**CONTRALTO-V®**

Torpedo defence system for surface vessels

**COUNTERMEASURE**

**Mission**

The system CONTRALTO-V®, new-generation solution, has been especially designed in order to face advanced heavyweight torpedoes.

Characterised by a high maximum speed, extended wire-guided range and improved acoustic and ACCM capabilities, those torpedoes are not anymore disturbed by effectors using a seduction philosophy.

Thanks to the operational concept of dilution / confusion, CONTRALTO-V® is able to strongly increase the operational capability and survivability of the surface vessels.

CONTRALTO-S®, state-of-the-art anti-torpedo system, is the most adapted equipment for the FREMM-class frigate, being deeply integrated and optimised for the benefits of the vessel.

**Operational concept: dilution / confusion**

**Operational capability increased: high success probability**

**Fully integrated with the combat management system**

**Compatibility with many launchers**

**FREMM preferred equipment**
**KEY POINTS**

**System overview**
CONTRALTO-V® is composed of several subsystems:
- the reaction system, which suggests an optimised evasive maneuver and deploys the countermeasures effectors
- the deployment system fitted to several types of launchers (mortar, rocket, pneumatic)
- the acoustic torpedo CANTO® countermeasure

**CONTRALTO-V® system**
As soon as a torpedo alert is declared on-board, CONTRALTO-V® will suggest an immediate deployment of the CANTO® countermeasure and evasive maneuvers based on the ship’s capabilities. CONTRALTO-S® will take into consideration speed, manoeuvrability, and environmental data.

**CANTO® countermeasure**
CANTO® is a broadband active acoustic countermeasure. It is designed to saturate the torpedo data processing system by emitting specific and smart acoustic signals, in the all torpedo frequency band in active and passive mode. Its mission consists in exhausting the threat by creating and renewing hundreds of targets. This concept, called dilution / confusion, has been developed in 2005 taking into account all the advanced torpedoes developments. Moreover, CANTO® can be upgraded very easily and without adaptation of the countermeasure itself. CANTO® will stay adapted to the threats during its all shelf life.

**Compatibility with many launchers**
DCNS developed the CONTRALTO-V® system to make it compatible with several types of launchers on board vessels. Thanks to this characteristic, the cost of integration is reduced and the impact of the system on the vessel’s architecture is limited. It can be implemented into new vessels as well as part of modernisation programmes.

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**CANTO® CHARACTERISTICS**

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Value</th>
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<tbody>
<tr>
<td>Acoustic</td>
<td>High-level active emitter</td>
</tr>
<tr>
<td>Frequency</td>
<td>Wideband</td>
</tr>
<tr>
<td>Autonomy</td>
<td>&gt; 10 minutes</td>
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<tr>
<td>Diameter</td>
<td>5 inches</td>
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<tr>
<td>Shelf life</td>
<td>20 years</td>
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**ADAPTABLE AND EVOLUTIVE TORPEDO DEFENCE SYSTEM**

**THE BEST COST FOR EFFICIENCY**