

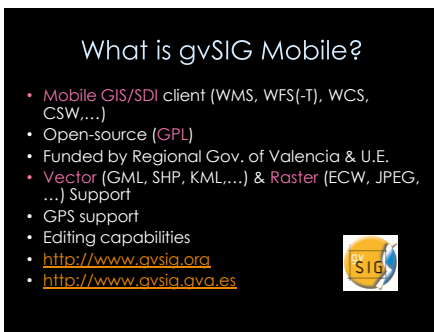


I'm Javi Carrasco, thank you for listening to Sensor services in gvSIG



I think all of you know gvSIG.

Just to say gvSIG is a really complete desktop GIS with raster and vector support, made in Spain but downloaded about seventy five thousand times from all around the world and translated into more than 20 languages.



gvSIG Mobile is not so well known but is a very interesting GIS application because it runs on PDAs and smartphones.

It uses extensively the GPS and can display vector and raster maps and it can be used to edit vector layers.



I come from Prodevelop, a Spanish company that has been working with GIS for 15 years and we are members of the Technical Management Team of gvSIG.



We have been working on a Sensor Observation Service client for gvSIG desktop and gvSIG mobile.

Who has made it?

proDEVELOP
Intelligence Technologies

Software
Colaborativo

UNIVERSITAT
JAUME I

We are not alone in this Project, we are working together with Software Colaborativo and The Jaume Primer University.

Sensor Observation Service

- Part of OGC SWE (Sensor Web Enablement) family
 - OGC Specification (1.0.0)
 - Access to sensor description and its observations
- WFS → SOS Protocol
 - GML → O&M Data
 - - → SensorML Metadata

Now a short introduction to Sensor Observation Service.

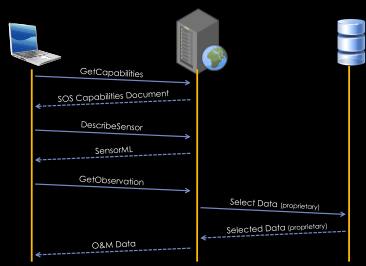
SOS is an OGC specification part of the Sensor Web Enablement and it allows us to get information from any type of sensors in a standard way.

If we compare SOS to WFS, both are protocols.

Similar to the GML, the language used in WFS to describe the data, is Observations and Measurements, the language used to get the sensor measurements.

In SOS is not enough with the data we need some metadata to describe the sensors. Sensor ML describes those sensors: its location, Id, phenomenon it measures –temperature, pressure,...-, procedure of data processing and so on.

Sensor Observation Service



To interact with a Sensor Observation Service, we first ask for the capabilities. After that we need the description of all the sensors and finally we can request the data.

When we ask for the measures most times the data is collected from a database, not from the real sensors.

What's been implemented?

- SOS Core Operations Profile
 - GetCapabilities
 - DescribeSensor
 - GetObservation

We have just implemented the three mandatory SOS operations. GetCapabilities to describe the service. DescribeSensor to get the Sensor metadata and GetObservation to receive the observations.

What has not been implemented?

- SOS Transaction Operations Profile
 - RegisterSensor
 - InsertObservation
- SOS Enhanced Operations Profile
 - GetResult
 - GetFeaturesOfInterest
 - Etc.

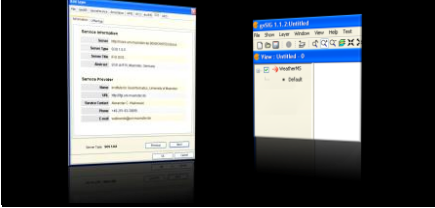
The other profiles, we have not implemented are:

-Transaction Profile is suited for auto-registering of sensors. Hello I'm a sensor and want to register into a SOS service to publish my observations, ok just use the RegisterSensor operation and later send those observations using InsertObservations.

- Enhanced Profile is for additional operations for example GetResult: Is to subscribe to periodic data without asking GetObservation again and again

gvSIG Desktop SOS client

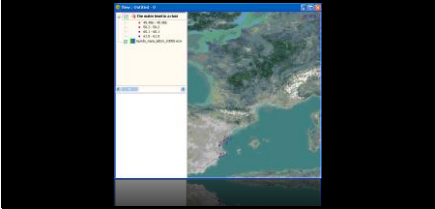
- SOS offering as a new layer



To do the prototype we chose to present an offering of a server as a new gvSIG layer.

gvSIG Desktop SOS client

- Procedures (sensors) location



The procedures or sensors inside this offering are presented as the features of the layer and displayed on the map.

To get that location we need to use DescribeSensor .

gvSIG Desktop SOS client

- Get Observations

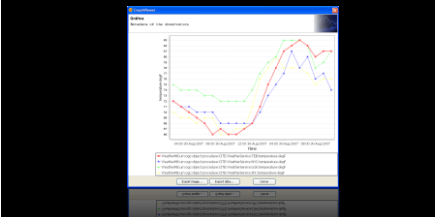


Then we can get the observations from any of those sensors.

From any time interval and for any of the observed properties.

gvSIG Desktop SOS client

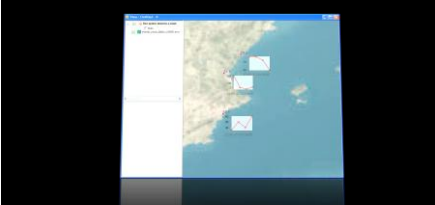
- Graphics support



We can display that information in graphics for an easy understanding and to compare the measures from several sensors.

gvSIG Desktop SOS client

- Graph Symbology



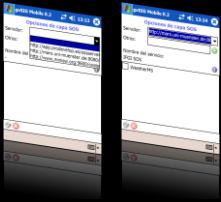
And we can see those graphics over the map.

gvSIG Desktop Video

Now we are going to see how it works.

gvSIG Mobile SOS client

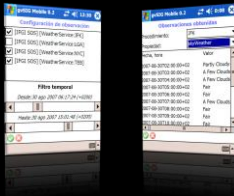
- SOS offering as a new layer



For the mobile client we took the same approach. An offering is a layer.

gvSIG Mobile SOS client

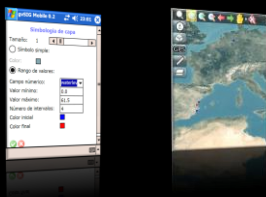
- Get Observations



gvSIG Mobile can display the Observations in the PDA too.

gvSIG Mobile SOS client

- Thematic representation



And use this information to display thematic maps where we can locate easily the zones with similar measures.

gvSIG Mobile Video

Now the video

What's next ?

- gvSIG Desktop
 - Integration into gvSIG 2.0 official version
 - Integration with discovery services
 - Transactional Profile Support
 - Real-time dynamic sensor data on map
 - Integration with layouts

Collaborations are wellcome

Now we want to integrate this prototype inside gvSIG official version and later:

-Integration with discovery services, support of the transactional profile, real-time dynamic sensor data over the map and integration with layouts.

What's next ?

- gvSIG Mobile
 - Integration into gvSIG Mobile 1.0 official version
 - Transactional Profile Support?

Collaborations are wellcome

we want to integrate the pilot into the gvSIG Mobile official version too and to implement the transactional profile to push measures from the PDA.