

WORKSHOP:

How to set up an adaptor

Speakers:

Daniele Colasimone, European Maritime Safety Agency (EMSA)

Klemen Omahen, Ministrstvo za Infrastrukturo, Slovenia (Mzi)

Paolo Pagani,
European Telecommunications Standards Institute (ETSI)

Armelle Sommier
French Hydrographic and Oceanographic Service (Shom)

Moderator:
Valerio Pace, Agenzia Spaziale Italiana (ASI)



**11-12 September
2024**



ASI Headquarters
Via del politecnico snc,
00133 Roma (Italia)



HOW TO SET UP AN ADAPTOR

L'océan en référence



Armelle Sommier
armelle.sommier@shom.fr

This project has received funding from the European Maritime, Fisheries and Aquaculture Fund (EMFAF). This document reflects only the author's view and European Climate, Infrastructure and Environment Executive Agency (CINEA) and European Commission cannot be held responsible for any use that may be made of the information it contains.

Summary



CISE ALERT OPERATIONAL TRIALS

SCENARIOS & PARTICIPATING PARTNERS

April – September 2024



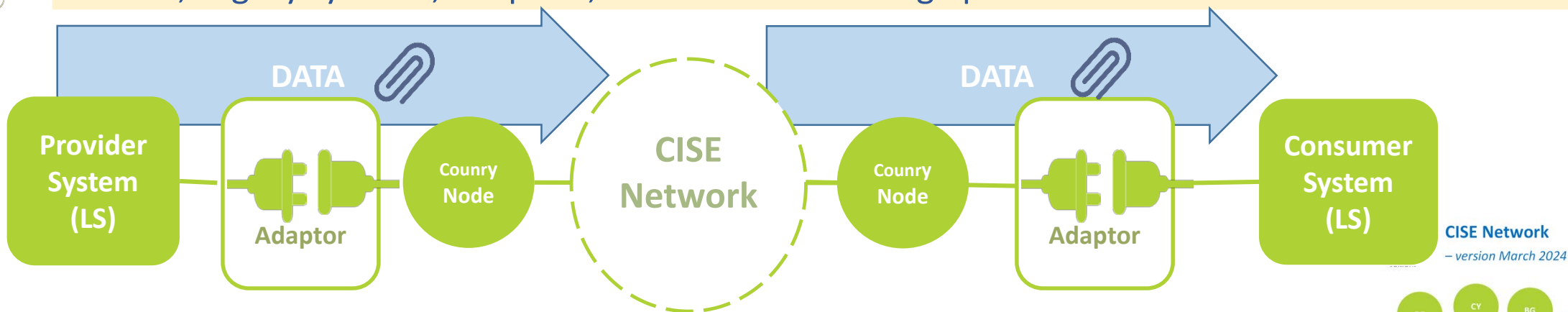
For trials to be conducted:

- Specific steps to join CISE
- fully functional national node
- Implementation of Operational Services in MS authorities systems
- Development and tests of adaptors



How to develop an adaptor

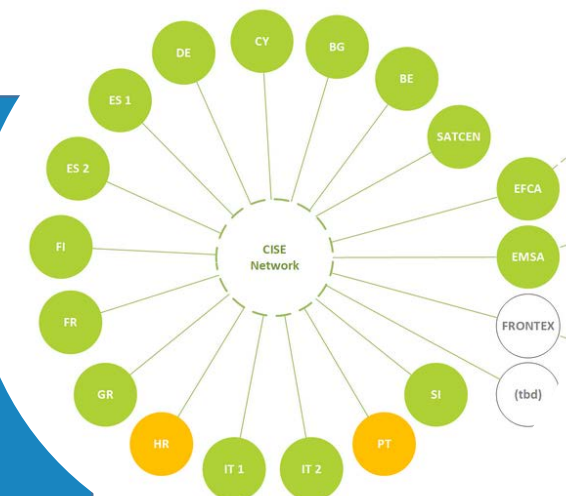
Nodes, Legacy systems, adaptors, services and exchange protocols



CISE Network
– version March 2024

CONFIGURATION OF ADAPTORS WITH CISE SERVICES

- Implementation /configuration of « services » in the adaptor:
 - categories + entities defined in **CISE data model** and **Catalogue**
 - **exchange protocol** (push/pull/subscribe)
- **Compatible Data model entities + exchange protocols required** (push/pull/subscribe) for both provider and consumer adaptors



LEGEND:

CISE Node status:

● Node V2 installed

● In the process to install V2

○ Under preparation



The diagram illustrates the CISE Network architecture. It shows a central 'CISE Network' (dashed circle) connected to 'Country Node' circles. These nodes are linked to 'Adaptor' boxes (plugs) which interface with 'Provider System (LS)' and 'Consumer System (LS)'. Large blue arrows labeled 'DATA' with paperclip icons indicate data flow from the Provider System through the Adaptor and Country Node into the CISE Network, and from the CISE Network through the Country Node and Adaptor to the Consumer System.

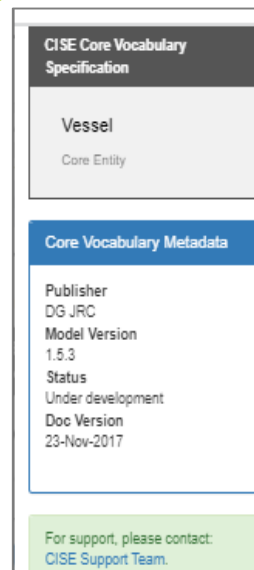


Table of Contents

Model Element
ConditionOfTheCargoAndBallastType
FishingGearType
HullMaterialType
INFCClassType
ISPSecurityLevelType
NavigationalStatusType
SanitaryMeasureType
ShipConfigurationType
Vessel
VesselType

[illegible]

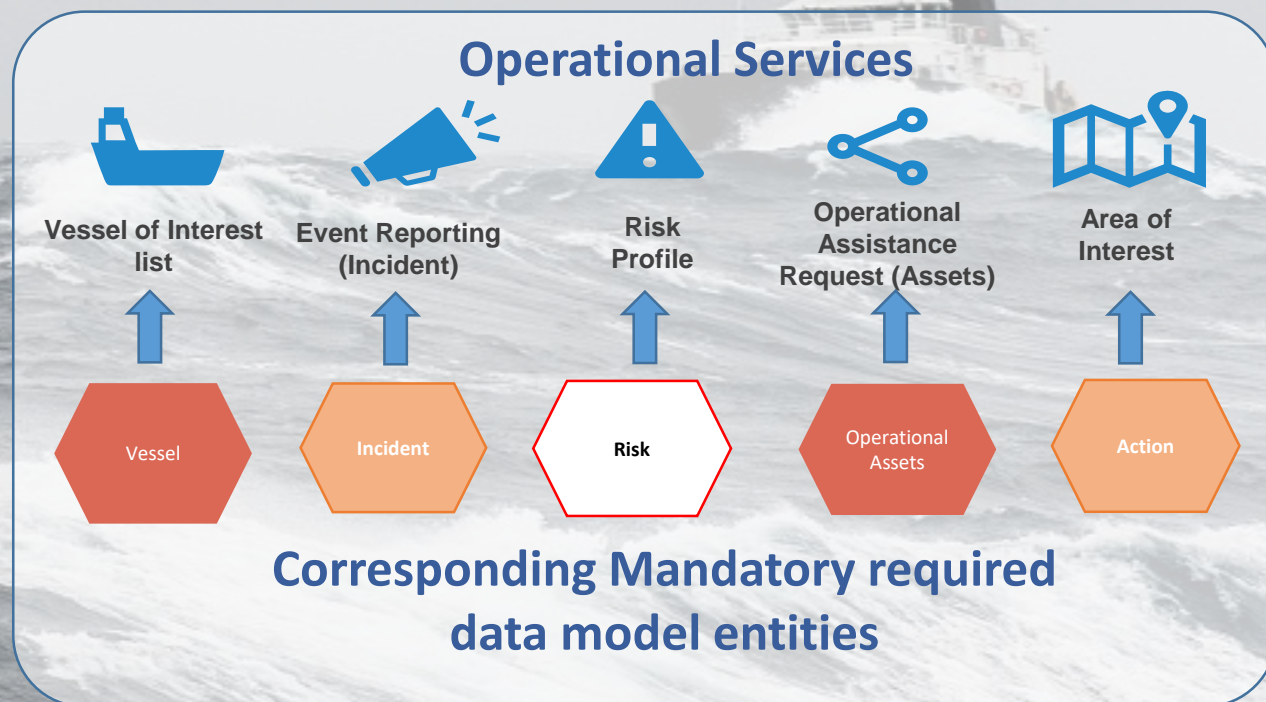


Operational Services

CISE “Operational Services” define how to use CISE services in a specific operational scenario.

They are defined by workflows that comprise one or more CISE services/data model entities. Ex: 2 or more organisations exchanging information about vessels of interest.

- Dedicated to Maritime surveillance
OPERATIONAL authorities and situations
- Implemented in MS systems
- Combine different services
- 1 corresponding mandatory entity from data model





Shom: French Hydrographic Service

Reference data provider



Understand
Description
Forecast
Dissemination

Marine
Physical
Environment

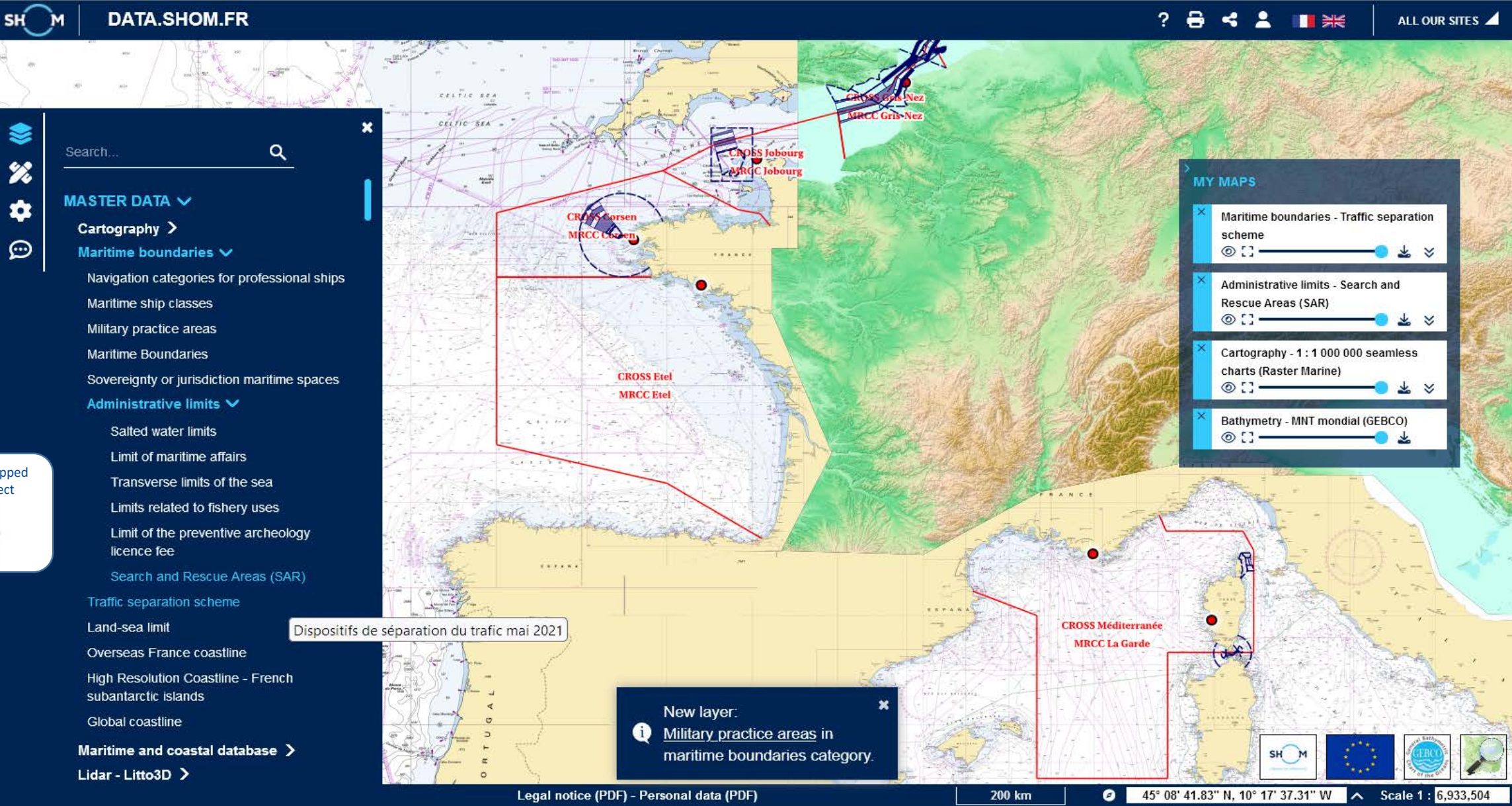
Missions

- Meet surface navigation needs
- Support armed forces
- Support public policies

Role in CISE: data provider only



Adaptor 1 – WMS Adaptor developed by JRC (2022)

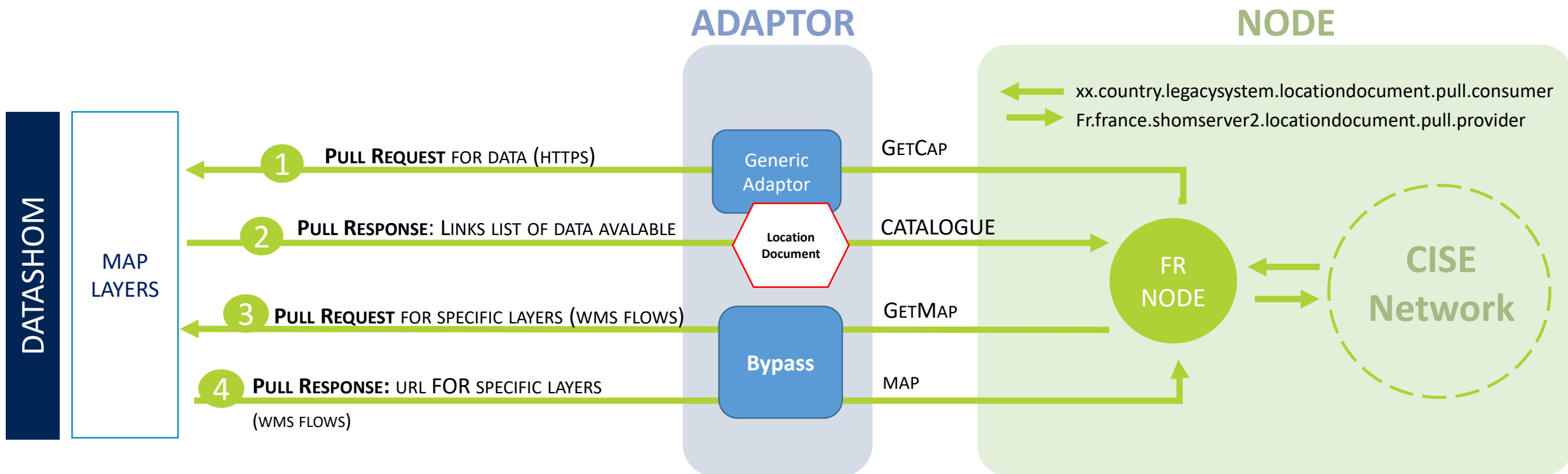




Adaptor 1: WMS adaptor

Protocol and Data model entity. Shom: data provider only => Pull protocol

WHAT ?		HOW?	SERVICE ID in NODE Interface
LS	Info/ Data?	Process	Code/country/LS Name.Protocol.Role





Adaptor 2: Nav Warnings



PING - The national nautical information platform

Sign in



Home | Warnings and notices | Regulations | My subscriptions | My contributions

Data Services

Home > Warnings and notices

Map

Table

Area: Select area



NAVAREA navigational warnings



Coastal navigational warnings

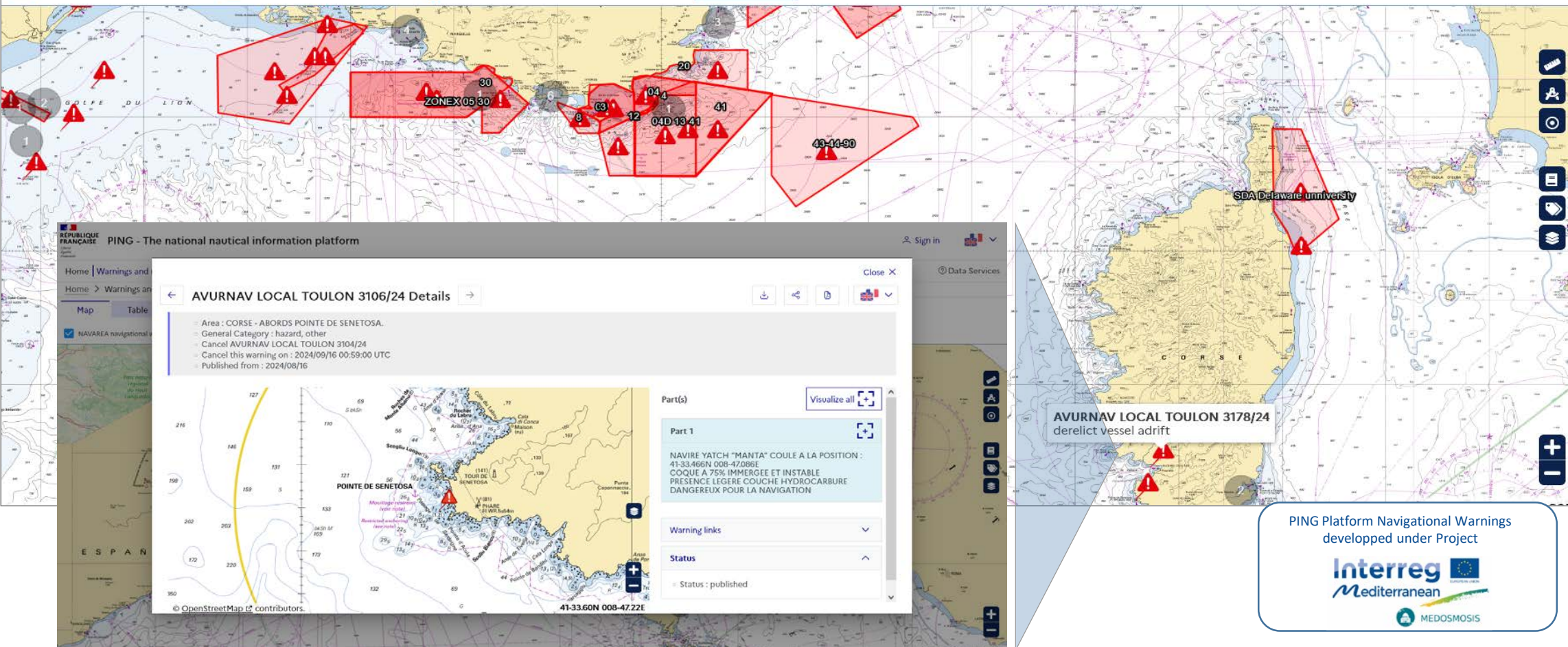


Local navigational warnings



Notices

Other filters



PING Platform Navigational Warnings
developed under Project



Cofinancé par
l'Union européenne



Armelle Sommier | DOPS/PSM/GEO/PEM

Projet CISE ALERT – VIP Days Rome – 12 Sept 2024



Adaptor 2: Nav Warnings

Development Steps

1 What ? For who? Why?

Navigational Warnings for authorities to contribute enhance Maritime Situational awareness authorities

2 Understand CISE

Access to CISE Interface + Study of CISE DATA MODEL

3 Service identification:

Data model Risk entity

4 Validation of protocol

Pull / Provider to respond to a request from an authority

5 Development phase

Outsource. Example provided by EMSA in java.

6 Test at national level

EMSA simulator

7 Test with other EU country

BG and GR : operational Risk Service in Pull Protocol (FR partners implementation ongoing)

8 Improvements

Addition of type of information as per data model (not all fields required)



Understanding CISE

Access and understand exchanges with Node interface

CISE

THIS NODE

- Authorities
- Contact persons
- Participants
- Services
- Access Control Rules
- Logs
- System status
- Accounting

REMOTE NODES

- CISE network
- Authorities
- Contact persons
- Participants
- Services

Administration Console

france nss-adaptor.france.nss-adaptor.eu

PARTICIPANT ADMINISTRATOR
Armelle Sommier (armelle.sommier)

List of Services

Home / Remote Nodes - Services

FILTERS

Service ID Community Service Type Service Role Data Location...
Country Function Service Operation Service Status Data Freshness
Participant ID

CLEAR APPLY

Service ID ↑	Service status	Service type	Service Operation	Service role	Node ID	Participant ID
gr.nodegr.nss-adaptor.action.push.consumer	Online	ActionService	Push	Consumer	gr.nodegr	gr.nodegr.nss-adaptor
gr.nodegr.nss-adaptor.action.push.consumer.aci	Online	ActionService	Push	Consumer	gr.nodegr	gr.nodegr.nss-adaptor
gr.nodegr.nss-adaptor.action.push.provider	Online	ActionService	Push	Provider	gr.nodegr	gr.nodegr.nss-adaptor
gr.nodegr.nss-adaptor.action.push.provider.aci	Online	ActionService	Push	Provider	gr.nodegr	gr.nodegr.nss-adaptor
gr.nodegr.nss-adaptor.action.subscribe.consumer	Online	ActionService	Subscribe	Consumer	gr.nodegr	gr.nodegr.nss-adaptor
gr.nodegr.nss-adaptor.action.subscribe.consumer.aci	Online	ActionService	Subscribe	Consumer	gr.nodegr	gr.nodegr.nss-adaptor
gr.nodegr.nss-adaptor.action.subscribe.provider	Online	ActionService	Subscribe	Provider	gr.nodegr	gr.nodegr.nss-adaptor
gr.nodegr.nss-adaptor.action.subscribe.provider.aci	Online	ActionService	Subscribe	Provider	gr.nodegr	gr.nodegr.nss-adaptor
gr.nodegr.nss-adaptor.agent.feedback.consumer	Online	AgentService	Feedback	Consumer	gr.nodegr	gr.nodegr.nss-adaptor
gr.nodegr.nss-adaptor.agent.pull.consumer	Online	AgentService	Pull	Consumer	gr.nodegr	gr.nodegr.nss-adaptor

Services per page: 10 231 - 240 of 438 < > >>

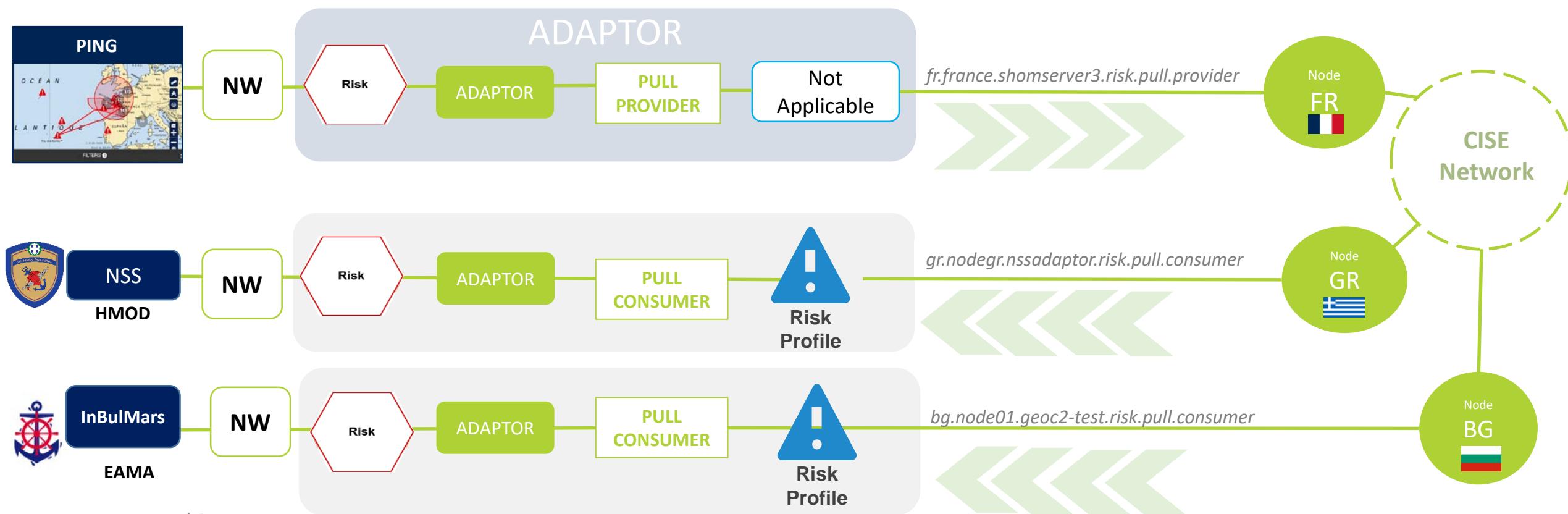
- Data Model Entity (Service)
- Exchange Protocols: Push, Pull, Subscribe
- Role in exchange: Consumer or Provider
- Country Node
- Stakeholder System (LS)



Adaptor 2: Nav Warnings

Data model entity & Protocol

WHAT ?		HOW ?			SERVICE ID IN CISE NODE INTERFACE ?
System ?	Info/ Data ?	Service(s) ?	Protocol & Role ?	Operational Service ?	⇒Service name in CISE Interface: Code/country/LS Name.Protocol.Role





Configuration of adaptator with a Risk object

xml example:

Extract from **Training Booklet** produced by HMOD:



```
<Risk xmlns:ns2="http://www.cise.eu/servicemodel/v1/authority/" xmlns:ns3="http://www.cise.eu/servicemodel/v1/service/"
xmlns:ns4="http://www.cise.eu/servicemodel/v1/message/" xmlns:ns5="http://www.cise.eu/datamodel/v1/entity/location/"
xmlns:ns6="http://www.cise.eu/datamodel/v1/entity/document/" xmlns:ns7="http://www.cise.eu/datamodel/v1/entity/organization/"
xmlns:ns8="http://www.cise.eu/datamodel/v1/entity/incident/">
  <Identifier>
    <GeneratedBy>
      <AlternativeName>SATWAYS</AlternativeName>
      <IdentificationNumber>SATWAYS</IdentificationNumber>
      <LegalName>SATWAYS</LegalName>
      <OrganizationClassification>Governmental</OrganizationClassification>
      <OrganizationPurpose>MarineEnvironment</OrganizationPurpose>
      <OrganizationPurpose>MaritimeSafetyAndSecurity</OrganizationPurpose>
      <OrganizationRole>NonSpecified</OrganizationRole>
    </GeneratedBy>
    <GeneratedIn>2024-03-06T07:52:29.358Z</GeneratedIn>
    <UUID>d57aa869-6df1-445e-997d-a0a2ef8abaf1</UUID>
  </Identifier>
  <Metadata>
    <Description/>
  </Metadata>
  <RiskLevel>High</RiskLevel>
  <RiskProbability>Frequent</RiskProbability>
  <RiskSeverity>Catastrophic</RiskSeverity>
  <RiskType>Accident</RiskType>
  <LocationRel>
    <Location>
      <Geometry>
        <Altitude>0.0</Altitude>
        <Latitude>37.818191984242375</Latitude>
        <Longitude>25.77529907226563</Longitude>
        <WKT>POINT (25.77529907226563 37.818191984242375)</WKT>
      </Geometry>
    </Location>
  </LocationRel>
</Risk>
```

CISE Risk Important Fields

- Identifier
 - GeneratedBy providing the IdentificationNumber
 - UUID
- RiskLevel
- RiskProbability
- RiskSeverity
- RiskType
- OccurencePeriod , UTC Start / End Date
- Location WKT Point Geometry



Configuration of adaptator with a Risk object

Current xml illustration

```
<Risk>
<Identifier>
<UUID>
nw_published_avurnav_toulon_v2_en.fid--6678a655_191be711143_-159e
</UUID>
</Identifier>
<Metadata>
<Abstract>generalarea</Abstract>
<Comments>PROVENCE</Comments>
<Language>eng</Language>
<PublicationDate>2024-09-04T00:00:00.000Z</PublicationDate>
</Metadata>
<OccurrencePeriod>
<Duration>P0Y1M0DT0H0M0S</Duration>
</OccurrencePeriod>
<RiskLevel>NonSpecified</RiskLevel>
<RiskProbability>NonSpecified</RiskProbability>
<RiskSeverity>NonSpecified</RiskSeverity>
<RiskType>Accident</RiskType>
<LocationRel>
<Location>
<Geometry>
<WKT>
POLYGON ((5.500016666775801 42.96668333351419, 5.633350000356742 43.03835000008024, 5.633350000356742 42.666683333136895,
5.500016666775801 42.666683333136895, 5.500016666775801 42.96668333351419))
</WKT>
</Geometry>
</Location>
</LocationRel>
</Risk>
```



Tests with project partners

Logs in CISE French node interface showing activity between GR and FR systems

SEARCH

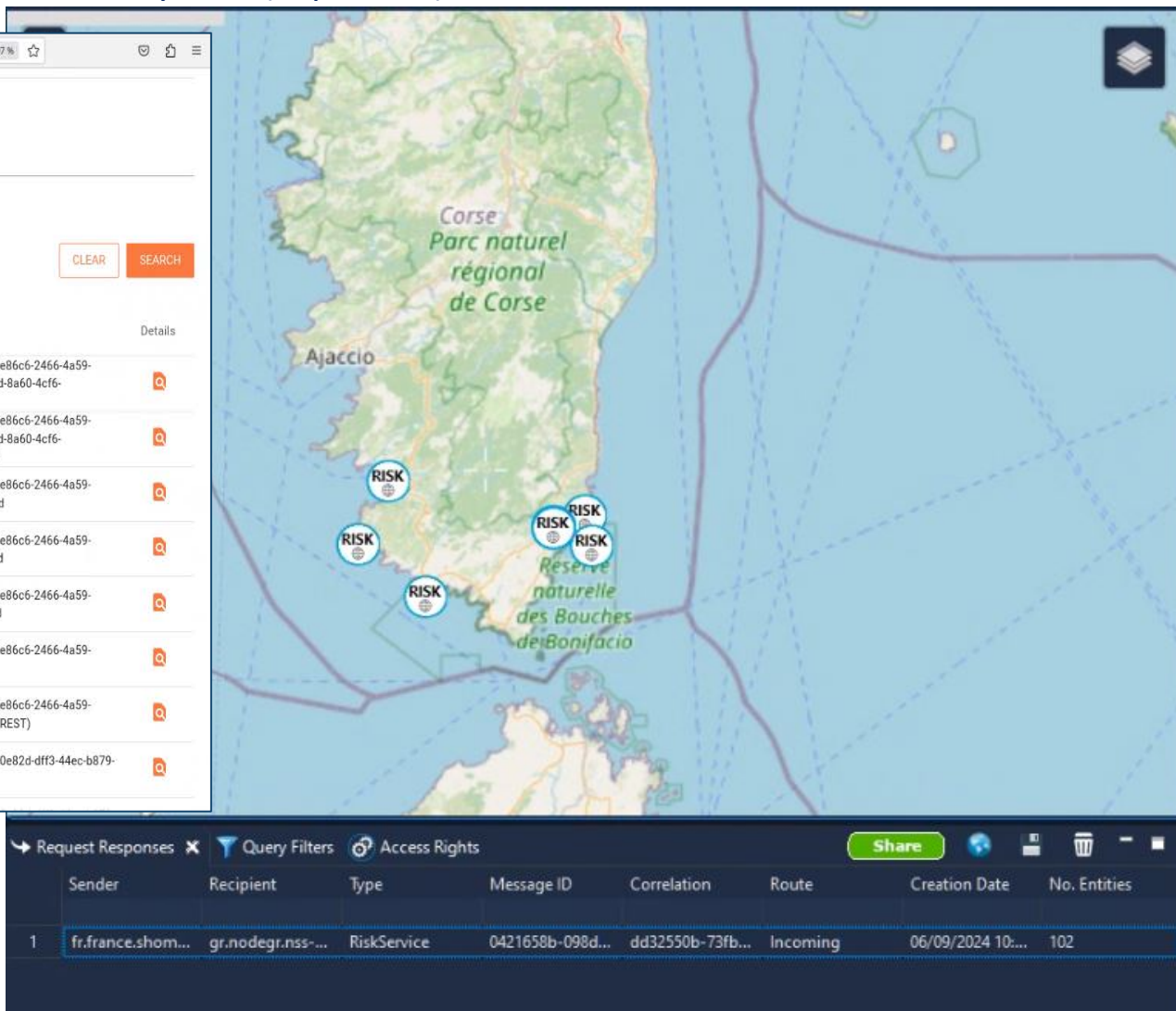
Start date: 05/09/2024 08:48 End date: 05/09/2024 10:48 User: Event Type...

Service ID: Element:

CLEAR SEARCH

Timestamp ↓	Service ID	User	Element	Event Type	Description	Details
05/09/2024 10:11 CEST	fr.france.shomserver3.risk.pull.provider/gr.nodegr.nss-adaptor.risk.pull.consumer	system	message	message_sent	Message with MessageID: 5b8e86c6-2466-4a59-b226-70309baf4264_03953b0d-8a60-4cf6-aeae-4718fcbd310b sent	
05/09/2024 10:11 CEST	fr.france.shomserver3.risk.pull.provider/gr.nodegr.nss-adaptor.risk.pull.consumer	system	message	message_to_be_sent	Message with MessageID: 5b8e86c6-2466-4a59-b226-70309baf4264_03953b0d-8a60-4cf6-aeae-4718fcbd310b to be sent	
05/09/2024 10:11 CEST	fr.france.shomserver3.risk.pull.provider/gr.nodegr.nss-adaptor.risk.pull.consumer	system	message	message_authorized	Message with MessageID: 5b8e86c6-2466-4a59-b226-70309baf4264 authorized	
05/09/2024 10:11 CEST	fr.france.shomserver3.risk.pull.provider/gr.nodegr.nss-adaptor.risk.pull.consumer	system	message	message_addressed	Message with MessageID: 5b8e86c6-2466-4a59-b226-70309baf4264 addressed	
05/09/2024 10:11 CEST	fr.france.shomserver3.risk.pull.provider/gr.nodegr.nss-adaptor.risk.pull.consumer	system	message	message_prioritised	Message with MessageID: 5b8e86c6-2466-4a59-b226-70309baf4264 prioritised	
05/09/2024 10:11 CEST	fr.france.shomserver3.risk.pull.provider/gr.nodegr.nss-adaptor.risk.pull.consumer	system	message	message_verified	Message with MessageID: 5b8e86c6-2466-4a59-b226-70309baf4264 verified	
05/09/2024 10:11 CEST	fr.france.shomserver3.risk.pull.provider/gr.nodegr.nss-adaptor.risk.pull.consumer	system	message	message_received	Message with MessageID: 5b8e86c6-2466-4a59-b226-70309baf4264 received (REST)	
05/09/2024 10:11 CEST	fr.france.shomserver3.risk.pull.provider/gr.nodegr.nss-adaptor.risk.pull.consumer	system	message	message_sent	Message with MessageID: 8290e82d-dff3-44ec-b879-a3627d761d8b sent	

Navigational Warnings from PING displayed in HMOD system (Sept 2024)





Challenges:

- Node fully operational and connected is key
- Time and resources need to be allocated for full understanding of environment, data model and notion of Services
- Combined understanding of both field operational needs and technical requirements is mandatory.
- Implementation of same attributes necessary for full interoperability

Recommendations:

- **EMSA Tools:** CISE CATALOGUE, Wiki...
 - CISE Alert Training booklet (by HMOD) available with illustrated examples for each step
 - Refer to existing available xml examples
 - Anticipation of evolution of data model to comply with standards in place or up-coming.
- Ex: Navigational Warnings: S124 based on guidelines set in the joint IHO/IMO/WMO Manual on Maritime Safety Information (MSI) which will be at term used on ECDIS onboard vessels



CISE-ALERT

CISE's operationalization launch through A Long
Endurance and Real live Test

Thank you !

