
The HABITATS Approach to Build the INSPIRE Infrastructure

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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

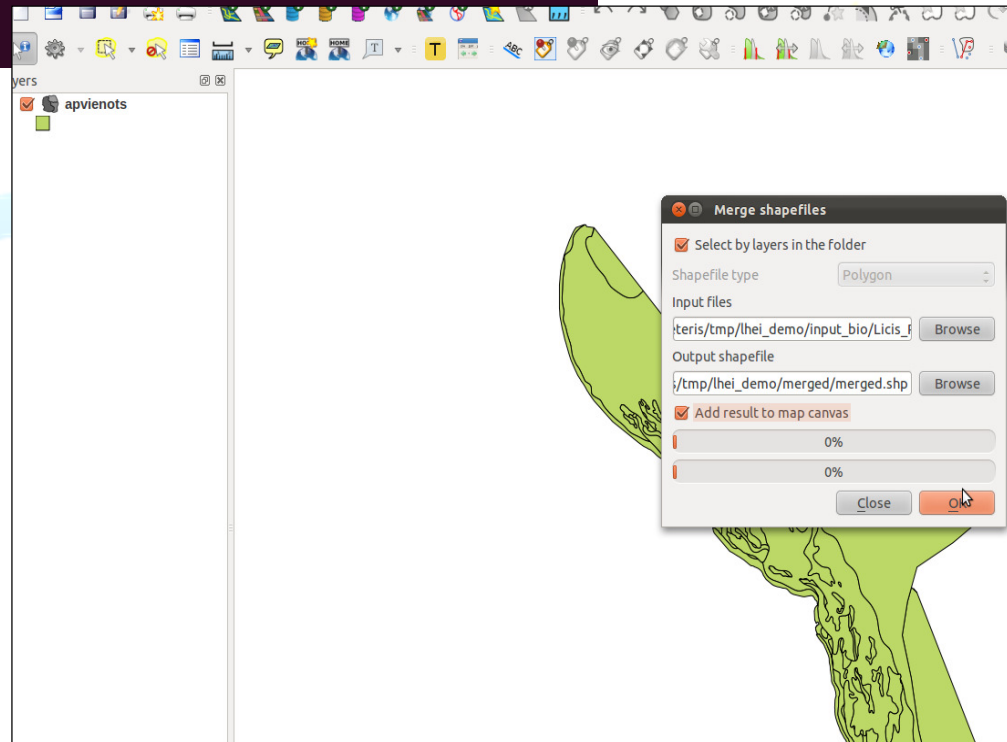
```
import os
import sys

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



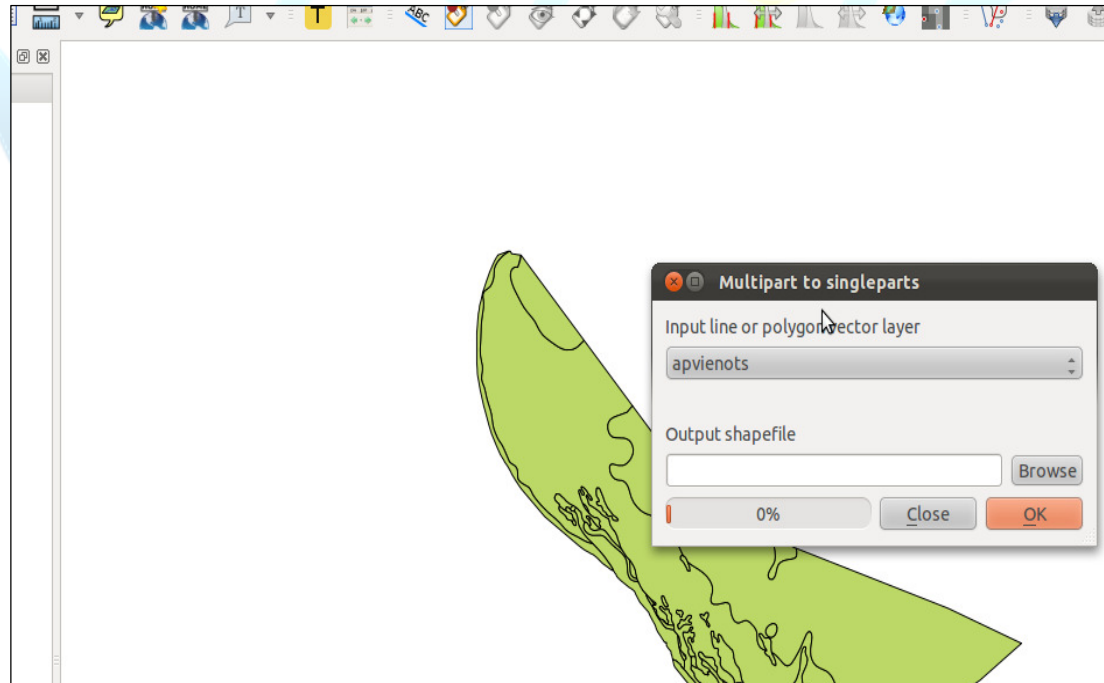
Basic Transformations

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

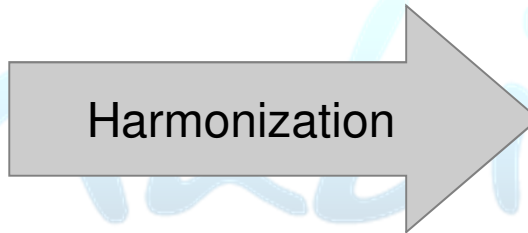
Basic geometry extraction from multigeometry using free and opensource desktop application



Advanced Transformations



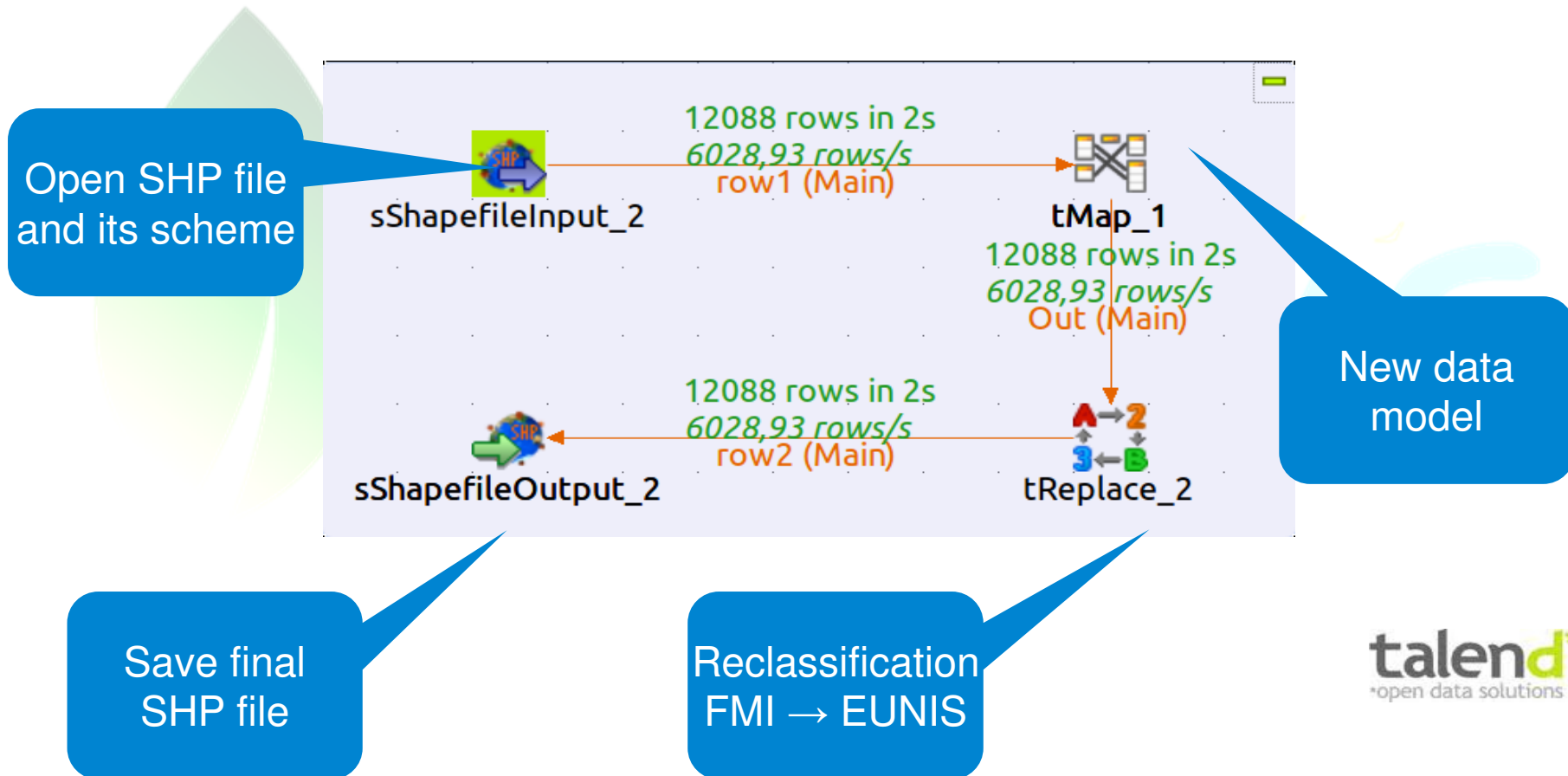
FMI Data



Data Specifications 2.0

Habitats and biotopes

Advanced Transformation – Schema



talend
open data solutions

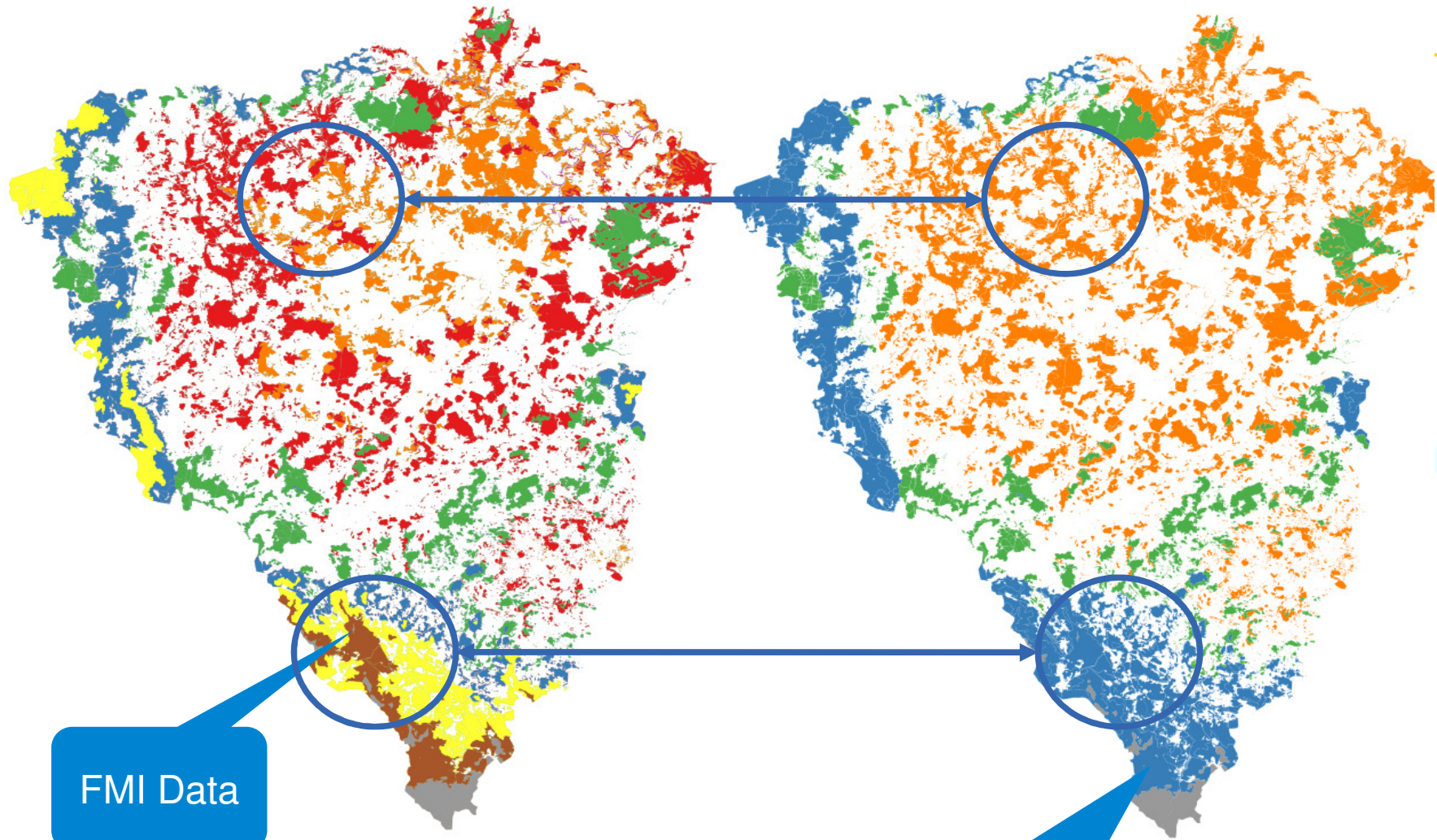
New Data Model

Existing FMI data model +

referenceHabitatTypeld: CharacterString
referenceHabitatTypeScheme: ReferenceHabitatTypeSchemeValue
localSchemeURI: URI
localNameValue: CharacterString



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

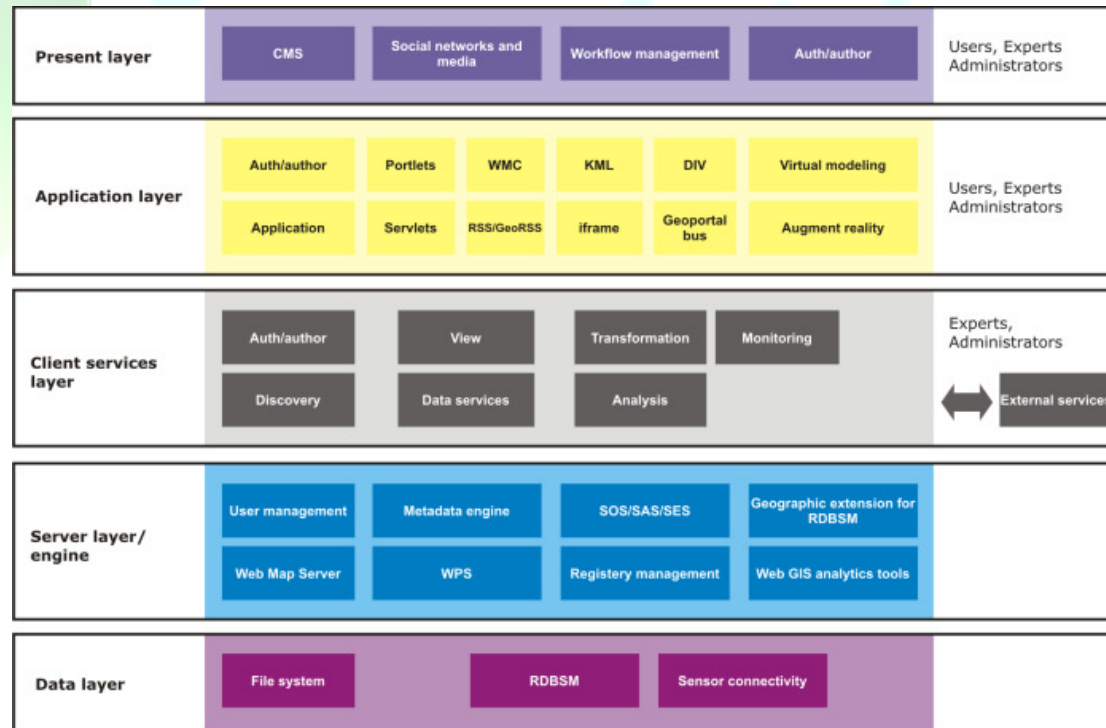
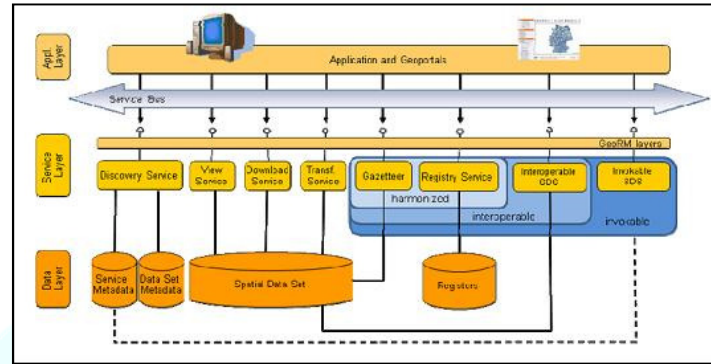


FMI Data

INSPIRE / Habitats Data



Changing Architecture Paradigm

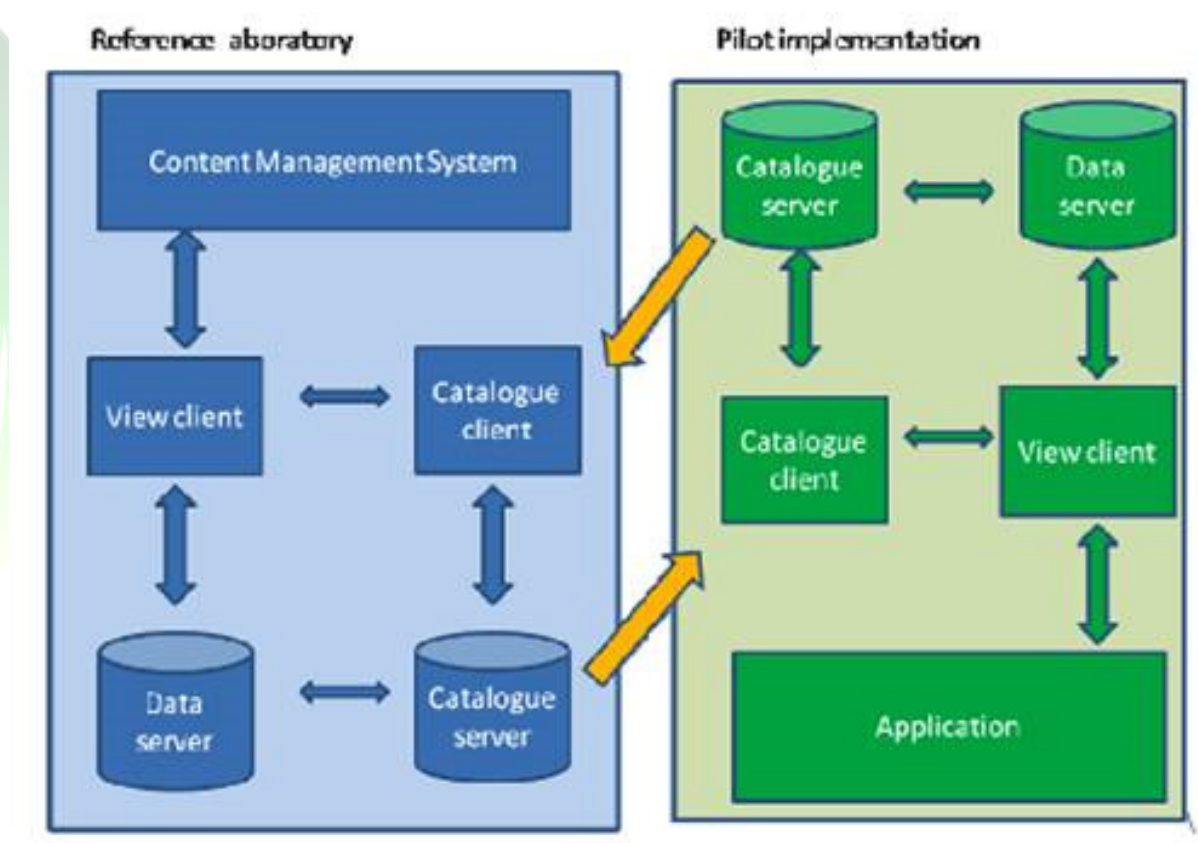


Reference Laboratory (RL)

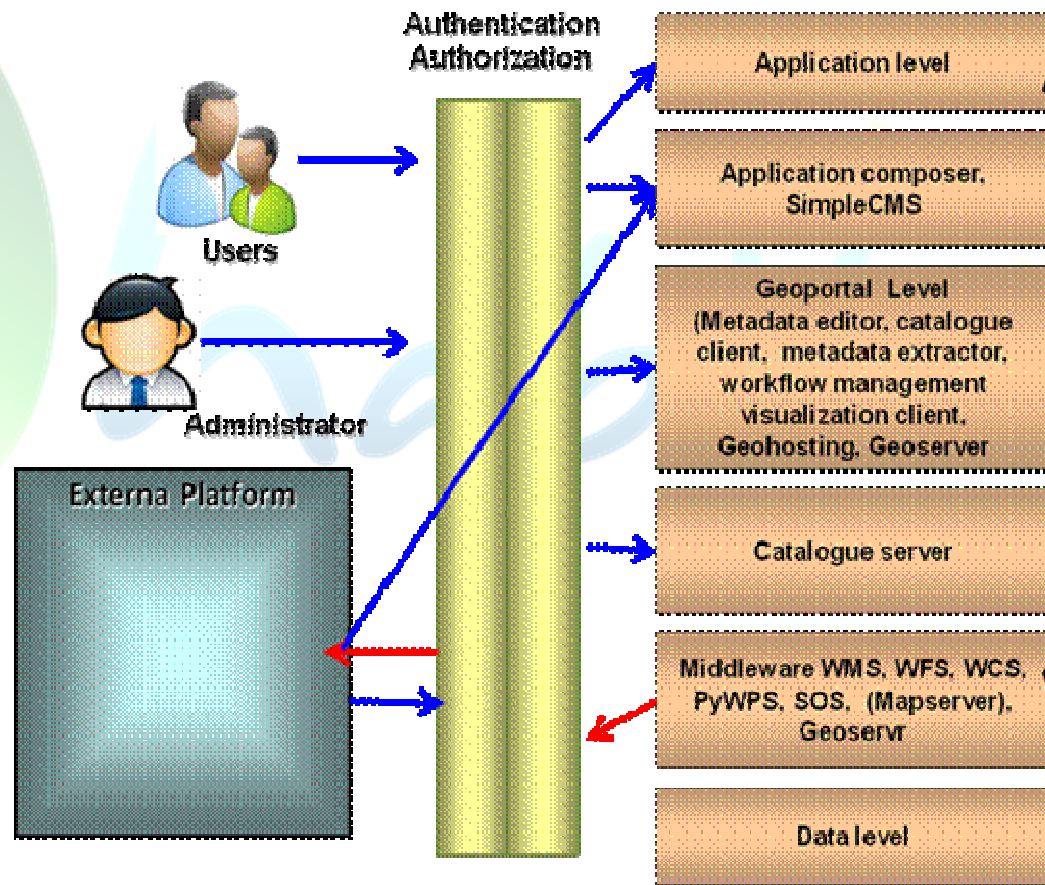
The HABITATS Reference Laboratory is a central hub with the support of global data, but also supporting cross scenarios implementations, and the HABITATS pilot applications, as implementations of single HABITATS pilot cases, which will also be used for testing the sharing of local data and metadata.



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

The screenshot shows a Windows Internet Explorer browser window displaying the 'habitats' website. The address bar shows 'http://www.habitats.cz/view'. The website header features the 'habitats' logo and a search bar with the text 'Specify an address or locality'. Below the header is a navigation menu with items: Home, Metadata, Map, SuperCAT, HS-CAT, Map Projects, Library, Blog, Follow us, and HELP. The main content area displays a map of Austria with a popup window for 'Eben'. The popup text reads: 'Ski resort Eben is placed in Salzburgin Austria. It is a part of large ski region Ski amade. More information about Eben: [Wikipedia page](#).' The map interface includes a scale bar (20 km), a copyright notice, and a coordinate display (1490969.8, 6010742.0). On the right side, there is a 'Layers' panel with a 'Public' tab and a list of layers including Environment, Water, Nature, and Socioeconomic factor. The Windows taskbar at the bottom shows the Start button, several open applications, and the system tray with the time 10:20.

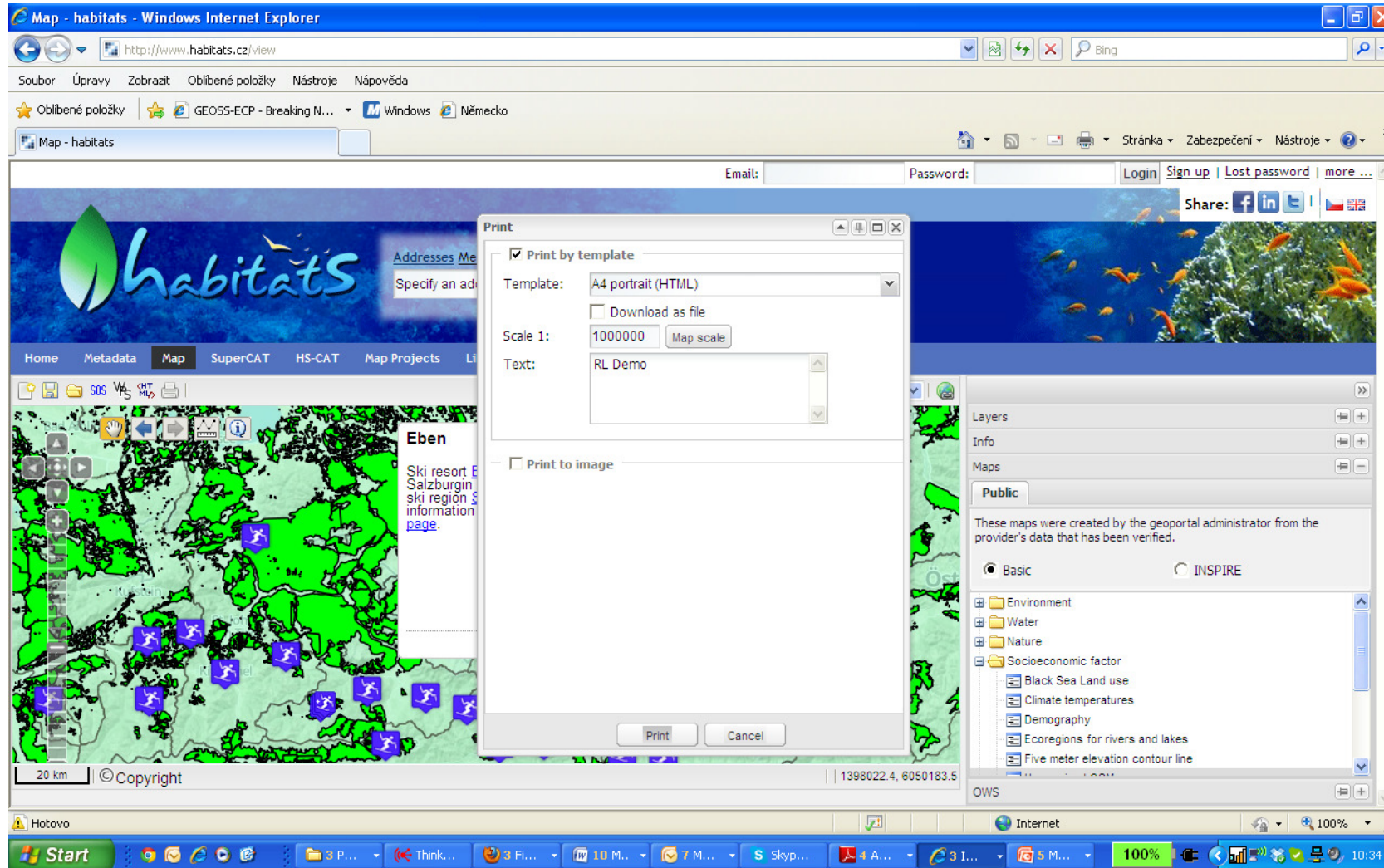
RL Approach

The screenshot shows a Windows Internet Explorer browser window displaying the CCSS - Habitats Reference Laboratory website. The address bar shows the URL: <http://www.ccss.cz/en/?menuID=54&articleID=124&action=article&presenter=ArticleDetail>. The browser's menu bar includes 'Soubor', 'Úpravy', 'Zobrazit', 'Obilíbené položky', 'Nástroje', and 'Nápověda'. The address bar also shows 'Bing' search and navigation icons.

The website content includes a navigation menu on the left with items: About us, News, Activites, Legal documents, Publishing, Programs, Projects, Links, Members, CCSS SDI initiatives, Agriculture and rural developm, Environment Protection, Information Technologies, Library, Contacts, and Follow us on. The main content area is titled 'Habitats Reference Laboratory' and features a post by Karel Charvat dated 2013-04-17. The post text reads: '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.' Below the text is a map showing a geographical area with various layers. The map interface includes a 'Layers' panel on the right with options like 'OpenStreetMap', 'Terrain', 'KML', 'Events from Liberec', 'Skiing resorts', 'European river catchm', 'Forests', 'Roads', 'Map Points', and 'Tourist Map Points'. The map also has a 'Filter' field and 'Logical Order' and 'Physical Order' buttons.

The Windows taskbar at the bottom shows the Start button, several open applications (3 P..., Think..., 3 Fi..., 10 M..., 7 M..., S Skyp..., 4 A..., 3 I..., 5 M...), a 100% zoom level, and the system clock showing 10:31.

RL Approach



WordPress GeoBlog

experiments + New Howdy, admin

Dashboard Add New Post

Duis autem vel eum iriure dolor|

Permalink: <http://wordpress.localhost?p=46> [Change Permalinks](#)

Upload/Insert Visual HTML

b / [link](#) [b-quote](#) [del](#) [ins](#) [img](#) [ul](#) [ol](#) [li](#) [code](#) [more](#) [lookup](#) [close tags](#) [fullscreen](#)

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed diam nonummy eirmod tempor invidunt ut labore et dolore magna aliquyam erat, sed diam voluptua. At vero eos et accusam et justo duo dolores et ea rebum. Stet clita kasd gubergren, no sea takimata sanctus est Lorem ipsum dolor sit amet. Lorem ipsum dolor sit amet, consetetur sadipscing elitr, sed diam nonummy eirmod tempor invidunt ut labore et dolore magna aliquyam erat, sed diam voluptua. At vero eos et accusam et justo duo dolores et ea rebum. Stet clita kasd gubergren, no sea takimata sanctus est Lorem ipsum dolor sit amet. Lorem ipsum dolor sit amet, consetetur sadipscing elitr, sed diam nonummy eirmod tempor invidunt ut labore et dolore magna aliquyam erat, sed diam voluptua. At vero eos et accusam et justo duo dolores et ea rebum. Stet clita kasd gubergren, no sea takimata sanctus est Lorem ipsum dolor sit amet.

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Ut wisi enim ad minim veniam, quis nostrud exerci tation ullamcorper suscipit lobortis nisl ut aliquip ex ea commodo consequat. Duis autem vel eum iriure dolor in hendrerit in vulputate velit esse molestie consequat, vel illum dolore eu feugiat nulla facilisis at vero eros et accumsan et justo odio dignissim qui blandit praesent luptatum zzril delenit augue duis dolore te feugait nulla facilisi.

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Word count: 0 Draft saved at 8:00:15 pm.

Geolocation

Number of features: 1

[Zoom to features](#) [Delete all](#)

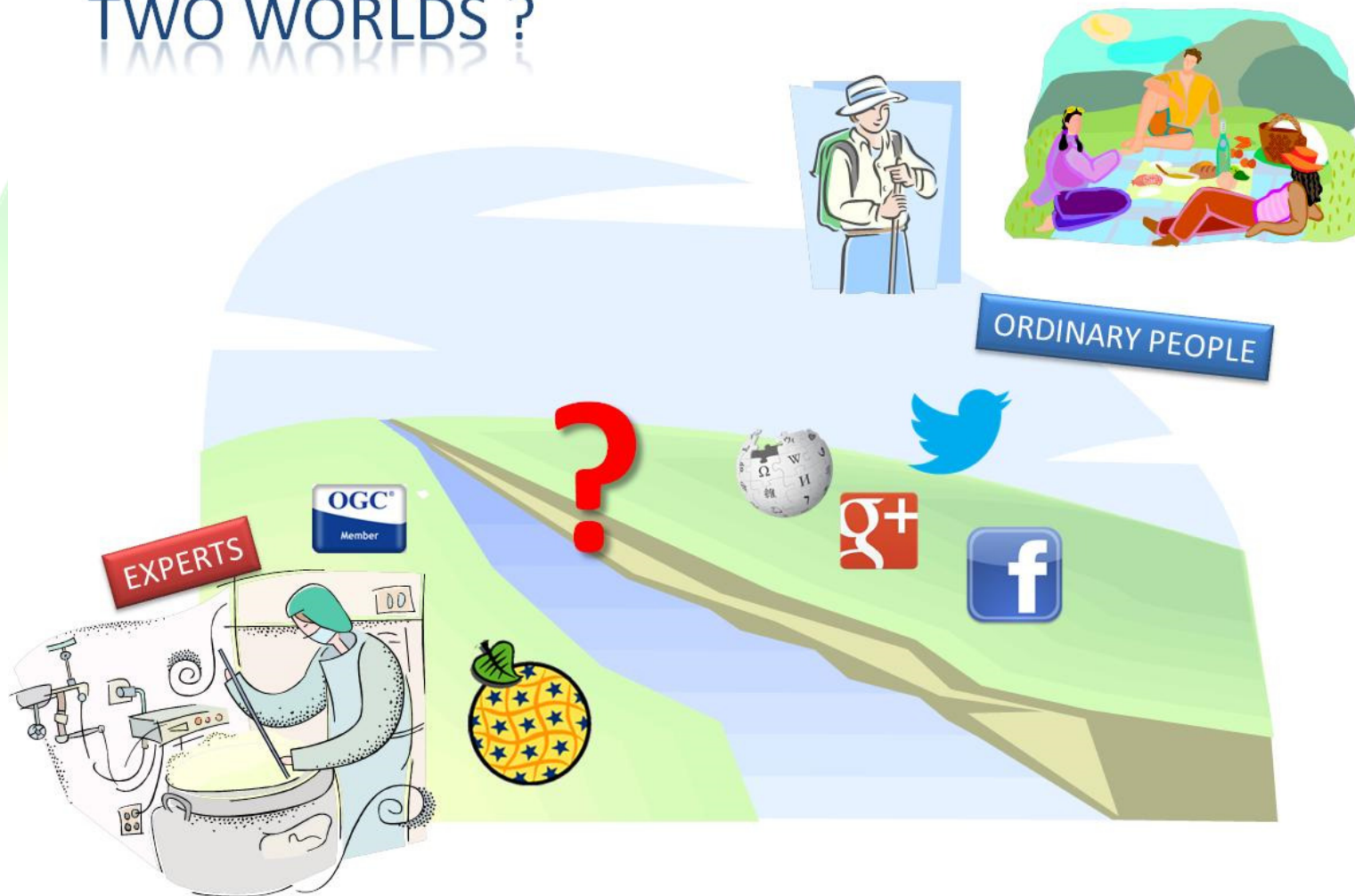
Thank you for creating with WordPress. Version 3.4.2

ts

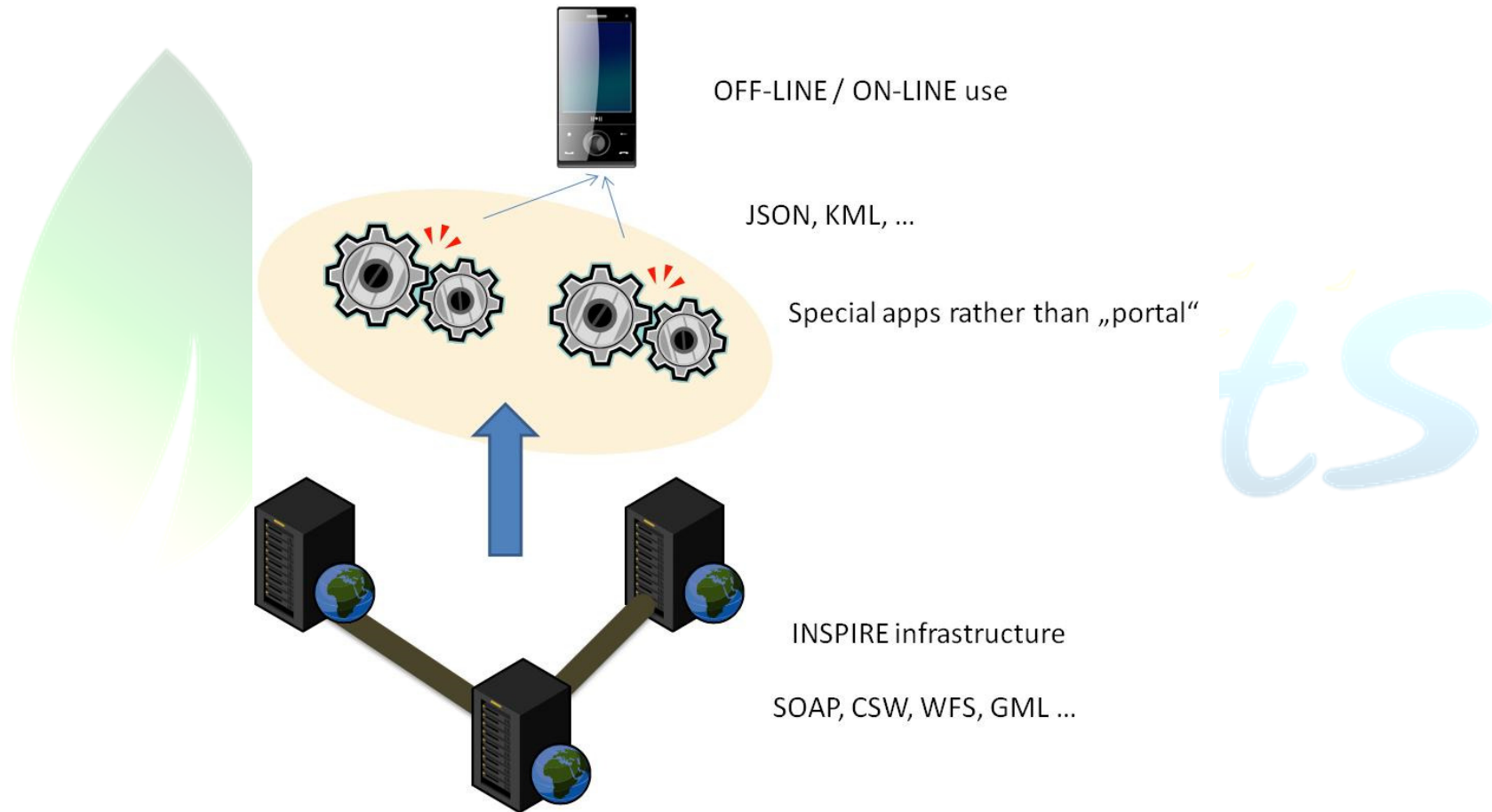


INSPIRE in Pocket

TWO WORLDS ?



Motivation



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

The screenshot shows the Google Play Store page for the HS-CAT app. The browser window title is "HS-CAT - Android Apps on Google Play - Mozilla Firefox". The address bar shows the URL "https://play.google.com/store/apps/details?id=cz.hsr.hscat&hl=en_GB". The page features the Google Play logo, a search bar, and navigation tabs for "SHOP ANDROID APPS" and "MY ANDROID APPS". The app card for HS-CAT is highlighted, showing a cat silhouette on a globe icon, a 5-star rating, and an "INSTALL" button. The main content area includes tabs for "OVERVIEW", "USER REVIEWS", "WHAT'S NEW", and "PERMISSIONS". The "Description" tab is active, displaying the following text: "Application for for discovery /search, browse and display maps / spatial data / geodata metadata (ISO 19115 / 19119 / 19139). Based on Open Geospatial Consortium Catalog service for Web (CSW) 2.0.2, ISO application profile 1.0. Ready to access INSPIRE and other Spatial Data Infrastructure catalogues. Catalogued Web Map Services (WMS) may be displayed in Locus app. Catalogued KML may be displayed in Google Maps app. Any idea for improving the app is welcomed." Below the description are links for "Visit Developer's Website" and "Email Developer". The "App Screenshots" section shows four preview images of the app's interface. On the right side, there are social media sharing options (Google+, Twitter) and app details: "ABOUT THIS APP", "RATING: 5 stars (5)", "UPDATED: 18 February 2013", "CURRENT VERSION: Beta6", "REQUIRES ANDROID: 2.1 and up", "CATEGORY: Tools", and "INSTALLS: 100 - 500". The Windows taskbar at the bottom shows the Start button, several open applications, and the system tray with the time 13:46.

View Services

The screenshot displays a mobile GIS application interface with several panels:

- Search Panel (Left):** Includes a search bar with the text "41.286907C", a "Search" button, and search filters for "Free text", "Resource type", "INSPIRE keyword", and "Location (lat,lon)".
- Search Results (Middle-Left):** Lists several services:
 - CGMW Bedrock and Geochronologic (Geochronologic):** "Covering the whole of Europe and adjacent regions... available in this OGC personal, non-commercial WMS reference implementation." URL: <http://www.cgw.com/OGC/OneGeology/Service/OneGeology/CGMW/BedrockandGeochronologic/World>
 - Europe BGR Geology (Geochronologic):** "The 1 : 5 Million Intercontinental Geology of Europe and Adjacent Regions." URL: <http://www.bgr.de/geoportal/OGC/OneGeology/Service/OneGeology/Geochronologic/EuropeBGRGeology>
 - CubeSERV WMS:** "OGC WMS compliant by CubeWerx Inc." URL: <http://www.cubewerx.com/OGC/OneGeology/Service/OneGeology/CubeSERV/WMS>
 - Decision Tools World:** "This service is automatically generated by Decision Tools World." URL: <http://www.decisiontools.com/OGC/OneGeology/Service/OneGeology/DecisionToolsWorld>
 - Energy - Fossil Fuels:** "Detailed data on fossil fuels." URL: <http://www.energy-fossil-fuels.com/OGC/OneGeology/Service/OneGeology/Energy-Fossil-Fuels>
- Metadata Panel (Middle-Right):**
 - Title:** Europe BGR Geology (Geochronologic)
 - Abstract:** The 1 : 5 Million Intercontinental Geology of Europe and Adjacent Regions.
 - Resource type:** service
 - Resource Location:** <http://www.bgr.de/geoportal/OGC/OneGeology/Service/OneGeology/Geochronologic/EuropeBGRGeology>
 - Bounding box:** -70.7683, 21.1250, 15.0000, 70.0000
- Legend Panel (Right):** Titled "Europe GISEurope 1:1.5", it lists geological features with corresponding color and pattern swatches:
 - Volcanism other than Cenozoic (diagonal lines)
 - Lower Paleozoic (tan)
 - Upper Neoproterozoic (dark red)
 - Neoproterozoic (purple)
 - Precambrian undf. (pink)
 - Cadomian / Pan-African (black dots)
 - Early-Mesozoic to Cenozoic (white dots)
 - Eovariscan - Caledonian (red dots)
 - Icartian (black dots)
 - Meso-Variscan (red dots)
 - Neo-Variscan (red dots)
 - Intrusive undf. rocks (light red)
 - Ultrabasic rocks, ophiolites, eclogites (cyan)
 - Cenozoic volcanism (orange dots)
 - Impact structure (black)

Supported coordinate systems: EPSG:4326

Cadastral Parcels



83 22:55

Výpis z katastru

Nahlížení do KN

[Výběr akce \(nabídka\)](#)

Informace o stavbě

Stavba:	č.p. 248
Část obce:	Hlouška 77739
Číslo LV:	2424
Typ stavby:	budova s číslem popisným
Způsob využití:	objekt k bydlení
Katastrální území:	Kutná Hora 677710
Na parcele:	1746

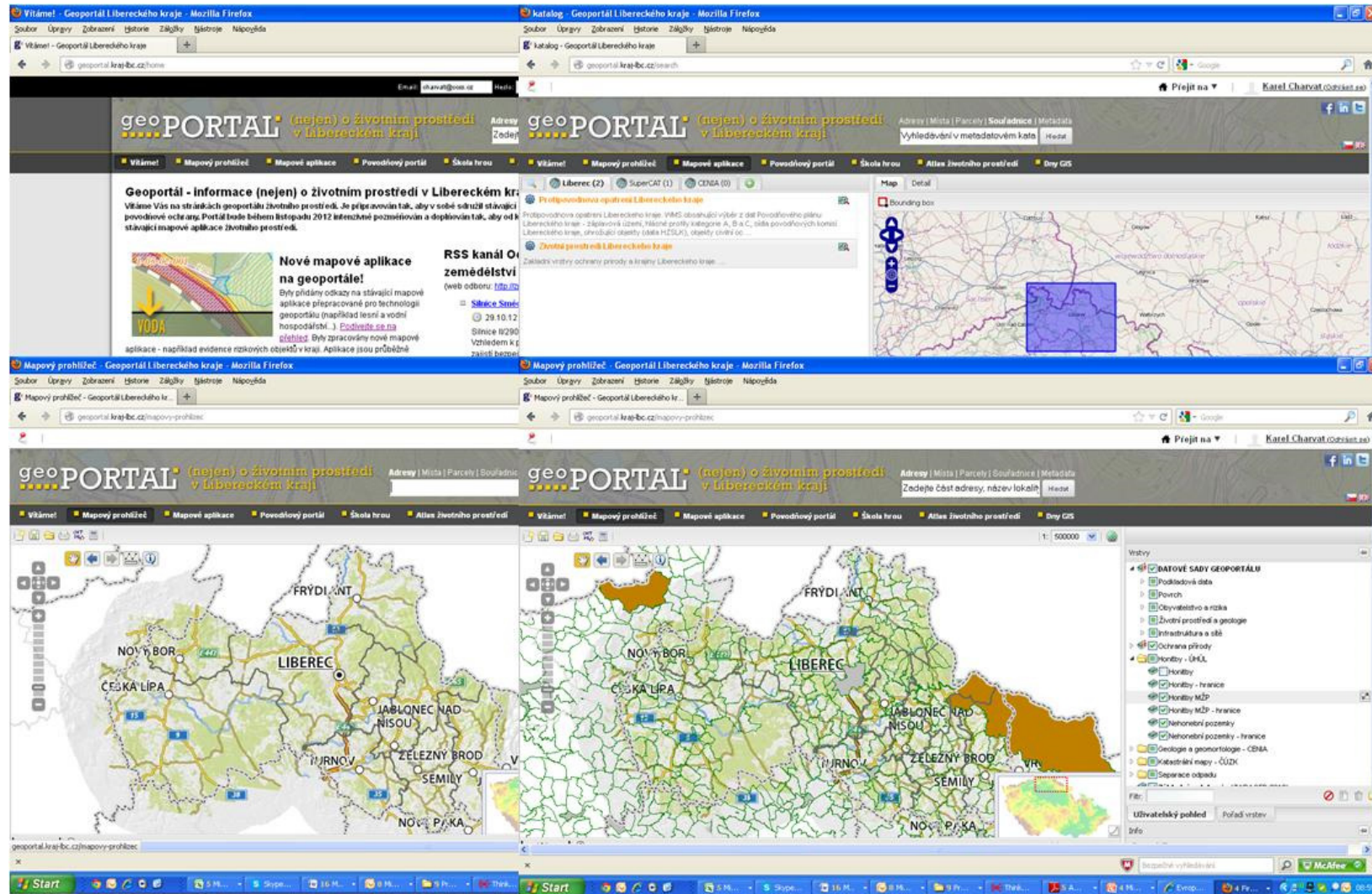
Vlastníci, jiní oprávnění

KML Resources

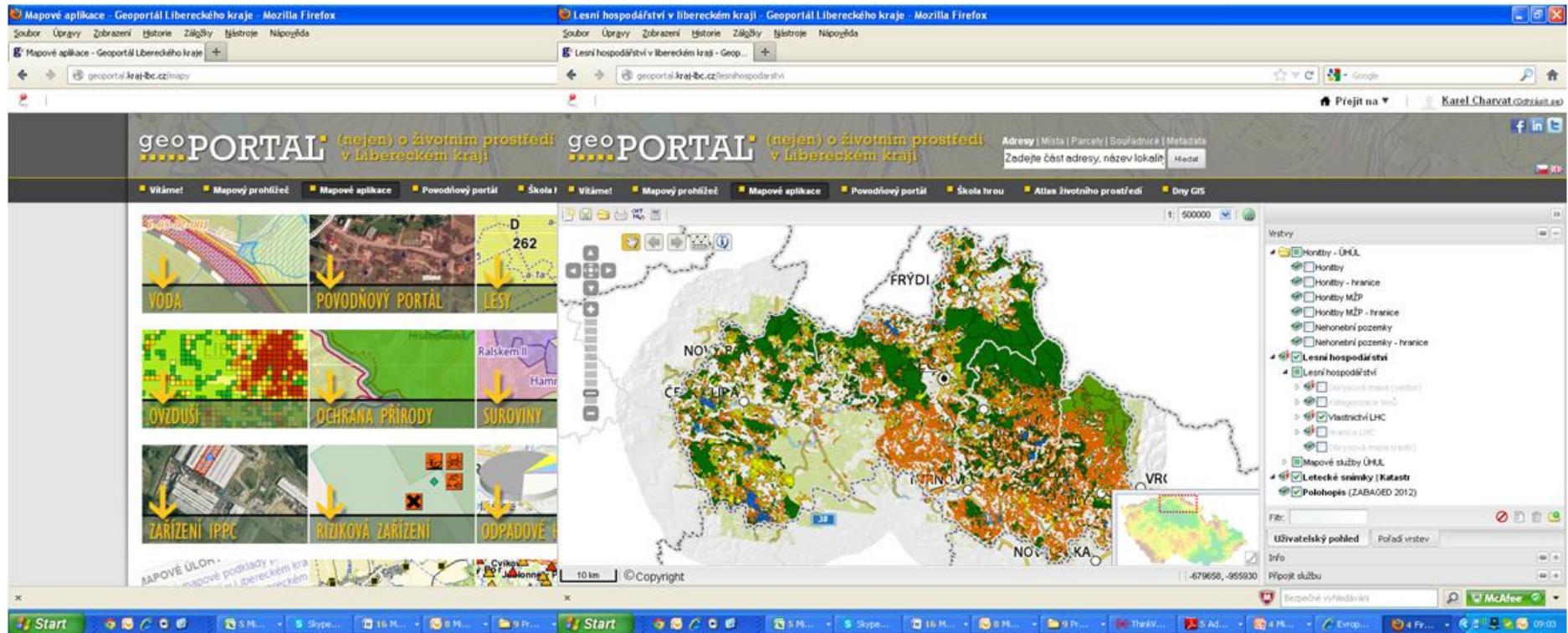
The screenshot displays a mobile application interface for KML resources. It is divided into three main sections:

- Left Panel (Catalog):** Shows a search result for "Liberec region" with a "Found: 4" indicator. Below the search bar, there are several search results, including "Castles in Liberec region" and "Accommodation in Liberec region".
- Center Panel (Detail):** Displays the metadata for a selected resource. The title is "Accommodation in Liberec region". The abstract describes "Hotels and other accommodation services in the Liberec region". The resource type is "Accommodation service". The resource locator is a URL: <http://dev.bnhelp.cz/pro>. The keywords include "ISO 19119: Služba zpřístupnění" and "Bouding box" with coordinates "14.3, 50.46, 15.72, 51.01".
- Right Panel (Map):** Shows a map of the Liberec region with a red crosshair indicating the location of "Liberec Chateau (not open to public)". A popup window displays a photograph of the chateau and a text description: "Grabštejn Castle is one of the oldest castles in northern Bohemia. The original ancient castle was replaced by a modestly sized royal castle in the possession of the Donín family. The castle was later rebuilt in the Renaissance style. The Lower Castle was added. Its presence during the Holy Roman Empire. The Hostinský Dům (i.e. inn) was built in the 16th century." The map also shows a scale bar for 3.0km and various map controls.

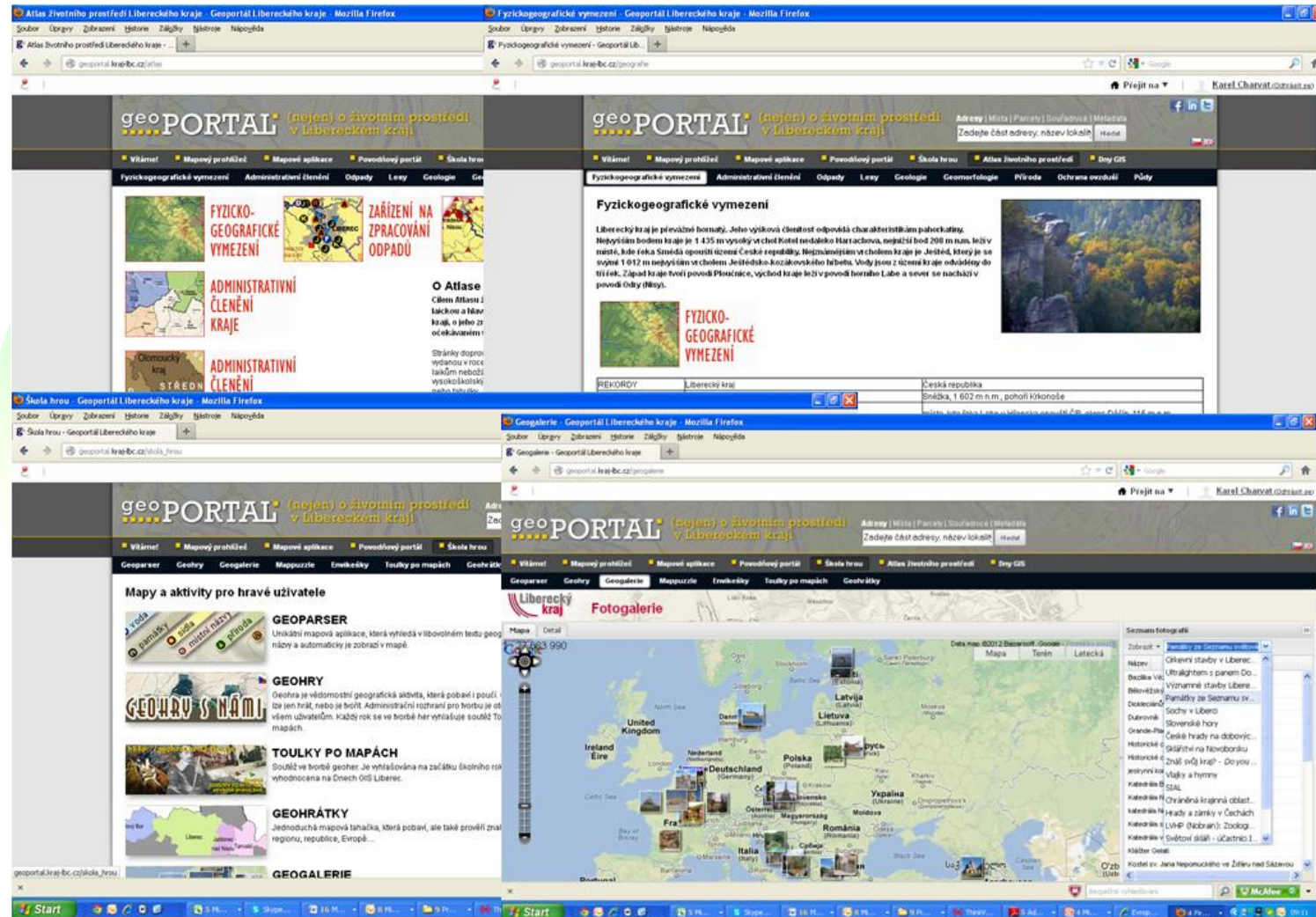
Liberec Example



Liberec Example



Liberec Example



Thanks!

<http://www.habitats.cz/>

