



BLACK-SHARK

"Stealth" Dual Purpose Wire-Guided Heavyweight Torpedo

DESCRIPTION

The BLACK-SHARK Advanced Heavyweight Torpedo is a multipurpose weapon designed to be launched from submarines or surface vessels. It is meant to counter the threat posed by any type of surface or underwater target for the next 20 years. The BLACK-SHARK is a new generation powerful, long-range, fully stealth, wire guided and self-homing heavyweight torpedo (21-inch diameter).

MAIN CHARACTERISTICS

- Dual purpose antisubmarine/antiship torpedo
- Adaptability to a large variety of discharge systems: push-out/swim-out launch
- Length of 6300 mm, allowing integration with any submarine tube
- Possibility to integrate it with all modern Torpedo Fire Control Systems, assured by compatibility with STANAG 4405
- Simple to interface with ship sensors and computing units
- Actual tactical situation permanently available for threat assessment and target selection
- Audio channel available
- Fibre optic wire guidance communication link
- Electrical propulsion system with very high energy content

primary battery

- Very High speed with stepless speed electronic control
- Acoustic head shape designed to reduce flow-noise
- Very low radiated noise (fully stealth)
- Optimised for deep and very shallow (coastal) waters operation
- Long Detection range even on low TS, zero Doppler and silenced targets
- Fully digital beam-forming, signal and data processing
- Possibility to simultaneously manage several targets
- Sophisticated ACCM capability

ADVANCED ACOUSTIC HOMING

The Acoustic Head of Black-Shark, named ASTRA (Advanced Sonar Transmitting and Receiving Architecture), is a state of the art active and passive acoustic head for modern torpedoes which represents the latest effort made by Whitehead Alenia Sistemi Subacquei.

It is possible to use ASTRA as an additional, remote sensor to the submarine combat suite.

The advanced signal and data processing provides the following features:

- Medium and high frequency operation in passive mode
- Spatial filtering



- Multi-frequency capability
- Frequency filtering
- Constant False Alarm Rate (CFAR) processing
- DEMON analysis
- Echo elongation analysis
- Echo spatial coherence analysis
- Echo angular extension analysis

ELECTRICAL PROPULSION SYSTEM

It consists of a new design Al-AgO battery with a very high-energy content, contra-rotating direct-drive brushless motor and skewed propellers which assure a minimum radiated noise and wakeless run and render impossible the torpedo detectability at useful ranges.

SENSORS

- Availability of multiple wake sensors for detection and classification
- Optimized wake homing capability
- Target tracking in acoustic and wake modes

POWERFUL EXPLOSIVE CHARGE

- Lethal for surface vessels and submarines, activated by both acoustic influence and impact fuses
- Safety and reliability verified in any operational phase
- Warhead proven against real targets
- Insensitive Munition Explosive (STANAG 4439 and MURAT-2)

SUBMARINE SYSTEM

- Launch performed at any operational depth of the submarine
- Presence of the launching submarine not disclosed (start-up at low speed, cavitation free)
- Continuous monitoring of torpedo status in submarine tubes
- Availability of compact Torpedo Board Interface (TBI) solutions for integration on existing platforms

STATUS

In full production for several major Navies. Integration completed for Scorpene submarines, in advanced stage for U209, U214 and U212 submarines.

