

SeaDataCloud – Riga, Latvia - 2016/12/01  
WP8.3

Review of data formats, with consideration of  
INSPIRE data models

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**National  
Oceanography Centre**  
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# Objectives

WP8.3 : To review and expand the SeaDataNet data formats to achieve INSPIRE compliance.



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# INSPIRE

- The INSPIRE Directive aims to create :
  - an European Union (EU) spatial data infrastructure
  - enable the sharing of environmental spatial information among public sector organisations
  - facilitate public access to this data across Europe.
- Implementation requires
  - harmonised, common data models
  - standardised ways to share the data (publish the data, encode metadata, format data)

# SeaDataNet supported formats

The following data transport formats have been defined under SeaDataNet:

ODV4 and NetCDF with CF compliance for profiles, time series and trajectories  
MedAtlas as an optional format

Feature types have been defined for multiple trajectories data like

moored ADCP      (Feature type = timeSeriesProfile)  
shipborne ADCP    (Feature type = trajectoryProfile).

# SeaDataNet data format extensions

SeaDataNet NetCDF implemented extensions to CF:

`sdn_parameter_urn` = "SDN:P01::PSLTZZ01" ;  
`sdn_parameter_name` = "Practical salinity of the water body" ;  
`sdn_uom_urn` = "SDN:P06::UUUU" ;  
`sdn_uom_name` = "Dimensionless";

SeaDataNet ODV implemented extensions:

`<subject>SDN:LOCAL:Depth</subject>`  
`<object>SDN:P01::ADEPZZ01</object>`  
`<units>SDN:P06::ULAA</units>`  
`<instrument>...</instrument>`

## SeaDataNet D8.2/D8.3

The use of O&M can be seen as a bridge between CDI and SensorML.

Developed within Geo-Seas and supported in SeaDataNet for Seismic data handling.

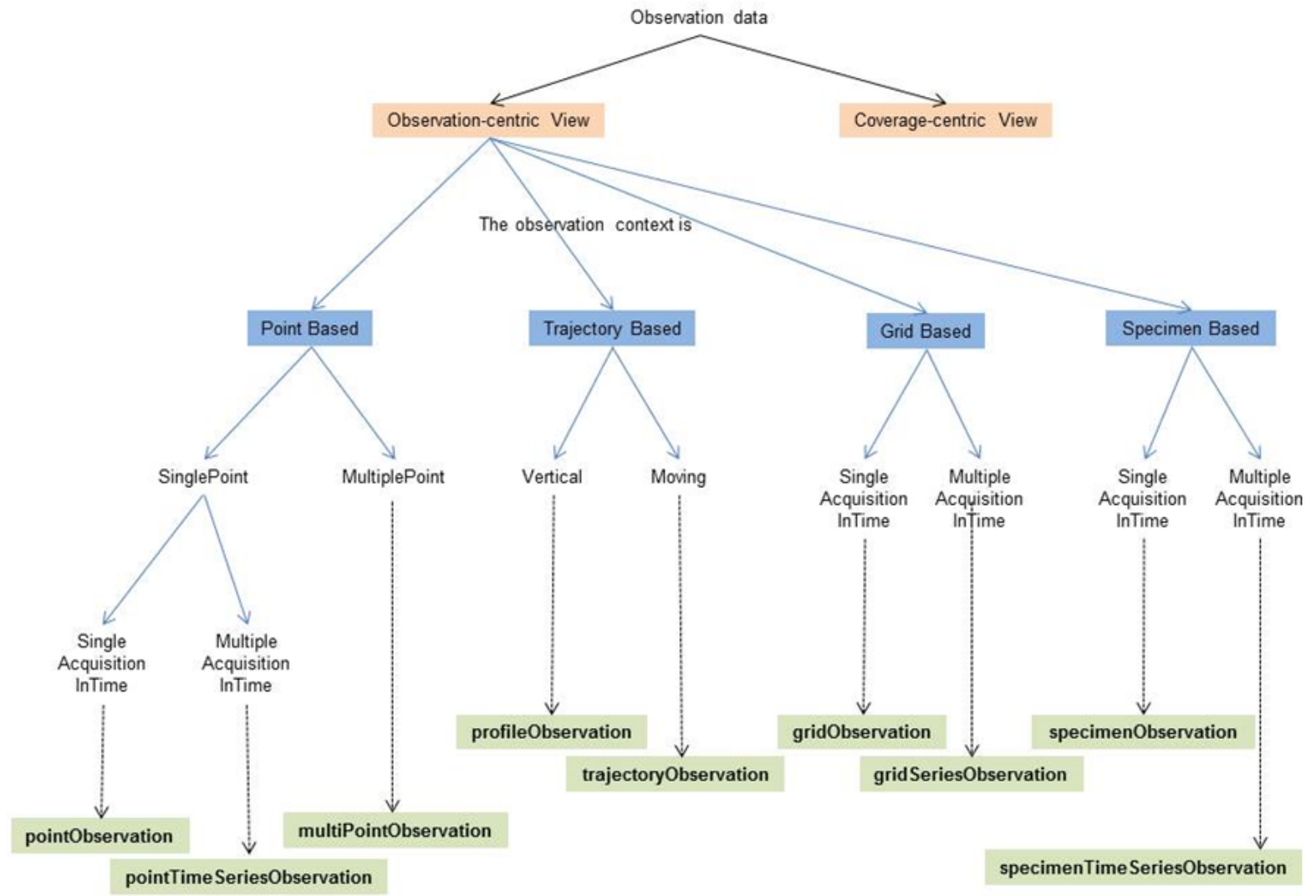
Discovery is granted by the CDI	one
	to
Data access is handled by the O&M part	one
	to
Browsing is handled by SensorML	many

WP8.3 will review the SeaDataNet profiles, time series and trajectories to build on this work.

# Working towards INSPIRE compliance

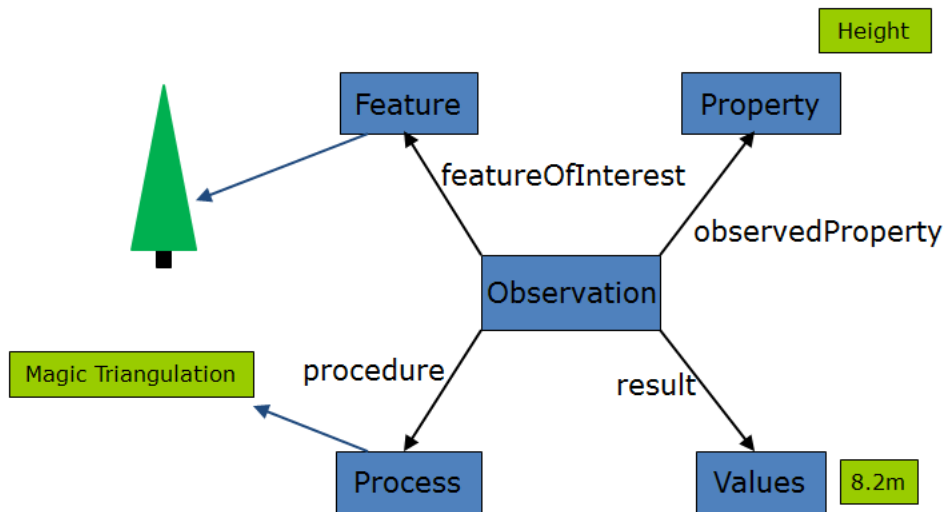
## Design Patterns – Dimensionality

<b>Point</b>	Single Result in Time	<i>point</i>	<i>pointObservation</i>
	Multiple Results in Time	<i>points</i> <i>time series</i>	<i>pointTimeSeriesObservation</i> <i>multiPointObservation</i>
<b>Curve</b>	Single Result in Time	<i>profile</i>	<i>profileObservation</i>
	Multiple Results in Time	<i>trajectory</i>	<i>trajectoryObservation</i>
<b>Surface</b>	Single Result in Time	<i>grid</i>	<i>gridObservation</i>
	Multiple Results in Time	<i>grids</i>	<i>gridSeriesObservation</i>
<b>Specimen</b>	Single Result in Time	<i>specimen</i>	<i>specimenObservation</i>
	Multiple Results in Time	<i>specimens</i>	<i>specimenTimeSeriesObservation</i>

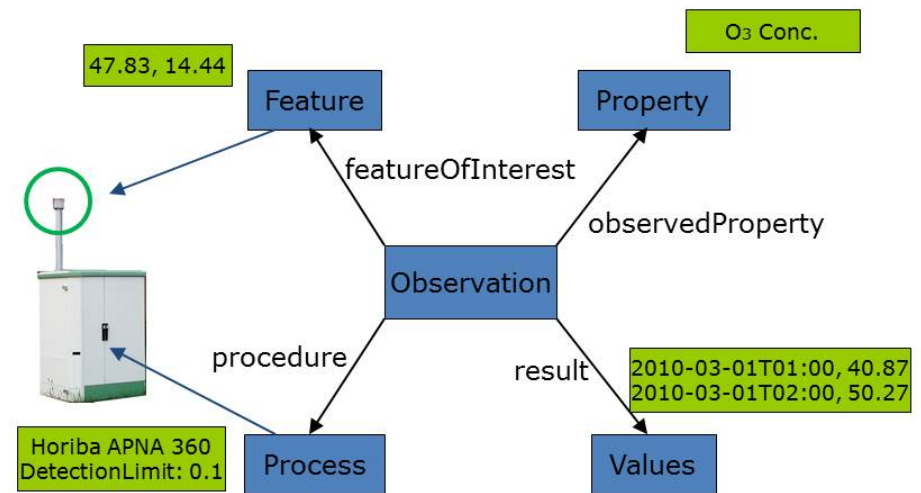




# O& M design patterns



pointObservation



pointTimeSeriesObservation

# SeaDataCloud

Objective : Evaluate the O&M data model/schema for data types.

Action : Examine reference data files and determine mappings with the O&M guidelines/design patterns.

Pressure/Depth profiles

Point time series

Trajectory

Profile time series

Profile collection



# SeaDataCloud

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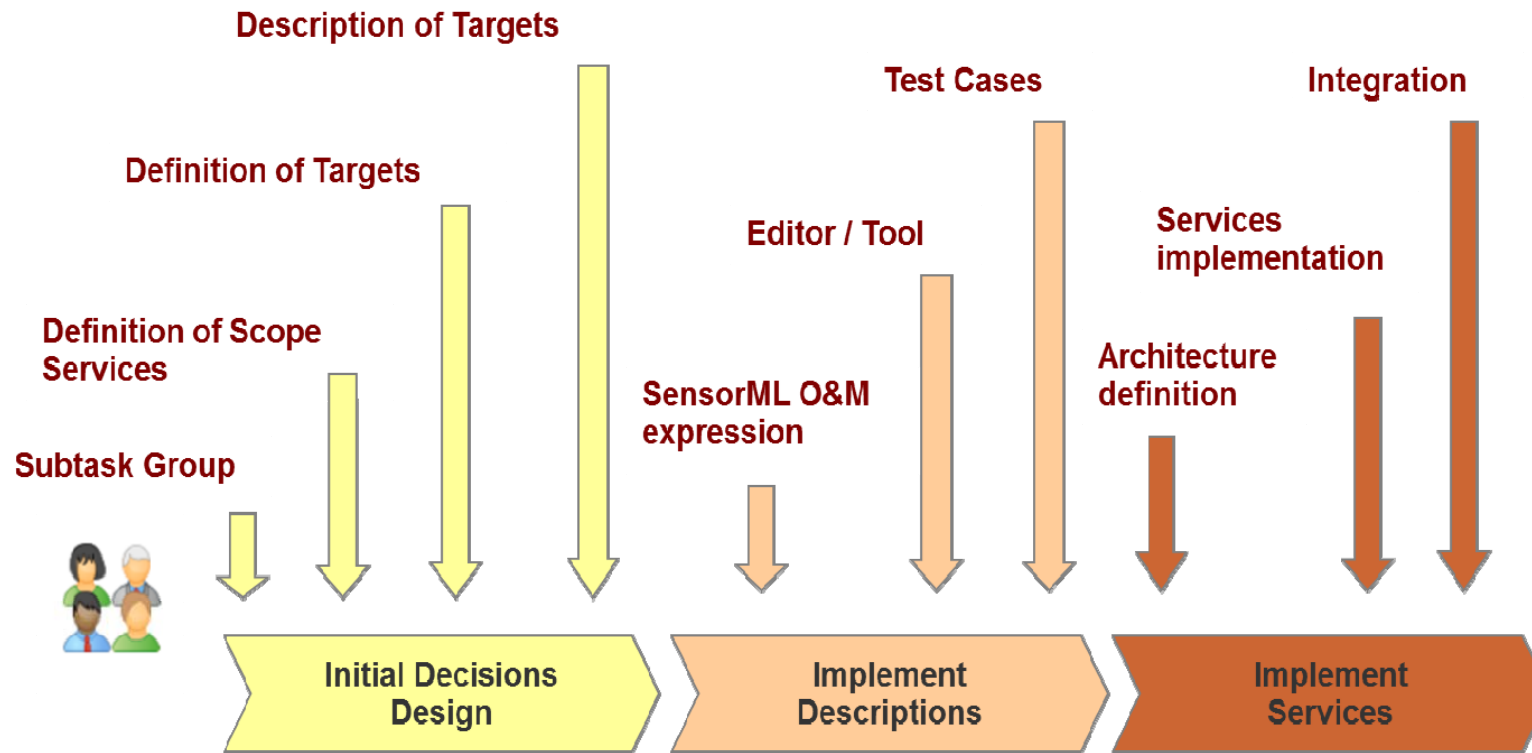
Trajectory

Profile time series

Profile collection

Grid – this profile requires mapping for CF compliance

# SeaDataCloud



# SeaDataCloud

Task : Review of data formats	M0	M3	M6	M9	M12	M15	M18
Fit to an O&M data model/schema	Light Green	Light Green	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
<i>Definition of scope services/targets</i>	Light Green	Light Green	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
Assess O&M metadata requirements	Light Green	Light Green	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
<i>Description of targets</i>	Light Green	Light Green	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
Create O&M data type schema	Light Blue	Light Blue	Light Green	Light Green	Light Blue	Light Blue	Light Blue
<i>O&amp;M expression</i>	Light Blue	Light Blue	Light Green	Light Green	Light Blue	Light Blue	Light Blue
Populate O&M with metadata/data	Light Blue	Light Blue	Light Green	Light Green	Light Blue	Light Blue	Light Blue
<i>Test cases</i>	Light Blue	Light Blue	Light Green	Light Green	Light Blue	Light Blue	Light Blue
Create Grid profile for NetCDF (CF)	Light Blue	Light Green	Light Green	Light Blue	Light Blue	Light Blue	Light Blue
D8.6	Light Blue	Light Blue	Light Blue	Light Blue	Light Green	Light Blue	Light Blue

# SeaDataCloud

## Partners

BODC	British Oceanographic Data Centre, UK
CNR	National Research Centre, Italy
SYKE	Finnish Environment Institute, Finland
CSIRO	Commonwealth Scientific and Industrial Research Organisation, Australia

# Deliverables

D8.6 Review of data formats, also considering INSPIRE data models (M12)

## References



INSPIRE  
Infrastructure for Spatial Information in Europe

<http://inspire.ec.europa.eu/>

SDN2\_D82\_D83\_WP8\_SensorML\_OandM\_profiles\_v2.docx

SDN2\_D94\_WP9\_SWE-CDI-portal.docx

D2.9\_OM\_and\_SWE\_Guidelines\_v3.0\_Final\_Draft.doc