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## Presentation Manual



## Technical Manuals

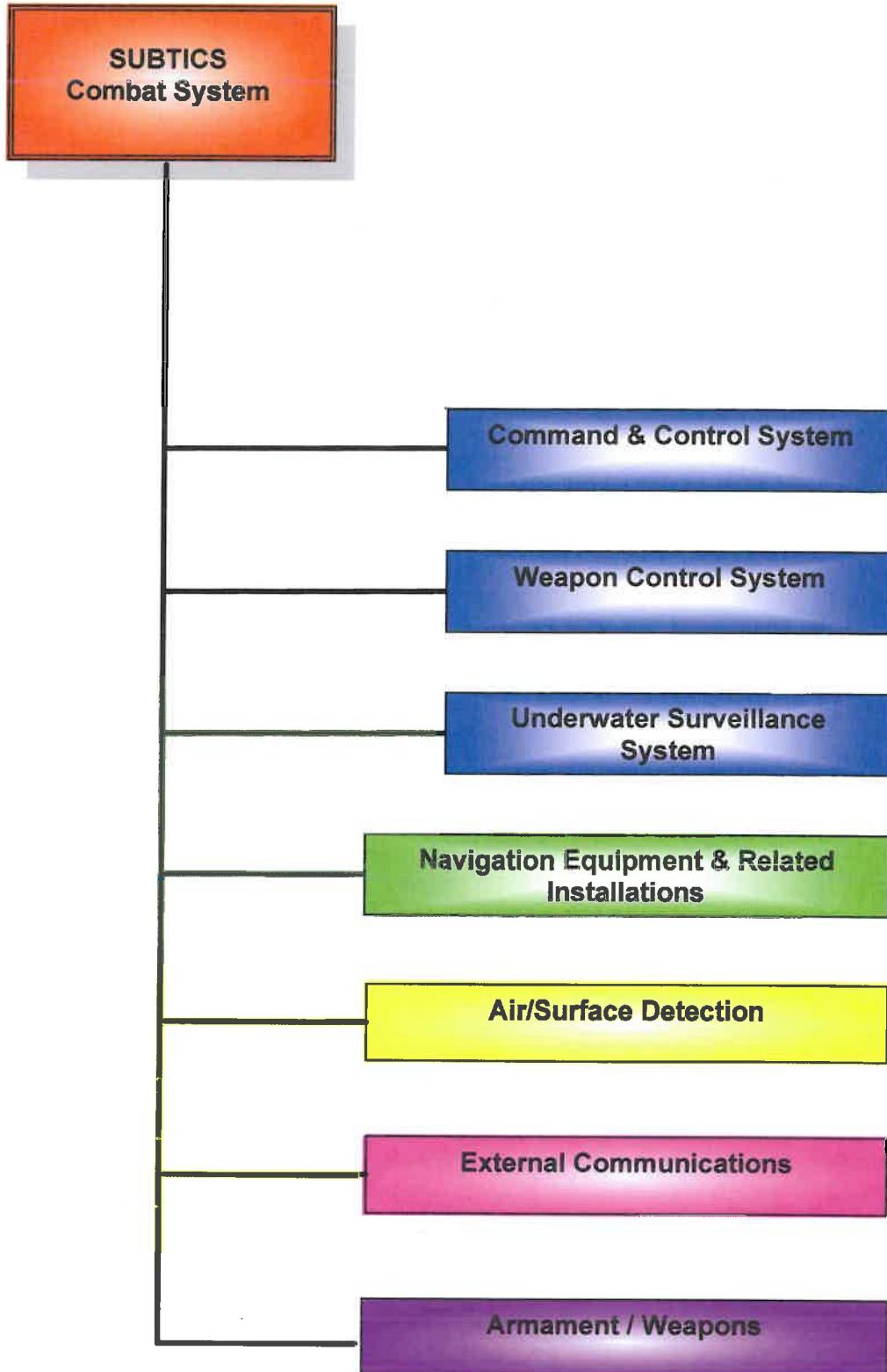


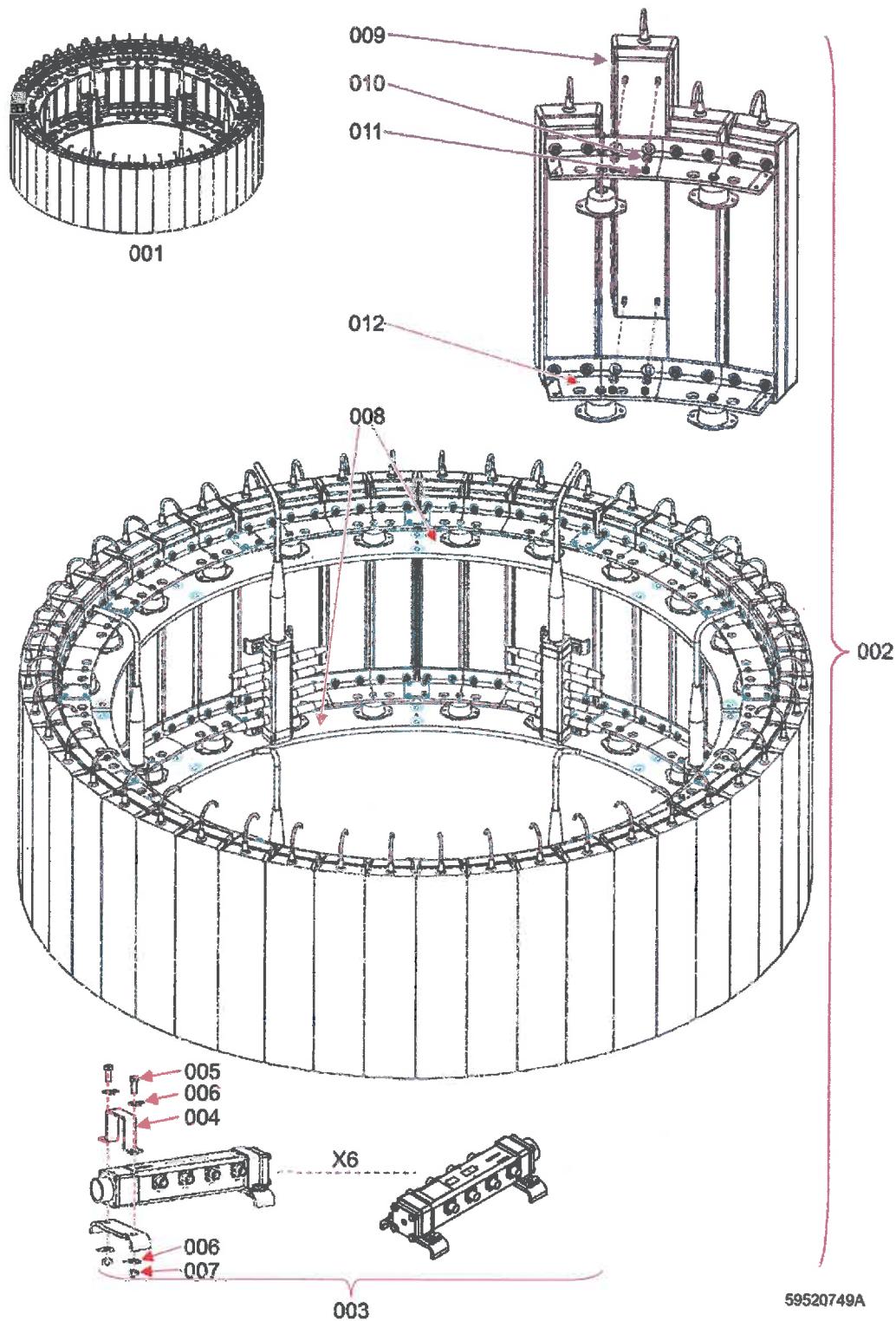
Figure 1-1: Combat System Overview

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ETM-CS-11-AD  
Revision 02



**FIGURE 1.2 – GENERAL VIEW OF THE CYLINDRICAL ARRAY**



**FIGURE 6.1 - CYLINDRICAL ARRAY (CA)**

**1.2.2 - INSTALLATION CHARACTERISTICS*****1.2.2.1 - Mechanical***

PARAMETERS	VALUES (TYPICAL)
Total weight in air	2500daN
Total weight in water	1700daN
Support interface	2048mm diameter (1030mm upper/lower flanges)

***1.2.2.2 - Electrical***

PARAMETERS	VALUES (TYPICAL)
Power supply	16VDC (14.7V to 17.3V)
Power consumption	50W
Current consumption of each stave	27 mA ± 6 mA
Interface	6 connectors RECM 24MT6116 (61 pins) (F6131)

***1.2.2.3 - Cooling***

Not applicable.

***1.2.2.4 - Environmental***

PARAMETERS	TYPICAL VALUES
Operating temperature in water	+2°C < T < +32°C
Storage temperature in air	-10°C < T < +40°C
Hydraulic operating pressure	P <= █ Mpa
Maximum pressure	P >= █ Mpa

### 1.2.3 - OPERATIONAL CHARACTERISTICS

PARAMETERS	POWER	$\Delta T$	TYPICAL VALUES
Transmission frequency			[REDACTED]
Transmitted pulse length			[REDACTED]
Impedance (for each stave)	4000W	$F = [REDACTED]$ kHz	$Z = 40\Omega \pm 30\%$
Bearing arc (horizontal)			[REDACTED]
Elevation arc (vertical)			[REDACTED]
Sound level (inside stave acoustic axis) Reference: 1µPa at 1m	4000W	$F = [REDACTED]$ kHz	$\geq [REDACTED]$ dB
		$F = [REDACTED]$ kHz	$\geq [REDACTED]$ dB
		$F = [REDACTED]$ kHz	$\geq [REDACTED]$ dB
Sound level (outside stave acoustic axis) $F = [REDACTED]$ kHz Reference: 1µPa at 1m	4000W	$\Theta = \pm 30^\circ$	$\geq [REDACTED]$ dB
		$\Theta = \pm 60^\circ$	$\geq [REDACTED]$ dB
		$\Theta = \pm 70^\circ$	$\geq [REDACTED]$ dB
Vertical directivity (at - 3dB)	4000W	$F = [REDACTED]$ kHz	$\geq [REDACTED]$

## 2.1 PHYSICAL DESCRIPTION

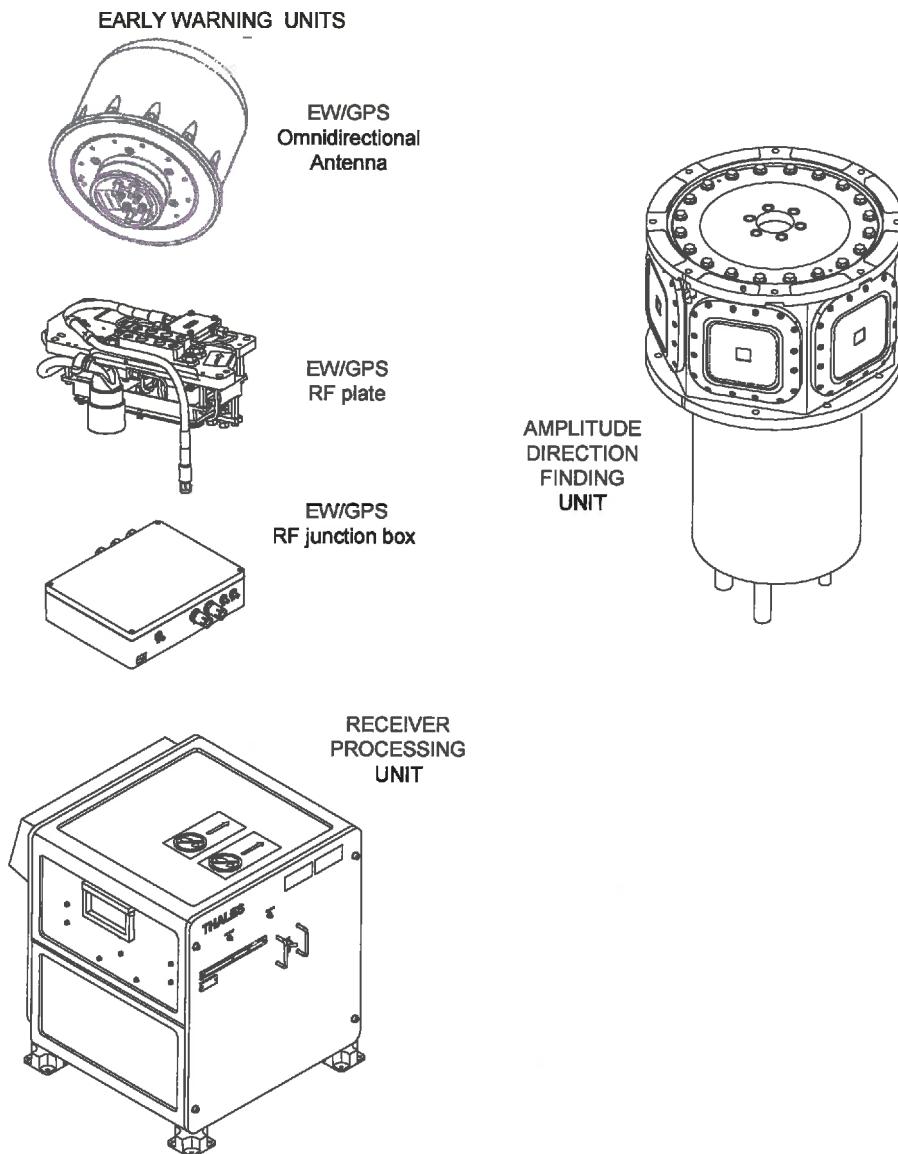


Figure T2-1: RESM Architecture

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**OIM-CS-05-A**



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# **OPERATING INSTRUCTION MANUAL**

**COMBAT MANAGEMENT SYSTEM**

**Status: Final**

- The functional status of the Optronic mast equipment: "SOM",
- The functional status of the attack periscope equipment: "APS",
- The functional status of the RESM equipment: "RESM".



**Figure 4-19: PMFL – "SYSTEM SYNOPTIC" – "Sensors zone" details**

#### 4.1.3.1.2.4 "COMMAND AND WEAPON CONTROL" zone

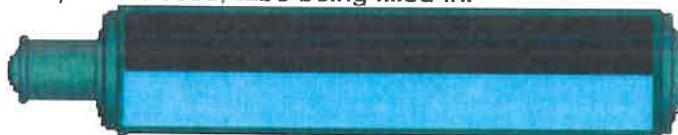
This zone includes 16 main graphical elements:

- 12 objects that represent the launching capability per tube, 4 SUT launching capabilities and 8 SM39, the synthetic status of which being indicated by the color of the graphical object.
- 1 torpedo firing installation, represented by 6 tubes that display the following information:
  - The tube status and the status of the weapon in the tube, indicated by the tube image.

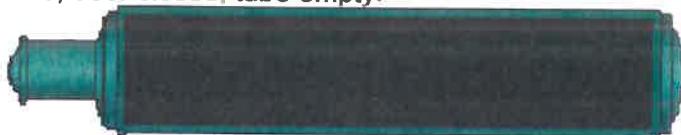
Tube available, door closed, tube full.



Tube available, door closed, tube being filled-in.



Tube available, door closed, tube empty.



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**SSTM-CS-08-A  
Revision: 01**



**BAR CODE (TBD)**

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## **SUB SYSTEM TECHNICAL MANUAL**

**EXTERNAL COMMUNICATIONS**

**Status: Final**

### 2.2.2.3.2 V/UHF Tx - Rx subsystem

This subsystem allows voice communication at periscope depth or when surfaced and consists of:

- one commercial civilian radio maritime radio communication link in the frequency range 150.8 MHz-163.6 MHz in audio (in compliance with GMDSS),
- two V/UHF transceiver integrated in the console RH02531,

The GMDSS functions are realised through the maritime VHF transceiver that has the Digital Selective Calling (DSC) capability with a watch receiver.

This VHF radio maritime equipment complies with GMDSS specifications.

#### 2.2.2.3.2.1 VHF Radio maritime RT 5022 GMDSS

The RT 5022 is a synthesized, microprocessor-controlled VHF transceiver providing a full capability ship-to-ship and ship-to-shore VHF communications link in the 149.3 - 163.75 MHz range.

It is equipped with all international maritime VHF channels, plus a choice of up to 30 private channels.

The unit has built-in DSC (class A) capability, therefore avoiding the need for a separate receiver/modem.

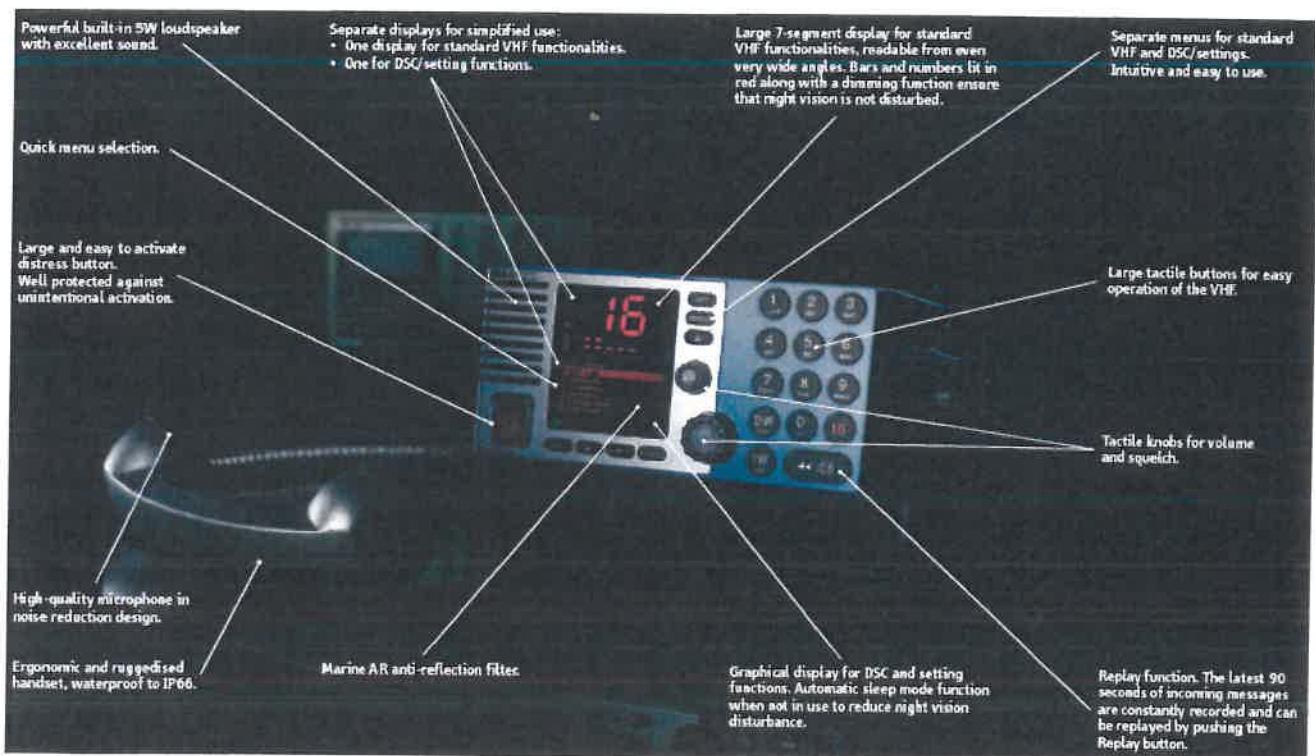


Figure 2-26: VHF Radio maritime transceiver RT 5022