melodies
exploiting open data

The MELODIES project

Jon Blower

University of Reading

on behalf of MELODIES consortium

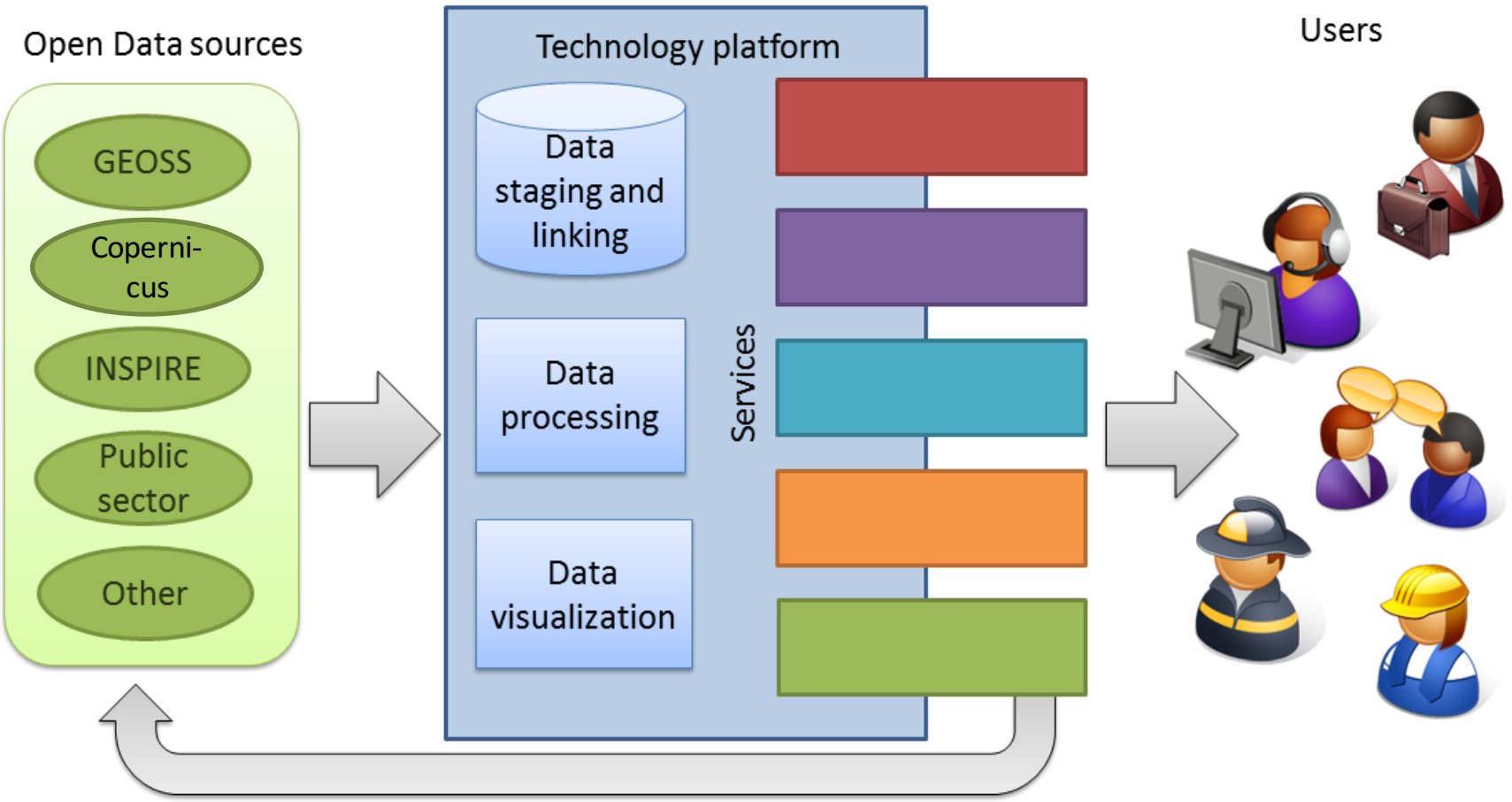
European Commission

MELODIES Project Overview

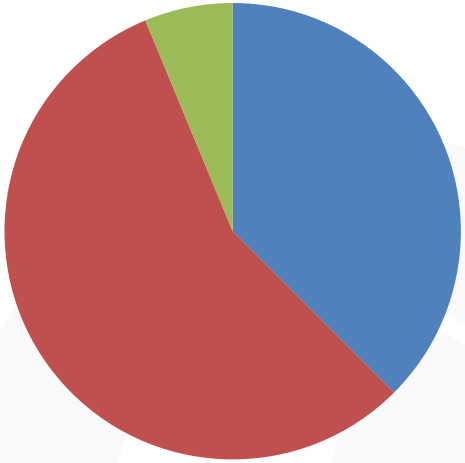
- Maximizing the Exploitation of Linked Open Data In Enterprise and Science

- 3 years, November 2013 – October 2016
- 16 partners in 8 EU countries
- €6.7M budget

Project concept



Project consortium



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Assimila

Vista

ERMESS

terranea

HELLENIC REPUBLIC
National and Kapodistrian University of Athens

gisat

HYDROMODELHOST

terradue 2.0

EOXPLORE

Critical software

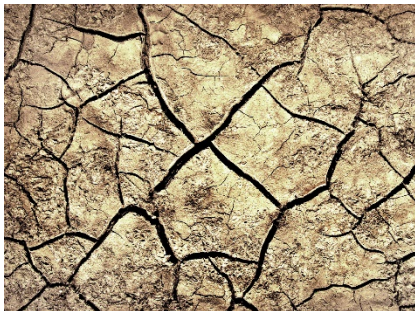
IST TÉCNICO LISBOA

CSIC Consejo Superior de Investigaciones Científicas

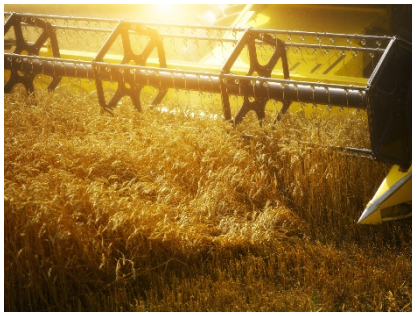
NERC SCIENCE OF THE ENVIRONMENT

acs ADVANCED COMPUTER SYSTEMS

The MELODIES Services



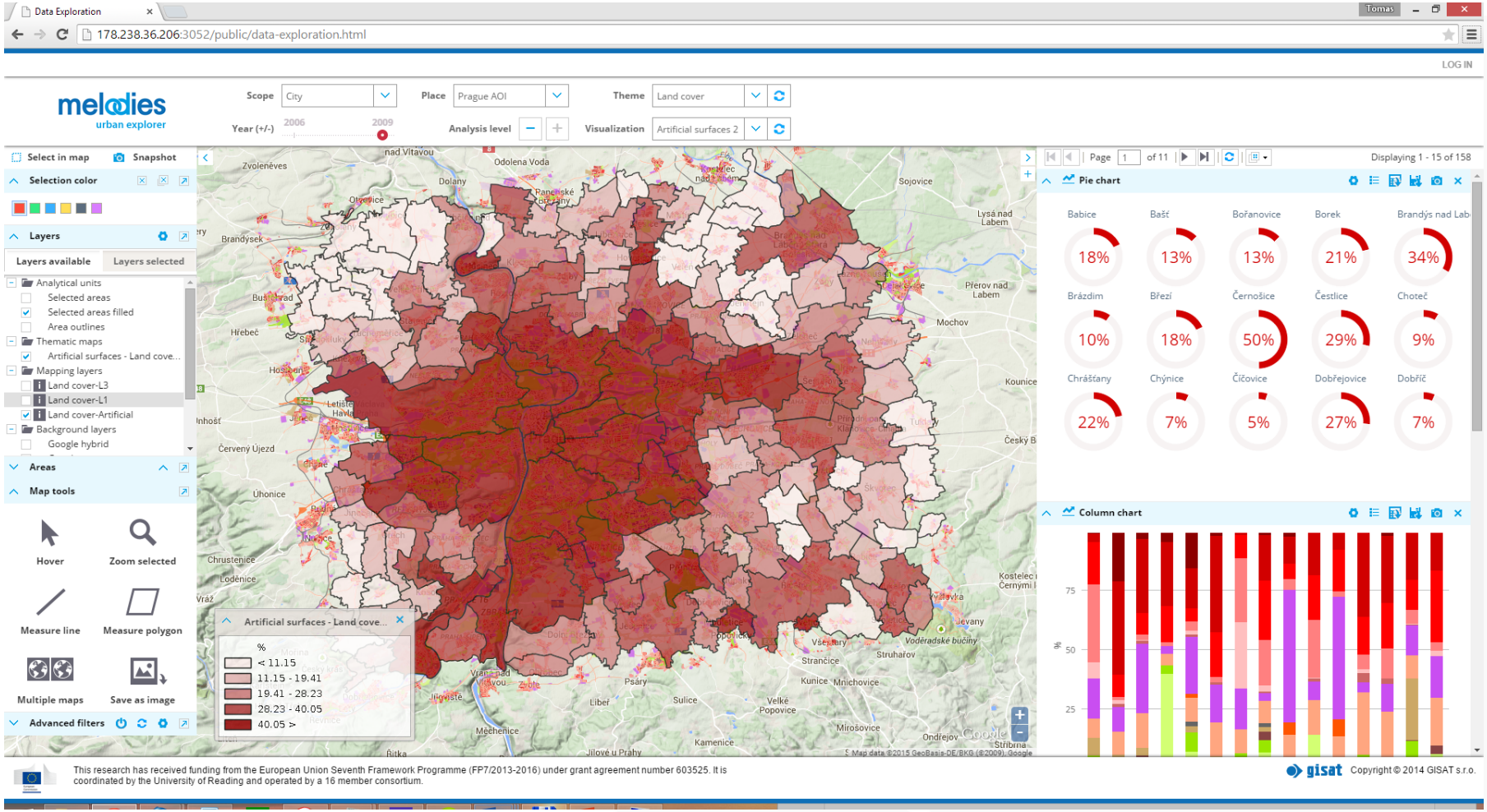
Improving Emission Inventories	Site-specific information for land management
Urban Ecosystem Accounting	Assessment of Good Environmental Status for oceans
Desertification indicators	Marine transport
Customised crisis, disaster and risk mapping	Groundwater modelling



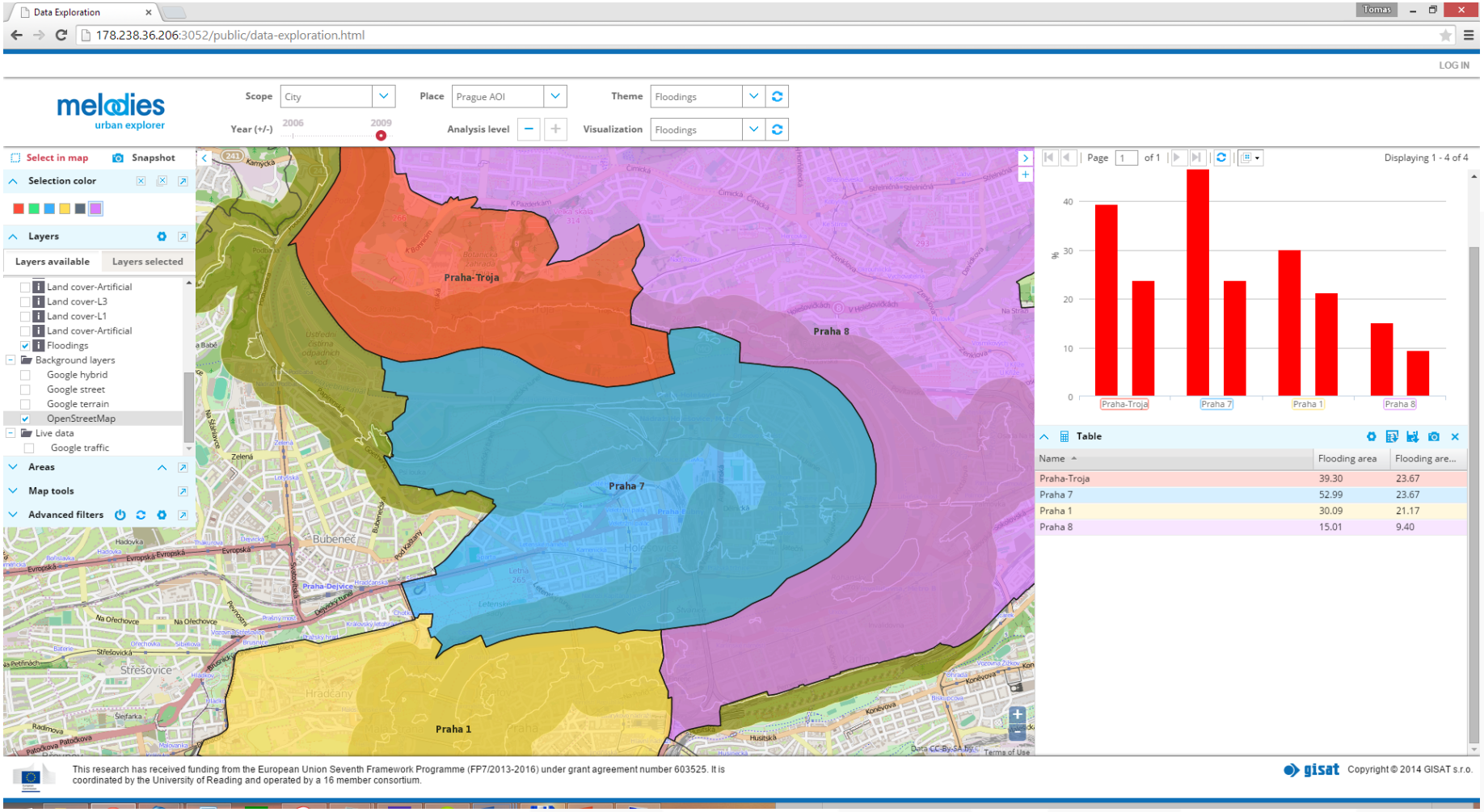
Key challenges

- Integration of data from multiple sources
- Cross-querying to generate new information

Example MELODIES service: Urban Explorer application



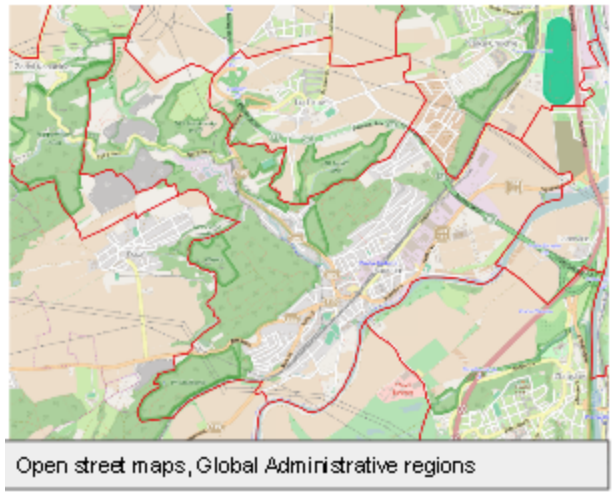
Urban Explorer Land Use / Land Cover theme
See http://www.melodiesproject.eu/node/33



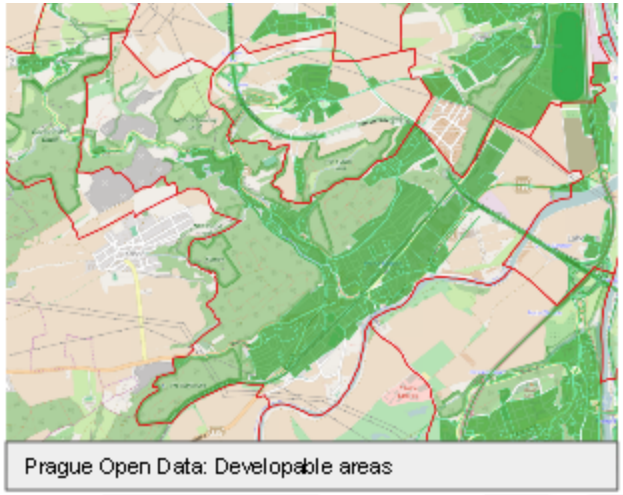
Flood zones theme

Open Data inputs to Urban Explorer

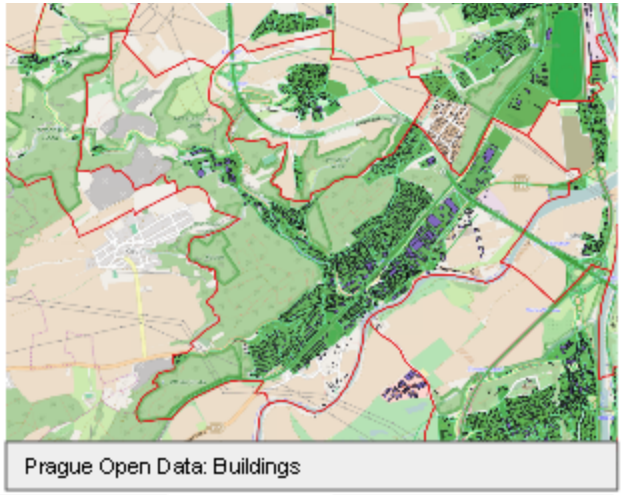
(Sources: OpenStreetMap, Prague authorities, LinkedGeoData.org, more)



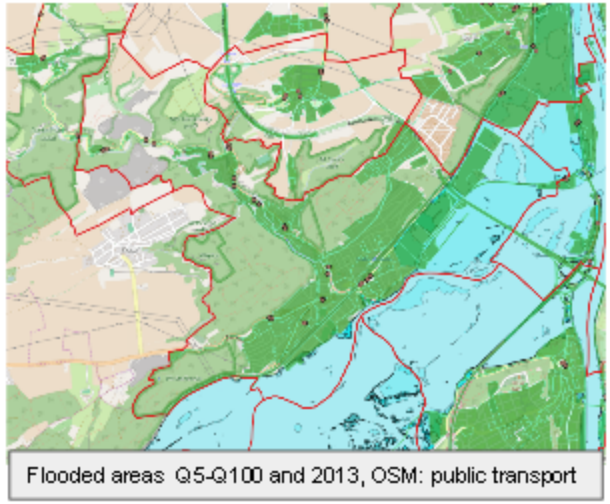
Open street maps, Global Administrative regions



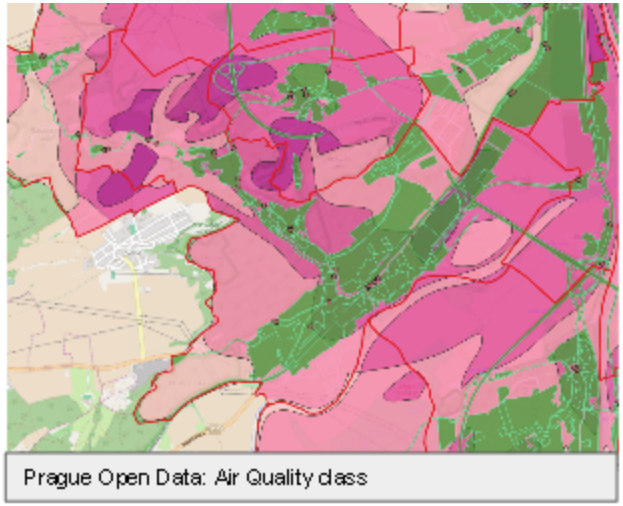
Prague Open Data: Developable areas



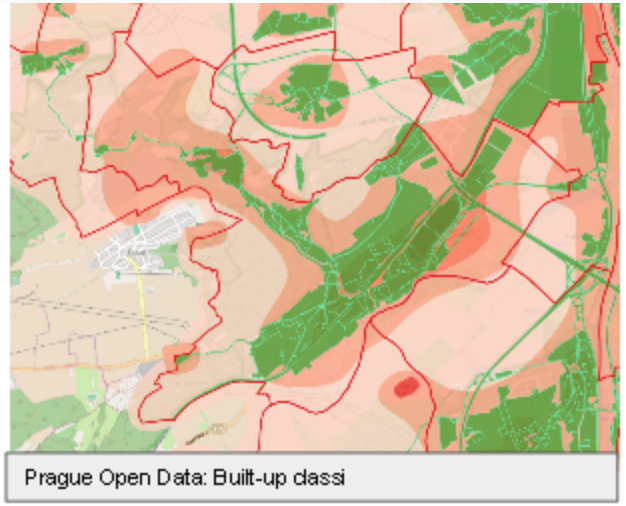
Prague Open Data: Buildings



Flooded areas Q5-Q100 and 2013, OSM: public transport



Prague Open Data: Air Quality class



Prague Open Data: Built-up classi

European Historical Flood Database

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Input:

Copernicus

EFAS, EMS, HRL Layers, Local Component, EU-DEM, CLC

INSPIRE - Infrastructure for Spatial Information in Europe

esa

Sentinel-1, EarthExplorer, Archives (Envisat, ERS, …)

Disaster events:

EM-DAT, MunichRe Nathan, Darmouth Flood Observatory, National databases

flickr

YouTube

OpenStreetMap

Processing:

EGI

terradue 2.0

Private Linked Data

Public Linked Open Data

EOXPLORE

www.terranea.de

www.eoxplore.com

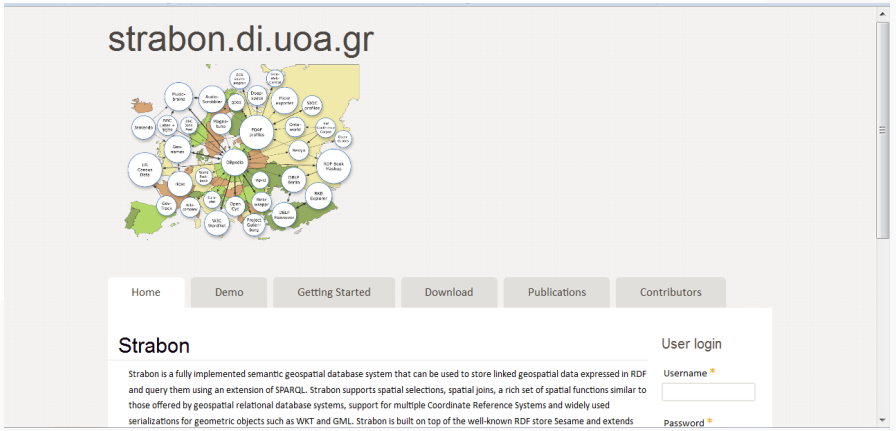
terranea

Key challenges

- Integration of data from multiple sources
- Cross-querying to generate new information
- Handling geospatial Linked Data

Geospatial Linked Data tools

- Strabon
  - spatiotemporal RDF store
  - GeoSPARQL / stSPARQL support
- GeoTriples
  - Convert geospatial data to RDF
- Ontop-spatial
  - "Wrap" existing geo-databases
- SILK
  - Discover links in datasets



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LEO

TELEIOS

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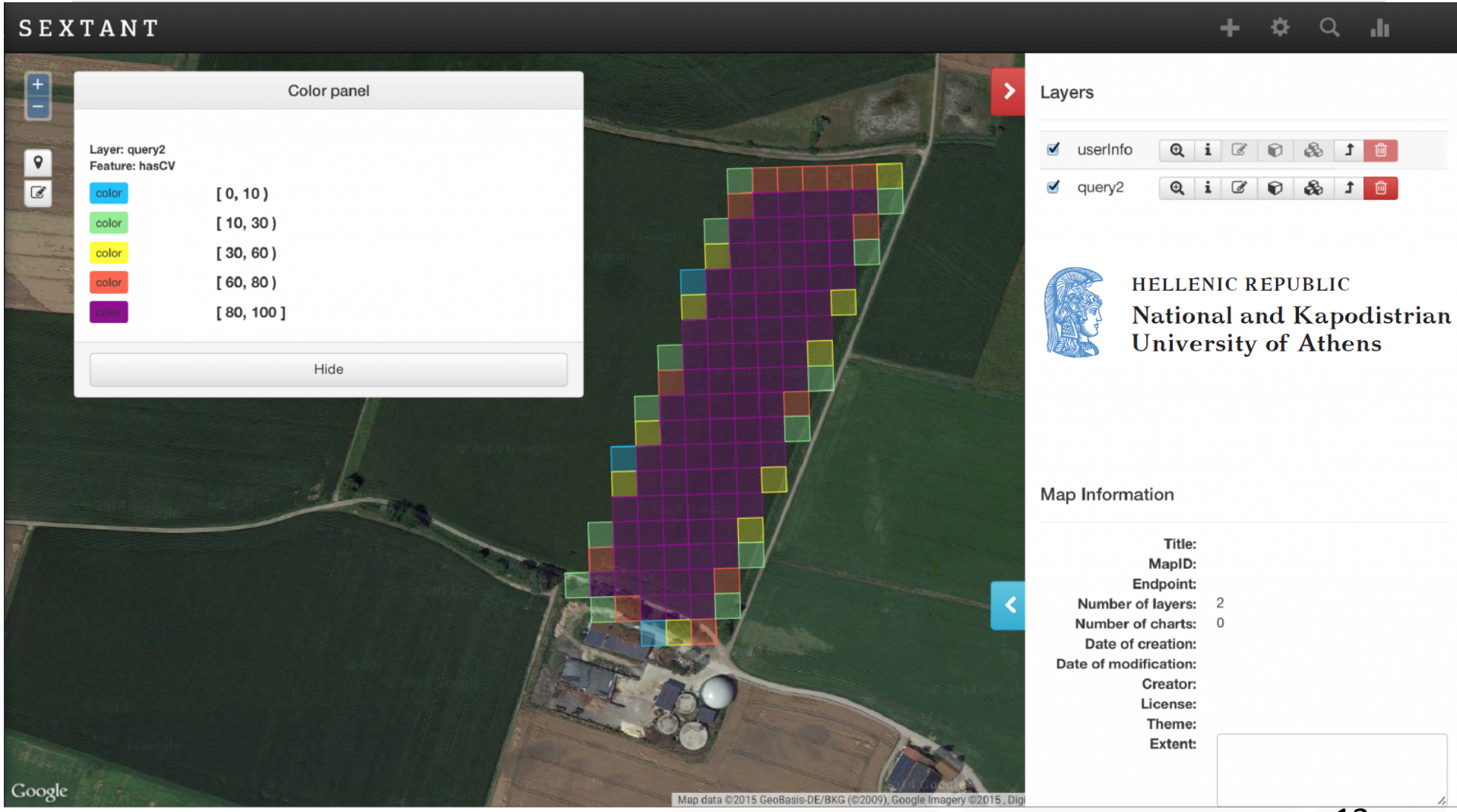
Sextant: visualizing and integrating time-evolving Linked Data

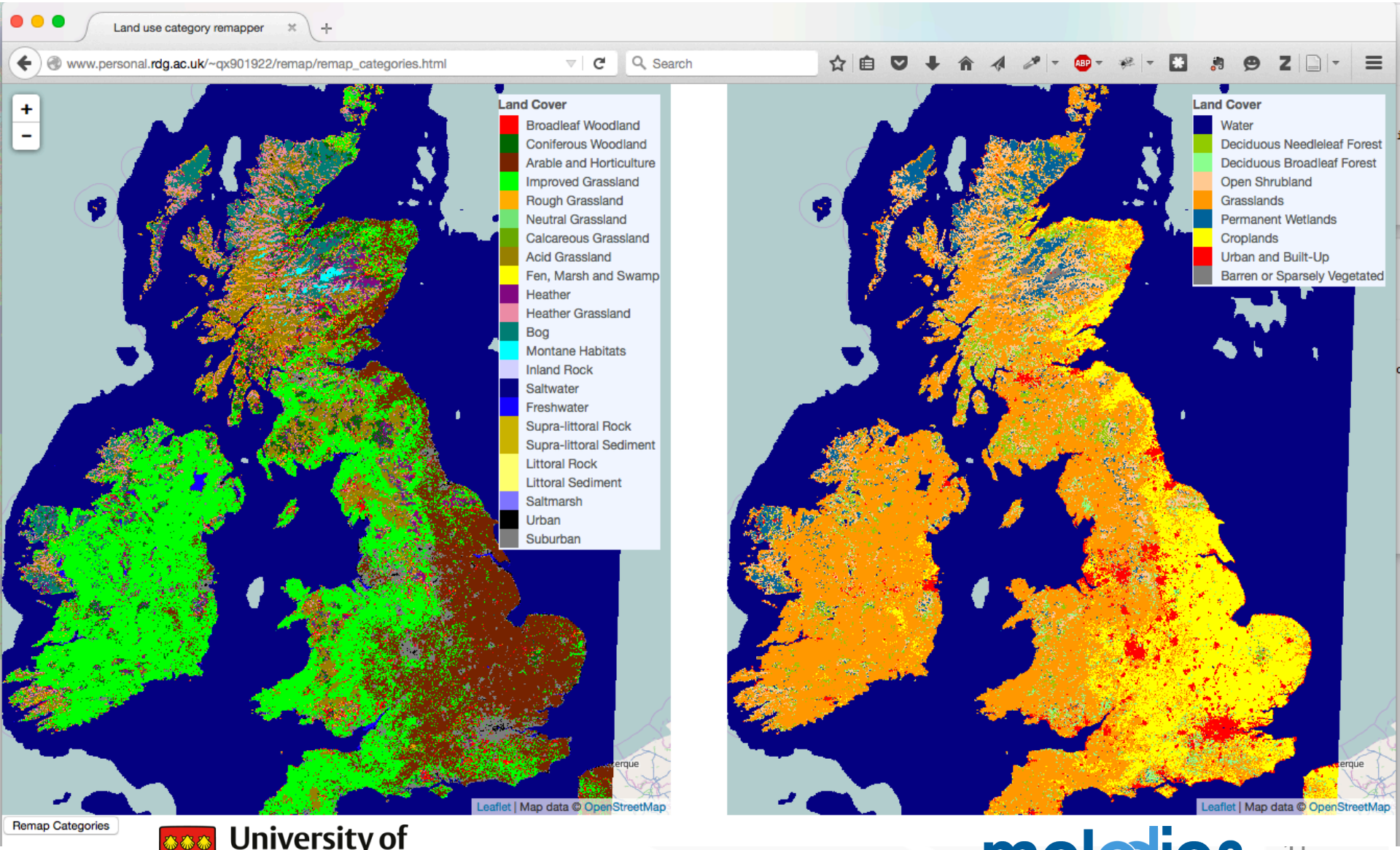


Key challenges

- Integration of data from multiple sources
- Cross-querying to generate new information
- Handling geospatial Linked Data
- What about Big Data?
  - Satellite images, weather forecasts, …

Land cover remapping application

Combines Earth Observation data with Linked Data using JSON-LD



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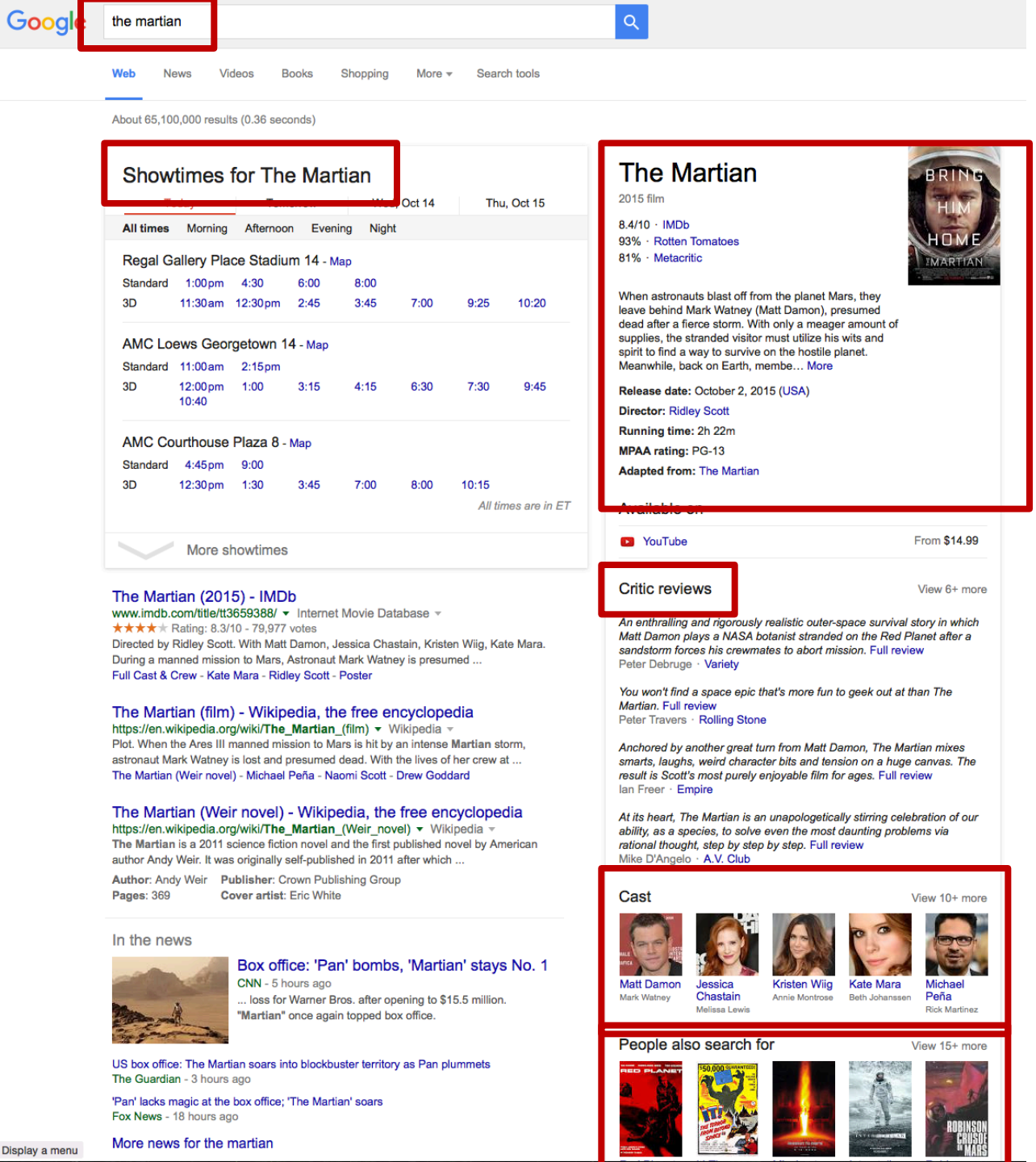
- Mixing open and closed data in applications
  - Licence issues, including cross-border issues
- How should we publish data to ensure maximum re-use?

CUSTOMERS WHO BOUGHT THIS ITEM:
ALSO BOUGHT:
dernativateur.fr

g-dat



Search for "The Martian", Google shows:

- Facts about the film
- Cast
- Showtimes
- Reviews
- Related films

This is Linked Data in action!

(powered by schema.org vocabulary)

Why can't we do the same for data?

Summary

- Exploring Open Linked Data through eight real applications, with emphasis on user's point of view
- Application developers see benefits of Linked Data flexibility and ease of data integration
  - but data conversion is expensive
- We are developing tools and standards for producing and using *geospatial* linked data
- Handling raster/image/coverage data in LD environment is a key research area
- Need to consider the role of mass-market search engines

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Thank you!

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