The German Marine Data Infrastructure (MDI-DE)
German EEZ
For which Systems do we need Data

- Marine Data Infrastructure (MDI-DE)
- MyOcean
- SeaDataNet
- Copernicus InSitu
- EMODnet
- MUDAB
- CISE
- MaNIDA
- ICES
- NOOS
- TMAP
- AufMod
- GDI-DE
- IODE
- OSPAR
- GEBCO
- HELCOM
- Copernicus InSitu
- BOOS
- BaltSeaPlan
- MSFD
- WFD
- WasserBLiCK
- INSPIRE

2. BSR MSP Data Expert Sub-Group, BSH
Johannes Melles
MDI-DE

- MDI-DE = Marine Data Infrastructure - Germany
- Supra-institutional network for the integration of marine data from all relevant data sources
  - Federal Institutions
  - State Institutions
  - Research Organizations
- National marine and coastal information system
  - Central geoportal
  - Central metadata catalogue
  - Local infrastructure nodes providing data and services
- Project was funded by the German Ministry of Education and Research
- Cooperation arrangement between the partners for permanent operation
Future Network

- Service Oriented Architecture
- Decentralized network of data providing services
- Data and Services documented with metadata
- Focus on interoperability
HELCOM, 2006: Development of tools for assessment of eutrophication in the Baltic Sea, Baltic Sea Environmental Proceedings No. 104
Harmonization: Example Eutrophication

The Nitrite-N-Layer of different agencies with their own styles

The harmonized Nitrite-N-Layer with unified symbols and legend
MSRL D5: Eutrophication

(Nitrate-N)
MSRL D5: INSPIRE compliant WFS

FeatureTypes

<<featureType>>
+ MSRL_EnvironmentalMonitoringFacility
  +id : inspireId_composite
  +managementRestrictionOrRegulationZoneId : inspireId_composite
  +additionalDescription : CharacterString
  +geometry : GM_Object
  +name : CharacterString
  +legalBackground : [0..1] CharacterString
  +responsibleParty : [0..1] CharacterString
  +reportedTo : CharacterString
  +mediaMonitored : MediaValue
  +measurementRegimeValue : [0..1] MeasurementRegimeValue
  +mobile : [0..1] MobileValue
  +resultAcquisitionSource : [0..1] ResultAcquisitionSourceValue

responsibleParty
Werte aus MDI-DE_ResponsiblePartyCode getrennt durch Komma

legalBackground: z.B. WRRL, OSPAR usw. getrennt durch Komma

<<featureType>>
+ MSRL_ManagementRestrictionOrRegulationZone
  +id : inspireId_composite
  +reportingUnitId : inspireId_composite
  +geometry : GM_Polygon
  +SpecialisedZoneType : MarineRegionZoneType
  +zoneType : ZoneTypeCode
  +activity : ControlledActivityType
  +controlMeasure : ControlTypeCode

<<featureType>>
+ MSRL_ReportingUnits
  +id : inspireId_composite
  +reportingAuthority : MDI-DE_ResponsiblePartyCode
  +reportingObligation : CharacterString
  +reportingPeriod : CharacterString
  +reportingUnitName : MSFD_MSCommon_Region

<<featureType>>
+ MDI-DE_Observation
  +id : CharacterString
  +parameterName : MSRL_ParameterNameCode
  +parameterValue : numeric
  +parameterUnit : MDI-DE_Unit
  +phenomenonTime : TM_Object
  +resultQuality : CharacterString
  +resultTime : TM_Object
  +validTime : TM_Object
  +environmentalMonitoringFacilityId : inspireId_composite

<<featureType>>
+ MDI-DE_MarineFeatureOfInterest
  +id : CharacterString
  +observationId : CharacterString
  +geometry : GM_Object
  +depth : numeric

reportingObligation: "curr. "MSFD"
reportingPeriod: Berichtszeitraum
Marine Data Infrastructure (MDI-DE)

MDI-DE Portal

Data Search
DataVisualisation
Data Access

https://www.mdi-de.org
Geodateninfrastruktur des BSH

Geofachdaten: Aktuelle Schiffs- und Stationsmessungen (hier z.B. Wellen- und Windinformationen)

Model-Simulation (e.g. Currents)

Legende

- < 0.25 m/s
- 0.25 - 0.5 m/s
- 0.5 - 1 m/s
- 1 - 2 m/s
- 2 - 3 m/s
- 3 - 4 m/s
- > 4 m/s

† direction
Model-Simulation
(e.g. Water Level Prediction)
Density of Harbour Porpoise

Legende

BSH WMS BIO
HarbourPorpoise_Density_6x10

- 0,00
- 0,01 - 1,00
- 1,04 - 2,07
- 2,08 - 4,00
- > 4,00

[ Ind./Km² ]
Wrecks and Obstructions

Legend
- shalwar than the range of depth of the surrounding
- within the range of depth of the surrounding depth
○ non-dangerous wreck
○ non-dangerous wreck
● dangerous wreck
● dangerous wreck
# distributed remains of wreck
+ wreck showing mast/masts
+ wreck showing any portion of hull or superstructure
● foul ground
● Obstruction
ENC-Data and Data about Pollution

2. BSR MSP Data Expert Sub-Group, BSH Johannes Melles
03. March 2015
MSDI Open Forum, Heathrow, UK

ENC-Data and Data about Pollution
Summary

- Easy access to spatial data
- Data could be used interdisciplinary
- The processes of providing data to different systems could be simplified
- Data remains with its originators
- Minimal alteration to existing data structures
- Datasets could be provided for multiple uses
www.mdi-de.org

Thank you for your attention.

Questions?

johannes.melles@bsh.de, +49 40 3190 – 3420