some generic applied research, which began in 1974 at the department's communications research centre.

To promote the exploitation of Telidon, the department instituted a program of field trial subsidization, assistance toward the development of production prototypes of the necessary range of equipment, and co-ordination, standardization and related activities. An advisory committee was formed, comprising representatives of information suppliers, carriers, cable TV companies and broadcasters, manufacturers, labour and civil groups, to help guide Telidon development.

Product development in the Canadian electronics industry is proceeding at a rapid pace. Bell Canada undertook a $10 million field trial of Telidon involving over 1,000 terminals with about 100,000 pages of accessible information. As noted in Chapter 16, Communications, other field trials were under way or planned by Alberta Government Telephones, Manitoba Telephone System, the Ontario Educational Communications Authority and Telecable Videotron.

In recent years, automation (in the form of free standing text editing and automatic word processors) has been making rapid inroads into the office environment. New data communications services have led to the creation of computer communications networks which permit widespread access to data processing and information services of all kinds. These two technologies are now being combined to make possible automated offices involving electronic office-to-office communications, information storage and retrieval and sophisticated information management tools. Canada, with a leading position in both the data communications and word-processing industries, has an opportunity to play a major role in office automation.

A joint government-industry program has been initiated to establish Canadian industrial leadership in certain communications-related aspects of the automated office through the development of nationally manufactured equipment to implement Canadian network services. The first phase, a market survey, was completed in November 1979 with a report by Canadian National-Canadian Pacific Telecommunications which indicated a market potential for office communications in the order of $5 billion to $20 billion over the next 15 years. The immediate target is to extend word-processing technology to complement and strengthen the existing range of telex services provided to some 40,000 Canadian subscribers.

The efficient exploitation of the radio frequency spectrum is a responsibility of the communications department. To discharge it effectively, research is required on the propagation of radio waves, natural and man-made sources of unwanted radio emissions or interference and development of techniques for more extensive use of the available spectrum. Since 1969 expanding effort has been devoted to increasing the efficiency of spectrum use in the face of growing congestion and exhaustion of available space in the most favourable bands.

DOC is supporting spectrum research projects at Nova Scotia Technical College, Laval University, McGill University, the University of Western Ontario, University of Manitoba and the University of British Columbia. On the industrial side, there are co-operative programs with several telephone carriers for the study of propagation problems associated with the new, high-capacity digital relay systems being installed across Canada. In these projects the department is providing both equipment and expertise to assist in the evaluation of system performance.

A substantial proportion of the research resources is dedicated to work in support of policy and regulatory priorities. An extensive study of electromagnetic propagation in the Great Lakes area was initiated to provide technical data required for policy development and planning for broadcasting services. Considerable research effort has also been made to develop an automated spectrum management system.

Mobile radio systems serving users on land, air and water operate on frequencies assigned by DOC under the Radio Act. The department has a number of activities in progress, ranging from planning for a satellite to serve air and marine and some land mobile users to development of mobile digital radio systems.

It is often said that Canada has one of the best telecommunications systems in the world. But this is true only in the major cities. Many rural areas have relatively limited