



# **OCEAN2020 PROJECT**

## **SMALL ACTORS, LARGE PLAYERS, ONE DEFENCE**

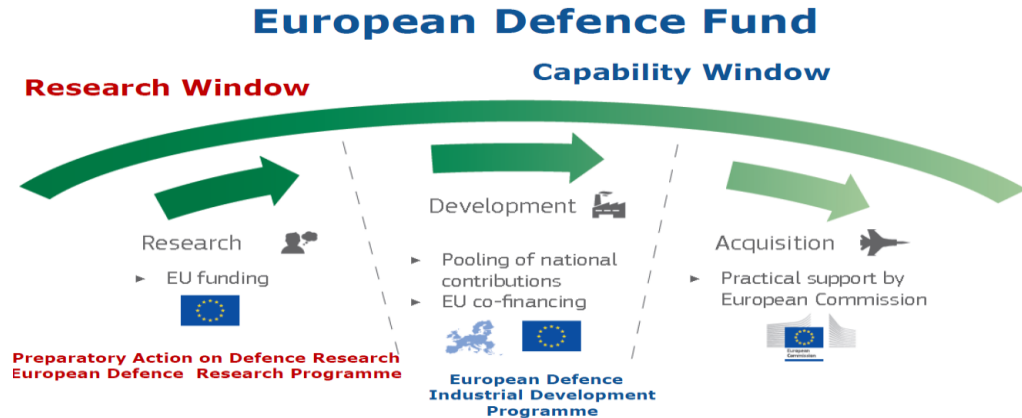
18<sup>th</sup> November 2020



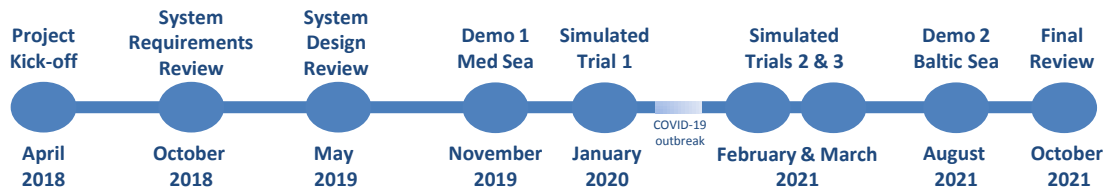
# OCEAN2020 Project Context



- ***PADR is the 1<sup>st</sup> step of a European Defense Research and Capability Development Programme***
- ***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)**



## 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 live trials
  - ***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**

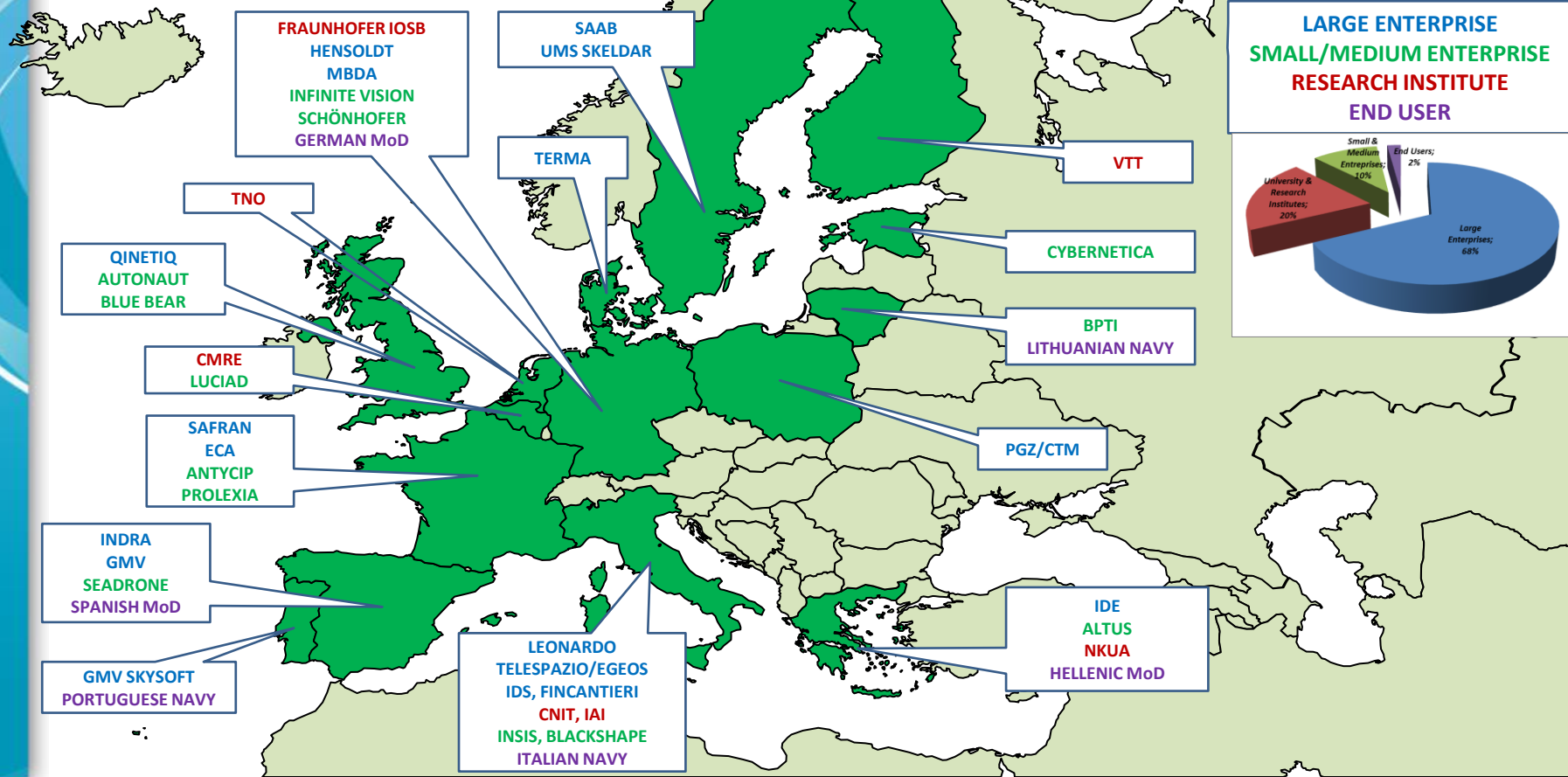
- Diverse EU wide consortium to demonstrate large military R&T effort
- Improve market position of European defence industry in UXS
- Involve End-Users in design choices

**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



# SMEs involved in OCEAN2020 Project

- **13 Small/Medium Enterprises initially involved as OCEAN2020 partners**
  - decreased to 11 as 2 SMEs (\*) taken over by Large Companies
- **10% of overall OCEAN2020 budget has been allocated to SMEs**

Company	Nation	Skills and Tasks
Prolexia		System Simulation
Schönhofer		System Simulation
Anticip Simulation		System Simulation
Infinite Vision		Virtual Reality Modelling
Altus		System Simulation, Human Factor, Hellenic MOC for Med Sea Demonstration
Seadrone		Unmanned Surface System (SEAD-23) for Med Sea Demonstration
Insis (*)		System Integration for Med Sea Demonstration
Black Shape		Unmanned Aerial System (BK180-ISP) for Med Sea Demonstration
Blue Bear		Unmanned Aerial System (Ghost) for Baltic Sea Demonstration
Autonaut		Unmanned Surface System (Autonaut) for Baltic Sea Demonstration
BPTI		Human Factor, System Integration per Baltic Sea Demonstration
Cybernetica		Security Design
Luciad (*)		System Simulation, Human Factor

## Introduction

Private research institute, founded in 2008 in Vilnius, Lithuania

### Scientific research, R&D services, technology development, consulting, science promotion

Technology areas	Markets
<ul style="list-style-type: none"><li>• High speed electronics</li><li>• Artificial Intelligence</li><li>• Human-Machine interaction</li></ul>	<ul style="list-style-type: none"><li>• Defence &amp; Security</li><li>• Space</li><li>• Energy</li></ul>

## Description of the tasks carried out in the OCEAN2020 project

### Human Factor

Pilot Operator Interface Design

Pilot Operator Training tools Design



### System Integration and Live Trials

Lithuanian Navy Patrol Vessel Integration

Live Demonstration in Baltic Sea



### Project Management

Participation in general management of the project as member of the Supervisory Management Board, coordination with LT MoD, Armed forces, administrative consultations.

## Benefits

**Experience** to work in large scale project

**Knowledge** in specific domains

New **partnerships** in defence and security markets

Increased **IPR** portfolio

Self-confidence and new projects (PADR, EDIDP, H2020)...



We develop and sell **mission-critical** e-government, information security, radio communications and surveillance software products and systems

- Unified eXchange Platform® (UXP) for Interorganisational Data Exchange
- Sharemind® for Confidential Data Analysis
- SplitKey® Mobile Digital Identity
- Coastal Maritime Communication, Border Surveillance

**Secure Software Development:** homeland security, defense, energy, cybersecurity, tax and customs, authentication and digital signature solutions

**Research and Development:** information security

**Together with** LEONARDO, INDRA, SAAB, IDE and VTT we participated in ***Communication and Information System Security*** analysis and design

Cybernetica's unique experience in designing and deploying country-wide secure data exchange platforms is utilized in the analysis and design of Ocean2020 security architecture

Cybernetica participates in general management of the project as member of the Supervisory Management Board

## **Benefits gained from participation in the OCEAN2020 project**

- Increased network with European defense industry vendors
- Experience of cooperating and negotiating in good and tough weather
- Actionable feedback and improvements to compliance and ethics in R&D
- New projects inspired by Ocean2020 cooperation
  - ECYSAP Development of the European Cyber Situational Awareness Platform
  - Cybersecurity incident management system, cooperation with Estonian Defense Forces
  - Machine Learning for supporting cybersecurity awareness (ESA GSTP)
  - Cyber security information sharing in systems of trust (UXP) or without trust (Sharemind)

- **ICT SME based in La Seyne sur Mer (South of France)**
- **Provides products and services using advanced new technologies:**
  - **Robotics** : Mission planning, Command & Control of UGV, USV, AUV and UAV
  - **Simulation** and serious games for performance evaluation, test bed, decision making, education and training
  - **Virtual and Augmented reality** for situation awareness, maintenance, aided piloting systems and training
  - **Artificial Intelligence** : object recognition and system optimization



## Tasks carried out in the OCEAN 2020 project

- **RADAR sensor behavior simulator**
  - Simulates every ally RADAR beams propagation and detections depending on the RADAR characteristics
- **AIS messages simulator**
  - Delivers the neutral entities AIS frames to a server
- **Synthetic-Aperture Radar simulator**
  - Receives the simulation data, captures a picture from the 3D simulation done with our graphical engine and send it to a server

## **Benefits from our participation in the OCEAN 2020 project**

- **New partnership with European companies and research institutes**
- **Opportunity to take part in future European projects**
- **Reuse of our development in future defense and civilian projects**
  - Evolution of our engine called ADVANSYS
  - Improvement of our skills in distributed simulation and advanced sensor data generation
  - New knowledge in defense interoperability standards
- **Creation of 2 new jobs**
- **Improvement of competitiveness in distributed simulation**

## OUR PROFILE

Infinite Vision is an award-winning digital creative studio based in Munich, Germany. We are specialized in the fields of communication design, UI / UX, 3D-Animation and VR / AR.

### COMMUNICATION DESIGN

We design  
Communications  
That crash through the  
daily information  
overload.

### UI / UX

We're a team of  
creative problem  
solvers seeking to  
make a positive impact  
on your business and  
the world around us.

### 3D-ANIMATION

We provide creative  
concepts, design and  
animation production  
for all types of clients  
and platforms.

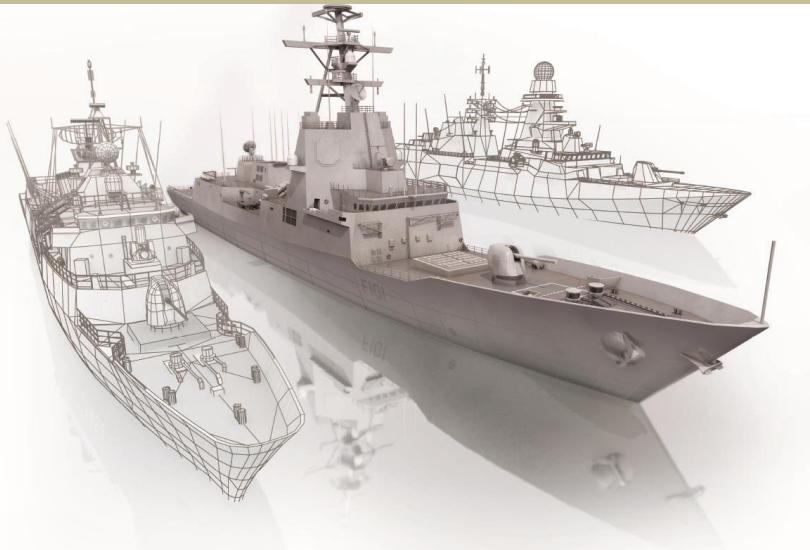
### VR / AR

Imagine Everything. A  
simple motto we live  
by. We produce unique  
creative content  
for virtual and  
augmented reality.

**Awards:** New York Festivals International TV & Film Awards, Digital Art Awards Japan, Australian Effects and Animation Awards, Animex International Festival, Cartoombria Festival, Promax BDA

## OUR TASK

We provide 3D Models for the visualization of the simulation.



### What we did

Models are constructed through blueprints and images.  
Most of the models have two level of details.

### Tools we used

Modo

70 %

Maya

20 %

Remo 3D

10 %

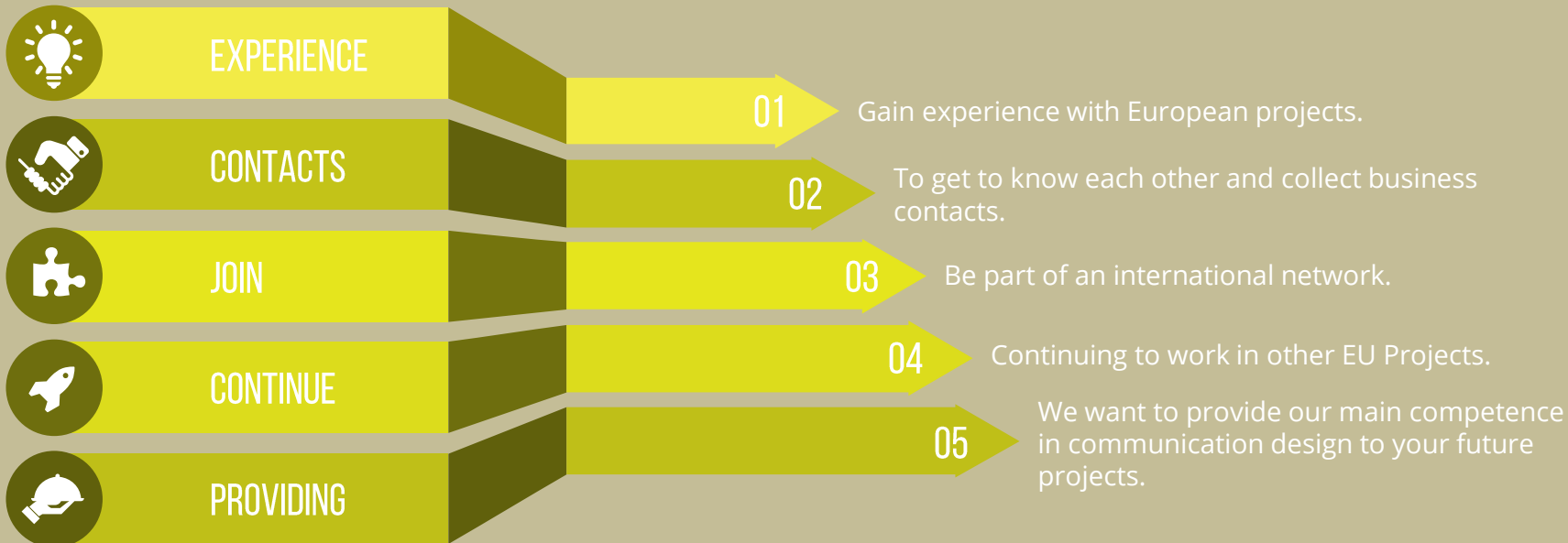
Photoshop

100 %



## OUR HOPES

WE ARE SHAPING DIGITAL WORLDS TO ENHANCE YOUR PRODUCT!



**We are a technology integrator providing turnkey solutions in the field of Unmanned Systems**

**We have offered our services in multiple domains, like:**

**UxV swarming**

**Borders surveillance**

**Critical infrastructures' protection**

**SAR missions**

**Aerial target drone applications**

**Self-protection for UAVs**

**Intelligence gathering**

**Airborne ISR**

**CBRN applications**

**Anti-drone solutions**



## ALTUS in the OCEAN2020 project:

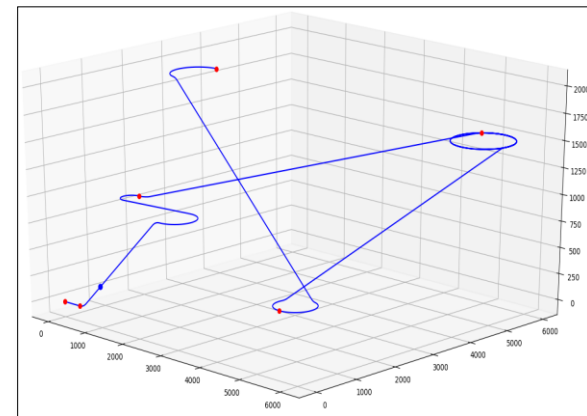
System Simulation & Modelling

Human Factor & Training

[Based on ALTUS UAS ACADEMY expertise]

Hellenic MOC for Med Sea Demonstration

[Hands on collaboration with the Greek MOD]



## Benefits gained in the OCEAN2020 project

Integrated / Holistic approach in a large scale project

Collaborations/synergies established

Simulation / modeling competences

Foreground IP created

Know-how of the European Defense eco-system [EDIDP, EDF]





indra



TNO

QINETIQ

BPTI



TERMA<sup>®</sup>  
ALLIES IN INNOVATION



FINCANTIERI



AutoNaut



PROLEIA



LUCIAD

