

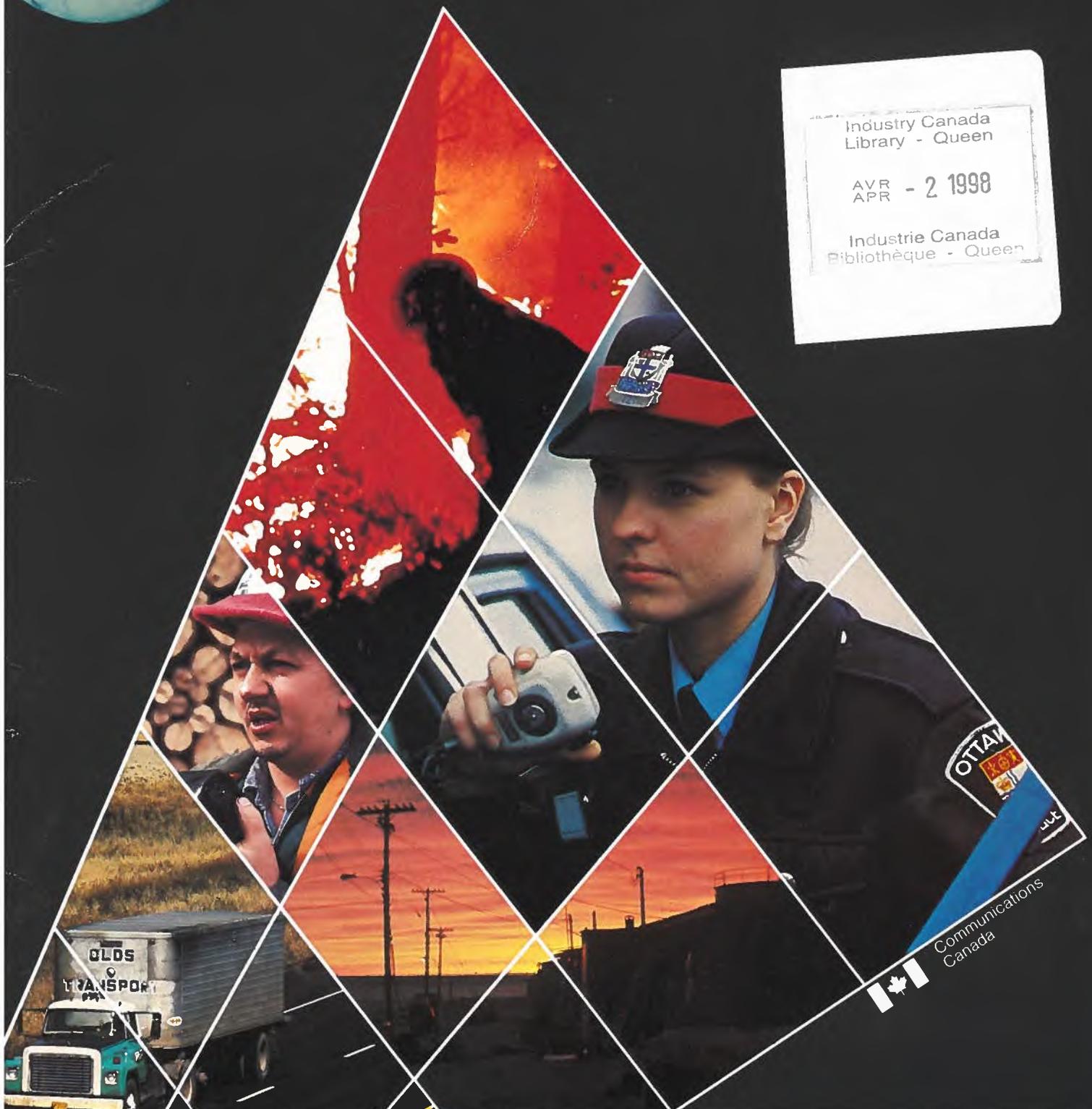
INTERNET

REACHING ALL CANADIANS

Industry Canada
Library - Queen

AVR - 2 1998
APR

Industrie Canada
Bibliothèque - Queen



Communications
Canada



Across Canada, hundreds of businesses, industries and government agencies depend on mobile communications to do their job.

But today's mobile radios and mobile telephones generally serve the most populated areas, where many users are within close range of a base station.

MSAT is a proposed new communications system that will bring two-way mobile service to all Canadians by using a satellite as a relay station in space.



The name MSAT stands for Mobile SATellite.

The new system will allow someone using a relatively small and inexpensive radio terminal to communicate directly by satellite virtually anywhere in the country.

While the greatest use of MSAT will probably be in land vehicles, the system will also be useful in planes, boats and field operations.

MSAT was conceived by the Department of Communications to satisfy national needs for improved public and government mobile communications in isolated and sparsely populated areas.

By extending mobile communications, MSAT will significantly improve public safety and create an environment more hospitable to economic development in the rural and remote parts of Canada.

Planning has been carried out by Telesat Canada and the Department of Communications in close consultation with the telecommunications industry, provincial governments, federal departments,

communications equipment suppliers and prospective users of MSAT services.

A commercial system

Telesat Mobile Incorporated (TMI), a subsidiary of Telesat Canada, is now developing plans to offer mobile satellite service on a commercial basis in the early 1990s.

TMI will own and operate the satellite, and market satellite services to end users, private

system operators and independent value-added service providers through its retail organization.

Obtaining MSAT mobile services will be as simple as subscribing to standard telephone service.

MSAT will not compete with cellular mobile systems. Rather, it will provide a complementary service in areas not served by these systems.



What services will MSAT provide?

TMI intends to offer two major service categories:

- data communications — services such as two-way messaging, position reporting and text transfer;
- interconnected and non-interconnected mobile radio to provide voice communications requirements.

Satellite mobile radio service: MSAT will offer private communications between mobile units or between mobile units and a base station.

“Mobile satellite communications will make a major contribution to public safety in rural and remote areas of the country,” states Gerry Lutley, officer in charge of telecommunications engineering for the RCMP.

Police forces are expected to be major users. Others include ambulance services, road maintenance crews and forest firefighters.

Resource industries, where people are constantly on the move in remote locations, need the range and universality MSAT can provide.

Fishing fleets could use MSAT to get the latest reports on weather or sea conditions, to check shipping schedules and to exchange information about catches and fish locations.

Satellite mobile telephone service: MSAT will provide two-way radio telephone communications between mobile units and the public telephone network or between mobile units.

This service will appeal to mobile users such as sales personnel who need to be able to telephone their customers or home offices. At present, mobile telephone service is available only in major cities, along highways connecting those cities and in some rural areas. MSAT

mobile telephone service will be available everywhere in Canada, including coastal waters.

Satellite mobile data services: MSAT will permit subscribers with mobile data units to call up information from a computer database for display on a small video screen or to enter and process information.

Subscribers will be able to dial right into the computer without an intermediary, and data may be encoded to ensure confidentiality.

A police officer on patrol could check a vehicle's ownership. Resource exploration teams could report their findings and manage their logistics; or, a dispatch centre could check cargo loads and send inter-city instructions to trucks that would otherwise return home empty.

Data acquisition and control: MSAT will be able to collect data transmitted from remote monitoring and alarm devices and send commands to automated control stations.

For example, data from unmanned meteorological stations could be relayed by



MSAT for use in weather forecasting. Hydrological data could be collected and distributed to government agencies responsible for hydroelectric projects or flood warnings.

Possible industrial applications include monitoring and control of pipelines, railways, power lines and oil wells.

"MSAT will give us better coverage and faster response. In the long run, it will save us money and fuel," says Ted Bennett, president of J.E. Transport Ltd., Cambridge, Ontario.

Other services: One very important service that MSAT could provide is nationwide paging. MSAT could also broadcast weather forecasts and agricultural information to any point in Canada. Truck transport operations could be

enhanced by an auto-locating feature capable of providing a continual, automatic update of a truck's location to a dispatch centre.

Another possible MSAT offering is remote telephone service. Some 100,000 households in Canada do not have access to basic telephone service. MSAT could bring "thread of life" communications to these homes and to temporary or seasonal dwellings such as exploration camps and wilderness parks.

Opportunities

The MSAT program offers new and unique business opportunities to various industries as well as opportunities to end users.

Manufacturing industry:

Since MSAT is a new concept, there is potential for substantial domestic and export sales totalling hundreds of millions of dollars for mobile radio, mobile telephone and data terminals, spacecraft and associated sub-systems, gateway and base stations.

Service providers: TMI, owner and operator of the satellite and retailer of satellite

services, can share with telephone companies, radio common carriers and equipment suppliers, the challenge of providing mobile services to users across Canada.

End users: Potential users of MSAT can greatly improve their efficiency and productivity by introducing reliable mobile communications services.

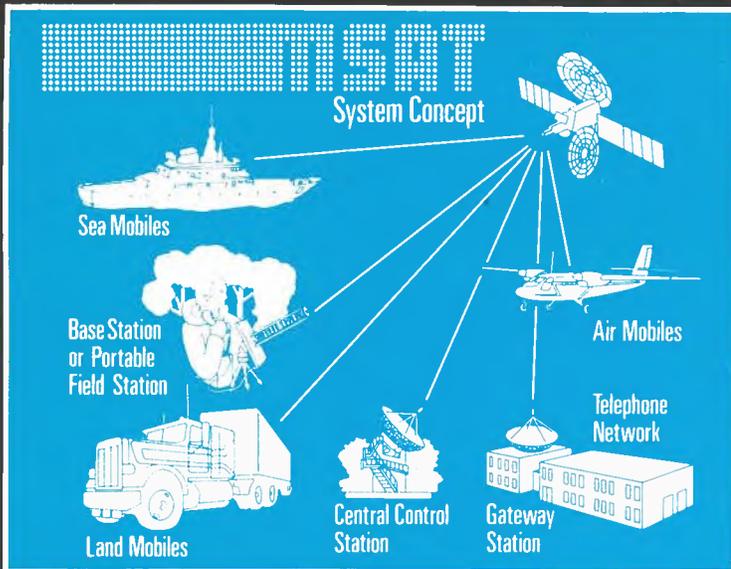
The unique features of the MSAT system will provide opportunities for many new applications. Prospective MSAT users, service providers and manufacturers are encouraged to come up with new ideas for using MSAT and to discuss these with TMI and the Department of Communications.

Who will use MSAT?

Studies by Telesat Canada show that MSAT will be attractive to a broad market.

Potential industry users include:

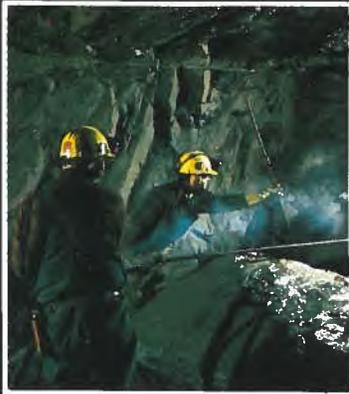
- transportation and trucking,
- mining and exploration,
- forestry,
- agriculture and fishing,
- construction,
- manufacturing,
- service industries.



"We need voice and data communications with transport units at all times so we can guarantee delivery under the 'just in time' inventory policies now being adopted by the manufacturing industry. We believe MSAT is the answer," says Gerald Thompson, president of Thompson Transportation Ltd., St. Thomas, Ontario

Government agencies account for about 10 per cent of the demand identified by Telesat Canada. Major government applications include:

- law enforcement,
- emergency medical services,
- disaster relief,
- resource management,
- pollution clean-up.



How will MSAT work?

The initial system planned by TMI will use one satellite to provide service to all of Canada.

On the ground, TMI will have a central station to control the satellite and to manage the flow of communications through the MSAT system.

There will be a number of gateway stations for connection to the public telephone network and several hundred base stations to connect to the headquarters locations of organizations using mobile MSAT terminals.

Over 150,000 mobile units will be able to use the first-generation system. Terminals will be about the same size as today's mobile units, with small roof-mounted antennas. There will also be terminals light enough for a person to carry into the bush.

Communications with mobile units will be in the L-Band (1500-1700 MHz), while the up and down links between the satellite and gateway stations will be at 14 and 12 GHz.

Back-up for Canada's MSAT system is expected to be provided by a similar satellite serving the United States. MSAT in turn will provide back-up for the American system.

Benefits of MSAT

MSAT offers many social, economic and technological benefits.

Nationwide coverage: MSAT will extend mobile communications to all parts of the country, including the North and Canada's coastal waters. It will be of particular benefit to remote or sparsely populated areas with inadequate mobile service or no service at all.

Unlimited range: Today, about half the users of mobile communications have problems with inadequate range or coverage gaps outside the larger cities, and costs of improving or extending these services would be prohibitive. Because MSAT will relay calls by satellite, it will extend service-area coverage and provide wide-area mobile communications.



High-quality communications: MSAT will provide clear and reliable signals. In isolated areas, MSAT customers will know they can always get through; this is far from certain with HF radio, now widely used for communications in the North and other remote areas.

Ease of use: The system will be completely automatic. When a mobile user wants to make a call, MSAT will automatically assign a channel, without the intervention of a central operator. No special skills will be needed to use MSAT.

Economic benefits: In addition to the benefits it will bring government and private sector users, MSAT will mean new business opportunities for Canadian industry in domestic and export markets. It will also create jobs and lead to the development of new skills in Canada's labor force.

Want to know more?

For more information about MSAT, call or write:

Telesat Mobile Incorporated
333 River Road
Ottawa, Ontario K1L 8B9
Tel: (613) 746-5920

Department of
Communications
MSAT Program Office
300 Slater Street
Ottawa, Ontario K1A 0C8
Tel: (613) 990-4099

