

Seabed Warfare

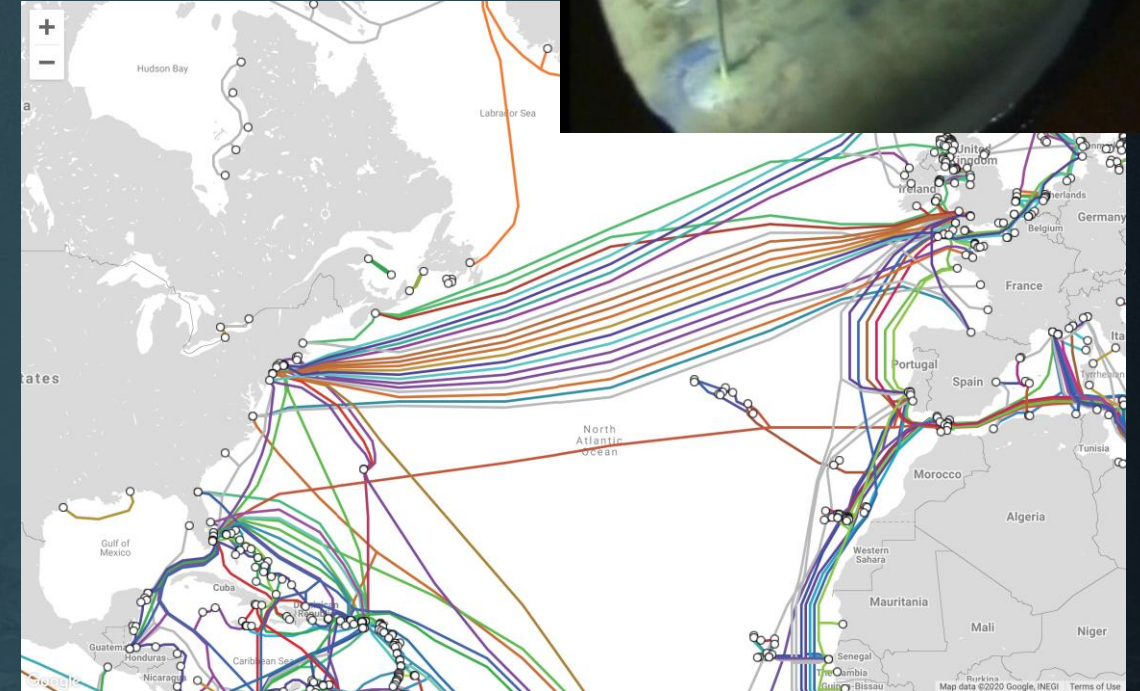
Saab's Approach

Chris Lade 24 May 2023



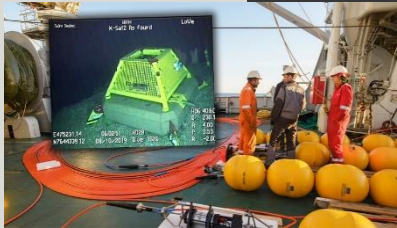
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Underwater Infrastructure



Seabed Warfare 2022

Norwegian undersea surveillance network capable of detecting submarines has cables mysteriously cut as police are called in to investigate - while suspicion swirls that Russia may have 'sabotaged' the equipment



Royal Navy hold Seabed Warfare Workshop Portsmouth Naval Base



Royal Navy purchase 2 x Multi Role Ocean Surveillance Ship (MROSS) vessels

January 2022

16 February 2022

19 May 2022

26 September 2022

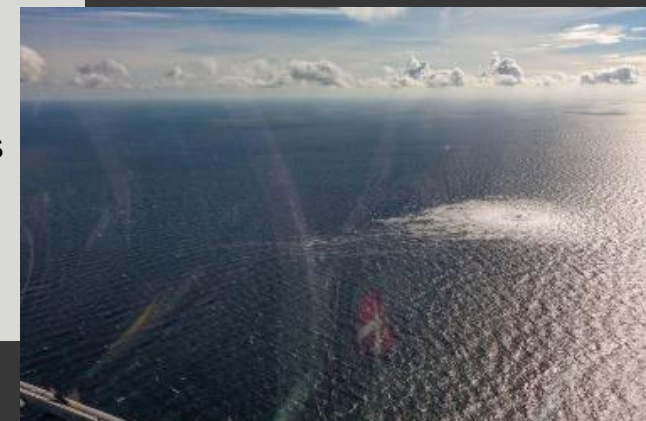
1 January 2023

France Unveils New Seabed Warfare Strategy

A new "Seabed Warfare Strategy" was unveiled by French Minister of Armed Forces, Florence Parly and Joint Chief of Staff, General Thierry Burkhard on 14 February. The strategy aims at broadening the capabilities of anticipation and action of the French Navy (Marine Nationale) up to 6,000 m depth.



Explosions on Nord Stream pipeline cause leakage of methane gas into the Baltic around Bornholm



Latest News



**NATO Steps Up Response To ‘Clear And Present’
Undersea Infrastructure Risk**

16 May 2023



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Saab's Approach to Seabed Warfare SBW

- Understand the requirements and approach (Strategy and OPCON) which differ Nation to Nation.
- Isolate trends eg 6000metres
- Seabed Warfare definition:
 - Operations to, from and across the ocean floor including Oceanography, Geoint, Maritime Mine Warfare, Hydrography, Critical National Infrastructure Operations (CNI Ops)
- CNI Ops includes Seabed Warfare and Seabed Commercial Operations
- ASW, MW, ISTAR assets may be used in a CNI Ops Role
- Holistic Maritime Warfare – build the picture

Saab's Contribution to CNI Ops



CNI Ops

- Responsibility: Potential confusion over Who owns it and what is their role?
- **Defensive** – Protection of Own/Allies Critical National Infrastructure
- **Offensive** – Expeditionary Seabed Warfare Survey
- CNI Operations Overt, Discrete, Covert
- Phased:
 - Survey
 - Monitor
 - Identify
 - Interdict
- Deploy
- Strike
- Intervention capability, Weapon deployment
- Modularity - Carry differing payloads to conduct a range of tasks



New Requirements

- Time of detect to engage
- Area denial
- Combat non conventional threat eg Unmanned Underwater Vehicle/CNI SM Ops
- Conduct survey of own CNI, map and revisit new to defence
- Sensor system/network placement at critical points
- Respond
 - Timely
 - Effective
 - Lethal

Saab's underwater competences



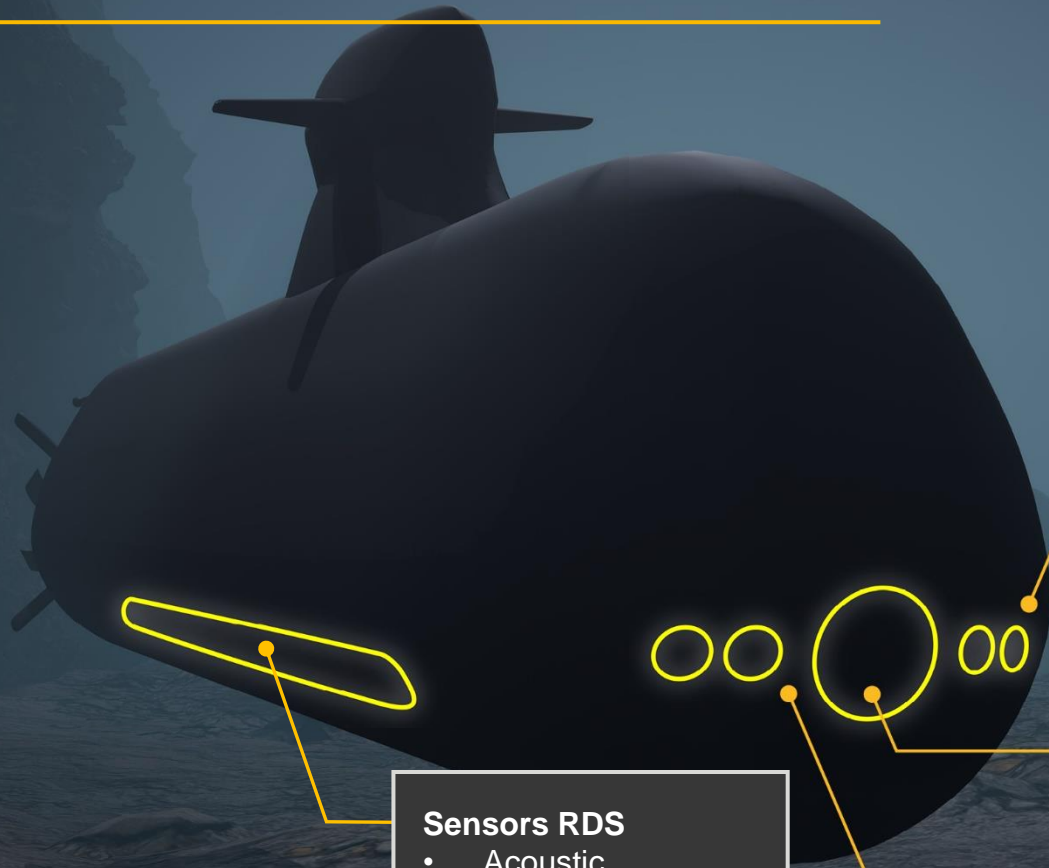
Underwater vehicles

Submarines

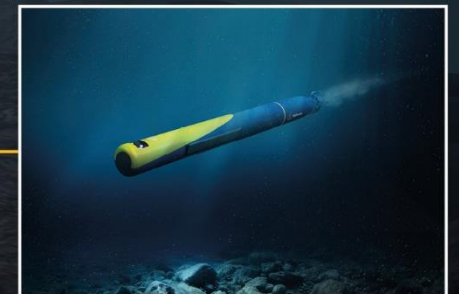
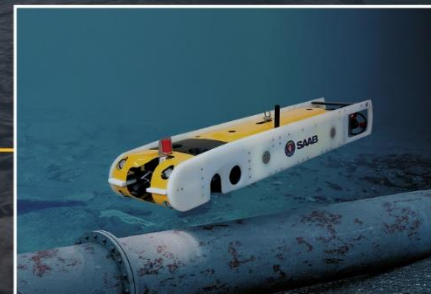
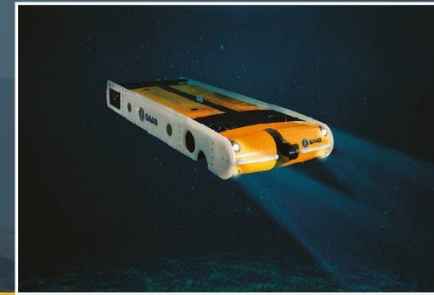
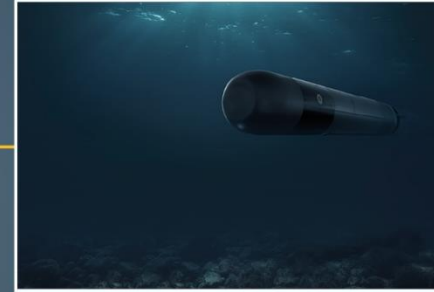


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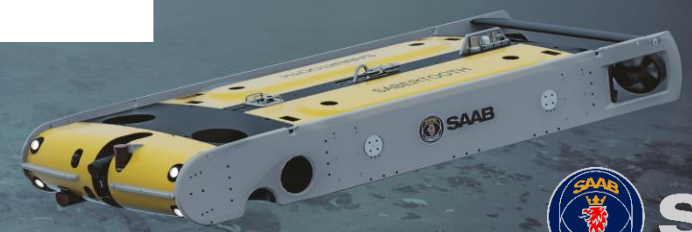
Kockums' Submarines and seabed warfare



- Sensors RDS**
- Acoustic
 - Electric
 - Magnetic



Commercial UUVs



Commercial Operations



SAAB

Commercial Operations



Top Hat style Tether Management System with a 400 m winch module for a 20 mm tether fitted with latch status and line out sensors. Options include lights and cameras.

The commercial seabed



