



***Maritime unmanned systems test and evaluation for
underwater warfare: development and challenges***

**Centro di Supporto e Sperimentazione Navale
La Spezia**

(TV Lorenzo BAZZARELLO)

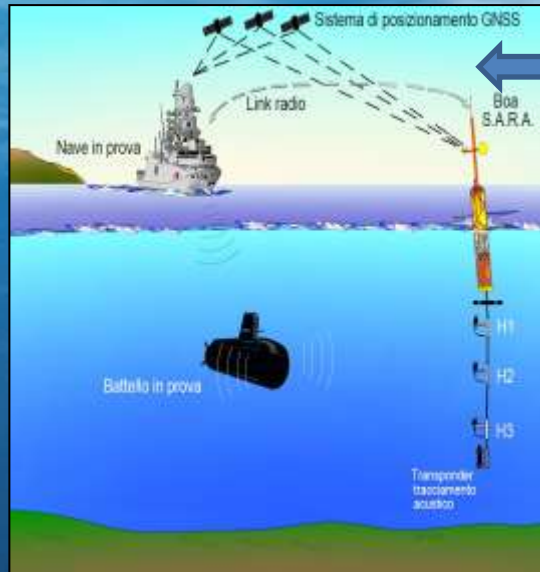
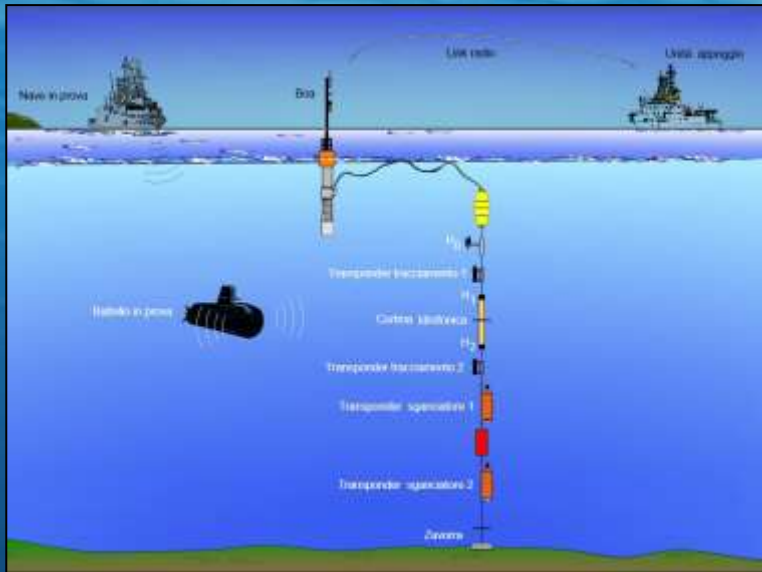
AGENDA

- CSSN
- SEALab
- Ongoing project: BOOMER
- NATO EXERCISE
- THE FUTURE

Test & Evaluation Capabilities

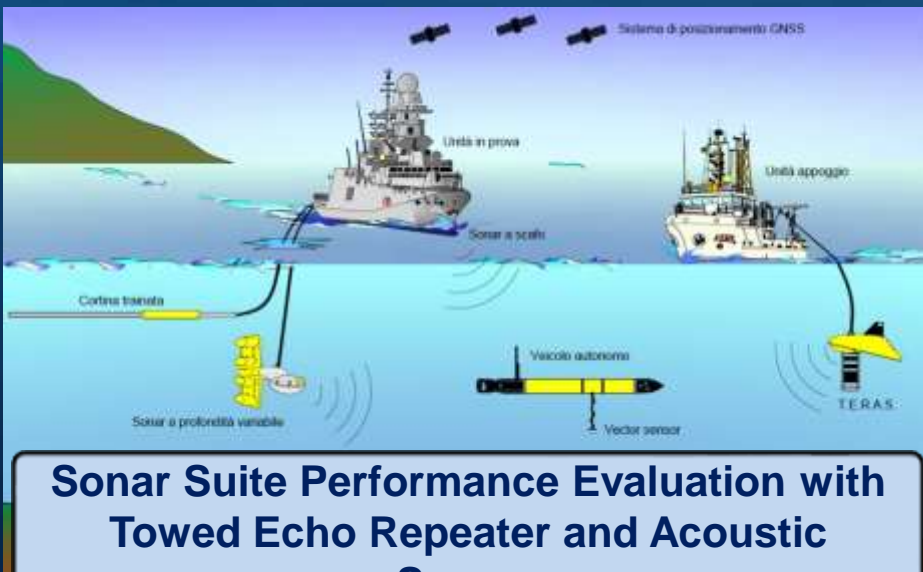


CSSN – LEGACY SYSTEMS

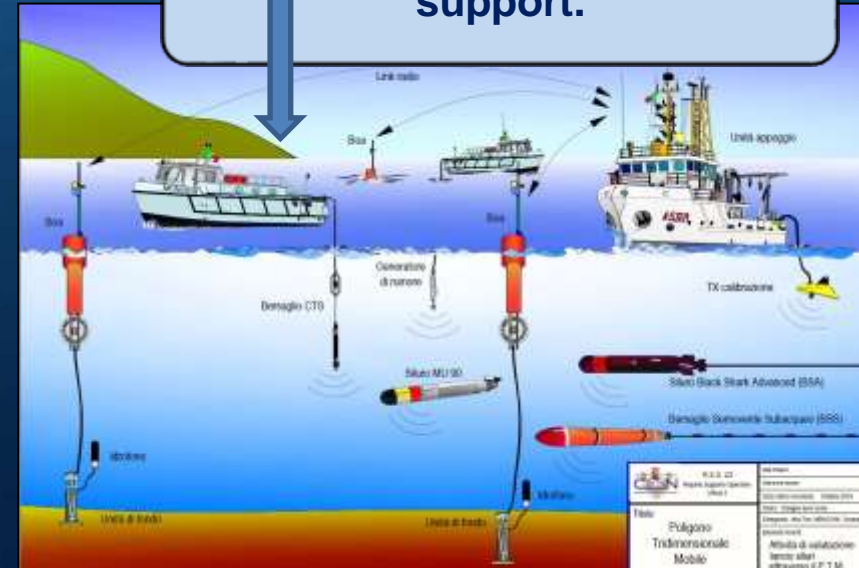


**Mobile Acoustic Range for
Real Time Monitoring and
Autonomous Monitoring**

**3D TRACKING SYSTEM for
Real Time Scenario
Monitoring and
Reconstruction for Torpedoes
qualification and technical
support.**



**Sonar Suite Performance Evaluation with
Towed Echo Repeater and Acoustic
Source**

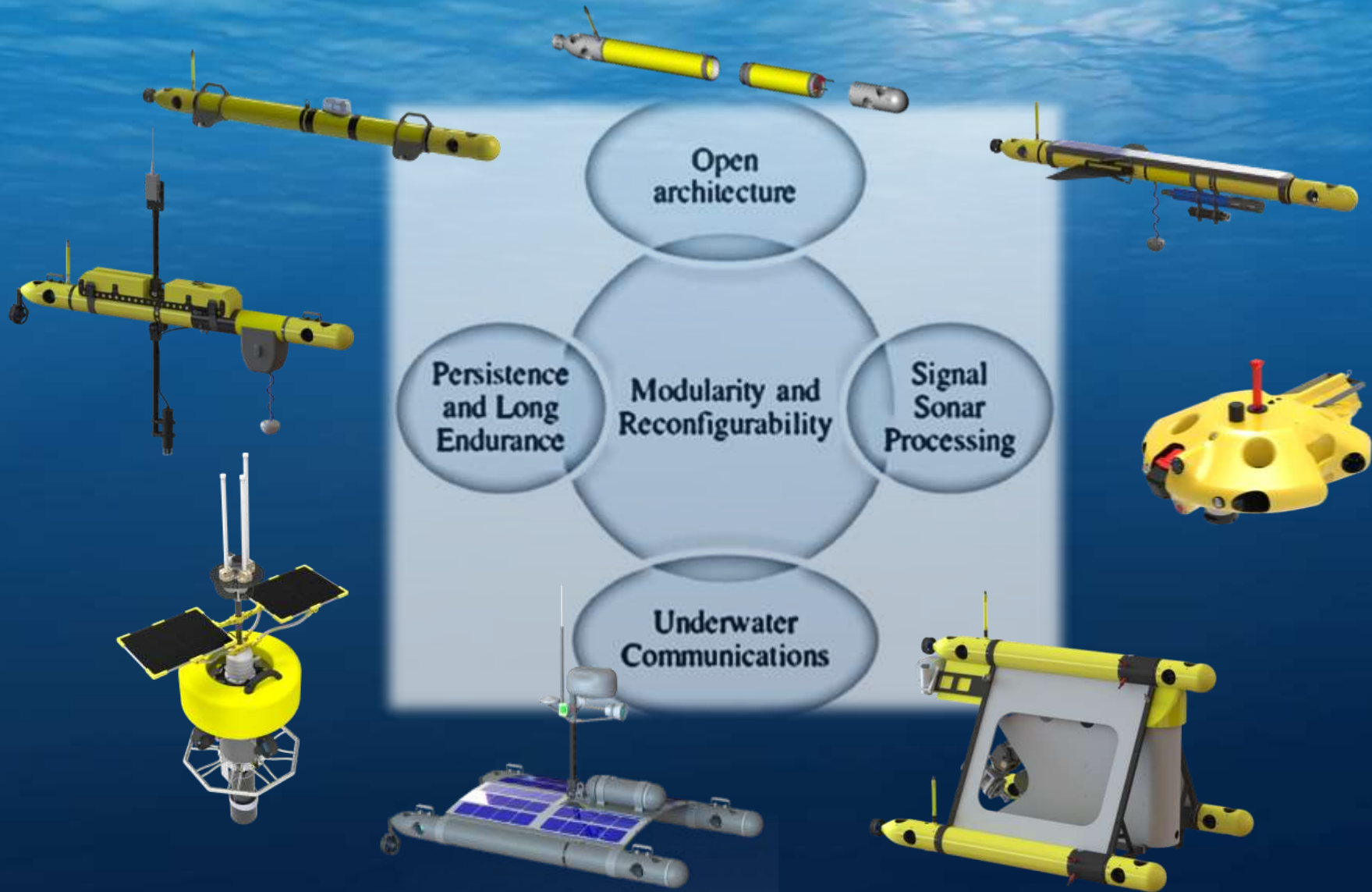


SEALab: an overview

- Agreement between the Italian Navy and ISME
- Establishment on 1st April 2015 of a joint Laboratory (called **SEALab: Sistemi Eterogenei Autonomi - Laboratorio**)
- Sinergy for common goals in the field of marine robotics systems: (applied) research & at-sea experimentation



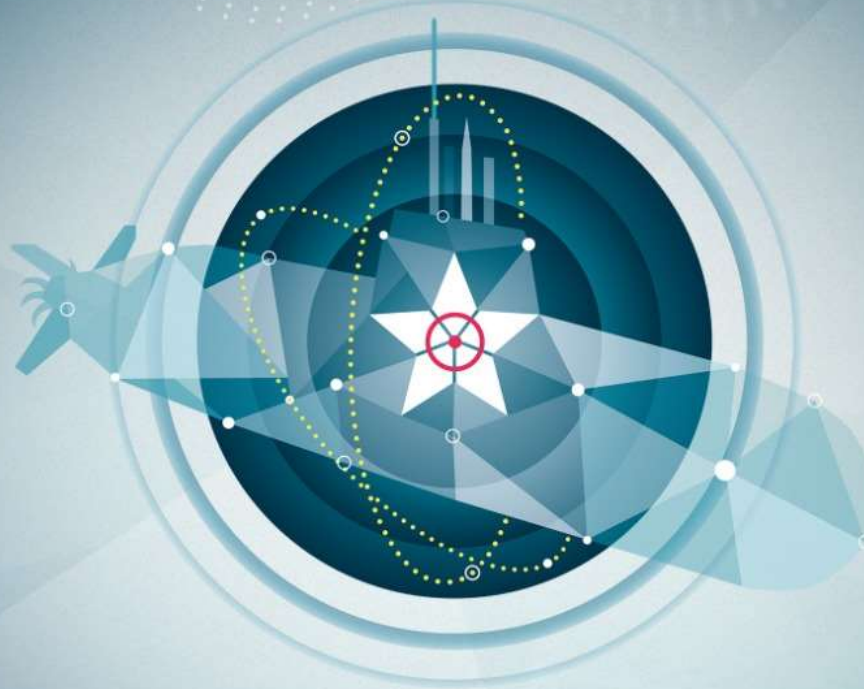
SEALab: an overview



SEALab: an overview



EXPLORING THE FUTURE



BOOMER

RECONFIGURABLE AUTONOMOUS SYSTEMS FOR UNDERWATER WARFARE T&E

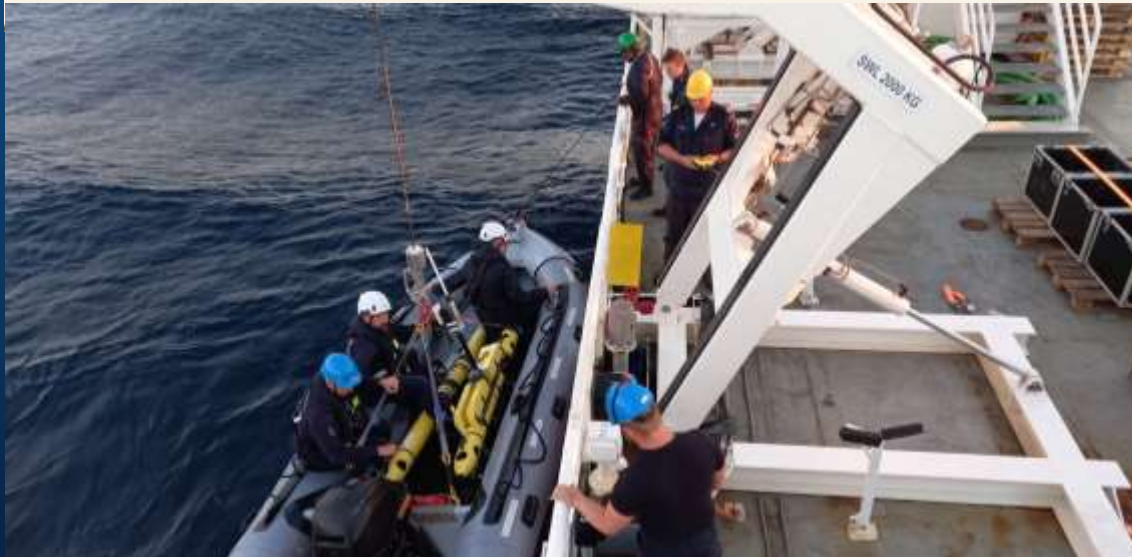
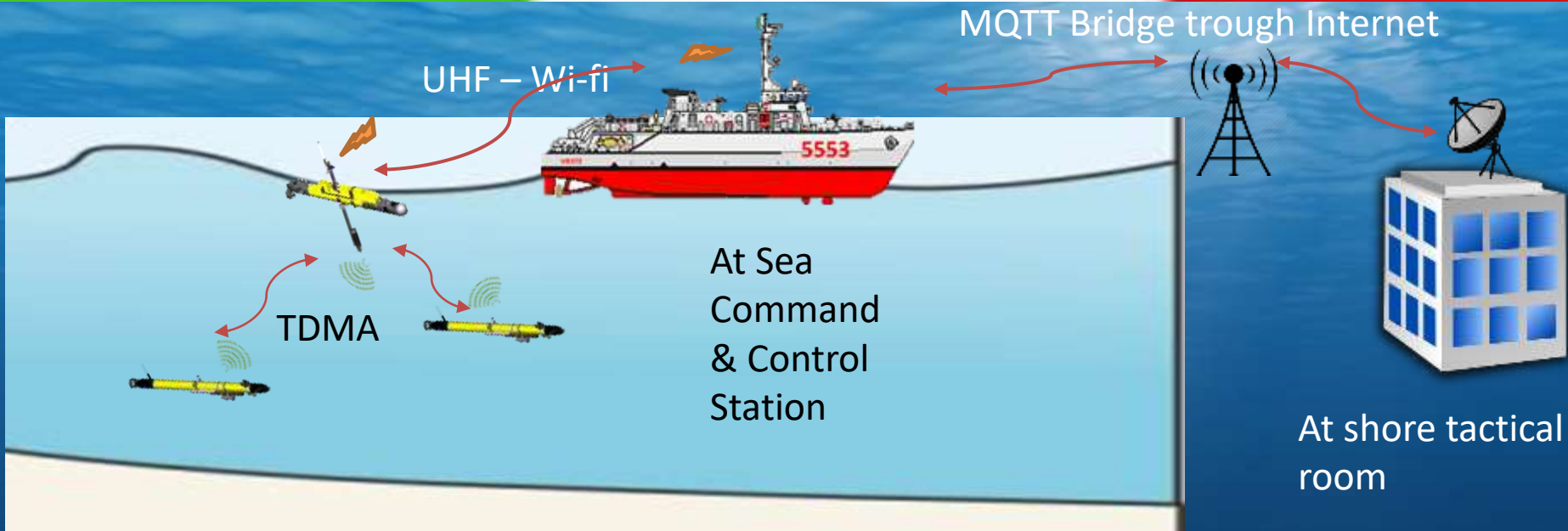


BOOMER

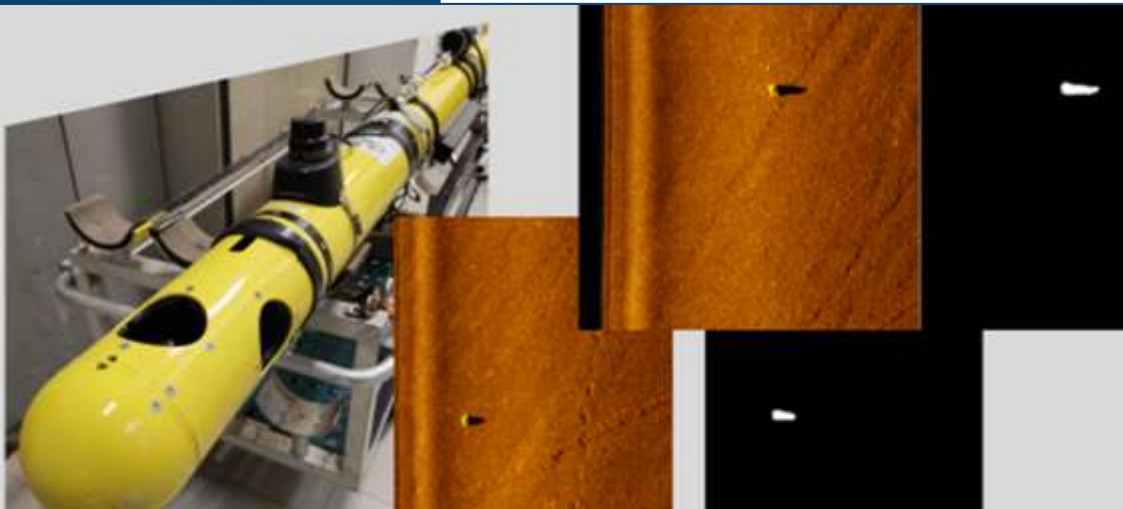
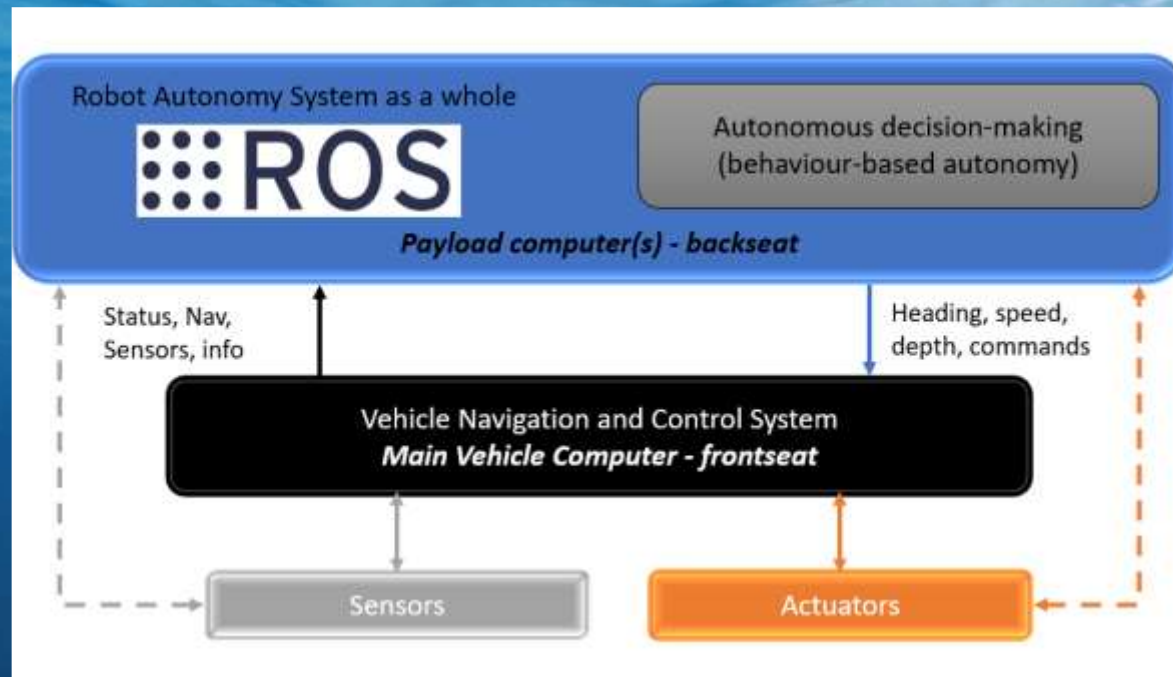


EXPLORING THE FUTURE

NEAR PAST: NATO exer REP-MUS 21



DEVELOPING AI



Future?





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CSSN - Ufficio Lotta Sotto la Superficie

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