

ILWIS Open

A flexible Open Source GIS

- Overview
- Applications
- Scripting & Map calculations
- Integration
- Case study : Geonetcast

What is ILWIS?

ILWIS: the **I**ntegrated **L**and and **W**ater **I**nformation **S**ystem

- PC-based integrated Geographical Information System (GIS) & Remote Sensing software
- Originally designed in 1985 for a land use zoning and watershed management project in Sumatra
- Developed originally at the ITC Netherlands now part of 52N
- Low Cost, Low threshold in use
- Open source (GPL)

Overview

Regular components

The screenshot shows the ILWIS 3.0 Academic interface with the following components labeled:

- Control menu icon**: Located at the top left of the main window.
- Standard toolbar**: A row of icons below the menu bar.
- Object selection toolbar**: A second row of icons for selecting map objects.
- Menu bar**: File, Edit, Layers, Options, Help.
- Title bar**: Landuse: Polygon map of land use units - ILWIS.
- Close button**, **Maximize button**, **Minimize button**: Window control buttons.
- Scale box**: Shows the current scale (1:200000).
- Layer Management pane**: A tree view on the left showing the map's layers and legend.
- Status bar**: Displays coordinates at the bottom of the map viewer.
- Table viewer**: A table showing data for the selected layer, including a 'Landvalue' column.
- Statistics pane**: A summary of statistics for the selected layer.
- Operations/Navigator pane**: A sidebar on the left with a tree view of operations.
- Catalog**: A list of data files in the 'C:\ILWIS 3.0 Data' directory.
- Split bar**: A vertical line separating the table viewer from the statistics pane.
- Scroll bar**: Horizontal scroll bars for the table and statistics panes.

| Landvalue | |
|-------------|------|
| | 100 |
| (irrigated) | 150 |
| | 600 |
| | 50 |
| | 50 |
| | 75 |
| | 75 |
| | ? |
| | ? |
| | 50 |
| | 1000 |
| phery | 750 |
| | 50 |
| Max | 1000 |
| Avg | 290 |
| StD | 355 |
| Sum | 2900 |

Overview(2)

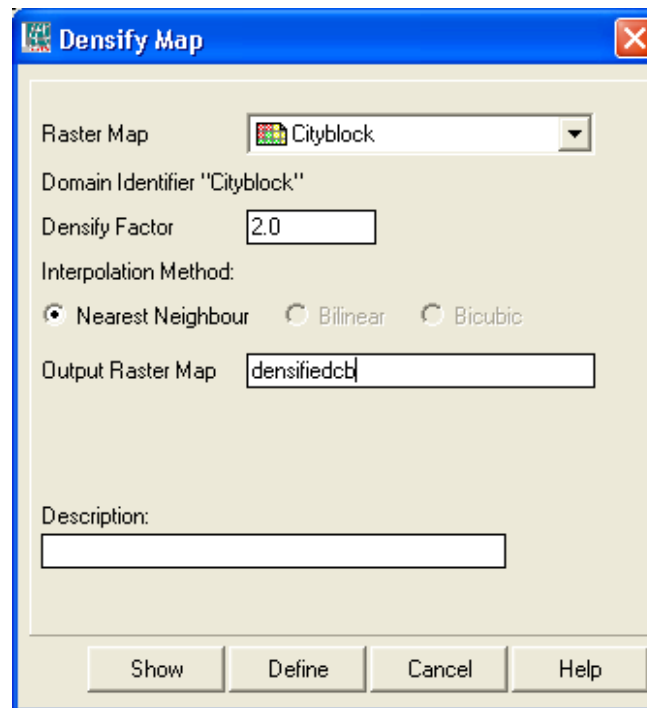
- Applications, operations on spatial and tabular data.
- Map calculations (more about that later)
- Extensive and flexible support for spatial reference systems and their transformations
- Large and comprehensive help system
- Ease of use

Applications

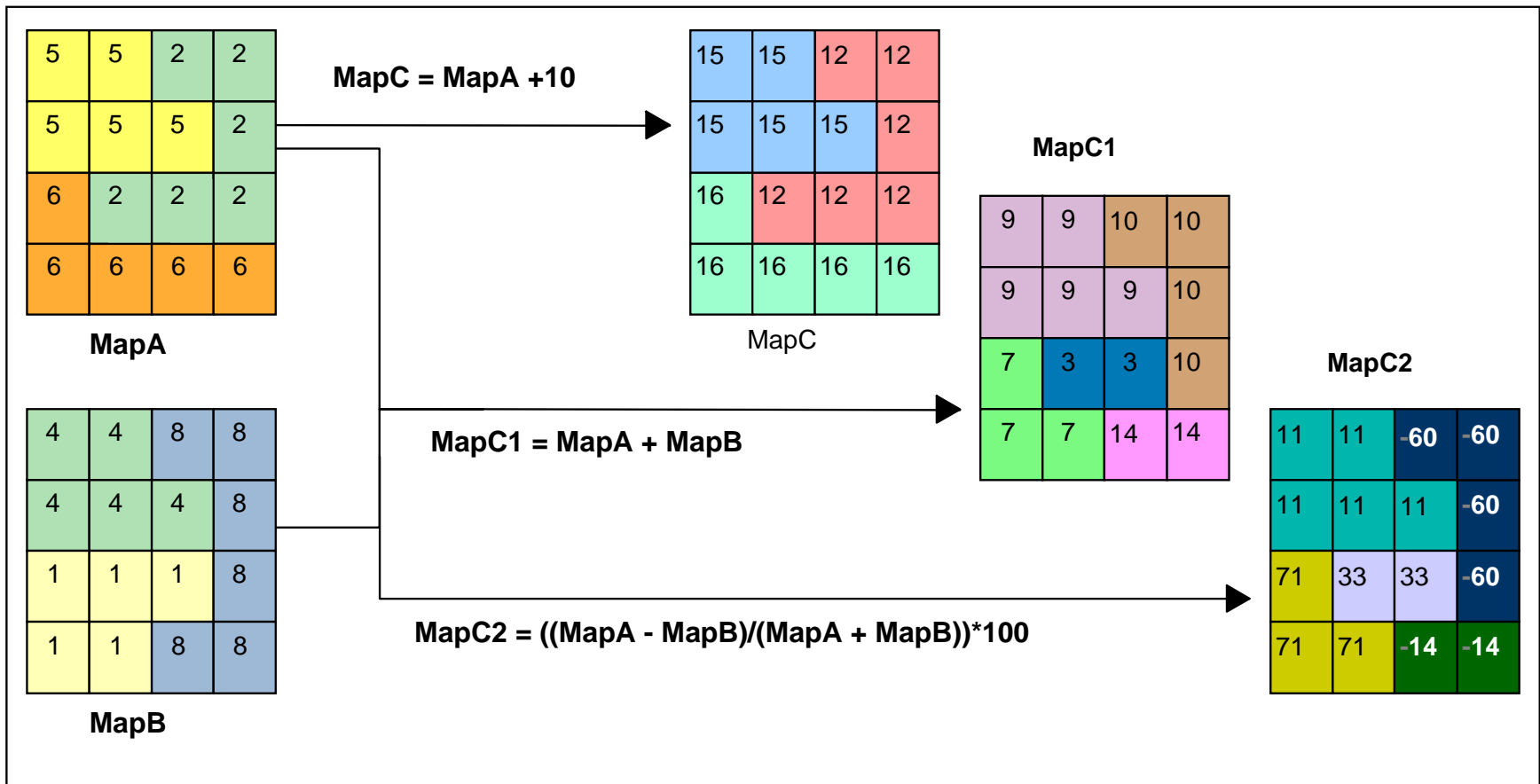
- All algorithmic operations on spatial and tabular data are called 'Applications'
- Applications are described by an expression e.g
dcb = MapDensify(Cityblock,2,nearestneighbour)
- Applications maybe used in other expressions and will be calculated as needed

Applications(2)

- User friendly way to enter expressions : applications forms



Map calculations



Scripting

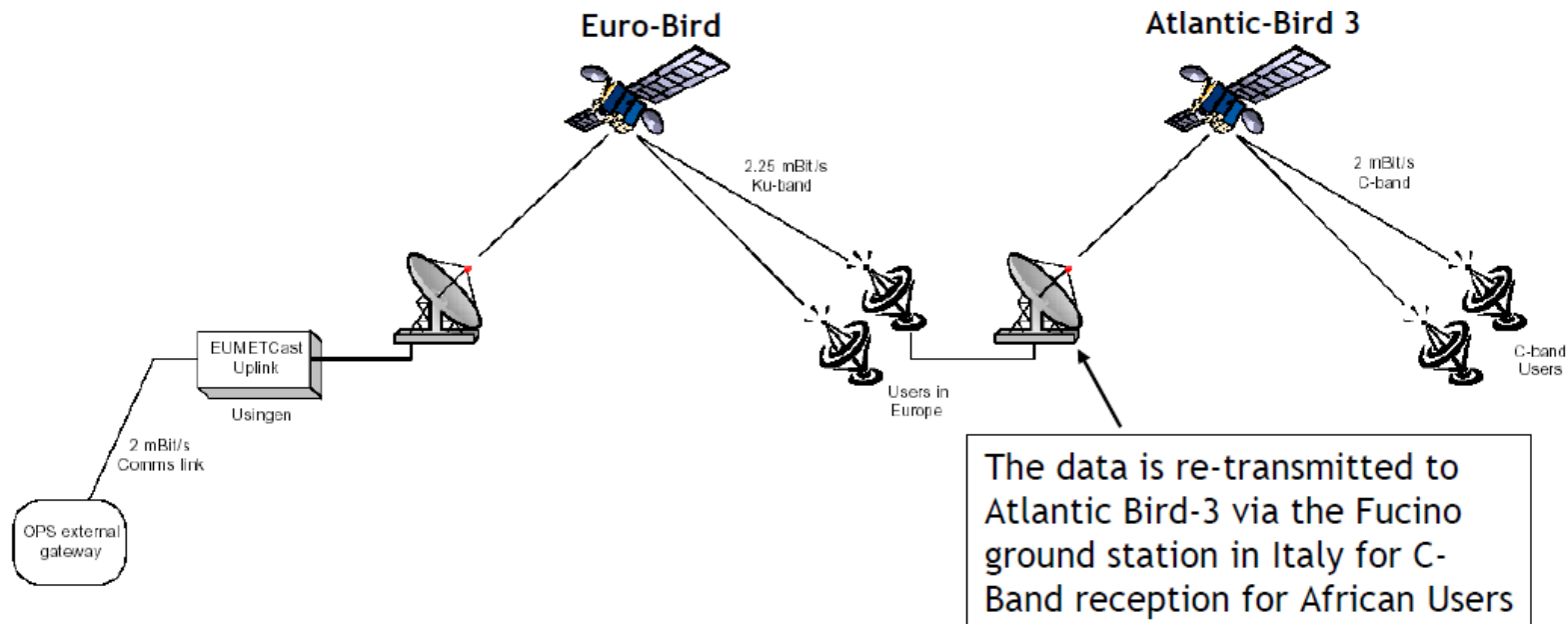
- Multiple applications combined with arithmetic, conditional and logical operations can be combined in a so called script which will be executed in sequential order
- Very easy to model complex combinations of different spatial data sources

Integration

- All ILWIS commands can be used within a DOS batch file
ILWIS -C "<Any expression>"
 - This facilitates the usage of ILWIS in environments which needs heterogeneous use of processing software
 - Same interface can also be used through a C style interface
- Any External program can be used/started from within the ILWIS environment.
 - ILWIS is able to manage the execution flow of external programs

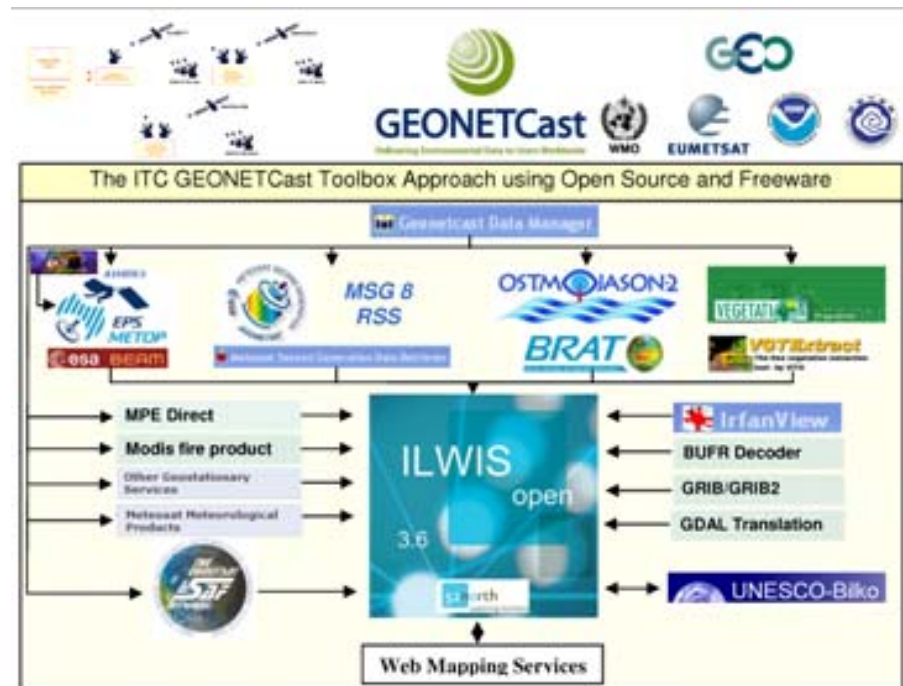
Geonetcast : Near real-time satellite reception

- Communication satellite based data distribution system
- Inexpensive way to access global data from freely available satellite products



Case Study : Geonetcast

- The GEONETCast Toolbox, developed as a plug-in as of the ILWIS version 3.6, is offering a set of utilities that facilitate easy import of various free satellite and environmental data / products that are disseminated via GEONETCast, into a GIS environment.

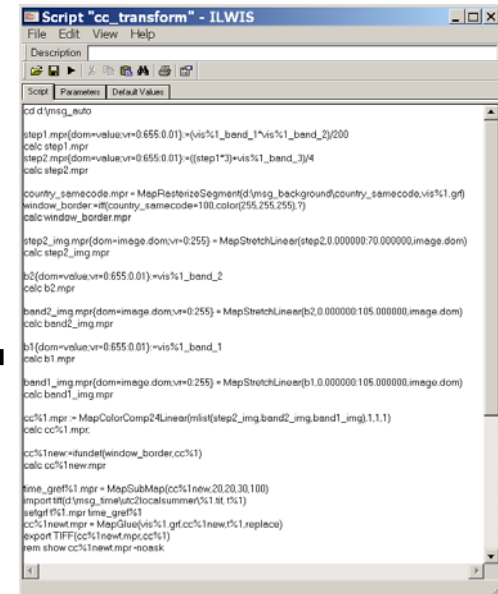
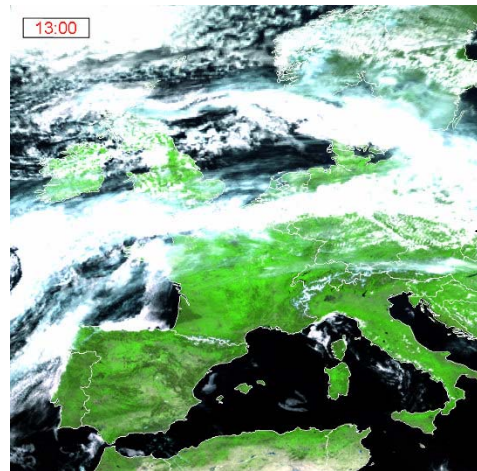
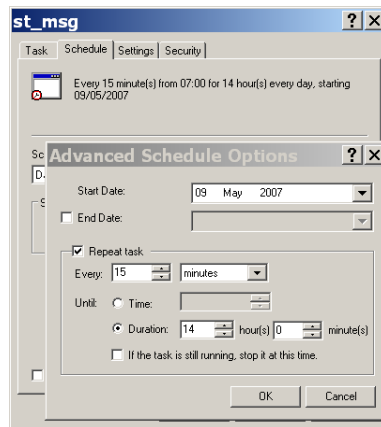


Putting things together

- Near-real time visualization:(1) using Windows Scheduler – (2) batch routines to extract new data – (3) Ilwis scripts for processing and (4)
- Virtually any application can be built depending on the User needs

rem: directory with raw MSG-Data is \\Pc2133-24002\Rawdata20061220\ and should be mapped as network drive z:\ on local system

```
d:\msgdataretriever\gdalwarp.exe --config GDAL_CACHEMAX 30 -t srs
"+proj=latlong" -te -12.059870 34.265180 18.662739 64.129717 -tr 0.04300 0.04300 -of
ILWIS MSG(Z:\,%date:~-4,4%%date:~-7,2%%date:~-10,2%%1,(1,2,3),N,B,1,1)
D:\MSG_auto\vis%1
```

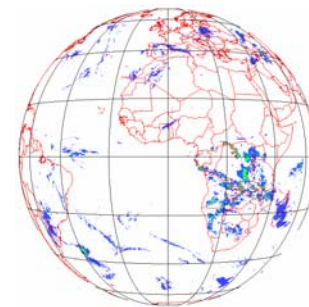
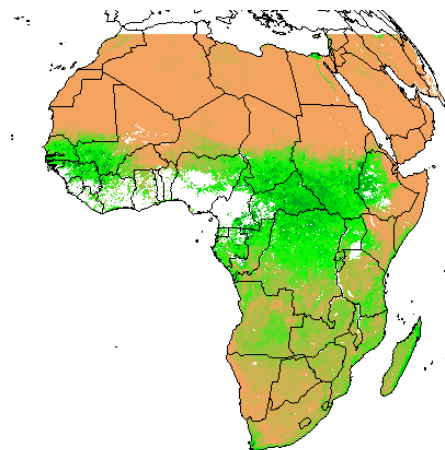
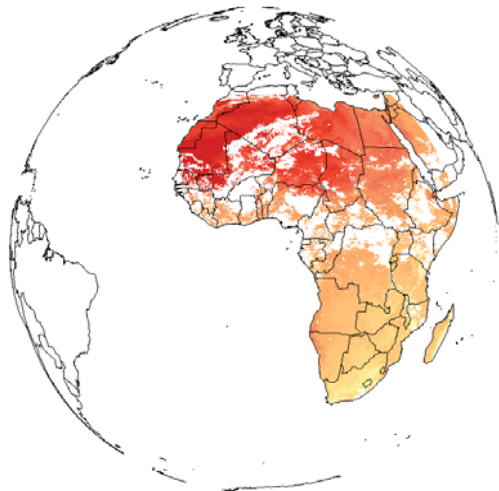
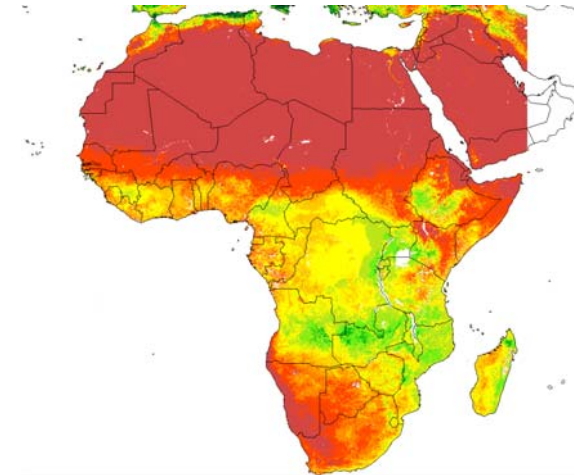
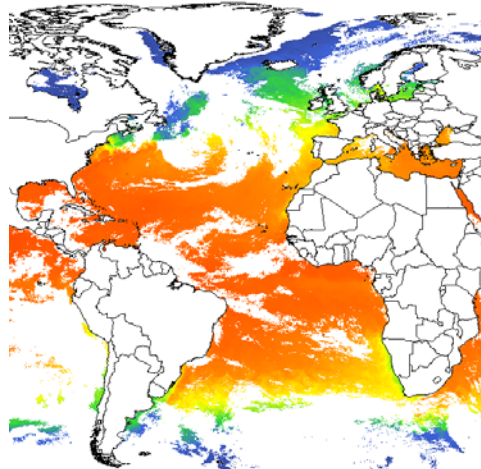
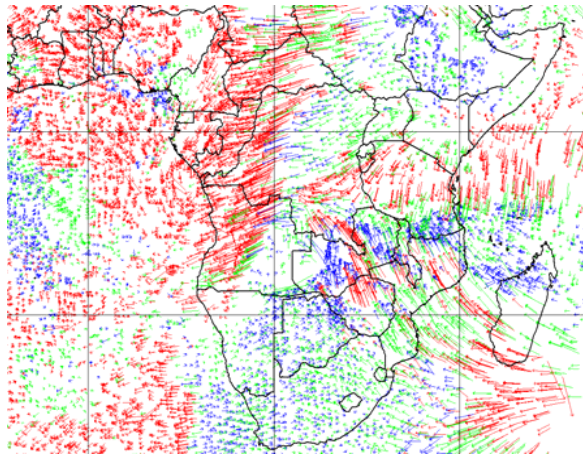


In Practice

- GEONETCast African Service received in Africa



End products



And much more.

http://52north.org

The screenshot shows the homepage of 52north.org. The header features the 52north logo and the tagline 'exploring horizons'. A navigation menu on the left includes links for Home, Downloads, Source Repository, About, Get Involved, Publications, and References. Below this is a section for '52N Communities' with links to Sensor Web, Security & GeoRM, Geo-Processing, ILWIS, Semantics, and Students Corner. The main content area starts with a 'Home' heading and a 'Welcome to 52°North' section. This section contains a paragraph about the 52°North Initiative for Geospatial Open Source Software GmbH, its mission, and a list of cooperation partners. Below this is another paragraph about the work of partners, mentioning Java and C++ based web services and the GNU General Public License (GPL). The page is divided into four community-focused boxes: 'Sensor Web Community', 'Security & Geo-RM Community', 'Geoprocessing Community', and 'ILWIS Community', each with a brief description of their focus. On the left side of the main content area, there are logos for OGC Associate Member, the Sensor Web Alliance, and FOSS4G Sydney 2009 (20-23 October) with a 'Sponsor' label.

52north
exploring horizons

- Home
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- About
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- References

52N Communities

- Sensor Web
- Security & GeoRM
- Geo-Processing
- ILWIS
- Semantics
- Students Corner

OGC
Associate Member

sensor web alliance

FOSS4G
Sydney 2009
20-23 October
Sponsor

Home

Welcome to 52°North

52°North Initiative for Geospatial Open Source Software GmbH is an international research and development company whose mission is to promote the conception, development and application of free open source geo-software for research, education, training and practical use. 52°North backs an open initiative, which is driven by leading research organizations and individuals in the international GIS field. Cooperation partners participate in research and development with focii on Sensor Web Enablement (SWE), Web Security and Geo-Rights Management, as well as Geo-Processing .

The work of our partners results in a collection of Java and C++ based web services implementations. Our software is published under the GNU General Public License (GPL), but is also available via a dual licensing model for those who would like to tightly integrate our software into their own commercial software products.

Sensor Web Community

We focus on the development of a broad range of services and encoding implementations related to Sensor Web Enablement (SWE), as well as multi functional clients to access all of these services.

Security & Geo-RM Community

We provide ready-to-use software, as well as prototype implementations to enable interoperable business and access control process for geospatial services and spatial data infrastructures.

Geoprocessing Community

We aim to design a pluggable web service architecture for orchestrating and executing geo-processes, as well as research GRID based and spatio-temporal data analysis processing techniques.

ILWIS Community

We strive to advance ILWIS into re-usable, interoperable web services, as well as to further it as client software in a distributed service environment (SDI).