite service above 30 MHz, and specified by the country where the amateur station is to be operated.

Article 4. Conditions of Use

1. The IARP may be issued by the permit holder's home Administration or under delegated authority by the IARU member-society of that country. It should conform with the standard form for such permit contained in the Appendix.

2. A Signatory Administration may summarily withdraw or decline to honor an IARP at any time.

3. When transmitting in the visited country, the IARP holder must use the call sign prefix specified by the visited country and the call sign of the home license separated by the word "stroke" or "/".

4. The IARP holder must transmit only on frequencies specified by the visited country and must abide by all the regulations of the visited country.

Article 5 Final Provisions

1. This agreement shall not alter the prior agreements in force on this subject. The Signatory Administrations reserve the right to enter into supplementary agreements on methods and procedures for enforcing this agreement. However, such agreements may not contravene the provisions of this agreement. The Signatories shall inform the OAS General Secretariat of any supplementary agreements they enter into and that Secretariat shall, for the purposes of registration and publication, send a certified copy of the text of the agreement to the Secretariat of the United Nations, in accordance with Article 102 of its Charter, and to the General Secretariat of the International Telecommunication Union.

2. This agreement shall remain open for signature at the General Secretariat of the OAS until its entry into force and shall thereafter remain open for accession. Member States of the OAS or of CITELE may become Signatories to the agreement by:

- a. Signature not subject to ratification, acceptance or approval;
- b. Signature subject to ratification, acceptance or approval followed by ratification, acceptance or approval; or
- c. Accession.

3. Ratification, acceptance, approval or accession shall be effected by deposit of the appropriate instrument with the General Secretariat of the OAS in its capacity as Depository.
4. Signatory Administrations may make reservations at the time of signature or of deposit of an instrument of ratification, acceptance approval or accession, provided that such reservations deal with specific provisions of this agreement and are not inconsistent with its objectives and purposes.
5. This agreement shall enter into force on the thirtieth day following the date on which four Signatory Administrations have become Parties to it.
6. This agreement shall remain in force indefinitely, but may be terminated by agreement of the Signatory Administrations. Any of the Signatory Administrations to this agreement may denounce it. The instrument of denunciation shall be deposited with the OAS General Secretariat. After one year from the date of deposit of the instrument of denunciation, the agreement shall no longer be in effect for the denouncing Signatory Administration, but shall remain in effect for the other Signatory Administrations.
7. The original instrument of this agreement, the English, French, Portuguese and Spanish texts of which are equally authentic, shall be deposited with the OAS General Secretariat, which shall forward a certified copy of its text to the Secretariat of the United Nations for the registration and publication, in accordance with Article 102 of its Charter, and to the General Secretariat of the International Telecommunication Union.

The Secretary General of the OAS shall notify the Signatory Administrations of the signatures, deposits of instruments of ratification, acceptance, approval, accession and denunciation, and of reservations, if any.

IN WITNESS WHEREOF the undersigned plenipotentiaries, being duly authorized thereto by their respective governments, have signed this agreement.

DONE AT _____, on this _____ day of _____, one thousand nine hundred and ninety _____.

RESOLUTION PCC.III/RES. 2 (I-94)

RELATING TO THE ESTABLISHMENT OF A WORKING GROUP RELATIVE TO CITEL'S PREPARATION FOR REGIONAL AND WORLD RADIOCOMMUNICATION CONFERENCES¹

The First Meeting of Permanent Consultative Committee II: Radiocommunications,

CONSIDERING:

- a) Under the International Telecommunication Union (ITU) structure, World Radiocommunication Conferences (WRCs) will be held every two years and regional conferences will be held as appropriate;
- b) The WRCs will consider and implement changes to the Radio Regulations that will impact the interests of all CITEL members;
- c) There are a number of issues to be considered by the WRCs which are of common

¹Published as Resolution XXX attached to Doc. PCC.III-53/94 and approved with amendments in the Sixth Session .

regional importance;

- d) It would be to the benefit of all CITEL members to coordinate their preparation for the WRCs;
- e) That Article 92 of the CITEL Regulations prescribes the conduct of meetings and administrative support for the PCCs and Working Groups;
- f) That Article 93 of the CITEL Regulations prescribes the working procedures governing the activities of the PCCS; and
- g) That WRCs will have agendas for each conference that will likely change in subject matter attracting different regional experts and leadership to prepare for these conferences.

RESOLVES:

1. that a Working Group be established under PCC III to coordinate CITEL preparations for upcoming WRCs and regional radiocommunication conferences;
2. that the Terms of Reference for this Working Group and working method are:
 - a) to develop recommended views or proposals on PCC III issues that will be considered at WRCs or regional radiocommunication conferences convened under the auspices of the ITU;
 - b) these recommended views or proposals would then be considered by PCC-III;
 - c) that the recommended proposals agreed by PCC-III would be sent to all CITEL Member countries with a recommendation that each country submit the proposal to the ITU as a country proposal;
3. that the Working Group will have a Chairman and a Vice Chairman who will serve for a two year-period from the conclusion of one WRC until the conclusion of the next WRC;
4. that upon the conclusion of a WRC two year cycle, the Vice Chairman shall assume the Chairmanship of the Working Group and a new Vice Chairman be appointed;
5. that an adequate coordination between PCC.II and PCC.III be established.
6. that PCC.III be invited to nominate a coordinator to facilitate the coordination on broadcasting issues to be addressed by WRCs, so that PCC.III can submit these issues to CITEL Members; and
7. that Administrations would be free to develop their own proposals for the WRCs as they deem appropriate.

RECOMMENDS:

That-in accordance with Article 92 of the CITEL Regulations the Working Group:

- a) Should conduct its business using facsimile and other modern means of correspondence; and
- b) Schedule meetings, to the extent possible, in conjunction with relevant PCC-III Plenary Meetings.

RESOLUTION PCC.III/RES. 3 (I-94)

**ESTABLISHMENT FOR A WORK PLAN FOR THE WORKING GROUP RESPONSIBLE
FOR CITEL'S PREPARATION FOR REGIONAL AND WORLD
RADIOCOMMUNICATIONS CONFERENCES¹**

**The First Meeting of Permanent Consultative Committee III: Radio
Communications,**

CONSIDERING:

- a) That CITEL, in resolution XXX, established a Working Group for the purpose of drawing up positions and proposals for consideration at the World Radio Conferences;
- b) That a World Radio Conference is scheduled to be held in Geneva from October 23 to November 17, 1995;
- c) That the ITU Council prepared an agenda for the 1995 World Radio Conference at its meeting in 1994; and
- d) That the Radio Communications sector of the ITU is undertaking technical studies for the conferences,

RESOLVES

1. That the Chairman and Vice-Chairman of this Working Group be Luis Manuel Brown Hernandez (Mexico) and Cecily C. Holiday (United States);
2. That the Chairman of the Working Group coordinate with and report to the members of CITEL on which countries have decided to take positions on the topics in the agenda for the 1995 World Radio Conference;
3. That the Working Group circulate the positions recommended or to be studied in its meetings in November-December 1994 and April-May 1995;
4. That the positions or proposals recommended be submitted for consideration at the meetings of PCC.III in early 1995, and before June 23, 1995.
5. That the proposals recommended and approved by PCC.III be transmitted to all member countries of CITEL with a recommendation that each country present the proposal to ITU as a national proposal; and
6. That the administrations are free to draw up their own proposals for the 1995 World Radio Conference as they deem appropriate, and

URGES

CITEL representatives to take part in the technical work under way in the radio communications sectors of ITU and CPM, and

RECOMMENDS

That for planning purposes, CITEL's PCC.III hold meetings twice a year and the CITEL Executive Secretariat publish the meeting calendar in accordance with Article (89 s) of

¹Published as resolution YYY appended to Doc. PCC.III-53/94 and approved with changes at the sixth session.

CITEL Regulations.

RESOLUTION PCC.III/RES. 4 (I-94)

**AGENDA, SITE, AND DATE OF THE Second Meeting OF
PERMANENT CONSULTATIVE COMMITTEE III: RADIOCOMMUNICATIONS¹
The First Meeting of Permanent Consultative Committee III: Radio Communications**

CONSIDERING:

- a) The Action Plan of the Inter-American Telecommunications Commission for the 1994-1998 period;
- b) The Work Plan of Permanent Consultative Committee III: Radio Communications for 1994-1998;
- c) The need to have ample time for the Working Groups established at this meeting to prepare the relevant documents and distribute them to the CITEL member countries before the Second Meeting,

RESOLVES:

1. To hold the Second Meeting of PCC.III in Venezuela, in March 1995.
2. To approve the draft agenda for the Second Meeting of PCC.III that is appended to this resolution, and

DIRECTS:

The Executive Secretariat of CITEL to distribute to all CITEL member administrations the attached draft agenda before October 1994, and to invite their comments on it by the end of November 1994.

**SECOND MEETING OF PCC.III²
DRAFT AGENDA**

1. Adoption of the Agenda.
2. Opening remarks.
3. Appointment of the Final Report Drafting Group.
4. Comments on PCC.III Working Program.
5. Comments to foster participation by Associate Member.
6. Comments on possible amendments to the Statute and Regulations of CITEL, with a view to making suggestions to COM/CITEL. Because of the size of these documents, they will not be distributed at the Meeting.
7. Meeting and Report of the Working Group Coordinator on the following matters:
 - 7.1 Regional data base on the use of the radio frequency spectrum with a view to promoting shared and harmonious use of it, including the aspect of frequency sharing.
 - 7.2 Low Earth Orbit Satellites, below 1GHz.
 - 7.3 Very Small Aperture Terminals (VSATs).
 - 7.4 Personal Communications Systems and similar systems, including roaming

¹Published as Doc. PCC.III-58/94 and approved at the sixth session.

²Published as Doc. PCC.III-54/94 and approved in the Sixth Session.

- cellular systems in the Americas.
- 7.5 Amateur Radio Service.
 - 7.6 Preparation for the participation of the World Radiocommunications Conference, 1995.
 8. Mobile Satellite Service and Low Earth Orbit Satellites above 1GHz.
 9. Geostationary Orbit Satellite System.
 10. Implementation of the Global Maritime Distress and Safety Systems (GMDSS), including the regional systems of the satellite mobile service in 1.5/1.6 GHz related to it.
 11. Remarks on next seminar's organization in reference to the introduction and development of new technologies.
 12. Report on the results of PCC.III Seminar.
 13. Review of matters related to the findings of the Voluntary Group of Experts to Simplify the Radio Regulations.
 14. Human Resources.
 15. Agenda, place and date of the Third Meeting of the PCC.III.
 16. Other related matters.
 17. Approval of the Meeting Report.

VIII. RECOMMENDATIONS

RECOMMENDATION PCC.III/REC. 1 (I-94)

REGIONAL SATELLITE SYSTEMS OPERATING IN THE 1530-1544/1626.5-1645.5 MHz BANDS AND PARTICIPATING IN THE GLOBAL MARITIME DISTRESS AND SAFETY SYSTEM¹

The First Meeting of Permanent Consultative Committee III: Radiocommunications

CONSIDERING:

- a. That mobile-satellite systems will be operating the 1530-1544 MHz and 1626.5-1645.5 MHz bands, now being used for the GMDSS by the Inmarsat system;
- b. That five of the seven countries that are part of the additional allocation to the mobile-satellite service in these bands (RR 726C) are in Region 2;
- c. That the introduction of mobile-satellite systems within these frequency bands, the integrity, effectiveness and protection of maritime distress and safety communications must be continuously maintained;
- d. That recommended criteria for mobile-satellite systems participating in the GMDSS will be on the agenda of the 40th Session of the Radiocommunications Sub-Committee of the International Maritime Organization (IMO) to be held from 16 to 20 January 1995 in London, UK;
- e. That Member Countries of CITELE have a major interest in preserving the effectiveness of distress and safety communications in the GMDSS;

RECOMMENDS THAT THE CITELE MEMBER COUNTRIES:

1. Bring this issue to the attention of both their maritime and satellite authorities noting

¹Published as Doc. PCC.III-52/94 and adopted by the 6th Session.

that IMO COM-39NVP.7 is under consideration by the IMO.

2. Submit to IMO, papers that support IMOs issuance of guidance in 1995 for regional satellite systems to participate in the GMDSS. A sample IMO input paper is given in the Annex attached.

3. Participate in the 40th session of the Radiocommunication Sub-committee of the IMO to be held from 16 to 20 January 1995, in London, UK.

INSTRUCTS:

The Executive Secretary of CITELE to distribute this RECOMMENDATION to all Member Countries of CITELE.

ANNEX

SUB-COMMITTEE ON RADIOCOMMUNICATIONS 40th Session 16-20 January 1995

Reasons for developing guidance for administrations to use when authorizing regional Mobile Satellite Systems (MSS) to participating in GMDSS

1.0 Introduction

1.1 The Sub-Committee at its 39th Session reviewed the issue of regional satellite systems being authorized to participate in the GMDSS. Members were invited to consider the draft guidelines in COM 39/WP.7 and submit comments to enable the Sub-Committee to develop detailed criteria at its Fortieth Session.

1.2 The purpose for developing guidelines for Mobile Satellite System participation was so that the distress and safety needs of all maritime users including those vessels not subject to SOLAS, would be provided. Regional satellite systems are expected to provide communications to vessels sailing domestically or within a particular region, e.g., Gulf of Mexico, Caribbean Sea, etc. Many thousands of vessels, which are not required to fit GMDSS equipment, sail in these areas. They naturally will seek a minimal communication solution for their general communication needs. It is our purpose that the proposed guidelines will shape these regional MSS to include the same distress and safety features of the GMDSS.

1.3 The primary reason to have GMDSS participation criteria is to protect the integrity of the mariner. Not all communications systems available to vessels provide for distress and safety communications. Regional MSS, meeting a recommended GMDSS participation criteria, will ensure that distress and safety communications are given their proper priority and handling. This is particularly important for non-convention vessels and for those convention vessels using regional MSS equipment. This will allow the IMO to influence the development of the MSS so that the maintenance and integrity of the GMDSS are ensured.

2.0 Recommendation.

- 2.1 We encourage the Sub-Committee to approve in 1995 a Draft Assembly Resolution establishing criteria so that regional MSS can participate in the GMDSS. We fully adopt the criteria and fundamental principles specified in COM 39/WP.7 and recommend these annexes be used as a basis for a Draft Assembly Resolution. Upon the Assembly's issuance of approval, the Administrations will use IMO standardized criteria when authorizing regional MSS which elect to participate in the GMDSS.

RECOMMENDATION PCC.III/REC. 2 (I-94)

DESIGNATION OF SPECTRUM FOR AND PROSPECTS FOR PERSONAL COMMUNICATIONS SYSTEMS IN THE AMERICAS¹

The First Meeting of the Permanent Consultative Committee III: Radiocommunications,

CONSIDERING:

- a) That Personal Communications Systems (PCS) represents an opportunity for a major improvement in mobile or portable communication services for individuals or businesses which would be integrated into a variety of competing networks,
- b) That PCS should be available to users both nationally and throughout the entire Americas, and should be based on the principles established by the 1994 ITU World Telecommunications Development Conference which include Universality of Service and Diversity of Services.
- c) That both these objectives will be enhanced if a requisite degree of interoperability exists;
- d) That many countries in Latin America are developing their national telecommunications networks;
- e) That one element of such interoperability is compatibility of spectrum use;
- f) That another element of interoperability is the use of compatible standards;
- g) That some CITELE members have already established national frequency plans for PCS;
- h) That many CITELE Member Administrations have extensive use of fixed service systems in the bands considered to be used by PCS systems;
- i) That there is possible synergy between PCS and the Mobile Satellite Service;
- j) That the introduction of PCS should be made in individual countries in accordance with the needs of that country;
- k) That the ITU is currently developing standards for Future Public Land Mobile Telecommunications Systems - FPLMTS - and is considering strategies for the migration toward FPLMTS taking account into of networks currently deployed or being developed for near term deployment.

RECOMMENDS:

1. That CITELE members examine the subject of a regional spectrum use for PCS taking

¹Published as Doc. PCC.III-54/94 and approved in the Sixth Session.

into account of plans under development in Member Administrations, with a view to harmonizing individual plans, where possible, increasing the possibilities for interoperability of PCS systems.

2. That CITELE members examine approaches that may be used by administrations to make frequencies available for PCS bearing in mind the steps that may need to be taken to relocate existing radio services whose functions need to be continued.

3. That the Working Group of PCC.III entrusted to examine inter-alia the subject of spectrum use for PCS in the Region shall solicit and compile available data describing for each Administration:

- domestic spectrum allocations identified for use by PCS
- relevant technical and economic factors considered in this identification
- time frame that PCS is expected to be introduced
- strategies that will be adopted to foster and facilitate migration of existing fixed service systems to new frequency bands.

This information should be available for discussion in the March 1995 meeting of PCC.III.

4. That information relative to standards under consideration and experiences with new technologies in Member Administrations for potential application to PCS should be collected and disseminated to CITELE members.

5. That the Working Group should identify those factors of interest to CITELE members that may be relevant to facilitating international roaming in the provision of Personal Communications Services across the Americas, such as:

- a. Standards
- b. Frequency Band Plans
- c. Roaming agreements
- d. Cross-border licensing and/or hand-over arrangements
- e. Provisions for use of mobile satellite services
- f. Other mechanisms that may be appropriate

6. In order to promote recognition of the Region 2 interests by the ITU, CITELE members should monitor and participate, as possible, in the activities of ITU-R Task Group 8/1 toward the standardization of FPLMTS (IM72000) and the development of migration strategies for the implementation of FPLMTS.

7. The results of the examination by this Working Group of PCC.III be completed in a timely manner so that CITELE members can take the results into account in developing their national policies.

INSTRUCTS:

The Executive Secretary of CITELE to distribute this DRAFT RECOMMENDATION to all Member Countries and Associate Members of CITELE.

RECOMMENDATION PCC.III/REC. 3 (I-94)

INTRODUCTION OF DIGITAL TECHNOLOGY IN CELLULAR SYSTEMS AND ITS IMPACT ON ROAMING SERVICE DELIVERY IN THE AMERICAS

The First Meeting of the Permanent Consultative Committee III: Radiocommunications

RECOGNIZING:

That the prospects of development for cellular systems in the Americas are significantly ensured by a favorable regulatory framework, service delivery agreements and

technological certification of the systems.

TAKING INTO ACCOUNT:

The importance of relying on a single technical standard to simplify technical system certification with views of furthering roaming service delivery on a continental scale;

CONSIDERING:

That in order to ensure favorable operational prospects of a continental roaming cellular system, there is a need to confirm that digital technology trends will not compromise the existing harmonization in the Americas, as digital technology could encourage the other standard applications;

RECOMMENDS:

That Telecommunications Administrations of CITEL Member States, operating companies, and manufacturers take action to continue facilitating adequate technological certification opportunities and interconnection criteria to promote a solid foundation for suitable systems integration.

X. ANNEXES

ANNEX 1

**REPORT OF THE COORDINATOR OF WORKING GROUP ON MOBILE SERVICES
(Terrestrial)**

Dr. Joao Carlos Albernaz (Brazil) was appointed Coordinator of PCC.III Working Group on Mobile Services.

Seven documents concerning Public Communication System (PCS), digital cellular and digital cordless telephones presented to the consideration of PCC.III.

Following, a summary with the relevant systems contained in those documents:

Document PCC.III-13 presents an overview of recent regulatory activities in the United States relative to the introduction of PCS. PCS is considered to encompass a "family of mobile or portable radio communications services that could provide services to individuals and business, and integrated with a variety of competing networks". Many see PCS as offering great potential of a wide range of enhanced personal and mobile communications capabilities for individuals wherever they may be located. In the United States, the Federal Communications Commission (FCC) has adopted regulations for narrowband PCS (at near 900 MHz) and wideband PCS (at near 2 GHz). The paper outlines recent decisions taken by the FCC for PCS in these categories, including the frequency allocations adopted and the associated rules for selection of licensees and regulation of the service specific standards for PCS systems are expected to be developed and adopted by industry organizations rather than mandated by regulation.

Document PCC.III-16 describes some of the technologies under consideration by the industry standards organizations in the United States that may be implemented for PCS at 2

GHz. The review is being carried out by the Joint Technical Committee on Wireless Access (JTC). Seven proposals are being reviewed and developed with a view to having one or more of the proposals ready for balloting by industry members in the first quarter of 1995.

Document PCC.III-25, introduced by the United States, presents a draft recommendation for consideration by CITELE PCC.III on studies and deliberations toward development of a regional spectrum allocation plan for PCS in the region. This draft notes that development of compatible spectrum allocation plans could promote introduction of services on a more universal basis, and facilitate interoperability.

Document PCC.III-46 outlines the present status of digital cellular implementation in Canada where both providers have the manufacturing industry and the Canadian service implemented TDMA digital cellular following the TIA 15-54 standard. The document includes an annex extracted from the ITV-R digital cellular Recommendation outlining the veracious worldwide digital cellular systems and including the characteristics of the 15-54 TDMA and 15-95 CDMA Systems.

Document PCC.III-47 contains a Canadian standard for digital cordless telephone operating under 1 GHz (RSS-130).

The system is known as CT2 Plus, which is a superset of CT2 (also contained in RSS-130). In Canada the frequency band is 944-948.5 MHz, with 3.5 MHz held in reserve (948.5-952 MHz). Since both CT2 and CT2 Plus are in use in several countries in the Region the specification should also be of assistance to other countries in their planning.

Following discussion it was decided to draft a Recommendation concerning designation of spectrum for PCS in the Americas due to the importance of this subject to most Member Administrations.

The Coordination invited the delegates to participate in an informal meeting held on Thursday, August 25, 1994, at 10:00 am in which members would bring their own proposals on how the work would proceed.

Delegates from ARGENTINA, CANADA, CHILE, MEXICO and the USA assisted the Coordinator to prepare a Draft Recommendation and which was submitted for approval of PCC.III meeting (see Doc. PCC.III-51).

ANNEX 2

REPORT OF THE SEMINAR ON LOW-EARTH ORBITING (LEO) SATELLITES OPERATING BELOW 1 GHz

Mr. L. M. Brown Hernandez (PCC.III Chairman) introduced the seminar participants. A summary of the items presented follows.

1. **Mr. Alan Parker and Mr. Mario Florian (Orbital Communications Corporation - U.S.A.)**

FDMA Sharing

Mr. Parker and Mr. Florian presented the case for Low Earth Orbiting satellite systems, operating below 1 GHz and using narrow band FDMA modulation, sharing with existing space and terrestrial users without displacement or causing harmful interference.

ORBCOMM showed that sharing with existing fixed and mobile users is assisted by the characteristics of both the LEO systems and the fixed and mobile users. The FDMA LEO users will be widely dispersed geographically, separated from fixed and mobile users, and will use very short duration transmission, typically <100 millisecond bursts. Fixed and mobile users, by contrast, would overwhelm potential interference from LEO users. Further, the ORBCOMM Dynamic Channel Activity Assignment System (DCAAS) will direct ORBCOMM subscriber communicators to unoccupied channels, protecting both existing fixed and mobile users and the ORBCOMM, satellite receivers. ORBCOMM provided a summary of the actual measurements made from two orbiting satellites that substantiates the presence of unoccupied channels, albeit temporarily, and the effectiveness of the DCAAS system.

ORBCOMM showed that space and terrestrial users of the 137-138 MHz downlink band are protected by ORBCOMM's use of fixed and frequency separated narrowband channels and PPD limits in accordance with Resolution 46.

**2. Mrs. Alan Renshaw
(Starsys Global Positioning, Inc. U.S.A.)**

Spread Spectrum Sharing

Mr. Renshaw outlined the methods by which a hybrid spread-spectrum/narrowband little LEO system can share frequency spectrum with existing users in the allocated bands, other little LEO applicants and future applicants. The presentation outlined the STARSYS frequency plan and showed how the two forward narrowband (50kHz) links were placed in the less heavily used bands (149.9-150.05 MHz and 400.15-401 MHz) to avoid self interference in the return link bands (148.0-149.9 MHz and 137-138 MHz). Spread-spectrum is designed to operate across currently used spectrum without causing harmful interference to existing users by virtue of low power and very brief messaging. Conversely, spread-spectrum is able to accept interference from other users, especially fixed and mobile users. The presentation provided a detailed explanation of sharing in each of the STARSYS system's four communications links, to include accommodation of ITU and U.S. restrictions and constraints. Sharing in the 148.0-149.9 MHz band concerns mostly fixed and mobile systems, whereas sharing in the 137.0-138.0 MHz band is complicated by the meteorological satellites and the other little LEO systems which must share the same spectrum. Techniques used by spread-spectrum in these bands are very low power flux density (-156 dB (W/m²/4kHz), and cross-polarization of downlink signals to share with both meteorological satellites and FDMA little LEO systems. The presentations were a comprehensive treatment of sharing in the allocated bands which should be helpful to administrations as they plan their own systems or merely coordinate with spread spectrum/narrowband applicants.

**3. Mr. Don Falle
(Teleglobe-Canada).**

Little LEO Service Applications in Canada

Mr. Falle from Teleglobe Canada made a presentation of the ORBCOMM System. Teleglobe has entered into a joint venture partnership with Orbital Sciences Corporation of the U.S. Through this partnership, Teleglobe will have responsibility for the operations in

Canada and internationally.

Mr. Falle described the ORBCOMM System and its components: the space segment, the ground segments and the terminal subscriber units. He also provided a description of the applications of the system. With regard to the space segment, he pointed out that ORBCOMM will have a constellation of 26 satellites by 1996, to be expanded to 36 satellites after 1997.

Part of the presentation was devoted to a comparison of ORBCOMM with the big LEO systems, in terms of the cost of the satellite constellation and of the cost of the terminal subscriber units, pointing out that the cost of the ORBCOMM System is about 150 million dollars, versus several billion dollars for the big LEOS.

The presentation also described the international group of candidate licensees in several continents of the world, as well as a schedule for the implementation of the system.

**4. Mr. José Manuel Villavazo
(LEO-ONE PANAMERICANA - MEXICO).**

~~Comments Regarding the Efficient Utilization of the Assigned Spectrum and the Additional Frequency Requirements in Narrow Band's VHF & UHF~~

Mr. Villavazo introduced a paper discussing Mexico's plans for implementing LEO One Panamericana. He discussed Resolution 46, equitable access and efficient use of existing spectrum allocations with an emphasis on technological innovation and international coordination. He stated that while 7 systems had been published in advance, only 3.5 MHz of shared spectrum is allocated to this service. Noting that this spectrum shortage is the major obstacle to the implementation of this valuable new service, Mr. Villavazo suggested eliminating existing services in these allocated primary bands, and raising to co-primary any existing secondary allocations and allocating new spectrum for this service. Finally, Mr. Villavazo emphasized that CITELE Countries should work together to obtain new frequency allocations at WRC-95.

ANNEX 3

**WORK PROGRAM
LEO MSS BELOW 1 GHZ WORKING GROUP¹**

1. The Working Group shall compile data from Region 2 countries describing:
 - 1.1 Each administration's current domestic allocation(s) of the following frequency bands:

137	-	138 MHz
148	-	149.9 MHz
149.9	-	1 50.05 MHz
400.15	-	401 MHz
 - 1.2 The number and type of licenses (or other assignments) that have been made pursuant to these allocations;
 - 1.3 The actual usage of these bands;
 - 1.4 The number and type of applications that have been received to provide service

¹Published as Doc. PCC.III-18/94 Rev. 1 and approved in the Sixth Session.

- in these bands;
- 1.5 The gross spectrum requirements for anticipated services;
 - 1.6 any additional frequencies in the VHF and UHF bands that have been identified and reviewed by an administration in which LEO MSS below 1 GHz Systems could be operated; and
 - 1.7 Each administration's space and earth station licensing process, including the name and phone number of an appropriate contact person.
2. The Working Group shall identify spectrum efficient technologies for use by LEO MSS Systems operating below 1 GHz.
 3. The Working Group shall consider work being carried out by the ITU In Task Group 8/3 regarding better use of the existing LEO MSS bands below 1 GHz.
 4. The Working Group shall consider work being carried out by the ITU-R Working Party 8D on mobile-satellites, particularly regarding technical and operational recommendations.

ANNEX 4

REPORT BY THE WORKING GROUP ON THE USE OF VERY SMALL APERTURE TERMINALS (VSATs) IN THE AMERICAS

PLAN OF ACTIVITIES¹

PARTICIPANTS:

Argentina:	Roberto Door, Juan José Valorio
Canada:	Veena Rawat, Ronald G. Amero, Marc Dupuis
Dominica:	Henry M. Shillingford
Mexico:	Sergio Viñals
U.S.A.:	Sahai (Ken), Benito Gutiérrez Luaces
Venezuela:	Carlos E. Pérez R. (Coordinator)

DOCUMENTS CONSIDERED:

PCC.III 159/93, Annex IV/3
 PCC.III 22/94
 PCC.III 14/94
 PCC.III 23/94
 PCC.III 29/94
 PCC.III 27/94

COMMENTS:

Taking into account the increased use of VSATs networks and recent technological developments in this area, and that the application of these technologies contributes to regional integration in the Americas, we propose that the plenary session of PCC.III adopt the following:

- a. Consider objectives a), b) , c) , d) and e) of the action plan included in the document

¹Published as Doc. PCC.III-42/94 Rev. 2 and approved in the Sixth Session with amendments to items 3,4 and 6.

- submitted by the Chairman of PCC.III (27/94) with respect to their application in the use of VSATs in the Americas.
- b. Include the collection and distribution of information on the use of VSATs to CITELE Member Countries as a responsibility of the Working Group.
 - c. Consider the documents listed at the beginning of this Draft Resolution (summaries and amendments attached) as a basis for work done by this group, recommending to the Coordinator of this Working Group that they be included in a single document intended to update the current version of the report developed in the third Meeting of the PTC.III, and
 - e. Request that the Chairman of PCC.III submit the above mentioned document at the next COM/CITEL meeting.
 - f. Urge the administrations of countries in the region to submit information on the following topics to this group for purposes of updating the report on VSATs:
 - 1) Regulatory framework, including interconnection criteria;
 - 2) Technical standardization;
 - 3) Networks in operation, including technical characteristics, approximate number of stations, etc.
 - g. Urge CITELE Member Countries to develop regulatory framework including interconnection criteria that promotes great integration in the region on an equitable basis.

.1. VSAT Characteristics

The VSAT (Very Small Aperture Terminal) is a type of fixed-satellite (geosynchronous) non-mobile earth station used for a wide variety of telecommunications applications, including interactive and batch data communications in a variety of protocols, packet-switched networking, voice applications, data and video broadcast, and wide-area networking. VSAT and related technology may be roughly categorized into the following areas:

- Fixed Satellite Services (SCPC). These types of systems are characterized by a constantly transmitted carrier signal (exclusive band allocation), and are not actually VSATs; they are included here for completeness of definition.
- Star-networked VSATs: The most common type of VSATs depend on the operation of a HUB earth station (a large dish, typically 4-8m) for data relay. Individual VSATs cannot directly receive each other's transmissions (due to minimal transmit power), but communicate exclusively with the HUB, using "burst" transmissions and contention protocols to minimize the bandwidth needed. Antenna size typically ranges from 1.2m to 3.8m, and VSATs of this type operate either in the C band (4-7 GHz) or the Ku band (12-14GHz).
- Mesh-networked VSATs: A less common type of VSAT shares a common pool of channels, and are able to directly receive each other's transmissions. Due to the additional power requirements, larger dish sizes are generally used (3M or more). This type of VSAT is generally limited to voice and batch-type operations.
- Sub-meter VSATs (USATs): The most rapidly evolving VSAT technology uses smaller antennas (less than 1m average diameter), and highly integrated technology to provide low-cost access to the VSAT network. USATs are star-networked, requiring a HUB earth station. Spectrum spreading techniques

are often used, even within Ku band, to reduce interference potential.

Use of VSAT terminals is recommended whenever there is a need for transmitting information to and from easily assembled installations in remote sites. Also, the modulation techniques and low power transponders used make them attractive to take advantage of space stations transmitting towards regions of dense traffic.

This document will focus primarily on star-networked VSATs, being the most widely deployed. Some consideration of unique issues for USATs will be given in Section 8.

At the time of this document's drafting, VSAT technology is in its third generation. The first generation, beginning around 1980, primarily focused on one-way broadcast using C-band spread spectrum. The second generation, beginning around 1983, added two-way operation at low speeds using simple contention protocols, saw the introduction of Ku-band VSATs, and began the move to general networking and network management. The third generation, starting around 1987, introduced more efficient bandwidth use, software-defined multiprotocol gateway systems, advanced network management, and hybrid (VSAT/terrestrial/LAN) networking. USAT systems began to appear around 1990, as a natural outgrowth of the VSAT technology and the increasing demand for low-cost, highly integrated systems.

For more details on the background and general architecture and operations of VSAT networks, see the document CTP.III-99/93 (Venezuela).

1.1 Definition of terms

VSAT:	Generic term applied to small-aperture earth stations. In practice, refers to earth stations carrying interactive data traffic, using contention techniques to share channel bandwidth.
HUB:	a central routing, relay, and broadcast origination node in a star-configuration VSAT network
C-band:	Region of the RF spectrum from approximately 4 to 7 GHz.
Ku-band:	Region of the RF spectrum from approximately 12 to 14 GHz.
EIRP:	Equivalent Isotropic Radiated Power. A normalized measurement of power generated from an antenna.
BPSK:	Binary Phase-Shift Keying, a modulation technique.
QPSK:	Quadrature Phase-Shift Keying, a modulation technique.
Inroute:	a frequency (channel) assigned to the satellite data path including the uplink from one or more VSAT stations and the corresponding downlink to the HUB; i.e., a channel from VSATs to the HUB.
Outroute:	a frequency (channel) assigned to the satellite data path including the uplink from the HUB and the

corresponding downlink to a set of VSATs; i.e., a channel from the HUB to VSATs.

Contention Channel: a data channel where multiple data sources (i.e. VSATs) contend for the available bandwidth using a multi-access protocol.

1.2 Radio frequency characteristics

VSATs operating in the Ku-band transmit at 12-14 GHz, usually with narrow spectrum transmit channels and BPSK or QPSK type of modulation. Occasionally spread-spectrum techniques are used to allow a decrease in antenna size. Burst transmitters are generally 2 watts or less. Ku-band VSATs are susceptible to moisture attenuation (rain fade), but other signal interference problems are rarely encountered in the Ku band. All sub-meter VSATs (USATs) use the Ku band at the present time.

VSATs operating in the C-band transmit at 4-7 GHz at the present time, generally using spread-spectrum techniques to reduce the power required at the VSAT transmitter. Burst transmitters for C-band VSATs are generally under 4 watts, with 2 watts being common. Antenna sizes depend on many factors, including interference coordination, weather, antenna footprint, etc. Typically they are larger than Ku-band VSATs, with 2.4m being about the minimum deployed size. C-band is relatively immune to moisture interference, but terrestrial microwave interference is often an issue, requiring care in coordination.

A star-based VSAT network requires a single powerful carrier, similar to video broadcast, for the outroute (uplink from the HUB). Several other narrow-band frequencies (inroutes) are also allocated for the use of transmissions from the VSATs. Because the VSAT transmitters operate in "burst" mode with a contention protocol, many VSATs may share a single inroute; thus, the number of required inroutes is significantly less than the number of VSATs in the network.

2. VSAT Interconnection with public switched networks

A VSAT network generally operates as an independent private or shared-service network, providing transparent protocol service between VSAT and HUB attachment points. In this mode, the only use of public networks may be the use of certain terrestrial services (such as data backhaul links between the HUB and network concentrator nodes), using established protocols.

Occasionally, a VSAT network may be called upon to provide services as an essential part of the public switched network (PSN). Adherence to existing standards is particularly important in this case. There are two known applications where this issue must be addressed with some urgency:

- X.25 VSAT service within X.25 PSN. In this case, an agency is using the VSAT network to provide all or part of the services of a public X.25 data network. Clearly, the VSAT network must provide a fully conformant interface as defined in Recommendation X.25; other guidelines for connection quality, performance, and addressing are desirable as well. Status of work on the interconnection in the ITU was presented in document PCC.III-14/94. ITU-R Task Group 4/3 held its third meeting in Washington, D.C., USA on June 8-10, 1994. Draft Recommendation "Connection of VSAT Systems with Packet Switched Networks Based on ITU-T Recommendation X.25" was completed and will be submitted to ITU-R Study Group 4 at the June, 1995 meeting. After

the approval, this recommendation will be maintained by ITU-T Study Group 7.

- VSAT Voice networks (hub-switched and mesh) used within, or connected to, the PSTN. The latter issue (connection of a private VSAT voice network to existing PSTN) may be simplified if such connection is done through a central PBX (Private Branch Exchange). The VSAT telephony interface is required only to provide basic 2- and 4-wire E&M, tip and ring voltages, and obey other PBX line requirements. This topic is addressed in CTP.III-110/93 (Mexico). The more difficult issue of VSAT telephony networks used as part of the PSTN is a worthwhile topic for discussion, but no submissions are available at this time.

ITU-R Task Group 4/3 also developed a preliminary draft new recommendation "Connection of Private VSAT Networks to the Public ISDN." Further work on this recommendation will be carried out in ITU-T Study Group 13.

3. End user access alternatives and interconnection requirements

End user access to a VSAT network is done via interfaces at one of four points:

- The VSAT;
- The HUB;
- Remote data concentrator equipment (Host Interface) attached to the HUB; or
- Remote modem equipment (tail-circuit) attached to the VSAT.

Regardless of the location of the interface, there are two key issues in end-user access that involve standardization:

- Physical interfaces
- Logical (protocol) interfaces.

Standards in the area of physical interfaces is generally covered by the CCITT; relevant interface standards include RS-422, RS-232, V.35, and various LAN media interface standards. Section 3.0 of document CTP.III-110/93 (Mexico) contains additional discussion of physical interfaces.

Logical or protocol interfaces, while subject to standardization, are nearly impossible to quantify in today's market. Today's VSAT networks can support literally hundreds of data communication protocols, either through transparent frame passing or more efficient "protocol tunnelling" applications. Protocol standardization issues are presently within the domain of the VSAT customer/supplier relationship, except for issues of interconnecting with the PSN.

Section 9 of document CTP.III-99/93 (Venezuela) offers additional information on these user interface protocols, often termed "access protocols". These protocols may be divided into several categories, such as:

- Fixed-configured point-to-point and multidrop circuits. Examples: SNA/SDLC, BiSync
- Switched virtual circuits. Examples: X.25, Modem simulation protocols.
- Voice, video, analog telefax services.

- LAN (Local-Area Network) gateway services. Examples: Ethernet TCP/IP, Token-Ring.
- Broadcast applications (data or video)
- Protocol conversion applications. Example: SDLC fixed PU to SDLC token-ring.

4. Modulation techniques used, with special consideration of extended spectrum techniques

Signal modulation in VSAT networks attempts to balance three factors in order to obtain the maximum data rate with minimum interference and bandwidth usage:

- a. Transmit Power (including antenna gain). Increasing the transmit power of a VSAT increases the potential data rate, but impacts costs and increases the potential for intersatellite interference (off-axis EIRP). Transmitters in most star-configuration VSATs today are under 3 watts.
- b. Spectrum Spreading. Normally it is desirable to keep inroutes very narrow in terms of spectrum; BPSK and QPSK encoding are used to promote this. A narrow inroute allows very efficient use of bandwidth. In the Ku-band, for instance, it is desirable to place adjacent inroute frequencies 200Khz or closer. However, if the desired data rates cannot be obtained without impacting off-axis EIRP, a spectrum spreading technique such as error correction coding is used. This generates a wider and lower channel profile with less impact on adjacent satellite operation.
- c. Inroute Bandwidth. The effective data bandwidth (VSAT-to-HUB) can be increased through encoding, power, or spreading; but the desirable goal is to improve overall efficiency (how many bits a frequency range can carry, with given EIRP limits). Moving from a 64Kb/s to a 128Kb/s inroute while doubling the required channel spacing, for instance, does not improve efficiency.

Additional information on modulation techniques may be found in documents CTP.III-105-93 (USA), CTP.III-106/93 (USA), and CTP.III-107/93 (USA), and in section 3 of document CTP.III-25/93 (Argentina).

Modulation techniques should be considered separately from channel sharing, or multiple access, techniques. Numerous multi-access techniques are used, or have been used, within VSAT networks to share the available inroute bandwidth amongst the VSAT population. Included in these techniques are FDMA, SCPC, CDMA, Aloha, and numerous variants of TDMA. Document CTP.III-99/93 (Venezuela) provides a summary of these techniques in section 8 and Annex 1.

5. Spectrum use.

5.1 Comparison of the use of C and Ku bands for this type of network, considering the parameters for rain attenuation.

Of the two commonly used VSAT frequency bands, C-band and Ku-band, Ku-band operations are more susceptible to rain/moisture attenuation (commonly referred to as "rain fade"). The severity of this problem depends on the average seasonal rainfall in a region, and the density of the rain cells. In tropical regions with very heavy rainfall,

Ku-band may be unsuitable; although the problem may be alleviated with larger antenna sizes and adjustable-power transmitters. Terrestrial "on-demand" bypass techniques, where available, can also help.

Where rainfall is not a major factor in estimated network availability (such calculations are outside the scope of this paper), Ku-band is an excellent choice, due to the low use by terrestrial microwave systems.

In Canada, the USA and Mexico, there is no frequency allocation to the terrestrial services in a large portion of the 12/14 GHz band. This has facilitated the implementation of VSAT terminals in urban, semi-urban, rural, and isolated areas, unencumbered with coordination. The much smaller antenna size required for the Ku-band and the better interference environment has permitted the rapid growth of VSAT services in these countries, which in turn has resulted in economies of scales resulting from the mass production of the VSAT terminals. In order to protect the thousands of installed terminals and ensure proliferation of VSAT networks in the Americas, continued access to exclusive spectrum for the fixed-satellite service in the Ku-band is essential. Other services should not be allocated in the 12-14 GHz bands by future ITU Conferences to protect the use of VSAT's in this band.

C-band VSATs typically encounter two problems. The first is antenna size; the characteristics of C-band reception generally make antenna sizes smaller than 2.4M impractical, at typical data rates in use today (512Kb/s outroute). The second problem is spectrum interference, especially from terrestrial microwave applications in urban areas. Document CTP.III-110/93 (Mexico), in section 5.1, notes some specific interference problems of this nature.

It is perhaps of interest to explore the possibilities of multi-hub systems using a mixture of Ku-band and C-band VSATs to take advantage of the strengths of each. This is addressed further in Section 8.

5.2 Spectrum availability by country.

A comprehensive database of C and Ku spectrum availability, coverage, and usage is not available at this time. Individual contributions from documents CTP.III-99/93 (Venezuela) and CTP.III-110/93 (Mexico) are summarized here:

MEXICO: Current and projected transponder availability:

Morelos I & II: current Ku-band operation by VSATCOM (Mexico)

SOLARIDAD (1984): Ku-band, 32 transponders of 54 MHz each; also C-band, 24 transponders of 36MHz each and 12 transponders of 72MHz each.

LATIN AMERICA: Current and projected transponder availability:

Mexican, Brazilian, and soon Argentine satellites available. Also large-capacity transponders on Intelsat and Panamsat.

Alpha Lyracom ORBX: new satellite in 1994-95 for Latin America.

Regional satellite proposed for Andean countries.

Telesat Canada, the owner of Canada's Anik satellites provides two standard services called Anikom 200 and Anikom Access. Both are available at C-band and Ku-band, but VSAT usage in Canada is far greater at Ku-band. Anikom 200 uses the "star" topology, using two shared-hubs, located in Toronto and Montreal. The Anikom Access is primarily a voice communications network, which is based on a "mesh" topology and uses DAMA satellite access. There are also three other companies that provide VSAT services to Canadian users on Anik satellites: Canadian Satellite Communications (Cancom), AT&T Tridom, and Scientific-Atlanta.

5.3 Interference coordination

Document CTP.III-107/93 (USA) provides further details on the routine and blanket licensing agreements that have evolved for C-band and Ku-band VSAT installations in the U.S., and the interference standards that must be met in order to successfully avoid most interference problems; in particular, the use of the $29 - 25 \log O$ limit for side-lobe gain at angles from 1.5 to 7 degrees.

In Canada, earth stations that conform to the Canadian government's definition of VSAT benefit from a more expeditious licensing approval than otherwise possible. This simplified licensing process is possible because there is no requirement for coordination in the Ku-band frequencies, since neither Canada nor the USA operate terrestrial facilities in the 12/14 GHz bands. Interference is therefore limited to adjacent satellite networks which can be coordinated for each transponder use using typical earth station characteristics, independent of the exact location of these earth stations within the satellite's footprint.

It should be noted that while there are a number of cases where other services have been shown to interfere with VSAT operation (terrestrial microwave, satellite analog FM/TV, and SCPC, for instance), the only known interference problem generated by VSATs to date has been intersatellite interference (off-axis EIRP). This problem is manageable through the balancing of antenna size and beam shape and the use of spread-spectrum where necessary. However, coordination of VSAT carriers with other C and Ku-band services is necessary to avoid carrier interference problems.

Documents CTP.III-107/93 (USA) and CTP.III-105/93 (USA) provide a detailed study of the intersatellite interference issue and other issues affecting VSAT spectrum interference and interference coordination. Note also regulatory aspects of interference coordination given in Section 7.

6. VSAT transmission characteristics.

6.1 Signal Levels.

Signal levels are determined by adjusting the EIRP of the terrestrial station. After that the levels at the input and output of each one of the subsystems at the terrestrial station are adjusted. Finally, these adjustments are made at the interface of the transmitted signals as well as the received signals. These interfaces may correspond to voice, data, FAX, video, etc.

Other transmission characteristics are based on the technical parameters of the national satellites. Link calculations for VSAT are based on many factors, but the basic equation for Earth Stations is as follows:

$$(C/N) = EIRP + (G/T) - K - B - L$$

where

EIRP = equivalent isotropic radiated power

(G/T) = ratio of system gain to system temperature

K = Boltzman's constant (-228.6dB)

B = bandwidth

L = link attenuation; $L = 20 \log F(\text{MHz}) + 20 \log D(\text{Km}) + 32.4 + L_s$

L_s = other link losses

An example follows for a C-band installation in South America; information is derived from document CTP.III-25-93 (Argentina).

Band: C

Latitude of the terrestrial receiving station: 54S48

Longitude of the terrestrial receiving station: 68W19

Longitude of the subsatellite point: 71W

Receiving frequency: 400MHz

EIRP: 20 dBw

Receiver system temperature: 120 Kelvin

Antenna receiver gain: 33 dBi

Link attenuation: 96.2 dB

Receiver bandwidth: 5 MHz

Carrier to Noise ratio: -2.4 dB

6.2 Performance in relation to noise and interference.

The terrestrial stations operating in C-band are the most affected by interference originated by the microwave systems operating in the 4 and 6 GHz bands.

For potential future users it is recommended to perform some advance analysis. For these interference theoretical studies, the ratio of carrier to noise (C/I) should be set at least to 25dB.

6.3 Power requirements.

Power requirements are based also on the technical characteristics of the national satellites.

7. Information, by country, on the regulation of VSAT use, with a view to identifying points in common.

VENEZUELA: REGULATORY

In Venezuela, VSAT network operation is governed by the "Regulation on the Operation of Private Telecommunications Networks," issued October 3, 1991. This governs all issues regarding licenses and permits, including satellite use, interference, rates, radio spectrum, compatibility with PSN, etc. Details of this regulation follow:

Satellite Use:

- The space segment shall be administered through the regulatory agency (CONATEL, the National Telecommunications Commission), in accordance with the guidelines of the Radio Regulations of the International Telecommunications Union.
- Companies that have signed satellite telecommunications agreements must request assignment of the satellite space required by any operator on a non-discriminatory basis and in accordance with the principle of equal treatment.

Interference:

The regulation requires operators to use equipment that does not cause interference to other services with previously assigned frequencies, and stipulates the action to be taken by the regulatory agency in proven cases of interference.

Rates:

Rates are regulated for all services provided by the licensees, between maximum and minimum values, and for use of the space segment. Licensees are free, however, to offer different conditions and rates to their users in accordance with the special features of the service they provide.

Use of Radio Spectrum:

- Administration of the radio spectrum is the responsibility of the regulatory agency, which is governed by the aforementioned Radio Regulations.
- Operators may not use assigned frequencies for purposes other than those specifically set forth in their permits and licenses.
- The regulatory agency may decide to transfer the service being provided to alternate bands or to reduce that part of the spectrum assigned to said service, with a view to ensuring more efficient use of the radio spectrum, after first notifying the operators affected so that they may present such arguments as they consider relevant within a reasonable period of time.

Compatibility:

The equipment and systems to be installed must be compatible or provide the appropriate interface for interconnection with the Basic Telecommunications System and with Venezuelan security and defense systems.

MEXICO: REGULATORY

Chapter 5 of the "Reglamento de Telecomunicaciones" establishes the regulations to follow for the installation, operation and commercialization of the terrestrial stations. For the installation of private nets, the "Secretaria de Comunicaciones y Transportes" through the "Direction General de Politice y Normas de Comunicaciones" must be contacted for the terrestrial ... The permit for the space segment must also be included and obtained through "Telecomunicaciones de Mexico." A technical description of the net should also be presented.

A similar procedure is followed for the installation of public nets, but in this particular case, a market study and financial plans should be included, as well as the tariff.

Interference coordination: The "Secretaria de Comunicaciones y Transportes" in coordination with "Telecomunicaciones de Mexico" are the departments in charge of maintaining the registration of transmitting terrestrial stations, in order to reduce the probability of interference.

U.S.A.: REGULATORY

Regulation of VSAT installation and licensing in the USA is performed by the Federal Communications Commission (FCC). Relevant publications are provided at the end of this section.

About a decade ago, when satellite communication systems and applications experienced significant growth in the USA, the government recognized that special regulations were required for the licensing and operation of VSAT systems in order to maintain efficient use of the radio spectrum and geostationary orbit (GSO). Also, it became apparent that the processes of authorization of VSAT networks featuring large numbers of earth stations needed to be expedited. The fixed satellite service (FSS) allocated frequency bands, which are used extensively by domestic satellite communication systems in Region 2, are in the 4-7 GHz and 12-14 GHz bands. In order to satisfy the heavy demand in the U.S. for fixed satellite services in these bands, the government devised an orbit plan of two degrees spacing between satellites in the relevant portion of the GSO.

Since VSAT systems use very small aperture terminals with relatively low levels of antenna discrimination, it was necessary to establish limits for transmit power flux densities and the minimum size of antennas. These limits, based on compatible operation at two degree satellite orbit separations, evolved into VSAT standards for the U.S. domestic satellite industry. To expedite the licensing of large numbers of VSAT terminals, conforming systems were given "blanket authorizations" for all VSATs in a network.

Relevant publications from the FCC in the matter of VSAT licensing and operation are as follows:

1. FCC Report and Order, Released December 17, 1991, CC Docket No. 90-219, In the Matter of Routine Licensing of Large Networks of Small Antenna Earth Stations Operating in the 12-14 GHz Frequency Bands.
2. CC Docket No. 90-219, FCC Notice of Proposed Rule making, Released April 27, 1990, In the Matter of Licensing of Large Networks of Small Antenna Earth Stations Operating in the 12-14 GHz Frequency Bands.
3. FCC Declaratory Order, Released April 13, 1987, In the Matter of Routine Licensing of Earth Stations in the 6 GHz and 14 GHz Bands Using Antennas Less Than 9 Meters and 5 Meters in Diameter, Respectively, for Both Full Transponder and Narrowband Transmissions.
4. FCC Declaratory Order, Released April 9, 1986, In The Matter of Routine Licensing of Large Networks of Small Antenna Earth Stations Operating in the 12-14 GHz Frequency Bands.
5. FCC Declaratory Order, Released September 25, 1985, In The Matter of Routine Licensing of Earth Stations in the 6 GHz Band Using Antennas Less than 9 Meters in Diameter for Narrowband Transmissions.

8. Examination of VSAT developments and future trends (USAT)

VIDEO AND VOICE INTEGRATION (see also document CTP.III-110/93 (Mexico))

It is likely that we will see the integration of video into low-cost VSATs with small antenna size, based on the implementation of Direct Broadcasting Satellites (DBS). Voice integration (packet-switched star network, and direct mesh network) will increase in importance as more efficient and capable systems are deployed; voice is especially attractive for service to rural and remote areas. ISDN integration into private business nets is a future possibility as well.

MULTI-HUB NETWORKS

In the near future, we will probably see the introduction of software-integrated multiple hub networks, allowing general packet switching between VSATs on different outroutes. This would allow the possibility of much larger networks, and the possibility of networks mixing C and Ku-band VSATs, or VSATs utilizing different outroute speeds and encodings.

NETWORK MANAGEMENT INTEGRATION

Further integration of VSAT NMS (Network Management Systems) with NMS platforms such as Netview, UNMA, and others is expected in the mid-1990's.

USAT NETWORKS: (see also document CTP.III-106/93 (USA))

The popularity of VSAT networks in the fixed satellite service (FSS), in which small earth station antennas are located remotely on the roofs of office buildings, hotels, commercial malls and other convenient places, has led to the development of even smaller antennas than VSATs; generally, under 1 meter in effective aperture. These have been referred to in the literature as Ultra-Small Aperture Terminals (USATs). Naturally, antenna discrimination degrades with decreasing antenna size. As a result, in a GSO environment in which satellites are spaced 1, 2 or 3 degrees apart in orbit, it may not be possible to operate with co-frequency carriers in adjacent satellite systems because the main beam of the USAT is impinging on the adjacent satellite's receive beam. For example, in the Ku band (12-14 GHz), a center-fed parabolic antenna with a 1 meter diameter (ratio of diameter to wavelength, $D/\lambda = 50$) would have a half-main-beam-width (HMBW) from about 1.4 to 2.3 degrees. An antenna with a D/λ of 40 (0.8 m diameter) would have a HMBW from about 1.7 to 2.9 degrees. Frequently, the USAT antenna is designed as a horizontal ellipsoid or truncated ellipsoid, reshaping the main beam to reduce interference in the direction of adjacent satellites. This is normally coupled with an equatorial mount to preserve alignment during pointing.

Still, the resultant increase in interference between co-frequency, co-coverage satellite systems in the GSO could have a negative effect on the communication capacity of FSS systems, and should be explored further. This paper identifies potential problems in the use of USATs in the present FSS environment and offers some suggestions for mitigating their interference potential by offsetting carrier frequencies and using spread spectrum modulation techniques. Care should be taken to understand and manage the relationship between three factors in order to minimize interference:

- Transmit power in conjunction with beam width
- Spectrum spreading, allowing a reduction in power at the expense of increased frequency usage
- Effective bandwidth, a function of power, spreading, and encoding techniques.

An Example of a Global USAT Network

A proposed global, mesh-networked system of USATs (sub-meter VSATS) was described by one administration (see Doc PCC.111-22/94). The system would operate in the Ka-band allocation to the FSS 27.5-30.0 GHz uplinks and 17.7-20.2 GHz downlinks) using satellites in the geostationary satellite orbit (GSO). It would provide on-demand, direct access to two-way, interactive, all-digital circuits ranging from 16 kbps telephony to 384 kbps and 1.544 Mbps (T1) data, video, and videotelephony.

The vast majority of the USAT terminals would employ inexpensive 66 cm antennas in conjunction with 0.1 W transmitters whose output would be increased in proportion to rain attenuation to a maximum of 0.5 W. The antenna size was chosen to permit orbital spacings down to 2 degrees and to facilitate the installation of the USATs at residential as well as commercial sites.

Coverage of USATs throughout the world would be provided by a total of 17 GSO satellites launched in two phases over the period from 1997 to 2003. Clusters of four satellites would be located at each of four nominal orbital positions to achieve service to all continental and island land masses, with an additional -satellite providing one-hop links between Asia and North America. Clusters would be connected by wide-band inter-satellite links at 60 GHz to achieve global connectivity. Each satellite would have up to 48 spot beams (24 geographically-separated beams on each of two polarizations) connected to 20 Waf, 120 MHz transponders and would re-use each frequency 12 times.

The 9-satellite phase 1 system (two satellites per cluster) would provide 100,000 simultaneous simplex 384 kbps circuits or the equivalent of over 2 million simultaneous telephone calls among 66 cm USAT terminals. The 17-satellite phase 2 system would provide twice these capacities.

REFERENCES

- | | |
|----------------|---|
| CTP.III-107/93 | V-SAT Performance Standards Adopted by the U.S. (USA) |
| CTP.III-105/93 | VSAT Intersatellite Interference Considerations (USA) |
| CTP.III-106/93 | Interference Considerations of Ultra-Small Earth Stations Used in the Fixed Satellite Service (USA) |
| CTP.III-99/93 | VSAT Networks: Mobile Services Coordination (Venezuela) |
| CTP.III-110/93 | Comments respective of VSAT Systems (Mexico) |
| CTP.III-25/93 | Use of VSAT Terminals Presented by Argentina (Argentina) |

ANNEX 5

WORK PLAN OF PERMANENT CONSULTATIVE COMMITTEE III (PCC.III):

RADIOCOMMUNICATIONS, 1994-1998¹

The First Assembly of the Inter-American Telecommunication Commission (CITEL) adopted, in its Resolution 8 (I-94), the mandate of Permanent Consultative Committee III headquartered in Mexico, as follows:

- "To promote the harmonization of radiocommunication services, bearing especially in mind the need for reduction to the minimum of those factors that may cause harmful interferences in the performance and operation of networks and services.
- To promote the use of modern technologies and the application of the ITU Radio Regulations and Standards."

Similarly, in its Resolution 10, CITEL RES. 10 (1-94), the First Assembly outlined the Plan of Operations of the Inter-American Telecommunication Commission for the period 1994-1998. That Plan establishes and coordinates the activities to be undertaken by CITEL during this period in order to carry out its objectives efficiently. It also recommended that the Chair of COM/CITEL, the Chairs of the Permanent Consultative Committee, as well as the Executive Secretary, consider the aforementioned Plan of Operations as a basic document when planning their own activities.

In view of the above, the Work Plan proposed for PCC.III takes considerable account of the overall conception of the Plan of Operations adopted by the Assembly, which seeks to achieve the consolidation of CITEL in the American States during the period 1994-1998, as the leading institution devoted to strengthening the Inter-American Telecommunication System. It also takes into account the objectives outlined in the Plan of Operations, as follows:

- a) To promote the strengthening of the telecommunications networks and services operating in the American and Caribbean region, and to achieve the availability of services to users with a diversity and density adequate to the demand;
- b) To encourage and promote the creation of radiocommunications in the region, operating with modern technologies and without generating interferences that go beyond the countries' borders, thus being useful to the wide range of radiocommunications users;
- c) To cause the integration level of regional telecommunications to facilitate a timely support to the development process of the region;
- d) To consolidate in the region an adequate coordination and cooperation with subregional and extraregional entities, particularly those from Central America and the Caribbean, as well as with the International Telecommunications Union; and
- e) To harmonize national and international legal aspects for the purpose of facilitating inter-company activities within the framework of the regional telecommunications sector.

In view of the above, Permanent Consultative Committee III will follow a Work Plan consisting mainly of specific activities set out in the Action Plan.

The Work Plan of PCC.III provides for:

1. ~~Promoting the Participation of Associate Members~~
-PCC.III will continuously devote its efforts to promoting the participation, in its

¹Published as Doc. PCC.III-27/94 and approved in the Sixth Session with amendments to item 5.

activities, of institutions belonging to the regional telecommunications sector, as Associate Members."

2. ~~Analysis of CITELE's Basic Instruments~~

-At PCC.III Meetings, analysis of CITELE's Statute and Regulations will be facilitated, so that any necessary changes may be considered, where possible.

3. ~~Seminars~~

-The organization of seminars on issues of major regional interest, related to radiocommunications, will be encouraged. Such seminars will preferably take place at the beginning of each meeting of the Committee.

4. ~~Activities Related to Objectives in the Action Plan~~

-Supporting countries by performing studies and making recommendations on the optimal use of existing and future technologies (objectives "a" and "b");

-Promoting comparable uses, at the regional level of the radio-electrical spectrum (objective "c");

-Fostering regional integration through uses of regional radiocommunication systems (objective "c");

-Strengthening cooperation and coordination with subregional telecommunications institutions in the American region and with regional telecommunications organizations, such as the European Postal and Telecommunications Conference (objective "d");

-Enhancing regional participation in meetings and conferences organized by the International Telecommunications Union (ITU), as well as closely coordinating the follow-up and implementation of its resolutions (objective "d"); and

-Encouraging exchanges of information on legislative issues in the various countries of the region and their harmonization, as far as possible (objective "e").

5. ~~Subjects for Study~~

For the time being, the following subjects were identified:

-Regional database on the utilization of the radio-electrical spectrum, including frequency sharing;

-Portable personal communication system and related systems;

-Small Aperture Terminals (VSATs) and similar systems;

-Geostationary satellite-orbit and low-orbit systems;

-Services for amateur radio;

-Affairs related to the ITU;

-Human resources.

Close cooperation will be established with other relevant COM/CITELE committees or groups for the joint study of subjects, as required; for example, use of the radio-electrical spectrum in America, rural communications and development, and human resource training.

6. ~~Working Groups~~

-The creation of Working Groups and ad hoc groups carrying out their activities mainly by correspondence will be encouraged. In view of the fact that some of the subjects identified were studied by Permanent Technical Committee III, PCC.III predecessor, and that in some cases considerable progress has already been made, existing Working Groups will be continued, for the time being, on the following subjects:

-Use of the radio-electrical spectrum in America;

-Use of VSATs in America;

-Land mobile services;

-Preparing the region's participation in the ITU's Conferences on Radiocommunications; and

-Low-orbit satellites operating below 1 GHz.

- The practice of appointing Coordinators for given subjects of study will also be pursued.

7. ~~Establishing a Schedule of Meetings~~

The following meetings of PCC.III are planned, as indicated below:

1994: -First Meeting: August 22-31, in Ottawa, Canada.

-A seminar will be held at this meeting on uses of low-orbit satellite operating below 1 GHz;

1995: -Second Meeting: February, in Venezuela

-Third Meeting: September, in Mexico.

The Second Meeting of the Committee is scheduled to be held immediately after the Regional Meeting of the International Telecommunications Union (ITU), which will inform the outcome of the work of the Voluntary Group of Experts to examine the allocation and more efficient utilization of the frequency spectrum and the simplification of the Radio Regulations.

For the following years of the work period, two meetings per year are envisaged preferably in March and September.

ANNEX 6 JOINT SESSION OF PCC.II AND PCC.III

Date: August 25, 1994

Time: 9 a.m.

Chairman: Mr. Brown Hernandez (Mexico)

Vice-Chairman: Mr. Ronald Begley (Canada)

During the meeting the following topics were discussed:

- a) Participation of Associate Members in the Working Groups. On this point it was agreed that COM/CITEL should take up the matter with a view to simplifying the process of incorporating these members, adopting Mexico's proposals for amendments to Article 82 of the Rules of Procedure and a document that could motivate their participation. It was agreed that the Chairman of PCC.III submit the adopted documents to COM/CITEL (Annex 7).
- b) Regional data base on utilization of the radio spectrum. The administrations of Argentina and Canada presented documents concerning the 960 to 2500 MHz frequency bands in accordance with the activities of the Working Group coordinated by Mr. Bruce Gracie (Annex 8).
- c) Matters related to the GVE. Mr. Harbi, of the RRB, made a presentation explaining the restructuring of radio regulations as provided in the final report of the GVE.

After an exchange of views, it was agreed that greater study of this report is needed in order to take better advantage of the information meeting to be held in Caracas in March 1995.

ANNEX 7

ASSOCIATE MEMBERS IN THE WORK OF THE PERMANENT CONSULTATIVE COMMITTEES OF THE INTER-AMERICAN TELECOMMUNICATION COMMISSION (CITEL)

WHAT IS CITEL ?

The Inter-American Telecommunication Commission (CITEL) is an organ of the Organization of American States. Its purpose is to use all the means at its disposal to

facilitate and further the development of telecommunications in the Americas, along with adequate telecommunications that contribute to the development of the region.

WHAT ARE THE PERMANENT CONSULTATIVE COMMITTEES ? WHAT IS THEIR PURPOSE ?

The Permanent Consultative Committees (PCCs) are working committees responsible for furthering CITELE's ends. There are three PCCs, responsible for Public Telecommunications Services (PCC.I), Broadcasting (PCC.II) and Radiocommunications (PCC.III).

The purpose of the PCCs is to advise all regional telecommunications entities on matters relevant to their respective areas of competence.

WHO PARTICIPATES IN THE PCCs ?

CITEL Member States (which are all OAS Member States) and American States which, although not OAS members, have been accepted in accordance with the pertinent statutes. Associate Members also participate.

WHO MAY BE AN ASSOCIATE MEMBER ?

Associate Membership in a Permanent Consultative Committee (PCC) of the Inter-American Telecommunications Commission (CITEL) is open to any recognized operating agency, industrial organization or financial or development institution related to the telecommunications industry, with a legal personality provided such membership is approved by the corresponding CITEL Member State (i.e. the country where the entity was incorporated or has its principal office).

WHAT ARE THE BENEFITS OF ASSOCIATE MEMBERSHIP ?

Access to abundant first-hand strategic information on such matters as the state of telecommunications in the countries, development and investment needs, and project initiatives (not yet announced) of interest to Associate Members;

Opportunity to increase their presence in the countries of the Americas by associating with CITEL, which enjoys a solid reputation for impartiality and the confidence of decision makers at the national level;

A forum that makes possible full participation in, and contribution to, the development of programs and projects in the Americas;

An unparalleled opportunity for joint participation with those who make decisions and those who participate in the decision-making processes for national telecommunications policies;

The opportunity to establish a close relationship with key players in telecommunications in the Americas.

HOW DO ASSOCIATE MEMBERS PARTICIPATE ?

Associate Members of a PCC may participate fully in all the activities of that PCC, with voice but without vote. They may present technical papers and receive the documents

of that PCC (i.e. they may contribute proposals and participate in the formulation of PCC's decisions and plans of action).

Furthermore, when authorized in writing by a duly designated governmental representative of a Member State which is a member of a PCC, an Associate Member may, in that PCC and on behalf of and in representation of that State: (1) vote, (2) submit papers and (3) propose to include topics on the PCC's agenda.

DOES IT COST TO BE AN ASSOCIATE MEMBER ?

Associate Members share in the costs of operation of the PCC in which they participate, voluntarily choosing a contributory level. The contributory level is based on a "unit" scale. The smallest share is "one" unit. The monetary value of the unit is one thousand United States dollars (US\$1,000.00) and covers membership prorated for one calendar year. Associate Members choose the units of their contribution as they see fit.

HOW DOES ONE APPLY TO BECOME AN ASSOCIATE MEMBER ?

The application for Associate Membership on a PCC is sent to the telecommunications administration in the Member State that is a member of the PCC, indicating the chosen contributory unit and the pertinent information on the contact person for the procedures to be followed. The corresponding Member State, where applicable, shall approve the application and ask the Executive Secretariat of CITEL to carry out the appropriate procedures.

WHO NOTIFIES THE APPLICANT OF ITS ACCEPTANCE ?

After these steps, the Executive Secretary of CITEL notifies the applicant of its acceptance and on the procedures to be followed.

AND IF AN ASSOCIATE MEMBER WISHES TO RENOUNCE ?

Any Associate Member may renounce membership in any PCC by written notification of such intention to the Executive Secretary. Such renunciation will become effective 90 days from the date of notification. In such a case membership fees will be prorated on a yearly basis.

APPLICATION FORM FOR ASSOCIATE MEMBERSHIP ON PCCs - CITEL

To become an Associate Member of one or more Permanent Consultative Committees, the applicant must complete this form and have it sent by the telecommunications administration of the Member State to the Executive Secretary of CITEL.

International and regional organizations should send this form directly to the Executive Secretary:

Executive Secretary
Inter-American Telecommunication Commission

1889 F Street, NW
Washington, DC
Tel: (202) 458-3004
Fax: (202) 455-3967

APPLICATION FORM FOR ASSOCIATE MEMBERSHIP ON PCCs OF CITEL

CITEL Member State: _____

Date: _____

Name of company/organization/entity applying for Associate Membership:

_____ **Permanent**

Consultative Committee on which Associate Membership is sought:

Number of contributory units chosen for each Permanent Consultative Committee on which membership is sought:

Person authorized to submit application on behalf of company/organization/entity:

Name: _____

Position: _____

Address: _____

Telephone: _____

Fax: _____

Signature: _____

Authority responsible for the telecommunications administration approving the applicant's participation as an Associate Member:

Name: _____

Position: _____

Signature: _____

ANNEX 8**REPORT ON POINT 9.1 OF THE AGENDA¹****REGIONAL DATA BASE ON UTILIZATION OF THE RADIO SPECTRUM,
IN ORDER TO PROMOTE ITS ORDERLY, SHARED USE,
INCLUDING FREQUENCY SHARING**

This subject was considered at the joint session of PCC.II and PCC.III held on the morning of the 25th.

Various papers on this topic were presented. They were submitted by Argentina (15), Mexico (41, published erroneously on the 25th as 40), Canada (50), Uruguay (40), and the United States (21). In response to a request on June 30, 1994 from the Chairman of the joint Working Group of PCC.II and III, information was received from Paraguay for consideration at this meeting. There was a brief overview of the major points of each contribution. The Chairman stressed the importance of this work in the context of harmonizing policies for use of the spectrum in the region and encouraging all members to continue their efforts to develop a regional data base and expand its usefulness. He also encouraged them to submit data in an electronic format.

The United States mentioned in particular the matter of sharing a specific frequency range (1452-1525 MHz), and referred to the activities of the ITU-R sector concerning sharing of this band by aeronautical telemetry, the mobile satellite service, and the satellite radio relay service. Although preliminary indications are that the sharing may not be feasible, additional studies are being undertaken to increase the feasibility of sharing. The Canadian delegation observed that similar results have been found on the 23000 MHz band, and they should be taken into account when evaluating the possibilities of sharing the spectrum.

The Chairman of the joint Working Group (Dr. Gracie) and the Chairman of PCC.III (Mr. Brown) urged members to continue efforts aimed at building on the auspicious start of the project. In this regard, members should do everything possible to provide information on the complete range of data approved in the prior meeting, in order to carry out the project's general objectives and to ensure that the regional data base meets the members' needs to the greatest extent possible.

The Chairman invited Dr. Gracie to continue with this important work and take the necessary steps to ensure timely progress on it.

¹The Sixth Session took note of Doc. PCC.III-27/PPC.III-54/94 which includes the summary of the consideration of this matter in the Joint Session PCC.II/PCC.III.