

News

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A new track for MSAT — a commercial service by 1989

The Department of Communications (DOC) and the United States National Aeronautics and Space Administration (NASA) have signed an Arrangement which changes and accelerates the plan for MSAT's commercial development. Commercial telecommunications carriers in both countries are now expected to participate in the program earlier than planned.

Originally, the department had proposed that MSAT be owned and operated by government to demonstrate mobile satellite services and to develop a market for commercial use. NASA would have been given satellite capacity to carry out experiments and demonstrations in return for launching the spacecraft. Under this scenario, MSAT service would not have become commercial until the 1990s.

Under the new Arrangement, MSAT would involve international co-operation, with two or three satellites covering Canada and the United States. From the outset, the project would be a commercial venture owned and operated by Canadian and U.S. carriers — Telesat Canada and a U.S. satellite operator to be chosen and licensed by the U.S. Federal Communications Commission. DOC would obtain capacity from Telesat to carry out a post-launch communications program of demonstrations and trial services in Canada. The new plan is subject to the resolution of certain frequency and regulatory issues in both countries.

The new Arrangement could hold several advantages for Canada and the United States, including the sharing of non-recurring expenses and of the costs of back-up spacecraft as well as the early start of commercial service, while still allowing for government-sponsored trials and experiments. The new approach brings closer the day of full commercial exploitation of MSAT's great potential.

If the current program definition stage is successful, the next step would be Canada-U.S. co-operation on the implementation and post-launch phases of the program. DOC has invited

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A user view

"MSAT is the answer to a prayer," says Gerry Lutley, Officer-in-Charge of the Telecommunications Engineering Branch of the Royal Canadian Mounted Police (RCMP). "No wonder we are very excited about it."



Gerry Lutley, Officer-in-Charge, RCMP, Telecommunications Engineering Branch

"It is in the North and other sparsely settled parts of Canada that MSAT will make the big difference: in northern Ontario and Quebec, Labrador and all the West north of 55° latitude. There, for the first time, police on patrol will be in constant, thoroughly reliable and fast communication with their headquarters and with other police on patrol."

Mr. Lutley, interviewed at RCMP headquarters in Ottawa, described his plans for communications via an MSAT satellite: "MSAT will make a major contribution to public safety. A patrol on a lonely stretch of the Dempster Highway at -40°C might find travellers in trouble. With MSAT, police would be able to use the car radio to call for help, medical advice or rescue support from detachment headquarters.

"Or a road might be blocked by snow or washouts: a prompt warning sent back via MSAT could save enormous difficulty to other

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(DOC/NASA)

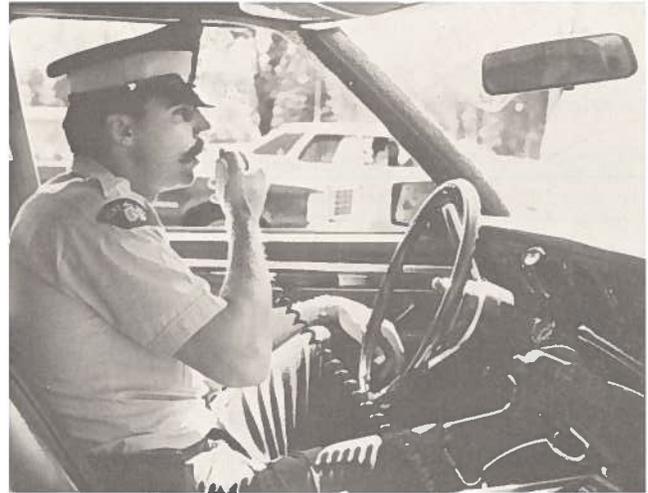
Telesat Canada to submit a detailed proposal by mid-1984 for development of a commercial satellite system. The telecommunications service industry, manufacturers and users will also be involved in planning. To foster the development of mobile satellite services, DOC would obtain satellite communications services from Telesat and service providers for experiments and field trials. The department is now receiving proposals from potential users, service providers and manufacturers wishing to participate in a post-launch communications program.

The Telesat proposal, as well as the results of a comprehensive two-year program of engineering and commercial viability studies sponsored by DOC, will enable the government and Telesat to decide in late 1984 whether to proceed with implementation of the MSAT system and services.

The DOC-NASA Arrangement has led to a re-orientation of work under Phase B of the MSAT program, whose schedule will be extended to the end of October 1984. Telesat is not expected to award procurement contracts until the latter part of 1985. A transition or bridging phase from mid-1984 to December 1985 will allow for the transfer of leadership in implementation of the MSAT system from government to industry. The first launch is envisaged for late 1988 ●

(User's view)

drivers. At any time, drivers, pilots or navigators equipped with MSAT terminals would have far better information about road and weather conditions than is now available."



With MSAT, RCMP officers on patrol in the North will be in constant communication with headquarters.

While the greatest use of MSAT for police work would be in cars, it would also be useful in small boats which have traditionally depended on HF and VHF radio.

Cost is another advantage the RCMP expects of MSAT, Mr. Lutley notes. "Present terrestrial communications systems in the sparsely settled North not only have serious technical limitations but are expensive." The RCMP hopes MSAT will not only improve public safety in remote areas, but save money at the same time ●

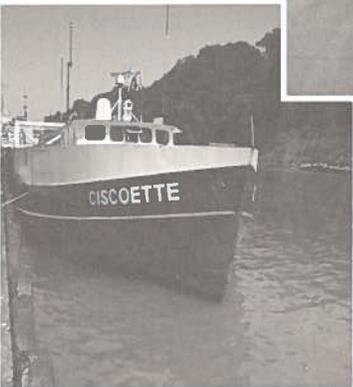
Plans for MSAT field trials

In April, the Department of Communications extended the final date for proposals from potential participants in the MSAT field trials. A modified *MSAT Users' Guide* will be issued to reflect the new approach which flows from the recent decision to proceed directly to a first-generation commercial system.

The most important change is the extension until August 1984 of the final date for experiments and trial proposals. DOC has already received about 100 applications, almost equally divided between the public and private sectors. The department is anxious not to overlook any other users or telecommunications firms which might benefit from MSAT services or business opportunities, and contribute to its commercial development.

Although the planned intermediate step of a government demonstration system was discarded in favor of a commercial system led by the private sector, the concept of government-supported trials followed by full commercial service is being preserved. Trial service will be available to selected participants who have submitted a trial proposal before August 31, 1984 and are able to demonstrate a communications need or business opportunity which might be developed with MSAT.

Trials are expected to last about six months, but may be extended if more time is essential for a sound viability assessment. DOC will provide the minimum number of terminals needed for assessment although, in some cases, this will represent only a fraction of the number required for commercial service.



Operators of fishing boats, emergency services and construction equipment at remote sites are among those interested in DOC's MSAT post-launch communications program.

The Department of Communications will pay for satellite time during user trials and for the lease of the necessary terminals. Users will be responsible for transportation, installation, operating, administrative and engineering costs. Users are not required to commit themselves in advance to commercial service in order to participate in the government's post-launch program. However, the department expects users whose trial results indicate viability to subscribe to commercial service on MSAT.

The federal government is expected to decide on the next phases of the MSAT program by the end of 1984. If approved, users and other participants would then be required to

plan their trials and sign a detailed agreement on participation before the first satellite is launched.

For further details and application forms, potential users are invited to get in touch with:

Demetre Athanassiadis
 Manager, MSAT Post-launch Communications
 Program and Policy
 Department of Communications
 365 Laurier Avenue West
 Ottawa, Ontario
 K1A 0C8
 Telephone: (613) 995-7783

New space plan funds MSAT bridging phase

The government's new Space Expenditure Plan announced March 19 will provide DOC with \$3.9 million to carry on the program until satellite construction gets underway.

During the bridging phase essential work will continue in order to avoid unnecessary delays in the planned launch of the MSAT satellite and to minimize disruption of MSAT teams in industry and government. Work will include further development of technology for commercial MSAT spacecraft and ground stations; detailed definition of the commercial MSAT system; planning of MSAT post-launch field trials; and resolution of spectrum and regulatory questions.

Telesat Canada and the Department of Communications

While Telesat Canada has been closely involved in MSAT from the beginning, the new approach to commercial use led to the signing, on June 18, of a comprehensive Memorandum of Understanding to define Telesat and DOC roles and responsibilities through the remainder of the program.

Telesat's lead role and DOC's supporting position are reflected in the agreement which also stresses recognition of the federal government's commitment to support development of the Canadian space industry.

During the bridging phase from late October 1984 to December 1985, Telesat will continue liaison with potential U.S. satellite operators and preparations for the procurement of the satellite system.



MSAT on Cantel

Plans are underway for an MSAT presentation on Cantel, the federal government's Telidon data base. The 45 pages, in English and in French, explain MSAT, sketch its development and use the unique color graphics of Telidon to illustrate the operation of MSAT.



MSAT information is now available in Telidon form.

Cantel is accessible not only to Telidon system owners and subscribers, but also in many public libraries and federal offices.

The same Telidon material is available now at each DOC regional office. Phone the DOC program development and policy analysis group in Moncton, Montreal, Toronto, Winnipeg or Vancouver to arrange for a viewing.

MSAT on video

"MSAT — Communications on the Move," is the title of a new 16-minute videotape about MSAT made for the National Film Board by Lauron Productions of Toronto. It explains MSAT and its evolution, with particular emphasis on the development of user applications.

The film will be available shortly on 1/2" VHS video cassette or 3/4" video cassette through DOC Information Services or through any DOC regional office.

Questions and answers

- Q. Will the results of the Phase B studies now underway be available to the public?
- A. A summary of the results of the Phase B studies will be published by the department. The individual studies may be available for consultation in the library at DOC headquarters or through the regional offices. Certain portions of the studies containing commercially sensitive material will remain confidential.
- Q. There are difficulties with present terrestrial mobile radio systems operating in valleys or tunnels. Will MSAT improve this?
- A. MSAT will offer a great improvement in those areas where the topography blocks the line-of-sight between stations, causing reception difficulties. At a distance of 10 km, for example, a 150 m high antenna appears less than 1° above the horizon. MSAT, on the other hand, will appear at an elevation angle of 10° to 30° over most of Canada, providing much better coverage in valleys, even in fairly mountainous terrain. In urban areas, however, MSAT signals would be blocked by high-rise buildings and MSAT would not be usable in tunnels or other structures such as parking garages.



Satellite "look-angles" (degrees above horizon) for spacecraft at 106.5° longitude.



DOC asks for public input on MSAT spectrum allocation

The Department of Communications (DOC) has asked for public comments on a proposed re-allocation of radio spectrum for the mobile satellite service. The reallocation is important to potential MSAT users since it will authorize the operation of mobile satellite services (such as MSAT satellites) in sub-bands between 806 and 896 MHz, with possible expansion of future services in the 1500 MHz band.

Comments on the proposals set out in the Canada Gazette on May 19 and June 2 are encouraged and should be addressed to the Director General, Telecommunications Policy Branch, DOC. Submissions must be postmarked by August 17 for the May 19 notice and by August 31 for the June 2 notice. Canada Gazette notices DGTP-003-84/DGTR-014-84 (May 19) and DGTP-006-84/TRS-015-84 (June 2) may be obtained from Information Services, DOC, 300 Slater St., Ottawa, Ont., K1A 0C8, (613) 995-8185 or from DOC regional offices in Moncton, Montreal, Toronto, Winnipeg and Vancouver.

Conference papers

“Propagation Measurements for Land Mobile Satellite Services,” by R.W. Huck, J.S. Butterworth and E.E. Matt; Institute of Electrical and Electronics Engineers (IEEE) 33rd Vehicular Technology Conference, Toronto, May 1983.

“MSAT Mobile Terminal Design Considerations” by J.E. Nicholson, J.D.B. Kent and J.T. Sydor; IEEE 33rd Vehicular Technology Conference, Toronto, May 1983.

“Characterization of Propagation Effects for Land Mobile Satellite Services,” by J.S. Butterworth and E.E. Matt; Institute of Electrical Engineers (IEE) Conference on Satellite Systems for Communications and Navigation, London, England, June 1983.

“The Canadian MSAT Mobile Satellite Program,” by C.A. Franklin and R.W. Breithaupt; Pacific Telecommunications Conference, Honolulu, Hawaii, January 1984.

“MSAT Mobile Communications Demonstration Satellite System and Bus Trade-off Considerations,” by R.D. Caswell and A.M. Kidd; American Institute of Astronautics and Aeronautics (AIAA) 10th Communications Satellite Systems Conference, Orlando, Florida, March 1984.