Maritime Spatial Data Service

Why standards help to increase the quality of the operational services

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EMSA

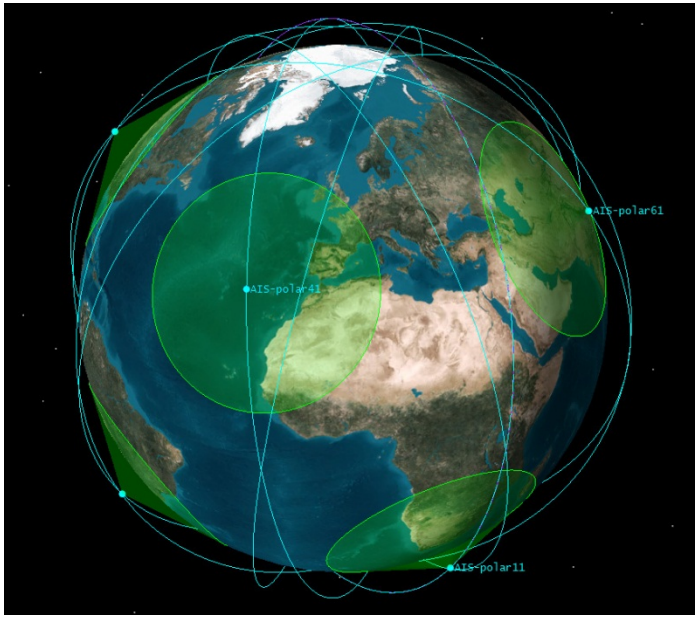
Topics

Introduction to European Maritime Safety Agency (EMSA)

CleanSeaNet (CSN) - > Maritime Earth Observation System

What are the challenges to create a near real time operational Maritime Spatial Data Service? How to address the challanges

Q&A



Background:

Post *Erika* (2002: EMSA established, set-up started 2003)

Legal basis:

- Regulation 1406/2002/EC

- Regulatory Agency of the European Community

- Own legal identity

- Technical and operational support to EC and MS

- Approximate 200 staff

- Annual budget about 60 MEURO

CleanSeaNet (CSN) – Earth Observation Maritime Service

Legal framework is provided by Directive 2005/35/EC on ship sourced pollution

– European system for detecting oil slicks

– System that interoperate with national/regional response chain (aerial/naval surveillance)

– Identification of potential polluters and provide analysis capabilities

–CleanSeaNet (CSN) versions

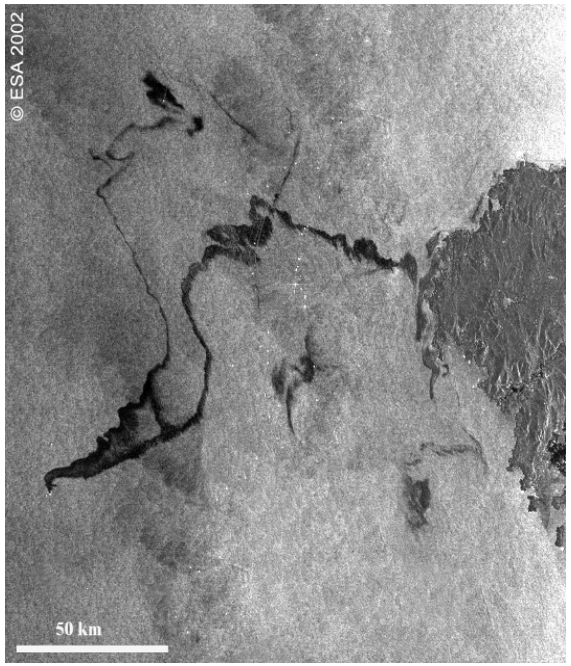
– CSN v1.0 operational Apr. 2007

– CSN v2.0 operational Feb. 2011

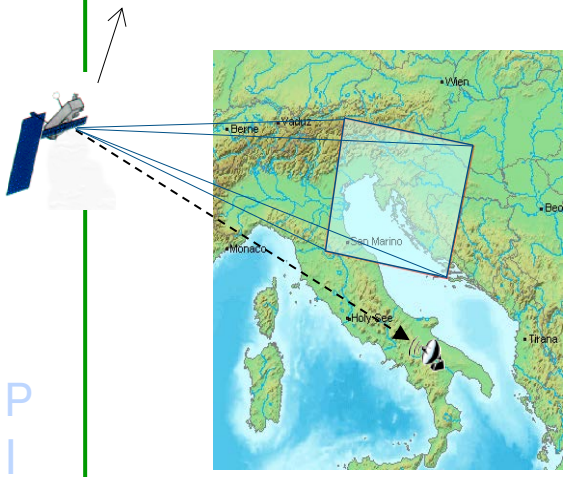
–Users

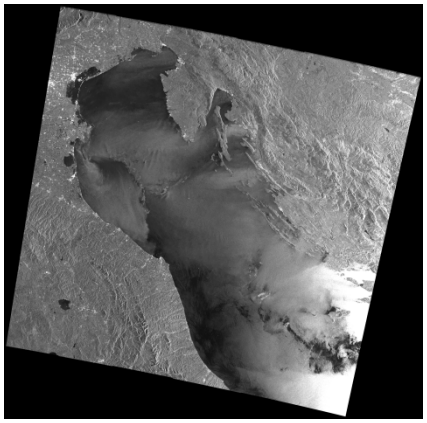
– 28 EU + EFTA Coastal States

– Approximately 500 users



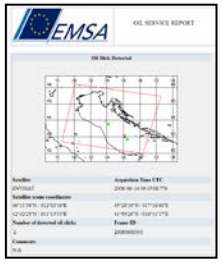
Enterprise viewpoint – use case





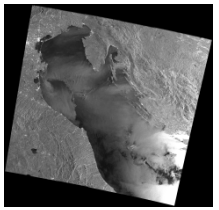
Phone and email alert

Oil Service Report



Image

(LR, HR)



Ancillary data

Planning

Ordering, Acquisition and Processing

Oil Spill Analysis

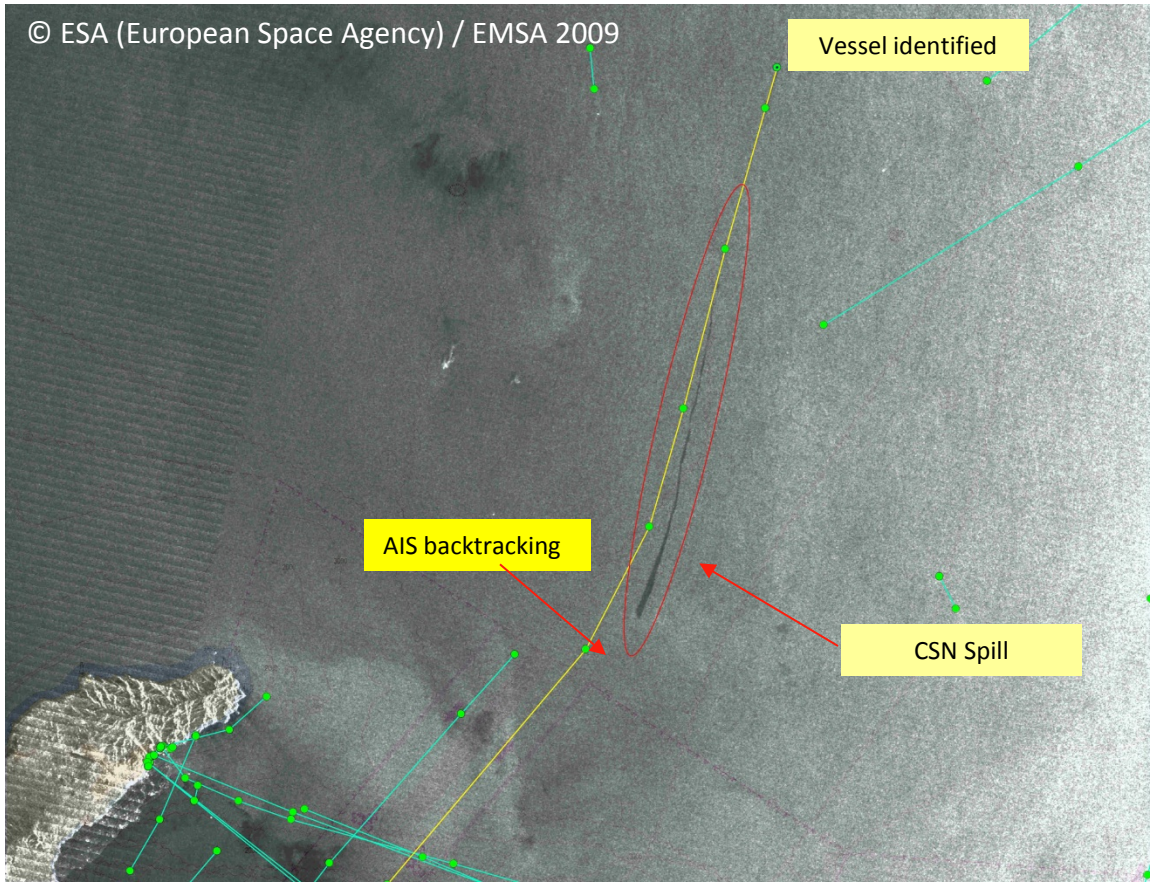
Alert & Product Delivery (Web Browser, EMSA)

Feedback

T0 = End of scene acquisition

T = T0 + 30 min

Oil Spill polluter

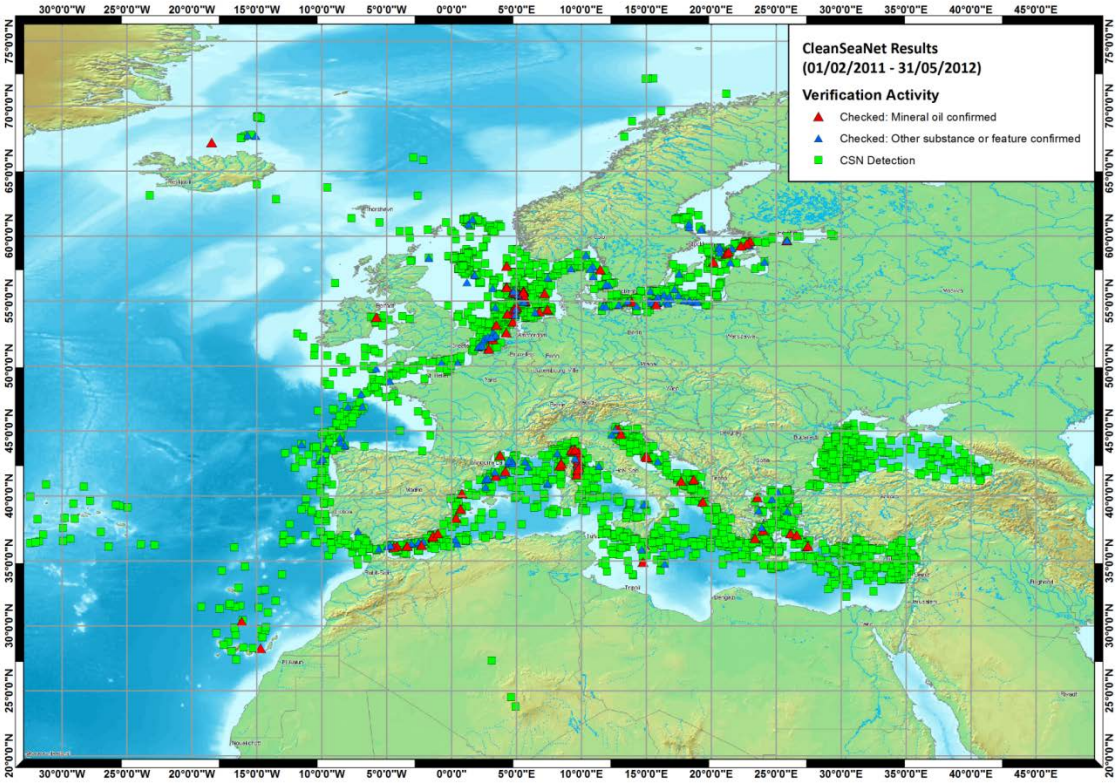


ENVISAT image acquired over the Canary Islands on 15 September 2009 by the Azores ground station

possible spill reported by CSN and confirmed by aircraft as being mineral oil - 42 km long

polluter identified using AIS information

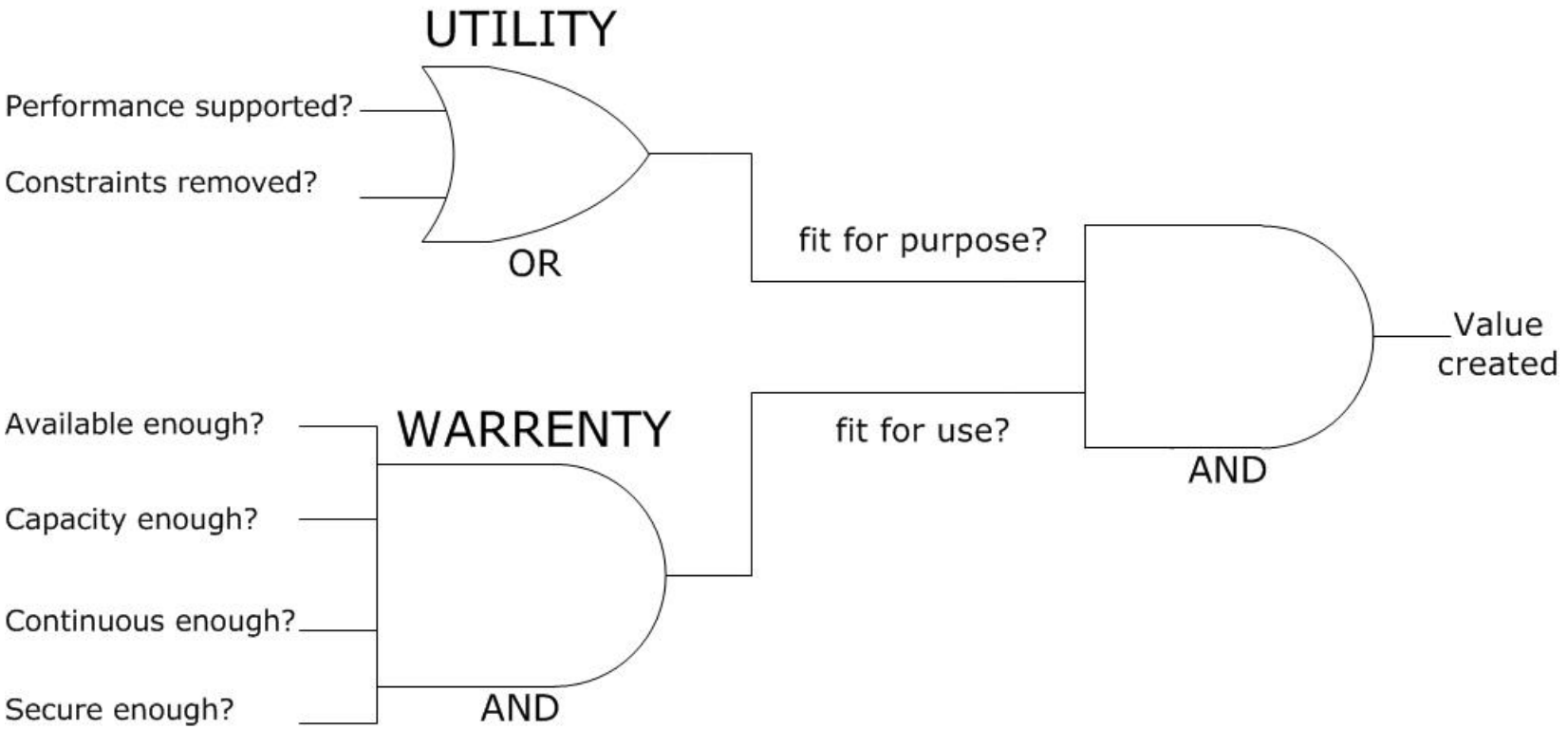
Oil Spill detection



7 satellite images per day
5 oil spills per day

What does service mean?

A SERVICE is a mean of delivering value to customers by facilitating outcomes customers without the ownership of specific costs and risks (ITIL)



Interoperability for CSN

For CSN, as many operational emergency services, taking the right decision at the right time, means to analyse all the relevant information when some predefined event is detected (e.g. an Oil Spill) and trigger a set of actions

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1. CSN acquires and process huge variety of data sources
2. CSN is a near real time service with demanding performance
3. CSN process a quite huge volume of data every day
4. CSN involves many users form different countries and organizations
5. CSN enables the exchange of information among its users (technical and semantic interoperability)
6. CSN is a Maritime Service which belongs to different themes: safety, environment, security

Architecture principles

INTEROPERABILITY based on standards as key driver for:

- Fit the EU policies requirements;

- Increase the RE-USABILITY of the EMSA maritime services avoiding to tailor the services or clients for each use case;

- Exchange CROSS-SECTOR information among EU Institutions and MS;

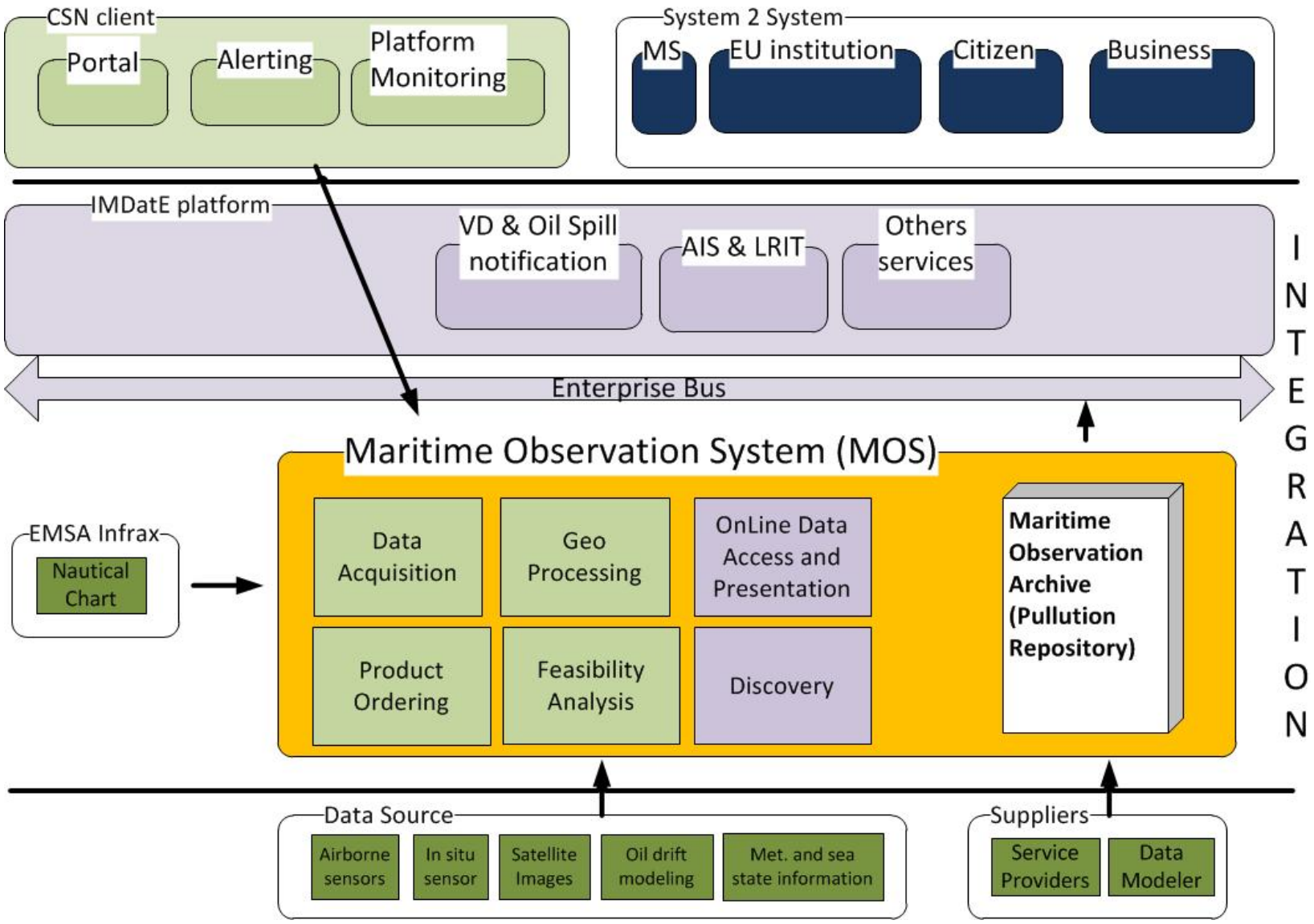
- Seamlessly acquire NEW DATASET;

- Streamline the continuous IMPROVEMENT of the standard services without having to bear the ownership of the costs;

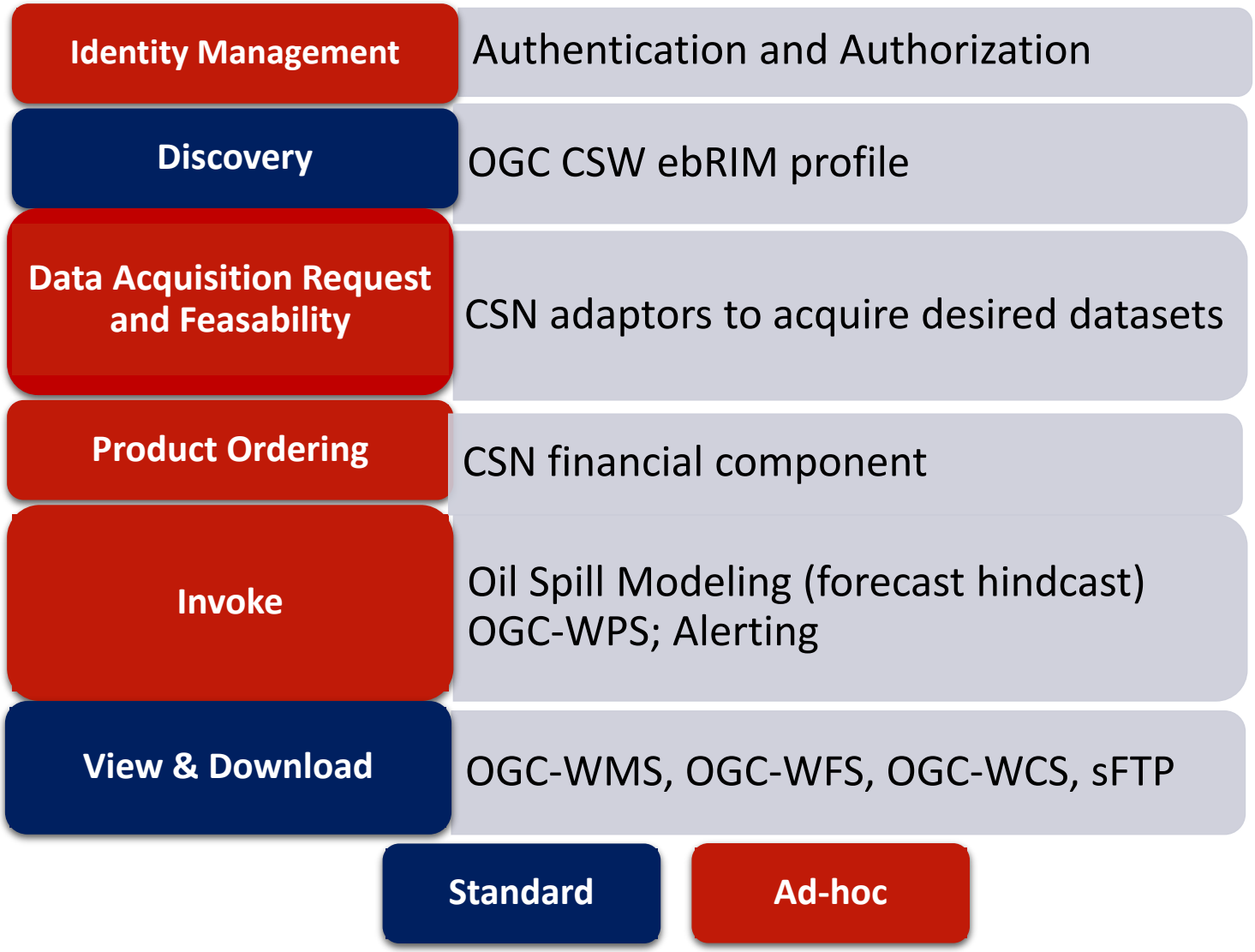
- Increase the efficiency to MAINTAN the standard services due to the fact that they are deployed in many environments less prone to fail than ad-hoc implementations;

- Avoid CONTRACTOR'S DEPENDENCY and promote competitiveness.

Maritime Earth Observation Service



Computational viewpoints



Information viewpoint

CSN implements syntactic interoperability: The CSNDC information exchange mechanism is based on Geographic Markup Language (GML - ISO 19136)

Earth **O**bservation **P**roduct	• SAR and Optical Satellite Image
Oil **S**pill **W**arning	• “Early” Warning
Oil **S**pill **N**otification	• Oil spill data
Quality **NO**tification	• Image Displacement
SAR **DER**ived Data	• Wind, Waves, Detected Vessels
Quality **R**eport	• Quality indicators

Standard **Ad-hoc**

Interoperability challenges

- Very slow legal and standardization process “we cannot wait”
- Technological providers protect the business with proprietary solution
- Interdependencies among organizations for release management
- Heterogeneity LESS issues data format MORE issues with data quality (scale, accuracy, timing)
- New devices with specific requirements increase the complexity of the eco systems (mobile/tablet)
- Access and Right management
- Error Management always lower estimated
- Standard vs Performance

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