Data upload and upgrade mechanisms for Estonian SDI

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Spatial Data Infrastructure (SDI)

- SDI development in Estonia is lead by the Estonian Land Board (ELB)
- This SDI ensures availability and reliability of geographically referenced data held by public authorities

“Must be things”:
- Data
- Technologies
- Legal regulation
- Mutual agreements
Estonia’s Spatial Data

- National level:
  - Estonian topographic database (ETAK),
  - Cadastral register,
  - Register of construction works (EHR),
  - Register of roads,
  - Environmental register,
  - Addresses data system (ADS)
- Local governments
- Other – more than 1000 spatial data producers
Objectives for Estonian SDI

- Estonian SDI: must be a common “gateway”, through which spatial data that are owned by the:
  - Estonian state,
  - local governments and
  - other legal persons governed by public law,

- can be published and made available
INSPIRE Project in Estonia

- Preparations: 2010
  - before 2010

- National level:
  - Legal basis: Spatial Data Act (17. 02. 2011) and Public Information Act
  - Estonian Land Board as main coordinator

- AS Regio:
  - Consulting
  - Mock-up, etc

- Start: 2010Q3
Project scope

- Annex I themes spatial data and metadata
- Detailed analysis of the data
- Creating INSPIRE-compliant spatial data repository,
- Creating transfer and update mechanisms for data and making them flexible enough to be used in the future.
- Loading the data into the database with initiating the update mechanisms.
- Creating the Estonian GeoPortal to access the INSPIRE discovery and view services.
Technical solution

- Two problems:
  - time (deadline)
  - money (budget)

- Decisions:
  - Out-of-box solution for software – beginning with implementation
  - most significant decision was: to do the data analysis and upload mechanisms development at the same time
Platform for Estonian SDI

ESRI technology + MS Windows and Debian

- ArcGIS for INSPIRE
  - Quite “fresh” software 😞
- ESRI GeoPortal Server
- PostgreSQL
- ConTerra SDI
Software: main components

- Windows Server 2008R2
- Debian
- ESRI:
  - ArcGIS Server Standard Enterprise ver 10.0 SP3 (Java)
  - ArcGIS for INSPIRE 1.0 SP2
  - ESRI GeoPortal Server ver 1.2
- PostgreSQL 8.4.3
- ConTerra SDI (SecManager, Servicemonitor)
Data flows

- Geographical names
- Administrative units
- Addresses
- Cadastral parcels
- Transport network
- Protected sites
- Hydrography

INSPIRE Annex 1 Data Themes
- Owner’s know-how
- Spatial data
- Metadata

INSPIRE Annex 2 Data Themes
- Owner’s know-how
- Spatial data
- Metadata

Additional Spatial data sets
- Elevation metadata
- Ortoimagery metadata
- Geology metadata

Annex 1 data themes metadata

Repository

Metadata (XML):
- Discovery
- Creation & Editing
- Download
- Validation

Public users metadata:
- XML

Public user

Spatial data:
- discovery
- view

PUBLIC USERS SPATIAL DATA

Metadata (XML):
- Discovery
- Creation & Editing
- Save
- Download
- Validation

User’s spatial data:
- search
- view
- map presentation
- download

Authorised user

Spatial data:
- discovery
- view
Data upload and refresh mechanisms

- One mechanism for every data theme

- Graphic programming:
  - ESRI ArcGIS ArcModel
  - ETL-tools
  - in combination with Python scripts

- Self-documenting processes

- Data analyzing and testing at same time
Addres upload and refresh
Closer view
Results

- **December 2011**: the data upload procedures for INSPIRE directive Annex 1 datasets were finished.

- **2012Q1**: all developing was finalized, resulting in the Estonian Spatial Data Infrastructure – which, in turn, is now a part of the Infrastructure for Spatial Information in Europe (INSPIRE).
INSPIRE geoportal

- http://inspire.maaamet.ee/
Regio INSPIRE Team

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QUESTIONS?
THANK YOU!