



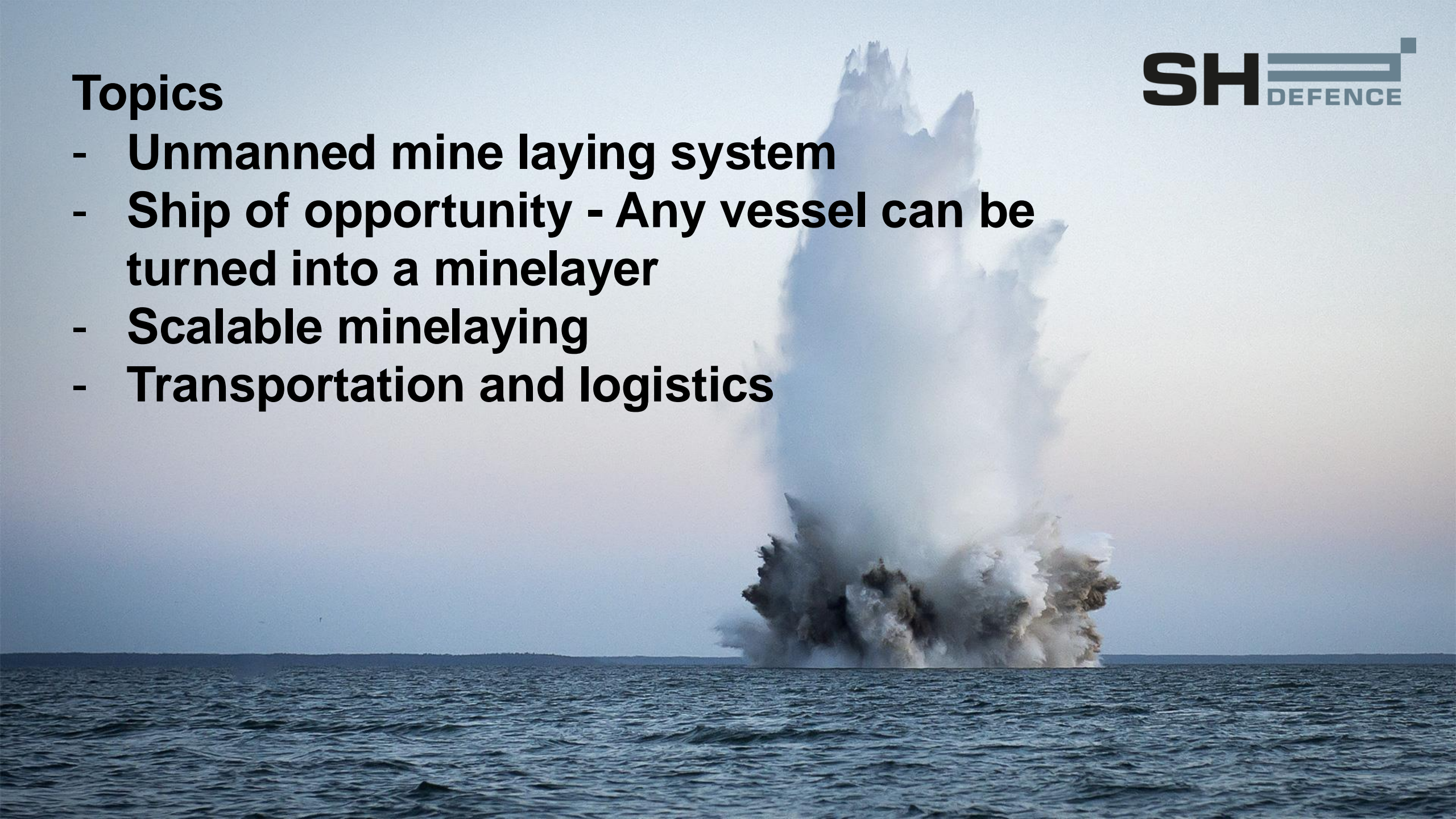
AUTONOMOUS AND UNMANNED MINE LAYING

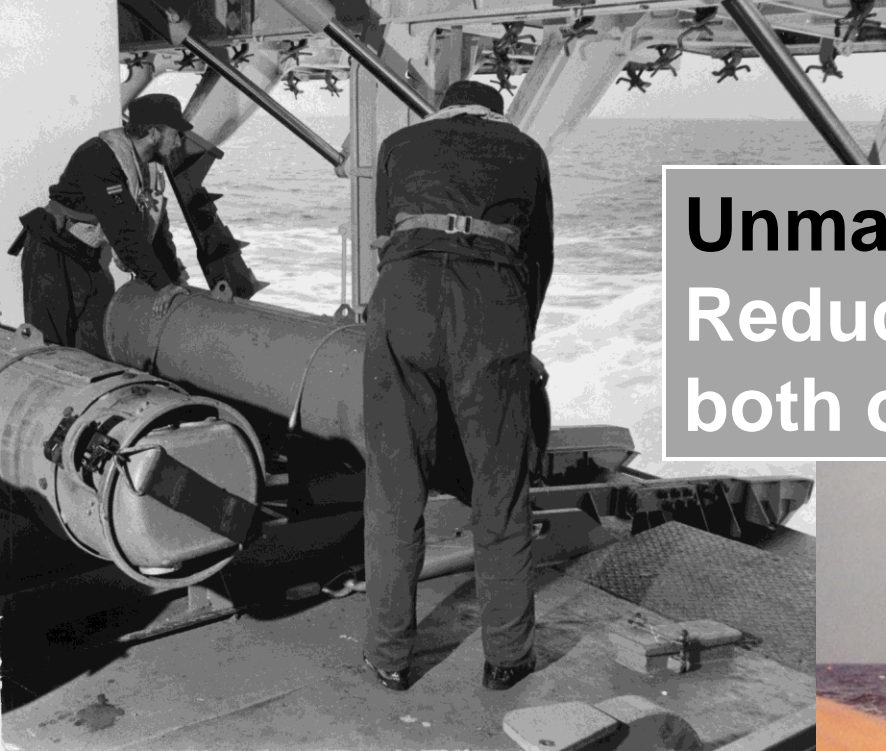
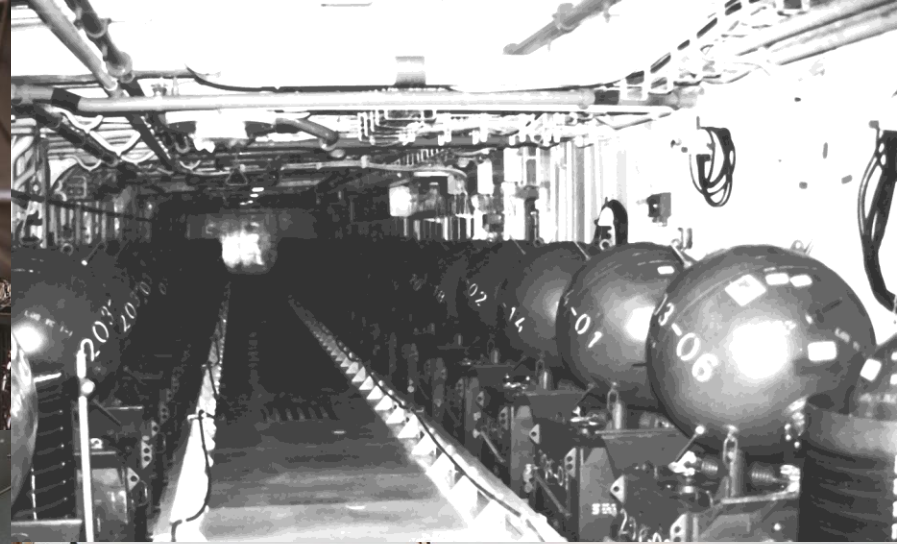
Speaker, SH Defence

Jimmy Gehring
Sales Director

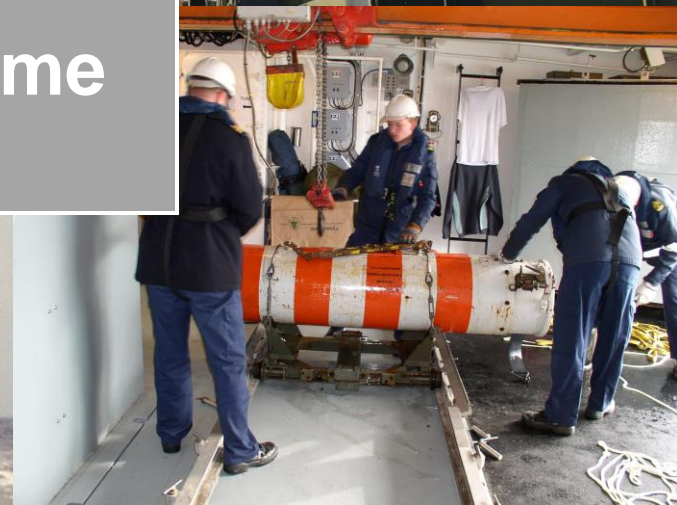
Topics

- Unmanned mine laying system
- Ship of opportunity - Any vessel can be turned into a minelayer
- Scalable minelaying
- Transportation and logistics





Unmanned mine laying system
Reducing lots of manpower and time
both on shore and at sea



The Cube™ Eco System

Onshore Handling



Mobile Side loader



Container/
Cube loader
system



Training
Upgrade
Maintenance



Fast swap
Interchange-
ability

Onboard Handling



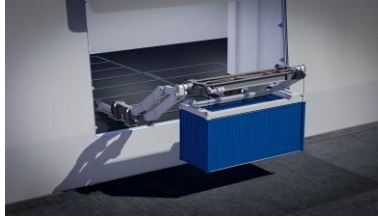
Cube Skidding System



Mission bay
doors and
Twist locks

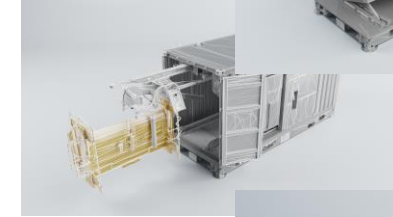


Elevators and infrastructure

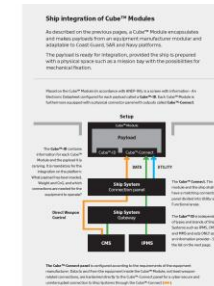


Side davit

Mission Payloads

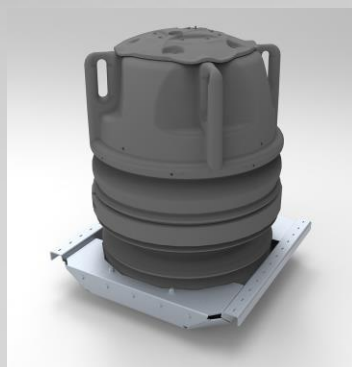
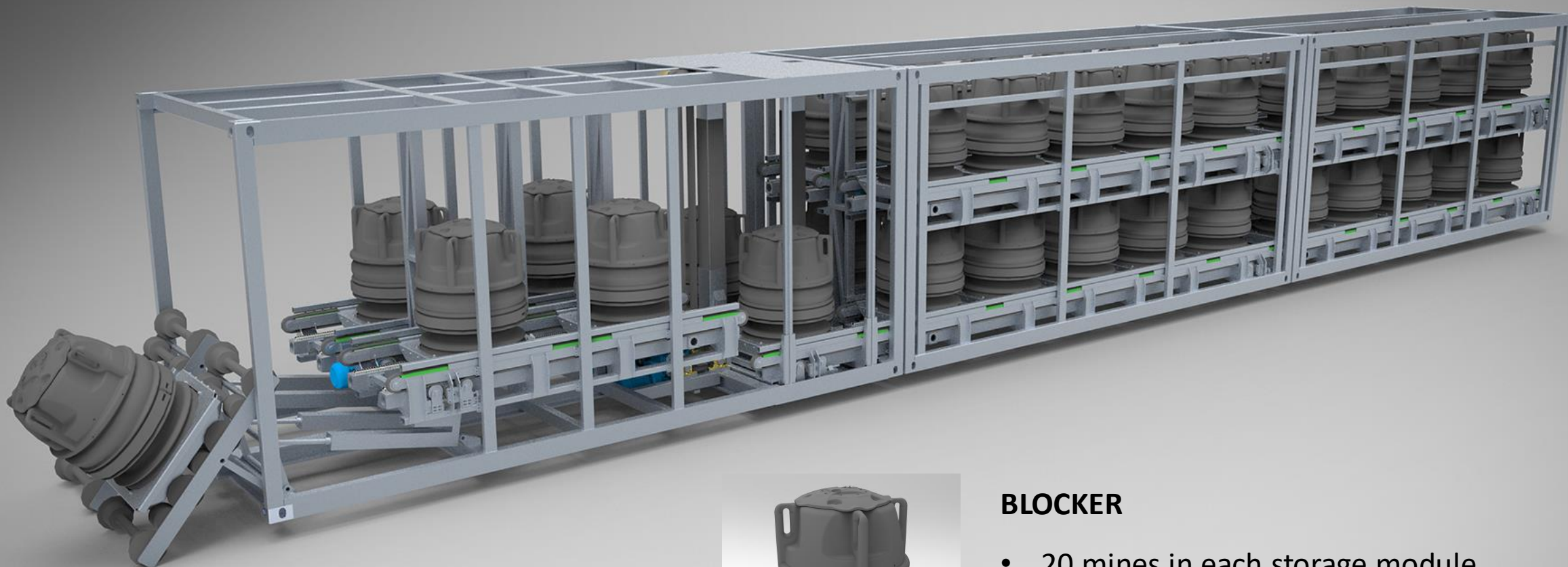


Integration to Ship system



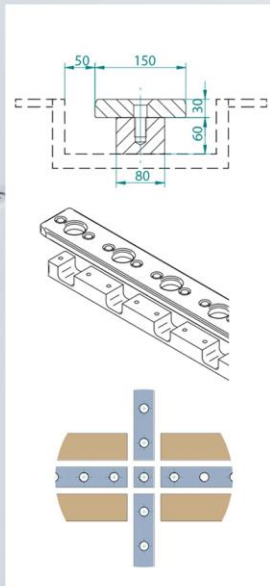
Cube ID
Cube Connect





BLOCKER

- 20 mines in each storage module
- Split time between mine 30 seconds.
- Launcher own weight 8T



Mission: Onboard Handling system
Name: Cube™ Sea State Skidding System
Company: SH Defence
Integration: Shipyard / SH Defence

The Sea State skidding system allows moving Cube™ compatible modules around on the open deck or inside the hangar. It is mission bay compatible and can work together with the hydraulic-driven twist lock system.

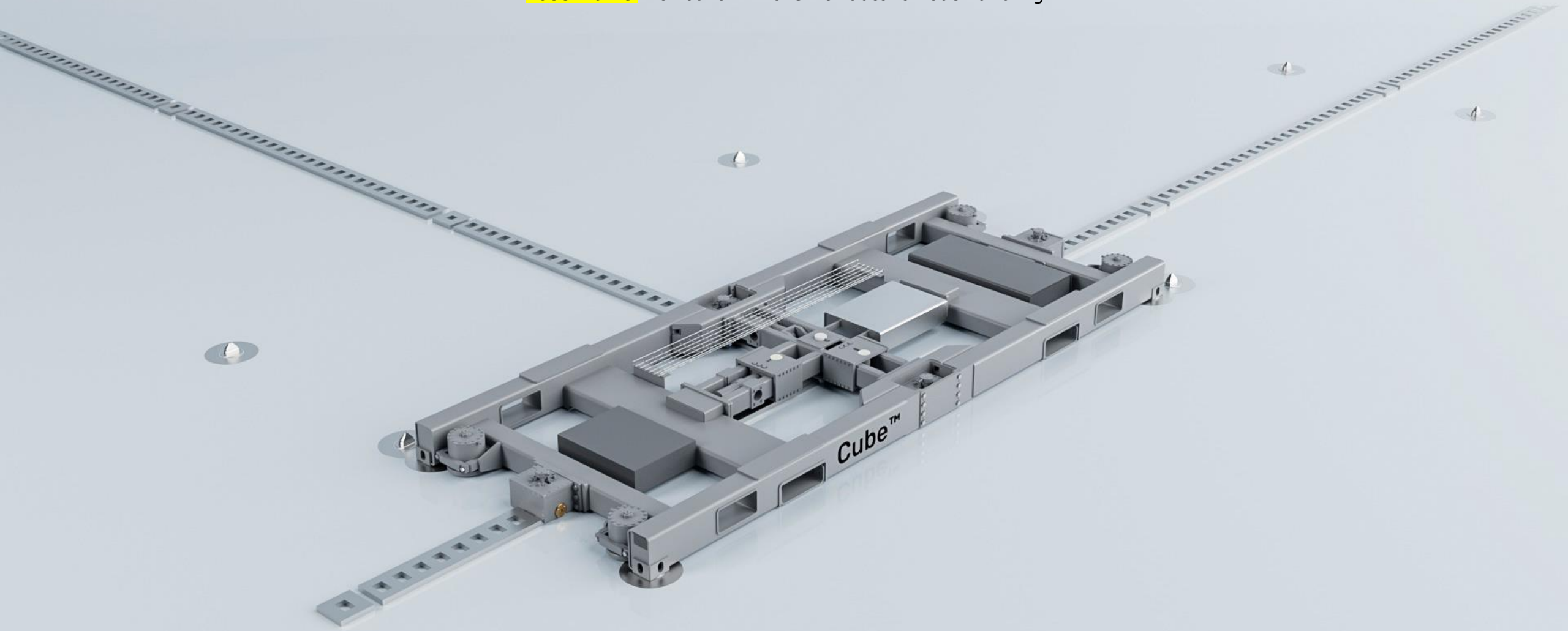
The Mover unit, a key component of the Sea State Skidding System features a moving cylinder for longitudinal movement, one for transverse movement, and three hydraulic-operated lock pins.

The operational maximum accelerations are horizontal, 0.5 g, and vertical, 0.8 g. The maximum roll angle is 22.5 deg.

The expected moving speed will be 2-2.5 m/min with modules weighing 15 Tons or less.

Onboard module handling

Base Frame with built-in mover for autonomous handling



SH DEFENCE

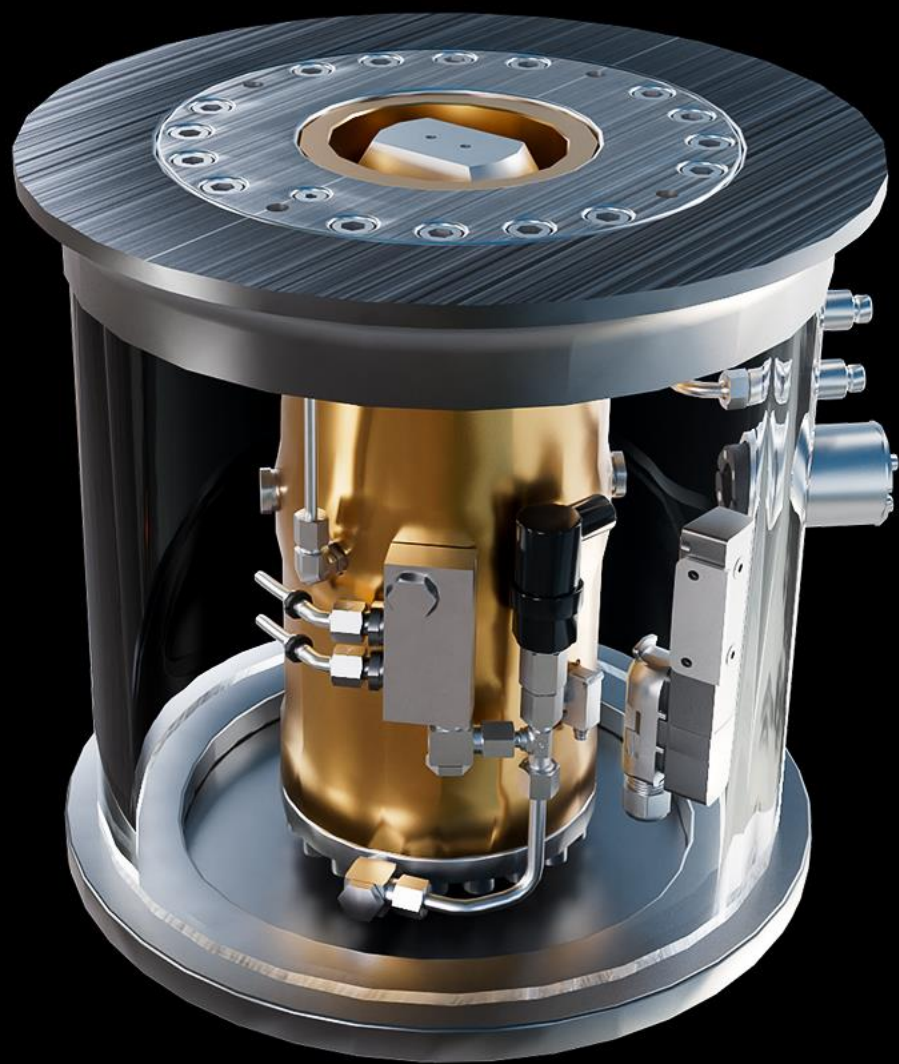


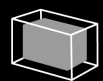
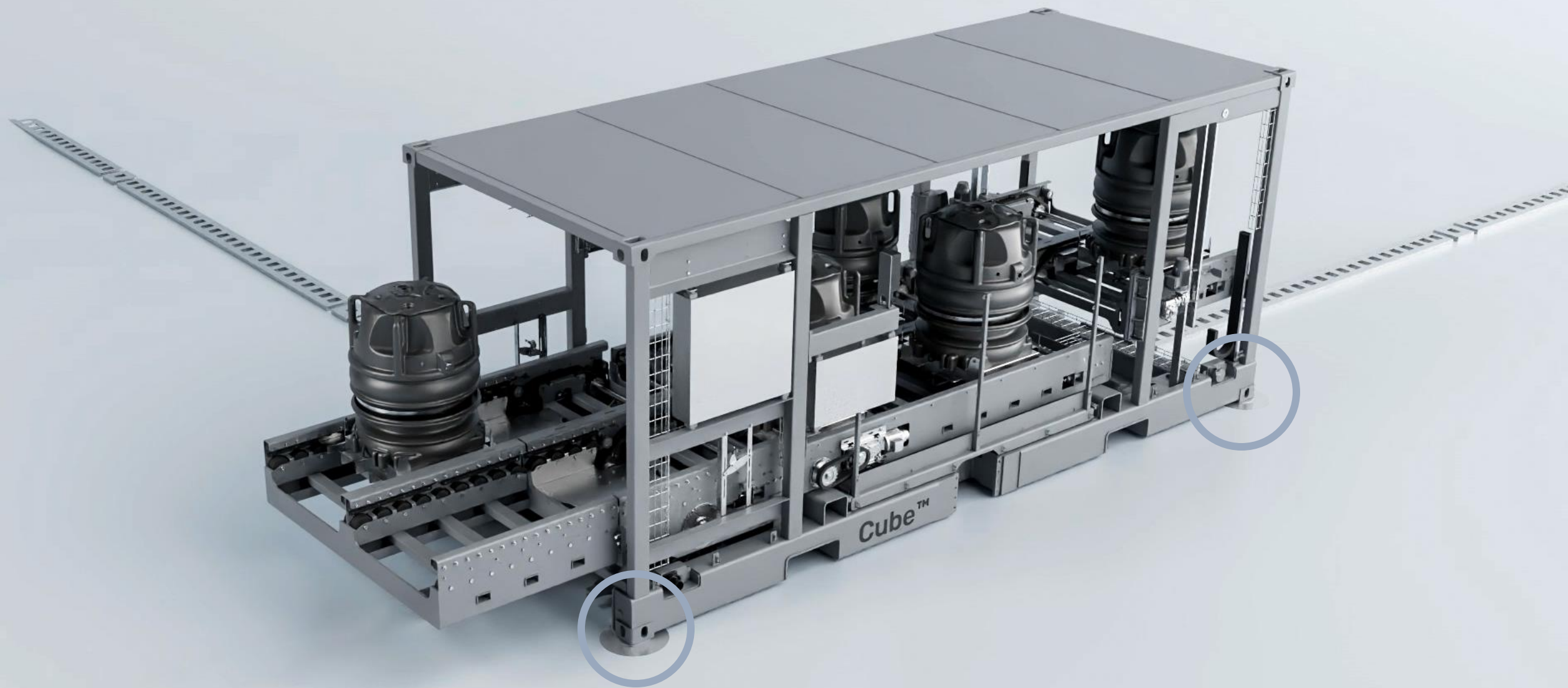


PATENT PENDING

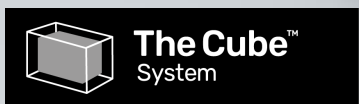
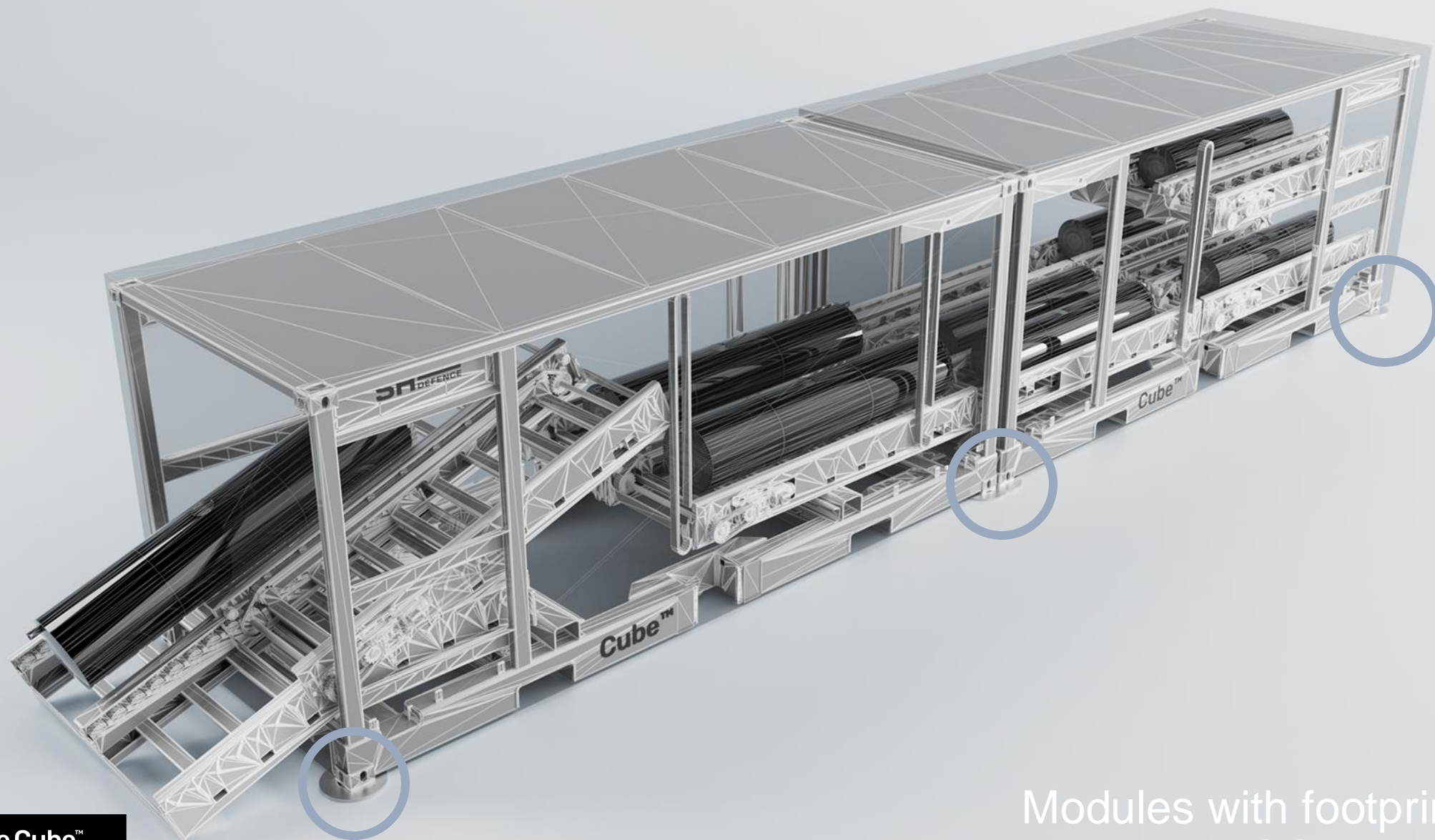
Remotely operated hydraulic Twist lock

DNV approved for cargo securing, lifting appliances and personnel handling



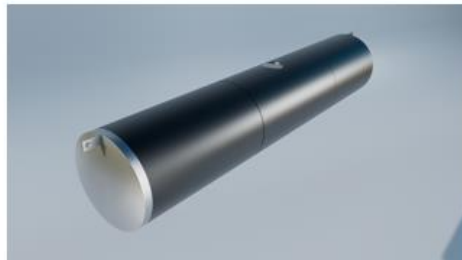
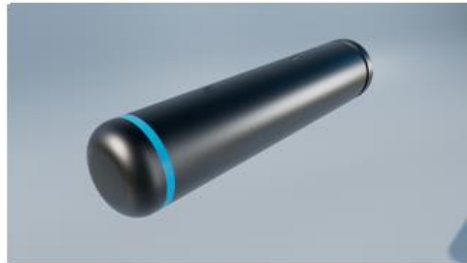


The Cube™
System



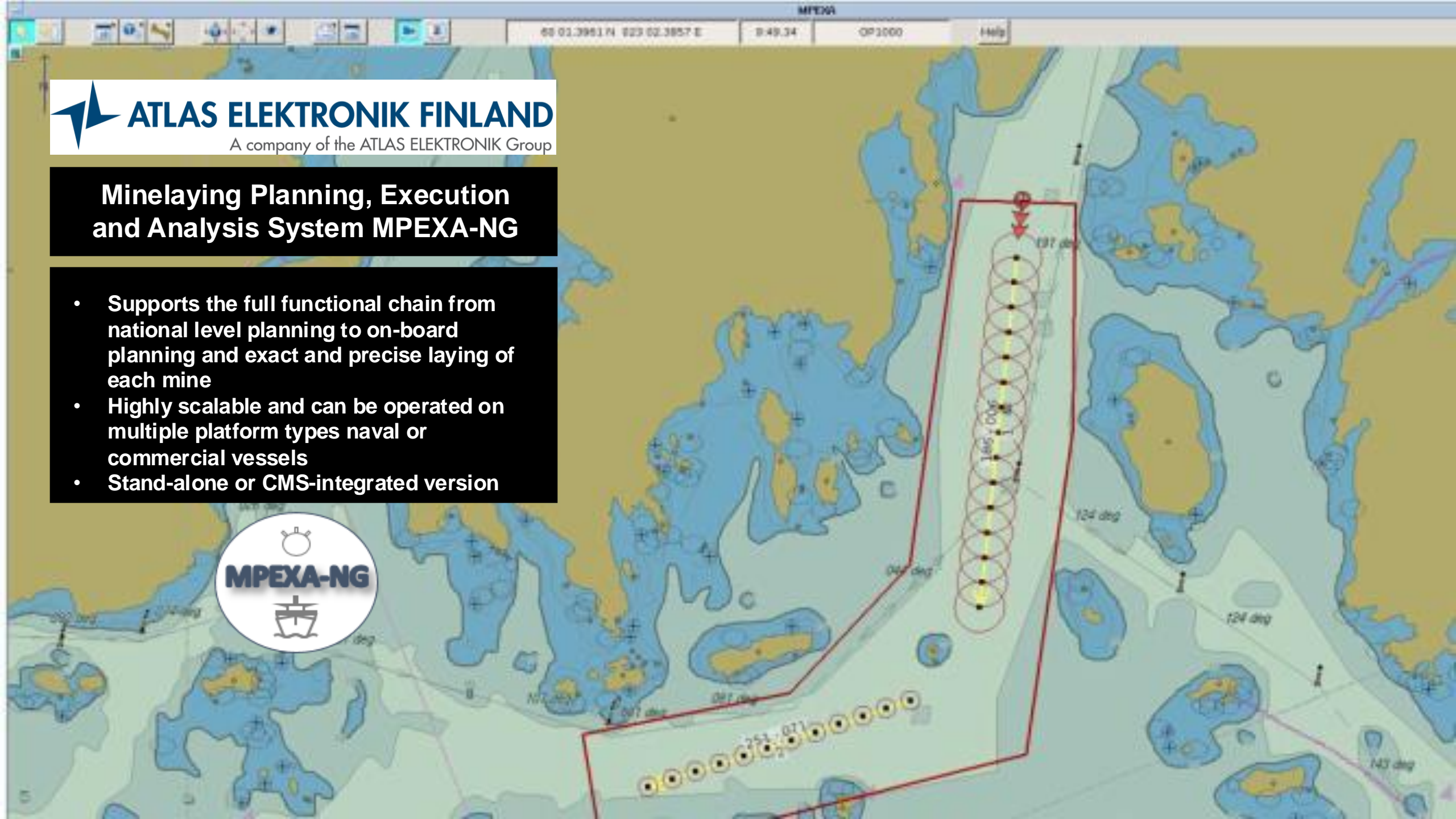
Modules with footprints of
2x 20ft standard ISO containers

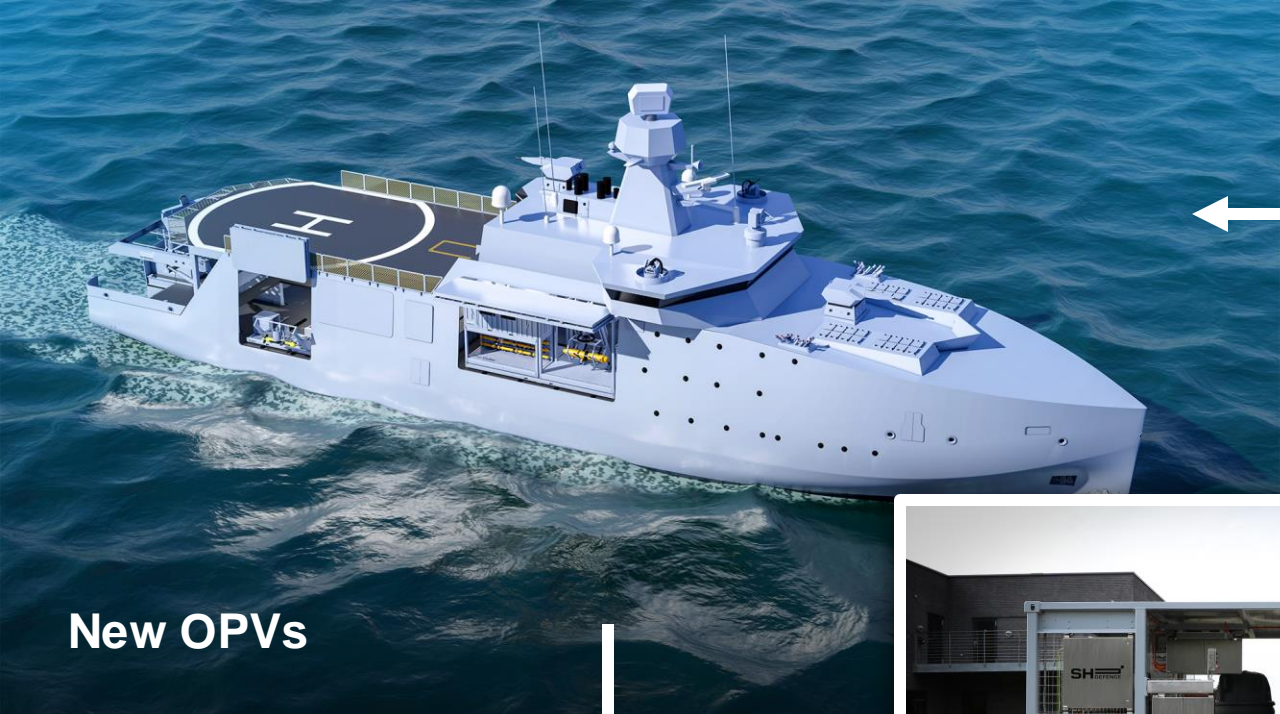
THESE ARE THE MINES WE ARE ABLE TO LAY (ALL PRODUCED IN EUROPE)



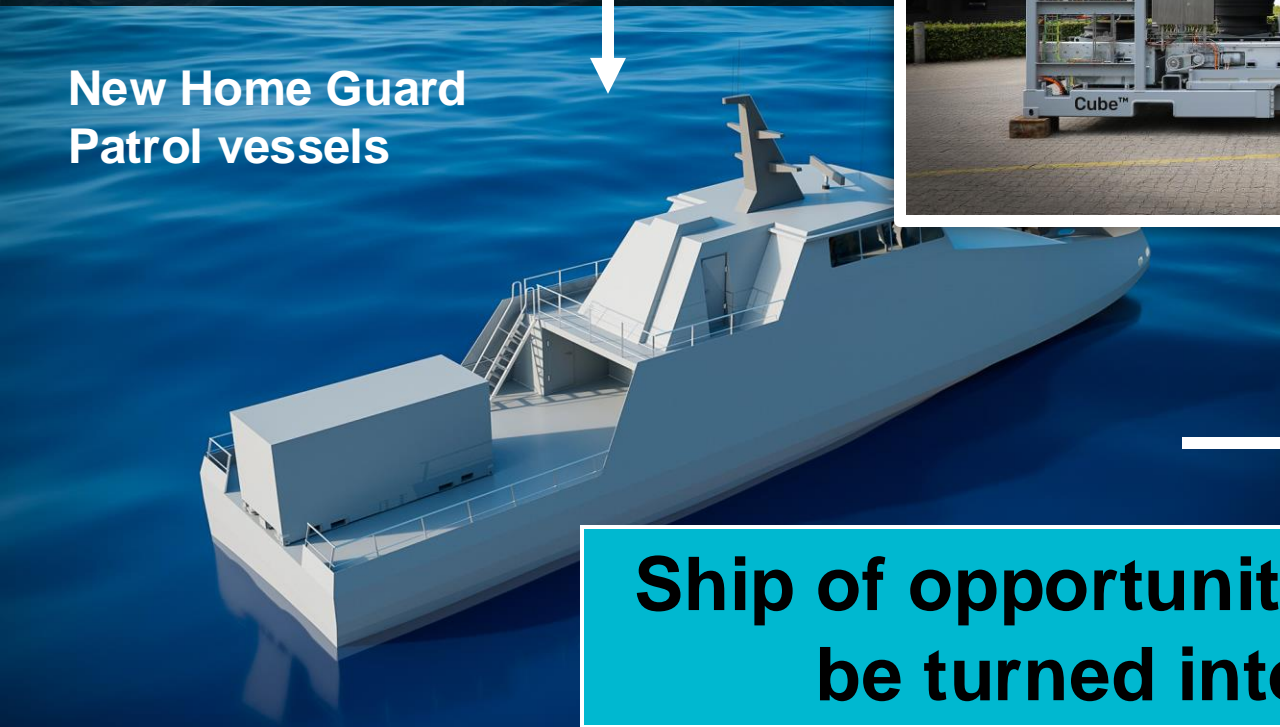
Minelaying Planning, Execution and Analysis System MPEXA-NG

- Supports the full functional chain from national level planning to on-board planning and exact and precise laying of each mine
- Highly scalable and can be operated on multiple platform types naval or commercial vessels
- Stand-alone or CMS-integrated version

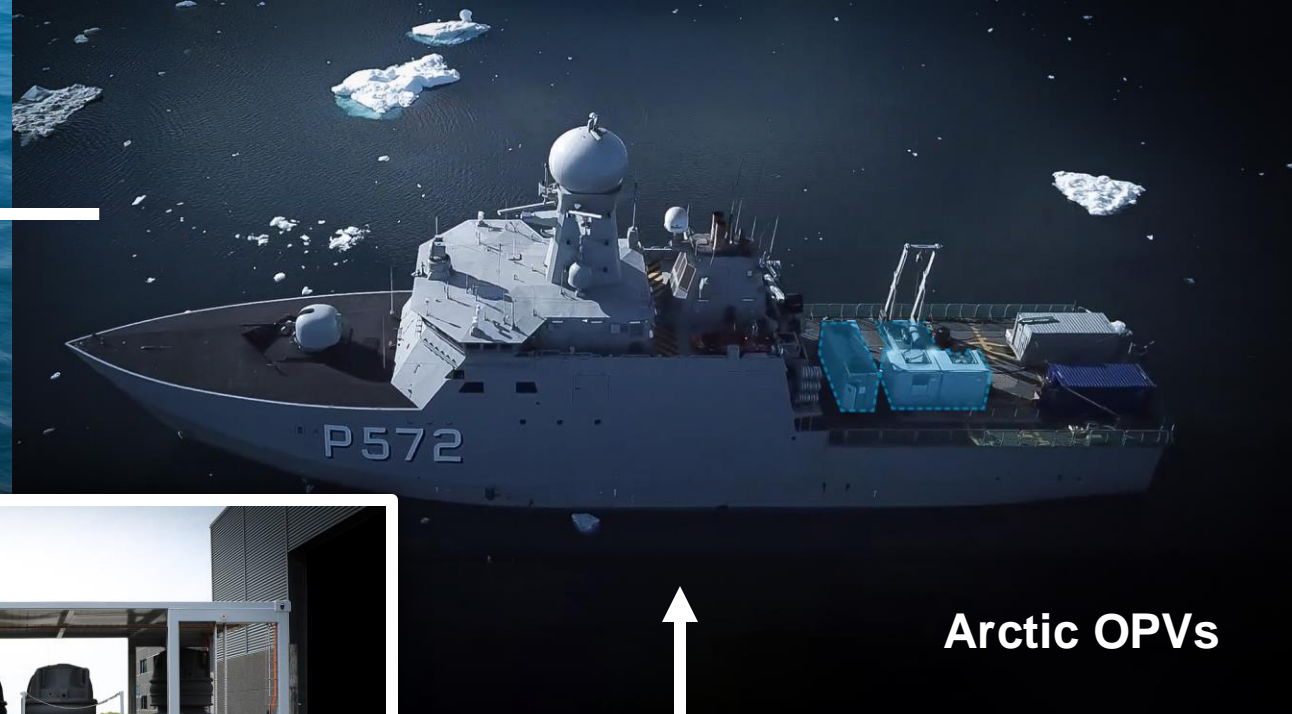




New OPVs



**New Home Guard
Patrol vessels**

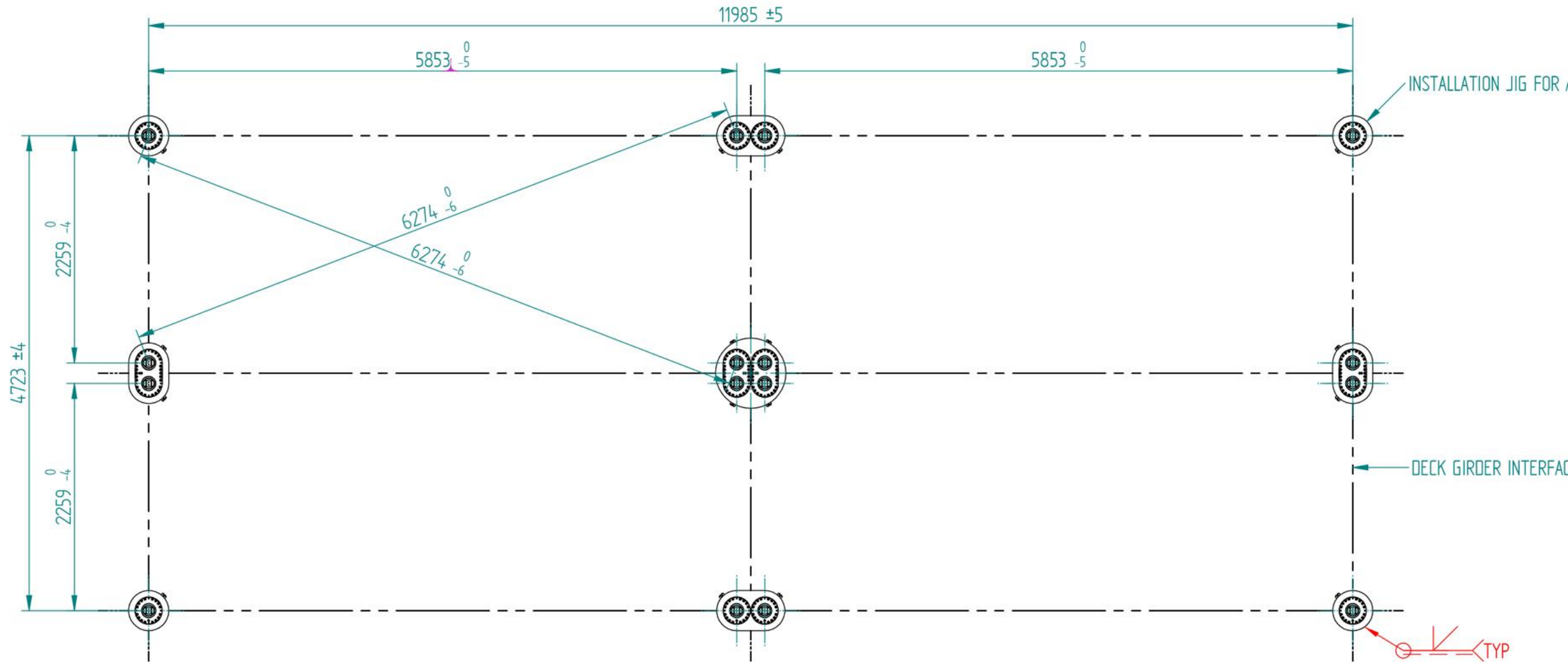


Arctic OPVs



**Frigates and
Support vessels**

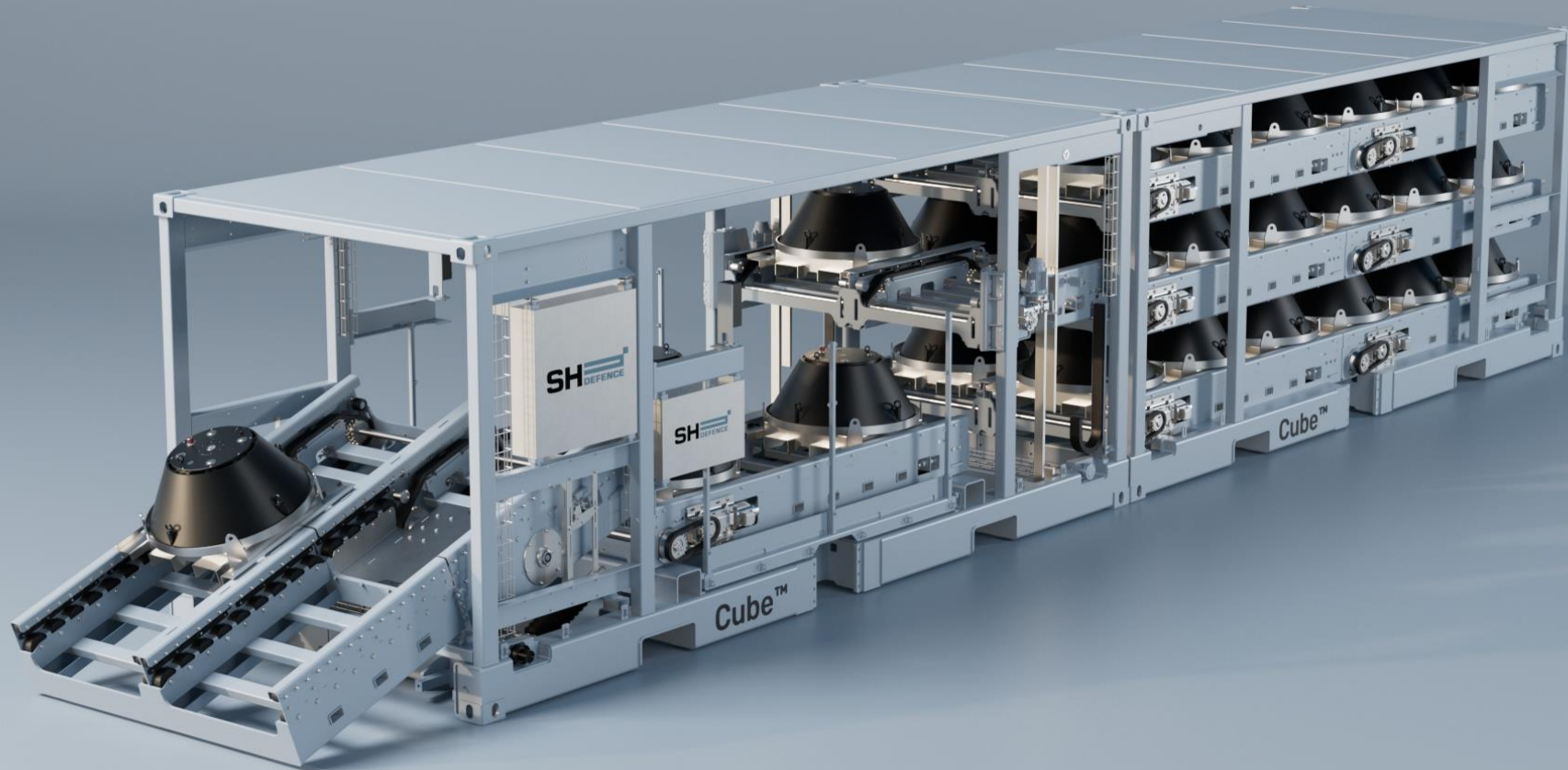
**Ship of opportunity - Any vessel can
be turned into a minelayer**



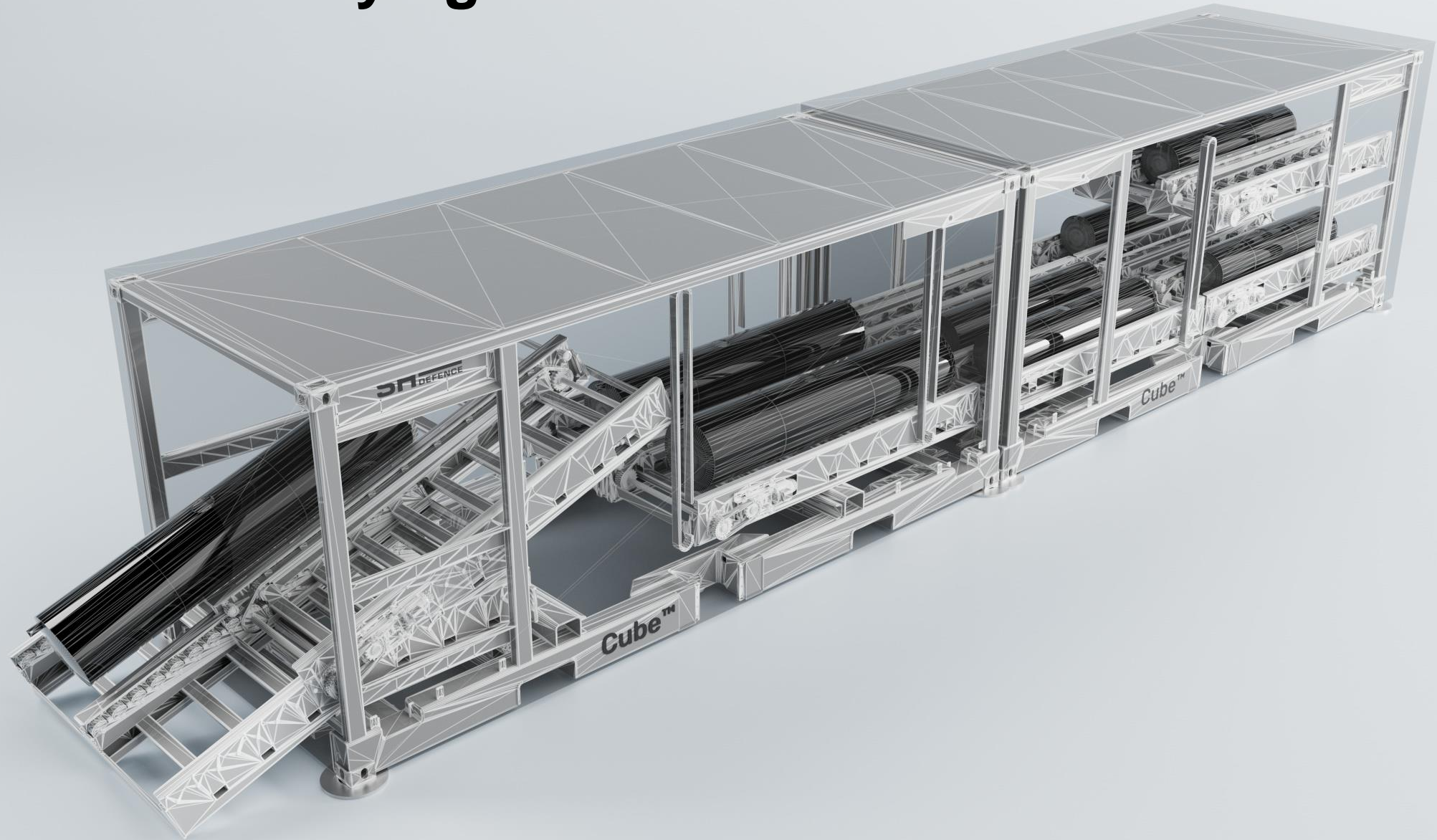
Deck layout

Custom-made for any type of vessel

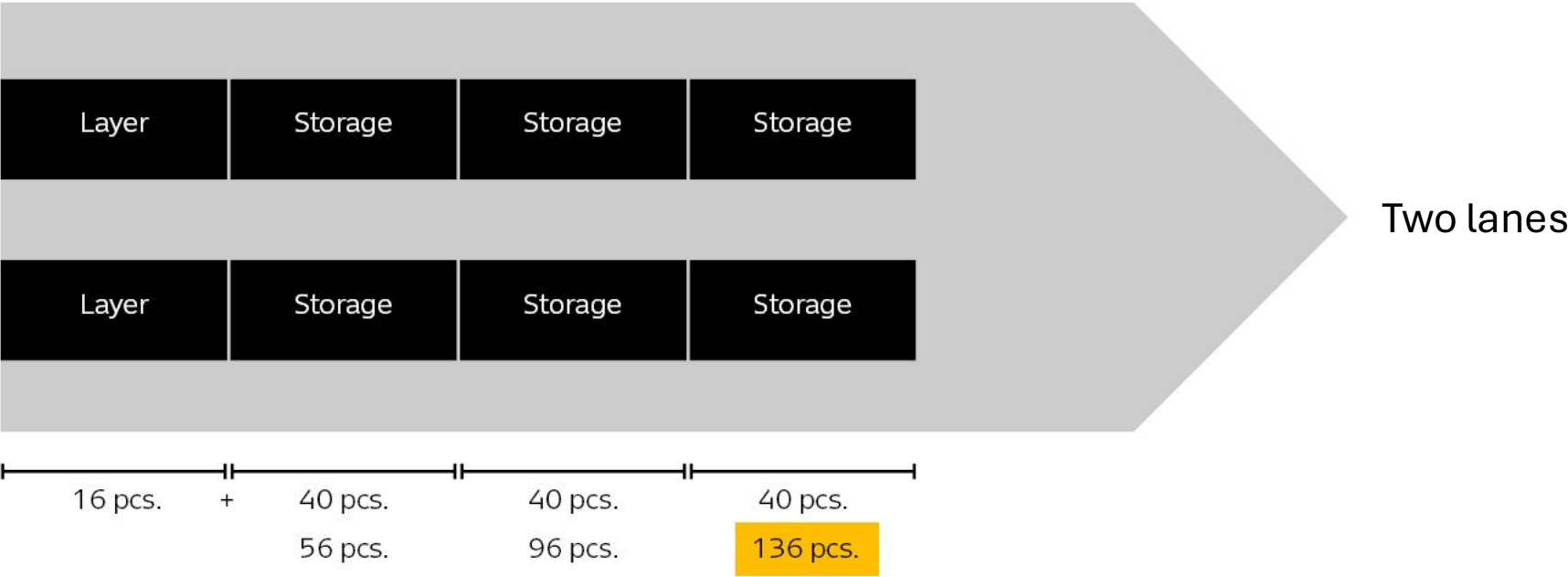
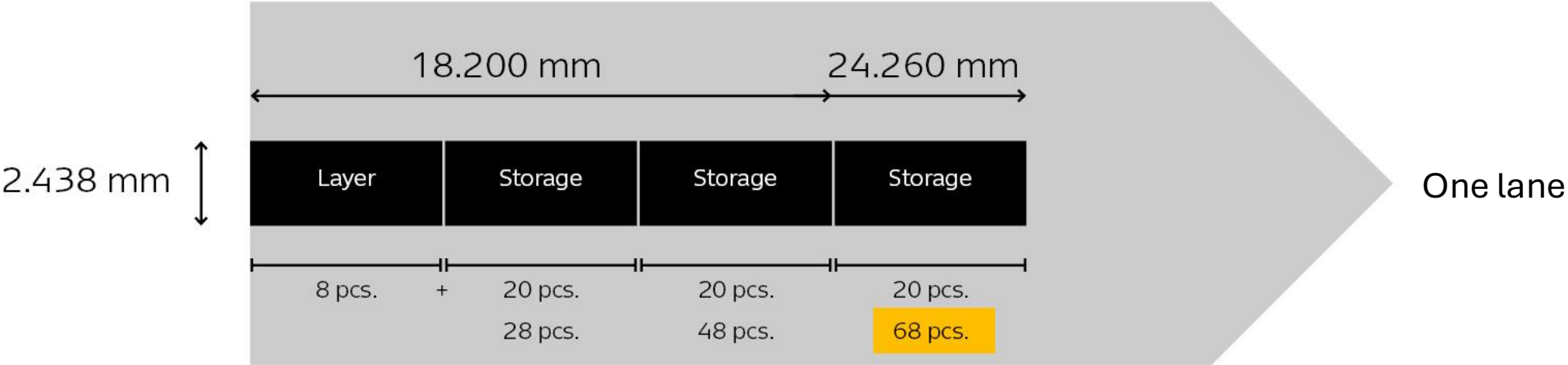
Scalable minelaying



Scalable minelaying



Scalable minelaying





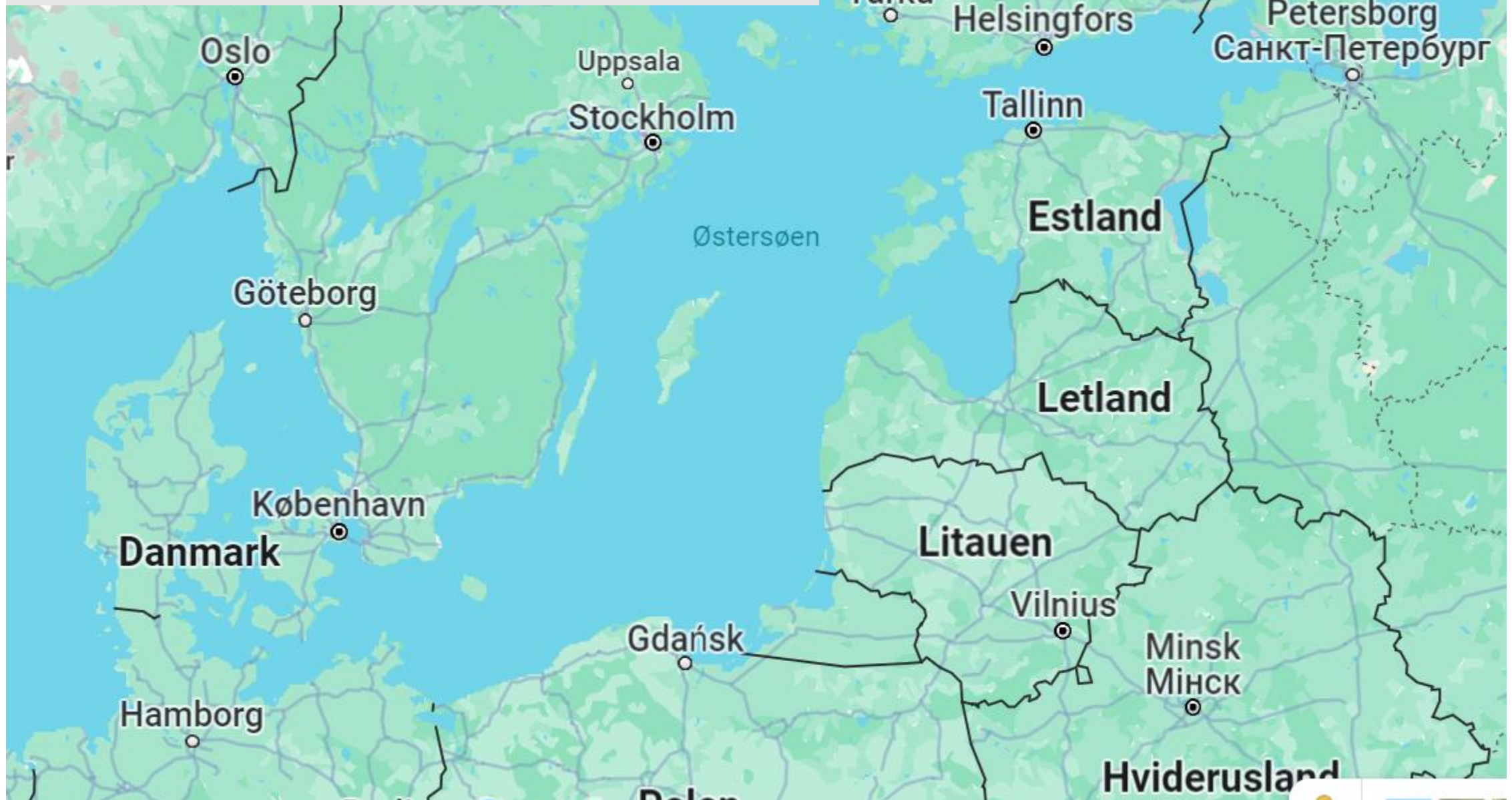


Transportation and logistics



Transportation and logistics

Has the minelaying task changed from defensive to offensive mining?





GUARDING EUROPEAN SHORES

DRONE SUPPORT

SEARCH AND RESCUE

MINE CLEARING

SURVEILLANCE & RECONNAISSANCE

MINE WARFARE

SURFACE WARFARE

SEABED WARFARE

ANTI-SUBMARINE WARFARE

NEXT GENERATION SURFACE VESSEL PLATFORM

for maritime security, border control, and disaster response applications



EUROGUARD

Grant Agreement no 101121408

Project budget 95 M€

Start date 01.12.2023

Co-funded by European Defence Fund

EU contribution max 65 M€

End date 30.11.2027



The European Defence Fund initiative EUROGUARD project integrates advanced technology to develop a **groundbreaking modular, medium-sized, semi-autonomous surface vessel prototype** for multi-mission capabilities.

CONSORTIUM MEMBERS AND MEMBER STATES

The consortium of **27 organisations from 10 countries** is coordinated by Estonian shipbuilding and engineering company Baltic Workboats.

EUROGUARD's success is guaranteed by **the quality of the cross-border partnerships** and the ability to leverage civil-defence cross-fertilization from leading European industrial enterprises in the consortium.

DENMARK



NORWAY



ESTONIA

CONSORTIUM COORDINATOR



NETHERLANDS



BELGIUM



SPAIN



FRANCE



ITALY



THE EUROGUARD PROJECT REINFORCES THE EU SUPPLY CHAIN AND ENABLES **NEW COLLABORATIONS** BETWEEN EUROPEAN INDUSTRIALS AND ACADEMIA.



- Small and Medium sized Enterprises
- Mid-Cap Enterprises
- Research Centres
- Other Enterprises

Questions?

