

Together with their thematic mapping programs, these programs effectively unite Landsat imagery directly with classical cartography, allowing the same methods of basic data management for both.

Collins & Moon has carried out projects for the Air Operations Research Branch of the Canadian Department of National Defense and for the Defense Research Establishment (Suffield). These projects involved the development of a program to produce maps of terrain visible from a long range radar, data base systems for terrain data computation and map production and a study for the creation and implementation of software for terrain analysis and display.

Keywords: 6 = Computers; 8 = Energy; 9 = Environment; 10 = Image Processing & Optics; 15 = Radar; 17 = Software Services; 20 = Miscellaneous; Mapping = 8, 9, 10, 15, 17, 20; Data Acquisition = 8, 9, 10, 15, 17, 20; Data Processing = 8, 9, 10, 15, 17, 20; Interactive Processing = 17; Geologic Analysis = 8, 9, 17, 20; Geographic Analysis = 8, 9, 17, 20; Thematic Analysis = 8, 9, 10, 15, 17, 20; Thematic Mapping = 8, 9, 10, 15, 17, 20; Thematic Display = 8, 9, 10, 15, 17, 20; Software Development = 17; Geographic Information Systems = 8, 9, 17, 20; Computer Graphics = 17; Digital = 8, 9, 17, 20; Spatial Information Systems = 9, 17; Numerical Analysis = 17; Statistical Analysis = 17; Systems Development = 6, Terrain Analysis = 8, 9, 10, 15, 17, 20; Hydrologic Analysis = 8, 9, 17, 20; Hydrologic Mapping = 8, 9, 17, 20; Data Management = 8, 9, 10, 15, 17, 20.

Revised: Dec 83

COM DEV Ltd

Code: CDL

Address: 155 Sheldon Drive
Cambridge, Ontario, Canada N1R 7H6

Contact: Mr. M V O'Donovan, President - (519) 622-2300

History: COM DEV was incorporated federally in 1971 and is a Canadian high technology company.

Capability: COM DEV designs and manufactures microwave and SAW enhanced subsystems for communications satellites, earth stations and radar systems.

Communications Satellite Products - Contiguous and non-contiguous dual mode output multiplexers; group delay and amplitude equalized input multiplexers; high power waveguide and low power coax isolators; low pass harmonic reject filters; telemetry, command and preselect filters; adaptive variable power dividers and combiners; and polarization switches and beam reconfiguring subsystems.

Earth Terminal Products - High power microwave components and subsystems including filters, diplexers, combiners, isolators and terminations; low-loss transmit reject filters; interdigital and coax filter-isolator assemblies.

Surface Acoustic Wave (SAW) Products - Advanced signal processing components and subassemblies for radar and satellite communications, e.g., filters, delay lines, convolvers, SAW oscillators and synthesizers, code and chirp waveform generators.

Consulting Services - Studies undertaken on trade-offs, optimization and hardware design aspects of the microwave subsystems used in communications satellites.

Research and Development - Fin line techniques at frequencies above 20 GHz; SAW devices as signal pro-

cessing element in digital communications and radar systems; high power ferrite technology and beam reconfiguring networks.

Average Work Force: Technical Staff - 90
Manufacturing, Management
and Support Staff - 123

Gross Sales: 1980 - \$ 2.9M
1981 - \$ 4.6M
1982 - \$ 9.6M
1983 - \$18.0M

Plant Size: 40,000 sq ft - expansion to 69,000 sq ft to be completed by Mar 84.

Equipment: Computers are used extensively for design (CAD), manufacture (CAM) and testing (CAT). There are automatic test facilities to measure product performance, terminal vacuum chambers to test performance in a simulated space environment, and shock and vibration equipment to simulate conditions in the nose cone of a Delta or Atlas Centaur rocket or in the Space Shuttle. The MIC-SAW facility includes a specially lighted, class 10,000 clean room. The plating facility is equipped to produce very high quality nickel, copper and silver plating, primarily on invar and aluminum parts.

Experience: More than forty communications satellites scheduled for launch by 1986 will carry equipment designed and manufactured by COM DEV, and virtually every major builder of earth stations in the western world used some COM DEV components. Customers include Hughes Aircraft, RCA, Ford Aerospace, SPAR Aerospace, Marconi (UK), and the Canadian Government.

Keywords: 5 = Communications; 7 = Electronics; 15 = Radar; 18 = Space Systems; Satellite Subsystems = 5, 7, 18; Microwave Subsystems = 5, 7, 15, 18; Surface Acoustic Wave Subsystems = 5, 7, 15, 18.

Revised: Dec 83

COMINCO Ltd (Electronic Materials Division)

Code: COM

Address: Cominco Ltd
Trail, British Columbia, Canada V1R 4L8

Cominco Electronic Materials Inc
E 15128 Euclid Ave
Spokane, Washington 99216

Contact: (Canada) Mr H E Hirsch, Manager, Technical Research - (604) 364-4426
(Canada) Mr R F Redden, Development Superintendent - (604) 364-4751
(US) Mr D L Guettinger, Manager, CEMI Sales - (509) 922-8614

History: Cominco Ltd was incorporated in 1906 and is 91% Canadian owned. Other Canadian locations include - a Head Office at 200 Granville St, Vancouver, British Columbia V6C 2R2; Group Offices in Trail, British Columbia - Calgary, Alberta - Yellowknife, NWT; and Research Centers in Trail, British Columbia and Sheridan Park, Ontario. Other US locations (Electronic Materials) can be found in California - Chicago, Ill - and Hartford, Conn.

Capability: Cominco is the world's largest producer of zinc and lead with significant output of many by-product metals and chemical fertilizers.