

use ACSSB or LPC voice-processing and forward error correction for data. Equipment is sold directly from Kanata and through regional representatives.

## **Solutec Ltd. (H.A.)**

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Gilles Fortin, Vice President,  
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Solutec manufactures video broadcast/CATV equipment and provides systems planning, turnkey installations and preventive maintenance services.

The company's main product, the SOL 6800, is an automated broadcasting system featuring video/audio integrated and programmable switchers. New products include the SOL 20/20, an audio level meter colour-keyed in video, and the SOL ADA 2 x 7, an audio distribution amplifier.

Solutec is active in the U.S. market and in South America, Europe and Australia.

## **Spar Aerospace Limited Satellite and Communications Group**

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Larry Clarke, Chairman, Chief  
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Spar Aerospace Limited is engaged in the design, development, manufacture and servicing of systems and products for space, defence, communications, aviation and teleoperator markets. The company is the principal supplier in Canada, and a major international

manufacturer of satellites and satellite subsystems for communications and surveillance applications. It also supplies ground terminals for domestic and international communications systems.

### **Space electronics**

Spar and its predecessor companies have over 27 years' experience, and have contributed to the design and manufacture of over 60 satellites and subsystems. In addition to building highly successful scientific satellites for Canada's space research program, the company has assumed increasingly greater participation in a number of domestic and international telecommunication satellite programs.

A complete turnkey system, which included a pair of spin-stabilized satellites and a related ground control system (TT&C), was built for EMBRATEL, the Brazilian government-owned telecommunications company, under a \$125 million (U.S.) order signed in 1982. The project, known as Sistemas Brasileiro de Telecomunicações por Satélite (SBTS) was completed in 1985 with the successful launch of the second spacecraft, and constitutes the first domestic communications satellite system in Latin America.

Spar has a number of ongoing space technology contracts, including the development, integration and testing of the solar array for the European Space Agency's Olympus satellite, and is waiting approval of the construction phase for Canada's mobile communications satellite and synthetic aperture radar satellite, RADARSAT.

Canada has been deeply involved in the U.S. Space Shuttle program with the supply of the Remote Manipulator Systems (RMS) used to deploy and retrieve payloads. The RMS is a highly sophisticated computer-controlled 15-m long mechanical arm. The prototype, Canadarm, and an initial supply of three flight systems were designed and developed by Spar under an agreement between the National Research Council of Canada and the U.S. National Aeronautics and Space Administration.

Recent successful involvement in supplying the communication receivers and channel amplifiers for INTELSAT VI and antennas for INMARSAT, coupled with the new technologies being developed and implemented on the Telesat Anik E program at both C and Ku band, have kept Spar on the leading edge.

### **Earth Stations**

Spar has worked on more than 240 projects worldwide for satellite earth stations, subsystems and components. During 1986-88, Spar supplied INTELSAT standard A stations and upgrades to Liberia, Zambia, Mozambique and Bangladesh. In 1984, the company signed contracts valued at more than \$28 million to provide satellite earth stations and technology transfer to the People's Republic of China. Another major export sale was a shared \$3.5 million contract with Ericsson Telephone Corporation Far East of Thailand, to supply the Royal Thai Navy and the Telecommunication Authority of Thailand with satellite earth station equipment. Spar has the capability to build any class of INTELSAT Earth Station and has installed Class A and Class B stations in 18 countries. The company has been the sole earth station supplier to Canada's international telecommunications carrier, Teleglobe Canada. Teleglobe upgraded its system with Time Division Multiple Access/Digital Speech Interpolation (TDMA/DSI) equipment in 1985. Spar developed the TDMA system operating at the INTELSAT standard of 120 Mbps specifically for Teleglobe.

A line of low-cost single channel per carrier (SCPC) earth stations has been developed for telephony and data applications. The stations can be equipped with up to 12 circuits and are well suited for remote locations and private networks.

Spar is developing a family of low-cost earth stations especially suited for rural telecommunications in developing countries. Most existing very-small earth stations are designed to carry digital data, and a substantial increase in cost and complexity is incurred if voice is added. The Spar Low Cost Earth Terminal (LCET) is designed to carry both voice and data, resulting in significant cost savings. Spar's U.S. subsidiary, Comtel, designs and makes light- and medium-route (3 to 15 Mbps and 15 to 60 Mbps) TDMA systems, satellite network control centres and bulk encryption equipment. The company has supplied a 60 Mbps system to Indonesia,