From Geoportal to Spatial Data Service Platform

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Introduction

- National Land Survey of Finland - 1900 employees
- Development Centre - 120 employees
- SDI Team - 8 employees

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Finnish Reference Architecture for SDI Services

- Description of how to achieve interoperability of Geographic Information systems, services and content
- Based on European INSPIRE legislation and international standards
Finnish public sector reference architecture for SDI services

**Data Layer**
- Geographical Information Systems
  - Portals and clients
    - Interoperable components / Mashups

**Application Layer**
- Spatial data service bus
- Federation security
- Rights management

**Service Layer**
- Support services
- Licence services
- Metadata Services
  - CSW
- Content Services
  - WMS
  - WMTS
  - WFS
  - WCS
- Transformation services
- Analysis services
  - WPS
- Portrayal services
- Storage services
- Software services
  - SaaS

**Data Layer**
- Data sources
- Data products
Finnish Reference Architecture for SDI Services

- Consists of five main layers:
  - Content layer
  - Service layer
  - Authorisation layer
  - Authentication layer
  - Application layer

- The SD Service Platform binds the five layers together
  - Enables users to publish content through standardised services securely into any web applications or portals
Finnish Reference Architecture for SDI Services

Individual datasets and systems

Spatial Data Infrastructure **SDI**
(*Inspire* services and content made available)

Spatial Data and Services **Ecosystem**
Public sector provides basic infrastructure, infrastructure is complemented and extended by private sector and collaboration
Layers of SDS platform functionality

IaaS, Infrastructure as a Service

PaaS, Platform as a Service

SaaS, Software as a Service

DaaS, Data as a Service

AaaS, Analysis as a Service

VaaS, Visualisation as a Service

Map client

Map UI
**Spatial Data Service Platforms**

- Spatial Data Service Platforms...
  - ...enable efficient browser-based utilisation
  - ...of spatial data and services
  - ...through the web
  - ...as cloud services

Google maps

Portal for ArcGIS / ArcGIS Online

GeoNode

opengeoportal
National geoportal

About 3000 daily users, about 5000 registered users
Embedded maps / Service platform, My places -beta
> 20 data providers, > 200 map layers
Open Source Geoportal

Open source code libraries

- OpenLayers
- jQuery, RightJS
- Liferay
- GeoNetwork
- GeoServer, GeoWebCache
- PostgreSQL, PostGIS
- Linux, Apache, Tomcat

OSKARI

www.geoportal.fi
Open Source Map Application Framework

Developer Web Site for Oskari Map Application Framework

Oskari.org is a web site to support the development of Oskari Open Source JavaScript Map Application Framework. The Map Application framework is implemented as a collection of reusable bundles.

Bundles are used as uniform containers to ship and share new functionality to the application setups. Additions to existing functionality are implemented as Plugins shipped within the bundles.

Oskari version 12 provides applications with loose coupling and inter-bundle messaging with Requests and Events, configuration, application state and localization support. Loose coupling enables reusing bundles in different application setups.

Map functionality is implemented with OpenLayers. The user interface components are based on jQuery, YUILibrary, DOJO Toolkit, RightJS, see Open Source JavaScript libraries for a more complete list of libraries used and to be used.

Getting started

- Download
- Quick start
- Documentation
Open Source Spatial Data Service Platform
- OSKARI

- OSKARI = Open Source Karttaikkuna (stands for Open Source map window)
  - ...but OSKARI is more than just a map window in a Geoportal...
- OSKARI is the core of an Open Source based Spatial Data Service Platform – key principals:
  - Reuse existing OS components: e.g. OpenLayers, jQuery
  - All developed code is released under OS licenses (MIT/ EUPL)
  - Flexible architecture allows for adding functionality both on the server and client side
OSKARI first phase @ geoportal.fi

- Users can publish an embedded map into any common web content management system (CMS), utilizing the rich content from the Finnish SDI
- The embeddable map client has basic functionality
  - Zooming, panning, index map
  - Selection of background map
  - Address and gazetteer search...etc.
  - WMS GetFeatureInfo
- All data consumed by the map client is provided through standard INSPIRE-approved OGC interfaces (WMS/WMTS, WFS)
Google maps
ArcGIS Online

Oulu Airport

Location of the Oulu City Airport

Web Map by JanKyll

Last Modified: May 4, 2012

(0 ratings, 0 comments, 2 views)

More Details...

Open this map in:
ArcGIS Explorer Online

Make your own map
Add to this map
Make a new map
SDI Service Platform

Starting points:
INSPIRE-directive
International standards (OGC, ISO)
Spatial Data Infrastructure

An Open Source Solution
OSKARI SD Service Platform @ Geoportal.fi

3. Define map settings

- **Web site domain name (required, see Help)**: geoportal.fi
- **Map name (required)**: Oulu Airport map
- **Select map interface language**: in English
- **Map size**:
  - Small (375x300)
  - Medium (500x400)
  - Large (640x512)
  - Define custom size
  - Width: 1000
  - Height: 700
- **Select map interface tools**:
  - Scale bar
  - Index map
  - Zoombar
  - Address and place name search
  - Map center marker
- **Map position and scale**:
  - North 7201522
  - East 4230692
  - Scale: 1

Preview of the map you want to define
OSKARI SDI Service Platform

- The Clue: being able to define and publish a map UI on a web page without having to write code
- Defining a simple map UI is possible within a few minutes; defining a more complex map UI can take tens of minutes or hours
  => multifold increase in productivity as compared to traditional ways of publishing a map UI
- Rich Inspire data content available for publishing
Example: City of Tampere voting districts
One Company

Closed Source
Community
Open Source
Why OSKARI?

- Open Source – collaboration
- Support for OGC standards and INSPIRE
- Architecture considerations
  - Modularity – flexibility, adaptability, performance
  - OSKARI is an organized way of writing JavaScript
  - Possibility to exchange e.g. UI libraries
  - Avoiding lock-up situations with software components or technologies
- Localization needs
OSKARI further development
- Geospatial web applications

- Functionality of the source code and the platform to be extended using same code base to cover more use cases, e.g.
  - Building permit web services for municipalities – the Finnish Ministry of Environment
  - Web-based e-Conveyance of real estates – NLS FI
  - Statistical evaluation of basic services, such as health care and safety services – the Regional State Admin Agencies
  - Candidate technology for European Location Framework (E.L.F) platform – EuroGeographics project application

Project Started
Project Started
Project Starting
In Negotiation
OSKARI wiki

http://oskari.org/trac/wiki

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OSKARI GitHub repository

https://github.com/nls-oskari
NLS Fi Open topografic data 1.5.2012

Topographic maps 1:25.000 ... (raster)

Topographic Database (vector)

Backround maps 1:10.000 ... 1:8 M (raster)

Ortophotos (0,5 m)

Elevation model 2m, 10m ... (grid)

Laser scanning data (LAS)

http://www.maanmittauslaitos.fi/en/opendata
Terms of use

The data made available on 1 May 2012 are granted permanent and free right of use.

Free right of use means that available topographic data products can without charge be:

- used within the organisation
- published as desired
- distributed freely to others
- further processed to new products
- sold ...or used in any other way

- mention the name of the Licensor, the name of the dataset(s) and the time when the National Land Survey has delivered the dataset(s)
- provide a copy of this licence or a link to it, as well as
- require third parties to provide the same information when granting rights ...
Be smart ...

→ Be open minded!

Open standards
Open source code
Open data
Open services
More information

http://www.oskari.org
http://www.geoportal.fi

Thank You! Questions?
TIETOA MASTA
LUOTETTAVASTI VERKOSSA
JA LÄHELLÄSI
FAKTA OM LANDET
TILLFÖRLITLIGT PÅ WEBBEN
OCH NÄRA DIG