

MEKO® S-X

persistent uncrewed ASW

May 10, 2023 | Jens Ballé



engineering.tomorrow.together.



thyssenkrupp

Modern Anti Submarine Warfare

NATO ASW Doctrine

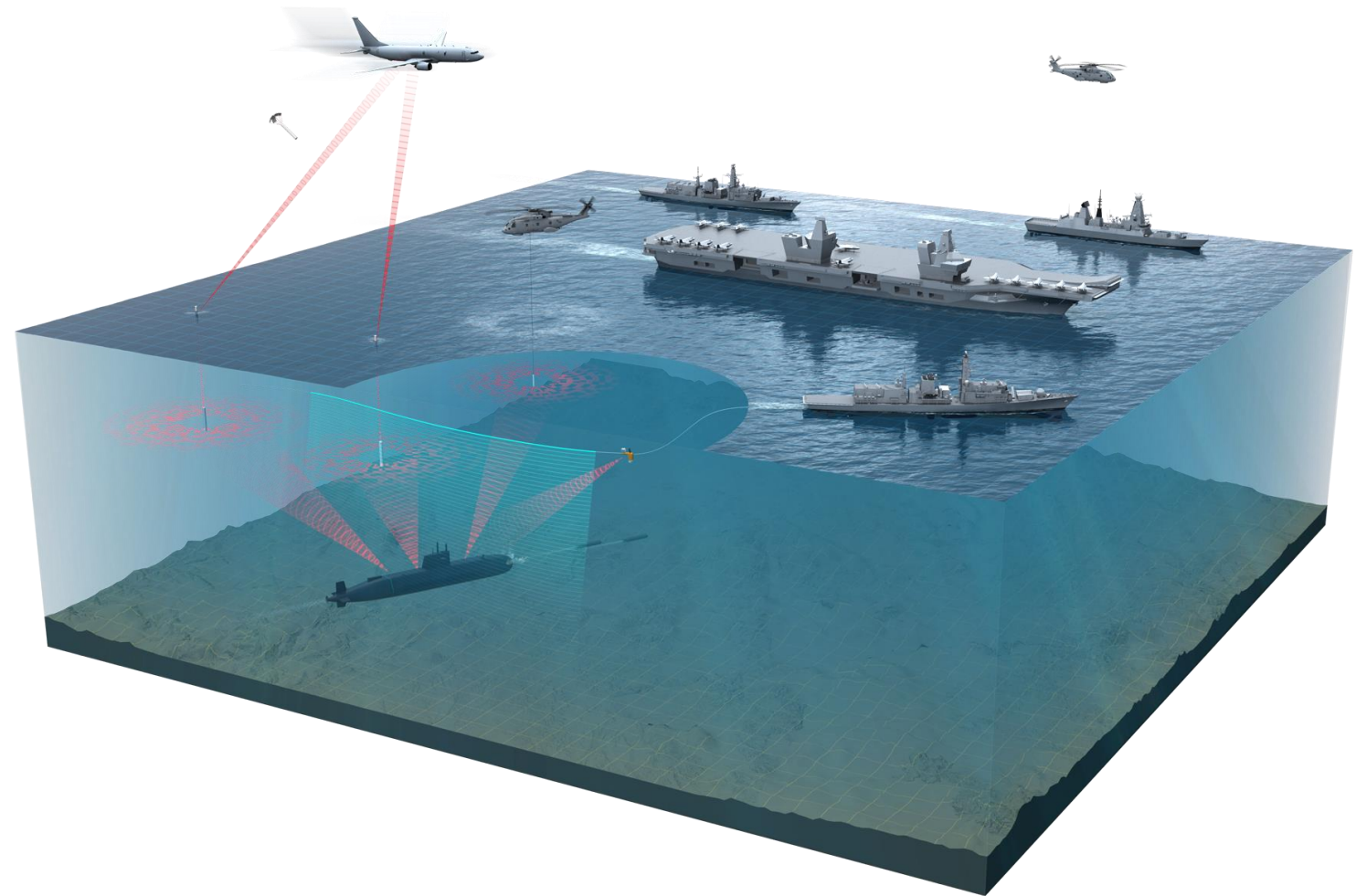
- Reduce vectors for quiet approach
- Keep speed of advance high (16 to 18 kn)
- Fight the sub at the pickets

High Level Requirements

- Submarine is not affected by weather
- Task Force will not avoid heavy weather
- Underway replenishment is available

Consequences for ASW screen

- Maximum speed of 22 kn
- High seaworthiness
- The more sonars the better



Do we have what we need?

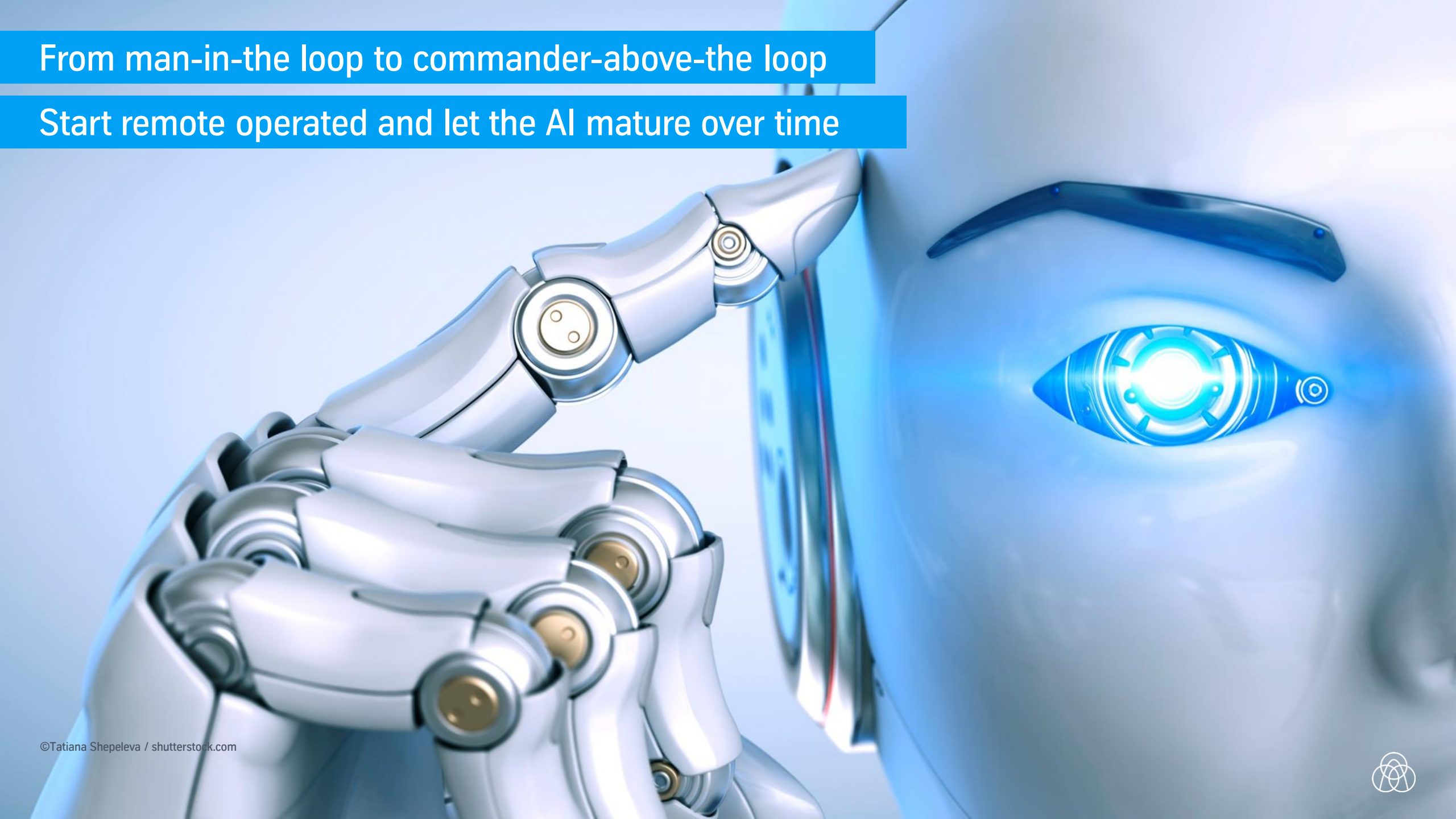


MEKO® S-X



From man-in-the loop to commander-above-the loop

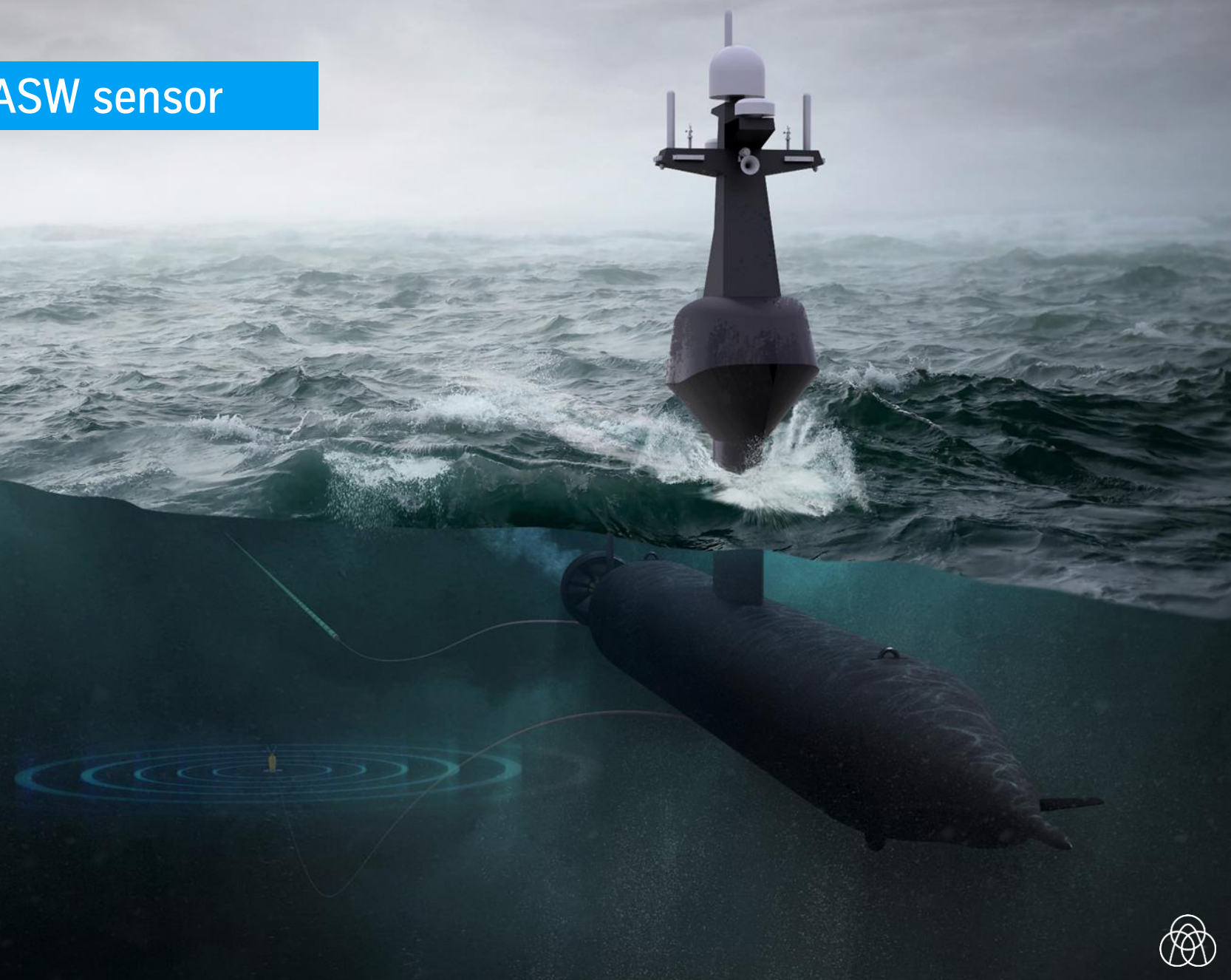
Start remote operated and let the AI mature over time



MEKO® S-X

Uncrewed high performance ASW sensor

Sensors	TAS act + pas HMS
Comms	Satcom, VHF, UHF, Link
LIBIT	52 4 6 m
Displacement	~250 t
Max Speed	22 kn
Range	1,700 nm
Maintenance	42 days

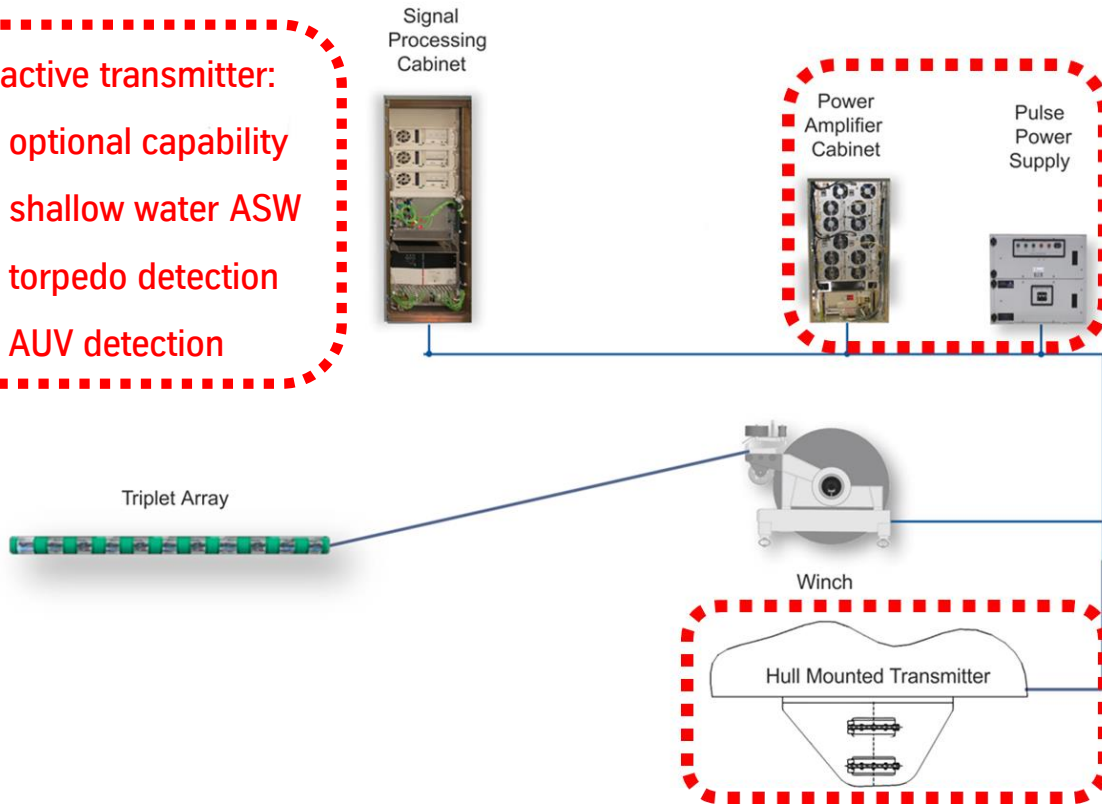


Flexible sonar payload

A balanced cost/performance ratio

HF active transmitter:

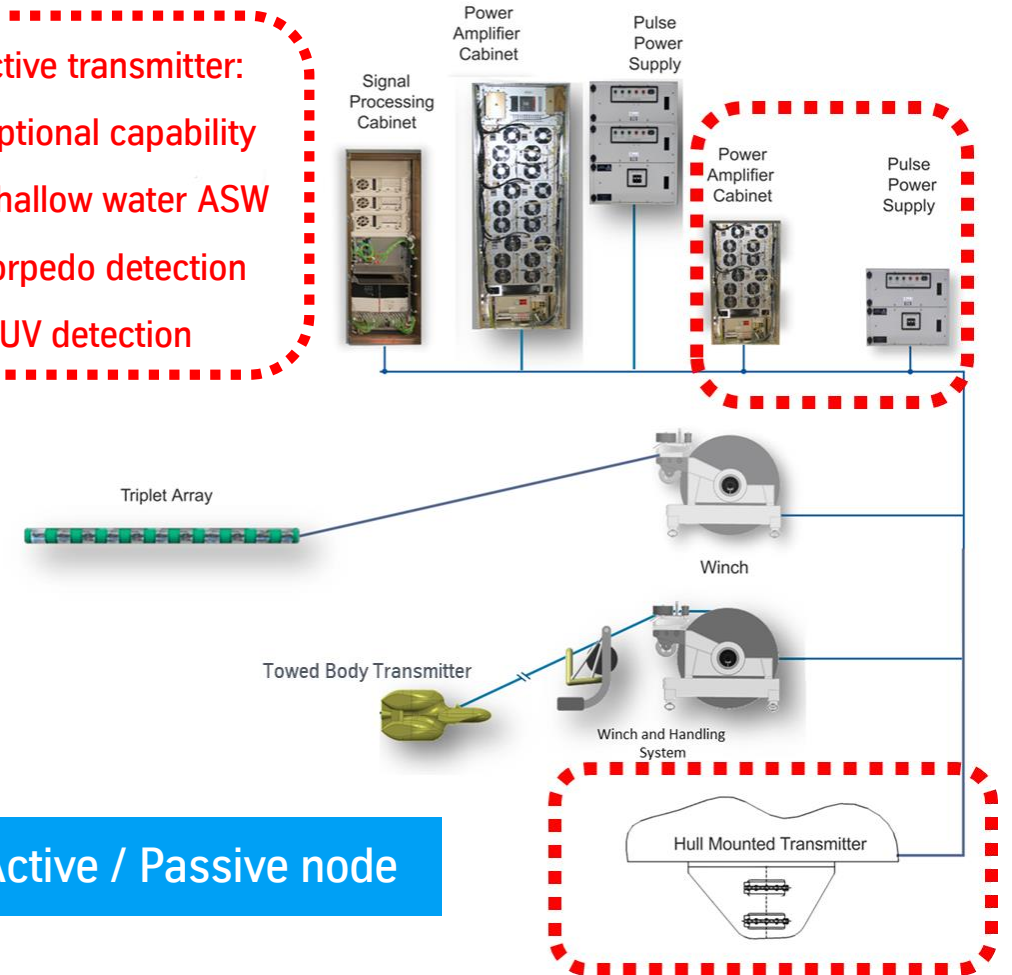
- optional capability
- shallow water ASW
- torpedo detection
- AUV detection



Passive node

HF active transmitter:

- optional capability
- shallow water ASW
- torpedo detection
- AUV detection

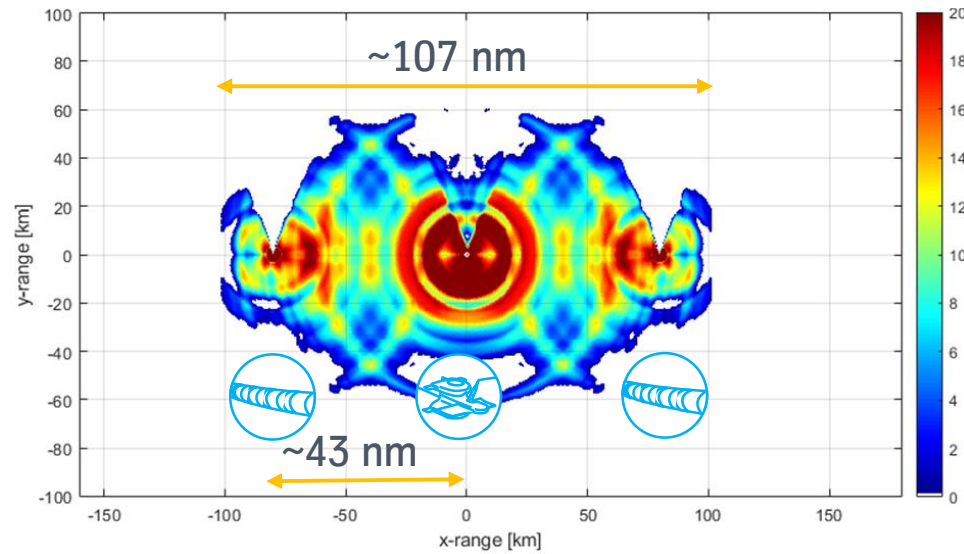


Active / Passive node



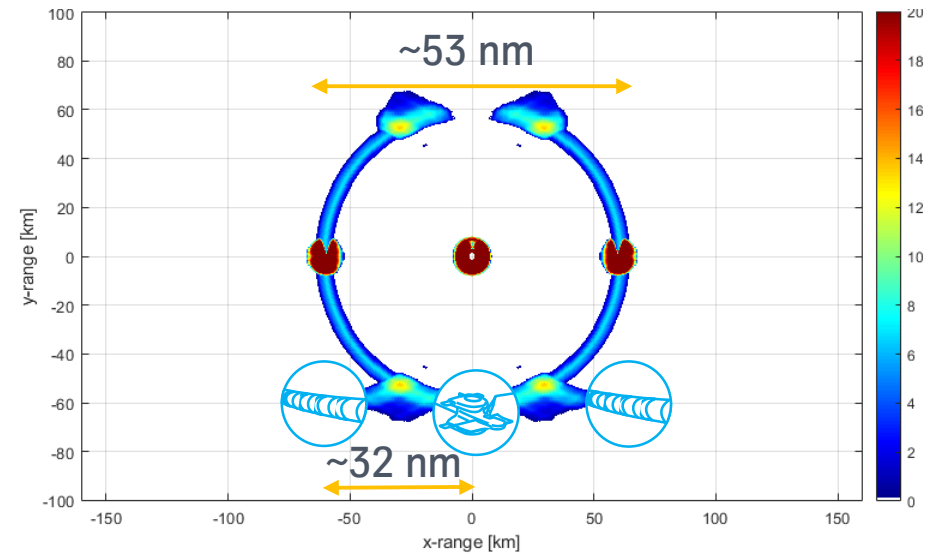
The multistatic sonar barrier in the deep North Atlantic

February

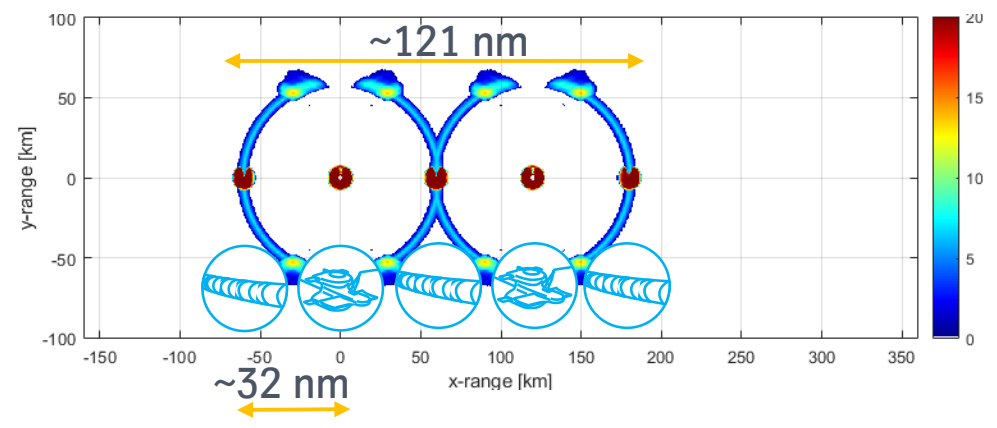
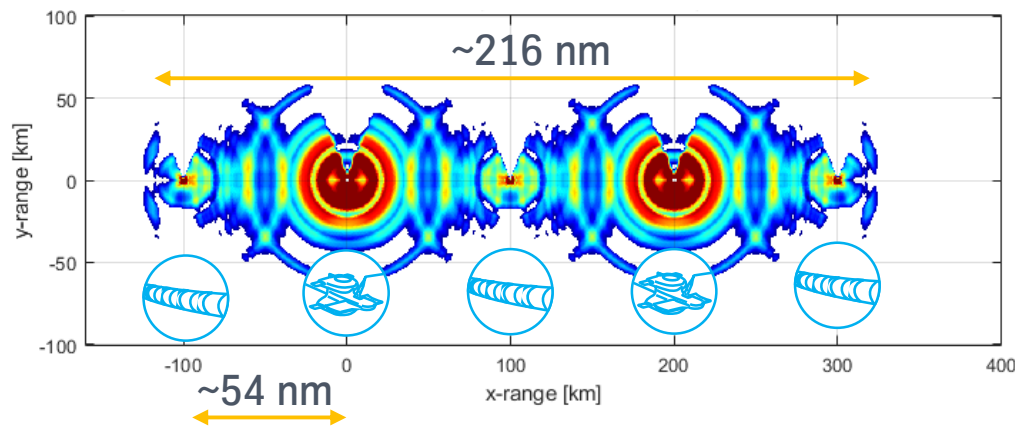


3 units

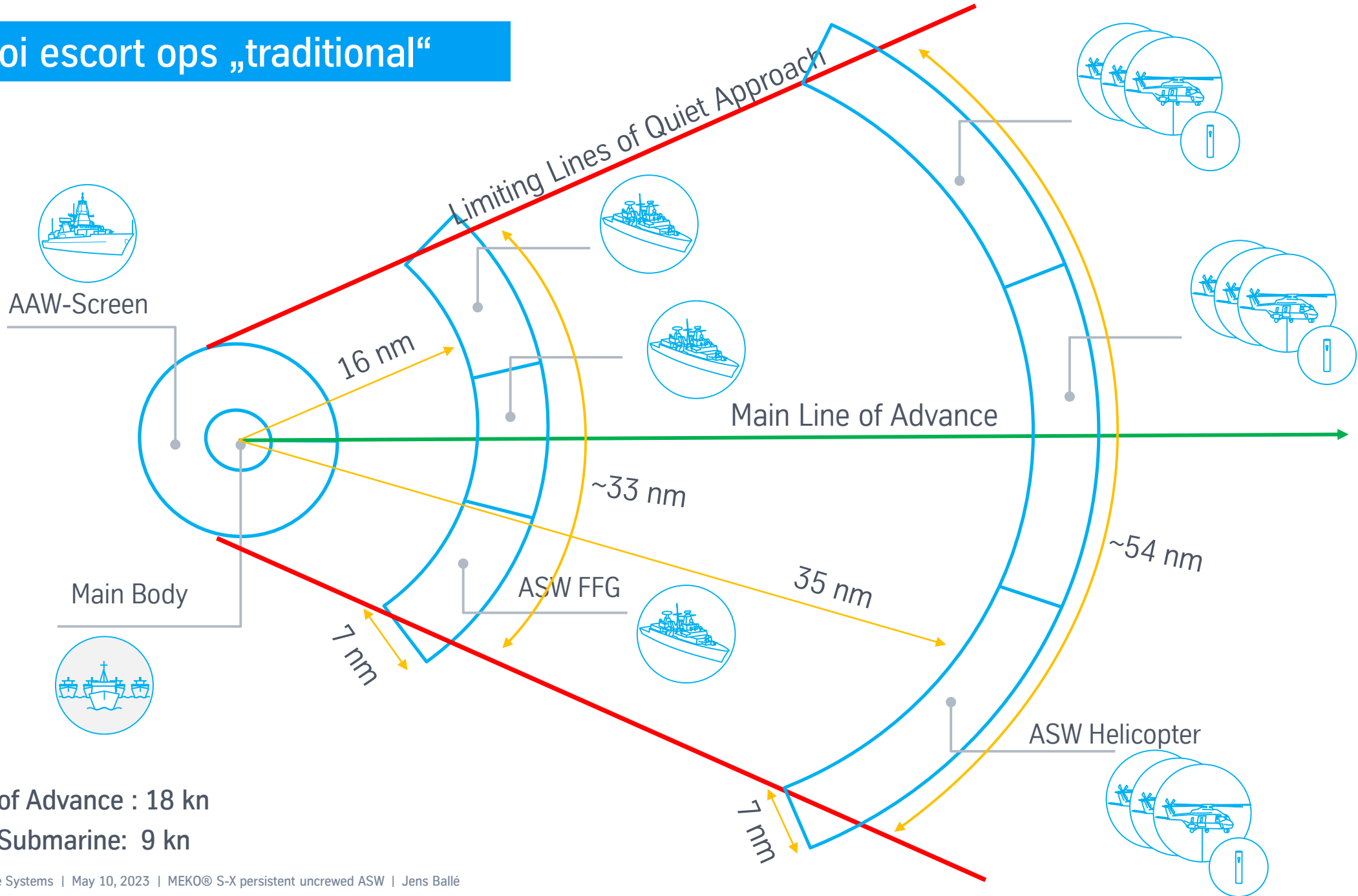
August



5 units



Convoi escort ops „traditional“



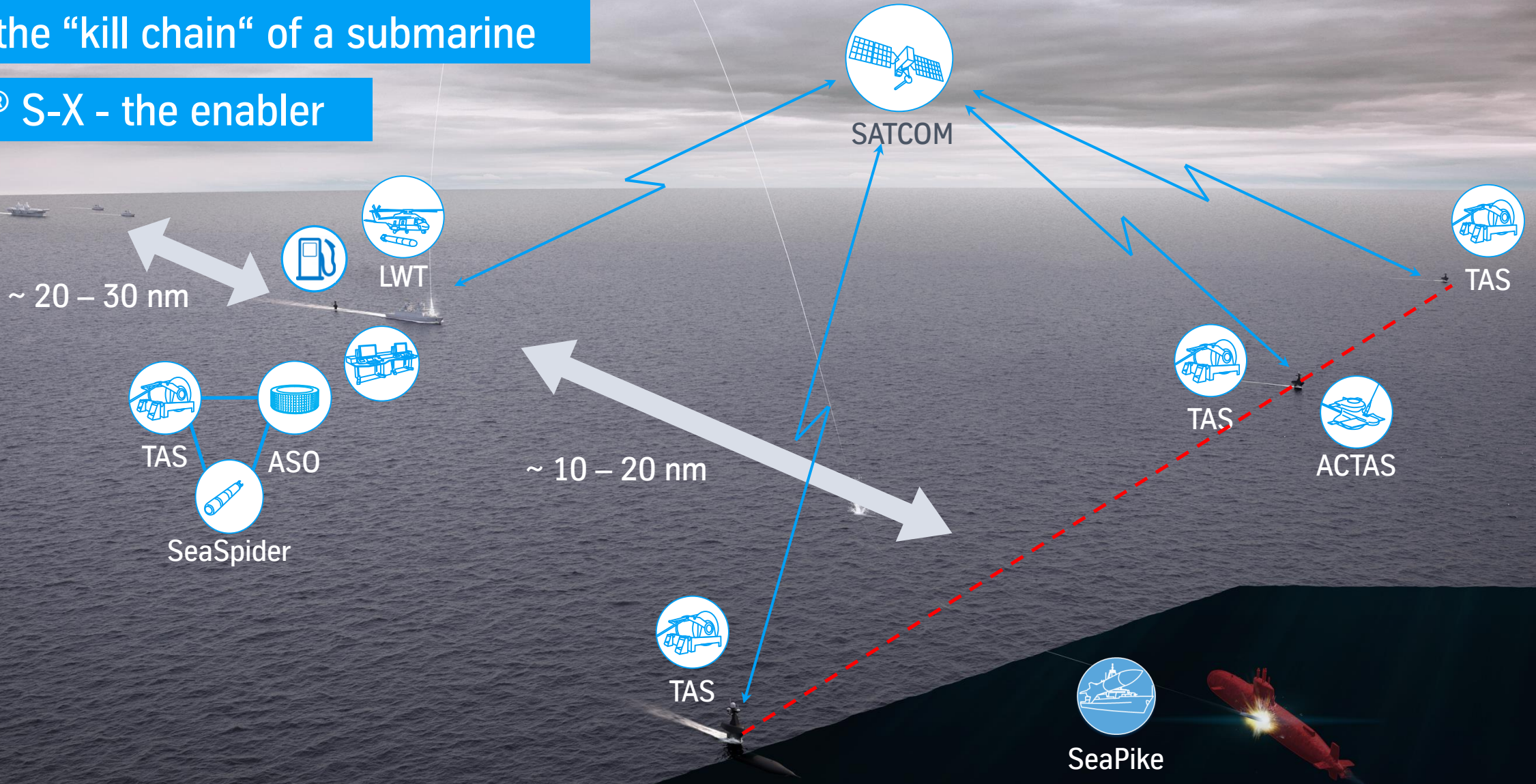
Speed of Advance : 18 kn

Speed Submarine: 9 kn

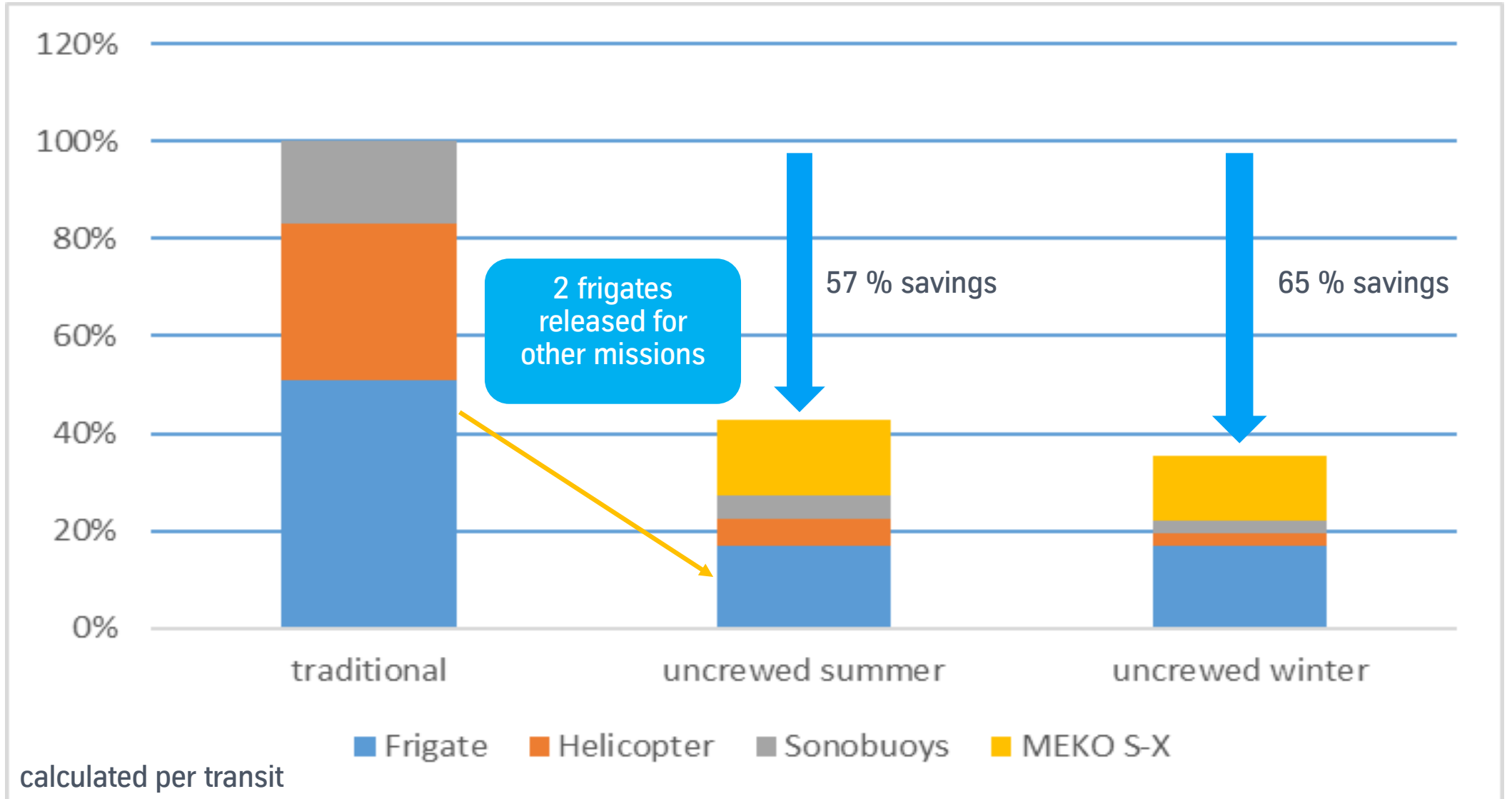


Break the "kill chain" of a submarine

MEKO[®] S-X - the enabler



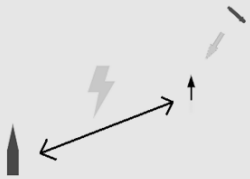
OPEX convoi escort ops traditional vs. uncrewed



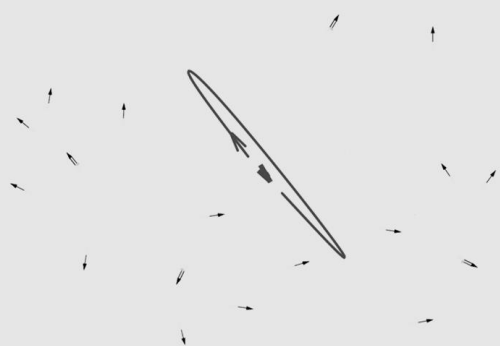
MEKO® S-X as force multiplier

The benefit of large non-organic uncrewed systems

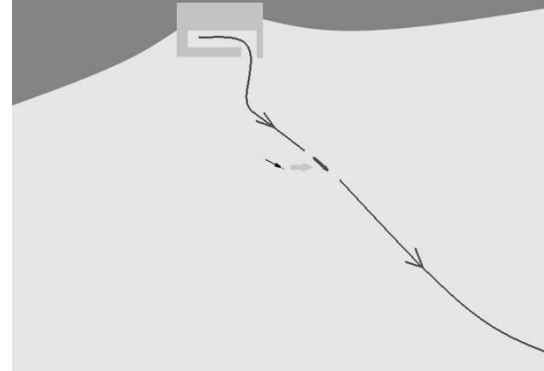
ACINT Collector



Area ASW screen



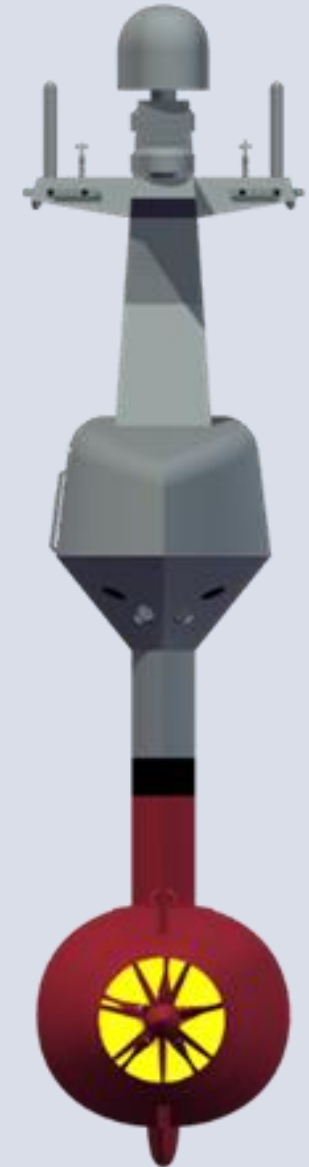
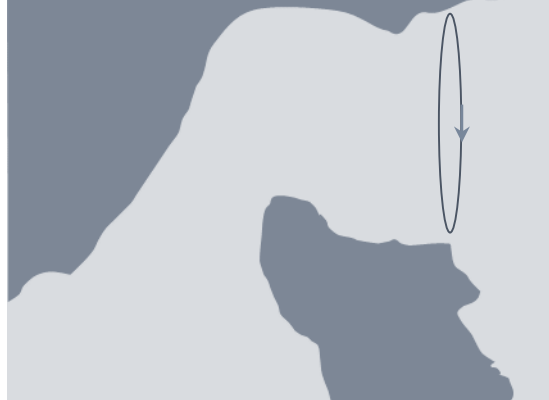
Belling the cat



Sensor for SeaSpider



Choke Point Patrol



MEKO® S-X, the key to future ASW

A networked, distributed ASW force

Uncrewed Ops
at TF speed and
range

Protect legacy
HVU's against
modern HWT

Low cost ASW
performance
boost

Use of non ASW
units for ASW
operations

