EVALUATION OF THE ANIK-B COMMUNICATIONS PROGRAM

Volume 2: Processes

Submitted to the Department of Communications
by CPER Management Consulting Inc.

Ottawa
July, 1983

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Volume 2 : Evaluation of Processes

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EVALUATION OF PHASE TWO OF THE ANIK-B COMMUNICATIONS PROGRAM: PROCESS EVALUATION

1 BACKGROUND AND PURPOSE

This report contains an assessment of the effectiveness of three key processes involved in the conduct of the Anik-B Communications Program. The assessment covers both Phase One and Phase Two of the Program. The purpose in assessing the effectiveness of these processes in the Communications Program is to provide useful insights to the DOC in planning future satellite communications service development programs. In particular, in assessing the processes, recommendations are made for the proposed DOC Mobile Satellite (MSAT) Post Launch Communications Program (PLCP).

The three processes assessed are as follows:

- the process for weaning experimenters away from subsidized satellite service;
- the process for involving the private sector in designing and conducting the Program; and,
- the process for identifying and dealing with policy, regulatory and institutional barriers to new telecommunications services.

The Phase One evaluation dealt with other program processes, including the project selection process (see Milestone One Report). The above three issues were identified as important to service development programs such as Anik-B and MSAT for the following reasons:

i) weaning: New satellite communications services deve-

loped and assessed as viable in DOC demonstration programs are expected to eventually be provided on a commercially-financed and operated basis. Thus, there is a need in such programs to prove that the services being tested do represent viable undertakings for the satellite operator. Early transition of experimenters from subsidized to interim commercial or fully commercial services is tangible evidence that effective demand exists for new services.

ii) involvement of the private sector: Industrial and economic benefits are secondary but important objectives of both the Anik-B and MSAT service development Programs. The effects expected in this area are benefits to the satellite service and ground segment industries, and, for MSAT in particular, the increased stability of the prime spacecraft contractor (SPAR). The effectiveness of the process for involving the private sector in the design and implementation of these experimental demonstration programs is considered by the evaluation team to be influential in determining the extent to which benefits actually do accrue to these industries.

iii) policy: The results of the evaluations of the Phase One and Phase Two Programs show that policy, regulatory and institutional issues are one of the major sets of impediments to broader use of the 14/12 GH_z

satellite service. A review of the Anik-B approach to its policy goal may assist in developing more effective approaches for addressing policy issues which would influence the viability of new satellite services being developed in future DOC programs.

II FORMAT OF THIS REPORT

This report contains three main sections, each focussing exclusively on one of the three process issues. Section III contains a report on the weaning process. Section IV is concerned with the involvement of the private sector and section V contains a report on the policy process in the Anik-B Communications Program. Each section contains recommendations for the MSAT Program. Detailed tables of contents on the individual process issues are contained at the beginning of the relevant section.

III ASSESSMENT OF THE WEANING PROCESS

ASSESSMENT OF THE WEANING PROCESS

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ISSUE: WEANING OF PROGRAM PARTICIPANTS FROM DOC-SUBSIDIZED EXPERIMENTAL SERVICES

1.0 INTRODUCTION

This section examines the approaches used by the DOC to encourage experimenters to move away, when desired by DOC, from the subsidized-experimental satellite service and, where appropriate, to move to follow-on commercially-offered services. It also offers alternative approaches which could be considered in the MSAT Program for the "weaning" of experimenters from the subsidized service. The rapid shifting of DOC-sponsored experimenters from experimental to interim or full commercial MSAT services will be important to the development of commercially-offered follow-on services.

2.0 BACKGROUND

The Anik-B Communications Program provided the opportunity to potential users of commercially-offered 14/12 GH_z satellite services to assess the feasibility of introducing follow-on services into their operations and to specify those conditions under which the service would be viable. The DOC Program enabled users to conduct the above assessments by providing them with subsidized experimental satellite services and, in some cases, related ground equipment.

The end-result of the use of the DOC-subsidized experimental service was to be a decision by experimenters on the nature of the telecommunications system which would best meet their communications requirements given the cost,

service requirements and other constraints bearing on such a decision. This decision has been referred to in this evaluation and by DOC officials as the "viability decision". Ideally, a positive decision would result in rapid transition to commercial or interim commercial service.

There are two dimensions to this weaning of experimeters, as follows:

i) encouraging experimenters who have decided in favour of the use of the satellite service of the Program over other telecommunications systems, to actually transfer to commercial service once it becomes available; and,

ii) moving experimenters out of the Program who have decided against the use of the satellite service, in order to enable other experimenters to participate.

3.0 APPROACH TO THE ASSESSMENT OF ANIK-B WEANING PROCESS

The approach taken in this assessment of the weaning of Anik-B experimenters from the DOC-subsidized service has been to identify:

i) the overall Program approach to weaning;

ii) the specific approach used for different experimenter groups;

iii) particular situations in which DOC was relatively successful and others in which difficulties were experienced in moving experimenters or project sponsors away from subsidized service;

iv) the features of the approaches and situations ii) and iii) above which impeded or facilitated an effective weaning process; and,

v) the similarities and differences between the Anik-B and MSAT Programs, leading to recommendations on approaches which could be taken to effectively move MSAT experimenters away from experimental subsidized service.

3.1 Format of this Report

The remainder of this report contains three sections. Section four contains an overall description of the approach used to move experimenters from experimental service to follow-on commercially-offered service or strictly off of the subsidized service. Section five contains case examples and an assessment on how the weaning process actually worked, and Section

six contains recommendations for the proposed MSAT Post Launch Communications Program.

4.0 DESCRIPTION OF THE WEANING PROCESS IN THE ANIK-B COMMUNICATIONS PROGRAM

In this section we describe the approaches that were available to DOC for moving experimenters off the subsidized Anik-B service, and, where appropriate, to follow-on commercially-offered services. Note that we distinguish between pilot project and other program experimenters since the other experimenters did not receive continuing pre-operational satellite service and thus weaning was not as much of an issue for them as it was for the pilot projects.

Descriptions are provided of the particular approaches used for moving each of these experimenter groups from experimental to follow-on commercially-offered services or just off the subsidized service.

4.1 Different Forms of Participation in the Communications Program

Experimenters in the Anik-B Communications Program can be grouped into two categories according to the nature of their participation in the Program:

i) those who conducted formal pilot projects; and,

ii) those who participated in the Program through less time-and resource-consuming activities (such as demonstrations in the Phase One Program and demonstration/experiments and aggregated activities in Phase Two).

4.2 Approaches Available to DOC for Moving Experimenters from the Subsidized-Experimental Service

A variety of options was available to the DOC officials when they so desired, to move experimenters away from subsidized-experimental service. They were:

i) Discontinuing the service for users who had clearly demonstrated that they had no intentions, in the near future, of introducing new commercially-operated communications services into their operations;

ii) Moving experimenters towards a cost-sharing or cost-contribution arrangement once it was clearly established that the experimentation had shifted to service delivery;

iii) Establishing the experimenter as a user of Telesat's commercial service offering. The user could either deal directly with Telesat or, in the early days of the Program, use a "leaseback" arrangement between the DOC and Telesat (an example here would be the lease-back arrangement struck between the DOC and Telesat so that LaSette could purchase the 14/12 GH_Z satellite service directly from Telesat); and,

iv) Encouraging experimenters to go directly to commercially-offered services on other available telecommunications systems which proved

to be the more appropriate for meeting their needs than the 14/12 GH_z satellite service.

4.2.1 The Overall Approach Used for Moving Pilot Project Experimenters from the Subsidized-Experimental Service

Fully 2/3 of the pilot project experimenters were involved with the DOC experimentation for a period of close to six years, through the Hermes Program and Phases One and Two of the Communications Program.

The overall approach used, when desired by DOC, to moving pilot project experimenters away from DOC-subsidized experimental service and, where appropriate, towards the use of commercially-offered services is illustrated below by a description of a typical path that an experimenter could have taken from the Hermes Program of experiments through Phases One and Two of the Anik-B Communications Program. The experimenter could have:

- explored the technical feasibility and potential of the 14/12 GH_z satellite technology in the Hermes Program, but no detailed feasibility analysis would have been conducted;
- prepared, as a result of the Hermes exploration, a proposal to conduct a

"hands-on" pilot project in Phase One of the Anik-B Program to assess the cost-effectiveness of introducing 14/12 GH_z services into their organizations;

- made a "viability decision" on the basis of the Phase One project results;
- After this decision was made, pursued one of the following courses:

  i) remained on the subsidized service in the Phase Two Program but contributed to the costs of the satellite service and, in some cases, the use of DOC ground terminals;

  ii) remained on the subsidized service in Phase Two without contributing to costs of the satellite service, usually for purposes of maintaining service continuity to end-users until a transition could be made to other follow-on telecommunications services, or for completing the Phase One Project;

  iii) moved directly to commercially-offered services; or,

  iv) moved away altogether from any new telecommunications services, including DOC-subsidized experimental satellite service.

All of the above are different forms of "weaning" experimenters away from full-subsidized DOC services and/or towards commercially-offered services.

4.2.2 The Overall Approach Used for Moving Other Program Experimenters from the Subsidized-Experimental Service

A variety of other experimenters used the DOC 14/12 GH_z subsidized-experimental satellite service on the Anik-B satellite to clarify and develop their telecommunications plans, and to assess the possibility of opening up new business opportunities. As opposed to conducting a lengthy pilot project, these groups experimented with the satellite technology and system through such program activities as one or a series of demonstrations or experiments. The demonstrations and experiments were sometimes, but certainly not always, carried out in the field, under the environmental conditions faced by the experimenter in day-to-day operations.

Unlike those who participated in pilot projects, non-pilot project experimenters were not expected by the DOC to make a "viability decision" on the basis of their experimentation. However, as we will note in the following sections, several of these experimenters did make

decisions in favour of using commercially-operated satellite systems and services. Consequent to their Program experimentation they introduced satellite services into their operations.

These activities did not generally involve provision of services to end-users and thus avoided the situation in which anything like true operational, and sometimes basic services, had to be withdrawn at a later date. Stopping the experimental service, then, was not the problem it became in the case of some pilot projects. In general, the options available to these groups following their experiments were:

- to go directly to Telesat Canada if operational satellite service was desired;
- to introduce no new telecommunications service at all; or,
- to continue to assess the possible use of satellite or other telecommunication systems but not through the DOC-subsidized experimental service.

These approaches to weaning were clear-cut and generally understood by experimenters from the beginning of their short activity.

5.0 THE IMPLEMENTATION OF THE WEANING PROCESS: DESCRIPTION AND ASSESSMENT

In this section we present some case examples of how the process of moving experimenters from subsidized service actually worked and the results of these approaches. This analysis covers both Phases One and Two and is broken down according to the approaches to weaning described in the previous section.

5.1 Pilot Project Experimenters

i) Experimenters Who Moved Away Altogether from Subsidized Experimental Service After Phase One

Two of the Phase One projects, one conducted by the Ministry of Education of Quebec (MEQ) and the other by the University of Montreal discontinued their participation after the Phase One Program. The University of Montreal (U. of M.) determined in their Phase One work that the satellite telehealth system which they had tested was not effective for their purposes. Neither of the experimenters introduced new telecommunications systems as a result of their project but MEQ has improved its existing teleconferencing system and U. of M. is still investigating the field of telehealth.

ii) Moved to Phase Two on a Cost-Contribution Basis

All but one of the Phase Two pilot project experimenters also participated in Phase One. Of the Phase Two experimenters who participated in Phase One,

only two did not contribute to the DOC costs for satellite services. Even the new experimenter, the Canadian Petroleum Association (CPA), paid for the service because of the rules for cost-sharing. The results of the project extensions into Phase Two on the telecommunications plans and systems of the experimenters are as follows:

- Two of these experimenters, TV Ontario (OECA) and the Knowledge Network (BCIT and the Ministry of Education, Science and Communications in Phase One) introduced Telesat 14/12 GH_z satellite service into their operations following the Phase Two project. Officials of the B.C. government and the Knowledge Network reported to us that the Anik-B service, although experimental, was seen in Phase Two as service delivery. Political commitment for a satellite-based teleeducation system existed very early in the project;
- Two experimenters, ACCESS Alberta and CNCP, are still seriously considering the introduction of commerically offered 14/12 GH_z satellite service. ACCESS executives are strongly in favour of introducing a 14/12 GH_z satellite system and have developed a plan for doing so but the Minister responsible has not approved the proposal due to concerns about its potential impacts on systems currently used by ACCESS for long-distance education. CNCP received approval to extend its project beyond Phase Two until February 1983,

when commercially-provided Telesat service on Anik-C3 became available. The DOC files on this project document that problems were encountered by DOC in getting CNCP officials to define objectives for the project as they related to that organization's business plan. However, DOC wanted CNCP involvement in the Program;

- The BCTV has no current intentions of introducing 14/12 GH_z satellite services and introduced no new other telecommunications service into its own operations, although BCTV is a shareholder in CANCOM which distributes the BCTV signal, among others via 6/4 GH_z satellite. BCTV officials do not attribute their participation in CANCOM to the Anik-B project. This fact was known by both the Federal and B.C. governments almost from the beginning of the project but BCTV's participation was desired by the B.C. government and grass roots, provincial and federal government policitical pressure was used to keep it on;
- The CBC has not yet introduced any new telecommunications services as a result of the use of the DOC subsidized service, although the use of 14/12 GH_z services is still under consideration by CBC;
- Memorial University has extended its terrestrial services to one of its experimental sites and is now participating in an off-shore application of the 14/12 GH_z system and services;

- The CPA itself, and its member companies have no plans to introduce new telecommunications services as a result of the project but are continuing to experiment with the DOC. Although regulatory problems are the main inhibitors for use of 14/12 GH_z services by CPA companies, CPA members interviewed stated that the current economic situation was also limiting the introduction of new telecommunications systems.

iii) Continued on the Subsidized Service into Phase Two With no Cost Contributions Until Other Telecommunications Systems Became Available

Two experimenters, the Inuit Tapirisat of Canada (ITC) and the Ontario Ministry of Government Services (OMGS), continued their Phase One experimentation into Phase Two. Neither organization paid the DOC for use of the satellite services in Phase Two. The ITC experimented for only about 3 months and then, with the TNI, also a Phase One participant, created the Inuit Broadcasting Corporation which now uses the 6/4 GH_z satellite services of the CBC to deliver programming to Inuit communities in Canada's panarctic region. The IBC moved away from the subsidized-experimental service once it had received its network license from the CRTC and funding to operate from the Federal Cabinet. The ITC and TNI worked through the pilot projects to demonstrate to the CRTC and the Federal funding bodies that an Inuit Broadcasting Corporation providing native programming

and run by Inuit people was desirable and could work.

The OMGS stayed on the experimental 14/12 GH_z satellite system in Phase Two until one terrestrial microwave link was made available by Bell Canada. A second experimental link, new to the Phase Two Project, was tested only briefly near the end of the Program after being delayed due to problems within the experimenter's organization. No terrestrial microwave link has been introduced to replace the second experimental service. The OMGS did not pose a problem for the DOC with respect to continued use of the experimental-subsidized service. Once a viability decision had been made by the OMGS, it moved to introduce its teleconferencing service on the selected terrestrial system when the commerical operator (Bell Canada) made it available.

5.2 Other Experimenters

Experimenters who participated in other program activities such as demonstrations did not pose "weaning" issues for the DOC similar to the extended use of the subsidized service by the pilot project experimenters.

The experimentation was generally of limited time and was considered just that, an experiment or limited field trial. Experimenters were not put in the position where they provided a continuing service to their end-users.

Out of the limited experimentation arose some

important success stories such as LaSette, the Globe and Mail and AllView Network.

Following demonstration of the Anik-B 14/12 GH_z system, LaSette became a paying Telesat customer of the 14/12 GH_z satellite system and the observations of AllView contributed to the use by some Pay TV operators in Canada of the 14/12 GH_z satellite service on Anik-C3. These successes are likely due in part to the fact that the participants came to the experimentation with a very clear definition of how they would use the satellite services in their operations.

5.3 Assessment of the Weaning of Experimenters from Experimental Service

As noted in section 3, there are two dimensions to the process of moving experimenters off of the subsidized experimental service when desired by DOC, i.e., moving experimenters towards commercially-offered services, and moving experimenters who have made negative viability decisions on the introduction of new telecommunications services off the subsidized service to allow others to experiment.

The process of taking experimenters through the two phases of the Program and, in some cases, the Hermes Program as well, resulted in the transition of two experimenters to Telesat's Anik-C3 service and several other experimenters to other new telecommuni-

cations services (e.g., OMGS, ITC). The majority of the pilot project experimenters moved from the experimental service when requested to do so by the DOC. Other experimenters who participated in experiments and demonstrations did not cause problems with respect to weaning as they did not receive continuing service on the Anik-B Communications Program.

Two cases, however, represent examples of "weaning" problems.

1. BCTV:

BCTV participated in the PDPP West project in both Phases One and Two of the Program, and made little pretense of moving to 14/12 GH_z services if they had to pay full commercial rates to Telesat. The original intention for requesting the involvement of BCTV as told to us by officials from the B.C. Ministry of Education, Science and Communications was to assist that Ministry in meeting its mandate to provide communications services to unserved and underserved areas of that province.

The BCTV story is likely the most high profile example of the problems that can be faced in conducting a program where the communications services are offered on a subsidized-experimental basis. In this case many communities in B.C. and the Yukon received the signal of a commercial television

station for the first time. For some communities television service itself had never been received before. In other cases, no choice had previously been available. Withdrawal of the BCTV service became a highly politicized issue from the grass roots right up to the Federal-Provincial levels. Correspondence on the DOC files illustrates a great deal of posturing by BCTV, the provincial and federal governments. The issue rose to the ministerial level and the BCTV signal was transmitted on the Anik-B subsidized service until the 6/4 GH_z CANCOM service became available and the terminals required were in place. Several communities which had received the BCTV signal via the Anik-B 14/12 GH_z experimental service have now switched to 6/4 GH_z service in order to continue receiving the signal.

2. CNCP

CNCP started its experimentation in Phase One in a joint pilot project with DOC which continued through Phase Two. As the end of Phase Two approached, CNCP officials requested another extension to complete their experiment until Telesat service became available. Still CNCP has not made a formal commitment to introduce 14/12 GH_z satellite services. DOC officials reported problems in getting

senior level officials of CNCP to define just exactly what the objectives were of their project and how it fitted into the organization's corporate plan. The statement of objectives for the project was produced jointly by DOC and CNCP officials at the persistent request of DOC prior to the extension beyond Phase Two. This extension was later approved by DOC. Our interviews with CNCP officials produced no evidence of a concrete plan to introduce the 14/12 GH_z satellite service.

Summary

In both of the above cases, the DOC was committed to keeping these users on the experimental service, i.e.,

- in the case of BCTV, political pressure caused by introducing and then attempting to withdraw what was viewed as a basic and operational service, placed the DOC in a position where it had virtually no choice but to maintain the BCTV on the experimental service; and,
- project files indicate that, in the case of CNCP, DOC wanted a carrier involved in the program and was also under pressure not to favour one carrier group (TCTS) over its major competitor.

5.4 Summary of Factors that Impede or Facilitate Weaning

On the basis of the above case examples and the description of the project results contained in Section 5.1, the following factors are identified as impeding or facilitating the transition of experimenters away from subsidized service.

i) Strong political support for introducing the new services is a key factor which can facilitate a relatively smooth transition to commercial service. Examples here are the strong political support for the creation of the satellite-based tele-educational service of the Knowledge Network in British Columbia, and, on the other hand, the need to convince the Alberta Cabinet of the desirability of the use of the satellite services by ACCESS Alberta. In the case of ACCESS the need to create this support has resulted in no follow-on satellite service to-date, even though senior executives of the agency support the transition.

ii) Concomitant to i) above, the long time involved in acquiring support required for the transition to commercially-offered services by publicly-funded institutions often prolongs the length of time users require subsidized service.

iii) The extent to which the experimenters have identified at the beginning of the experimentation, the role of the experimental and subsequent follow-on service in the organization's corporate level plan is a significant influencing factor. For example, CNCP is still working on this, whereas TVO had identified the specific purpose for which it would use the 14/12 GH_z satellite service (i.e., to extend its services to Northern Ontario) and the conditions under which this would be feasible, i.e., rolling over their southern Ontario coverage to the satellite service from their terrestrial lines.

iv) The availability or not to the experimenter organizations of funds for new services, is also a critical factor. For example, in some of the CPA member firms, resources for new services are just not available at this time due to current economic conditions.

v) The extent to which the experimental service is used to provide to the general public, end-user services which are considered as basic to quality of life or safety is important in assessing likely weaning problems. In the case of BCTV,

the provision of alternative television programming service to unserved or underserved communities was such an example.

6.0 SIMILARITIES AND DIFFERENCES BETWEEN THE ANIK-B COMMUNICATIONS PROGRAM AND THE MSAT PROGRAM

In order to draw recommendations for the design and conduct of the DOC-planned MSAT demonstration Program from the Anik-B experience, we identify below similarities and differences between the two Programs.

Similarities

The primary objective of both Programs is 'service development'. Service development refers to the development of new services to meet telecommunications service needs on a follow-on operational (as opposed to experimental) telecommunications system. The Project Brief for Phase B of the MSAT Program clearly states that the measure of success of the proposed MSAT demonstration Program would be the provision of MSAT services on a commercially-financed and operated basis, if warranted by the Phase B studies. In the DOC MSAT Program, like the Anik-B Program, the Department of Communications would assume responsibility, including financial, for designing and launching the satellite. As well, should Telesat be selected as the satellite operator, the DOC would lease the satellite services from that organization for its proposed satellite demonstration program. Users of MSAT would receive, as in Anik-B, satellite service which would be subsidized to some extent, by the DOC.

Differences

While the proposed MSAT demonstration Program follows the same overall DOC-subsidized demonstration satellite approach

pursued in the Anik-B Program, differences in the two Programs already exist and others are being considered by the DOC for the actual conduct of the MSAT Demonstration Program.

These are:

i) The intended client base for MSAT is different from that of Anik-B. The MSAT staff is attempting to encourage the participation in the MSAT demonstration Program of both the private sector and the carriers. Smaller private sector participants would likely feel the pressure themselves to determine whether or not to allocate resources to an MSAT service and to do so quickly;

ii) No needs analysis was conducted for the Anik-B Communications Program whereas the MSAT Program has placed considerable effort on this activity (see Section D of the Milestone No. 1 Report of the Anik-B Phase One Evaluation). This work can be used in selecting experimenters who have a serious interest in follow-on MSAT service;

iii) Due to delays in getting the Anik-B Communications Program underway, the promotional efforts conducted by DOC officials were limited to a relatively small group of potential experimenters (see Milestone No. 1, Report on the Phase One Anik-B Evaluation, Section D). To date, the MSAT staff has conducted a broadly-based, promotional effort for its proposed demonstration satellite program.

This work should provide DOC with a wider group of applicants to select from and a better indication of the potential markets for follow-on MSAT services;

iv) The MSAT Program is a phased one in which DOC officials must demonstrate to the Federal Cabinet, prior to the approval of each phase, that the proposed MSAT system still appears to be commercially viable and will have positive service and economic impacts. As a result of this phased-approach, a much longer lead-time has been established to design the MSAT experimental-demonstration Program, than occurred in the Anik-B Communications Program; and,

v) Unlike the Anik-B Communications Program, means for cost-recovery and cost-sharing are being examined already for the MSAT Program. This should assist in weeding out possible experimenters who might not be looking beyond the experimental service and encourage users to determine where such a service would fit into their future operational systems.

7.0 RECOMMENDATIONS FOR THE PROPOSED MSAT DEMONSTRATION PROGRAM

The previous analysis of the factors affecting the weaning of experimenters from subsidized-experimental service have led us to the following recommendations for the MSAT Program:

1. Almost all of the pilot project experimenters in the Anik-B Projects were willing to pay for the service in Phase Two. While the charges levied by DOC were not comparable to the rates for full commercial service, the willingness to contribute to costs could be used to illustrate to Telesat that the experimental service offering was considered to be of some importance to users. MSAT officials should consider introducing a fee for the use of the experimental satellite service as early as practicable in the proposed demonstration Program;
2. Selection criteria for the MSAT demonstration Program should include the users' ability to acquire funds for ongoing and not just experimental service. This recommendation is particularly important for publicly-funded institutions where funding approval processes are usually time-consuming and complex;
3. For both private and public sector organizations, transition to follow-on service will be affected

by the preparations that have been made. Selection criteria for the MSAT demonstration Program should call for evidence that provision has been made for a possible follow-on MSAT system in the corporate plans of the applicant;

4. For not-for-profit, social-service-type projects which would require funding by government agencies, DOC officials should consider involving funding agents closely in the project, as was done in some of the Anik-B projects (e.g., ITC and DIAND);

5. When it becomes apparent that a user is providing end-user services through the experimental-subsidized service, and yet has no concrete plans for transition to follow-on commercially-offered services, the DOC should request resource contributions by the experimenter or stop service to this experimenter. This recommendation could obviously not be applied in all cases. For example, when political pressure is high, a Ministerial decision may be required. Other projects may be continued because they support other government objectives (e.g., social development);

6. Special attention should be paid to experimental projects which involve services to the general population and which affect the quality of life (e.g., ambulance services, fixed telephone services). DOC should monitor such projects to deter-

mine whether funds will be available for follow-on services and whether commitment to introduce follow-on services exists by funding agencies and service providers. DOC should be aware that highly politicized situations could develop concerning the withdrawal of the experimental services in such cases;

7. Concomitant to six above, the DOC may wish to ensure in its project screening process that, except in cases where a social commitment is made by government, MSAT services would not be provided by experimenters to end-users who could not afford such a service on a follow-on commercially-offered system. For these purposes the DOC may wish to involve potential 'providers' of the end-user services for a follow-on system, and potential funders, in the project-screening process;
8. Careful attention should be paid in reviewing applications to determining if, in fact, a long-term pilot project is required for making a viability decision. It is the extended pilot projects where "weaning" problems arise for the most part, primarily due to the fact that end-users begin to view the experimental service as operational and continuing. As noted, in cases where experimenters are quite clear about how they wish

to use potential satellite services, less resource-consuming activities are often effective in moving users towards commercially-offered services;

9. The best approach to preventing problems like that encountered with the BCTV would be to avoid situations in which the experiment is:

   - long term, and,
   - delivering service directly to end-users, especially the general public.

   However, in Anik-B, projects of this nature were selected to force the development of new services to underserved areas;

10. Due to the differences between the target clients of the Anik-B and the MSAT Program, MSAT may be faced with some weaning problems of a somewhat different nature than those described herein. One in particular may require special consideration. Carriers are a very powerful lobby group and with strong entrenched positions. It may be difficult, therefore, in MSAT to wean carrier participants away from the institutional arrangements for MSAT which are set up in the Post Launch Communications Program (PLCP). Special consideration should be given to this potential problem in the detailed planning of the PLCP.

IV ASSESSMENT OF THE PROCESS FOR INVOLVING THE PRIVATE SECTOR

ASSESSMENT OF THE PROCESS FOR INVOLVING THE PRIVATE SECTOR

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1.0 INTRODUCTION AND PURPOSE

The purpose of this process assessment was to determine the effectiveness of the DOC approach to involving the private sector in two key aspects of the Anik-B Program: first, the involvement of the private sector in the manufacture of 14/12 GH_z LCET's; and, second, the involvement of Telesat in the Program and subsequent delivery of 14/12 GH_z service on a commercial basis. Specific suggestions were then to be made on possible improvements that could be considered in the current MSAT Program.

ISSUE : INVOLVEMENT OF THE PRIVATE SECTOR

2.0 INVOLVEMENT OF THE PRIVATE SECTOR IN THE MANUFACTURE OF LCET's

2.1 Introduction

In this section, the process employed by DOC, largely as part of the Program Delivery Pilot Project, to establish a viable Canadian manufacturing industry for low-cost earth terminals (LCET's) is examined and assessed. The purpose of this examination is to provide suggestions to DOC officials on the question of how to effectively involve the ground segment manufacturing sector in future DOC Programs that have communications service and industry objectives. In particular the intention is to provide suggestions on this process for the DOC-sponsored Mobile Satellite Program (MSAT). Thus, the assessment of the Anik-B process was done in terms of its effectiveness in contributing to the earth station manufacture industry objective. Issues of efficiency were not addressed in this assessment.

2.2 Background

The primary objective of the Anik-B Communications Program was to stimulate the establishment of a 14/12 GH_z satellite communications service in Canada. The requirements for service had been identified earlier in the CTS Hermes Program, continuing Anik-B experiments and other DOC studies. Direct-to-home broadcasting of television signals was seen as an important application of this service,

and the DOC co-sponsored with the governments of Ontario and British Columbia a major pilot project on this application. For direct-to-home broadcasting, it was recognized that a TVRO earth terminal which the average consumer could afford to buy would be an essential requirement. The technical feasibility of such a Low Cost Earth Terminal (LCET) had been established by CRC officials prior to the Hermes and Anik-B Programs.

2.3 Process

To meet this requirement, DOC placed contracts with SED Systems Ltd., of Saskatoon, Sask., for the development, production and performance evaluation of a low-cost earth terminal (LCET) and the supply of 100 terminals. DOC let separate contracts for the development and production of three prototype indoor units to Electrohome Ltd., of Kitchener, Ontario, from whom SED Systems Ltd. subsequently purchased 100 units. SED purchased the antennae for the LCET's from Andrew Antenna Company Limited of Whitby, Ontario.

In addition to financing the development, production and performance evaluation of the LCET's, DOC transferred technology and provided technical assistance to both SED Systems and Electrohome.

As part of its contract with DOC, Electrohome carried out a market survey for low-cost earth terminals, in order to determine the design parameters that were required. SED Systems was not required to conduct any market studies under its contracts with DOC, although some DOC officials encouraged the company to undertake them on its own.

2.4 Results

In spite of some problems with the indoor units, SED Systems successfully completed its contracts for the development, production and performance evaluation of the LCET's and the delivery of 100 terminals to DOC. It subsequently sold another 200 terminals, most of them to TV Ontario and Knowledge Network. The company judged the project to be both a technical and financial success.

SED has licensed General Instruments (G.I.) in the United States to use its LCET technology. However, apart from this license agreement, SED Systems is now completely out of the 14/12 GH_z LCET business, and has no prospect of getting into it again in the future.

2.5 Assessment of Process

The characteristics of the process used by DOC towards its objectives for LCET's were as follows:

i) to direct contracts to one selected company (SED) for the development and production of units to be used in the program experimentation;

ii) to transfer technology and provide technical assistance to the company;

iii) to assess the company in terms of its technical capability, but not its marketing or mass production expertise; and,

iv) to require no financial contribution by the company to the development of the LCET.

The process employed by DOC was effective in developing and producing an LCET that was technically as good or better than other TVRO terminals on the market at the time, as evidenced by G.I.'s desire to license the technology. However, SED has no prospect of manufacturing and marketing the LCET on its own in future and we found no evidence of other Canadian companies which are in such a position. DOC officials attempted to encourage an arrangement whereby SED could benefit from the mass production and marketing capabilities of Electrohome but this relationship did not develop.

2.6 Contributing Factors

Two main factors contributed to the failure of the process to achieve the desired objective.

First, the market for direct-to-home TVRO's in Canada did not develop as quickly as had been anticipated for a number of reasons beyond the control of the company, such as:

a) The government regulation that prohibited, until recently, the operation of TVRO's by private individuals;

b) The CRTC's decision to allow CANCOM to operate in the 6/4 band;

c) The dearth, until recently, of TV programs broadcast at 14/12 GH_z;

d) Telesat's decision to design the current Anik-C satellites so that their spot beams would not cover northern Canada; and,

e) The steady growth in the number of homes in southern Canada served by cable TV.

Because of the delay in the growth of the market, SED Systems lost whatever technical advantage it had over the competition in other countries as a result of its lead in the development of LCET's.

Second, SED Systems did not have the knowledge, expertise or resources necessary to manufacture and market LCET's in the large volume required to achieve the economies of scale that are essential to compete in the domestic and export markets. The company appears to have viewed the whole project primarily as an engineering development and production job to meet the requirements of the Anik-B Program, rather than as an investment in a new product line from which it could earn a good return for years to come. SED was not required by DOC to invest any of its own money in the development and production of the 100 DOC terminals for the project, and it did not do so. It had no experience in mass production or marketing, and very little appreciation of what they involved.

DOC provided as much support as could be reasonably expected of it, and more than would normally have been provided under the shared-cost programs of ITC. Although SED was chronically short of capital, this was not the major problem. The simple fact is that without a substantial strengthening of the company's production and marketing skills, no infusion of capital or financial assistance from DOC or any other source would have overcome the company's deficiencies. It is clear therefore, that even if the DBS market had developed as had been anticipated, SED would probably not have been able to compete in it on a long term basis, without

changes to its structure, e.g., formation of a consortium, purchase of a production-oriented company, or use of a licensing agreement.

2.7 Conclusions

Two general conclusions can be drawn from the foregoing analysis:

(1) Where a product, like the LCET, must be mass produced and marketed in order to achieve the economies of scale required to compete successfully in the market place, it is just as important for the contractor to have the requisite production and marketing skills and resources as it is to have the technical skills and resources required to develop the product.

(2) It is difficult to market any product if government policies and regulations prohibit or inhibit the development of the market for the product or its use. DOC service and product development programs should not be based on the assumption that regulatory and policy issues are the prerogative of other groups. The large resource allocations to these programs dictate that policy and re-

gulatory issues be dealt with directly in these programs to ensure the effectiveness of the resource expenditures.

2.8 Recommendations

2.8.1 General

The experience with the development and manufacture of the LCET's for the Anik-B Communications Program suggests several courses of action that should be considered by DOC in undertaking similar programs in future.

Where it is known that a new product must be mass produced and marketed in order to compete successfully in the market place, DOC should invite companies to bid on its development and share the development costs so that they have a vested interest in manufacturing and marketing it. In their bids, companies should be required to demonstrate that they have, or can readily acquire, the ability and the resources not only to develop the product but also to mass produce and market it, preferably by showing that they know the market and have mass produced and marketed similar products for it. They should be required to give an undertaking that if the product is successfully developed, they would endeavour to manufacture it in Canada and market it in the domestic and export markets.

If no Canadian company can be found which is willing and able to produce and/or market the product, consideration should be given to contracting with a Canadian company to develop the product, preferably on a cost-shared basis for the

reasons cited above, and to arrange for it to be manufactured under license and/or marketed by a foreign company, negotiating Canadian production offsets wherever possible.

If a company requires financing which DOC cannot provide, assistance under the programs of other federal government departments such as ITC should be sought where appropriate. In doing so, however, care should be taken to ensure that companies are adequately capitalized and do not assume debts which will impede them from achieving the project objectives.

Finally, DOC must ensure that government policies and regulations facilitate and support the attainment of its communication program objectives from the outset, and not prevent or impede them. Technological innovation is a risky business under the most favourable circumstances; it cannot be expected to flourish in the face of policies and regulations that oppose it.

2.8.2 Particular to MSAT

There are two important differences between the MSAT and the Anik-B Programs that condition the application of the above recommendations to the MSAT undertaking.

The first difference is that MSAT program management has commissioned an extensive study of the manufacturing opportunities and impediments, well in advance of the R & D and initial manufacturing initiatives. This should provide a solid base for determining the characteristics of the market and therefore the characteristics required of companies to establish and hold a lead in it.

The second difference is that the most recent estimates of the domestic market for MSAT terminals is 140,000 by the year 2000 : a market very much smaller than that envisaged for the 14/12 GH_z LCET's. Access to mass manufacturing and distributing capabilities may not be quite as important as in the case of the LCET's.

The LCET experience described above demonstrates the importance of selecting manufacturing companies that can develop a strategy to capitalize on the technological lead that the MSAT program will give them. It is too early now to specify what that strategy should be : it could range from a major initiative to break into the world-scale manufacturing business, at one extreme, to a technical licensing arrangement with an offshore company, at the other extreme.

Two of the key determinants of the strategy will be the expected rate of diffusion of the technical developments expected under MSAT funding, and the anticipated international market.

If the technical advances are expected to spread rapidly, then cost will quickly become the factor determining success.

If large international markets are foreseen, then the international competition will also bring strong pressures on cost.

Canadian manufacturing companies selected for MSAT participation should demonstrate an understanding of these issues and have a demonstrated ability to develop winning strate-

gies in response to them. The detailed profile and analysis of potential Canadian MSAT terminal and system manufacturers which is currently being conducted as part of the MSAT manufacturing impact study should provide useful information to DOC for the selection of DOC-sponsored MSAT manufacturers.

As noted on the previous page, this study will also identify potential problems and needs of the industry affecting its ability to meet the projected demand for MSAT equipment, as well as identify changes which could be made to address these problems by both government and industry. This work, combined with the early policy work being conducted by the DOC, should minimize the possibility of policy and other impediments similar to those faced by SED on the development of a viable manufacturing industry for MSAT terminals.

The key for the MSAT Program will be to act on the results of these studies in both the selection of DOC-sponsored MSAT manufacturers and the influencing of an MSAT policy and institutional framework.

3.0 INVOLVEMENT OF TELESAT CANADA IN THE PROGRAM

3.1 Introduction

The purpose of this process assessment is to comment on the effectiveness of the approaches used to involve Telesat Canada in the design, conduct and analysis of the Anik-B Communications Program. From this assessment, recommendations were to be made about approaches for involving Telesat in the MSAT Program.

The major purpose of DOC-funded experimental programs such as the Anik-B Communications Program is to stimulate the establishment of a new commercially viable telecommunications service offering. As the only owner and operator of Canadian commercial satellites, Telesat obviously has an important role to play in achieving this DOC objective and, in general, there would be considerable merit in involving Telesat in all aspects of such programs.

The major purposes in seeking an active involvement on the part of Telesat officials in such experimental programs would be as follows:

- to ensure that the experiments and projects selected represent an appropriate cross-section required to support a commercial viability analysis;
- to ensure that necessary relationships and procedures had been established so that follow-on services would be available for those experimenters desiring it; and,

- in achieving the above, to accelerate the process for the withdrawal of DOC subsidization of satellite services by encouraging Telesat to make a commercial viability decision at the earliest possible time and introduce a commercial service offering, if warranted.

3.2 Telesat Involvement in the Anik-B Program

The major activities in which Telesat possibly could have participated in the Program were:

i) program design;

ii) program promotion;

iii) proposal review and selection;

iv) project reviews;

v) market and feasibility analyses on the basis of project results; and

vi) individual Telesat - sponsored projects, demonstrations or experiments.

It was noted in the "end-state" evaluation that Telesat had originally not been as convinced of the need for a 14/12 GH_z demonstration program as had DOC. The Telesat decision to invest in a 14/12 GH_z satellite service offering had been made well in advance of the demonstration program, based in large part on the results of the earlier HERMES program of the DOC. This investment decision had been based on a different forecast of the market for 14/12 GH_z services than DOC's forecast. Telesat/TCTS had projected that telephone and message traffic would be the dominant use of the offer-

ing, whereas DOC thought that there would be considerable potential in television broadcasting.

In the final analysis, Telesat's actual involvement in the Program was very informal, especially in the earlier planning and developmental stages. The major involvement of Telesat officials was through the use of the demonstration activity which they used to exhibit to foreign parties the potential of medium-powered satellites for direct broadcast services (DBS). As well, in the latter stage of the Program, Telesat officials used the results of the PDPP pilot projects as further demonstrations of the feasibility of this approach to DBS.

While the results of the pilot projects were reviewed every two months at presentations to the Service Liaison Committee, there were no established links for either reviewing the results of individual pilot projects, or for aggregating the results of the pilot projects into market analyses and feasibility studies for the 14/12 GH_z service offering. Contacts between pilot projects sponsors and experimenters on the one hand and Telesat on the other were characterized as being very informal and intermittent.

On one occasion, however, Telesat did offer interim commercial services via the leaseback facility to a user that had a strong interest in moving quickly to an operational service.

3.3 Results of the Anik-B Program

The end-state evaluation, presented in volume one of this report, concluded that the Communications Program had played an important role in developing business for the current 14/12 GH_z service offering of Telesat. In particular, the PDPP projects demonstrated the feasibility of using such medium powered satellites for T.V. broadcasting directly to homes, institutions and cable head-ends. The demonstration effect of the Communications Program pilot projects was held to be a significant factor in the decisions of Canadian broadcasters to use the 14/12 GH_z service. As well, the experience of the DOC T.V. broadcasting pilot projects was identified as a significant factor in the decision of U.S. broadcasters to go for lower-powered satellites than had originally been planned for use in direct-to-home T.V. broadcasting. Both of these factors have made major contributions to development of the current utilization of the Anik-C satellite.

3.4 Conclusions on Telesat Involvement in the Program

It is clear that the involvement by Telesat in the design and conduct of the Communications Program was very limited and informal.

However, this lack of formal involvement did not prevent the results of the demonstration program from having important effects on both Telesat and the viability of its 14/12 GH_z service offerings.

This lack of a formal mechanism for involving Telesat in the Program was probably due to three main factors:

- DOC and Telesat had different views on which would be the major markets for the service offering, with Telesat emphasizing the voice/message market;
- Telesat was already committed, at least in principle, to the introduction of a 14/12 GH_z offering; and,
- Telesat officials initially downplayed the importance of a demonstration program, in part due to the markets which they were emphasizing.

3.5 The MSAT Program

The MSAT Program has a number of similarities with Anik-B but also some very fundamental differences that affect the issue of involving Telesat in the Program.

Like the Anik-B Communications Program, the objective of the MSAT Program is service development, i.e., the stimulation of the establishment of a new commercially viable service offering. However, the differences between the Programs are very profound.

From the perspective of designing a mechanism for involving Telesat in the MSAT Program, the most important differences are as follows:

- The MSAT Program is starting at a much earlier phase in the development of mobile satellite services than was the case of the 14/12 GH_z services of the Anik-B Communications Program which was based on the HERMES

experiments;

- An MSAT service offering has not yet been subjected to a detailed viability analysis by Telesat, TCTS companies or indeed any other party;
- MSAT is a phased program, requiring at each stage of approval the commitments of the major actors, including Telesat; and,
- There is greater emphasis in MSAT than in Anik-B on ensuring that the new services to be developed would be fully compatible with existing terrestrial and satellite communication services, both mobile and fixed.

3.6 The Current Involvement of Telesat in the MSAT Program

To date, the DOC MSAT project team has taken a radically different approach to the involvement of Telesat than is described above for the Anik-B Communications Program. Telesat is viewed as a major partner in the Program, and is actively involved in all of the major committees and study groups.

Telesat is being financed by the government to take the lead role in conducting the comprehensive viability analysis of the MSAT service offering that will be a major component of the Phase 'B' report to the government. As well, Telesat officials participate in review sessions of the market studies and marketing efforts being sponsored and conducted by DOC.

Further, Telesat officials participate very actively in the policy committees which are examining the regulatory and policy issues which must be addressed if MSAT is to be a viable service offering.

3.7 Recommendations

The consulting team recommends no changes to the current involvement of Telesat in the MSAT Program, based on the Anik-B experience. A radically different approach is being used, one which offers considerable promise of much closer and effective involvement of Telesat in the design and possible subsequent implementation of both the service offering and any experimental program of pilot projects or demonstrations.

V ASSESSMENT OF POLICY IDENTIFICATION AND RESOLUTION PROCESS

TASK NO. 3 : ASSESSMENT OF THE POLICY IDENTIFICATION AND RESOLUTION PROCESS

Table of Contents

ISSUE : IDENTIFICATION AND RESOLUTION OF POLICY ISSUES

1.0 INTRODUCTION

In this section we assess the overall approach followed in the Anik-B Communications Program for identifying and dealing with policy, regulatory and institutional barriers affecting the development of satellite services in the 14/12 GH_z frequency range. General lines of alternative approaches are presented and assessed and recommendations are made for the policy process in the DOC MSAT Program. We acknowledge the limited nature of the DOC policy goal for the Anik-B Communications Program and the alternatives offered are relevant to programs which would have a less limited policy goal than that of "issue identification".

In the remainder of this section we refer to "policy, regulatory and institutional issues" simply as "policy issues".

2.0 APPROACH TO THE ANIK-B COMMUNICATIONS PROGRAM TO THE FEDERAL COMMUNICATIONS 14/12 GH_Z POLICY PROCESS

The DOC goal for the Communications Program with respect to policy was limited to stimulating the identification of policy issues. No reference was made to resolving these issues. As was noted in the evaluation of impacts and effects of the Program, many issues were identified, however, few were resolved. Thus, while the Program's policy goal was achieved, the impact of these achievements in terms of the resolution of the issues identified, was limited.

The overall approach taken in the Communications Program towards 14/12 GH_Z policy issues reflected the limited goal statement and was an indirect and relatively passive one. Communications Program officials reported that the route most frequently followed was to encourage individual experimenters and project sponsors to put pressure for changes directly on those organizations with advisory and decision-making mandates for telecommunications and broadcast policy. This approach was selected by DOC Space Sector Management over one in which Communications Program officials would make direct interventions in the resolution of specific policy issues.

The primary tools used by Communication Program officials to bring policy issues to the attention of those groups with advisory or decision-making mandates were forums such as task forces, committees and meetings of DOC officials with policy responsibilities. Foremost among these

forums was the Federal-Provincial Task Force on Education and its spin-off working group. Meetings of this Task Force were attended by the Senior Assistant Deputy Minister (Policy) from DOC. While the Task Force began by focussing its attention on education only, it gradually began to encompass all of the Program's pilot projects. Another forum in which policy issues were raised was the Committees (one east, one west) of the Program Delivery Pilot Project which consisted primarily of broadcast users and provincial government and agency officials.

As well, as using the above primary tool, Communications Program officers did liase with DOC policy officers but these attempts were viewed by Communications Program officials as not being highly productive.

2.1 Three Specific Examples of the Anik-B Program Approach to Policy Issues

2.1.1 Federal 14/12 GH_z Communications Policy

We examined the approach taken by Anik-B officials towards two federal policy issues, i.e.:

i) The right of users to deal directly with Telesat Canada. Anik-B officials did not attempt to influence directly decisions on this matter but experimenters did, and continue to, lobby for change. The more liberal recommendation of the CRTC on this issue was rejected

by the Federal Cabinet, allowing only broadcast users of 14/12 GH_z satellite services to deal directly with Telesat. Thus, for many of the Anik-B experimenters the right to deal directly with Telesat for acquiring 14/12 GH_z satellite services remains a policy issue.

ii) The extension of broadcast services to remote and northern communities in Canada for which a license was granted by the CRTC to CANCOM.

The CRTC approval of the CANCOM proposal meant that one of the major markets anticipated by DOC officials for 14/12 GH_z satellite services had now gone to the 6/4 GH_z satellites.

The outcome of this review was to confirm the general program approach to policy as outlined previously.

2.1.2 International Telecommunications Regulations

The issue examined here was the World Administrative Radio Conference (WARC) negotiations concerning the frequency allocation for interim direct broadcast services in region two. In particular the position of the United States was to split frequency bands between fixed and broadcast satellites (11.7 - 12.2 GH_z band for fixed satellites, 12.2 - 12.7 GH_z for broadcast satellites). The Canadian delegation pushed

for a footnote which would allow the handling of some broadcast services in the 11.7 - 12.2 GH_z band. The U.S. position was approved as was the Canadian footnote. The granting of the footnote (Radio Regulation footnote 836) was important to the negotiations which were taking place at the time between the Canadian Department of Communications, the OECA and the British Columbia government regarding the use of the 14/12 GH_z portion of the Anik-B satellite for interim DBS.

DOC officials who prepared and presented Canada's position at WARC reported to us that they drew directly from the results of the CTS Hermes and Anik-B experiments for their presentation. They also considered that their ability to reference the results of field trials gave their arguments credibility which they would not have had without the Hermes and Anik-B Programs. Results of the Hermes and Anik-B trials were used directly in negotiating for footnote 836 which allows the use of the Anik-B and C satellites for interim DBS.

DOC officials reported that this credibility led to acceptance of Canada's leading role in RARC-1983 and assisted in Canada obtaining virtually all her objectives at that conference.

3.0 EFFECTIVENESS OF ANIK-B APPROACH ON POLICY ISSUES

The results of the Phase Two evaluation with respect to Federal 14/12 GH_z satellite policy show that federal communications policy impediments remain as a major barrier to the broader use of 14/12 GH_z satellite services. Also, while policy issues were raised as a result of the experimental use of the 14/12 GH_z satellite system, few changes have been made to resolve them. The policy issues identified by experimenters to the evaluation team in the Phase Two evaluation were the same ones identified in the earlier evaluation of the Phase One Program, with the exception of the ownership and operation of receive only earth terminals. As well, other issues arose in Phase Two concerning CRTC decisions and the Telesat decision on the tilt of the Anik C-3 14/12 GH_z satellite.

However, in the case of the international (WARC and RARC) negotiations, the DOC approach, which was to use program results in specific negotiations, was effective.

4.0 ALTERNATIVE APPROACHES

Figure one lays out alternative approaches which could be taken in experimental demonstration satellite programs to influence Federal level 14/12 GH_z satellite communications policy. The approaches consist of combinations of routes and techniques for affecting federal policy. Individual routes and techniques could be used independently but given the complexity of policy-making processes, it would likely be more effective to use a combination of them.

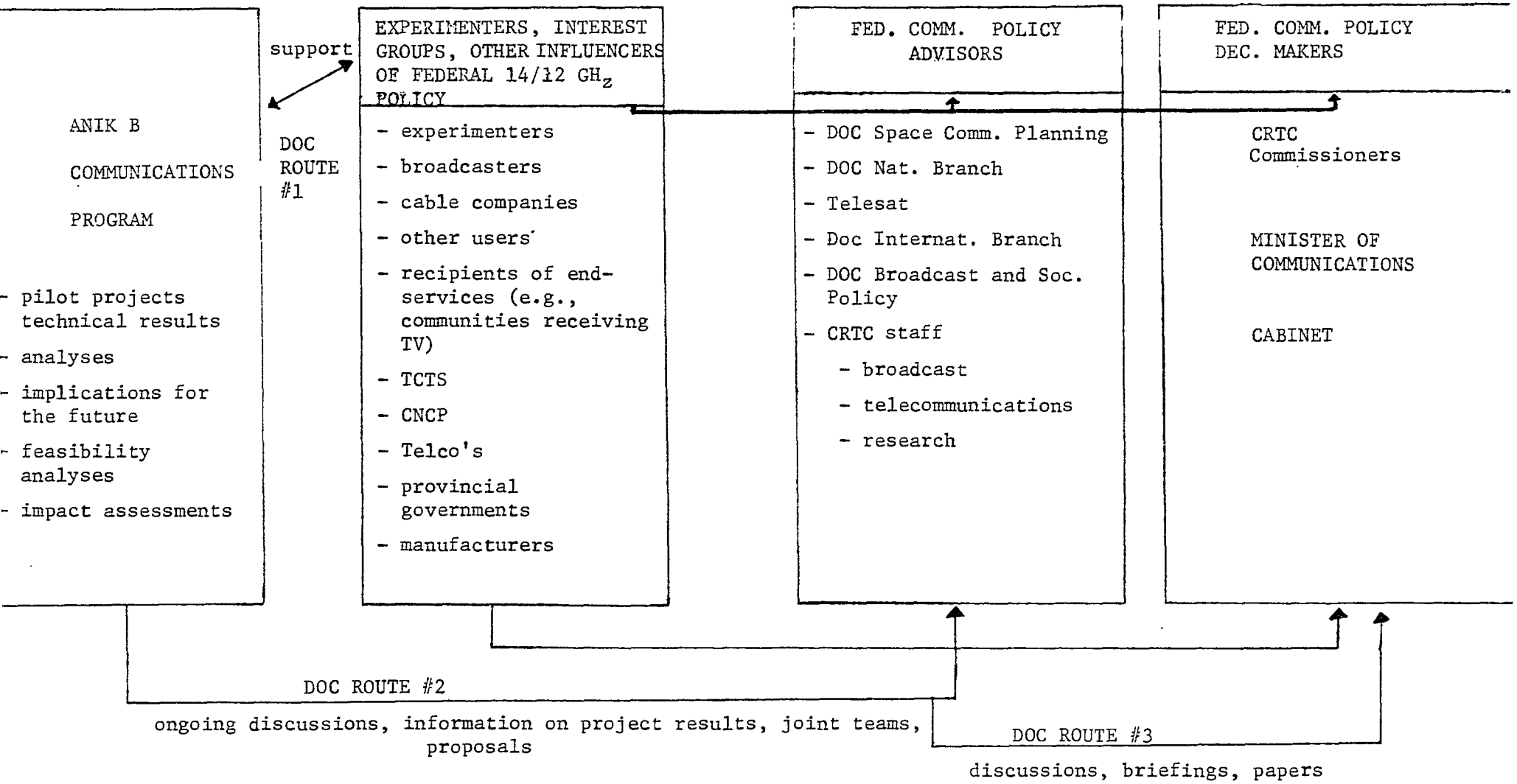
Figure one consists of:

- the outputs of the Anik-B Communications Program which could be used to influence policy making;
- experimenters, interest groups and other influencers of federal 14/12 GH_z communications policy;
- federal policy advisors; and
- federal policy decision-makers.

4.1 Groups Involved in Federal 14/12 GH_z Communications Policy

The groups identified as potential targets of experimental satellite program policy activities in the 14/12 GH_z band are listed below.

Figure One : Possible Routes and Techniques for DOC to Influence Federal Communications Policy through an Experimental Service Development Program in the 14/12 GH_z satellite band



i) EXPERIMENTERS, INTEREST GROUPS AND OTHER INFLUENCERS OF FEDERAL 14/12 GH_z SATELLITE COMMUNICATIONS POLICY

- experimenters
- broadcasters
- cable companies
- other users
- recipients of end-services (e.g., communities receiving new television services)
- provincial communications regulators
- provincial governments
- Telesat Canada
- CNCP
- TransCanada Telephone System
- Individual Telephone Companies (carriers)
- manufacturers (in particular earth segment)

ii) FEDERAL 14/12 GH_z SATELLITE COMMUNICATIONS POLICY ADVISORS

- Department of Communications Policy groups (broadcast and telecommunications)
- CRTC Research policy advisors (for both broadcasting and telecommunications policy)
- CRTC Policy Research group

iii) FEDERAL 14/12 GH_z SATELLITE COMMUNICATIONS POLICY DECISION-MAKERS

- Canadian Radio and Telecommunications Commissioners
- Minister of Communications
- Federal Cabinet

4.2 Routes

The following routes are identified as ones which could be pursued in an experimental program like Anik-B to influence federal policy decisions on the use of 14/12 GH_z satellite services.

(i) Communications Program → Experimenters → Advisors and/or Decision-Makers

This is an indirect route in which DOC officials would attempt to influence policy decisions through the experimenters. No, or very little, direct contact would be made on specific issues between officials of the Communications Program and policy advisors or decision-makers.

(ii) Communications Program → Policy Advisors

Following this route, Program officials would attempt to influence directly the policy advisors of both the DOC and the CRTC, prior to the issue reaching the level of decision-makers. This could be done both formally and informally. Results and potential implications of pilot projects, results of impact analyses and feasibility studies would be provided by DOC to these advisors.

(iii) Communications Program → Decision-Makers

Another route that could be followed would be for Program officials to attempt to influence directly the considerations and views of Federal policy decision-makers on individual policy issues. Briefings and papers would be buttressed by results of pilot projects, impact analyses, feasibility analyses and their implications to particular

issues.

4.3 Techniques

Figure one contains different techniques which could be used to influence 14/12 GH_z satellite communications policy. The techniques range from the informal to the formal and are:

(i) encouragement and support;

(ii) ongoing discussions;

(iii) secondments;

(iv) joint teams;

(v) development and circulation of discussion papers;

(vi) development and presentation of policy proposals; and,

(vii) briefings on issues and optional solutions.

4.4 General Lines of Approaches for Influencing Policy Decisions

The development of general lines of approaches which could be used by Space Sector officials in experimental satellite services development Programs like Anik-B, would combine the preferred routes with one or more of the techniques listed above.

A preferred route would be selected on the basis of the following factors:

- who has responsibility for the relevant policy;
- importance of the issue;
- urgency for resolution;

- extent to which the issue calls for an overturning of previous policy or regulatory decisions; and,
- potential for development of conflict with existing regulatory/policy rulings.

Below we list reasonable combinations of routes and techniques which could be selected by DOC officials.

Route #1: Program - Experimenters - Advisors/Decision-Makers

- encouragement and support

Route #2: Program - Policy Advisors

- ongoing discussions
- Joint Teams
- Secondments
- discussion papers
- policy proposals

Route #3: Program - Decision-Makers and Regulatory Bodies

- briefings
- discussion papers
- policy proposals

4.5 Effectiveness of Alternative Approaches

There is no one effective way for an experimental program like the Anik-B Communications Program to influence policy decisions. It would be naive to assume that there is any clear and single process for the making of 14/12 GH_z telecommunications policy. The Program's approach was effective in achieving its limited policy goal of issue identification. However, the results of the evaluation of the Program's

impacts and effects on policy resolution, as opposed to issue identification, illustrate that there is room for significantly increasing the effectiveness of the approach taken.

The approach recommended to influencing the resolution of policy issues is to:

#1 - select a set of routes and techniques aimed at different parties involved in the policy issue;

#2 - use the criteria outlined above to determine in which policy issues to intervene, and the routes and techniques to use for each issue; and,

#3 - use the actual results and analyses of pilot projects to make arguments and develop positions on individual policy issues.

communications, and, the Department of Communications itself, is supporting the development of cellular systems for mobile services;

- The above point, combined with the fact that the proposed MSAT Post Launch Communications Program is not planned until 1987, will require careful monitoring of other events taking place in the mobile communications market. In particular, this would be important to a continuing review of whether or not the need for the PLCP still exists.

6.0 RECOMMENDATIONS FOR INFLUENCING RELEVANT POLICY DECISIONS THROUGH THE MSAT DEMONSTRATION PROGRAM

Figure one displays three broad DOC routes for influencing policy issues. All routes and techniques would be the appropriate means to attempt to influence policy, at a given time and in given situations.

The key is to:

i) select more than one route and technique on any issue, at any time; and,

ii) maintain continuity in pressure.

There is nothing inherently wrong with the chosen DOC route of supporting experimenters in their attempts to influence policy advising and decision-making groups. However, in most cases, this effort is insufficient in itself. The following recommendations are made on the approach to influencing policy decisions through the MSAT demonstration Program. They are:

1) Start now and invest in all possible routes and techniques appropriate to the issues identified, the actors involved and the preferred decision on each issue. Efforts should be aimed at the DOC policy groups, the CRTC (both its policy staff groups and its research group) and interested and influential groups such as provincial regulators;

2) Continue to prepare and distribute, using the skills of the policy analyst seconded to the project team, policy discussion papers on specific policy issues. These papers are useful in stimulating debate among MSAT

officials and between MSAT officials and others. The circulation of these papers to senior management, especially, is one way of ensuring that the overall policy issue faced by MSAT officials (i.e., "a preferred regulatory and institutional environment for MSAT") has less chance of being ignored in DOC;

3) Involvement of the DOC and CRTC policy groups should be buttressed by an open rapport between senior level officials of MSAT and others from relevant groups within the Department;

4) Use could be made of the MSAT working groups to attain first-hand and early reading of the policy concerns of the members;

5) Special effort should be made to involve, when appropriate, executive level officers in the discussion of policy papers prepared;

6) Consideration should be given by DOC officials to selecting a certain number of pilot projects which would be aimed specifically, at testing possible new institutional arrangements for MSAT service and other policy issues;

7) We have explored the possibility with the appropriate CRTC official and this official has agreed that it would be extremely useful for programs like Anik-B and for the CRTC itself, to receive reports or syntheses of them, on the individual pilot projects. In particular this material

would be useful in forward thinking by the CRTC of telecommunication policy issues.