EMODnet
MedSea Checkpoint

~3 months update on progress

Summary

- General project aims and activities
- Preliminary list of required INPUT DATA for each challenge
- General principles of INPUT DATA classification
- Start of the Portal design
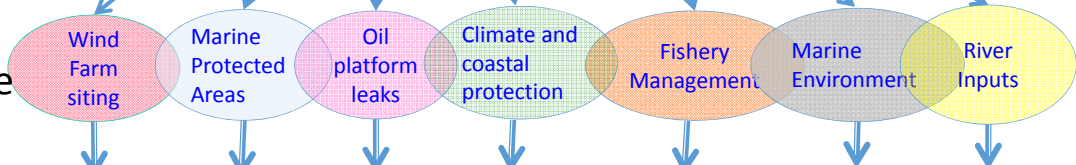- Next steps

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MedSea Checkpoint main goals

1) Carry out a **literature survey** on existing monitoring system

2) Produce an **assessment** of the accessibility, availability, multiple-use, efficiency, reliability, time consistency, space consistency, etc. of the monitoring system data for the challenges

3) Develop an **EMODnet *MedSea Portal*** that will publish all outputs from the challenges. In particular it will:

   - assess, extract the synergies between, and identify the gaps of, the present monitoring data sets for the entire Mediterranean Sea
   - disseminate new products based upon the available data for SEVEN challenges

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MedSea high level scheme

Catalogue of Data Producers and common data layers

MARINE DATA NETWORKS, SERVICES AND DATA BASES (EMODNET, COPERNICUS, EUROARGO, ETC)

Data Warehouse

Wind Farm siting

Marine Protected Areas

Oil platform leaks

Climate and coastal protection

Fishery Management

Marine Environment

River Inputs

Product Application Layer

VALUE-ADDED PRODUCTS, DECISION SUPPORT SYSTEMS FOR CHALLENGES

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The Partners

N	Partner name	Partner organization Acronym	Partner extended organization name and country
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2	Frederique Blanc	CLS	Collecte Localisation Satellites, FR
3	Gianna Fabi	CNR	Consiglio Nazionale delle Ricerche, IT
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6	Gilbert Maudire	IFREMER	InstitutFrançais de Recherche pour l'Exploitation de la Mer, FR
7	George Kallos	NKUA	National and Kapodistrian University of Athens, GR
8	Antonio Cruzado	OCEANS-CAT	OCEANS CATALONIA INTERNATIONAL SL, ES
9	Joaquin Tintore	SOCIB	Balearic Islands Coastal Observing and Forecasting System, ES
10	George Zodiatis	UCY	University of Cyprus, CY

Activities during this period

- Project start date: 4 December 2013
- Consortium Agreement defined
- Started the input data survey for classification
- Started the discussion on the input data classification
- Started the Project Portal

The Input data survey for classification

- A Template was organized to collect INTERNALLY the required input data to the challenges. WP leaders and participants gave inputs
- We try to use the nomenclature of Annex III of the MSFD.
- Monitoring was defined as the 'collection of information' for a specific usage, this case the 'Challenges'.
- Monitoring is referred to 'Characteristics' defined
    1. in all the marine and freshwater matrices, i.e. **air**, **water**, **riverbed/seabed** and **biota**
    2. in spatial mapping/geographic/demographic databases .

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Challenge 1: windfarm siting input 'characteristics'

- wind speed (10,40,80,120 and 180m), wind direction (10,40,80,120 and 180m), air pressure(10,40,80,120 and 180m), air density(10,40,80,120 and 180m), specific humidity (10,40,80,120 and 180m), air temperature (10,40,80,120 and 180m);
- Sea Level, water temperature (several depths),water salinity (several depths),Water velocity (several detphs), wave spectra, wave height , wave direction, mean and peak wave period, swell wave height;
- Bathymetry, seabed characteristics and substrate, sedimentary evolution, evolution of the coastline, , energy at the seabed, angiosperms, macro-algae, invertebrate bottom fauna, seismic structure and events
- Bird, marine mammals, reptiles, fish: species, protected status and migratory patterns
- Fishing activities, maritime traffic, radar infrastructures, port traffic, coastal land use, nautical activities, coast guards locations, national Grid Network (transmission and electric), capacity available on the line, regulatory constraints, landscape characteristics, port facilities

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Challenge 2: Marine Protected areas input 'characteristics'

•Water dissolved oxygen, pollutants in the water, water transparency, sea level, water temperature (several depths), water salinity (several levels), water velocity (several depths), light penetration or water transparency, Chlorophyll, wave spectra at predefined grid points, wave height, mean wave direction, wave mean period, peak wave period, swell wave height

•Bird, marine mammals, reptiles, fish: species, protected status and migratory patterns, pollutants in biota, phytoplankton abundance and species, zooplankton

•Bathymetry, seabed substrate, angiosperms, macro-algae, invertebrate bottom fauna, energy at the seabed, pollutants in sediments,

•Wind speed (10 m), wind direction(10m) , air pressure, air density(2m), specific humidity (2m), air temperature(2m)

•Maritime traffic

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Challenge 3: Oil platform leak input 'characteristics'

- Water velocity direction and amplitude, water temperature, wave direction and amplitude, Stokes drift, oil API, oil slicks area and thickness

- Wind direction and amplitude, air temperature

- Bathymetry, Coastline and coastal types, sedimentology, sea bed habitats/Environmental Sensitivity

- Marine and coastal infrastructures, mariculture, MPA, and transport routes

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Challenge 4:Climate and coastal protection input 'characteristics'

- Wind speed (10m), Wind direction(10m), Air pressure(2m), Air density(2m), Specific humidity (2m), Air temperature(2m), precipitation
- Water temperature (several depths), water salinity (several depths), water velocity (several depths), sea level range (tidal+surge), internal energy, Glacial Isostatic Adjustment , Mean sea surface level, wave spectra, wave height, mean wave direction , mean and peak wave period, wind sea wave height , swell wave height
- Bathymetry, coastline, coastal types, coastal erosion and sedimentation (quantitative and proxy), beach erosion and retreat, coastal flooding levels
- Seabed habitats
- NUTS area classification

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Challenge 5: Fishery Management input 'characteristics'

- Fishing fleet capacity, fishing time limitations and vessel types, localisation of fishing grounds (VMS, AIS, etc.)

- Fish catch, discard and by-catch of vulnerable species

- Water temperature (several depths), water salinity (several depths), water velocity (several depths), chlorophyll

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Challenge 6: marine environment input 'characteristics'

- River discharge location, Sewer discharge location
- Freshwater discharge and temperature
- Marine water dissolved oxygen, dissolved nitrogen (nitrate, nitrite, ammonia, DON), dissolved phosphorus (ortho-phosphate, DOP), silicates, total nitrogen (Tot_N), total phosphorus (Tot_P), Chlorophyll (Chl), water salinity, water temperature, water transparency, water currents at several depths
- Primary Production, phytoplankton biomass and species, HAB species, 'mussels watch data', invasive species
- Bathymetry, sediments, granulometry, redox, benthic organisms

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Challenge 7: river inputs 'characteristics'

- Freshwater discharge and temperature
- Nutrient loads
- Sediment loads and type
- Eels abundance

N.Pinardi, INGV

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Initial findings from input data survey

- Several common characteristics among challenges
- Initial classification of characteristics will be done on the basis of environmental matrices: air, water, riverbed/seabed, biota and human activities information
- Each challenge requires characteristics in most of the environmental matrices and human activities data
- Required data are mostly historical, archived observational and modeling data sets except for the oil platform leak and possibly coastal protection (still to be defined)
- Value-added chain from input data to challenge-related products may be long (i.e. climate, wind farming, marine environment, etc.)
- Several data producers for some characteristics scarce for others

Preliminary scheme for classification of input data

1. **Characteristics definition:** identification metadata (SDN BODC List or others), features, spatial representation, reference literature, challenge reference person
2. **Data provider/originating programme:** programme name, SDN EDMERP, data provider, SDN EDMO Id
3. **Overview elements:** Purpose of production, known uses, processing level, elements
4. **Spatial coverage:** lat, lon area, horizontal and vertical resolution, depth of area
5. **Temporal coverage:** start-end date of collection, time resolution of collected data
6. **Accessibility:** Catalogue, Catalogue name, data access mechanism, data policy/restrictions, legal/contractual specifications
7. **ISO 19000 elements:** spatial and temporal accuracy, thematic accuracy, instrument accuracy, completeness of data, logical consistency

The Portal design

Topics
Sub-webpages

Challenges
Sub-webpages

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Nest steps (up to summer)

- Complete the characteristics 'classification' work
- Develop the Literature review for all the required characteristics
- Finalize the first version of the Project Portal
- Develop the Portal Catalogue
- Start classification for 'fitness' for purpose
- Develop the Application layers
- Hold a technical Project meeting (May)

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