

TEG-MSP and the Italian MSP plan: synergies and cooperation

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*National Research Council CNR-ISMAR &
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Transposition of directive 2014/89UE and Italian governance

Legislative decree 201/2016; National guidelines(DPCM 01/12/2017)

Competent Authority: Ministry of sustainable infrastructures and mobility MIMS

Interministerial Table (11 ministries, coordinated by the PCM):

prepares the guidelines, assesses the consistency of the Plans with the LGs, follows the development of the implementation process of the Plans

Technical Committee (5 Ministries, 15 Italian regions that face the sea)

set up the Plans (3 Plans for Adriatic, Ionian-Central Mediterranean, Tyrrhenian-Western Mediterranean), supports CA in monitoring the Plans

CNR-ISMAR, Corila and IUAV University provided scientific support to the planning process in the framework of MSP-MED project

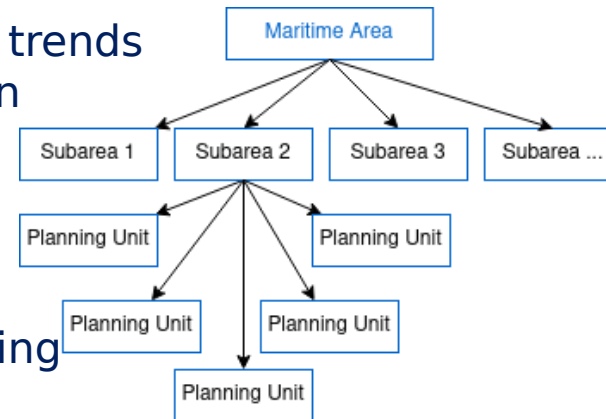
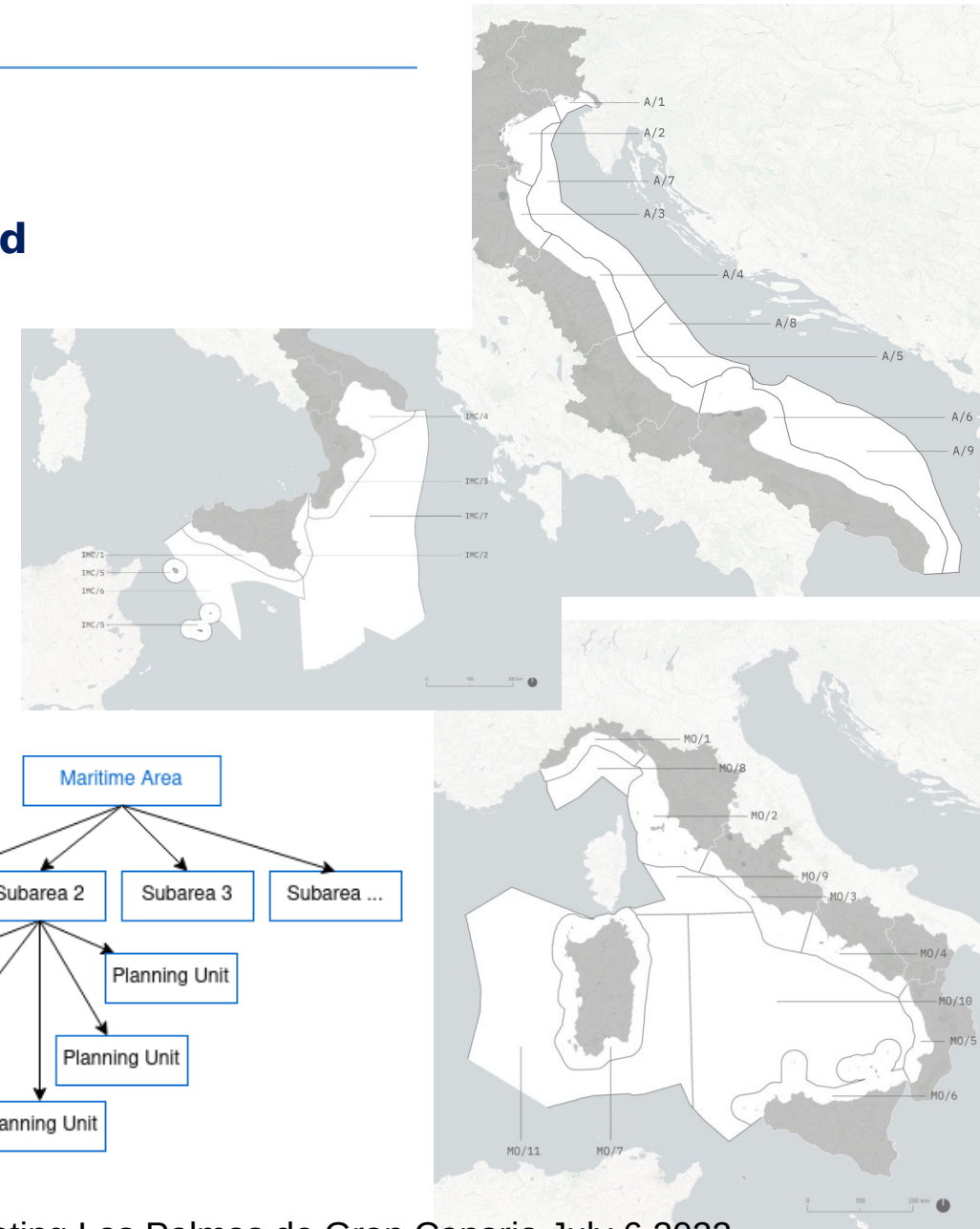


Italian MSP plans

- The national guidelines written by the Interministerial Table identify 3 **Maritime Areas** for MSP that are corresponding to the Italian part of **MSFD subregions: Adriatic Sea, Ionian Sea and Central Mediterranean sea , Western Mediterranean Sea**. Each area is divided in **subareas** (27) and each subarea in **planning units** (326)
- Plans with strategic and guiding characteristics and value.
- Plans superordinate with respect to all other planning or programming instruments that intervene on the same application area, integrated, intersectoral, capable of coordinating different policies and binding for all administrations

➤ Structure and contents

- Phase 1 - Initial assessment and current/expected trends
- Phase 2 - Interaction between uses and impacts on environment
- Phase 3 - Vision and strategic objectives
- Phase 4 - Strategic level planning
- Phase 5 - Monitoring and adaptation
- Phase 6 - Consolidation, implementation and updating



Planning units (PU) and vocations

Inside each subarea smaller planning units have been defined with a specific type.

G = Generic

Areas in which all uses tend to be permitted, with specific and reciprocal regulation mechanisms defined or to be defined in the context of national and international standards or sector plans, in order to guarantee safety, reduce and control environmental impacts and favor coexistence between uses.



P = Priority

Areas for which the Plan provides indications of priority of use and development, also indicating the other uses to be guaranteed or allowed through mutual regulations and with the identified priority use.



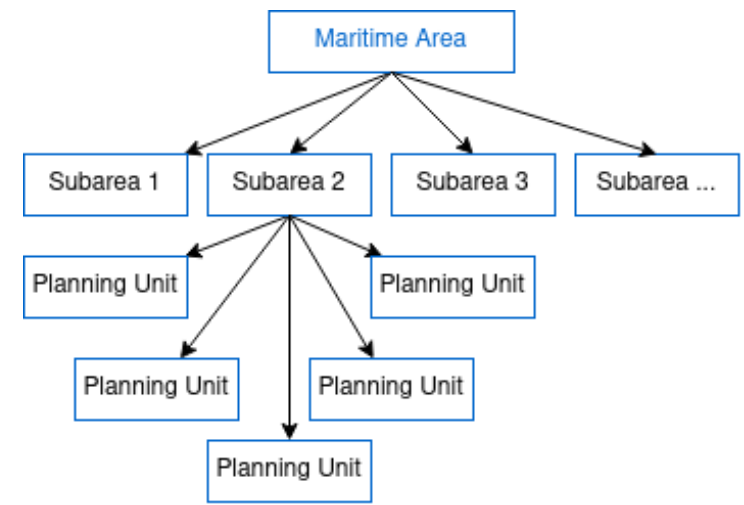
L = Limited

Areas for which a prevalent use is indicated, with other uses that may be present, with or without specific limitations, if and to the extent compatible with the prevalent use.



R = Reserved

Areas reserved for a specific use. Other uses are permitted exclusively for the needs of reserved use or subject to exceptions and concessions by the person responsible or manager of the reserved use.



Planning units definition



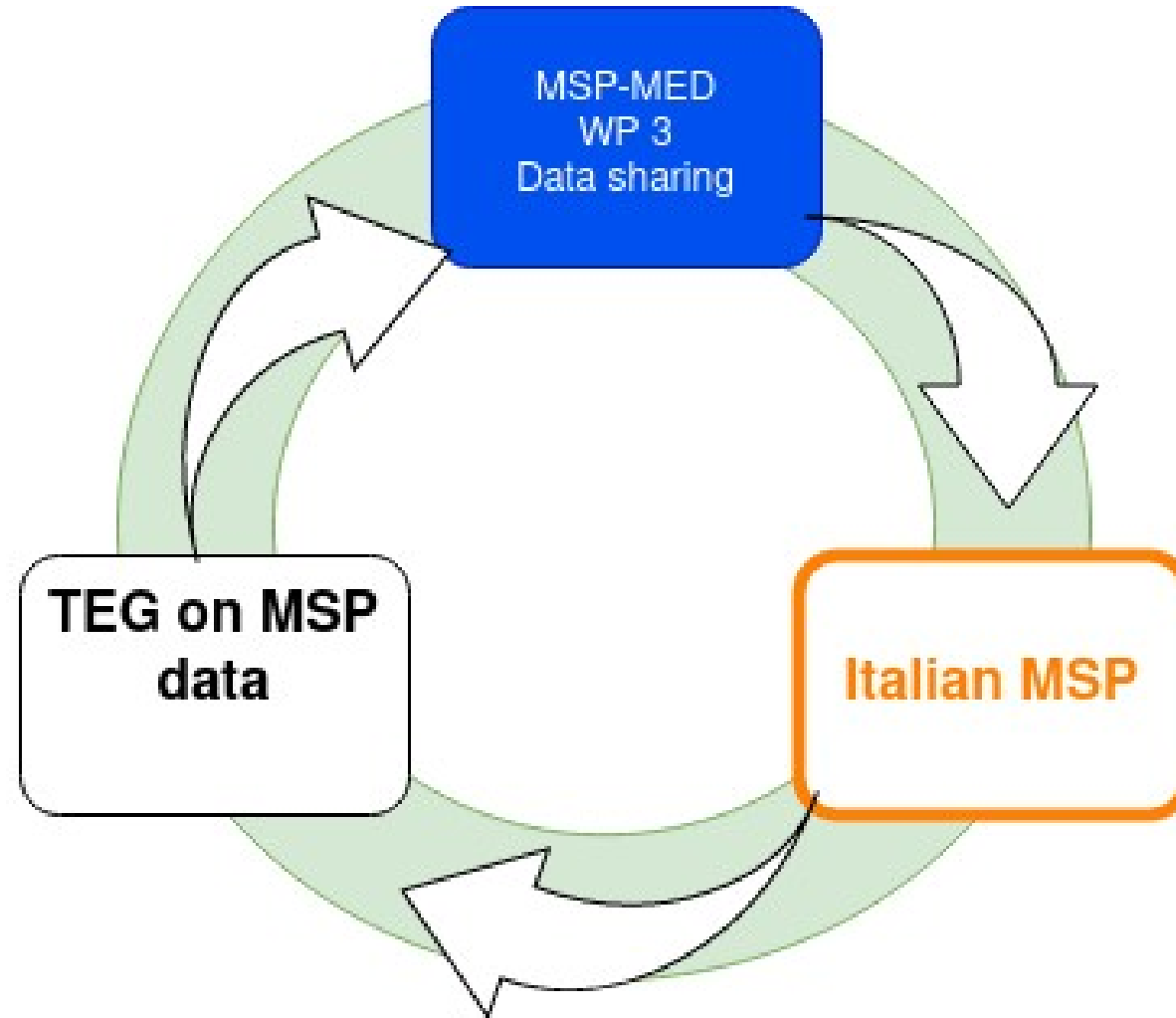
Ministero delle Infrastrutture e della Mobilità Sostenibile
 DIPARTIMENTO PER I TRASPORTI E LA NAVIGAZIONE
 DIREZIONE GENERALE PER LA VIGILANZA SULLE AUTORITÀ DI SISTEMA PORTUALE,
 IL TRASPORTO MARITTIMO E PER VIE D'ACQUA INTERNE

Tabella 38 Unità di pianificazione e attribuzione tipologica per la sub-area MQ/7

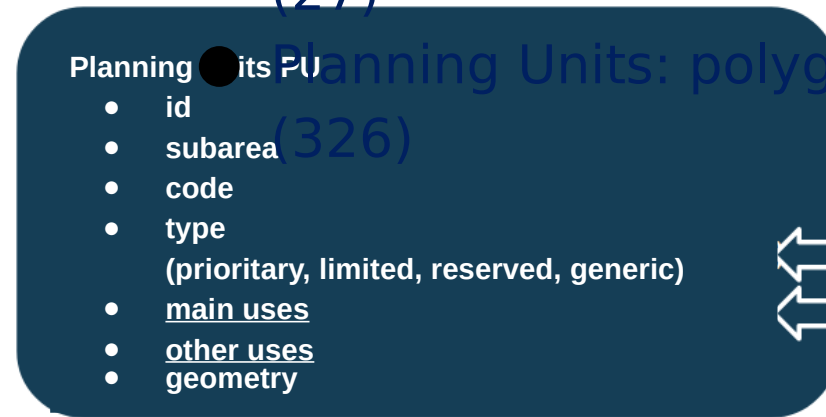
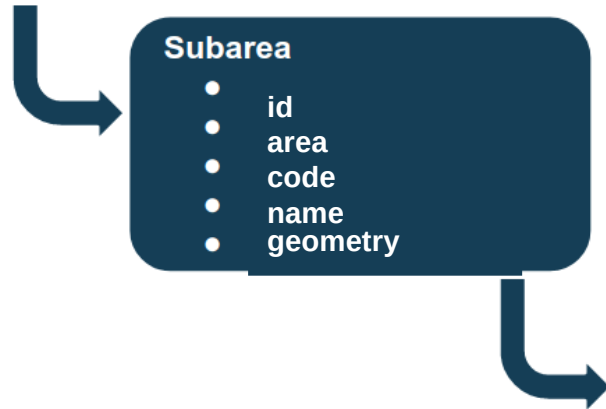
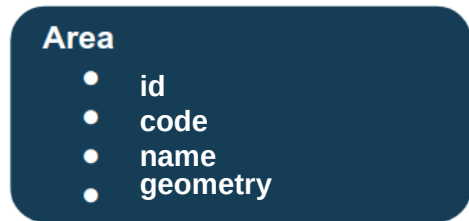
UP	Usi Generici (G), Prioritari (P), Limitati (L) e Riservati (R)	Motivazioni per l'attribuzione tipologica	Altri usi	Particolari considerazioni sugli altri usi	Elementi rilevanti per l'ambiente, il paesaggio ed il patrimonio culturale
MO/7_01	L (n) Uso Limitato (L) -Protezione ambiente e risorse naturali (n)	L'UP coincide con il perimetro dell'Area Marina Protetta di Capo Caccia, istituita con DM 20 Settembre 2002. L'area comprende al suo interno il SIC/ZSC e ZPS Capo Caccia (con le Isole Foradada e Piana) e Punta del Giglio (ITB010042 e ITB013044).	Altri usi compatibili con l'uso limitato. Gli altri usi sono ammessi nei limiti ed alle condizioni previsti negli atti regolatori e pianificatori del gestore.	Area di protezione ambientale con vocazione al turismo subacqueo, naturalistico, alla ricerca, all'energia rinnovabile da moto ondoso ed all'ittiturismo, secondo quanto disposto dall'organo gestore della riserva stessa. Navigazione da diporto, ormeggio ed ancoraggio regolati dalle misure previste per la AMP e il SIC presenti.	All'interno dell'UP Misure di conservazione vigenti nel sito Nat2000 ai sensi della Direttiva 92/43/CE. L'UP ricade all'interno del Santuario dei mammiferi marini Pelagos L'UP ricade all'interno dell'EBSA "North Western Mediterranean". Area Marina Ecologicamente e Biologicamente sensibile in accordo con la Convention on Biological Diversity.
MO/7_02	P (ppc,t) Uso Prioritario (P) - Paesaggio e patrimonio culturale (ppc)	Area costiera ad alta valenza turistica, paesaggistica e naturalistica. Presenza di aree ad alto valore naturale (SIC-ZPS) a terra e/o a mare.	Protezione ambiente e risorse naturali Pesca Ricerca e Innovazione Difesa costiera Energia	Energie rinnovabili: area vocata per lo sviluppo di energia da moto ondoso (vedi Studio 2011 ENEA/MISE/Università La Sapienza <i>Valutazione del potenziale energetico del moto ondoso lungo le coste Italiane</i>)	Misure di conservazione vigenti nelle aree interessate da siti Nat2000 ai sensi della Direttiva 92/43/CE.

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TEG and MSP-MED and Italian MSP synergies



MSP output data model



The simplified Italian MSP data model (flat) consists of the following datasets represented in geopackage (or Shapefile) format:

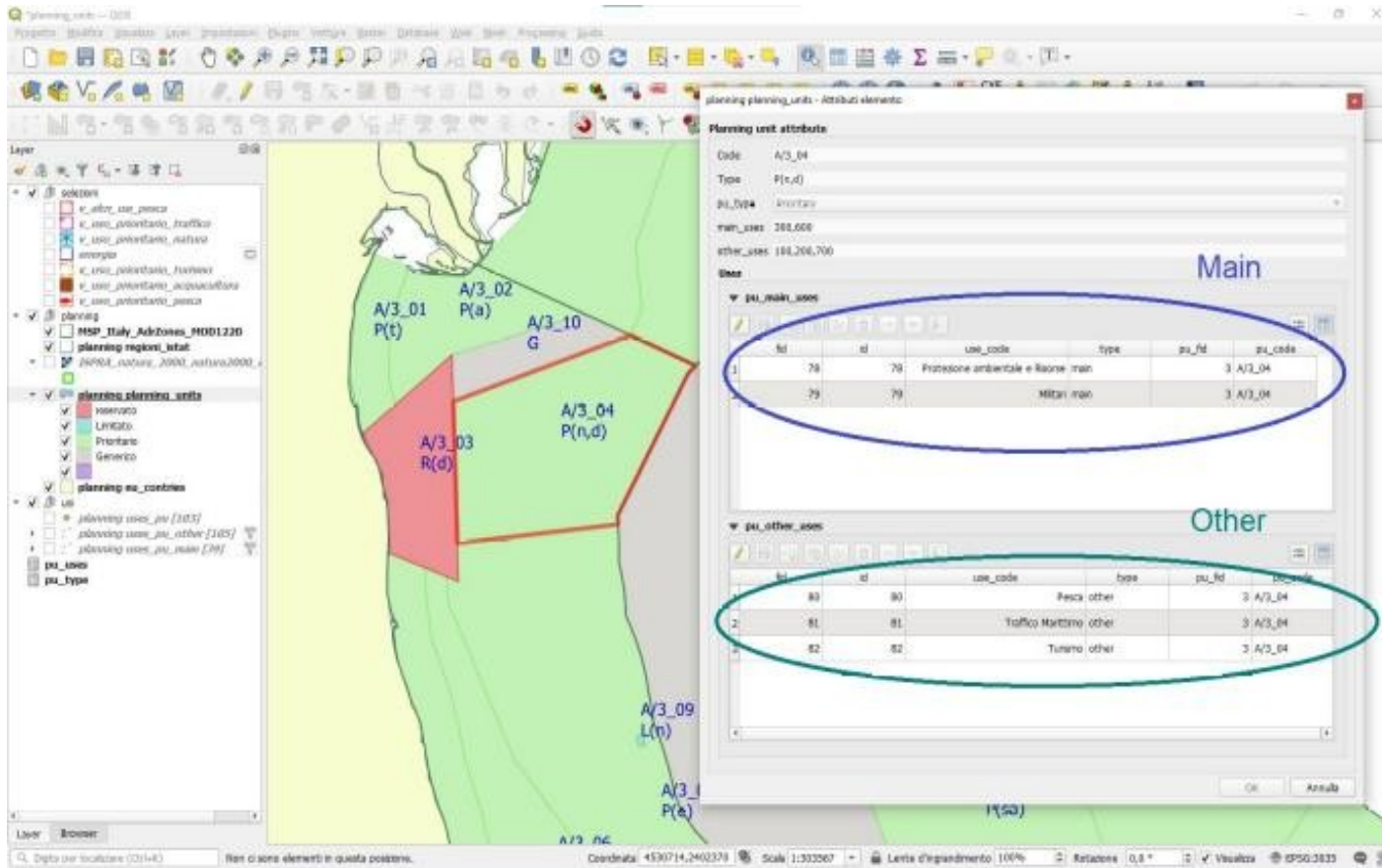
- Areas: polygonal layer representing the 3 plan areas
- Subareas: polygonal layer representing the sub-areas (27)

● Planning Units: polygonal layer with the planning units (326)



Each planning unit has two many-to-many relation with uses: a set of **main uses** (except generic PUs) and a set of **other uses** that are explicitly provided by the plan (except reserved PUs). All uses compatible with main uses are allowed in Priority PUs

Management tool



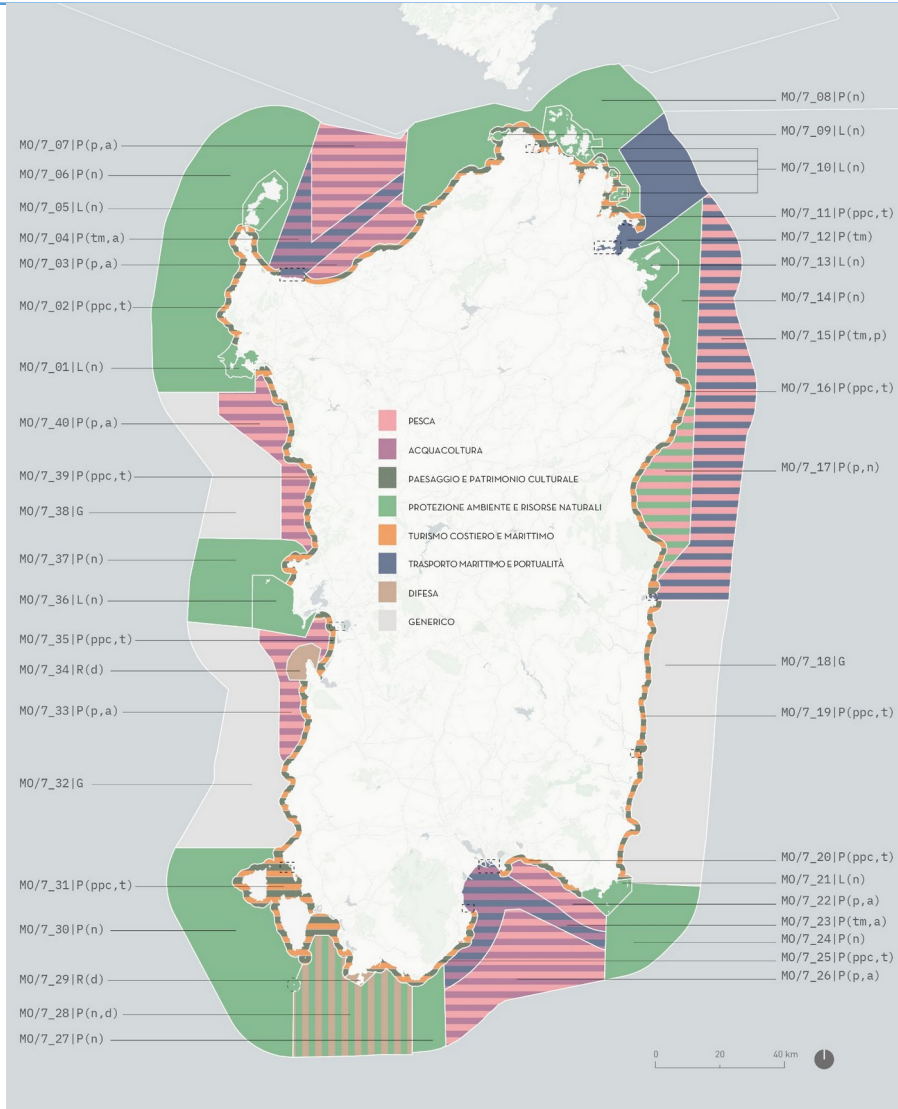
- PUs and uses are related by a many-to-many relation on main uses and other uses.
- GIS software tools allow to manage and update PU information and to plot different representation of units types, uses allowed or permitted.
- Flat files generated for each theme can be easily published and shared.
- Relations are constructed using geospatial operations.

Use list

- Starting from annex 5 of the national guidelines, the MSP plan has identified (Phase 3 strategic objectives) 12 themes or sea uses: *sustainable development, environmental protection, landscape and cultural heritage, safety and security, fishery, aquaculture, maritime transport, energy, coastal defence, tourism, scientific research*
- The complete list of uses assigned to PU as **main uses** or as **other uses** contains also *Military uses, Sand extraction, offshore discharge*

code	use_eng	Color
0100	Fishery	
0200	Marine Traffic and <i>Ports</i>	
0300	Environmental protection and resources	
0400	Energy	
0500	<i>Sand extraction</i>	
0600	Military	
0700	Tourism	
0900	Submarine cables	
1000	<i>Landscape/Seascape Cultural Heritage</i>	
1100	<i>Offshore (other than oil) discharge location</i>	
1200	<i>Coastal defence, seabed restoration</i>	
1300	<i>Safety and security</i>	
1400	Scientific research & Innovation	
1500	Aquaculture	

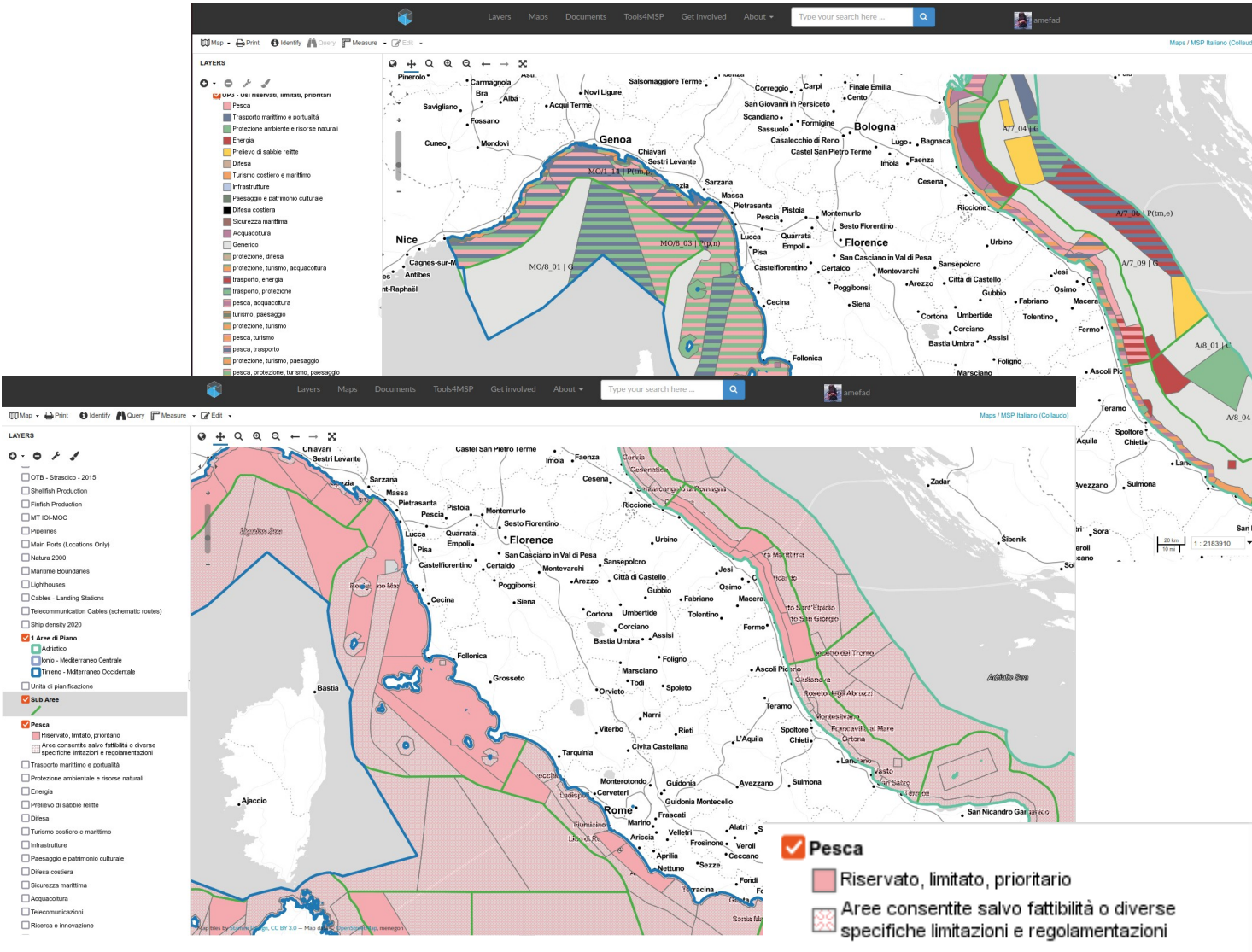
Visualization



- In the vocational map, each PU (Priority, Limited or Reserved) has one or more **main uses**
- a different color is assigned to each use
- a small texture image is generated for each existing combination of uses



Flat model exporter (MSP-MED result)



- CNR-ISMAR developed a quick tool to export the DB data for MSP Italian plan in a flat data model in ESRI shapefile format
- The tool (currently in the form of jupyter notebook) is able to create:

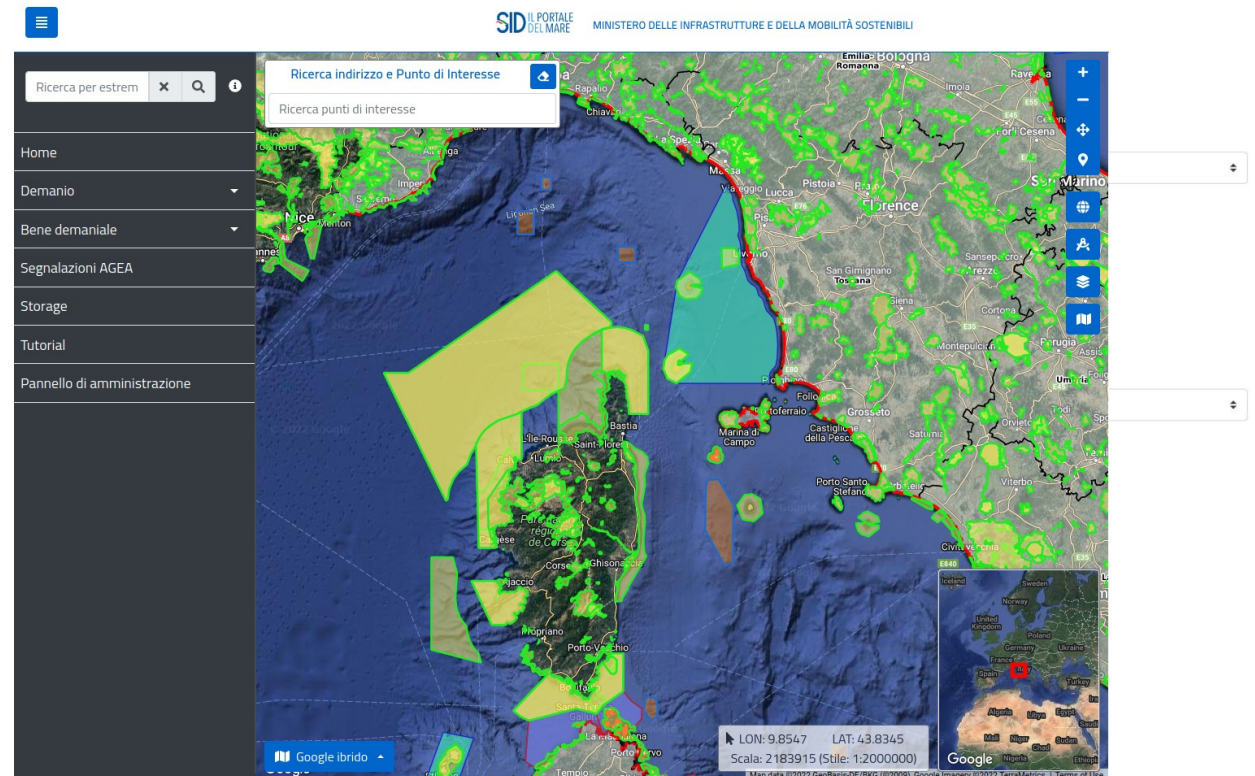
- three geospatial layers (areas, subareas, PUs)
- all needed styles (.SLD format **OGC compliant**) and textures to render PUs with different colors and by single use

- Layers can be **published directly in a OGC compliant server** (e.g.

National Italian geoportal: "SID- Portale del mare"

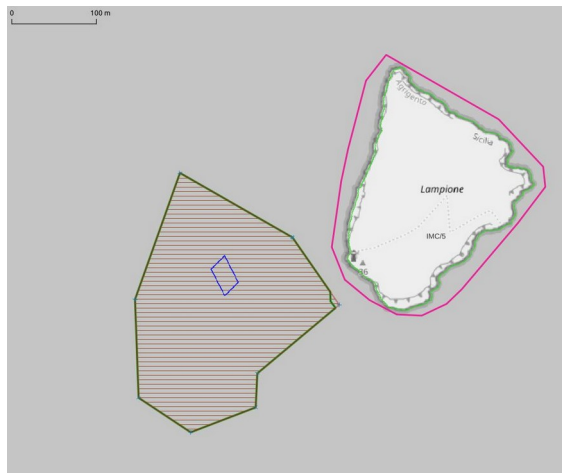
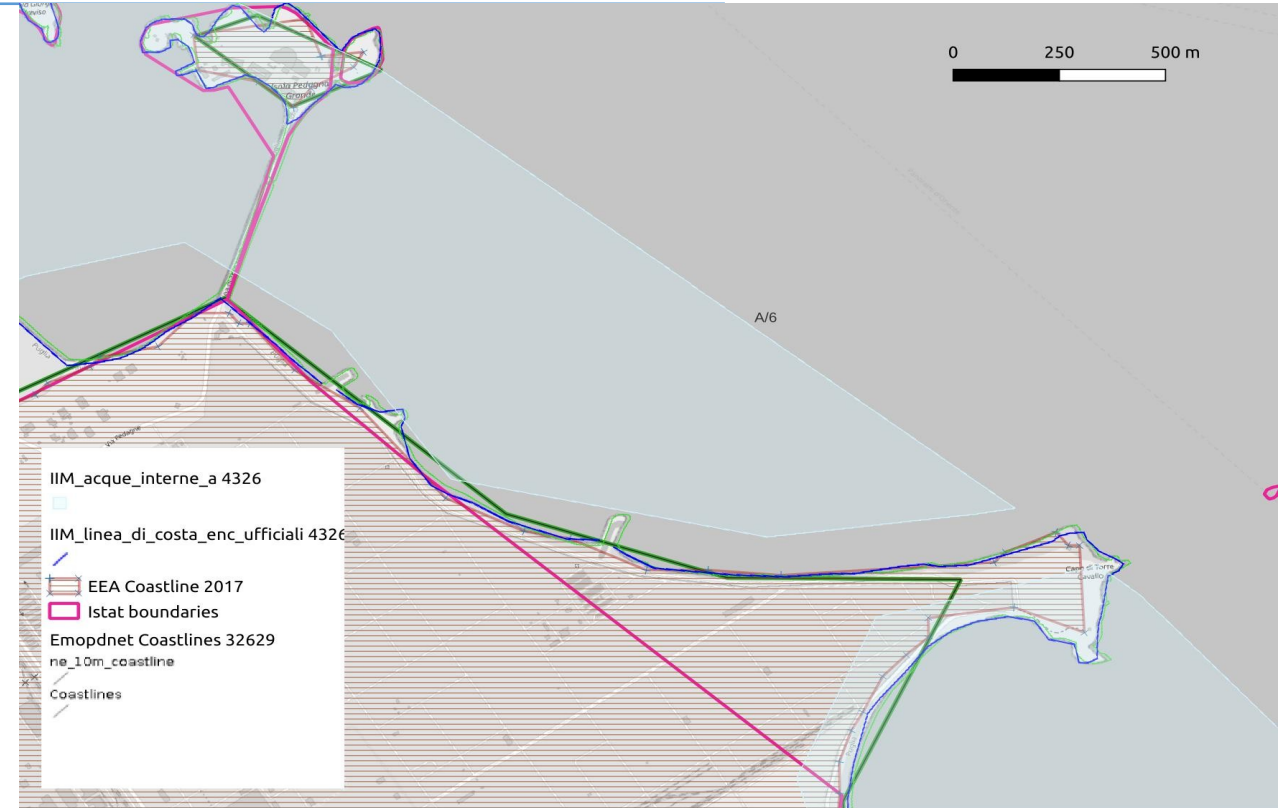
<https://www.sid.mit.gov.it/>

- The "SID (Portale integrato per la pianificazione del demanio e dello spazio marittimo - Integrated portal for state property and maritime spatial planning) il Portale del Mare" is an **existing portal** mainly used for maritime state property management and other needs of the Ministry and peripheral structures (harbour offices).
- Geospatial information can be published on the web interface with login access and through OGC compliant **interoperable services** (WMS, WFS)



Official data and legal binding of maps

- A lot of **official** geospatial data from different sources and with different levels of detail has been collected.
- National guidelines provide the use of a **geoportal** for publication of the plan and other data
- No coastline reference datum nor official SRS for the plan has been defined by TC (we used mainly EEA



Let's share data not maps. WebGIS can manage a multiscale plan of which the digital map is a representation (one of the many possible).

The user is able to compare different levels, estimate uncertainty and pick the best reference for each purpose. There's no "wrong" data

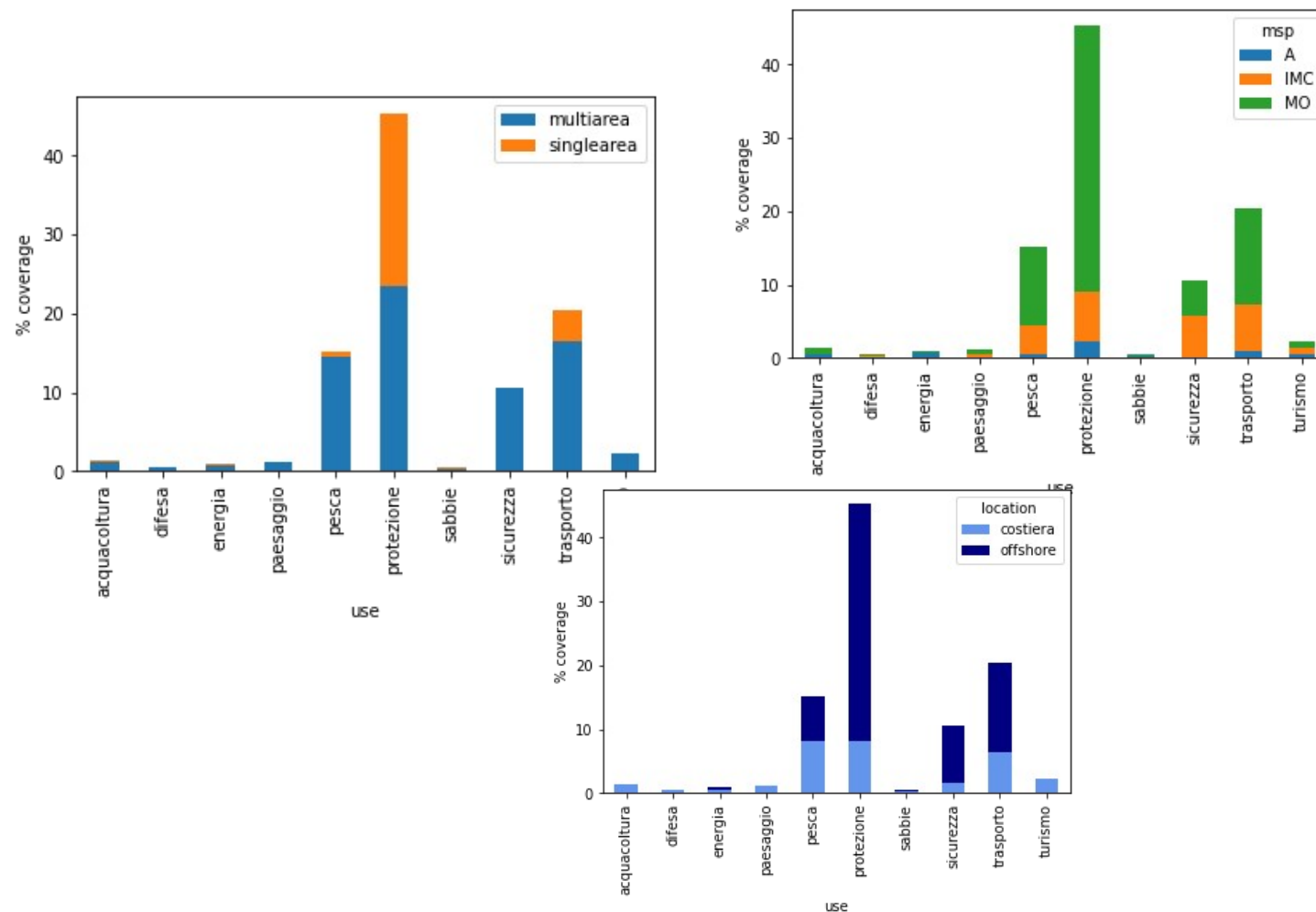
EMODnet translation tool (MSP-MED result)

- MSP Italy – EMODnet Exporter
- Version: 0.1 - draft
- Translate the current data model into EMODnet data model
- Map Italian sea-uses and EMODnet classification

code	use_ita	Codice Colore	Sigla	EMODnet	<u>HILUCS</u> MSP
100	Pesca	#F4AAAE	p	Fishing areas	
	Pesca commerciale				Professional fishing
	Pesca artigianale				Professional fishing
	Pesca ricreativa				Recreational fisheries
200	Trasporto marittimo e portualità	#6E7C97	tm	Maritime Traffic flows, Ports	
	Trasporto merci				Marine traffic lane
	Trasporto passeggeri				Marine traffic lane

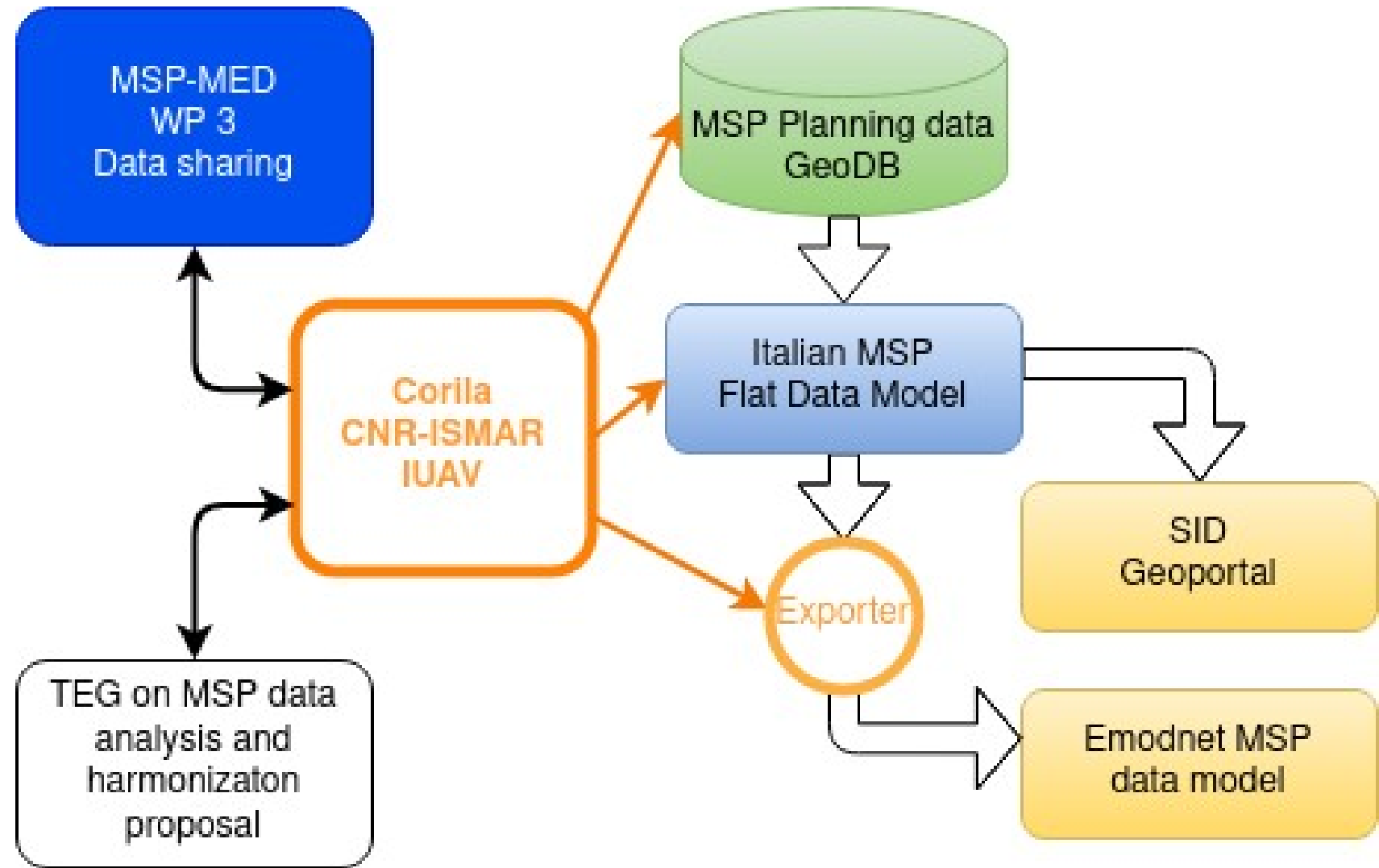
Exploratory Analysis Tools (MSP-MED result)

- MSP Italy – Exploratory Data Analysis
- Version: 0.3 - prototype
- Summarize main characteristics of MSP Italy geospatial outputs
- Generate tables, graphs and other statistical indicators



TEG and MSP-MED and Italian MSP synergies

The participation of CNR-ISMAR, IUAV and CORILA to the TEG-MSP, the collaboration with the competent authority in the national MSP process and the activities MSP-MED project have contributed to shape the output of Italian MSP plan in a format ready to be translated to EMODnet MSP data



Thank-you

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Tool4msp team @CNR-ISMAR <http://data.tools4msp.eu/team/>

(Stefano Menegon, Giulio Farella, Alessandro Sarretta, Emiliano Ramieri,
Andrea Barbanti, Elisabeth De Maio, Elisabetta Manea, Elena Gissi, Sofia Bosi)

Thanks also to the Lufthansa agent that changed our first rebooking and found a flight to get us here in time e to present