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TRACKING NO.	SLS-402
PROGRAM	MURRELET
CATEGORY	Sensors & Payloads
FISCAL YEAR	FY2025
CONTRACT AWARD	08 DEC 2024

CAPABILITY BRIEF

RESONANCE

SLS-PROPRIETARY

Passive Acoustic Sensing Payload

Resonance is the passive acoustic sensing payload — listen-only detection, classification, and bearing on surface and subsurface contacts. Designed to ride a UUV or a moored node, MURRELET hears propeller cavitation long before a radar would paint the contact, extending the fleet's awareness silently and at depth.

KEY CAPABILITIES

- Large-aperture coherent hydrophone array with 360° azimuth directional sensing.
- Propeller-cavitation and machinery-line detection and classification.
- Distributed, PADAL-style tracking across multiple low-power nodes.
- Onboard narrowband and broadband processing with false-alarm suppression.
- Library-matched classification of contacts by radiated noise.
- Tracks handed up to ALDER (SLS-305) for multi-INT fusion.

PLATFORM AT A GLANCE

360°

AZIMUTH

64

CHANNELS

Passive

MODE

Bearing + ID

OUTPUT

PAYLOAD PROFILE

ARRAY TYPE	Coherent hydrophone	CHANNELS	64
APERTURE	Large	AZIMUTH COVERAGE	360°
FREQUENCY	10 Hz - 30 kHz	BANDS	Narrowband + broadband
PROCESSING	Onboard DSP	DETECTION	Cavitation + machinery lines
CLASSIFICATION	Library-matched	TRACKING	Distributed (PADAL-style)
HOSTS	SALMON, ROCKFISH, moored node	POWER	< 40 W
INTERFACE	CEDAR / ALDER	STORAGE	512 GB
FALSE ALARM	Adaptive suppression	EMISSIONS	Passive only

CONCEPT OF EMPLOYMENT

MURRELET maintains silent, wide-area watch from subsurface or moored nodes, detecting and classifying contacts by their radiated noise and passing bearings to ALDER (SLS-305) for fusion with radar, ESM, and EO/IR. Hosted on ROCKFISH (SLS-207), it enables persistent acoustic surveillance of chokepoints with no emitted signature.