

# ARCHIVED REPORT

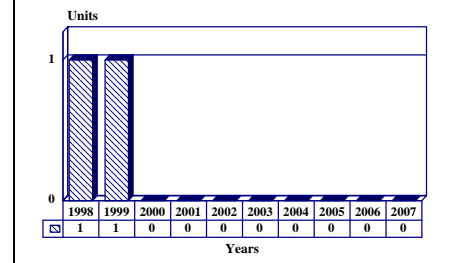
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## UYS-501 - Achived 5/99

### Outlook

- Integral part of UYQ-501 SHINPADS
- Limited to Halifax class frigates in the Canadian market
- Very small export market exists

10 Year Unit Production Forecast  
1998 - 2007



### Orientation

**Description.** Multisonobuoy acoustic processing system.

#### Sponsor

Minister of Supply and Services  
Place du Portage  
Hull, Ontario  
Canada

#### Contractor

Computing Devices Canada  
3785 Richmond Rd  
Nepean, Ontario K2H 5B7  
Canada  
Tel: +1 613 596 7000  
Fax: +1 613 820 5081  
Telex: 534 139

**Status.** In service and production.

**Total Produced.** Through early 1999, total production is estimated at 150 units.

**Application.** Designed to analyze data derived from sonar sensors for the location and identification of enemy submarines.

**Platform.** Installed on surface ships of frigate size, CP-140 patrol aircraft, and Super Seasprite SH-2G helicopters.

**Price Range.** Between US\$500,000 and US\$750,000, based on a comparison of similar units.

### Technical Data

The UYS-501 Signal Processor is a general-purpose programmable digital system designed to analyze data provided by modern sonar sensors (sonobuoys). It can perform vector arithmetic and matrix operations in its eight arithmetic units, using floating point complex operations at a rate equivalent of about 320 million floating points operations per second. It is used as part of the SQR-501 Canadian Towed Array Sonar System (CANTASS) and the SQS-510 active sonar systems. It

also can be applied to many existing sonar programs produced by companies other than Computer Devices International. The UYS-501 is also an integral part of the UYQ-501(V) SHINPADS (SHipboard INtegrated Processing and Display System).

The processor is designed to be used in either serial or parallel configuration operating on 115 Volt, 60 Hertz, single phase power. It is encased in a single cabinet measuring 65 x 26.8 x 26 inches. The case is air cooled

and the unit can drive up to six I/O consoles. The I/O devices can be software configured to either NATO Stanag 453, or Computing Devices' 16-bit parallel or high-speed serial interfaces.

## Variants/Upgrades

UYS-501. The original version of the system.

UYS-503. Airborne version.

## Program Review

**Background.** The UYS-501 was developed as a private corporate venture by Computing Devices (CDC). It was adapted for both the SQR-501 CANTASS and the SQS-510 sonar programs, the only requirement being to develop software packages to achieve compatibility. In April 1986 ComDev received a full-scale engineering development contract from Canada's Department of National Defense (DND) to develop the UYS-501. This included reducing the physical size of the UYS-501 from two six-foot cabinets to one four-foot cabinet, without compromising performance.

In late 1986, CDC received a Department of National Defense contract to develop the UYS-501 as an airborne signal processor for the Canadian Air Force's CP-140 Aurora aircraft. It is used with the APS-116

radar providing an SAR (Synthetic Aperture Radar) capability. The Canadian Navy installed the SQR-501 CANTASS aboard the two Annapolis class frigates in 1988. There have been no reports as to whether the ships also received the UYS-501, but such an installation would be likely given the system's role. In the spring of 1989, CDC was awarded a contract by Paramax, on behalf of the Canadian Navy, for 78 units of the UYQ-501 shipboard integrated processing and display system displays. The contract was estimated to be worth approximately US\$22.0 million.

The first modernized Tribal class destroyer returned to active duty in November 1989, and the Halifax, the first of 12 new City class patrol frigates, was delivered in October 1990.

## Funding

This program is funded by the Canadian Minister of Supply and Services for the Canadian Navy.

## Recent Contracts

No recent sales information has been made available to the public.

<u>Contractor</u>	<u>Award (\$ millions)</u>	<u>Date/Description</u>
Computing Devices	\$22.0	<i>May 1989</i> – Canadian government contract for 78 display screens for shipboard workstations.
E-Systems (USA)	(360.0)	<i>January 1995</i> – Upgrading of Australian air force's P-3C aircraft with 20 processors (part of a larger upgrade package).

## Timetable

<u>Year</u>	<u>Major Development</u>
1986	UYS-501 development contract awarded
1988	Production contract awarded as part of SQS-501 contract
1989	Second production contract awarded as part of SQR-501 contract
1990	First system delivered to Portugal
1995	Australia orders 20 systems for upgrading its Lockheed P-3C fleet
1996	Deliveries begin for Australian contract

## Worldwide Distribution

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**Australia.** (20)

**Canada.** (14)

**Japan.**

**Portugal.** (9)

**Sweden.**

**United States.**

## Forecast Rationale

The UYS-501 has an advantage over other signal processors in that it has been adapted from a nonmilitary version of the system. This will ensure that repair parts are readily available. The UYS-501 entered service in 1988, and has already seen the delivery of about 14 units to Canada and six to Portugal (plus training units), the latter purportedly for a very nominal fee. With the domestic market's prospects limited at present, Computing Devices was originally expected to market its signal processor as actively as possible among international navies, especially where the UYS-501(V) could be adapted to replace existing systems.

More recently it appears, however, that few other nations are showing serious interest for this system, aside from Canada and Portugal. In contrast, the

airborne sister version of the unit, the UYS-503, is alive and well, and in widespread usage.

The Canadian DND has constructed a total of 12 City class patrol frigates. Originally, Canada was seeking to procure an additional Six City class frigates, but pressure to reel in the defense budget killed its prospects. The existing 12 frigates are outfitted with both the SQR-501 CANTASS and SHINPADS ship-board search and target designation systems, each of which uses the UYS-501.

The following forecast assumes virtually no export sales; the production represented until 1999 is for spare parts, and possible export sales not accounted for here. Portugal is not likely to receive any more of these units, except for possible spares.

## Ten-Year Outlook

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### ESTIMATED CALENDAR YEAR PRODUCTION

Designation	Application	thru 97	High Confidence Level			Good Confidence Level			Speculative			Total 98-07	
			98	99	00	01	02	03	04	05	06		07
UYS-501	EXPORT (NAVY)	10	1	1	0	0	0	0	0	0	0	0	2
UYS-501	Prior Prod'n:	14	0	0	0	0	0	0	0	0	0	0	0
Total Production		24	1	1	0	0	0	0	0	0	0	0	2