CANTO® represents a breakthrough in the field of anti-torpedo defence. Based on dilution/confusion concept, it is the only solution capable of protecting submarines against both the most advanced and the previous generation torpedoes.

Unlike the seduction based decoy, CANTO® acts completely independently of the attacking torpedo(es). Its principle consists in saturating the torpedo sonar and data processing by generating a permanently renewed tactical picture resulting in exhausting the torpedo(es) energy.

Thanks to the small number of CANTO® needed by salvo and its associated compact launching system, CANTO® can be easily installed on board any submarine (SSK, SSN, SSBN).
CANTO® FOR SUBMARINE

Confusion/dilution
CANTO® has been developed to protect efficiently a submarine against single or multiple torpedo attacks. It is capable of defeating previous and new generation torpedoes combining complex signal processing and high endurance, against which the seduction based decoys are no longer efficient. CANTO® is an all-in-one broadband active acoustic emitter acting both as a jammer for dilution effect and as false targets generator for confusion effect. It creates and constantly renews hundreds of fake echoes on a 360° coverage area aiming at saturating the torpedo sonar and data processing. The extremely confused tactical picture forces the attacking torpedo(es) to waste time finding the real target and thereby exhausting its energy.

CANTO® functioning
- 360° immediate effect upon entering water,
- transmitting process independent of attacking torpedo(es),
- acoustic signals covering the whole torpedo(es) frequency band in active and passive modes.

CANTO® operational advantages
- Capable of countering any torpedo,
- capable of countering simultaneous torpedo attacks,
- efficient even in case of short notice torpedo alert,
- number of CANTO® by salvo drastically limited.

CANTO® installation on submarine
CANTO® all-in-one countermeasure along with the very low quantity needed by salvo limit the footprint of the CANTO® launching tubes on the submarine.

CANTO® is the anti-torpedo countermeasure easily integrable on all type of submarine including smaller ones.

CHARACTERISTICS

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acoustic</td>
<td>High-level active transmitter</td>
</tr>
<tr>
<td>Frequency</td>
<td>Wideband</td>
</tr>
<tr>
<td>Diameter / length / weight</td>
<td>&lt; 150 mm / &lt; 600 mm / &lt; 20 kg</td>
</tr>
<tr>
<td>Shelf life</td>
<td>20 years</td>
</tr>
</tbody>
</table>

ONE SALVO = 2 CANTO® IMEDIATE PROTECTION
CONTRALTO® FOR SUBMARINE

CONTRALTO®
CONTRALTO® is the reaction module associated with CANTO®. CONTRALTO® is installed into the reaction processing unit (RPU). The moment a torpedo alert is declared, CONTRALTO® reaction module defines an optimised evasive manoeuvre and deploys the CANTO®. CONTRALTO® takes into consideration the submarine’s capabilities such as speed, manoeuvrability, depth, etc., the submarine’s residual endurance and the environment data.

Three operational modes are available:
- manual,
- semi-automatic,
- automatic.

CONTRALTO® integration
RPU’s integration can be customised according to navy’s requirement:
- stand-alone,
- partially integrated,
- CMS integrated.

Launching tubes
CANTO® for submarine is deployed thanks to self contained high-pressure air mono-, bi- or tri-tubes.
The installation is light, compact and safe.
The very low quantity of CANTO® by salvo (2) offers a very wide range of tube configurations which can be installed into new submarines as well as during modernisation.
Background

DCNS has a wide experience in developing and integrating anti-torpedo countermeasures, the first solution being implemented in the 1970s. CANTO® has been developed based on this background to protect both submarines and surface vessels against all generation of torpedoes.

Equipped navies

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