

Like the aerospace industry, the Canadian defence electronics industry is highly export oriented and is closely integrated with foreign primary contractors, particularly in the U.S., although NATO markets are also served. Exports account for 80 per cent of the industry total shipments, and 81 per cent of these exports are intended for the U.S. market,<sup>42</sup> primarily as a result of the Canada-United States DD/DPSA agreements.<sup>43</sup>

The industry is concentrated primarily in Ontario and Quebec (92 per cent of production), with approximately 150 companies in the industry. The 12 major companies account for about 70 per cent of total industry revenues. The major Canadian defence electronics companies are Litton Systems Canada, CAE Electronics, Canadian Marconi Company, Unysis Canada, Raytheon Canada, Computing Devices Company, ITT Canon Canada, Bendix-Avelex, Garrett Canada, Rockwell International of Canada, MacDonald Dettwiler and Associates (MDA) and Leigh Instruments (now owned by Spar).

Unlike most other countries, Canada has a high incidence of foreign ownership within the industry, particularly American ownership. This is explained in part by the close integration of the U.S. and Canadian markets; that is, the DD/DPSA agreements calling for a Canadian content is seen as a background or indirect factor that influences U.S. companies in the decision to establish themselves in Canada. Among the 12 major Canadian defence electronics companies, eight are American owned, two are British owned, and only two are Canadian owned. Smaller companies are largely Canadian owned.<sup>44</sup> The U.S.-owned companies are the biggest investors in R & D and capital expansion. In some cases, the U.S. parent companies provide their Canadian subsidiaries with technology as a result of worldwide product mandates, an essential element to succeed in the U.S. and other international markets.

The Canadian defence electronic industry is in a favourable position internationally in market niches such as simulators, radar, telecommunication, navigation systems and instrumentation, and computer software. In contrast, it has limited capabilities in performing large-scale systems-integration activities. The main EC defence electronic companies competing internationally with

Canadian companies are Thorn EMI from the United Kingdom, Thomson-CFS from France and Standard Electric Lorenz from the Federal Republic of Germany. Examples of Canadian-European corporate links, through ownership of subsidiaries, partnership consortia or joint venture, are as follows:

- . *U.K. defence electronics companies with Canadian ownership*

MDA (UK)	MDA
Caltronics	Canadian Astronautics Ltd. (CAL)
- . *Canadian companies with British ownership*

Canadian Marconi Company	General Electric Co. PLC
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- . *German companies with Canadian ownership*

CAE Electronics GmbH	CAE Electronics Ltd.
Garrett GmbH	Allied Signals Aerospace Canada

In the U.S. market, the Canadian defence electronic industry, like the aerospace industry, will have to face U.S. defence budget cuts, non-tariff barriers (such as foreign government defence department regulations), restrictions (such as security and technology transfers) and intense competition. The conditions in the U.S., combined with the evolving environment, the necessity to develop new technologies and products and an expected industry consolidation, should prompt Canadian companies to look increasingly to European and other procurement markets, while conserving and strengthening their link with U.S. industry.

In summary, the Canadian defence electronic industry concentrates on specific technology niches, which benefits its international competitiveness. However, this lack of diversification also makes it vulnerable to fluctuations in the demand for defence products. It is, therefore, essential that the Canadian industry take a more active role in its participation in R & D joint projects, not only in the United States but also in Europe, especially