The HABITATS Approach to Build the INSPIRE Infrastructure

Karel Charvát, Otakar Čerba, Štěpán Kafka,
Tomáš Mildorf, and Přemysl Vohnout
Help Service Remote Sensing
Neusiedl am See, October 9 2013

Technological objectives

- Data modeling and transformation
- Architecture design and implementation

Data Models and Transformation Process

Input and information sources:

- Content from project partners (questionnaires, inputs to deliverable),
- Reports from the EU level, INSPIRE TWG BR-HB-SD,
- Information from D3.1, D3.2 and INSPIRE TWG BR-HB-SD discussions,
- Analysis of good practice from other EU projects such as Plan4all, Humboldt

Main tasks:

- To assist end users to describe their current models using interactive modelling tools
- To develop training materials and provide training sessions for users.
- To design the main transformation processes required for data sets, based on the requirements activities

Basic Transformations

Two solutions for data merging

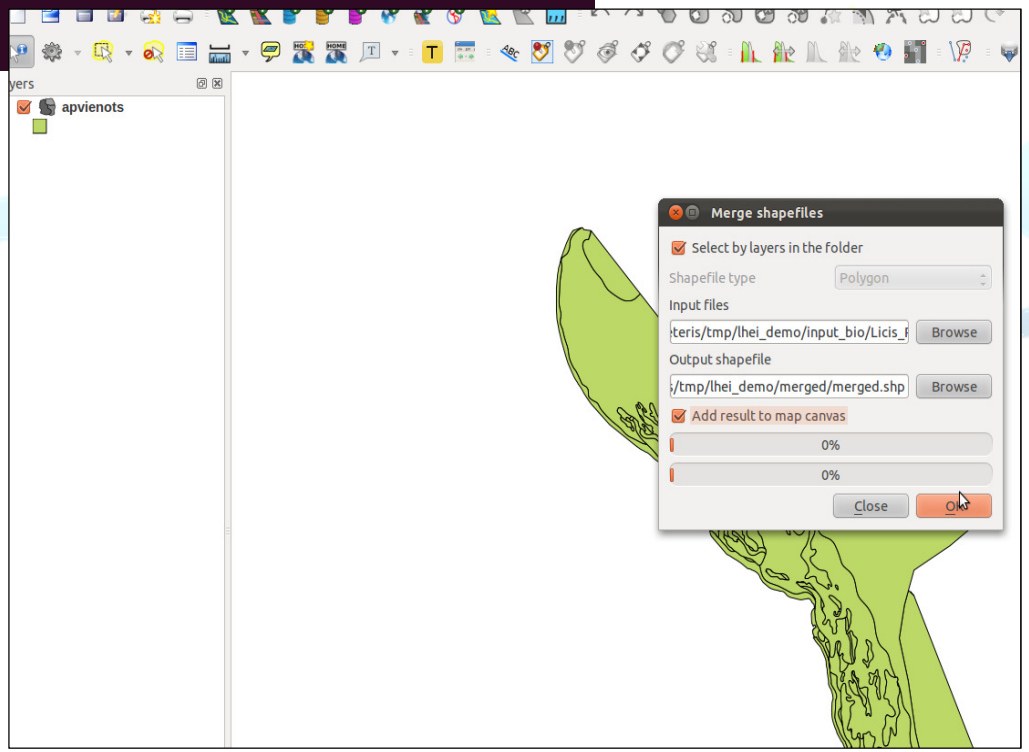
```
import os
import sys

path=os.path.realpath('')

for file in os.listdir(path):
        if file.upper().endswith('.SHP'):
            print 'Processing:%s'%(file)
            os.system('ogr2ogr -f "ESRI Shapefile" -s_srs EPSG:3059 -update -append -skipfailures merged.shp  %s -nln merged'%(file))
```

Basic script for automated data merge of data maintained as multiple files

Basic data merge of data maintained in multiple file structure using free and opensource desktop application



Basic Transformations

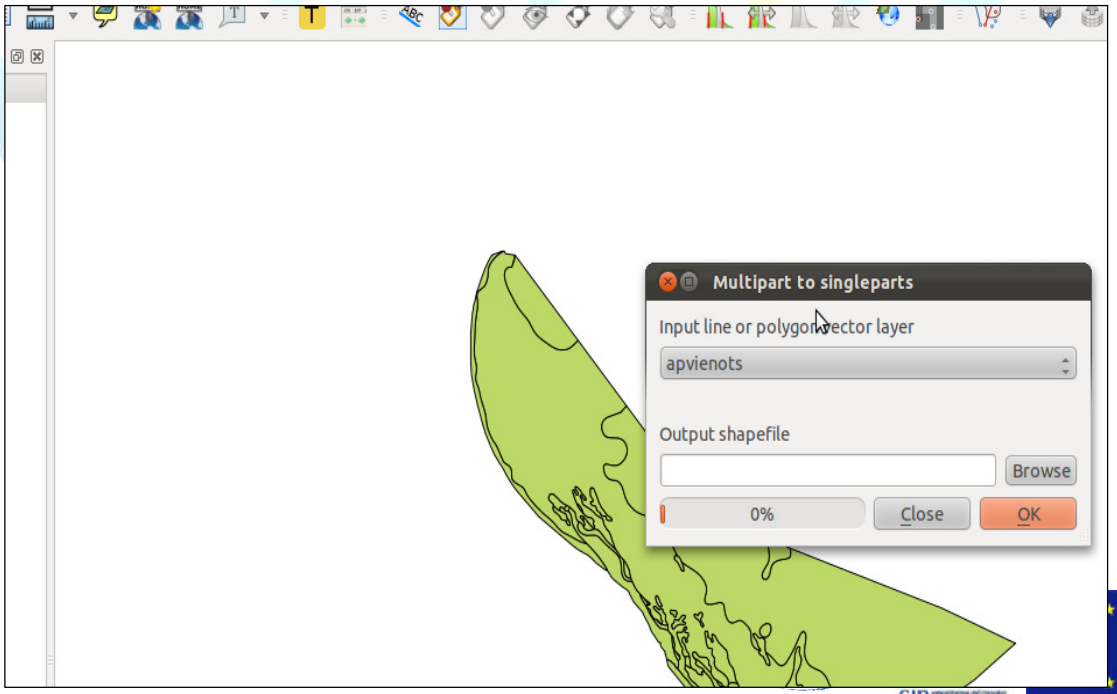
Two solutions for data extracting

SQL Editor | Graphical Query Builder

```
-- Break multipolygons into single polygons
SELECT a.biotope as biotope , (a.p_geom).path[1] As path, (a.p_geom).geom As the_geom
  FROM (SELECT biotope, ST_Dump(the_geom) from my_biotopes) AS a;
```

Basic SQL script for geometry extraction from multigeometry, further can be used as one setep in larger data transformation process

Basic geometry extraction from multigeometry using free and opensource desktop application



Advanced Transformations

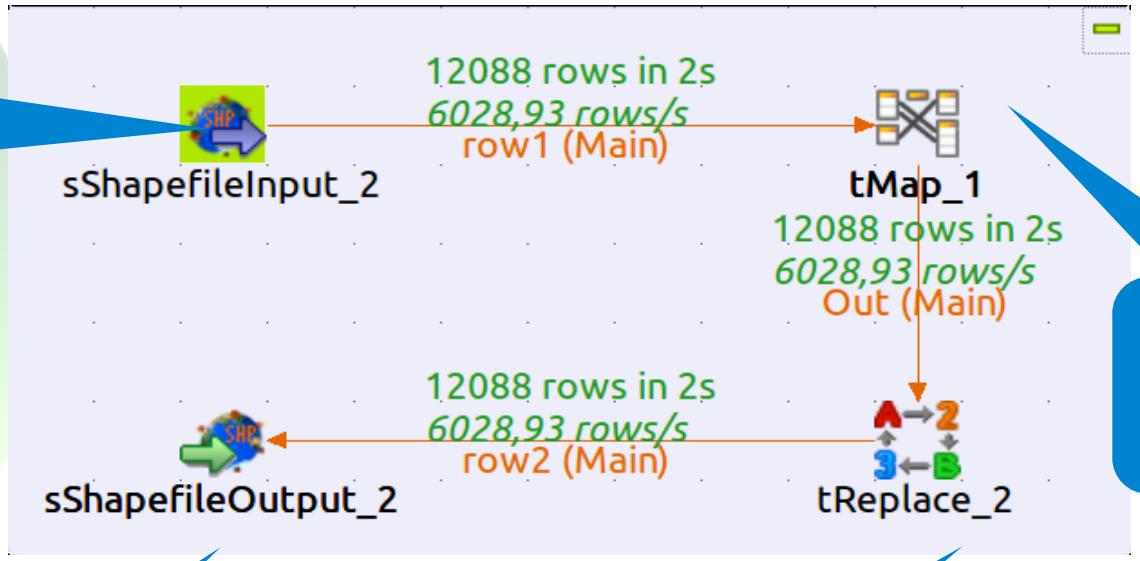
FMI Data

Harmonization

Data Specifications 2.0

Habitats and biotopes

Advanced Transformation – Schema



Open SHP file and its scheme

New data model

Save final SHP file

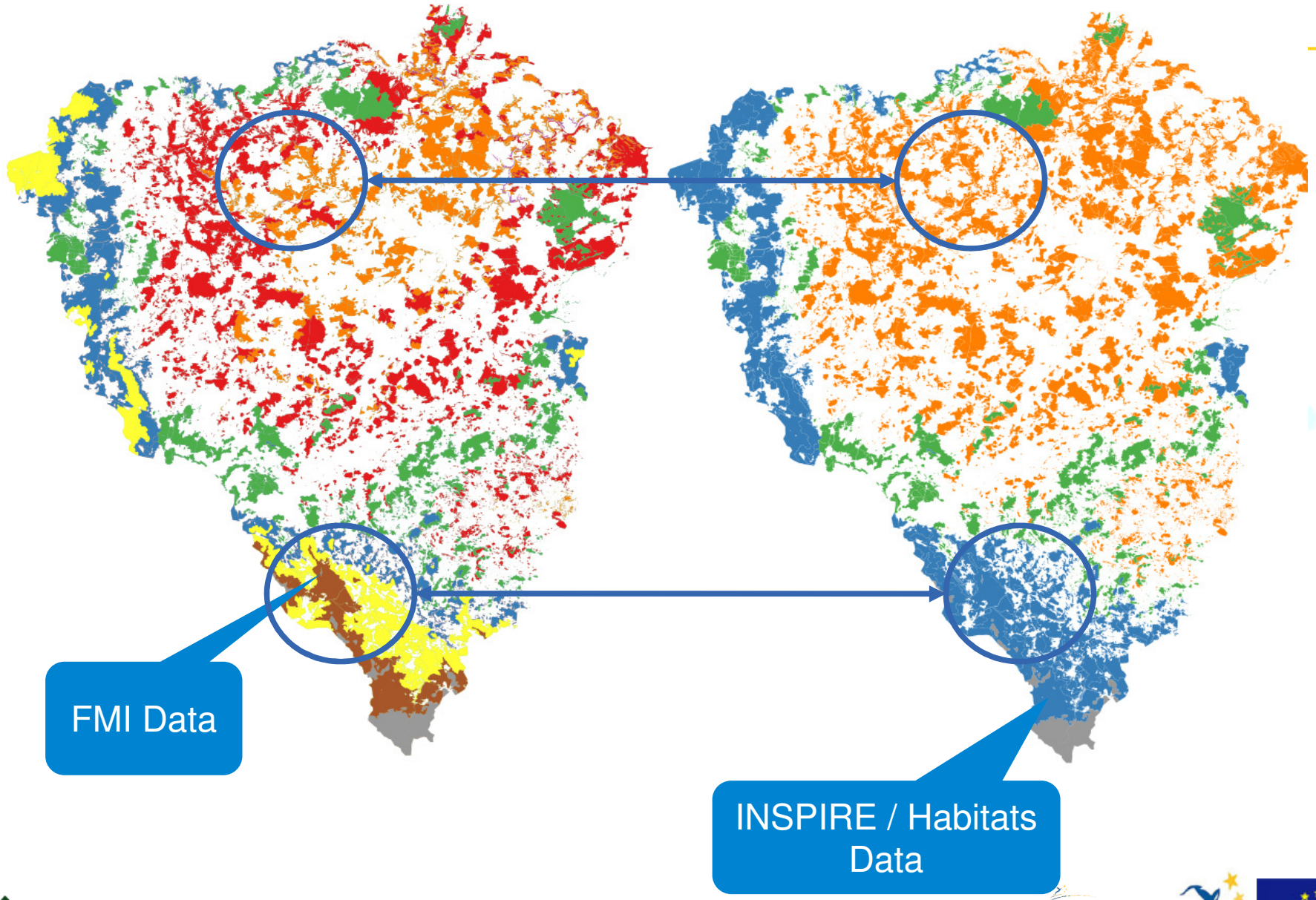
Reclassification FMI → EUNIS

New Data Model

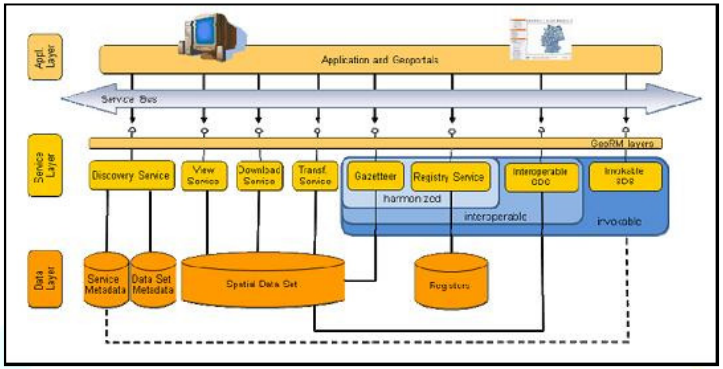
Existing FMI data model +

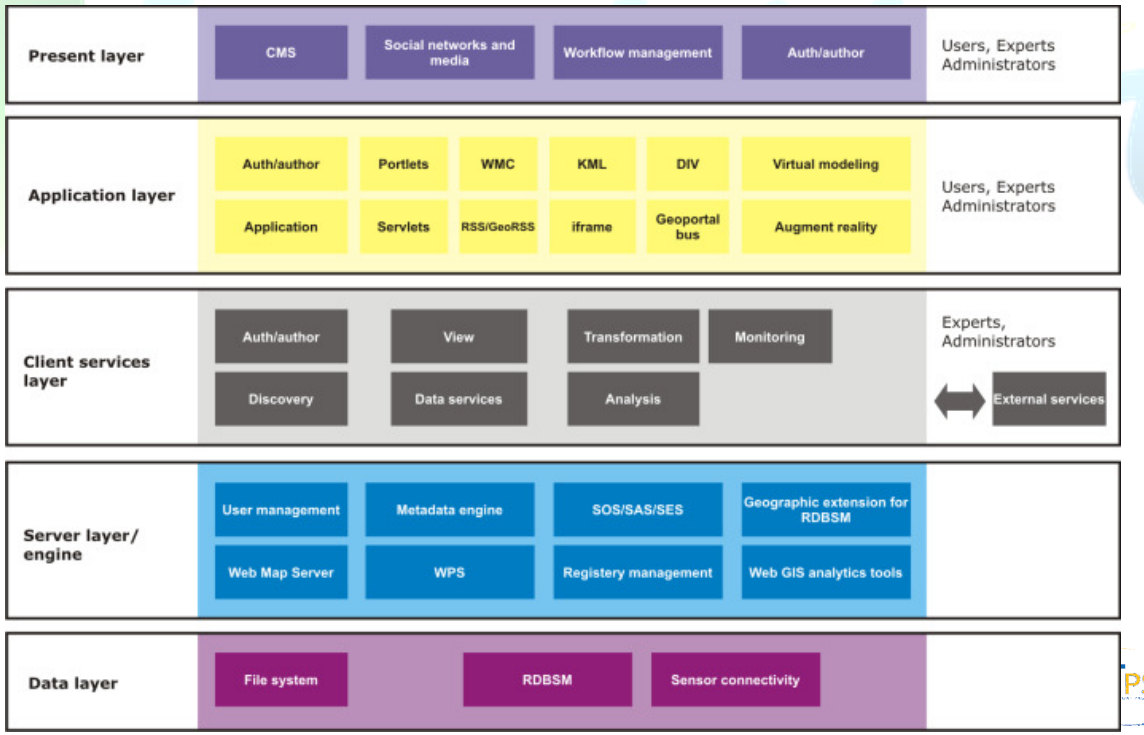
referenceHabitatTypeId: CharacterString
referenceHabitatTypeScheme: ReferenceHabitatTypeSchemeValue
localSchemeURI: URI
localNameValue: CharacterString

geometry: polygon
referenceHabitatTypeId: eunis_value
referenceHabitatTypeScheme: eunis
localSchemeURI: link_to_FMI_classification
localNameValue: FMI_classification_value


FMI Data
INSPIRE / Habitats Data

Changing Architecture Paradigm

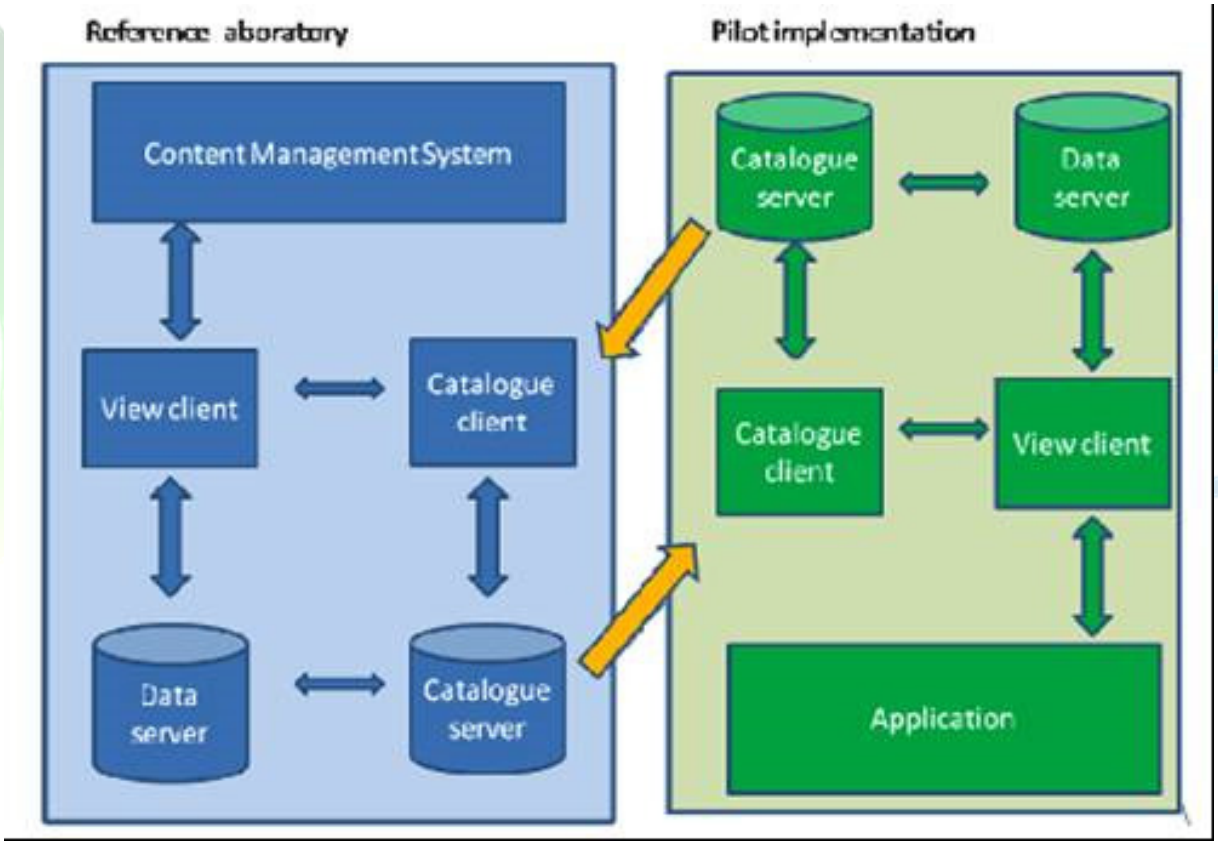




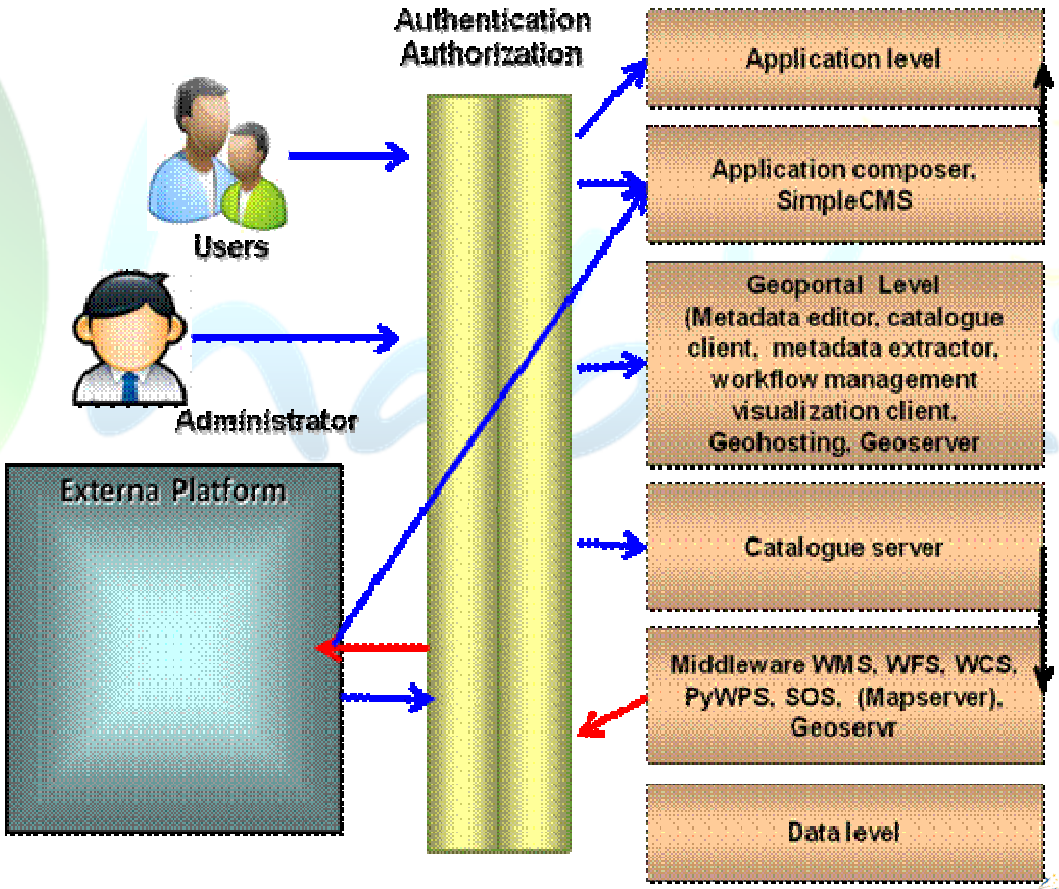
Reference Laboratory (RL)

The HABITATS Reference Laboratory is a central hub with the support of global data, but also supporting cross scenarios implementations, and the HABITATS pilot applications, as implementations of single HABITATS pilot cases, which will also be used for testing the sharing of local data and metadata.

Relation of RL to Pilots



RL Architecture

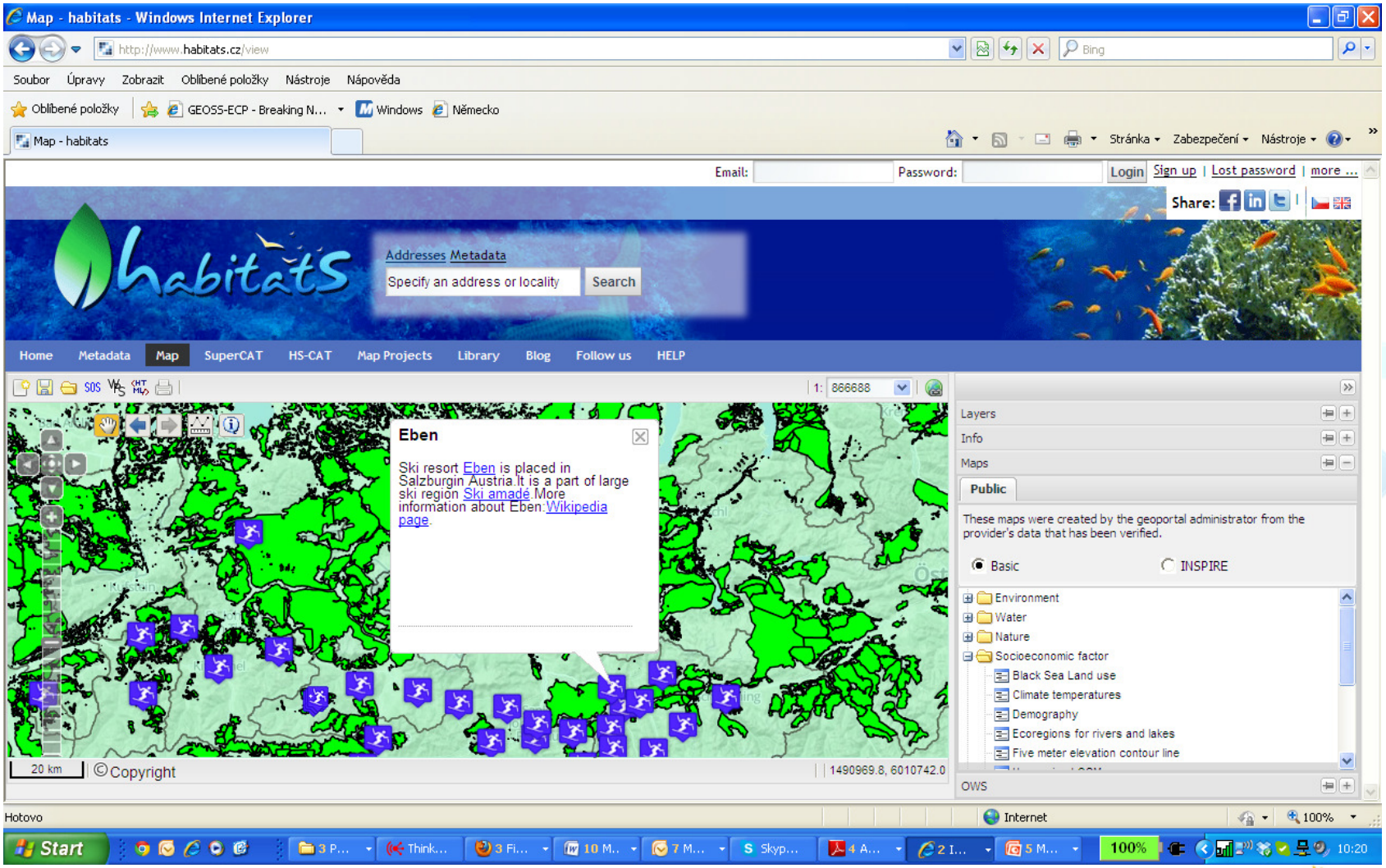


RL Advanced Principles

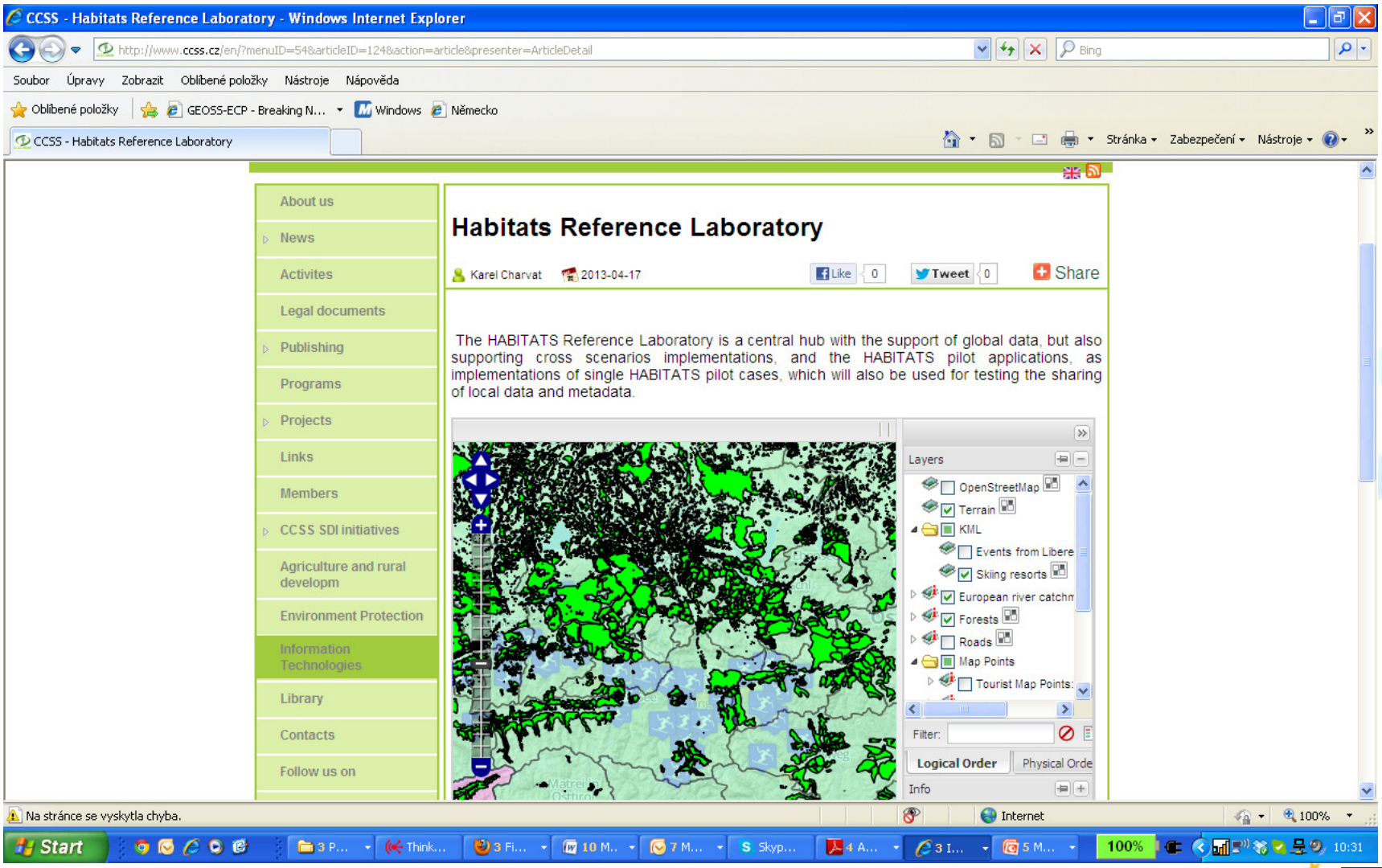
RL includes all basic Geoportal Functionality, but

- Supports work with maps, not only with services,
- Extends the INSPIRE services – use of KML,
- Includes possibilities for Open Linked Data,
- includes an option for embedding objects into HTML web sites.

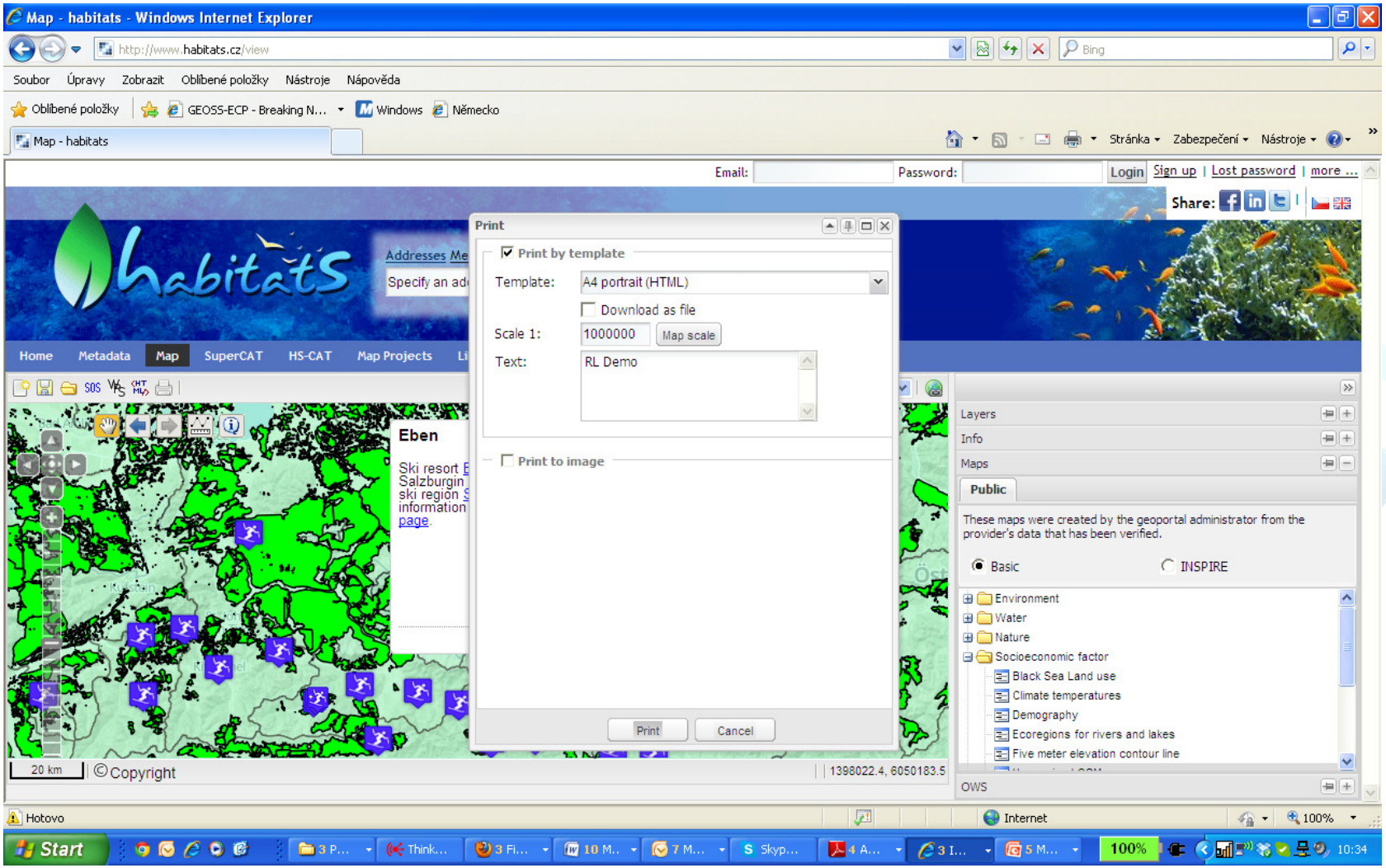
RL Approach


Map - habitats - Windows Internet Explorer
http://www.habitats.cz/view
Soubor Úpravy Zobrazit Oblíbené položky Nástroje Nápověda
Oblíbené položky
GEOSS-ECP - Breaking N...
Windows
Německo
Map - habitats
Stránka Zabezpečení Nástroje
Email:
Password:
Login
Sign up | Lost password | more ...
Share:
habitats
Addresses Metadata
Specify an address or locality
Search
Home Metadata Map SuperCAT HS-CAT Map Projects Library Blog Follow us HELP
1: 866688
Eben
Ski resort Eben is placed in Salzburgin Austria.It is a part of large ski region Ski amadé.More information about Eben:Wikipedia page.
Layers
Info
Maps
Public
These maps were created by the geoportal administrator from the provider's data that has been verified.
Basic
INSPIRE
Environment
Water
Nature
Socioeconomic factor
Black Sea Land use
Climate temperatures
Demography
Ecoregions for rivers and lakes
Five meter elevation contour line
OWS
20 km
©Copyright
1490969.8, 6010742.0
Hotovo
Internet
100%
Start
10:20

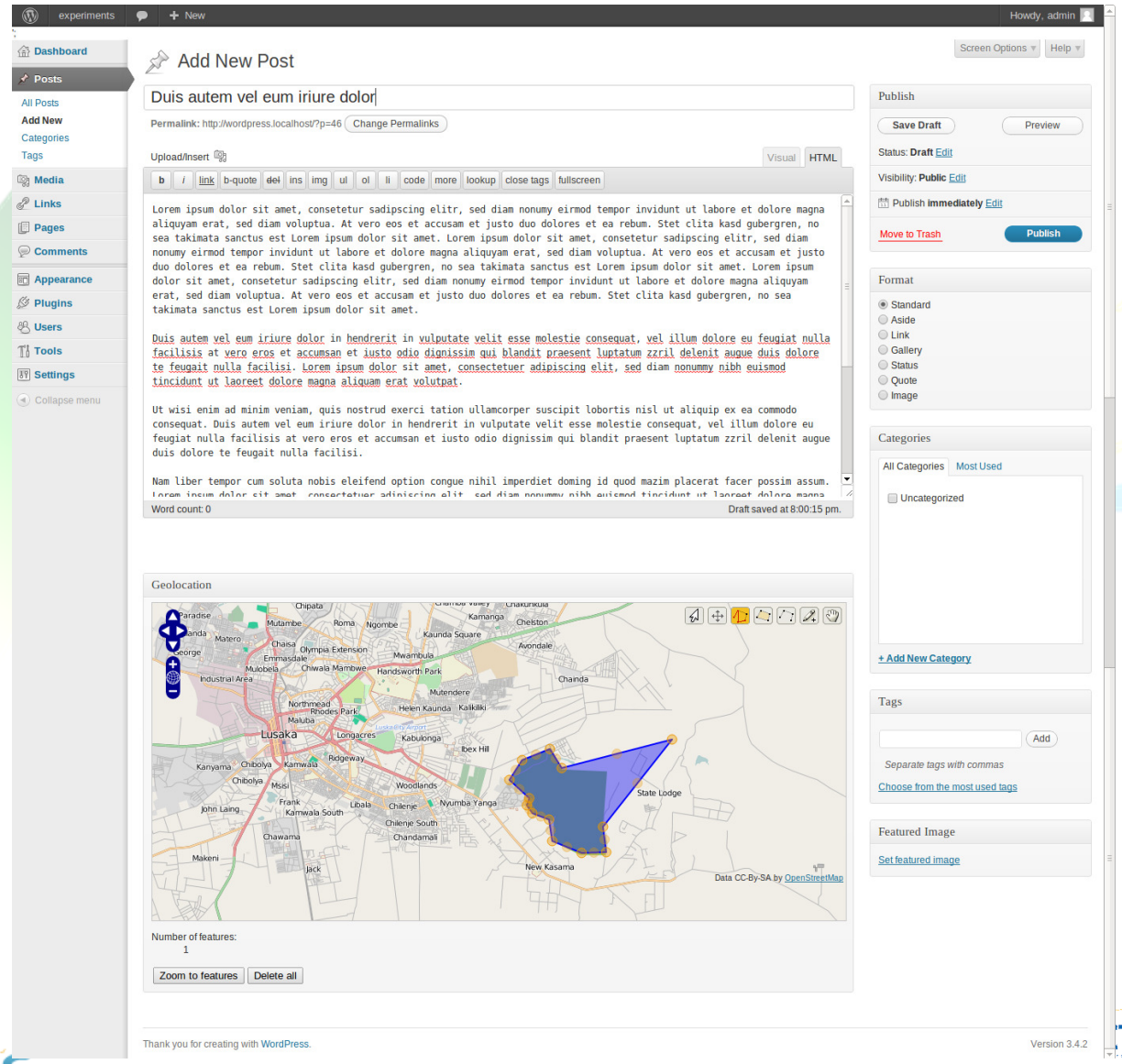
RL Approach


CCSS - Habitats Reference Laboratory - Windows Internet Explorer
http://www.ccss.cz/en/?menuID=54&articleID=124&action=article&presenter=ArticleDetail
Soubor Úpravy Zobrazit Oblíbené položky Nástroje Nápověda
Oblíbené položky
GEOSS-ECP - Breaking N...
Windows
Německo
CCSS - Habitats Reference Laboratory
Stránka Zabezpečení Nástroje
About us
News
Activites
Legal documents
Publishing
Programs
Projects
Links
Members
CCSS SDI initiatives
Agriculture and rural developm
Environment Protection
Information Technologies
Library
Contacts
Follow us on
Habitats Reference Laboratory
Karel Charvat
2013-04-17
Like 0
Tweet 0
Share
The HABITATS Reference Laboratory is a central hub with the support of global data, but also supporting cross scenarios implementations, and the HABITATS pilot applications, as implementations of single HABITATS pilot cases, which will also be used for testing the sharing of local data and metadata.
Layers
OpenStreetMap
Terrain
KML
Events from Libere
Skiing resorts
European river catchm
Forests
Roads
Map Points
Tourist Map Points:
Filter:
Logical Order
Physical Orde
Info
Na stránce se vyskytla chyba.
Internet
100%
Start
10:31

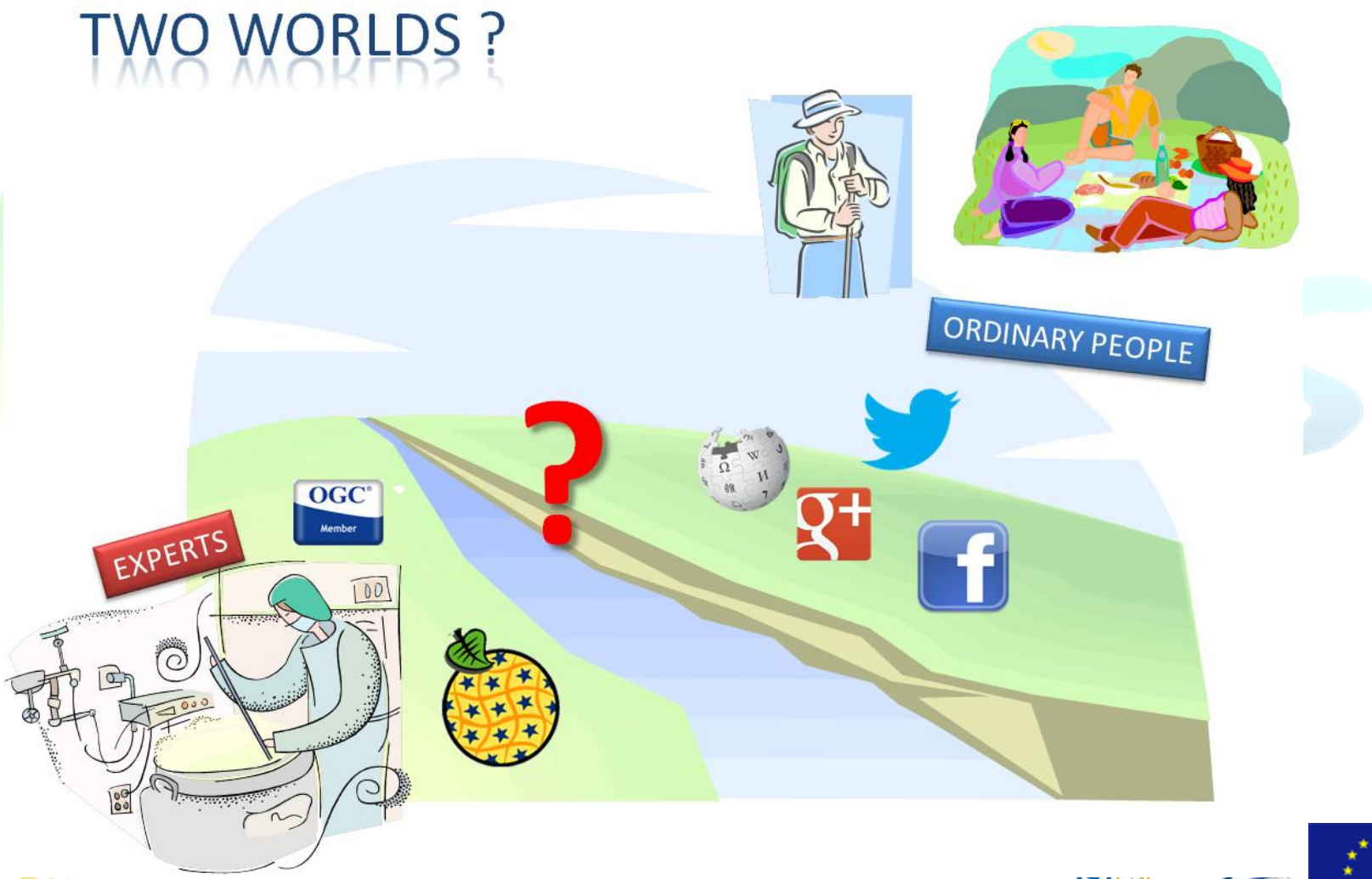
RL Approach


Map - habitats - Windows Internet Explorer
http://www.habitats.cz/view
Soubor Úpravy Zobrazit Oblíbené položky Nástroje Nápověda
Map - habitats
Email: Password: Login Sign up | Lost password | more ...
Share:
habitats
Home Metadata Map SuperCAT HS-CAT Map Projects
Print
Print by template
Template: A4 portrait (HTML)
Download as file
Scale 1: 1000000 Map scale
Text: RL Demo
Print to image
Print Cancel
Eben
Layers
Info
Maps
Public
These maps were created by the geoportal administrator from the provider's data that has been verified.
Basic INSPIRE
Environment
Water
Nature
Socioeconomic factor
Black Sea Land use
Climate temperatures
Demography
Ecoregions for rivers and lakes
Five meter elevation contour line
20 km
©Copyright
1398022.4, 6050183.5
OWS
Hotovo
Internet
100%
Start
10:34

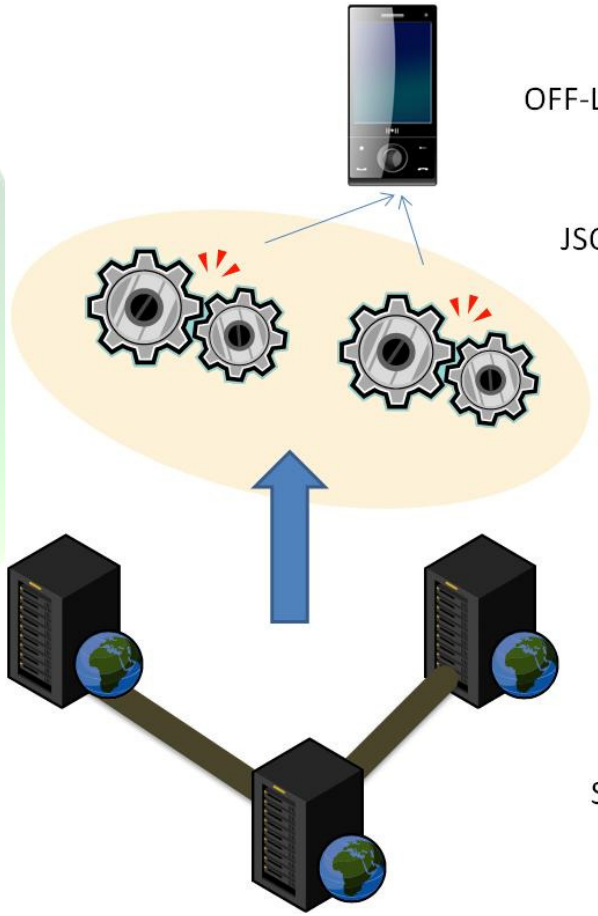
WordPress GeoBlog



INSPIRE in Pocket



Motivation



OFF-LINE / ON-LINE use

JSON, KML, …

Special apps rather than „portal“

INSPIRE infrastructure

SOAP, CSW, WFS, GML …

SuperCAT

For end-users operating services are crucial

- ❑ Availability
- ❑ Quality – service / data / metadata

Preparing catalogue of „clean services“ to ensure availability

First step - only WMS

Establishment of SuperCAT

Harvesting existing catalogues

Catalogues CSW 2.0.2 ISO AP 1.0

Only services (type=service)

Periodically (P1D)

Sources

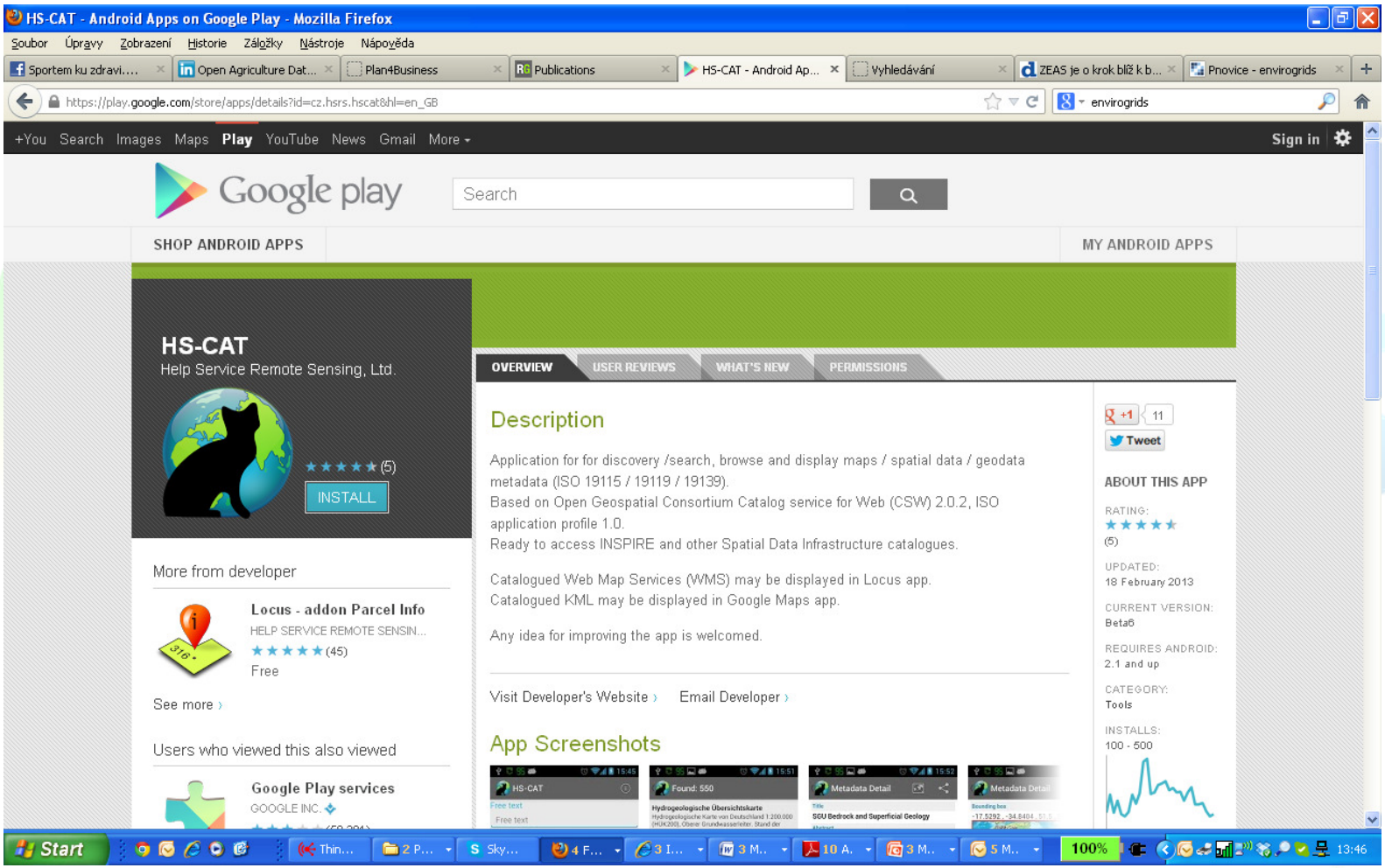
- GEOSS registry
- INSPIRE geoportal
- Catalogues we know about

Problems

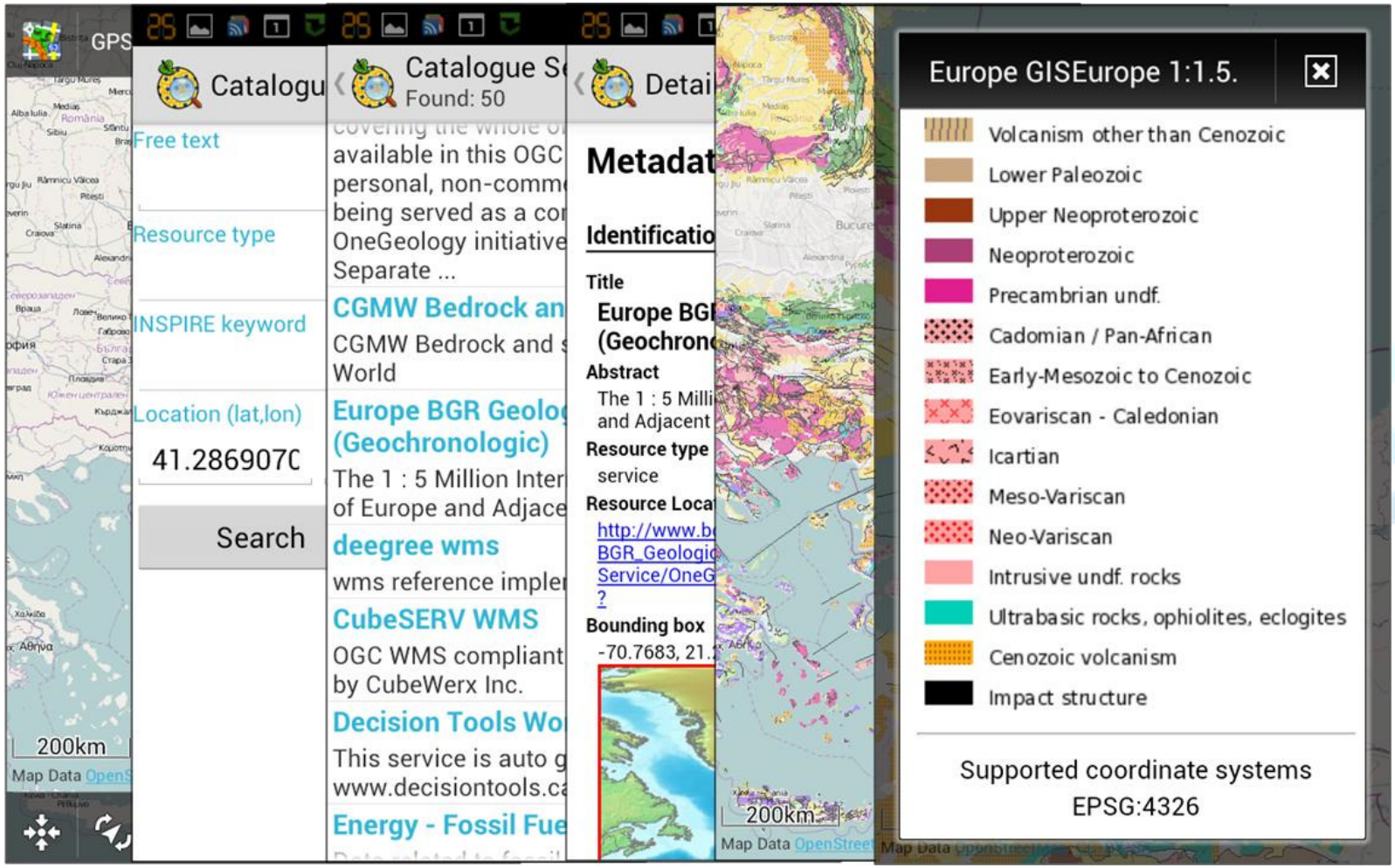
- No central catalogue / we don't know about services
- Classical search engines did not succeed
- Many catalogues do not response

Steps Towards INSPIRE in Pocket

HS-CAT

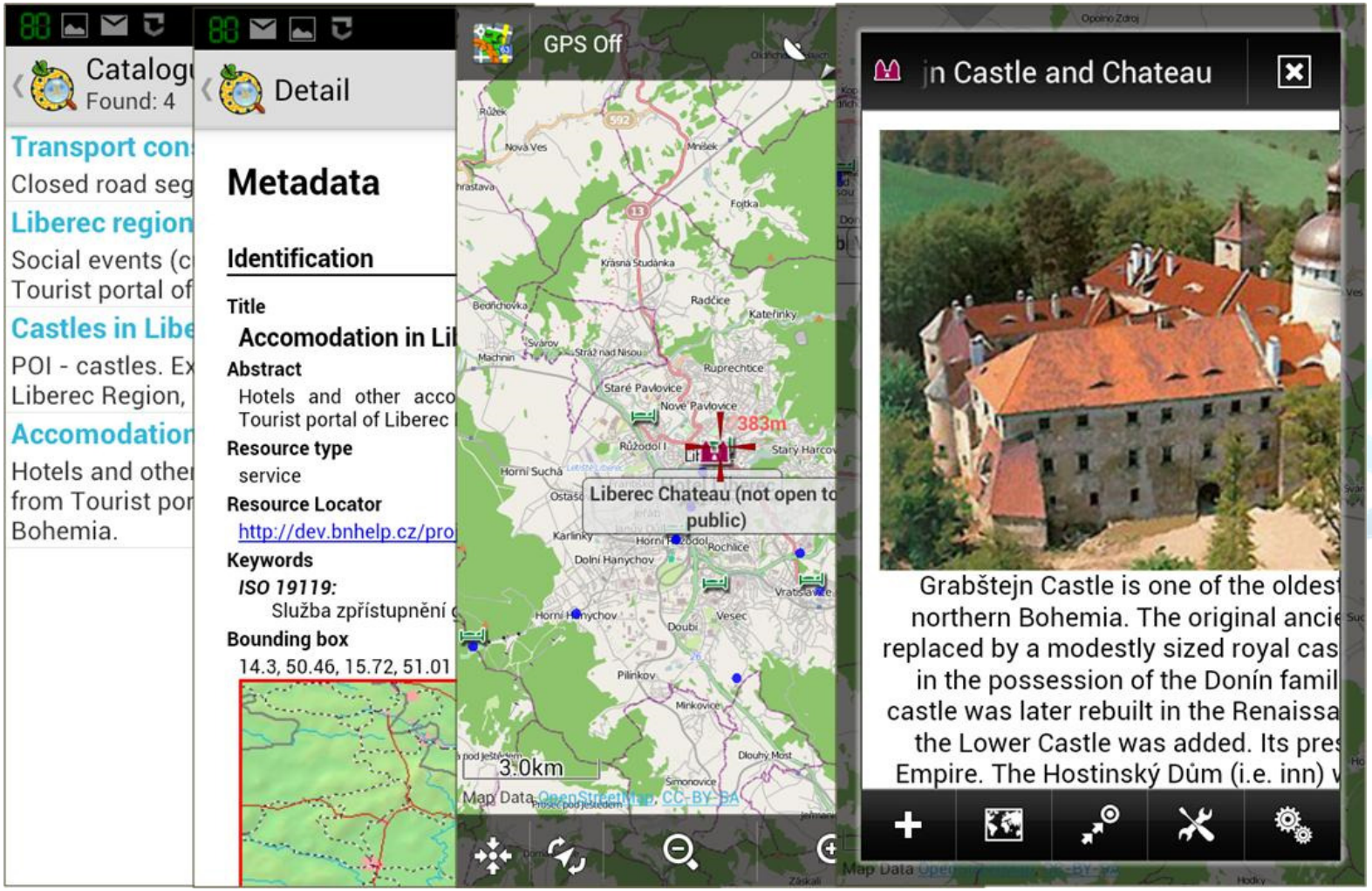


View Services

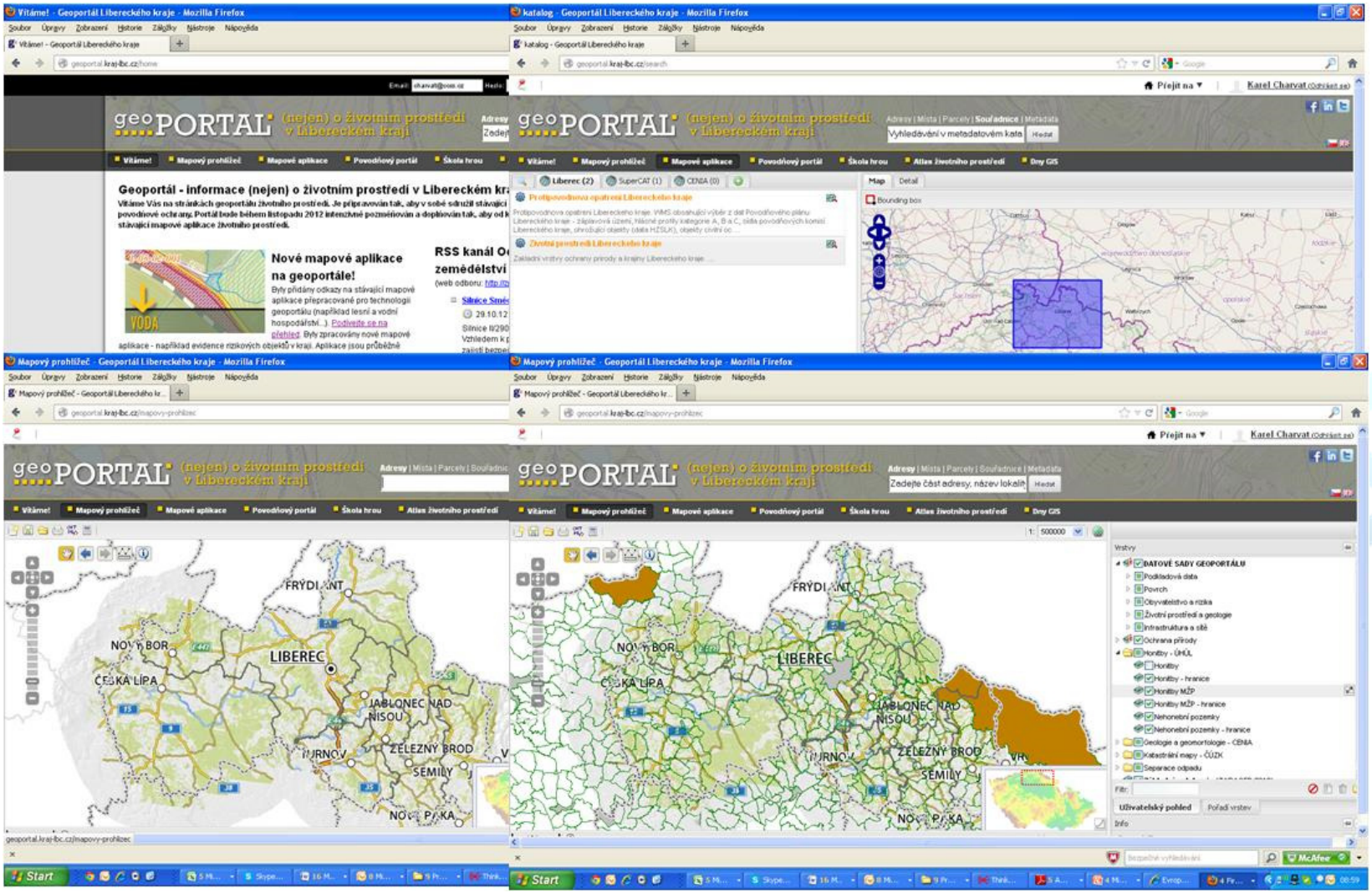


Cadastral Parcels

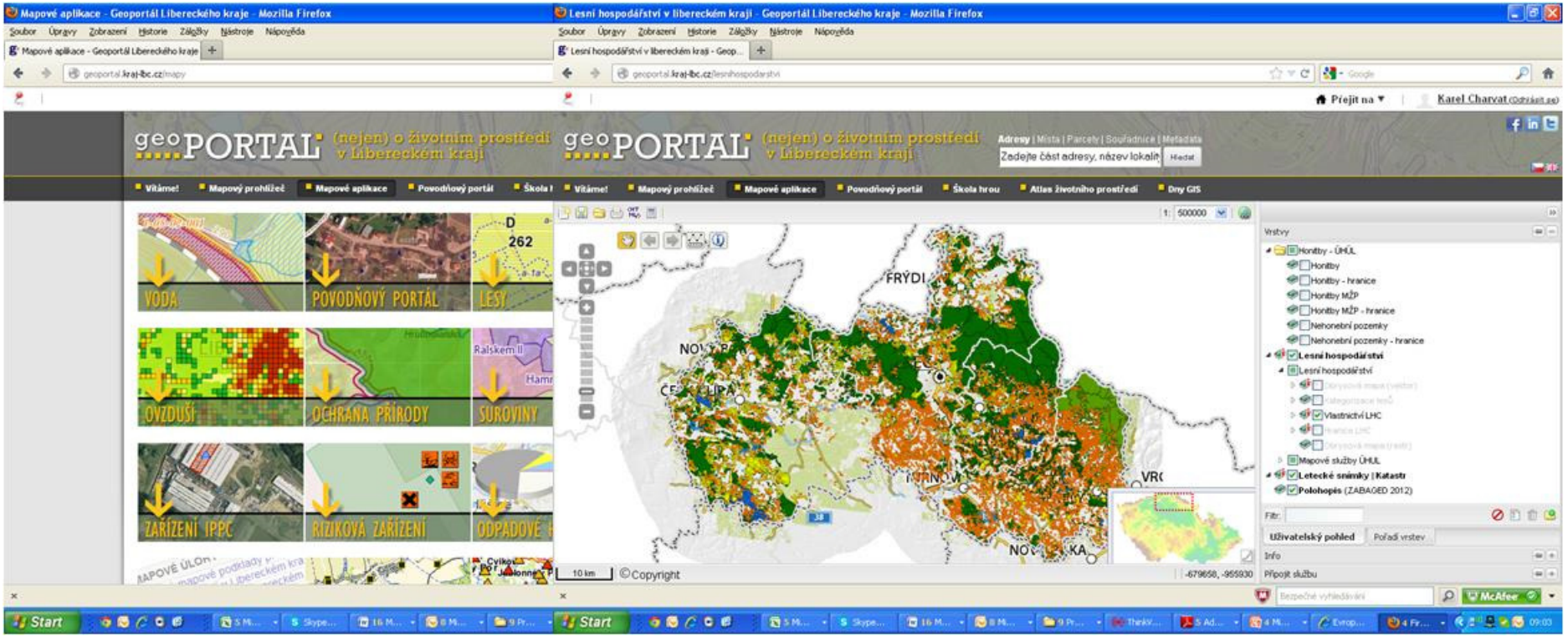
KML Resources



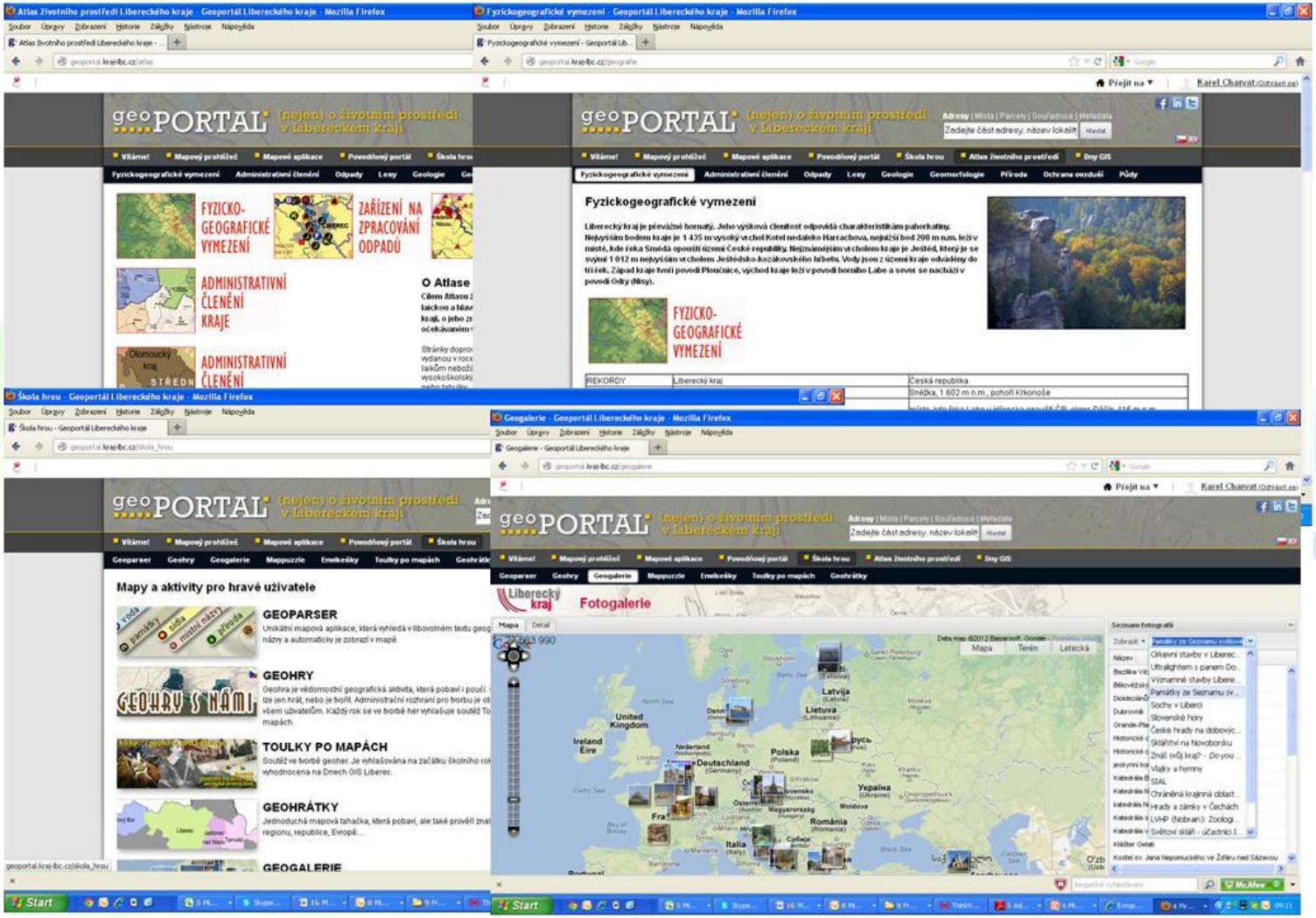
Liberec Example



Liberec Example



Liberec Example



habitats

ICTPSP

cip

Thanks!

http://www.habitats.cz/