

Satellite Systems Test Sets – ANIK C/SBS (12/14 GHz computerized payload test and integration support unit, Hughes Aircraft Co, and DOC); and ANIK D – 4/6 GHz (as for ANIK C, SPAR Aerospace and DOC) (1978-1981).

Defense:

Digital Switches – NORAD Joint surveillance System (1979-1981) (digital switches to handle up to 84 channels of digitized radar data, Hughes Aircraft Co); and Miscellaneous Digital Switches (1981-present) (as for JSS above, Hughes Aircraft Co).

Satellite Control Centers – SARSAT Canadian Mission Control Center (1981-1982) (installed at Trenton, Ontario as part of Canada's contribution to the international Search and Rescue Satellite (SARSAT) Program, provides control and monitoring capability for the entire Canadian SARSAT system, Department of National Defense).

Tracking Systems – Air Defense Aerial Target Tracking System (1981-present) (developing a tracking antenna, telemetry receiving system for use with target drones at the Defense Research Establishment Suffield in Alberta, Department of National Defense).

Communications Systems – Project Eureka (1981-1983) (designed, developed and installed a full, 2-way satellite communications ground system in Ottawa and Eureka to provide a data link for the DND (Project Hurricane), and Telesat Canada).

SED is the system designer and the system integration manager for the external and miscellaneous interior communications systems, and the meteorological systems for the six new Canadian Patrol Frigates for PARAMAX Electronics (a subsidiary of Sperry) (1983-Present).

Keywords: 5 = Communications; 6 = Computers; 7 = Electronics; 9 = Environment; 15 = Radar; 17 = Software Services; 18 = Space Systems; Ground Stations = 7; Telephone Communications = 5; 15; Design to Requirements = 17; Simulations Programs = 17; Communications Systems = 18; Instrumentation = 18; Systems Studies = 18; Satellite Communications Ground Stations = 18; Satellite Telemetry Tracking Stations = 18; Ground Control Equipment = 18; Payload Design = 18; Payload Test Services = 18; Computer Systems = 6; Digital Switches = 15; Aerial Target Tracking System = 1.

Revised: Dec 83

SHARP SPECIAL SYSTEMS (Ottawa) I.P. SHARP ASSOCIATES Ltd

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History: I. P. Sharp Associates Ltd is a Canadian owned company incorporated in 1964. The corporate headquarters is located in Toronto. Sharp Special Systems is a division of I. P. Sharp that began operation in 1973. All of the company's minicomputer-related activities are amalgamated in the division. Wholly owned subsidiaries of this Canadian company are located in Australia, Austria, Belgium, Denmark, France, the Far East, Germany, Italy, Mexico, The Netherlands, Norway, Sweden, Switzerland, the UK, and the US. The company has twelve Canadian locations in six provinces. There are nineteen US locations in twelve states and Washington, DC.

Capability: I. P. Sharp is a computer software company specializing in – (1) Provision of timesharing service called SHARP APL; (2) Development of software to handle projects ranging from large database applications to small real-time monitor and control systems; and (3) Research and development of software tools to aid in the production of trusted systems.

SHARP APL is offered in both interactive and batch modes and can be used at your own premises, using a variety of terminals, via a telephone connection. Each user has 256 kilobyte work-space that may contain both functions and data. Any number of work-spaces may be stored on disk for later retrieval. The file system is based on the principles of shared direct access and total security.

Development of turnkey computer systems now represents the major portion of the Special Systems activities. However, they continue to offer a wide range of services, including:

- Project Management
- Facilities Management
- Feasibility Studies
- System Specification and Design
- Hardware Evaluation, Selection and Acquisition
- Design and Selection of Communications Facilities
- System Operational Audits
- Contract Programming
- Complete Turnkey systems

Average Work Force: Total – 400 (Professionals plus Support Staff)

Gross Sales: 1980 – \$24M
1981 – \$35M
1982 – \$50M

Plant Size: 10,000 sq ft (Special Systems Office Space – all locations)

Equipment: Amdahl 480V8; 1 x IBM 3081-D; 2 x VAX 11/750; 1 x VAX 11/780; and n x PDP 11/34.

Experience: I. P. Sharp has experience in the following areas:

Timesharing – Using SHARP APL, many multi-national companies and governments access private and public data bases in Socio/Economic, Financial, Commodities, Airline Schedules, and Natural Resources.

Process Monitoring and Control – Warehouse Automation System for Liquor Distribution Center; Mail Handling Systems for Canada Post Office; Plant Monitoring System for General Electric Company; Process Monitoring Systems for Atomic Energy of Canada; Radar Control for Canadian Department of National Defense; and Command and Control System for Canadian Department of National Defense.

Real-Time Information Display – Operational Information Display System for airports administered by Canadian Ministry of Transport; MAX-PAK, a micro film information system developed for Illinois State Police; Aviation Communication Measurement System, an airborne communications monitor for Canadian Ministry of Transport; Schipol Airport Information System for the Amsterdam airport; and Computer Aided Dispatch and Records Entry for Police and Fire Departments.

Communications – The SHARPnet, designed and built by I. P. Sharp Associates Ltd to facilitate access to SHARP APL; and X.25 compatible front-end processors and Network Interface Machines for Canadian Department of National Defense.

Research and Development – Specification of trusted Database Management Systems for USAF project Guardian; Implementation of Euclid compiler jointly