



EUCISE2020

EUropean test bed for the maritime Common Information Sharing Environment

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EUCISE2020 received funding from the European Union's seventh framework programme under grant agreement no: 608385





- EUCISE2020 context and challenges
- CISE Roadmap
- EUCISE 2020 project
- Current architecture
- Need for CISE implementation





Surveillance activities are carried out by States but most of the activities and threats they address are **transnational in nature**.

Within most States surveillance activities concerning fisheries, the environment, policing of the seas including traffic monitoring, or border control fall under the responsibility of **several different enforcement agencies operating independently from each other**.





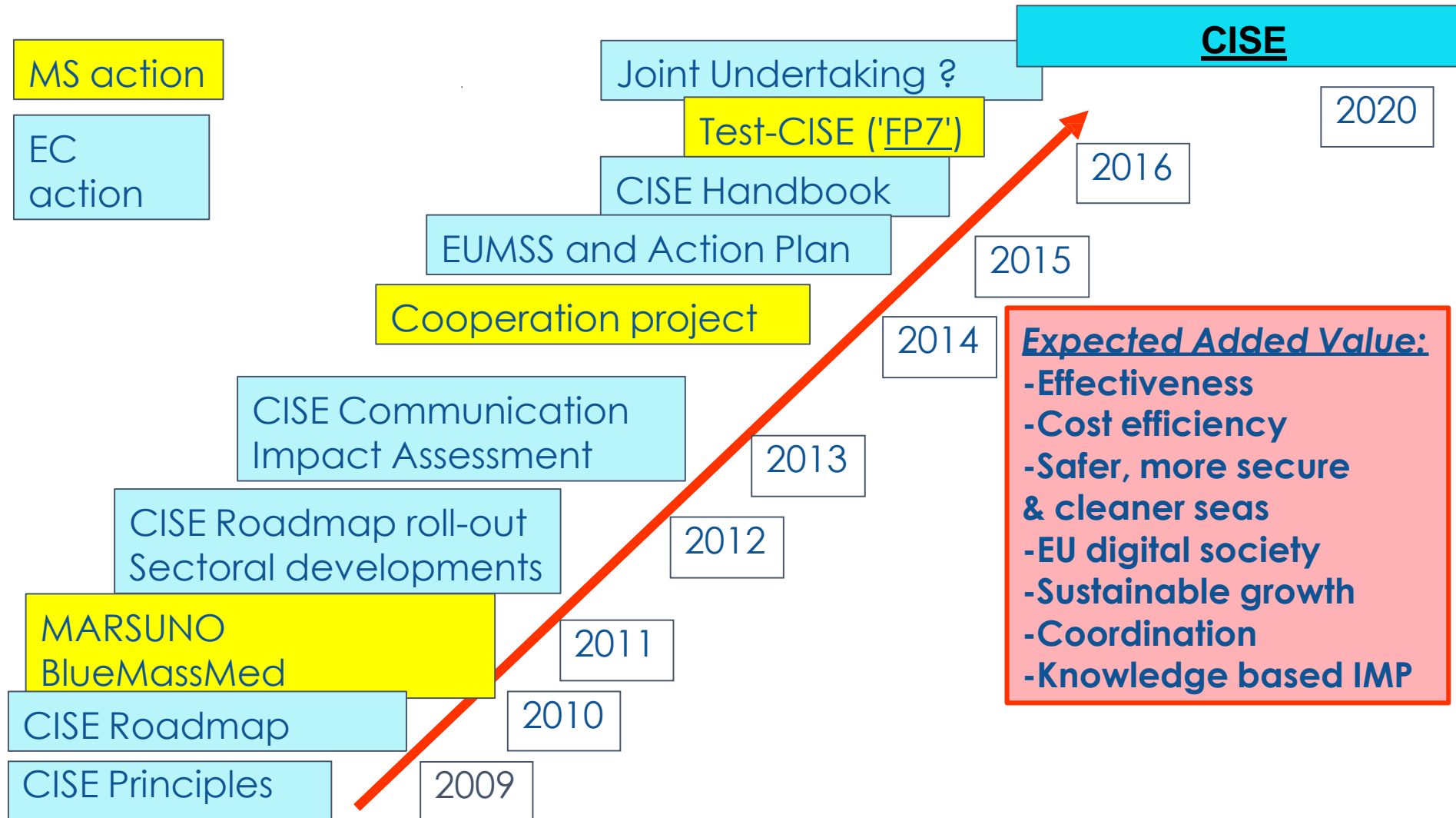
The aim of integrated maritime surveillance is to generate a situational awareness of activities at sea both cross-borders and cross-sectors, impacting on seven User Communities

- Maritime safety and security
- Border control
- Maritime pollution and marine environment
- Fisheries control
- General Law enforcement
- Defence
- Trade and economy





CISE: Common Information Sharing Environment Cross – Sectorial interoperability for better “Maritime Governance”





June 2017

Council conclusions on Global Maritime Security
General Secretariat of the Council

The Council encourages the further development of a shared situational awareness picture in the Mediterranean Sea***taking full advantage of the future Common Information Sharing Environment (CISE) for the EU maritime domain, which should be further developed and operationalised.***





EU's common foreign and security policy (CFSP) June 2017

Second Report on Implementation of EUMSS

Latest developments involving the EEAS, EDA and the Commission

On CISE (action 2.1.1), the Commission has put great emphasis on ensuring the progress of and necessary coherence between ongoing and new preparatory actions:

- **The EUCISE 2020 POV** project has reached phase 2 — development of the test-bed. The POV consortium will use the test-bed in phase 3 (from November 2017) to validate the CISE solutions, together with the builder (an industry consortium). The project will deliver its final results in the first half of 2018
- **Member States that participated in the EUCISE 2020 project considered it an important step towards completing the roadmap for CISE.** Member States participate in various CISE projects and exercises to improve and enhance interoperability between their various maritime authorities at national level. **The focus is on testing and validating the CISE concept for exchanging data at sectoral, cross-sectoral and cross-border level.**
- Member States are running national research activities and development projects to investigate **options for connecting EUCISE 2020 gateway with national legacy systems**



EUCISE2020 Partners

- 37 (39) Partners
- 15 EU/EEA maritime Countries
- Open to new partners and to collaborations with EU Agencies



- ★ Maritime Authorities
- ◇ Experts
- Research Institutions

Two new partners:

1. SGMER – France
2. Ministry of Fishery - Spain



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Partner	website	Partner	website
ASI	www.asi.it	DMI DK	www.dmi.dk
MMI	www.marina.difesa.it	NERSC	www.nersc.no
MEF GDF	www.gdf.gov.it	AEAT ES	www.agenciatributaria.es
MIT GC	www.guardiacostiera.gov.it	CIT	www.cit.ie
MDE ES	www.defensa.gob.es	DGPM	www.dgpm.mam.gov.pt
GUCI	www.guardiacivil.es	MARAD	www.marad.bg
SASEMAR	www.salvamentomaritimo.es	DEMOKRITOS	www.demokritos.gr
EUSC	www.satcen.europa.eu	RBP	www.politiadefrontiera.ro
SWED CG	www.kustbevakningen.se/sv/they-swedish-coast-guard	FINNAVY	www.puolustusvoimat.fi/en/Navy
MIN INT FBG	www.raja.fi	FGMSSC	www.bmvi.de
FTA	www.liikennevirasto.fi	HMOD	www.mod.mil.gr
TRAFI	www.trafi.fi	HCR	www.hcg.gr
BG PORT	www.mtitc.government.bg	MERCATOR	www.mercator-ocean.fr
MTC	www.regjeringen.no	MISE	www.sviluppoeconomico.gov.it
LAUREA	www.laurea.fi	GLT	www.studiotosato.it
OC UCI	www.ucy.ac.cy	DFT	www.gov.uk/government/organisations/departments-for-transport
APRE	www.apre.it	LCU	www.unilink.it
INGV	www.ingv.it	WPI	www.wisepens.com
CMCC	www.cmcc.it	SGMer	http://www.gouvernement.fr/secretariat-general-de-la-mer-sgmer

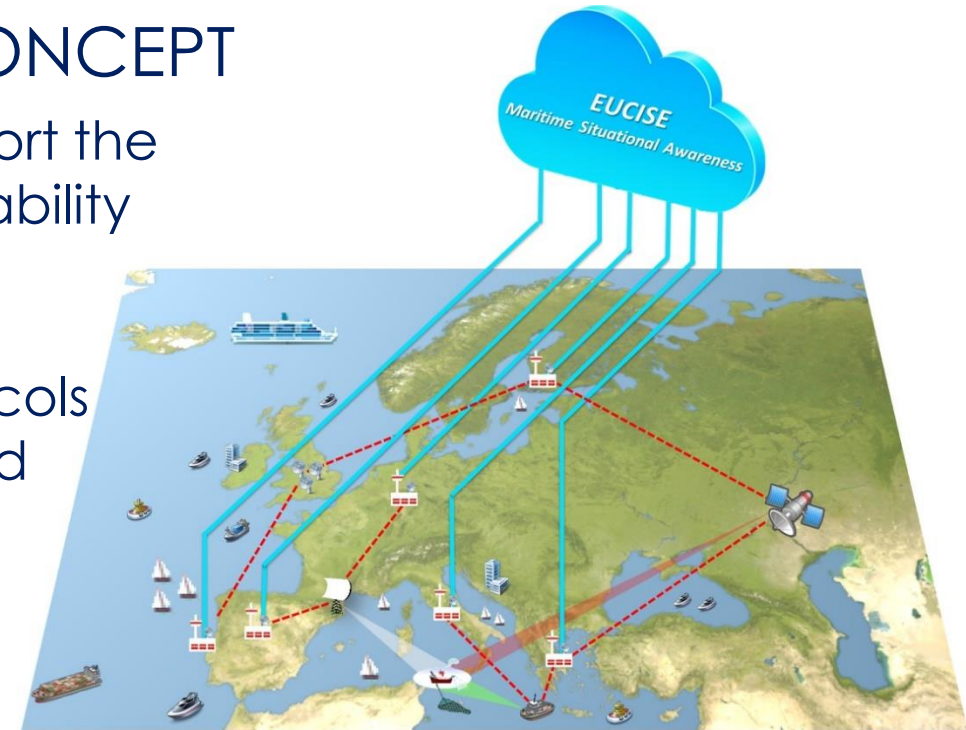




OPERATIONAL CONCEPT

Primary mission of EUCISE2020 is to support the EU Maritime Situational Awareness capability by means of an **Information Sharing Environment** capable to implement adequate security measures and protocols ensuring the confidentiality, integrity and availability of the data required and transmitted in the CISE community.

EUCISE2020 will not affect the functionalities of the operational information systems belonging to the participating Public Authorities or of the European existing sectorial information systems.



Blue lines depict flows of information within the CISE community, while the red dashed lines depict flows of information within the legacy systems belonging to single Public Authorities.

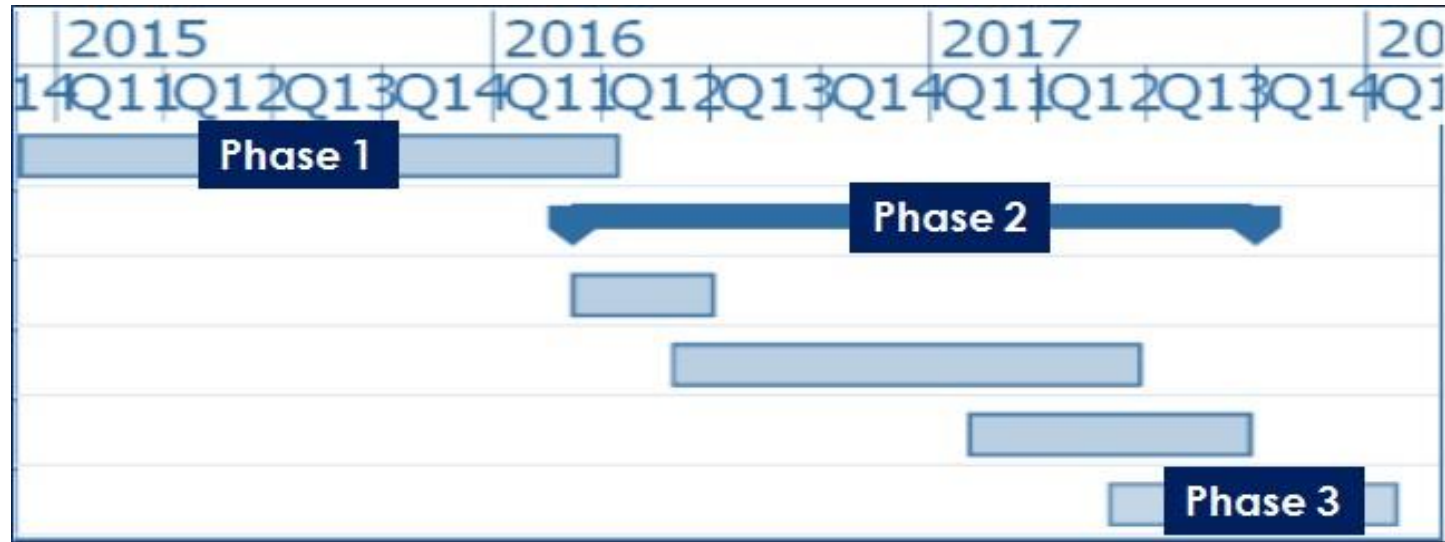




EUCISE2020 Principles

- Military/civilian cooperation;
- Management of EU RESTRICTED information through a special channel
- Complete decentralization according to CISE Hybrid Architecture: no central system, no central database
- Independence from any system and sensor
- Independence from any national or European architecture
- Firm adherence to standards and open source software
 - Adherence to the CISE data and service models
 - EUCISE2020 will promote standardizations groups inside the EU bodies (ETSI)
- Open to new partners and to European Agencies
- IPR management and sharing
- Common technical architecture





Phase 1 - Initial Definition Phase (CSA)

Phase 2 - Preparatory and Execution Phase (CP/RTD)

Phase 3 - Validation and Ex-Post Assessment (CSA)

Total duration: 42 months

Starting date: December 1°, 2014



Activity	Cost in €	EU Grant in €
Total Project	€ 17.053.931	€13.000.000
In Phase 2 Commonly European Procured R&D Services	€ 4.500.000	€ 3.375.000
Nationally Procured R&D Services	€ 1.200.000	€ 900.000





- Phase 1 has been duly completed with the definition of the **EUCISE 2020 Requirements** and the identification of the **2 LOTS of the Tender** (WP3 User cooperation (GR), WP4 Requirements Definition (IT)), WP5 Standardisation & IPR definitions (DEU)
- Phase 2 is being implemented through the **development process after the European procurement** - WP6 Development, test and integration (PT)
- Phase 3 started in parallel to organize the Validation and Ex-Post Assessment
 - WP7 Operational Validation (SP)
 - WP8 Assessment and Recommendations (FI)
 - WP10 Standardization, IPR and Governance (DEU)





The EUCISE2020 Services are organized in four classes:

- **Core Services:** services devoted to the implementation of CISE gateways that, accordingly to the Hybrid Vision architecture, are the component that will ensure the connection of each partner, or group of them, to the EUCISE2020 network.
- **Common Services:** devoted to the exploitation of entities within the CISE network following the EUCISE2020 business rules.
- **Advanced Services:** consisting of added value services proposed by each EUCISE2020 community of interest. Member States decide the implementation of advanced services or not.
- **Innovative Services** are optional R&D application services, with TRL (Technology Readiness Level), which are expected to deliver new added value in the maritime surveillance business processes.





LOT1 concerns R&D Services for the Implementation and the pre-operational validation of EUCISE2020 cross-sector and cross-border inter-regional wide network (core, common and advanced services). The scope of work shall include:

- **Final design** of R&D Core, Common and Advanced Services;
- **Development** of R&D Core, Common and Advanced Services;
- **Verification** of R&D Core, Common and Advanced Services **in test-bed environment**;
- **Integration and Verification** of R&D Core, Common and Advanced Services **in the EUCISE2020 participants' environment**;
- **Pre-operational Validation** of R&D Core, Common, Advanced (Lot 1) and Innovative (Lot 2) Services **in the real operational environment** of the above mentioned EUCISE2020 project's partners.





LOT 2 concerns Innovative R&D services for the pre-operational validation of added value services for the maritime surveillance in the EUCISE2020 inter-regional wide network; the services relate to the following domains:

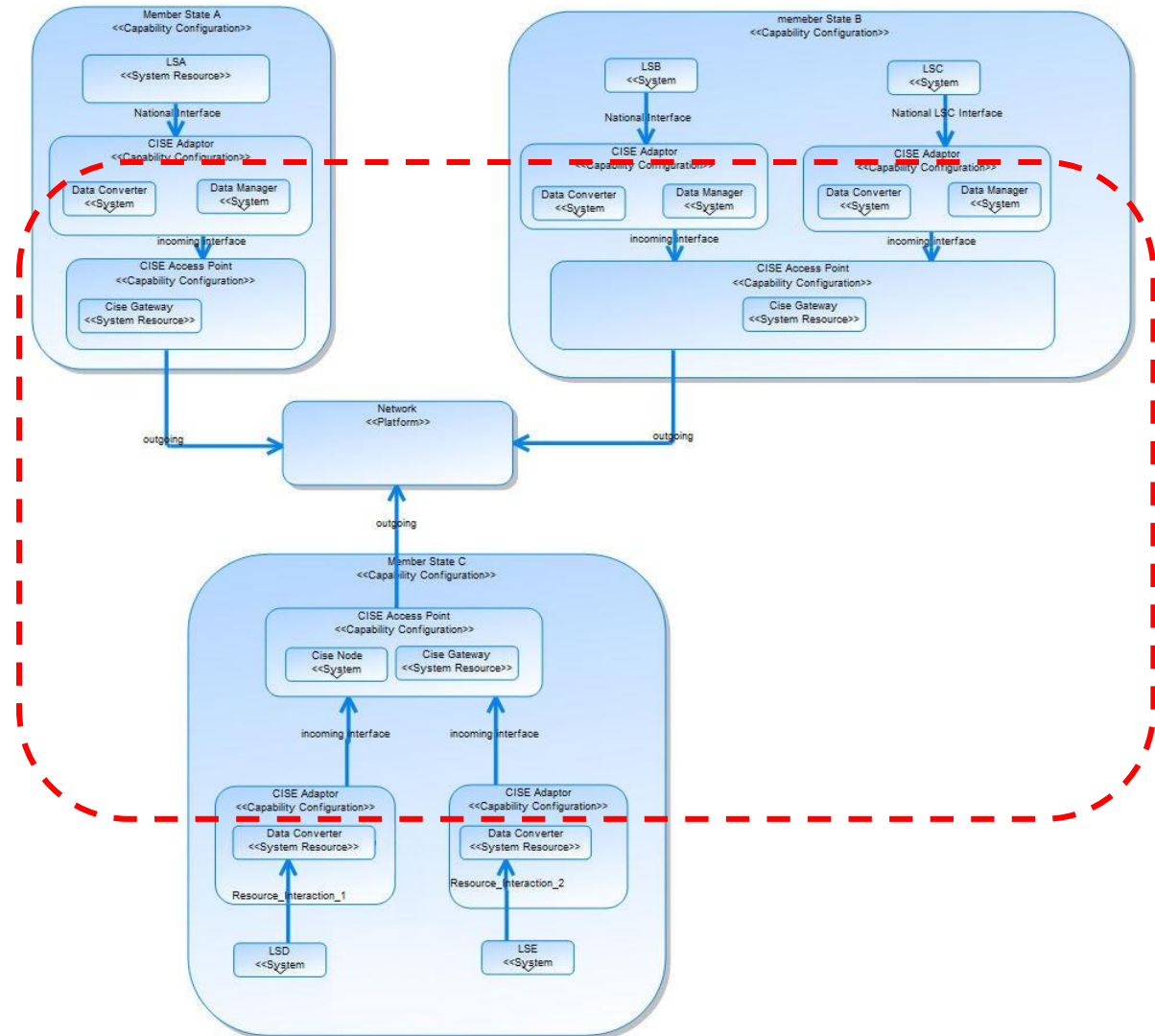
- Big data Analytics
- Entity Fusion
- Mission Planning
- Satellites services for maritime surveillance and
- Communications



Logical Architecture of EUCISE2020 Configurations A, B and C:

A, B and C:

- Inside the red line components developed through the European tender
- Outside the red line interfaces developed through the national procurements





Pre-Operational Validation

Eleven European countries will take part in the validation.

Regarding the configurations chosen:

- six countries with configuration C
- one country with configuration A
- one country with configuration B
- one country expressed an option for a kind of "Hybrid Vision configuration - A merge of Visions A, B and C"
- one country still under decision.

Few partners will connect through a "Light Client".

Each country will connect one or more Legacy Systems to its chosen configuration; so far, the eleven participating countries indicated at least 16 Legacy Systems to connect to the EUCISE2020 network.





EUCISE 2020 and EC expectations

1. Avoid to be tied to the contractor for the **future use and dissemination of the project's results** (and consequently avoid the risk of breaching the obligation under the GA to use and disseminate the project's results)
2. Avoid to undermine the purposes of EUCISE 2020, i.e. **the creation of an effective information sharing environment among European maritime public authorities**
3. Have a technical solution **free of any third parties' rights**, at least on its core and common elements which are essential for its functioning
4. Compatible with the expected **standardisation process** to be launched at the end of the project
5. Preserve the **security interests** involved in the project





Sharing the IPRs between the EUCISE 2020 Consortium and the contractor/s

- As requested by the GA and the WPC 2013, the public validator (the EUCISE 2020 Consortium) should not reserve the R&D results exclusively for its own use in order to ensure that **the conditions for the application of the exemptions laid down in the EU public procurements directive are fulfilled.**
- On the other side, the EUCISE 2020 Consortium and the EC expectations require to **maintain the IPRs at least on the core and common elements** which are essential for the functioning of the system.





Sharing the IPRs between the EUCISE 2020 Consortium and the contractor/s

LOT 1: The IPRs generated under LOT 1 of the Contract which relate to the **Core and Common Services** shall be the property of the EUCISE 2020 Consortium; the IPRs generated under LOT 1 of the Contract which relate to the **Advanced Services** shall be the property of the Contractor (with full licensing obligations).

LOT 2: The **R&D Services** demonstrated under LOT 2 of the Contract shall be the property of the Contractor/s generating it/them.





IPR sharing with DG MARE for interoperability call

In the current interoperability call, DG MARE makes reference to EUCISE2020.

EUCISE2020 was requested to make available documents and software:

- Documents are made available under the same Creative Commons License used for the tender, and under some additional requirement
- Software will be available in November 2017 and the Consortium will decide its sharing policy; WP10 activated a specific sub-group on the subject to analyse the issue and define a draft policy.

The same conditions apply to any new partner interested in joining the Consortium or taking part in the information exchange.





1st Report of the Ethical Advisory Board

Being a Security Research project, the European Commission asked EUCISE2020 to have an independent Ethical Advisory Board to review the deliverables for their compliance with the legislation concerning the information exchange (privacy, fundamental rights, dual use)

The EAB released its first report, raising several questions on the meaning of some critical data of the CISE data model, on the purposes of exchanges and on the **compliance** with international legislation **on Fundamental Rights**.

The issue will be analysed with DG HOME and with JRC, that manages the CISE data model.

The purposes will be defined with agreements among partners during the work of Task 6.6 – Access Rights Coordination





Concept of EUCISE2020 dissemination hub

Purpose: to make available the open data provided by partners managing national C Nodes to partners who do not manage national nodes, to the European Commission, to other European Institutions and, in case, to other maritime authorities of European Member States that do not participate in EUCISE2020.

The national data policy is considered confidential and is not disclosed in full.

Decision Makers can decide to provide entities in Full, Partial or Nil mode, at entity and/or attribute levels of the EUCISE2020 Data Model.





Concept of EUCISE2020 dissemination hub

Which data categories are made available on the EUCISE2020 network:

- Open Data, Unclassified: Data free and available to all partners on a voluntary base; at least data publicly available on the Internet
- Open Data available to User Communities, Unclassified: Data made available to specific User Communities on a voluntary base independently by bilateral or multilateral agreements
- Restricted Unclassified Data available to specific partners (confidential information) of each User Community based on existing bilateral or multilateral agreements. The information will not be disclosed by partners
- EU Restraint Data available to specific partners (confidential information) of each User Community through the EU Restraint channel. The information will not be disclosed by partners





Concept of EUCISE2020 dissemination hub

Mechanism used to make available the data/information:

- A specific dissemination server will manage the credentials of partners/institutions which asked to access the open data
- The open data made available by all EUCISE2020 nodes will be fused in a unique European maritime picture, using the same fusion function developed for the national C nodes
- The data will be accessed in full or in restricted modes, based on the User Community of the requester
- The server will be hosted by one voluntary partner (Satcen? Or other partners willing to host the server)





Plan for CISE Implementation

- EUCISE2020 ends in May/July 2018
- CISE shall be operational by 2020 (assuming September)
- Need to start with the CISE Implementation by February 2018, taking into account recommendations on:
 - Governance
 - IPR
 - Standards
 - Cost factors (operation and maintenance costs; costs for new entrants; costs impacts on current national nodes)





Plan for CISE Implementation

EUCISE2020 Consortium highlight the need to plan its engagement with CISE Implementation, taking into account the goal to have CISE operational by 2020.

On behalf of the Project Consortium, the following points are highlighted:

- The need to maintain operational the information exchange infrastructure between the 11 countries participating in the pre-operative CISE phase after the end of EUCISE2020 (May 2018)
- Definition of infrastructure governance criteria implemented
- Protection of the intellectual property of the partners, who financed the pre-operative phase
- Adherence of CISE Implementation to CISE principles, to which EUCISE2020 conformed; in particular:

Cross-sector and cross-border exchanges of information

Inclusion of all user communities

Civilian military cooperation

Fully decentralized architecture without centralized databases or monitoring functions

Full adherence to functional and technological standards

System to system interoperability





Cost factors at national level

Some preliminary estimate of costs for new entrants.

The figures will be released by December 2017, based on the experience of the activated 11 nodes/gateways and the almost 16 adaptors:

- For each adaptor approx. 50K
- Restraint Channel (SW, HW, VPN, Crypto device, Installation) approx. 300K
- HW node C approx. 60K
- SW node/gateway installation and engineering approx. 40K

