Implementation of Nordic Geoportals

– A Joint Initiative

INSPIRE conference, June 24, 2010

Anders Friis-Christensen
National Survey and Cadastre, Denmark
andfr@kms.dk

Jointly with: Kjell Hjorth, Tomas Martin Holtan and Jani Kylmäaho
Outline

• Background
• Why GeoNetwork?
• Open source developments
Background (1)

- In order to support national spatial data infrastructures each Nordic country will establish a Geoportal
  - In accordance with specific requirements from INSPIRE
- Each country have their own specific requirements but INSPIRE makes several common
  - Technical guidelines
  - Timetable
Background (2)

- Nordic agreement on collaboration on Open Source software developments
  - Denmark, Finland, Norway and Sweden
- Director generals agreed that development of national Geoportals would be an area of collaboration
  - The Nordic Initiative
- Preparation of an MoU
  - Will be signed by director generals in next nordic meeting
Principle of MoU

• The initiative will be used to share experience and reduce costs
  – Avoid duplication of work
• All costs for developments are shared equally among the participating countries
• Achieved results of the work shall be freely shared with everyone interested
Choice of GeoNetwork (1)

- No software fulfills all requirements from INSPIRE and guidelines (for discovery service)
  - Neither open source nor commercial software
- Software has to be modular and easy to configure
  - Requirements change over time
- Several countries have had less positive experiences with closed-source solutions for handling metadata
  - Not flexible enough
Choice of GeoNetwork (2)

- Open Source option: GeoNetwork
  - Several installations exist in production
  - Has been available for some years
  - Need for further development as it is not in full compliance with the requirements of INSPIRE

- All Nordic countries have decided to use GeoNetwork
  - Starting point was a Nordic meeting regarding metadata
  - All countries have (approximately) the same needs
What is GeoNetwork?

• GeoNetwork is a piece of software to (interactively) store, manage, and show metadata for datasets and services
  – A “portal” part
  – OGC Catalogue Service (Discovery service)
• Open Source published under GNU GPL version 2.0
• Builds on standards: ISO TC211 and OGC
  – But also Z39.50, OpenSearch, GeoRSS making it a very flexible product
FIND INTERACTIVE MAPS, GIS DATASETS, SATELLITE IMAGERY AND RELATED APPLICATIONS

What?

Where?

Search

Reset Advanced Options

CATEGORIES
- Applications
- Audio/Video
- Case studies, best practices
- Conference proceedings
- Datasets
- Directories
- Interactive resources
- Maps & graphics
- Other information resources
- Photo

RECENT CHANGES
- Hydrological Basins in Africa
- Vector Grid 5x5 Degrees Resolution
- Sea Area Delimitations - ASFA Geographic References
- Large Marine Ecosystems of the

GeoNetwork™ opensource

GEONETWORK’S PURPOSE IS:
- To improve access to and integrated use of spatial data and information
- To support decision making
- To promote multidisciplinary approaches to sustainable development
- To enhance understanding of the benefits of geographic information

GeoNetwork opensource allows to easily share geographically referenced thematic information between different organizations. For more information please contact

Jeroen.Ticheler@fao.org

FEATURED MAP
- GEOLOGICAL MAP OF THE DABAN BASIN 1:100,000

Geological map of the Daban Basin at scale 1:100,000. Authors: P. Bruni, E. Abbate, AS Hussain, M. Fazzuoli & M. Sagri Florence University and Somali National University, Mogadishu. Additions from...more...
Integration with other OS Components

- Option to integrate with other OS components
  - "Show map" map-client is developed by Danish IT agency on top of an OS component developed by the Danish National Survey and Cadastre
Open source - Pros

- “Free” under certain conditions
- Independent of specific suppliers
- Faster improvements and correction of errors
- Modifications and further developments easier
- An active “community” is constantly improving the software
- Possible for collaboration on developments
Open source - Cons

• The project has to be kept alive in some way
• Developers are required (if changes are to be made)
• It can be difficult to get an overview of the different components and dependencies (which often is consisting of many other OS projects)
• Branching of project: If you do further developments you risk to be “locked” to your version
Management of Open Source Challenges

- Major challenge of using Open Source for the geoportals
  - Need for further developments in a new project (branching)
  - Problems when updating to newer versions in future
    - Fine if you do not update to newer versions (but is it realistic?)
    - One of the advantages of OS is precisely the benefit of the improvements of others
- The main issues for us: How should further developments be managed?
  - Important for us is that code goes back to the community
    - Others can benefit from our development
    - We can update “seamlessly” to newer versions when improvements / new features are implemented
Challenge: Developments on GeoNetwork

- The community around GeoNetwork is very small
  - How to get into the “holy group”?  
  - Many resources required to become trusted in the community and to be allowed to commit to the "trunk" (main track for development)

- Not always a well thought out software architecture and incomplete documentation
  - Takes a long time to get acquainted with
Nordic Collaboration

• Agreed on joint development of GeoNetwork to adapt it to INSPIRE requirements
  – Through the Netherlands, the Nordic countries got in contact with the main developer of the GeoNetwork (OS project owner)

• Wiki for collaboration:
  – [http://beta.geonorge.no/wiki](http://beta.geonorge.no/wiki)

• Via telephone conferences and a couple of meetings
  – Identifying tasks
  – Prioritising tasks
Nordic Collaboration – Handling of Challenges

• Regarding branching and organisation of continued development:
  – Nordic countries pay the project owner for development
    • Ensuring that the developments go back to the community (to trunk)
    • Independent Nordic release (2.4.3); in the next stable public release (2.6), these changes are integrated
  
• Development on the core is made by the “project owner” of GeoNetwork, sponsored by the Nordic cooperation
Nordic Collaboration – Developments

- Better documentation of certain web service APIs ver. 2.4.3
- INSPIRE compliance (technical guidance 2.0)
  - User Interface ver. 2.4.3
  - Queryables ver. 2.4.3
  - Compliance tests (incl. QoS tests) ver. 2.4.3
- Performance improvements ver. 2.4.3
- Many bugfixes and minor improvements to catalogue service (CSW) ver. 2.4.3
- Validation mechanism for service interface ver. 2.6
- Multilingual editing ver. 2.6
- Decoupling of the security module of GeoNetwork ver. 3.x
- Modular architecture of GeoNetwork ver. 3.x
Summary

• Nordic collaboration on developments of core parts of GeoNetwork OS

• Using OS software provides good benefits
  – However, planning is necessary in order to avoid problems in the long term

• If need for further developments of OS -> important to plan how new versions are handled
  – Be careful to do your own “branch” of the software, unless you are aware of implications
  – Problems may arise in later updates
  – It is recommended that further developments go back into the main track or is completely independent of existing code
  – Investigate the possibilities of cooperation with others with similar needs (e.g., in the community)
Implementation of Nordic Geoportals

– A Joint Initiative

INSPIRE conference, June 24, 2010

Anders Friis-Christensen
National Survey and Cadastre, Denmark
andfr@kms.dk

Jointly with: Kjell Hjorth, Tomas Martin Holtan and Jani Kylmäaho