exail

OPTIMISING SOFTWARE INTEGRATION FOR AUTONOMOUS SYSTEMS WITHIN A HYBRID ENVIRONMENT

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- Leading high-tech industrial group
- Specializing in cutting-edge robotics, maritime, navigation, aerospace and photonics technologies.
- Expanding customer’s capabilities with a full range of robust in-house manufactured components, products and systems.
- Employing a workforce of 1800 people worldwide
- Global footprint and presence in 80+ countries.

exail = ECA GROUP + iXblue

Exail was formed by ECA Group and iXblue joining forces in 2022.

It is a subsidiary of Groupe Gorgé, a family-owned company specialized in high-technology.

Stronger together

1800+

EMPLOYES

280+

MILLIONS D'EUROS
DE CHIFFRE D'AFFAIRE

20+

% DU CHIFFRE D'AFFAIRE
INVESTI EN R&D

80%

DU CHIFFRE D'AFFAIRE
REALISE A L'EXPORT

24/7

SUPPORT

MINEHUNTER MODEL

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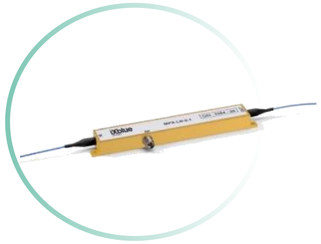
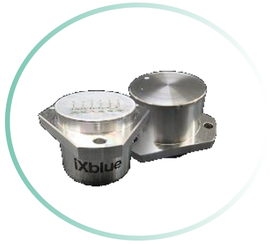
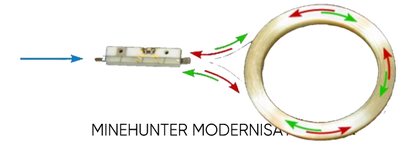
From components to complex systems

Components

- Fiber, Optic & Acc







Products/sensors

- Navigation

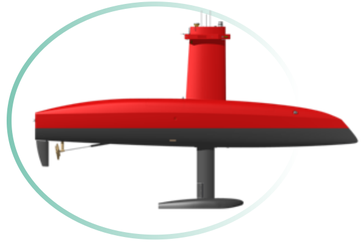
- Quantum technology / Gravimeter

- Simulator

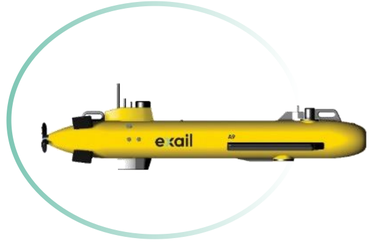
- Subsea Positioning / Sonar

Platforms

- Unmanned Surface Vehicles



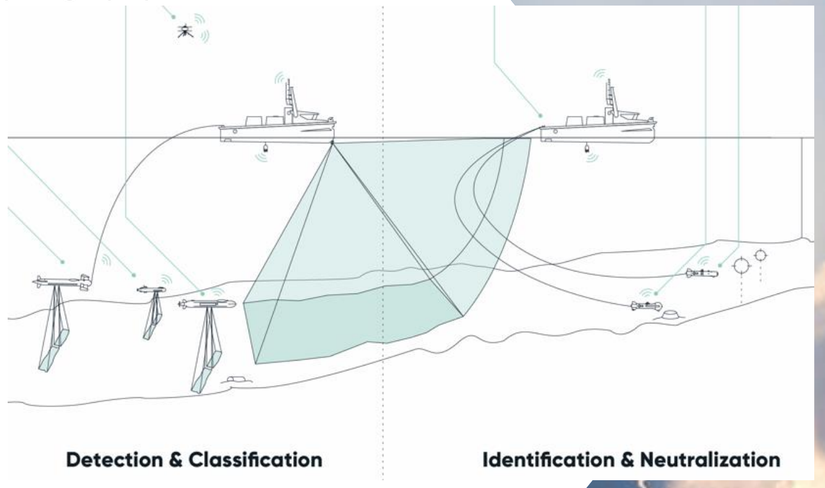
- Unmanned Underwater Vehicles

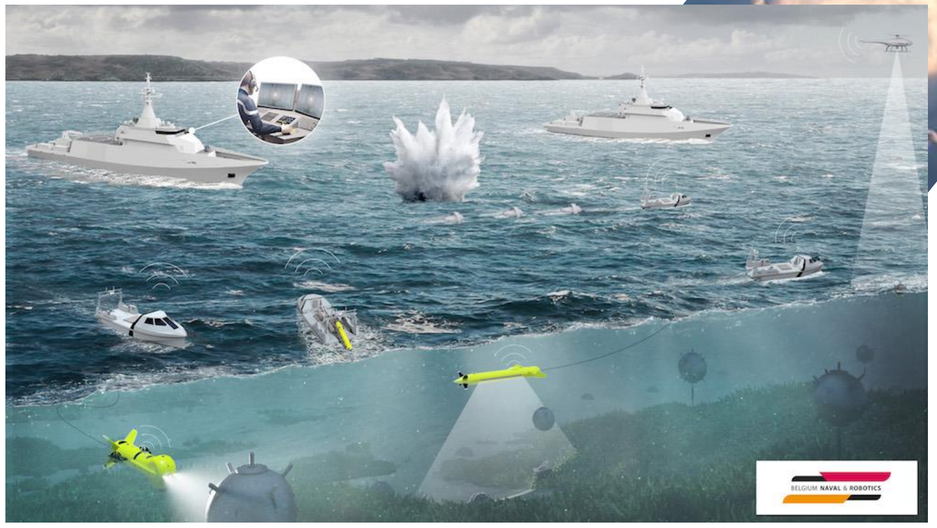


- Unmanned ground Vehicles

Integrated Systems

- Hydrography and MCM





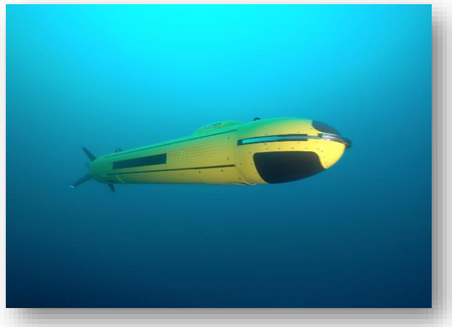
rMCM Toolbox

Toolbox Drones overview

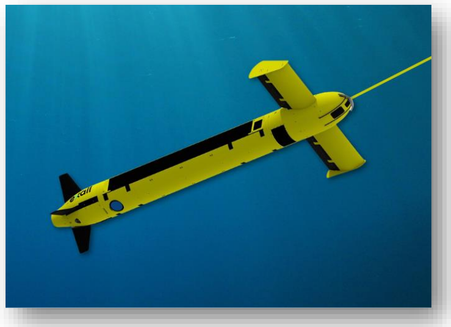
› Drone Carrier Vessel
MCM Mother Ship

› 2x Inspector 125 surface USV

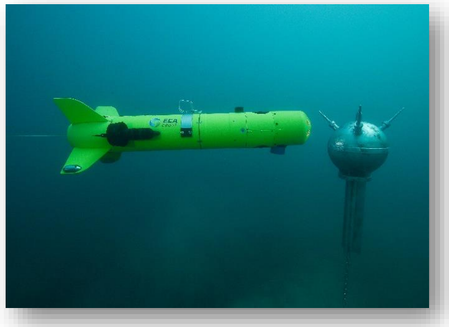
› 2x UMS Skeldar V200 UAV



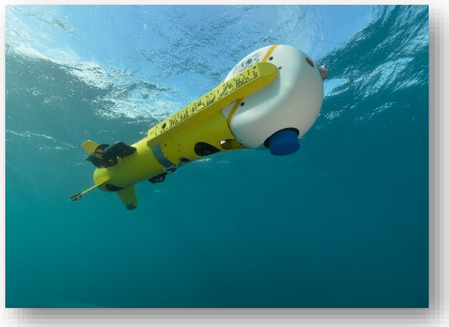
› 3x A18-M AUV



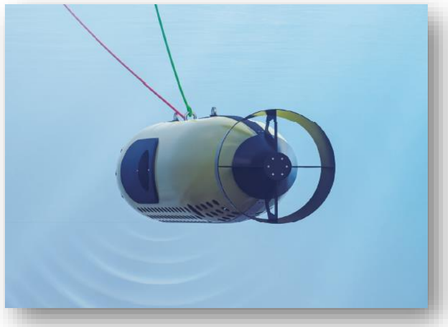
› 2x T18-M Towed sonar



› 4x SeaScan ROV
(identification)



› 40x K-Ster C ROV
(minekiller)



› 1x Patria Multi influence
sweep

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Software integration platform

- Testing and evaluation of embedded and surface software
- Representation of equipment onboard MCMV
- Drone farm to operate all software on the vehicles
- Mix of virtual and real environment
- Dynamic simulator to animate drones

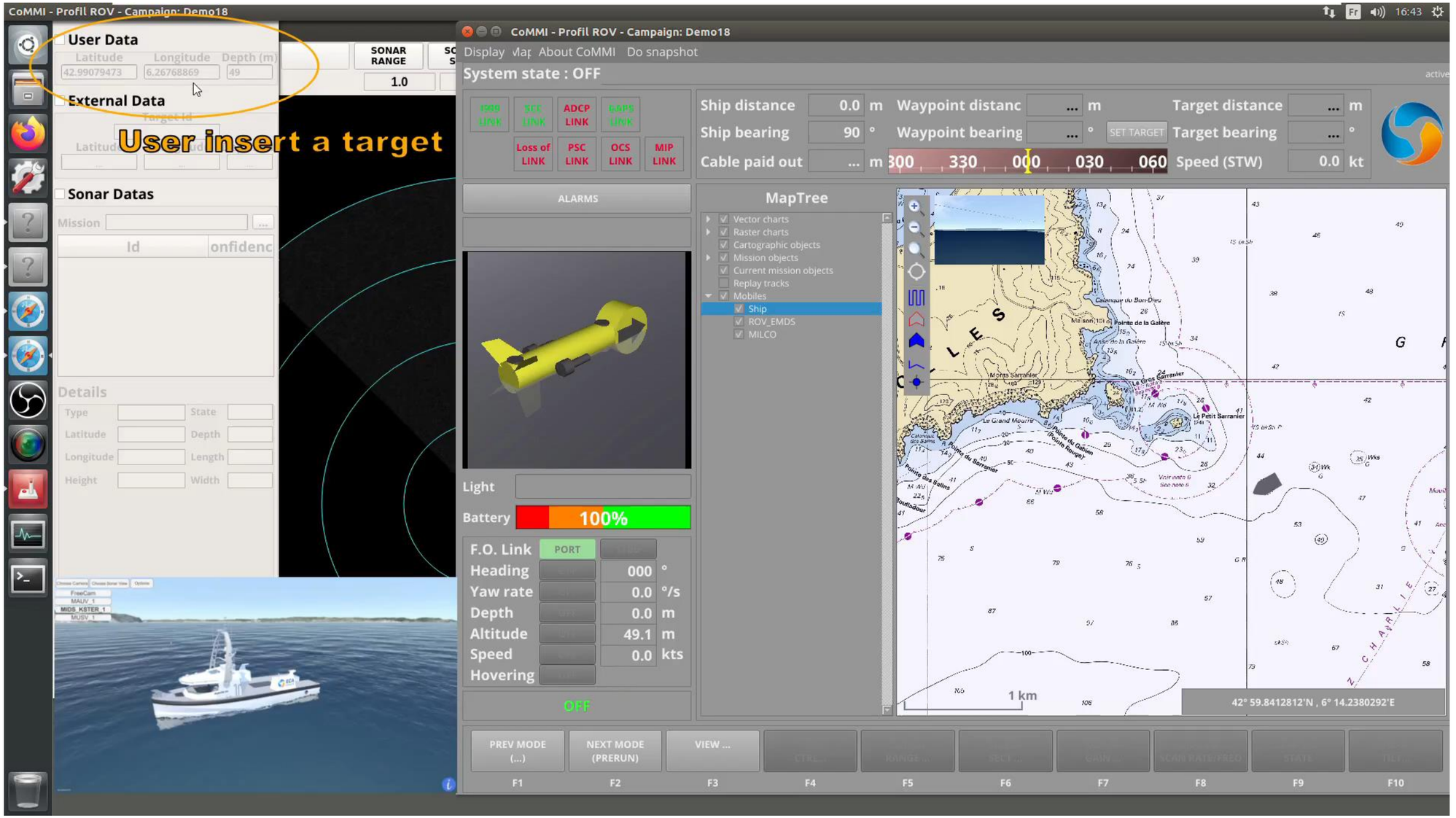
Challenges

- Not simply testing vehicle but a complex integrated system
- Software development multi domain & multi site
- Improve integration time and cost between sub-system integration
- Regular connection of all pieces of complex puzzle
- Confronting software to environment hardware as early as possible
- Visibility for client on software development

Accelerating maturity

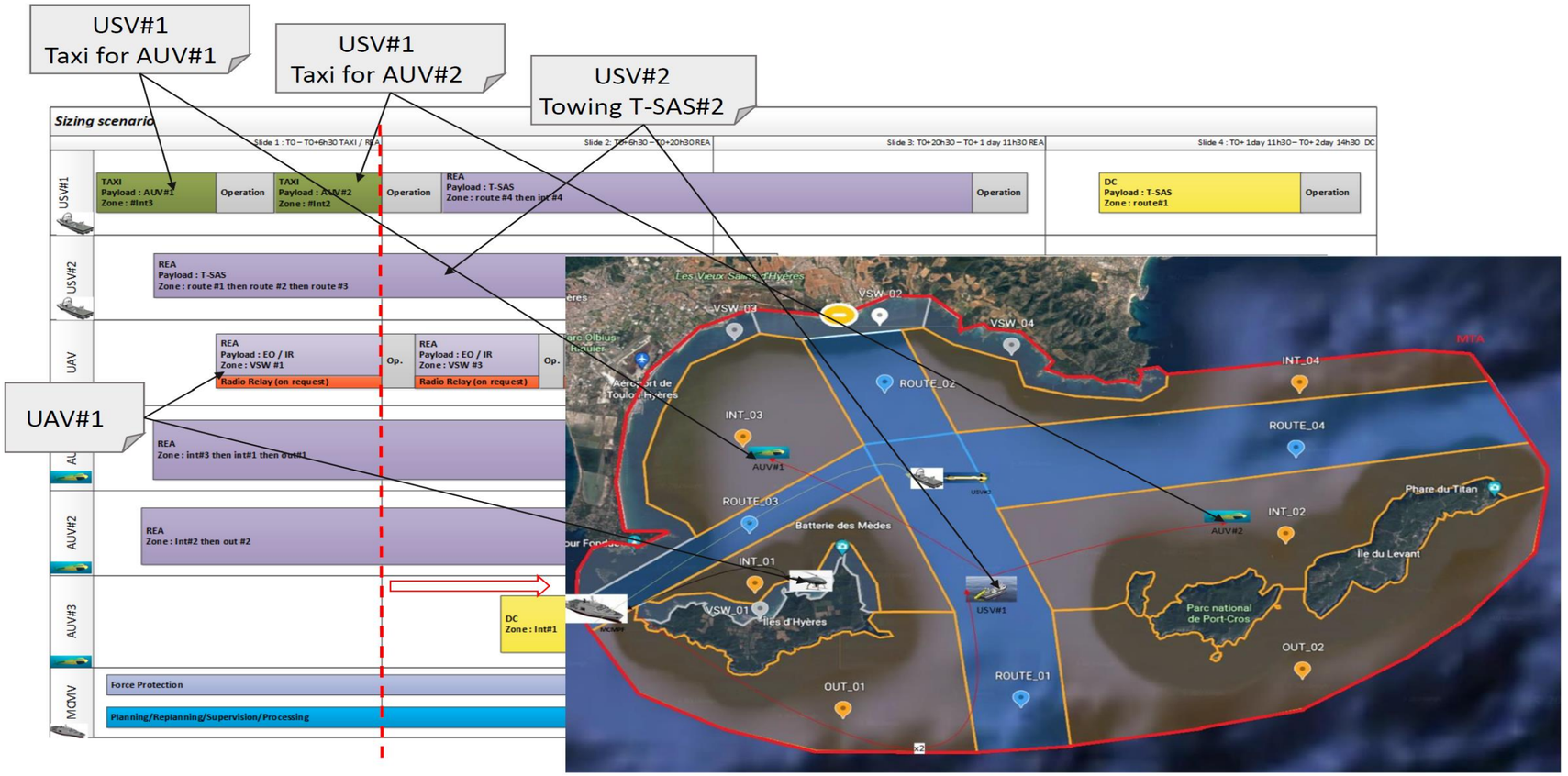
- Using simulation as a means of validation of software
- Confronting system to difficult conditions (environmental, operational, failiure…)
- Reducing errors through extensive sumulated testing
- Through radio link to testing area at sea optimization of development teams time
- Learning through simulation how to enhance vehicle performance
- Being as mature as possible before taking drones fo sea

Inspection vehicle simulated test



Sizing scenario and training

- Defining a mission to test system performance
- Environment of mission area completely modelised
- Reference given as 21 day mission using up to 11 drones simultaneously



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