

4.3 State of play of OGC SE revision

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Roadmap

- ▶ Quick history of SE implementation specification
- ▶ Introduction to SE with examples
- ▶ Now: several CRPs (Change Request Proposals) to treat
- ▶ Major upcoming improvements and new fonctionnalités
- ▶ Remote referencing and symbolizer parametrization
- ▶ Device independent units of measure
- ▶ Variable shape (MarkGraphic and ExternalGraphic)
- ▶ Advanced stroke (e.g. CompoundStroke)
- ▶ Composition of graphics (CompositeGraphic)
- ▶ Diagram symbolization

From SLD to SE, a quick history

□ 2000-2002 : SLD-1.0

- ▶ contains almost all of the content of a map (a list of styled layers)
- ▶ custom styling through WMS GetMap request

2005 : SLD-1.1 & SE-1.1

- ▶ extraction of pure symbolization elements from SLD to SE
- ▶ SLD-1.1 only manage the link (=glue) between WMS and SE
- ▶ SE-1.1 only describes the symbology of a layer

2010-2011 : towards a new release

- ▶ Improvements, new capabilities and harmonization

SE-1.1 :: Simple area symbolization

FeatureTypeStyle

► Rule

- PolygonSymbolizer
 - Fill
 - solid gray
 - Stroke
 - 1px wide black pencil



http://geosysin.iict.ch/se_styles/polygon.se

SE-1.1 :: Cities & capitals

FeatureTypeStyle

► Rule n°1

- Filter (match CAPITAL == 1)
- PointSymbolizer
 - Mark 10x10 red square

► Rule n°2

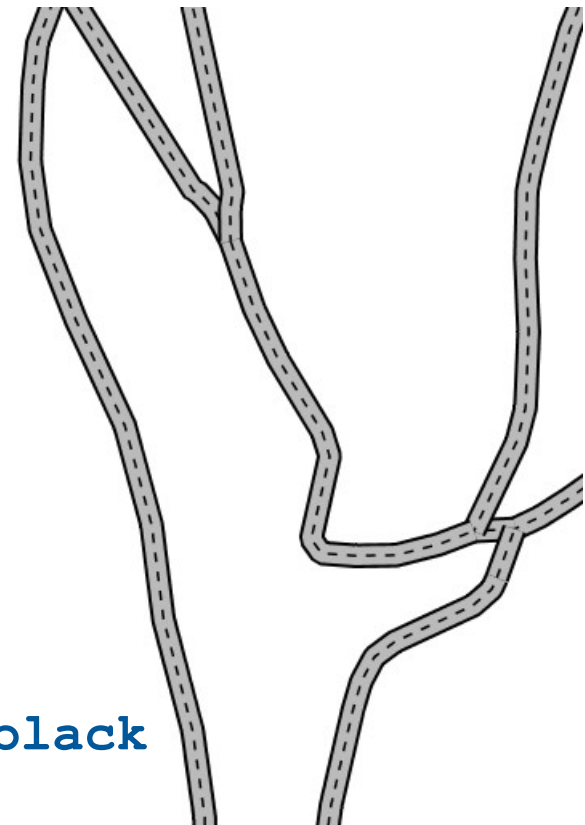
- ElseFilter (match any other feature)
- PointSymbolizer
 - Mark Ø 7 red circle

http://geosysin.iict.ch/se_styles/cities.se

SE-1.1 :: Road network :: 1st attempt

FeatureTypeStyle

- ▶ Rule with three LineSymbolizers
 - LineSymbolizer
 - Stroke: 5mm wide solid black
 - LineSymbolizer
 - Stroke: 4mm wide solid grey
 - LineSymbolizer
 - Stroke: 1mm wide dash solid black



http://geosysin.iict.ch/se_styles/roads.se

SE-1.1 :: Road network :: 2nd attempt

FeatureTypeStyle

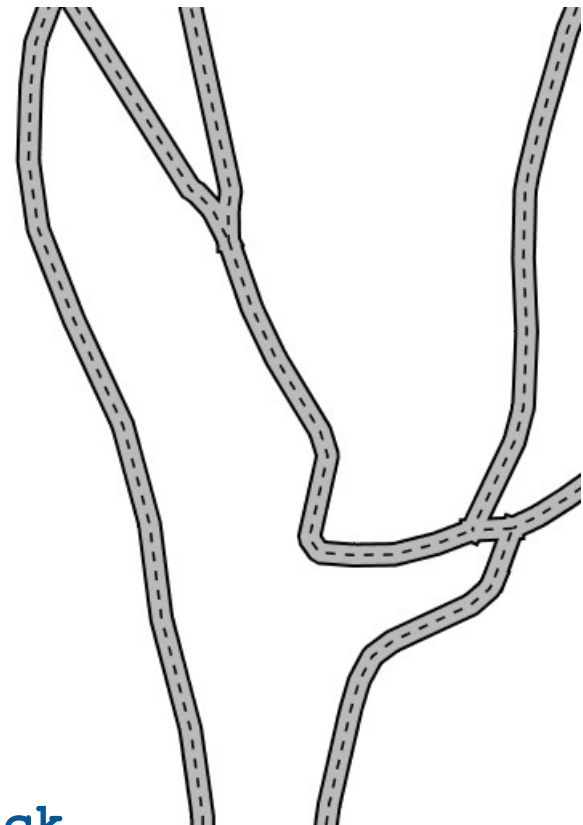
- ▶ Rule with one LineSymbolizer
 - Stroke: 5mm wide solid black

FeatureTypeStyle

- ▶ Rule with one LineSymbolizer
 - Stroke: 4mm wide solid grey

FeatureTypeStyle

- ▶ Rule with one LineSymbolizer
 - Stroke: 1mm wide dash solid black



http://geosysin.iict.ch/se_styles/fts_road_1.se [fts_road_2.se](http://geosysin.iict.ch/se_styles/fts_road_2.se) [fts_road_3.se](http://geosysin.iict.ch/se_styles/fts_road_3.se)

SE-1.1 :: UN accession (2002)

FeatureTypeStyle

► Rule

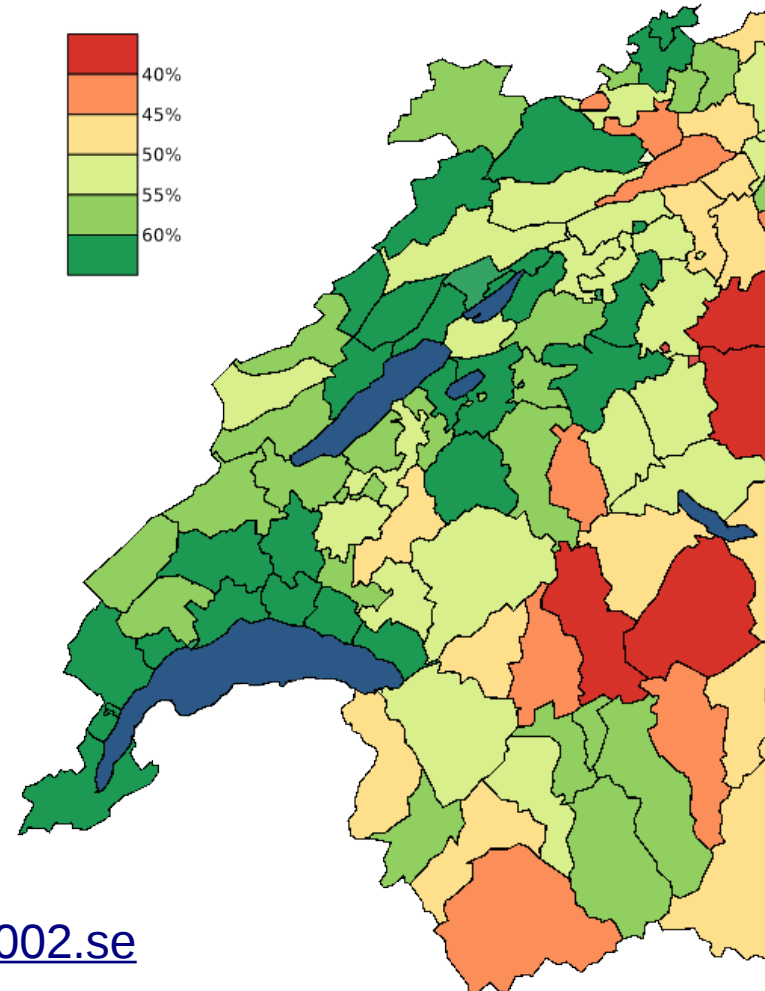
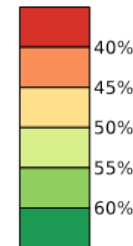
- PolygonSymbolizer

- Fill color

- Categorize

ONU_2002

40 <=
45 <=
50 <=
55 <=
60 <=



http://geosysin.iict.ch/se_styles/choropleth_un2002.se

OGC SLDSE1.2 SWG (Standard Working Group)

Several CRPs (Change Request Proposals) to treat :

- ▶ CR 07-105 SE Change request for thematic mapping
- ▶ CR 09-014 OWS-6 Symbology Encoding (ER 09-016)
- ▶ CR 10-139 Rapport in repeated linear patterns
- ▶ CR 10-142 Treatment of properties with a cardinality > 1
- ▶ CR 10-145 Add hatching to se:Fill
- ▶ CR 10-146 Add a way to select graphics using data content
- ▶ etc.

Let's take a tour on OGC public website ...

Remote referencing

Provide reusable symbolization

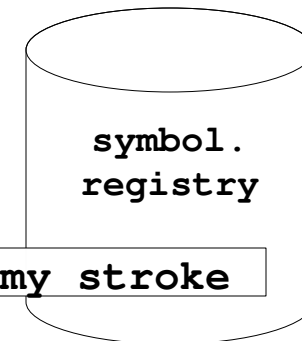
- Style, Symbolizer, Stroke, Fill, Graphic

e.g.

Style

- **AreaSymbolizer**
- **StrokeReference** --->

URL to my stroke



- Towards real symbolization registry/library

Symbolizer parametrization (I/II)

SymbolizerReference

- ▶ URL to the parametrized symbolizer
- ▶ ArgumentList
 - Name : **fill_color**
 - Value : **Recode**
OBJECT_TYPE
Forest => green
See => blue

ParametrizedSymbolizer

- ▶ FormalParameterList
 - Name : **fill_color**
 - Description : ...
- ▶ AreaSymbolizer
 - SolidFill
 - Color :
fill_color
(property name)

substitution

Symbolizer parametrization (II/II)

By substitution of each **fill_color** property name

- ▶ **AreaSymbolizer**

- **SolidFill**

- **Color**

- **Recode property OBJECT_TYPE**

- Forest => green**

- See => blue**

Pushes forward symbolization re-usability !

Device independent units of measure

SE1.1 = uom attribute only on the Symbolizer elements with the following uom definitions

- ▶ portrayal pixels (default), ground meters, and ground feet

Proposal = absolute portrayal units, device independent measures so as to be more portable :

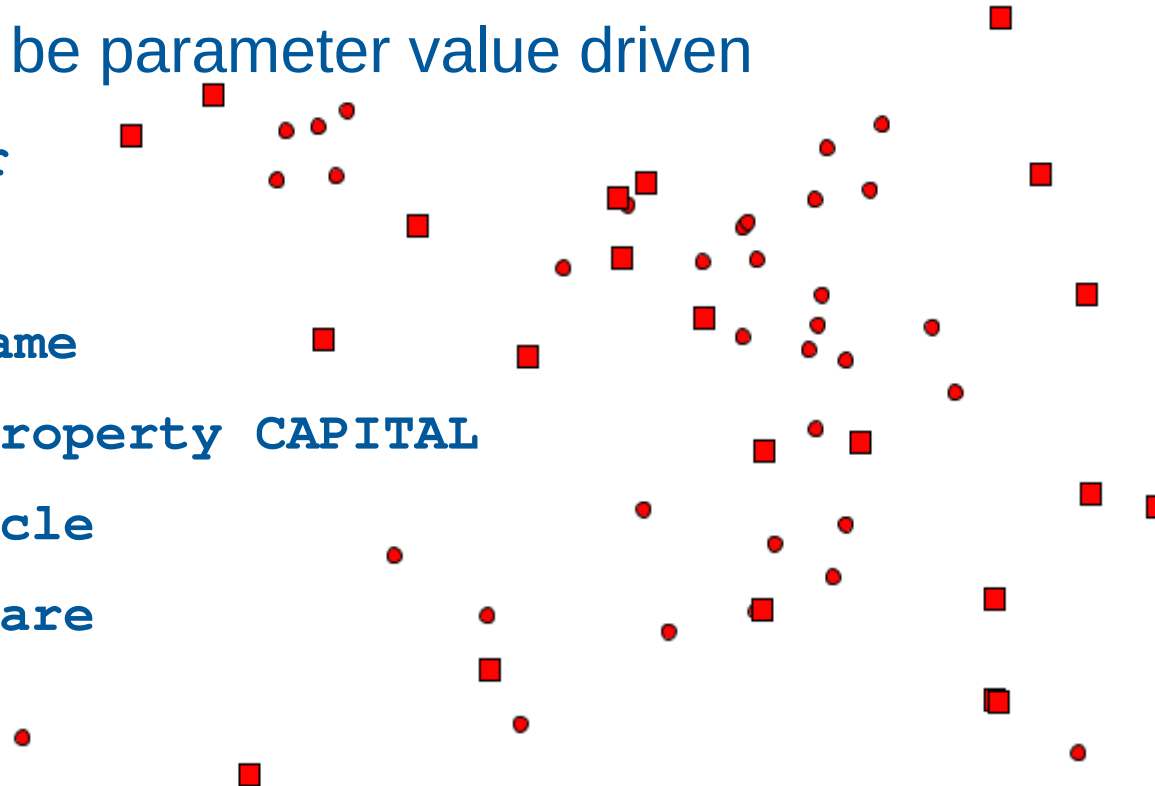
- ▶ urn:ogc:def:uom:se::**px|mm|in|pt** (portrayal units of pixels, millimeters, inches, and points)
- ▶ urn:ogc:def:uom:se::**gm|gft** (two ground units)
- ▶ urn:ogc:def:uom:se::**percent** (e.g. of object envelop)

Variable shape (MarkGraphic)

WellKnownName can be parameter value driven

PointSymbolizer

- Mark
- WellKnownName
 - Recode property CAPITAL
 - 0 => circle
 - 1 => square



Variable shape (ExternalGraphic)

OnlineResource for referencing a remote graphic can be parameter value driven

PointSymbolizer

- ExternalGraphic
 - VariableOnlineResource
 - Recode property CAPITAL

0 => city.svg



1 => capital.svg



Variable shape

No more long list of Rules

- ▶ more efficient
 - less operations against database
- ▶ brings consistency
 - as almost everything can be parameter value driven

Matches Bertin's shape visual variable

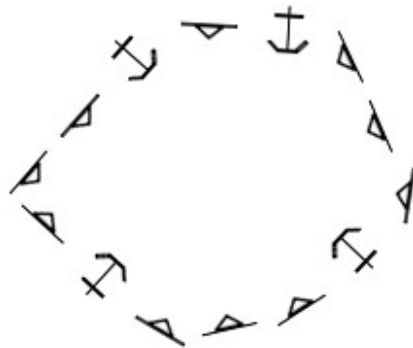
Advanced stroke

Stroke abstract element : an extension point

New types of Stroke : TextStroke,

CompoundStroke :

- ▶ combining multiple stroke elements together, e.g.

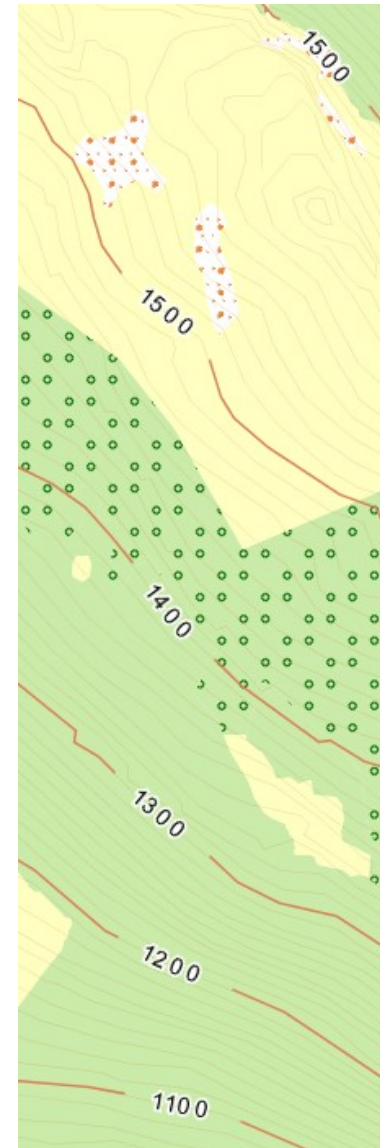


PreGap + GraphicStroke

PreGap + GraphicStroke + PostGap

GraphicStroke

PreGap + GraphicStroke



Composition of graphics

Group graphics into a single composite graphic

With the addition of general affine transformations



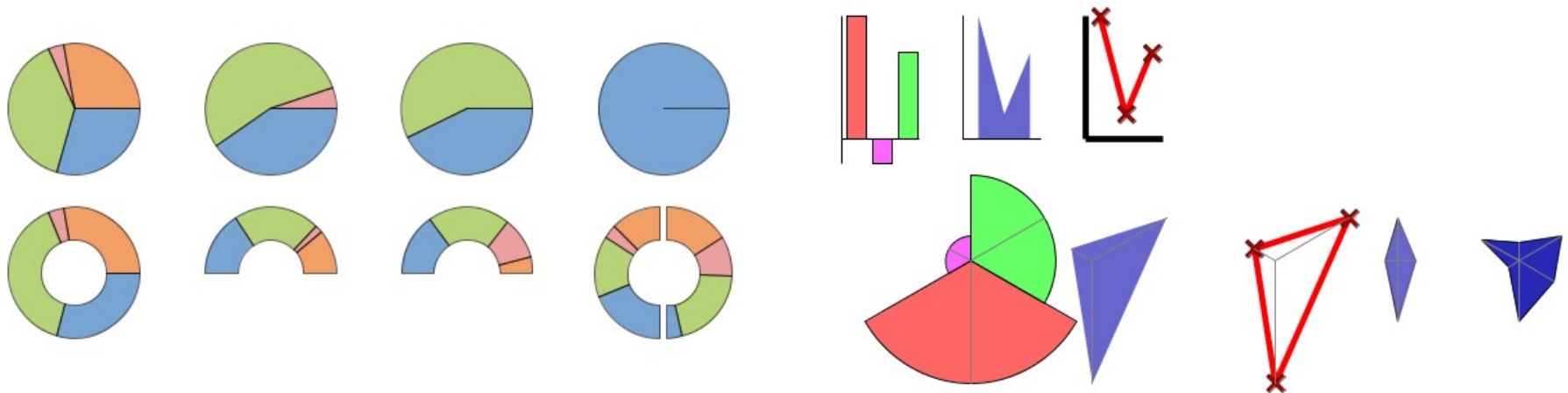
And even more powerful when parametrized

- ▶ Extend parametrization principle to each reference element ?

Diagram symbolization

Techniques of conventional cartographic representations

- ▶ in a standardized way
- ▶ rather using various external languages and formats



Modularization

The OGC Technical Committee adopted *The Specification Model — A Standard for Modular specifications* as the basis for creation of new specifications by the consortium

Even if SE is an encoding, it makes sense to design it with modularization in mind

- ▶ keep implementation cost as low as possible
- ▶ define relevant extension points

Support OGC SLDSE1.2 group

SWG Charter, group mailing-list, joining OGC

- ▶ <http://www.opengeospatial.org/projects/groups/sldse1.2swg>
- ▶ <https://lists.opengeospatial.org/mailman/listinfo/sldse.swg>

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- ▶ **THANKS FOR YOUR ATTENTION !**

