technologies were shaped and deployed to meet Canada's social, cultural and economic needs.

Formulation of a broadcasting policy for the 1980s took into account the changes in communications technology already affecting broadcasting. Extension of broadcasting services into remote communities by satellite had long been a concern of the department.

The policy sector had been developing policies to stimulate Canada's TV program-production industry so that it could fill the many channels soon to become available via satellite, fibre optics and other technologies. Strengthening of the Canadian broadcasting system in relation to its US competitors continued as a priority.

The department encouraged the application of new computer, satellite and fibre optics technologies in Canadian telecommunications systems, through field trials and support of liberalized terminal-attachment policies. It explored how best to implement open-system interconnection so that telecommunications systems and terminal devices, including computers, would be compatible, permitting easier transfer of information. As well as assuring Canadian capability in the production of computer-communications hardware and software, the department studied such issues as the implications for Canadian sovereignty of transborder data flows, and the impact of the new technologies on employment, manufacturing and the whole economy.

Space. The department developed, co-ordinated and implemented policies and programs for Canada in space telecommunications and encouraged Canadian industry to share in developing Canadian satellite systems.

Hermes, launched in 1976, was in its time the most powerful communications satellite in geostationary orbit. It was a joint venture of DOC and the US National Aeronautics and Space Administration (NASA). It operated in the 14/12 GHz band, where it was less likely to interfere with terrestrial communications, enabling high-power transmissions to be beamed to small, relatively inexpensive earth terminals situated, if required, in urban areas. Hermes ceased operations in November 1979 after exceeding its design lifespan by almost a year.

The Hermes program demonstrated the technical feasibility of communications services using satellites and created awareness among potential users. Designed and built in Canada, it permitted DOC to conduct experiments in telehealth, tele-education, advanced technology, community interaction and TV broadcasting and other services provided by universities, hospitals, federal and provincial departments, native organizations and industry. These experiments involved use of a large number of earth stations and antennas ranging in diameter from 3 m for two-way television, voice and data, to 60 cm for receiving only television signals under selected conditions.

The Anik B program continued exploring and developing new communication services by satellite and tested their commercial feasibility. The department leased from Telesat Canada Anik B channels in the 14/12 GHz band and provided the earth stations for pilot projects.

The applications were technically feasible with existing equipment and were sponsored by federal and provincial departments and agencies, telecommunications carriers, native communication associations, universities and hospitals. These projects were expected to lead to new commercial services on the Anik C or Anik D satellites.

The space sector continued research and development projects to prove the feasibility of MSAT, a mobile satellite system intended to provide two-way voice and low-rate data communications to users in such applications as oil exploration, mining, trucking, shipping, business, law enforcement and personal communications.

Much of the new satellite technology was developed at the department's communications research centre (CRC) near Ottawa. A large part of the technology was transferred to Canadian industry through contracts, because one DOC objective was to develop Canadian capability in the supply of satellites and space hardware. The department completed an $18 million expansion and upgrading of its David Florida Laboratory in September 1980 to make it a fully-equipped national centre for testing and assembly of large communications satellites and aerospace subsystems. Canadian industry was able to use this facility on a fee recovery basis.

DOC participates in international space ventures, among them a satellite-aided search and rescue system (SARSAT) to aid in quickly locating aircraft or ships in distress, and general studies of the European Space Agency (ESA). Proceedings of an Inuit circumpolar conference at Frobisher Bay in July 1983 were carried by an interactive Telidon network linking Canada, Greenland and Denmark, Alaska and other parts of the United States.

Research. The department emphasized development of new technology, demonstrating it through field trials and encouraging Canadian industry to develop commercial applications. Studies were continued in spectrum research, environmental causes of signal noise, re-radiation problems in AM broadcasting, mobile data communications systems, automated radiotelephones, optical communications and methods of improving rural communications.

A $12.5 million DOC program approved in November 1980 was designed to assist Canada's high-technology industry in capturing, by 1985, a significant share of markets for electronic equipment for the automated office of the future. The program