Using the HUMBOLDT framework to improve the exchange of oil spill data and information

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Outline

Introduction to HUMBOLDT project

Data Harmonisation

Scenarios

Ocean Scenario and oil spill data and information

Relationship to WARMER and InterRisk

A large project

- GMES project
- 50% funded by European Commission
- 4 years, started in October 2006
- 1300 person.month
- 27 partners

The Humboldt partners

- Fraunhofer (Germany) project coordinator
- Universities:
  - ETHZ : Federal Institute of Technology (Zurich)
  - University of Gävle –Sweden
  - Kaunas University of Technology
  - TU Delft
  - University of Rome
  - University of the West of England

-NMCAs
- IGN France
- IGN Portugal
- FOMI

-thematic partners
- oceanography (IFREMER, MARIS, BODC …)
- Meteorology
- Forest
- Satellites

-Private companies (ETRA, Intergraph), …

The Humboldt objectives

To contribute to the implementation of the European Infrastructure for managing Spatial Data

-with INSPIRE as legal framework
(a new European directive based around improving the management and access to spatial information)

-with focus on the data harmonisation process
(bringing together and being able to use different data sources easily)

Results of the second phase on user needs

The top five requirements are:

Problems with **different data formats** ➔ provide interoperable access to heterogeneous data sources

Problems with **different data models** ➔ provide solutions for data model harmonisation

Problems due to **missing / inconsistent / outdated metadata** ➔ provide solutions to search for and possibly capture / publish metadata

Problems with the **meaning of objects, i.e. semantics** ➔ provide solutions like application domain dictionaries and thesauri

Problems with **different coordinate reference systems** ➔ provide Coordinate Transformation Service(s)

Data harmonisation issues

Data (exchange) formats

Coordinate Reference Systems

Edge Matching difficulties

Data structure, conceptual model

Classifications

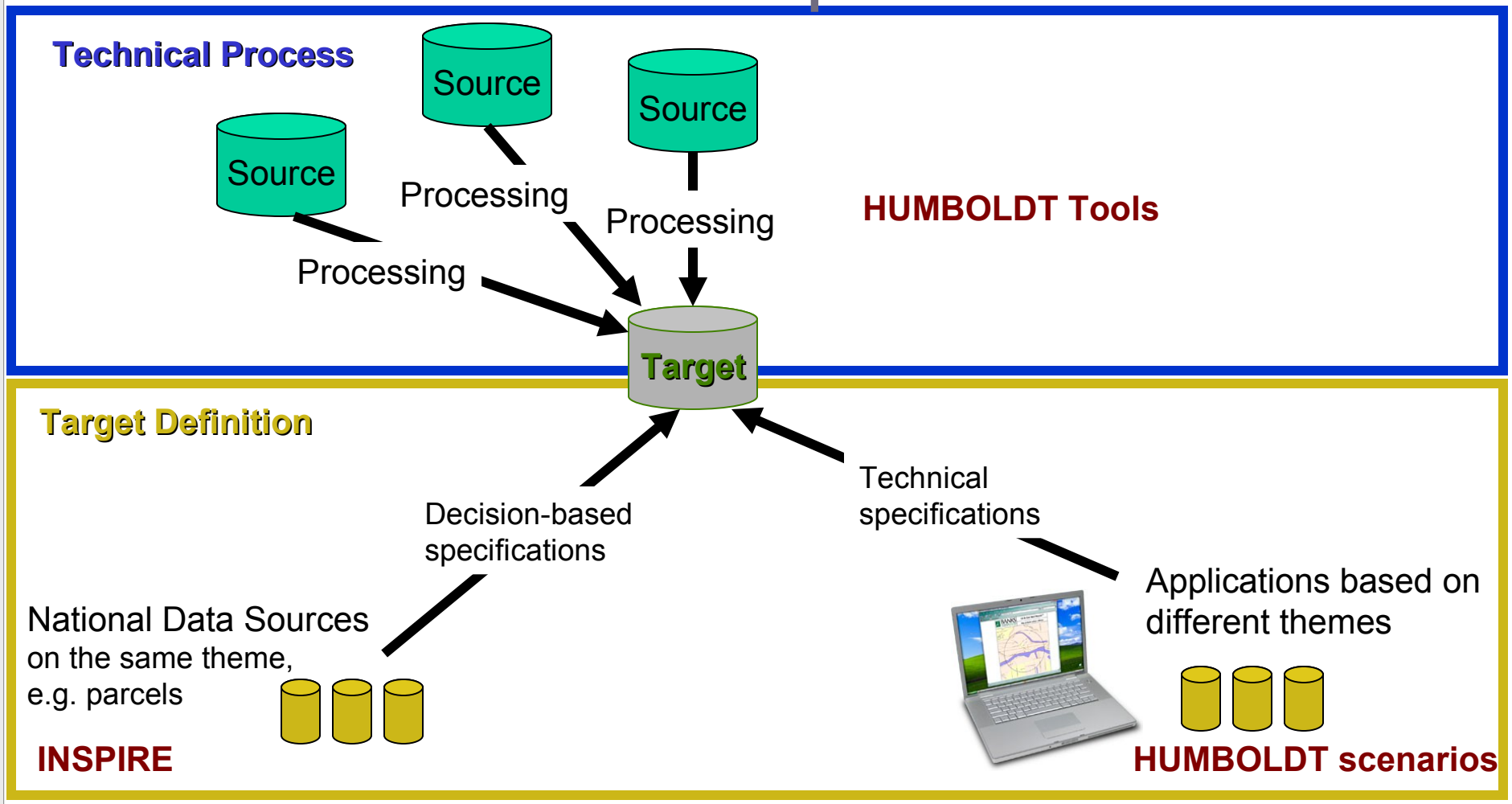
Semantics, terminology

Metadata

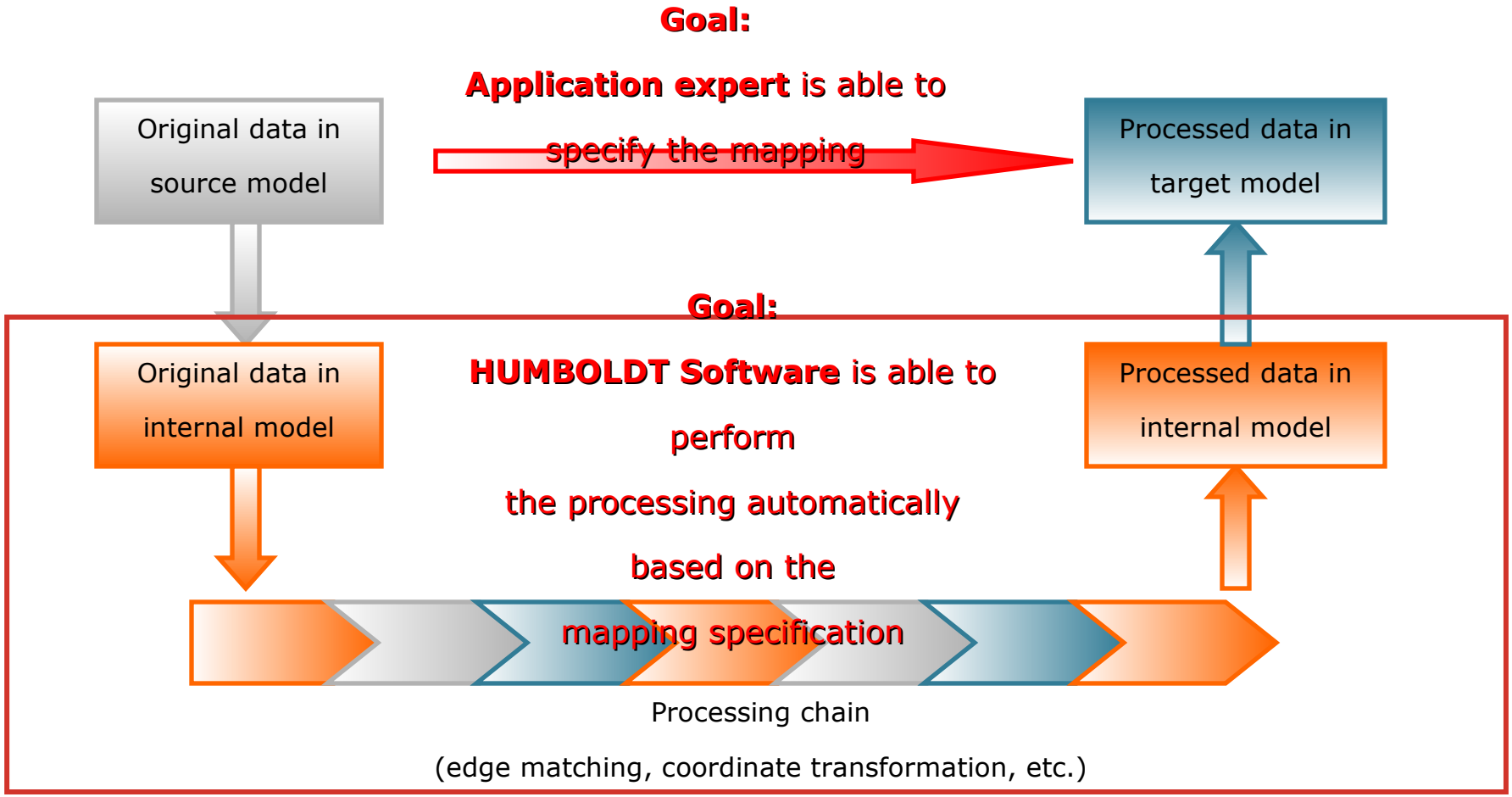
Levels of detail

Once tools are build to overcome some of these difficulties then it will make it easier to exchange, use and view data from different sources

Data harmonisation processes



Technical processing of data



Humboldt scenarios

Border security

Urban planning

Forest

Protected areas

Risk atlas

Transboundary catchments (water)

Ocean (Oil/contaminants spill crisis impact and management)

Galileo

The key role of Humboldt scenarios

- develop harmonised specification (for given theme(s))

- Identify data harmonisation issues
⇒harmonisation tools to be developed

- Test the harmonisation capabilities that have been developed by Humboldt

Current status ocean scenario specification

- BODC (United Kingdom)

  UK scenario, first draft

- IFREMER (France)/CLS

  French scenario, use cases are big and describe full application.

- HCMR (Greece)

  Greek scenario, use case is large and covers full prediction of oil spill.

- MARIS (The Netherlands)

  Overall scenario, focused on viewing all regional data sources.

Examples of use cases

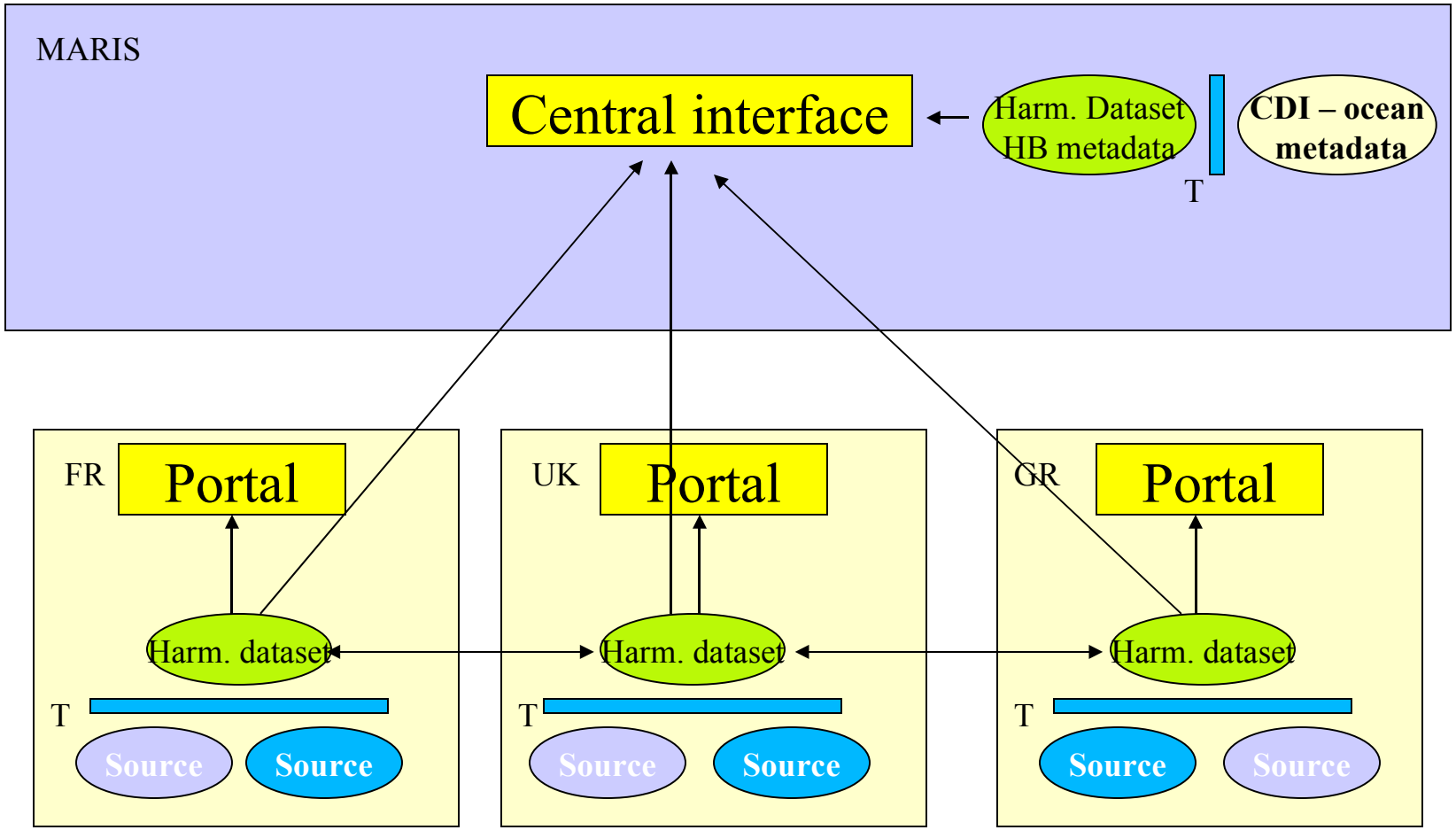
- A possible oil spill is detected in Aegean sea by an intergraded oil spill forecasting service, which apart from the detection, aims to provide the best forecast information about the drift of this oil spill. (GR)

- Visualisation of past oil spills in the English Channel in conjunction with sensitive area information: Shows details of past oil spills from both France and the UK within defined time limit. This is used in combination with on-line and requested environmental information to provide advice on threatened areas. (UK)

- Generate Synthesized Data for Oil Spill: Provide daily and on request reports on the situation and the evolution and impact of the oil spill development using various source of information made available through time i.e observations and model forecasts (FR-UC01)

- DATA INTEGRATOR prepares for user an overview of oils spill occurrences in the 4 regions (in the form of a catalogue). (MARIS UC-01)

Structure of Ocean scenarios



The Humboldt components to date

- UML modeller (based on Eclipse)
  - offering only the components allowed by INSPIRE
  - for harmonised specifications coming from scenarios

- Coordinate Reference System Transformation

- Geographic Edge Matching Service

-……and many more to be developed…..

Humboldt users

-Classification of Humboldt users:

- data providers / data custodians
- developers
- data users

-Involvement of users

- within the project
  - survey about user requirements
  - involvement of users through 8 scenarios
- without the project
  - will to involve key users to ensure sustainability of the project
  - will to create a community of Humboldt developers

Relationship to WARMER and InterRisk?

- I am here to start further cooperation
- Already some integration as there are organisations in both projects (Ifremer)
- Possibility to use some of the HUMBOLDT components
- May be further collaboration on oil spill monitoring and forecasting

Summary

- HUMBOLDT project is half way through
- Provide ‘tools’ and models to aid the integration of data from different sources to speed up processes that used to have to be done manually.
- Demonstrated by ‘Scenarios’ which are very diverse in nature
- Oil Spill scenario outputs will be available by end of 2009

Questions?

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