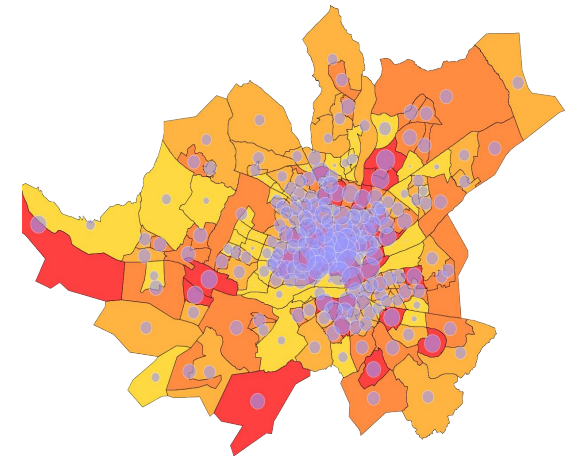
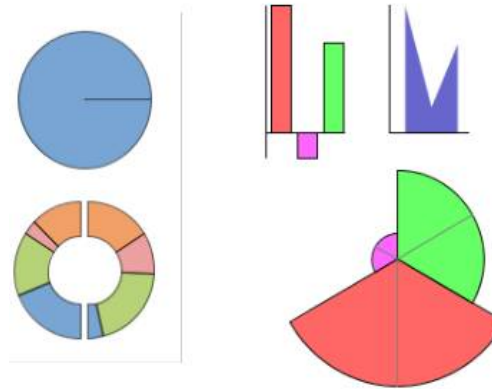
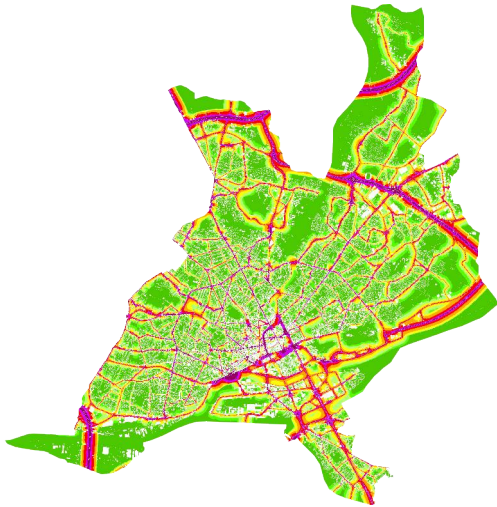


Toward a new symbology model



OrbisGIS workshop – OGRS 2012

Alexis Guéganno,IRSTV
Nicolas Fortin,IRSTV
Gwendall Petit,IRSTV
Erwan Bocher,IRSTV
Olivier Ertz,HEIG-VD
Julien Le Glaunec,HEIG-VD



l'esprit grand ouvert



heig-vd

Haute Ecole d'Ingénierie et de Gestion
du Canton de Vaud



Symbology encoding 1.1 :

- OGC specification
- Suffers from several weaknesses.

- Many symbols that are useful to the cartographers can't be described with SE 1.1 :
 - Collections of complex symbols
 - Hatched fills
 - Lines dashed with advanced symbols

Some symbols are possible but difficult to describe :

- Value classifications
- Interval classifications

The parameters used for these symbols are not described at the symbol level, but at the rule level.

SE 1.1 :

- Is distant for cartographer needs
- Is not much used by FOSS GIS
- Suffers from interoperability problems

In order to solve the problems faced by SE 1.1, a working group currently tries to improve it in a new model that is :

- Closer to cartographer needs
- Richer

SE is currently under active discussions in the OGC working group.

Through this presentation we will see how SE 2.0 can be used to create :

- Unique symbols
- Proportional values
- Unique values
- Interval classifications
- Bivariate analysis
- Diagrams

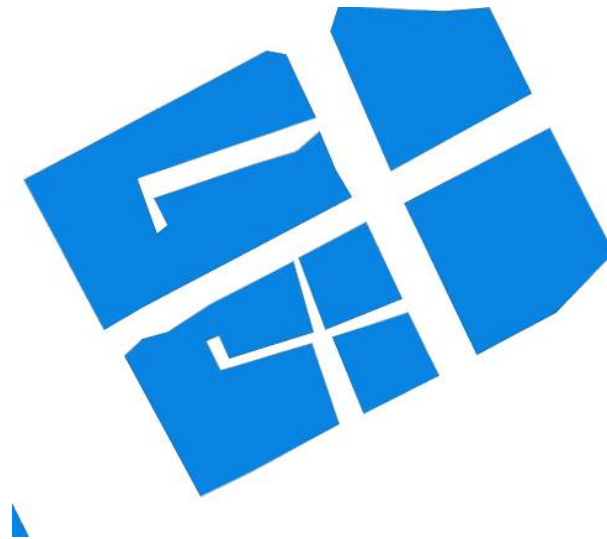
Symbology can't be explained without drawing maps : we'll use OrbisGIS !

- SE 2.0 is the symbology model of OrbisGIS 4.0.
- Useful to study the problems that can hide in the model...

OrbisGIS 4.0 is built to propose :

- A simple user interface for common analysis
- A complete user interface for advanced analysis

Let's start with simple analysis...
Have a look to the XML file.



As for SE 1.1, most of the informations are gathered in Symbolizers in SE 2.0 :

- LineSymbolizer
- AreaSymbolizer
- PointSymbolizer
- RasterSymbolizer
- TextSymbolizer
- CompositeSymbolizer

We face a paradox :

- Symbolizers' structure is complex
- We want to propose a simple editor

We try to propose an editor that can hide the complexity of the symbology models in many situations

Many needs of cartographers are well-known.
They will often try to build :

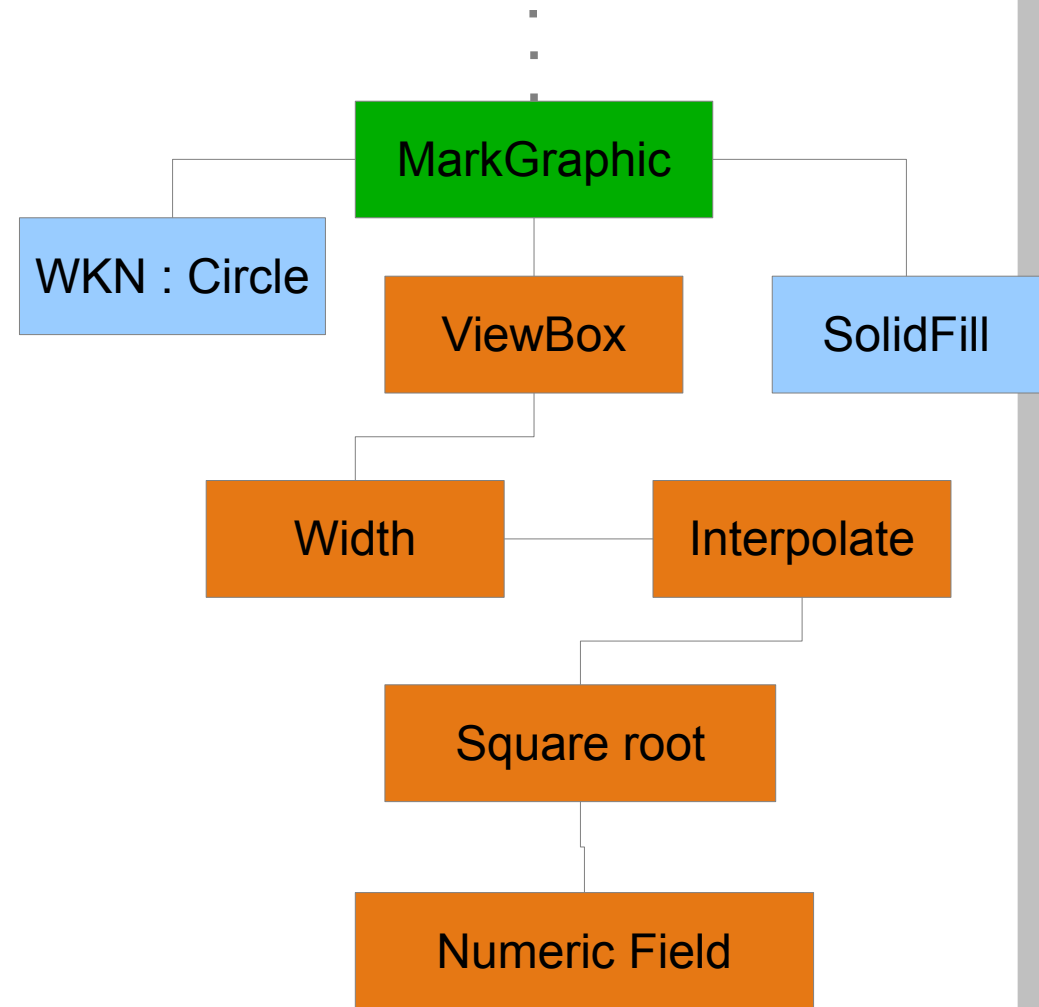
- Unique symbols
- Proportional symbols
- Value and interval classifications
- ...

Knowing that, we may :

- Study how to build such analysis with SE
- Use the simplest ways to do so as base patterns
- Try to recognize these patterns in the SE files

We don't want to maintain two symbology models in parallel (one for our needs and one to implement an OGC specification).

- We try to recognize some known patterns
Here a proportional point.



Build a proportional symbol and have a look to the generated XML !

- Still on the buildings of Nantes
- Build a proportional Symbol on the HAUTEUR (height) field.



SE is not built apart from the other works from the OGC :

- May replace SE 1.1 in SLD and in Open Web Map Context.
- Uses FES wherever it is possible

The norm is built to be naturally included in the OGC works.

The styles that can be built with SE can be much richer :

- All known patterns are not implemented yet in the simple editor
- Most of the configurations can't be associated to a known pattern.

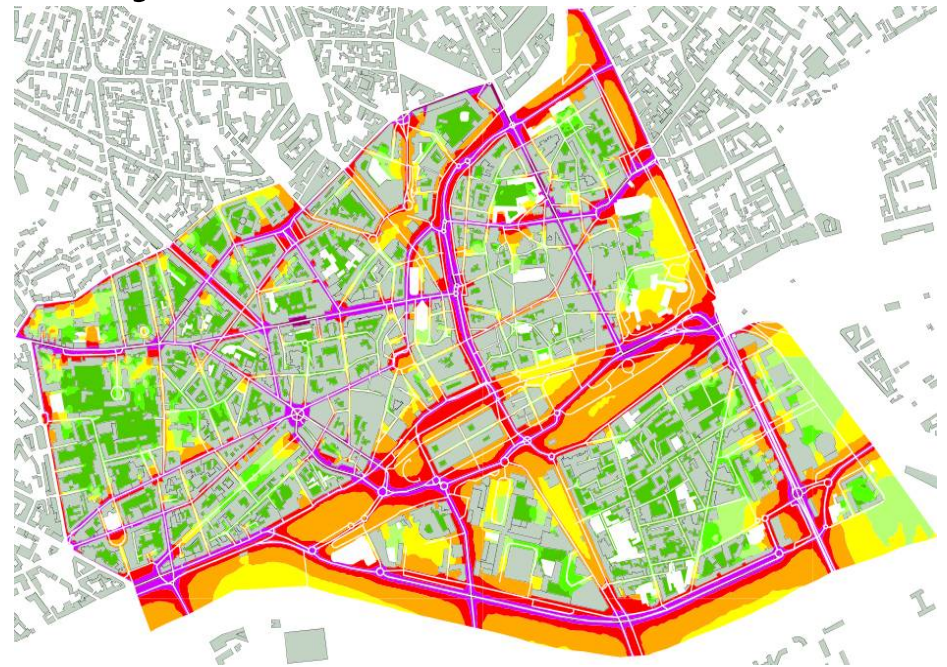
Even if the simple editor can't do more, we can go further by :

- Importing external styles
- Using a more advanced editor
- Editing XML files by hand

We can use SE to draw maps that are not yet recognized by the simple editor :

- Unique value
- Interval classification

We'll work with another layer :
contouring_noisemap.



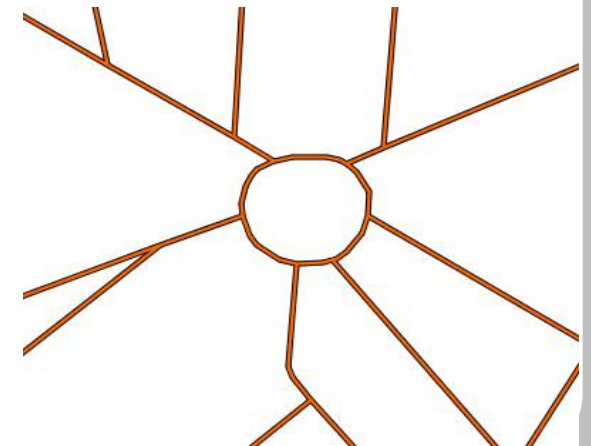
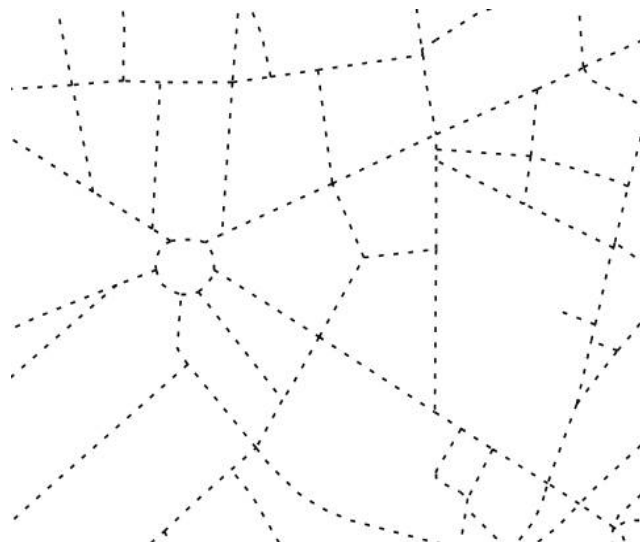
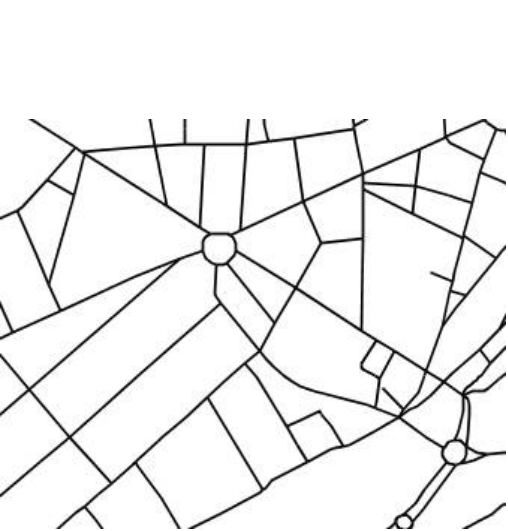
With SE 2.0, we can do things that are not possible with SE 1.1 :

- Hatched fills
- Graphic stroke
- Advanced diagrams
- Bivariate analysis
- ...



Even if rules are not used to build classifications anymore, they can still be used to :

- Filter rendered data with FES
- Draw layers differently according to the zoom level.



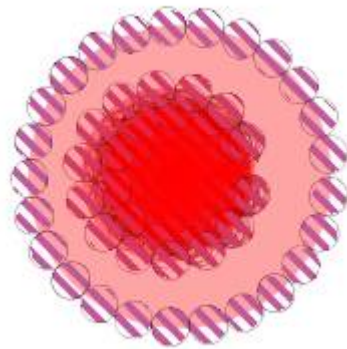
From the beginning, our implementation of SE 2.0 has been thought to :

- Match the specifications of the norm
- Propose a rendering engine that is at least as fast as the one we had in OrbisGIS 3.

We are able to style and draw huge data sets.

Symbology Encoding 2.0 may cause some issues :

- Mixed analysis can be hard to express
- It may be hard to build simple UIs in many cases
- It can be used to build totally pointless « analysis »



Let's take an example.

For an area symbolizer :

- Use a HatchFill to fill it
- Use a GraphicStroke to draw the lines
- Use a MarkGraphic as stroke pattern
- Use a PenStroke to draw the outer of the marks
- Use a HatchFill to fill this PenStroke
- ...

Things can go REALLY far !

Using OGC specifications, we can build a unique share format for maps :

- We have SE to describe symbology
- We have Open Web Map Context to describe the whole map, with styled layers.

What about using common data, common symbology, common maps ?

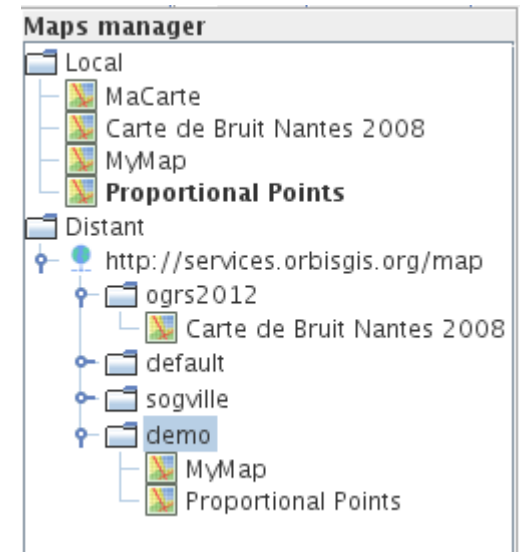
OrbisGIS is becoming usable on the server side too :

- WMS server to use SE 2.0 through the Web
- A service to share maps through the web

A map catalog service can be queried through HTTP to share maps with OrbisGIS.

Using it, people can :

- Prepare their maps locally
- Send their maps on the web
- Share their maps with their teams
- Use the maps of their teams



Cartography is useless if we are not able to process georeferenced data. The Web Processing Services is here to help you to :

- Retrieve processings from a server
- Send processings to a server
- Process data remotely

All the works that have been presented here are the first steps of a wider project : poly-publishing.