OCEAN2020 Webinar

DEMONSTRATION IN THE MEDITERRANEAN SEA, NOV 2019
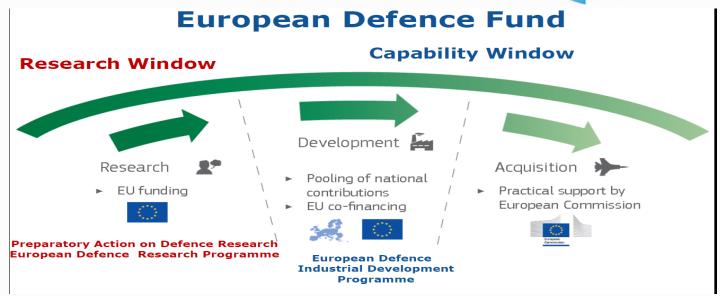
9th July 2020

OCEAN2020 Project Context

> **PADR** : pave the way for the **Research Dimension** of the **European Defence Fund (EDF)**

> **PADR** is launched and funded by the **European Commission**

> **European Defense Agency** is the implementing agency for the PADR

OCEAN2020: the PADR Project with highest budget (35.5 M€ out of 90 M€ of PADR Budget)

Call for Proposal	Proposal Submission	Project Kick-off	System Requirement Review	System Design Review	Demo 1 Med Sea		Simulated Trials		Demo 2 Baltic Sea	Final Review
June 17	October 17	April 18	October 18	May 19	November 19	January 20	February& March 21		June 21	September 21

www.eda.europa.eu

10 National MoDs/Navies supporting OCEAN2020

- *Italian Navy*
- *Hellenic Navy*
- *Spanish Navy*
- *Portuguese Navy*
- *Lithuanian Navy*
- *German MoD*
- *Swedish Navy*
- *French Navy*
- *Polish Navy*
- *Royal Dutch Navy*

OCEAN2020 Project Objectives

Operational objectives

- Significant improvement of **maritime Situation Awareness** through the integration of **UXS** (Unmanned Systems) with **ISTAR** (Intelligence Surveillance Target Acquisition and Reconnaissance) payload capabilities
- **Interoperability** by use of open architecture and recognised standards

Technical objectives

- **High integration among EU countries and heterogeneous systems**, demonstrated in full-scale demo
  - ✓ *Mediterranean Sea demonstration in 2019*
  - ✓ *Baltic Sea demonstration in 2021*
- Development of EU C4ISR **open architecture**
- Integration of EU/NATO/civil **data framework**
- Advanced **data and information fusion** techniques for shorter decision time at **CMS** (Combat Management System) and **MOC** (Maritime Operations Centre) levels
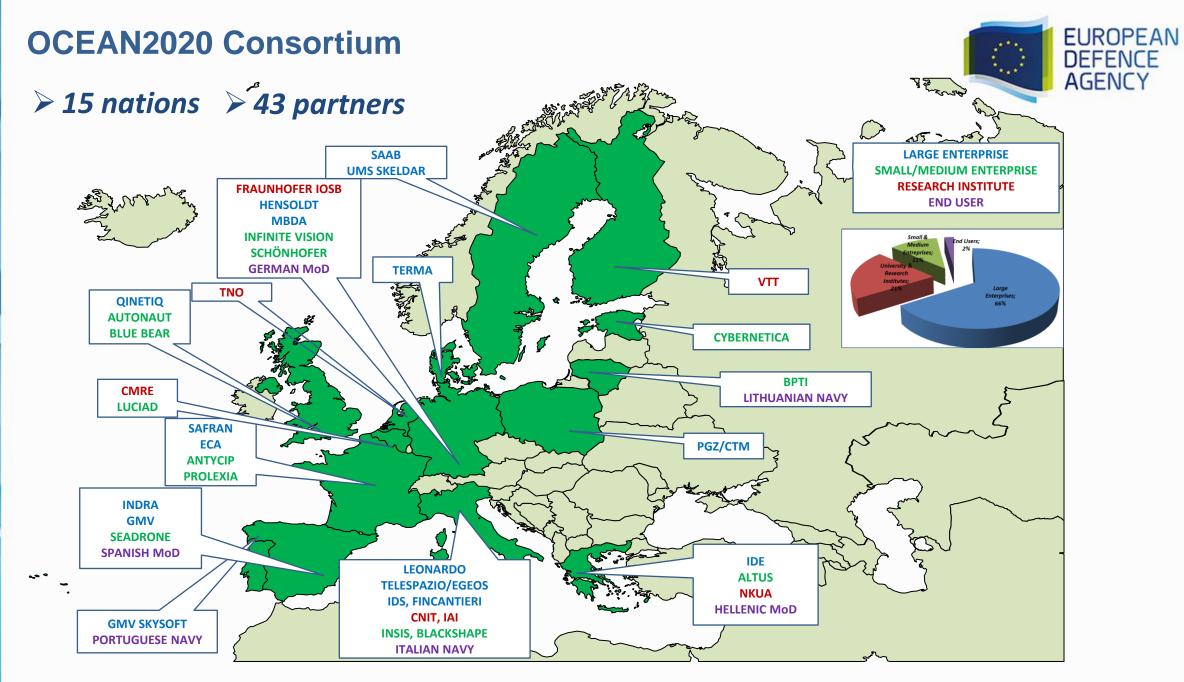- Increased **autonomy** for UXS, swarm operations, cooperation of assets

Cooperation objectives

- Diverse EU wide consortium to demonstrate large military R&T effort
- Improve market position of European defence industry in UXS
- Involve End-Users in design choices

Expected impact :
- **demonstrate the potential of EU-funded research for defense applications**
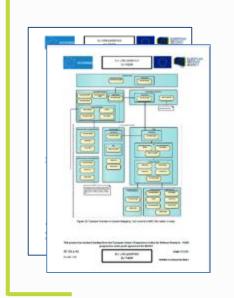- **boost the European industrial capacity in the military unmanned systems market**

OCEAN2020 Consortium

➢ *15 nations* ➢ *43 partners*

SAAB
UMS SKELDAR

FRAUNHOFER IOSB
HENSOLDT
MBDA
INFINITE VISION
SCHÖNHOFER
GERMAN MoD

TNO

TERMA

VTT

QINETIQ
AUTONAUT
BLUE BEAR

CYBERNETICA

CMRE
LUCIAD

BPTI
LITHUANIAN NAVY

SAFRAN
ECA
ANTYCIP
PROLEXIA

PGZ/CTM

INDRA
GMV
SEADRONE
SPANISH MoD

LEONARDO
TELESPAZIO/EGEOS
IDS, FINCANTIERI
CNIT, IAI
INSIS, BLACKSHAPE
ITALIAN NAVY

IDE
ALTUS
NKUA
HELLENIC MoD

GMV SKYSOFT
PORTUGUESE NAVY

LARGE ENTERPRISE
SMALL/MEDIUM ENTERPRISE
RESEARCH INSTITUTE
END USER

Small & Medium Entreprises; 11%
End Users; 2%
University & Research Institutes; 21%
Large Enterprises; 66%

OCEAN2020 Project Activities
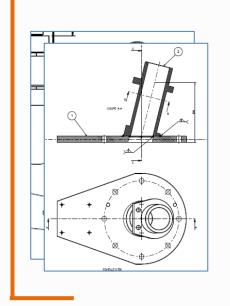
Roadmap to Mediterranean Sea Demonstration (MED SEA DEMO)
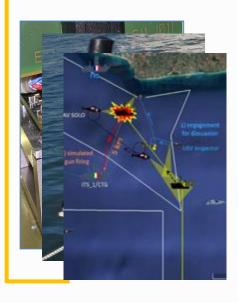
Requirement Analysis → **System Design** → **Development** → **Integration and trials**

OCEAN2020 Unmanned Systems

OCEAN2020 MED SEA DEMO – SYSTEM DEPLOYMENT

OCEAN2020 MED SEA DEMO

EU MOC Showroom

Setup of the EU MOC Prototype

EU MOC Shipping

EU MOC Technical Room

THANK YOU FOR YOUR ATTENTION
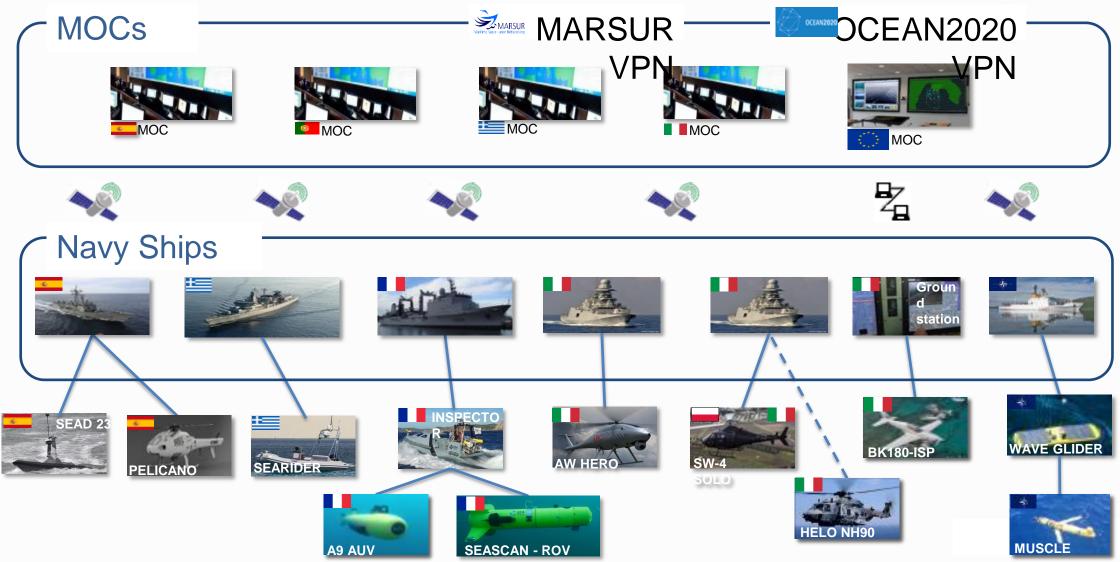
Dirk Tielbuerger
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OCEAN2020 MED SEA DEMO

20-21 November 2019

OCEAN2020

NAVAL UNITS

Italian Frigate 1 (Martinengo, FREMM)
Italian Frigate 2 (Fasan, FREMM)
Spanish Frigate (Santa Maria)
Hellenic Frigate (Limnos)
French BCR (Var, Durance class)
Italian MTC (Gorgona Class) - suspect vessel

MANNED AIRCRAFT

Italian NH90 Helicopter

UAV UNMANNED AIR VEHICLES

Leonardo AW Hero
Leonardo SW-4 Solo
INDRA Pelicano
Blackshape Bk180-ISP

USV UNMANNED SURFACE VEHICLES
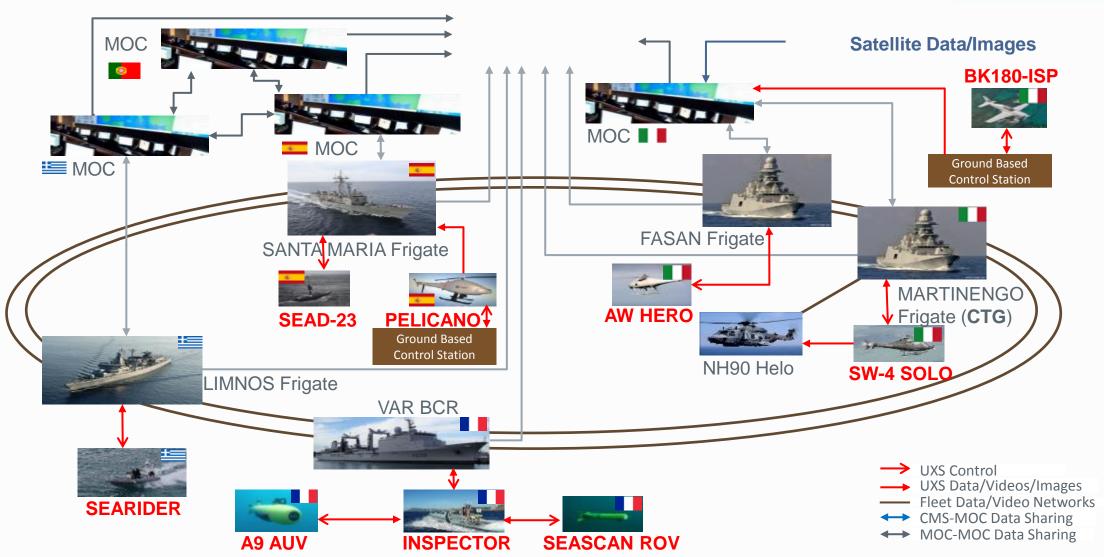
ECA Inspector
IDE SeaRider
Seadrone SEAD-23

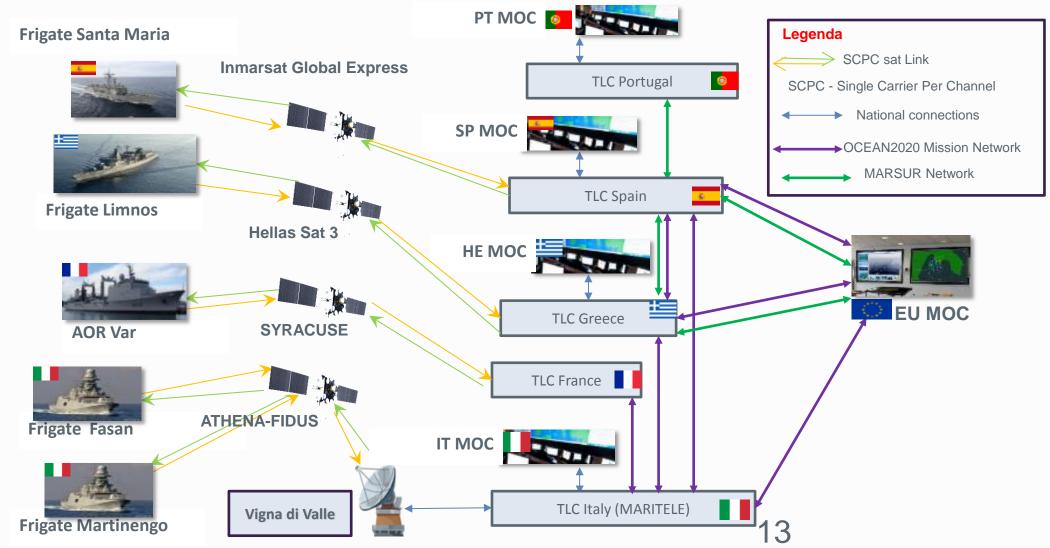## UUV UNMANNED UNDERWATER VEHICLES

ECA AUV A9
ECA ROV Seascan

LOCATIONS

AREA OF OPERATIONS:
within the Gulf of Taranto
Taranto NAVAL BASE (Italian Navy)
Grottaglie MILITARY AIRPORT
MARITIME OPERATION CENTERS
EU MOC Prototype: Bruxelles (in EDA)
IT MOC: Rome
ES MOC: Cartagena
HE MOC: Athens
PT MOC : Lisbon

System Configuration for Mediterranean Sea Demo

Ships and MOCs Networking

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Threatening Vessel Interdiction

Phase 0 Scenario preparation / Persistent Surveillance   **Cosmo Sky Med (Earth Observation Satellite)**

Phase 1 Alert for anomaly detection   **Cosmo Sky Med (Earth Observation Satellite)**

Phase 2 Resource tasking and area search

Phase 3 Localisation, classification and identification

Phase 4 Surface engagement *(simulated)*

Phase 5 UW localisation of the threat remains

OCEAN2020 MED SEA DEMO –Scenario #2

Mine Laying Vessel Interception before an Amphibious Operation

Phase 0 Scenario preparation / Intelligence received

Phase 1 Suspect vessel leaves the harbour and is detected by USV and UAV

Phase 2 Covert localisation and tracking with UAV

Phase 3 Mines are released by the vessel

Phase 4 Boarding with UAV support

Phase 5 Mines localisation and identification with UUV

OCEAN2020 MED SEA DEMO

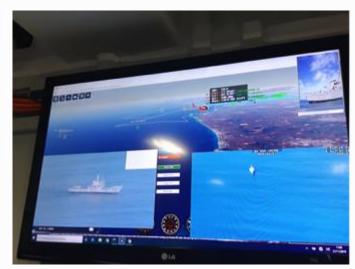Maritime Situation Awareness and ISTAR capabilities at Sea

ROV SEASCAN Control Station on board French BCR Var

UAV AW Hero Control Station on board Italian Frigate Fasan

USV Sea Rider Control Station on board Hellenic Frigate Limnos

Tactical Situation with 3D view and videos from Unmanned Systems displayed on board Italian Frigate Martinengo

OCEAN2020 MED SEA DEMO

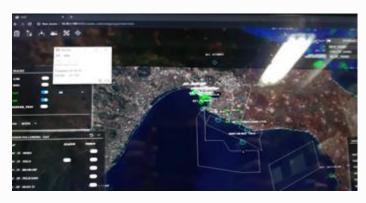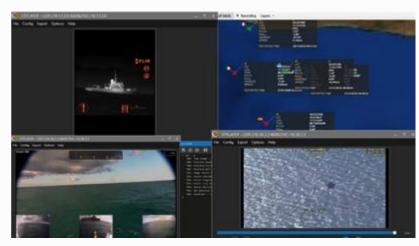Maritime Situation Awareness and ISTAR capabilities ashore

BK180-ISP Ground Station at Grottaglie Military Airport

Boarding phase of Scenario 2 displayed at IT MOC in Rome

Tactical Situation displayed at EU MOC Prototype in Bruxelles

Tactical Situation and videos from Unmanned Systems displayed at Hellenic MOC in Athens

Tactical Situation and Video Wall with videos from Unmanned Systems displayed at Spanish MOC in Cartagena

OCEAN2020 MED SEA DEMO - Achievements

Improvement of maritime situational awareness
- Surveillance information generated by UxVs
- Integration with CMS and MOC

Extending range and performance of maritime ISTAR capability
- UxS Payload (EO/IR, Radar, AIS, Sonar, etc.)

Achieving EU-NATO interoperability
- Adoption of NATO interoperability standards

Technical Innovation
- Integration of EU multi-countries, multi-producers, multi-domain manned and unmanned systems in real operational environment
- Effectiveness of an interoperable system-of-systems

Impact Making
- Effective model of pan-European Cooperation
- Efficient and Effective Defence Investments
- Future joint R&T and post R&T Activities

Effective Engagement of End-Users

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