Progetto CADEAU

Prodotti e servizi derivati da MARINE COPERNICUS a supporto delle Direttive Europee per l'ambiente costiero Tecnici e stakeholder a confronto

L'importanza dei prodotti downstream per USER FORUM COPERNICUS (Bernardo De Bernardinis)

5 Giugno 2018, Venezia,
Palazzo Querini Stampalia, Campo Santa Maria Formosa, Castello 5252

Copernicus objectives

The objective of Copernicus should be to provide accurate and reliable information in the field of the environment and security , **tailored to the needs of users and supporting other Union policies**, in particular relating to the internal market, transport, environment, energy, civil protection and civil security, cooperation with third countries and humanitarian aid

In order to attain its objectives, **Copernicus should ensure an autonomous Union capacity for spaceborne observations and provide operational services** in the field of the environment, civil protection and civil security, fully respecting national mandates on official warnings. It should also make use of the available contributing missions and in situ data provided mainly by the Member States. **To the greatest extent possible, Copernicus should make use of capacities for spaceborne observations and services of Member States**. Copernicus should also **make use of the capacities of commercial initiatives in Europe, thereby also contributing to the development of a viable commercial space sector in Europe**. In addition, systems to optimise the transmission of data should be promoted to further enhance capabilities in response to growing user demand for near real-time data

REGULATION (EU) N.377/2014.

Copernicus Committee and User Forum

Since **Copernicus is user driven**, it requires the continuous, effective involvement of users, particularly regarding the definition and validation of service requirements.

In order to increase the value of users, their input should be actively sought through regular consultation with end-users from the public and private sectors. For that purpose, a working group (the 'User Forum') should be set up to assist the Copernicus Committee with the identification of user requirements, the verification of service compliance and the coordination of public sector users.

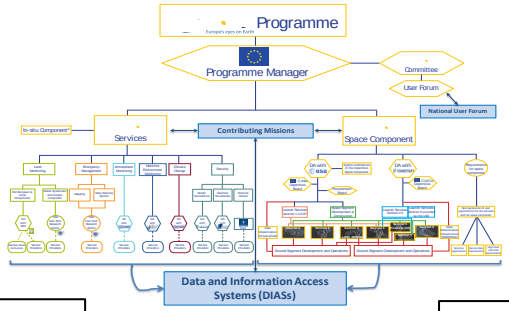
Article 30

Committee procedure

1. The Commission shall be assisted by a committee (the Copernicus Committee). That committee shall be a committee within the meaning of Regulation (EU) No 182/2011. …
2. **The Copernicus Committee shall set up the 'User Forum', as a working group to advise the Copernicus Committee on user requirements aspects, in accordance with its rules of procedure**.
3. and 4. …
5. Representatives of the entities to whom tasks of Copernicus are entrusted shall be involved, where appropriate, as observers in the work of the Copernicus Committee under the conditions laid down in its rules of procedure.
6. and 7. …

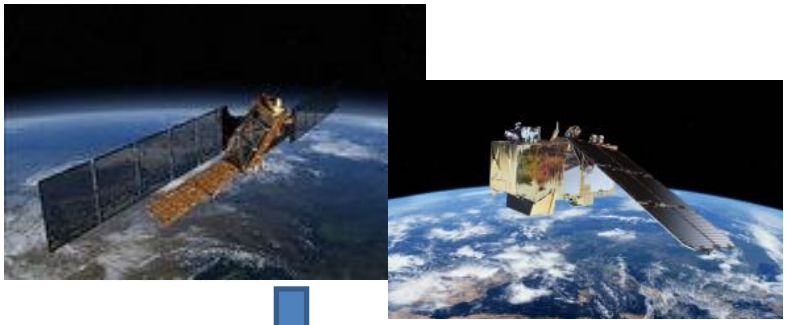
REGULATION (EU) N.377/2014.

The Copernicus Space & Services Components

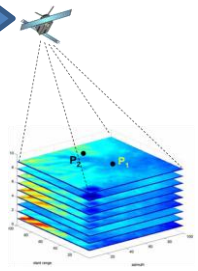


… the Contribuiting Missions: CSK National Constellation …

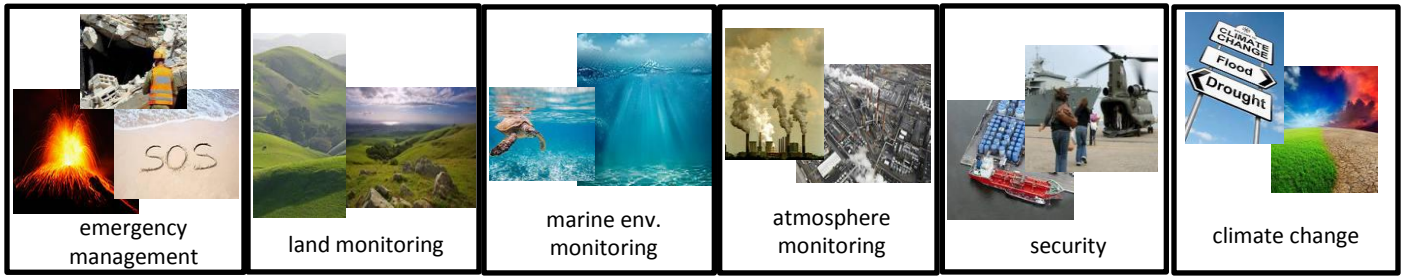
… the Sentinels Copernicus Constellation …



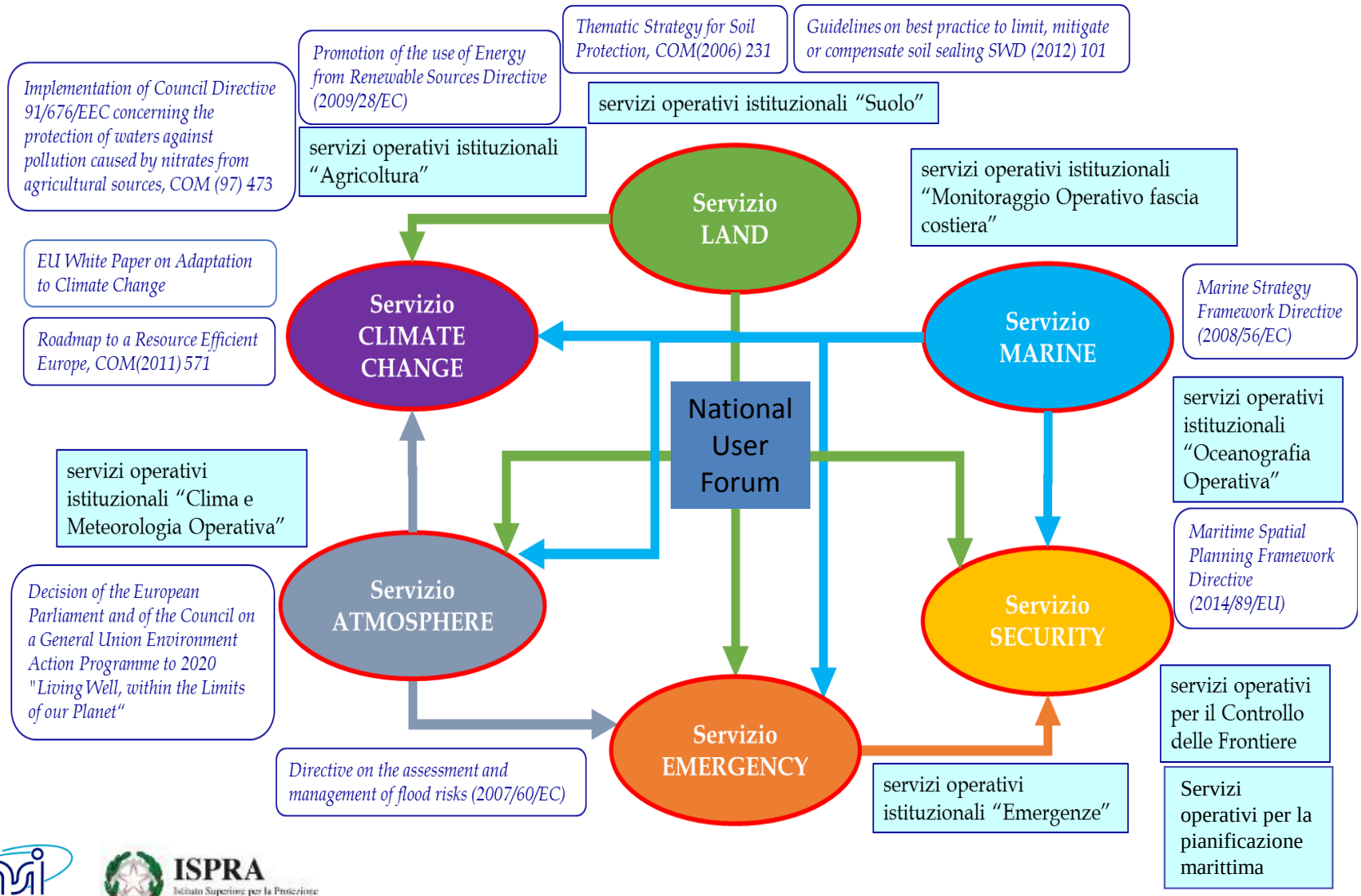
… National "Core Services" …



… Copernicus "Core Services" ….



Copernicus Core Services to support the National Implementation of several EU Environmental Framework Directives



agenzia spaziale italiana

ISPRA
Istituto Superiore per la Protezione e la Ricerca Ambientale

… Policies and application domains …

European Policies	Application domains
Common Agricultural Policy (CAP)	Agricolture/Food security
Nitrates European Directive (91/676/EEC)	
Habitats Directive (92/43/EEC)	
Birds Directive (2009/147/EC)	
Water Framework Directive (2000/60/EC)	Inland/coastal water and environment
Floods Directive (2007/60/EC)	
Marine Strategy Framework Directive (2008/56/EC)	
Bathing Water Directive (2006/7/EC)	
Maritime Spatial Planning Directive (2014/89/EU)	
Strategic Environmental Assessment Directive (2001/42/EC)	
Directive urban waste water treatment (91/271/EEC)	
Habitats Directive (92/43/EEC)	Ecosystem structure/composition
Birds Directive (2009/147/EC)	
Animal By-products Regulation (1069/2009/EU)	
Ambient air quality and cleaner air Directive (2004/107/EC AND 2008/50/EC)	Air quality
The General Conference of the United Nations Educational, Scientific and Cultural Organization meeting in Paris from 17 October to 21 November 1972	Cultural heritage
Raw Materials Initiative [COM(2008)699]	Raw Materials
Restrictions on the marketing and use of certain dangerous substances and preparations (asbestos) [1999/77/CE]	Natural and man-made hazards
Floods Directive (2007/60/EC)	
Water Framework Directive (2000/60/EC)	
Thematic strategy for soil protection [COM(2006)231]	
Waste Directive (2008/98/EC)	Urban area management
National Urban Directives	
Identification and monitoring of national protected areas	

… Copernicus Core Services and the Application domains …

Copernicus Application Domain	Related Copernicus Service(s)	Link
Agriculture, Forestry and Fisheries		http://www.copernicus.eu/main/agriculture-forestry-and-fisheries
Biodiversity and Environmental Protection		http://www.copernicus.eu/main/biodiversity-and-environmental-protection
Climate and Energy		http://www.copernicus.eu/main/climate-and-energy
Civil Protection and Humanitarian Aid		http://www.copernicus.eu/main/civil-protection-and-humanitarian-aid
Pulic Health		http://www.copernicus.eu/main/public-health
Tourism		http://www.copernicus.eu/main/tourism
Transport and Safety		http://www.copernicus.eu/main/transport-and-safety
Urban and Regional Planning		http://www.copernicus.eu/main/urban-and-regional-planning

Legend

 Copernicus Marine Environment Monitoring Service (CMEMS)  Copernicus Land Monitoring Service (CLMS)
 Copernicus Climate Change Service (C3S)  Copenricus Emergency Managament Service (CEMS)
 Copenricus Security Service (CSS)  Copernicus Atmosphere Monitoring Service (CAMS)

Copernicus Users Comunities

Article 3
Definitions

For the purposes of this Regulation the following definitions apply:

… … …

(9) '**Copernicus users**' means:

(a) Copernicus core users: Union institutions and bodies, European, national, regional or local authorities entrusted with the definition, implementation, enforcement or monitoring of a public service or policy in the areas referred to in point (a) of Article 2(2);

(b) research users: universities or any other research and education organisations;

(c) commercial and private users;

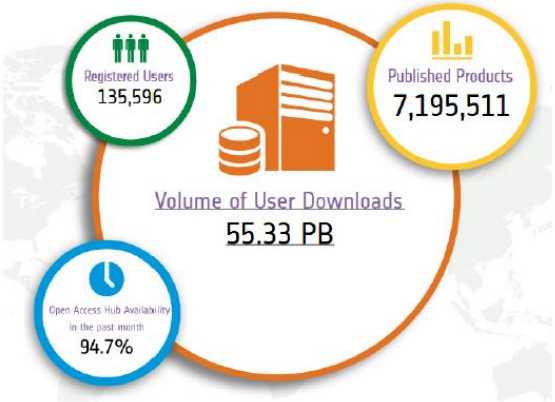
(d) charities, non-governmental organisations and international organisations …

REGULATION (EU) N.377/2014.

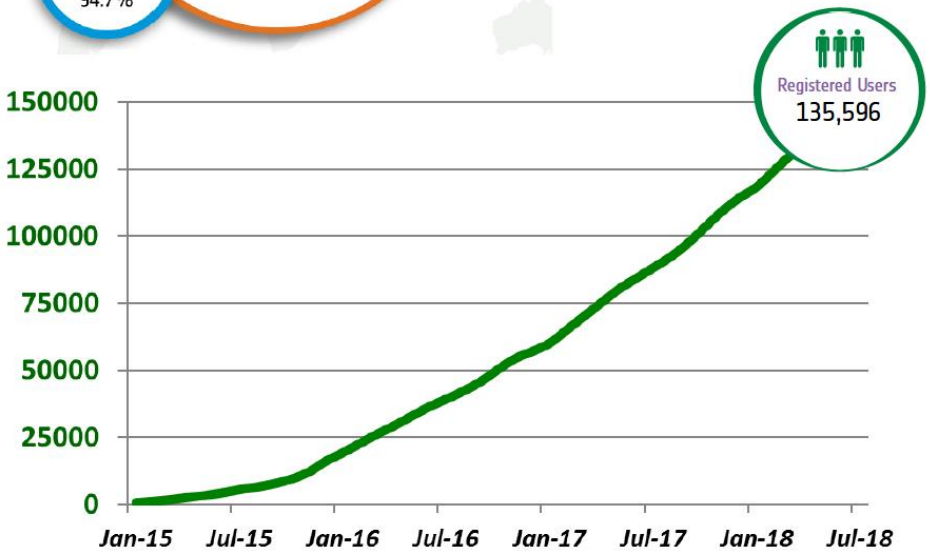
… Copernicus Sentinels Data Access: Users & Downloads…

Data Access

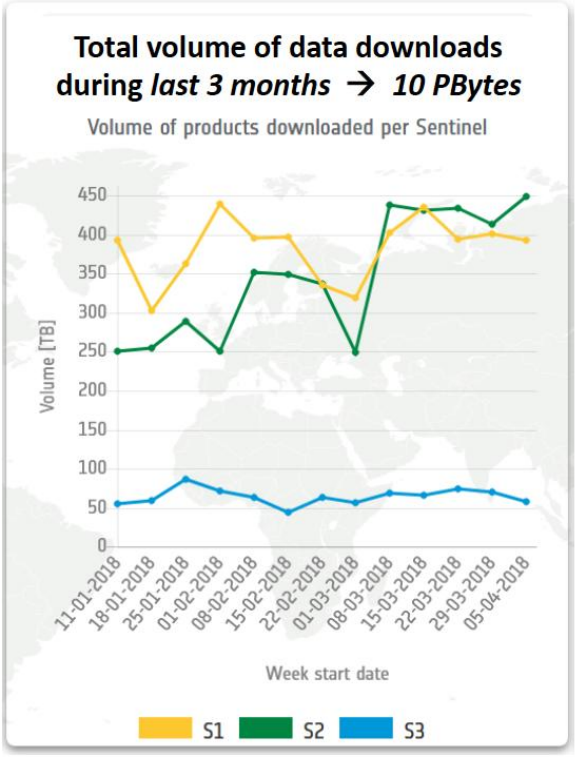
Sentinels Data Access at ESA - Statistics



Statistics at mid-April 2018



Total volume of data downloads during *last 3 months* → *10 PBytes*



… Copernicus Sentinels Data Access: Users & Downloads…

Data Access

Sentinels Data Access – Open Access Hub

Distribution of active users on ESA Open Access Hub (i.e. downloading data) during *last 3 months*

		Active Users	
Europe		7,864	46 %
Asia		3,833	23 %
North America		2,070	12 %
South America and Antarctica		2,235	13 %
Africa		736	4 %
Oceania		324	2 %

Statistics at mid-April 2018

Statistics of ESA Open Access Hub do not include active users <u>downloading</u> Sentinel data through :

- ***Eumetsat (Sentinel-3)***
- ***Partners within national collaborative ground segment (in Europe)***
- ***Partners within international ground segment (e.g. US or Australia)***

Statistics of ESA Open Access Hub do not include active users <u>using</u> Sentinel data (without downloading products) through image visualisation and handling tools:

- ***"EO Browser"*** *(see next slide)*

Copernicus Europe's eyes on Earth

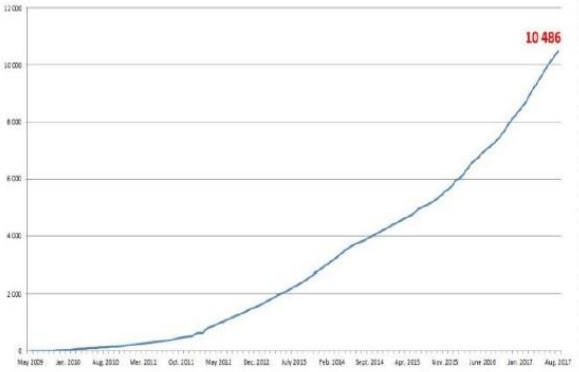
European Commission

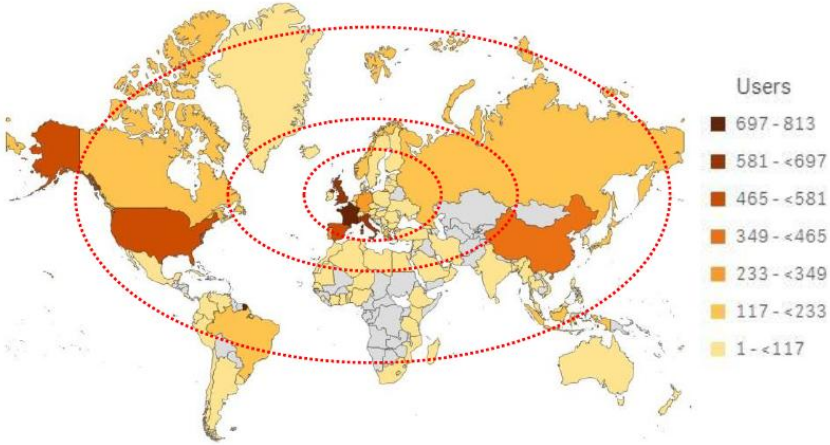
… Copernicus Marine Environment Monitoring Core Services: Users & Downloads…

Marine Monitoring

A CONSTANT GROWTH OF SUBSCRIBERS

More than 10 000 subscribers (~ + 200 new subscribers/month)





Downloads (2017) : 290 000+
Downloaded Volume (2017) : 371 Tb,
User satisfaction (2017) : 4,7/5

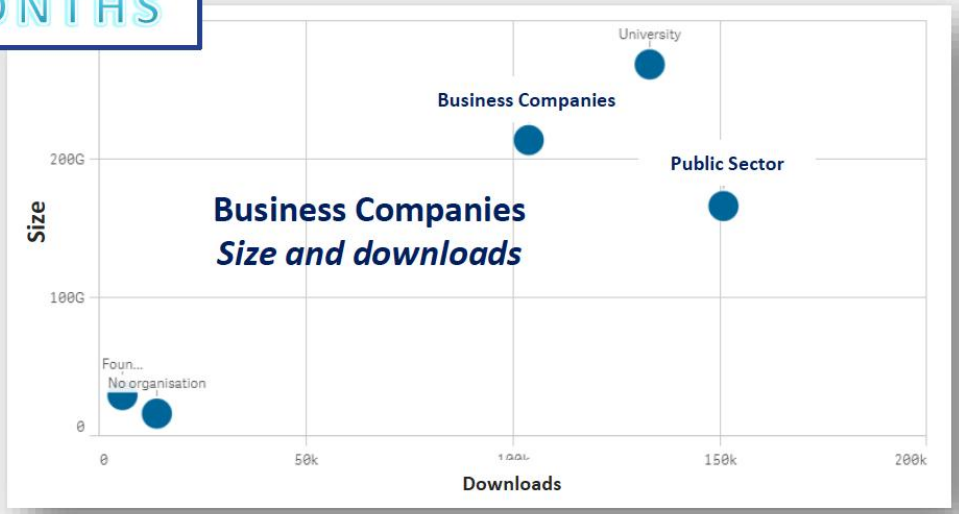
… Copernicus Marine Environment Monitoring Core Services: Users & Downloads…

Marine Monitoring

Uptake of products

12 LAST MONTHS

- 12 650 Subscribers
- 2800 Different Entities among which 1000 Business Companies
- Downloads/month: 35 000
  Download = Pair User/Dataset per Day
- Volume/month: 58 Tb
- 98% products on time
- Satisfaction of Users: 4,7/5



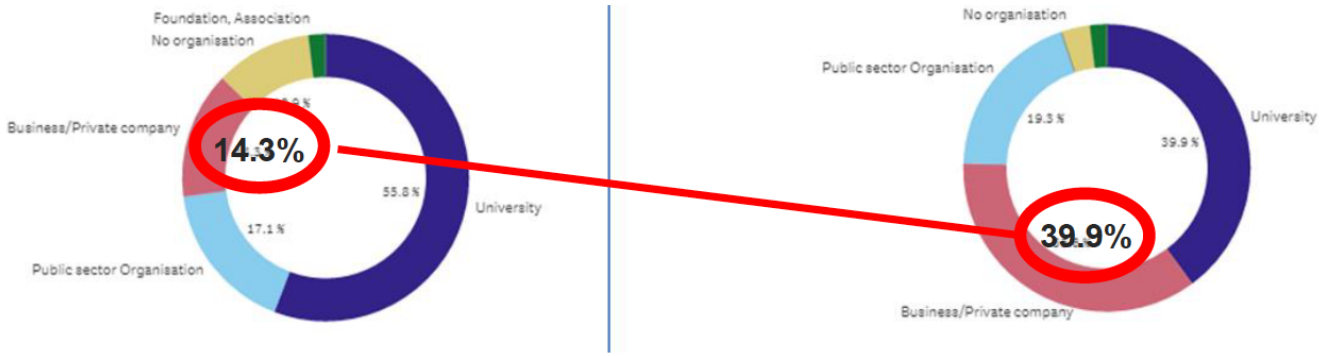
Business + Public Sectors:

- + 150TB in 1 year
- 55% of the total CMEMS downloaded volume

… Copernicus Marine Environment Monitoring Core Services: Users & Downloads…

Marine Monitoring

BUSINESS/ INDICATORS (Ytd JULY 2017)



RATE : Number of users

RATE : Percentage of DATA Volume Downloaded

Focusing on the number of users in the business sector is not enough for illustrating market development :

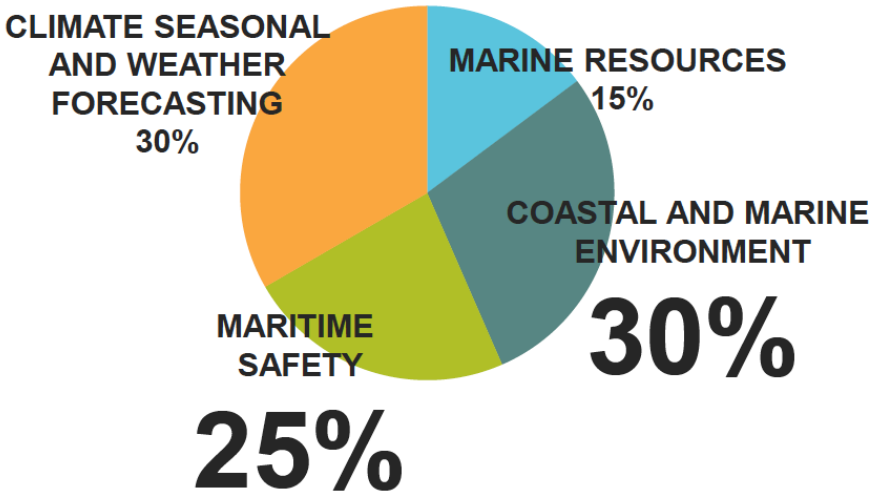
- ❑ Business **users are more active / regular in use** than any other users
- ❑ They **download more volume** than other users (service relevancy)
- ❑ Their immediate interest in **WAVES PRODUCTS illustrate the relevancy of the product in their operational chains.**

… Copernicus Marine Environment Monitoring Core Services: Users & Downloads…

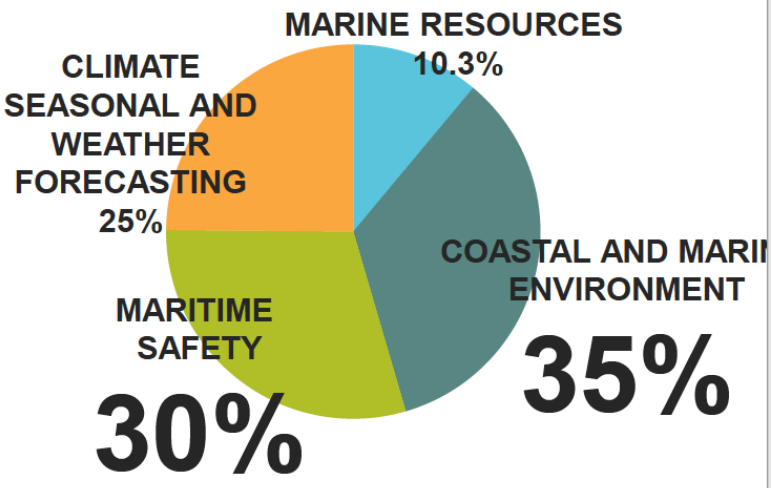
Marine Monitoring

FOCUS ON BUSINESS SECTORS (JULY 2017)

ALL

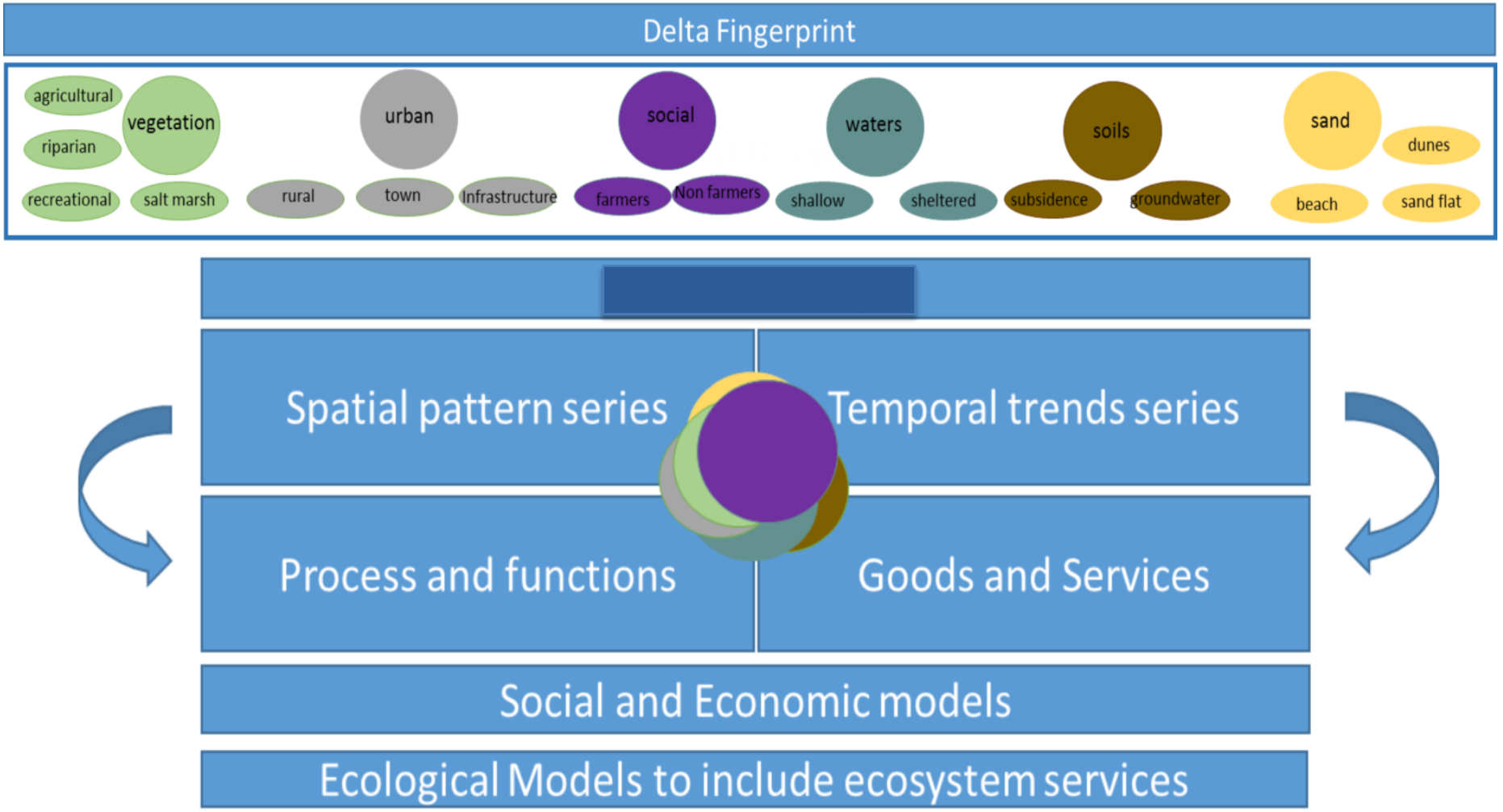


BUSINESS



European Commission | Copernicus Europe's eyes on Earth | Implemented by MERCATOR OCEAN

Coastal areas as macrosystems

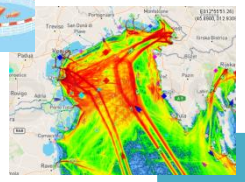


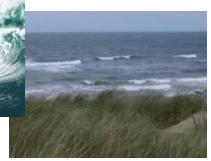
How future climate changes will influence coast and water management considering natural and anthropogenic gradients?

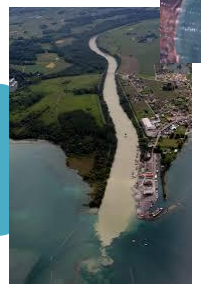
Forcing factors on Coast

Natural (climate variability, extremes and change)
Anthropogenic (human activities, pollution, etc.)











Wind, wave and currents

River discharge

Land use/land cover

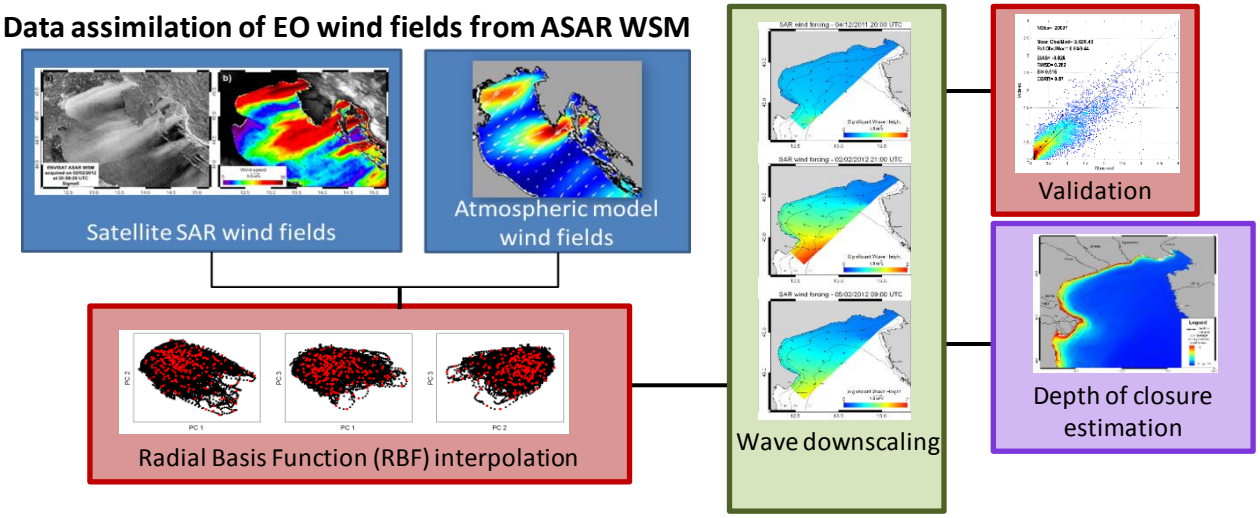
Subsidence

Water Properties

Maritime uses

Forcing Factors through EO data: Significant Wave Height

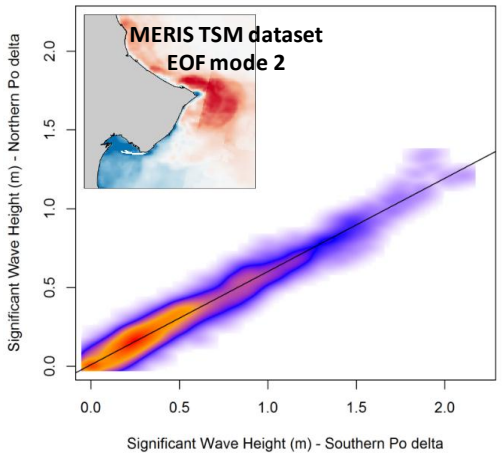
Data assimilation of EO wind fields from ASAR WSM



- **Forcing source:** wind
- **Data input:** SAR EO data
- **Other data:** wind and waves measurements nearshore and offshore
- **Technique:** downscaling wave model and assimilating in it SAR wind fields
- **Product output:** wave field

Comparison of Significant Wave Height

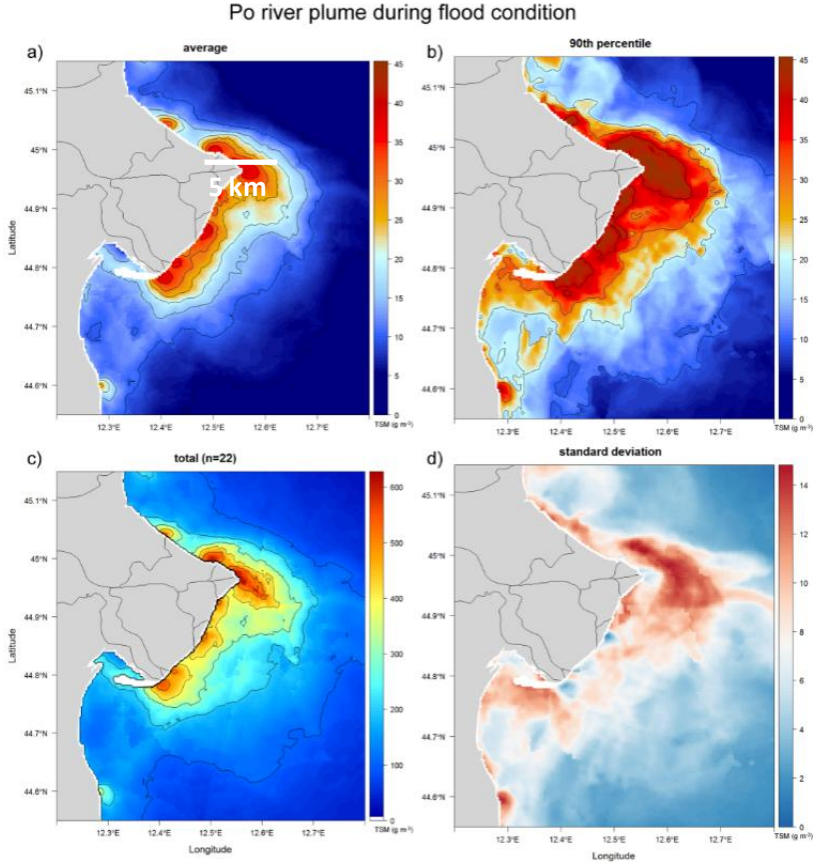
ASAR IMAGE



A comparison of significant wave height (Hs) for the period 2008-2013 have been done among the north and the south sea sides of the Po Delta prominence: values in the southern area of the prominence are slightly higher than in the northern one and thus erosion processes are more active in the southern coast

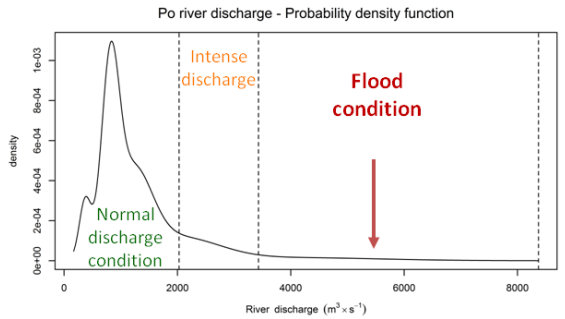
Gutiérrez, O. Q., Filipponi, F., Taramelli, A., Valentini, E., Camus, P., & Méndez, F. J. (2016). On the feasibility of the use of wind SAR to downscale waves on shallow water. Ocean Science, 12(1), 39-49.

Phenomena through EO data: River plume during flood condition



Statistical analysis on several MERIS observations acquired during flood condition

- **Forcing source:** fluvial and wave processes
- **Data input:** optical EO data
- **Other data:** river discharge, water quality measurements for validation process
- **Technique:** regional algorithms and model and statistical analysis
- **Product output:** Total suspended Matter concentrations statistical analysis



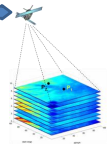
Deposit area of new sediment supply is located within 17 km from the delta

Filipponi, F., A. Taramelli, F. Zucca, E. Valentini, and G. Y. El Serafy. "Ten-years sediment dynamics in Northern Adriatic sea investigated through optical remote sensing observations." In 2015 IEEE International Geoscience and Remote Sensing Symposium (IGARSS), pp. 2265-2268. IEEE, 2015.

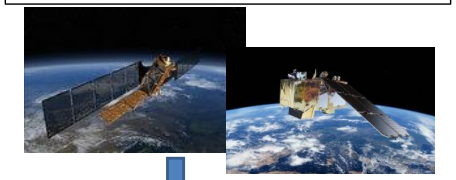
A downstream service constraction

… the Contribuiting Missions: CSK National Constellation …

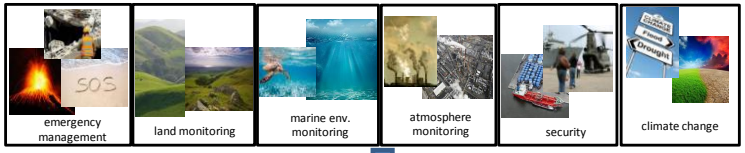
… National “Core Services” …



… the Sentinels Copernicus Constellation …



… Copernicus “Core Services” ….



Collaborative Data Hub

Consortium GARR

Sentinel-1 SAR L1 GRD

Sentinel-2 MSI L1C

Sentinel-3 OLCI L1b

S1 PREPROCESSING

S2 PREPROCESSING

S3 PREPROCESSING

S1 SAR GRD GEO Calibrated Projected

S2 MSI L2A ATM Athmosphe rically corrected

S2 MSI L2B BIO Biophysical products

S2 MSI L2B INDEX Spectral Indexes

S3 OLCI L2 REFL Athmosphe rically corrected

S3 OLCI L2 OCN Bio- geo- physical products

ISPRA

Common Sentinel Data baseline

R&D + IT

Mapping

CGS & Catalogues

… a “National Downstream Services” ….

TEP COSTUME

(COpernicus coaSTal monitoring: evolUtion of Marine and land sErvices)

ASI-ISPRA-DPC

Starting from processing products and integration of the data, the "Virtual Laboratory" will provide products/services for risk management and/or environmental monitoring in the context of the following phenomena/events.

Assimilation and integration of data

- ISPRA (librerie spettrali)
- COPERNICUS Core/Downstream Services (MYOCEAN, AquaMar)
- SINANET
- ECMWF (European Centre for Medium Range Weather Forecasts)
- Reti ondametriche e mareografiche gestite da ISPRA e/o Autorità locali
- … ….

Phenomena/events

- Variazione del livello del mare – dinamica lenta:
  1. Subsidenza (di origine naturale e/o antropica)
  2. Innalzamento del livello del mare
- Erosione delle coste e depositi dei sedimenti
- Inquinamento delle aree marine costiere
- Condizioni meteo marine particolari:
  1. Campi di vento e di onde per eventi critici
- Evoluzione degli habitat marini e costieri
- Mappe di Stato
- Mappe di Cambiamento
- Serie temporali

Expected Outcomes

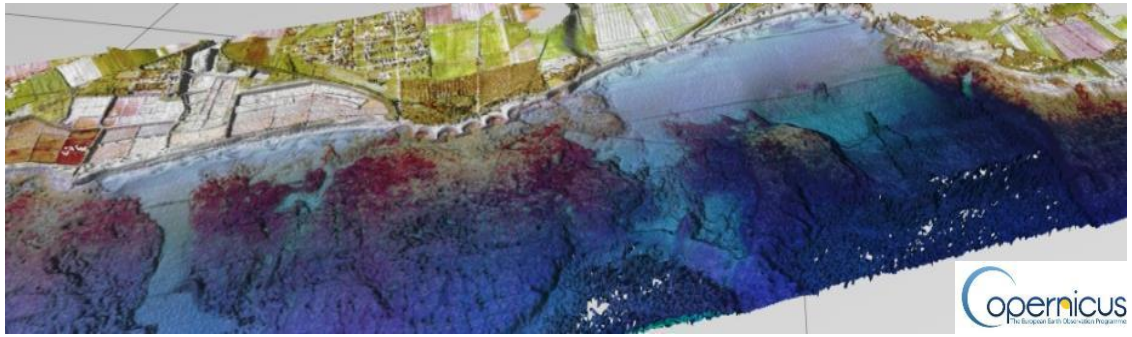
1. **Linee di Costa**
2. **Livello del mare**
5. **Movimento Ondoso**
6. **Tasso di subsidenza costiera**
7. **Campi di Vento**
9. **Habitat marino costieri**
10. **Ecosistema marino** (entro 30 km dalla linea di riva)

I. **Mappe di clorofilla**
II. **Total Suspended Matter**
III. **Trasparenza** (in termini di **K490**)
IV. **Sostanza organica disciolta e colorata** (CDOM)
V. **Sea Surface Temperature**
VI. **Ciclo diurno della SST**

(segue) prodotti attesi

Volumi delle spiagge
Mappa delle foci dei fiumi, della portata, dell'estensione delle plumes fluviali
Mappatura evolutiva delle dune costiere e aree umide (inclusa la zona di retrospiaggia)
Procedure per l'analisi dinamica del litorale
Ottimizzazione con dati EO delle forzanti meteo-marine
Utilizzo di dati EO per verifiche modelli previsionali stato del mare

Virtual Laboratory for the Coastal Risks



Copernicus National User Forum

When?

The **Italian National Copernicus User Forum** has been formally constituted in December 2014.

Why?

The primary aim of the **National User Forum** is to **share information and coordinated decisions** about the ongoing and foreseen activities in the three Copernicus Committee, User Forum and Security Board. Moreover the **National User Forum** has been set up **to define the National and European state of play of the Copernicus Programme** as a whole, with focus on the **national users' needs and requirements**, and **to stimulate and produce a qualified, authoritative and coordinated national space policy in the Programme**, particularly regarding **all Core Services** offered at the European levels as well as **the Downstream Services** that can be originated from them.

National Space Committee for Space Economy and Space Activities

Presidency of the council of the Ministers

Outcomes

National and European space policy discussion – Copernicus National User requirement coordination

The Italian National User Forum Architecture

Responsible to the Presidency of The Council of the Ministers
National delegated to the Copernicus User Forum and Committee
Responsible for security aspects (Copernicus security board)

National members for the management of Copernicus Services

National representative in ESA, EUMETSAT, ECMWF, WMO, EEA, INSPIRE
National coordinating Boards representatives on the matter of Copernicus Service sectorial exploitation (even Downstream)

National User Forum Operational Boards:
Security, Infrastructure & Transports, Cultural Heritage, Agriculture, Environmental Controls,
Industry, Gerology, Climate, Hydrology.

Institutional Users Community Representatives

- Ministries
- Environmental control system
- Civil Protecion Service
- Italian Regions

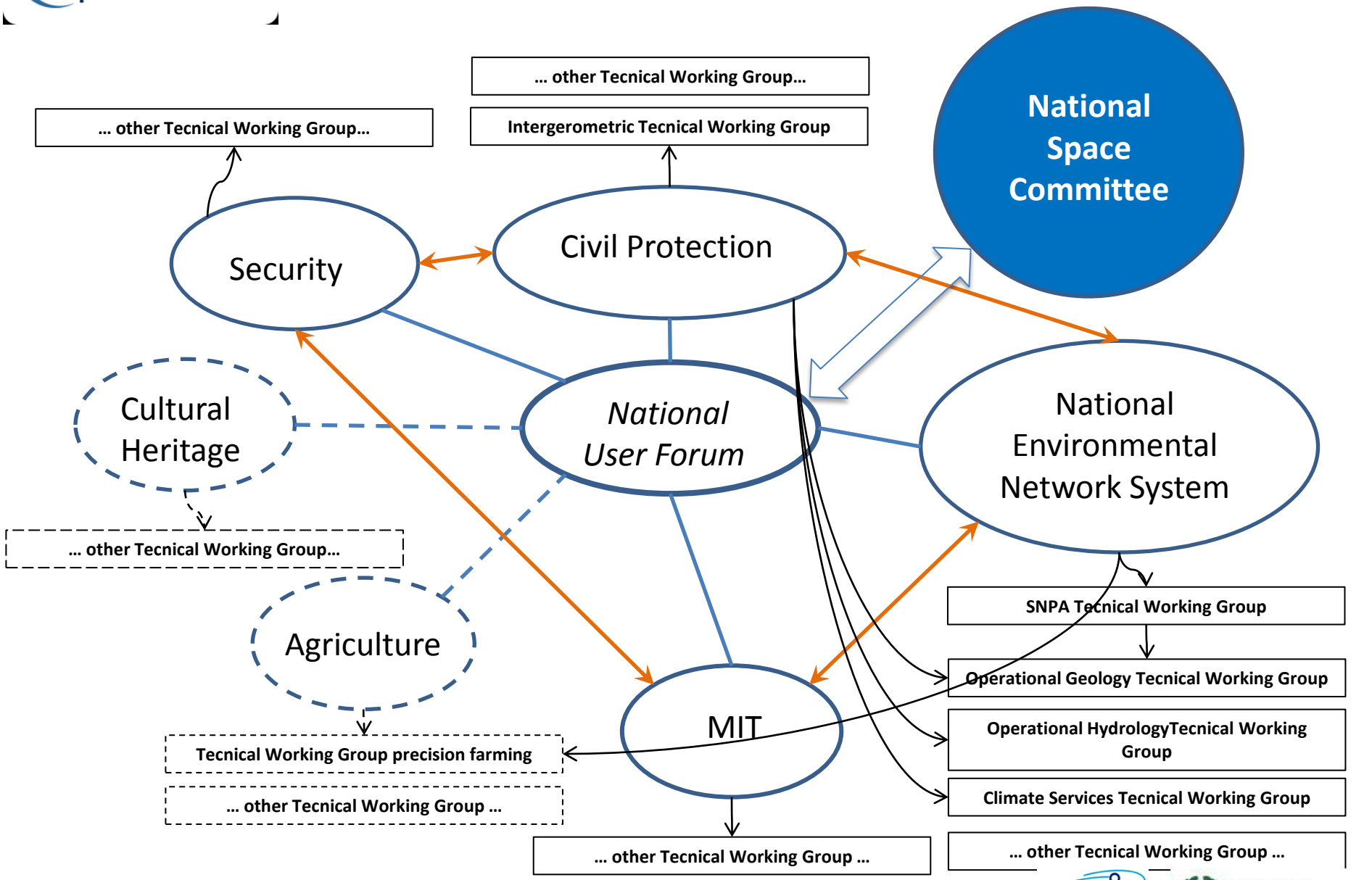
Scientific Users Community Representatives

- Representative of Academia
- National representative of Research Bodies and Institutions

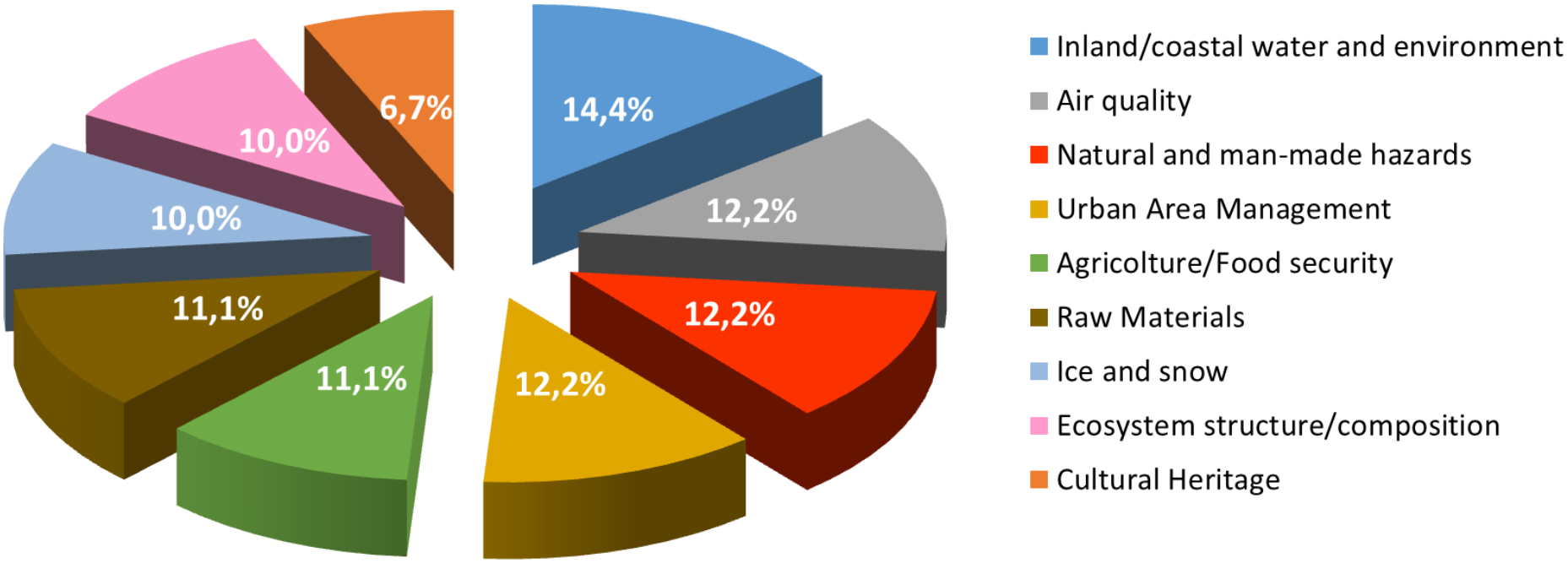
Commercial Users Community Representatives

- Industrial Space and
- Aeronautic Associations

Copernicus National User Forum



Interest of the user community for the investigated application domains



Requisiti utente: metodo di raccolta ed analisi

Identificazione utenti
Coinvolgimento nella raccolta requisiti

Analisi dei requisiti

Valutazione dai requisiti ai servizi operativi

- Identificazione domini applicativi e normativa di riferimento
- Identificazione delle comunità utente
- Definizione e disseminazione della matrice di interazione
- Raccolta dei contributi dagli utenti

Feedback

- Analisi e prioritizzazione dei requisiti in funzione dei processi decisionali

Risultati

- Visualizzazione delle priorità sui domini applicativi – requisiti - parametri
- Associazione dei requisiti con prodotti (layers) già esitenti
- Identificazione di prodotti e servizi da svilupppare

Survey ISPRA (2017) per il progetto: ***ITT ESA - Hyperspectral Imaging Mission Concepts***
ESA-ESRIN ITT AO/1-8579/16/I-SBo

Programma Copernicus
Quadro normativo

	Copernicus Application Domains							
	Agriculture, Forestry & Fisheries	Biodiversity & Environmental Protection	Climate & Energy	Civil Protection & Humanitarian Aid	Pulic Health	Tourism	Transport & Safety	Urban & Regional Planning
Agriculture/Food security								
Nitrates European Directive (91/676/EEC)	■	■			■			
Common Agricultural Policy	■							■
Habitats Directive (92/43/EEC)	■	■						■
Birds Directive (2009/147/EC)	■	■						
Animal By-products Regulation (1069/2009/EU)	■	■			■			
Ecosystem structure/composition								
Habitats Directive (92/43/EEC)	■	■						■
Birds Directive (2009/147/EC)	■	■						
Animal By-products Regulation (1069/2009/EU)	■	■			■			
Inland/coastal water and environment								
Marine Strategy Framework Directive (2008/56/EC)		■	■			■	■	■
Water Framework Directive (2000/60/EC)	■	■	■	■	■	■	■	■
Bathing Water Directive (2006/7/EC)		■			■	■		
Maritime Spatial Planning Directive (2014/89/EU)	■	■	■			■	■	■
Strategic Environmental Assessment Directive (2001/42/EC)	■	■	■	■	■	■	■	■
Floods Directive (2007/60/EC)	■	■	■	■	■	■	■	■
Directive urban waste water treatment (91/271/EEC)		■			■			■
Air quality								
Ambient air quality and cleaner air Directive (2004/107/EC & 2008/50/EC)			■		■		■	■
Cultural Heritage								
The General Conference of the United Nations Educational, Scientific and Cultural Organization meeting in Paris from 17 October to 21 November 1972						■		■
Raw materials								
Raw Materials Initiative (COM 2008/699)		■	■				■	■
Natural and man-made hazards								
Restrictions on the marketing and use of certain dangerous substances and preparations (asbestos) [1999/77/CE]		■			■			■
Thematic strategy for soil protection" [COM(2006) 231]	■	■	■	■	■	■	■	■
Water Framework Directive (2000/60/EC)	■	■	■	■	■	■	■	■
Floods Directive (2007/60/EC)	■	■	■	■	■	■	■	■
Waste Directive (2008/98/EC)		■			■			■
Ice and snow								
No specifc reference			■					
Urban Area Management								
Enhancing Europe's Natural Capital COM/2013/0249 final	■	■	■	■	■	■	■	■
Decision n. 1386/2013/EU	■	■	■	■	■	■	■	■

Strategia di disseminazione: matrice di interazione

Sezione I — Quadro normativo di riferimento (EU e ITA)

Sezione II — •Requisiti •Parametri

Sezione III — •Preferenze utenti •Risoluzioni spaziale e temporale

EXPECTED TEMPORAL AND SPATIAL RESOLUTION

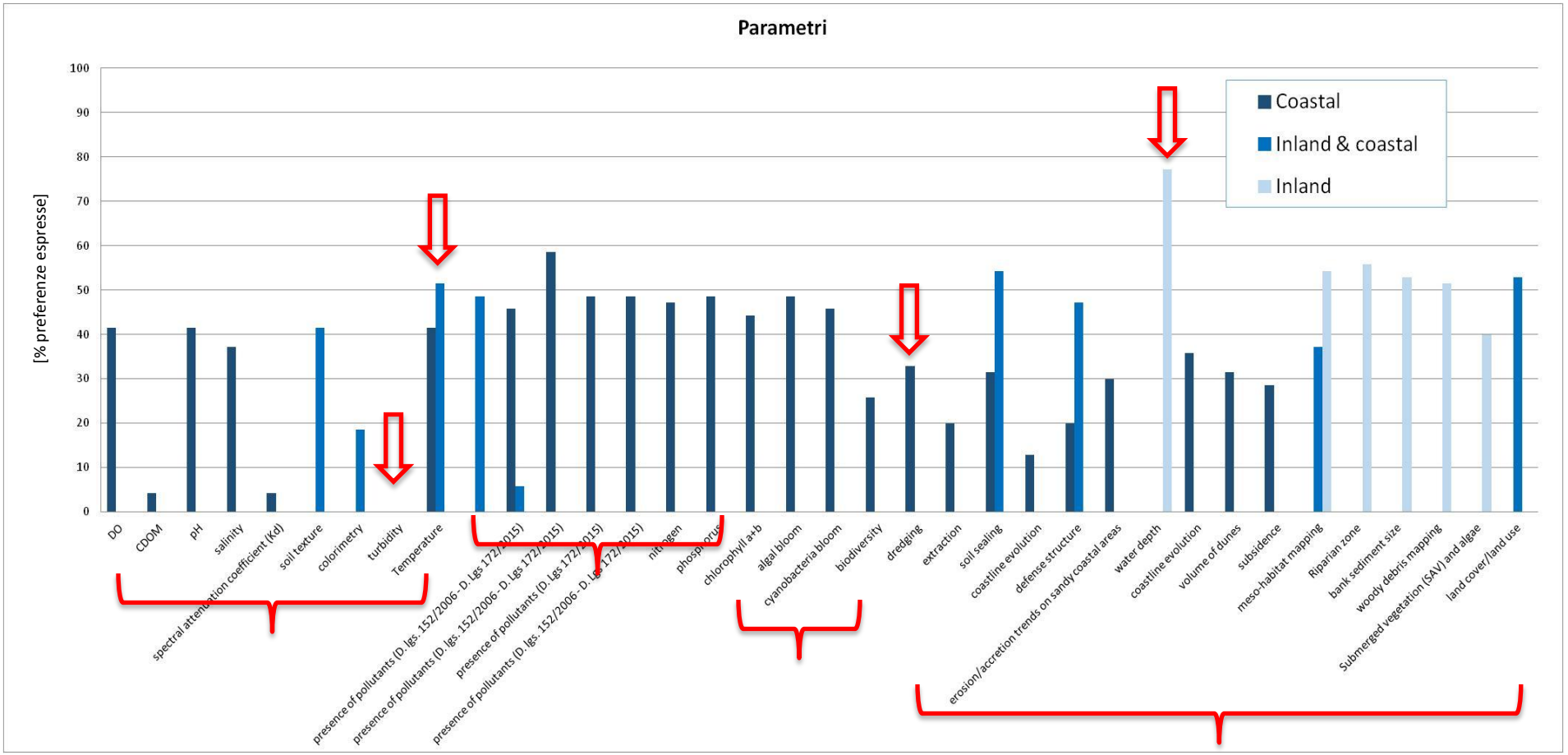
Parameters	Type	Importance value from 1 (low) to 5 (high)	Expected Spatial Resolution	Expected Revisit Time
land cover/land use	qualitative			
soil texture	quantitative	1 / 2 / 3 / 4 / 5		
SOC	quantitative			
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....

Parameters	Type	Importance value from 1 (low) to 5 (high)	Expected Spatial Resolution	Expected Revisit Time
land cover/land use	qualitative			
soil texture	quantitative		<1m / 1-4m / 4-10m / 10-30m / 100m / >300m / >1km	
SOC	quantitative			
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....

Parameters	Type	Importance value from 1 (low) to 5 (high)	Expected Spatial Resolution	Expected Revisit Time
land cover/land use	qualitative			
soil texture	quantitative			giornaliero / mensile / semestrale / annuale
SOC	quantitative			
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....

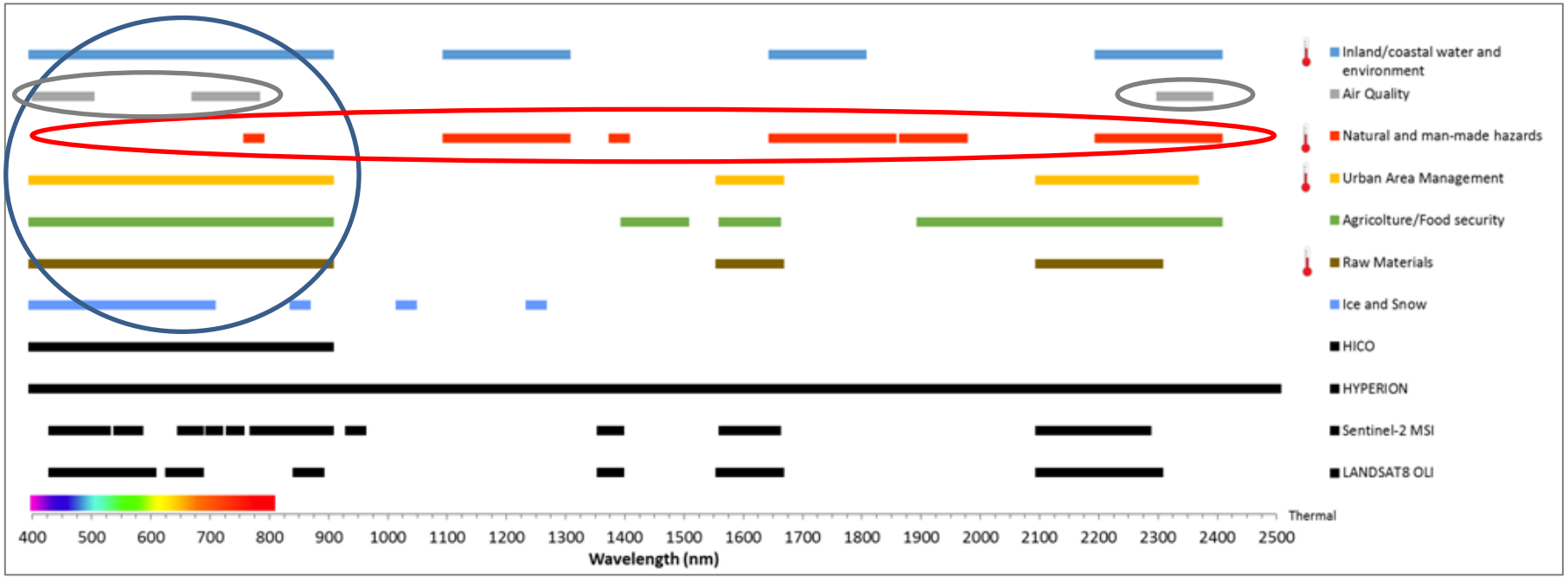
IC-1.2	Inland/coastal water and environment	(2008/56/EC) Water Framework Directive (2000/60/EC) Bathing Water Directive (2006/7/EC)	biogeochemical cycles in coastal and shelf waters;	Water	Physical features	Temperature	quantitative			

Valutazione: prioritizzazione parametri



Policy and Application Domains vs Spectral Ranges

Analysis of the consolidated layers and associated spectral ranges needs described by application domain.



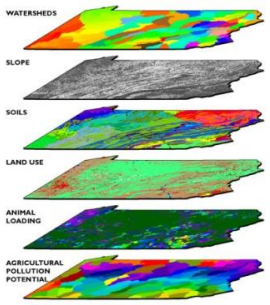
1. THERE ARE **SPECTRAL RANGES** RELEVANT IN TERMS OF NUMBER OF APPLICATIONS (VIS)
2. THERE ARE EXCLUSIVE **CONSOLIDATED LAYERS** THAT COVER THE EXTREMES OF THE SPECTRUM (AIR QUALITY)
3. THERE ARE **DOMAINS** THAT REQUIRE THE HYPERSPECTRAL MAPPING APPLICATIONS (NATURAL AND MANMADE HAZARD, COASTAL, AGRICULTURE)

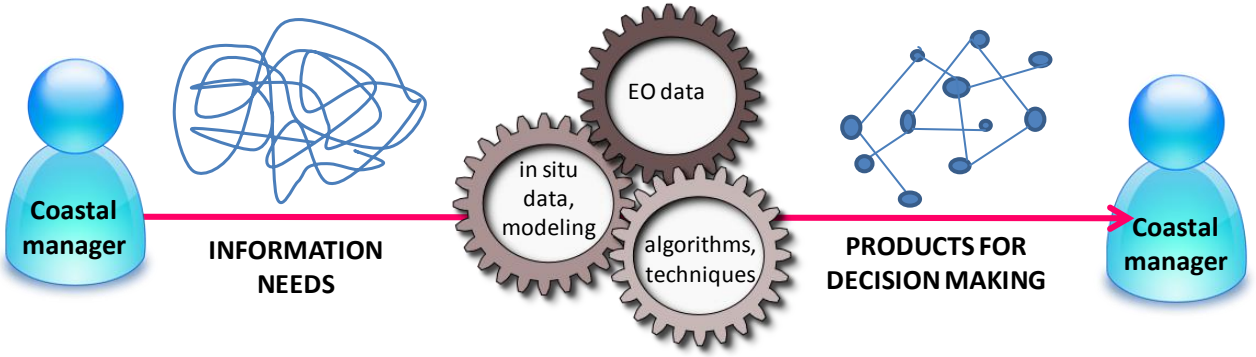
Mainstreaming EO products and services user-driven

"**Mainstreaming EO products and services user-driven**" means to make aware public and private users, and intermediate users as well, of the great advantages they certainly obtain by using EO products and services ….

FROM THE USER

FOR THE USER





… the Copernicus User Uptake and the National User Forum activities …

In its 2016 Communication on a European Space Strategy the Commission states that "*The Commission's aim is to optimise the benefits that space brings to society and the wider EU economy. Achieving this means boosting demand among public and private users, facilitating access to and use of space data, and stimulating the development and use of innovative downstream applications. It also means ensuring the continuity and user-driven development of EU space programmes.*"

A principal element of achieving this aim is to enhance user uptake of Copernicus data and services. The Commission has defined a User Uptake Strategy (CUF-2016-73), identifying objectives, key principles and 16 specific actions to implement user uptake measures in the framework of Copernicus.

EU Member States and Copernicus Participating States have been implementing user uptake measures at the national level for a long time. Such measures have included national coordination mechanisms ("User Fora"), funding provision for downstream service/application development or information activities, including topical workshops, events, or innovative development and matchmaking formats.

… then, some important user uptake measures to be implemented at the national level are:

- National topical workshops at along with sectorial seminars
- Relays and Copernicus Academy coordinate activities.
- FabSpace networking and activities
- OpenGeoData and Satellite Facilities Schools

…How does the national forum work?...

Thematic Workshops *organized* by the National User Forum

Agriculture – From satellite information to in-situ data (9 December 2014)

Organized in the frame of a Memorandum of Understanding between ISPRA and the Ministry of Agricolture (MIPAAF), the workshop aimed to stress the integration of different data source to improve tools and methods to better support EU Directives implementation.

… … …

Thematic Workshops organized & contaminated by the National User Forum

National Workshop

From Core Services to User Uptake - Downstream Potential for SME (11/15)

Provide elements on the state of involvement, perspectives and position of SME, Start-up and Spin-off in the frame of Copernicus downstream Services, upstream processes and in the European Space Sector outside the Copernicus boundaries

… … …

Seminars on

(Feb. 2016 – **Security Services** – Coast Guard – Port Authority)

… … …

Events (2017):

Climate Services (27/02 – EC, ECMWF)

… … …

…How does the national forum work?...

Copernicus Relays and the Copernicus Academy

To unleash the full potential of the Copernicus Open Data and Information, the European Commission is running several initiatives to ensure that current and potential users of Copernicus can make the most of the Programme and its data, in Europe and beyond.

Two networks were launched at the end 2016:
The Copernicus Relays is to ensure that information on the benefits and potential applications of the programme are unleashed at local level, to foster the awareness and use of Copernicus by local user communities;
The Copernicus Academy is to empower the next generation of researchers, scientists, and entrepreneurs and ensure they have suitable skill sets to use Copernicus open data and that results of research hit the market in a fast and efficient manner, to develop interdisciplinary educational, training and skills activities.

The Copernicus Networks wish to allow both the Copernicus programme and its users to work together to enlarge its user base and unleash its positive impact on the economy and society through concrete actions.

… Framework Partnership Agreement …

As part of its user uptake strategy for Copernicus, the European Commission published a Call for Proposals for the establishment of the **Caroline Herschel Framework Partnership Agreement** (**FPA**) between the European Commission and Copernicus Participating States.

This 4-year FPA, which is undoubtedly one of the most important measures implemented by the European Commission in the context of the Copernicus user uptake activities, will facilitate the co-financing by the European Commission of national, regional and local actions in the Copernicus Participating Countries.

The FPA will establish a contractual canvas setting programmatic objectives as well as the governance and scope of actions to be funded and carried out through **Specific Grant Agreements**.

The FPA includes three different action lines (referred to as "Tiers"):
Tier 1: national user uptake. The activities under this tier will aim at organising national or local awareness events, training sessions, online courses, hackathons, etc.
Tier 2: global action. The activities under this tier will aim at supporting European cross-borders user uptake (e.g. actions or events organised in several Member States) and the internationalisation of European companies offering applications based on Copernicus and space data
Tier 3: business solutions and innovative products and applications. The activities under this tier will aim at supporting innovation businesses and start-ups, their incubation and maturity, providing them with access to finance, lifting administrative and legal barriers, etc.

Applicants would be established in one of the Copernicus Participating States (28 Member States of the European Union + Norway and Iceland).

Applications would be presented by a consortium of Member States, represented by public bodies (or bodies with a public service mission).

Progetto CADEAU

Prodotti e servizi derivati da MARINE COPERNICUS
a supporto delle Direttive Europee per l'ambiente costiero
Tecnici e stakeholder a confronto

… grazie dell'attenzione !!!! …

5 Giugno 2018, Venezia,
Palazzo Querini Stampalia, Campo Santa Maria Formosa, Castello 5252