ETH
Eidgenössische Technische Hochschule Zürich
Swiss Federal Institute of Technology Zurich

INSTITUTE of CARTOGRAPHY

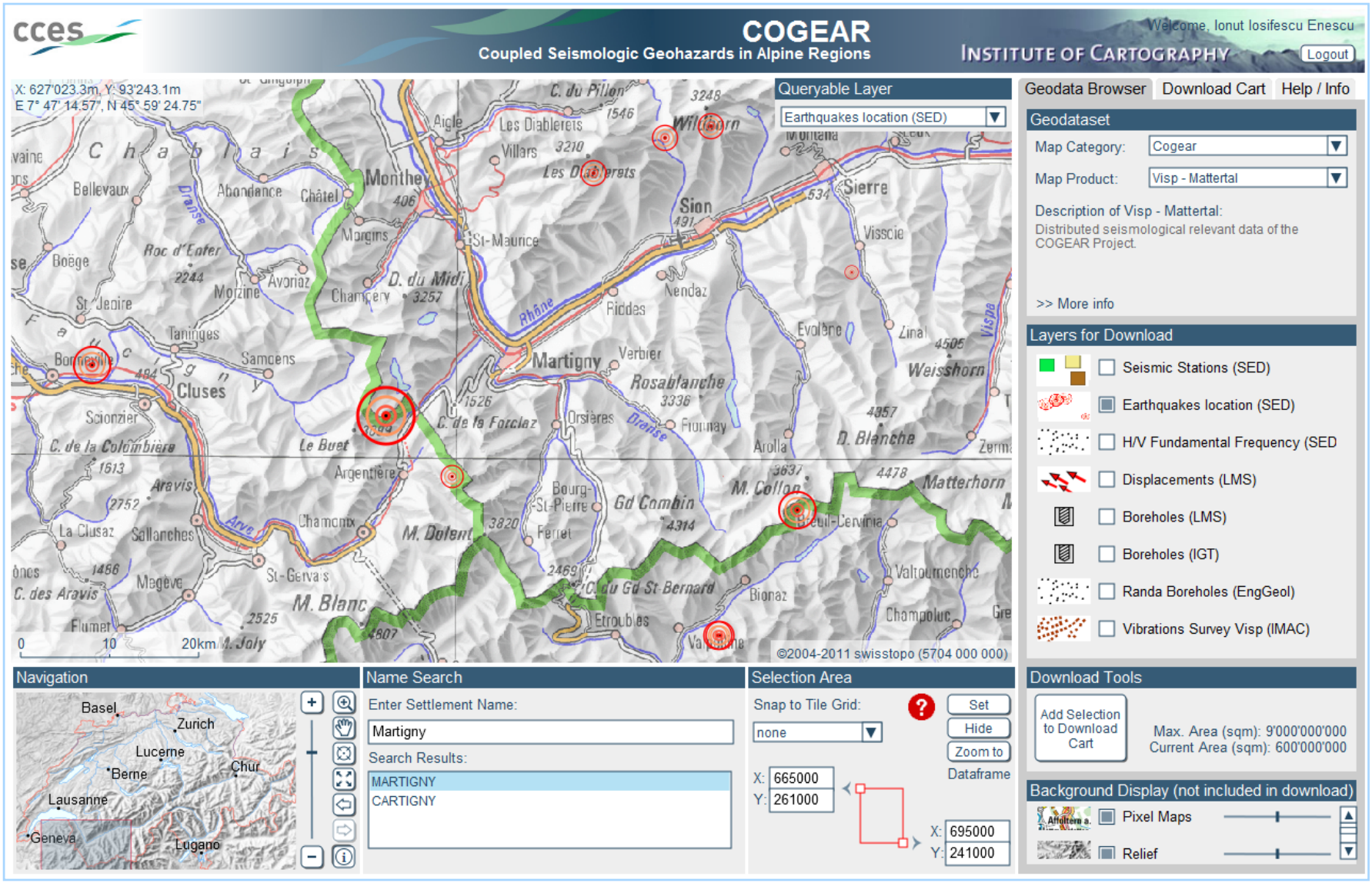
Cartography with SLD/SE (and extensions)

Ionut Iosifescu-Enescu
Lorenz Hurni

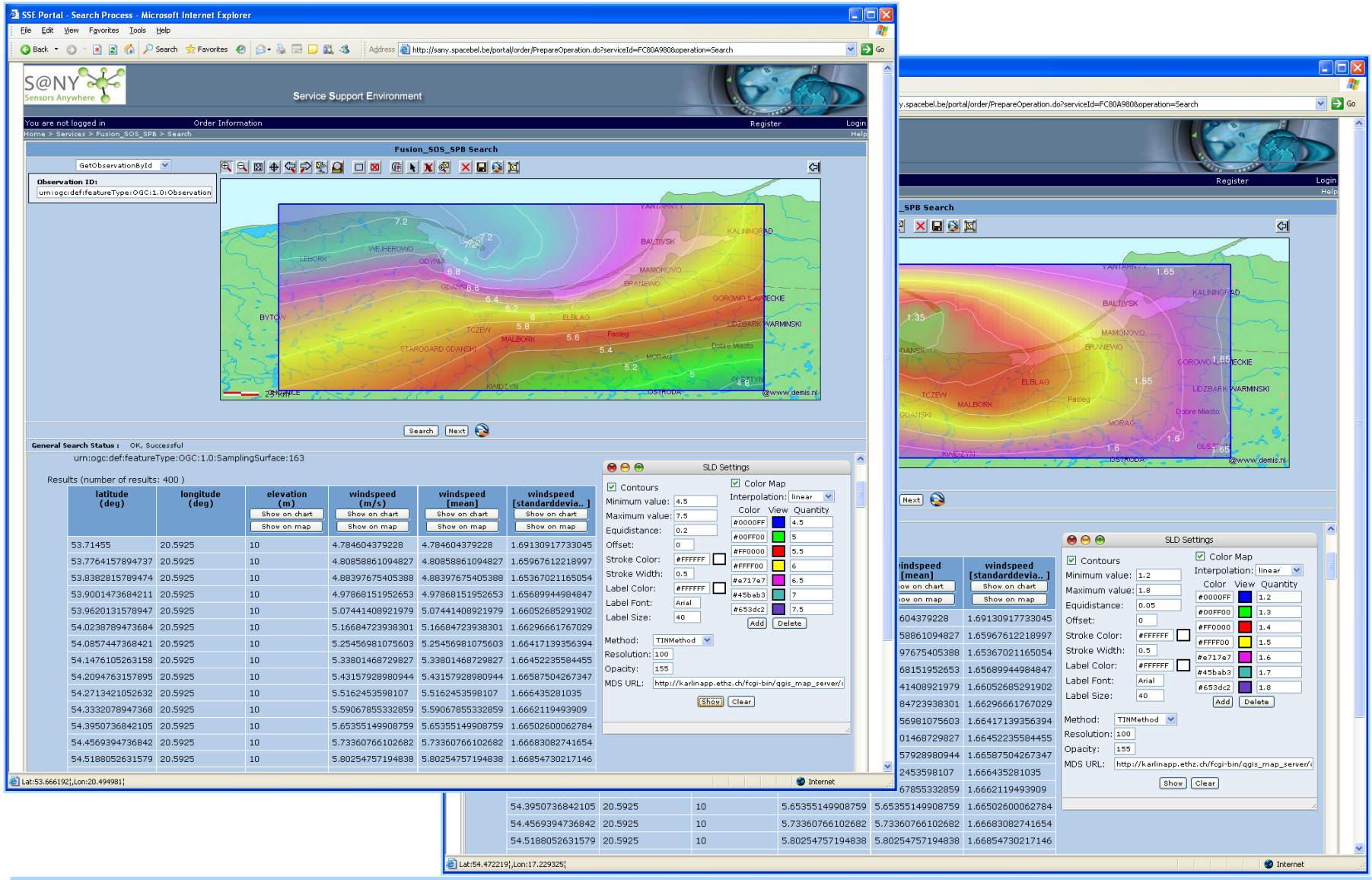
Motivation

- Why would you need SLD/SE for Cartography?
  - The combination WMS/DBMS is the only usable option for large scale WebGIS/Web mapping projects
  - Automatic production of maps from source data
  - On-demand, always up-to-date maps
  - **Need for advanced interactive functionalities in Web mapping user interfaces (e.g. change of symbology, change of classification boundaries, introduction of EDA, EVIS)**

Motivation: Environmental Research

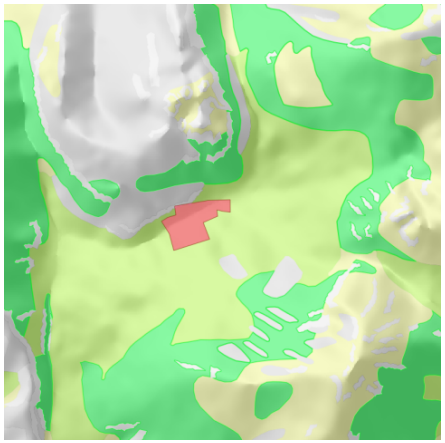


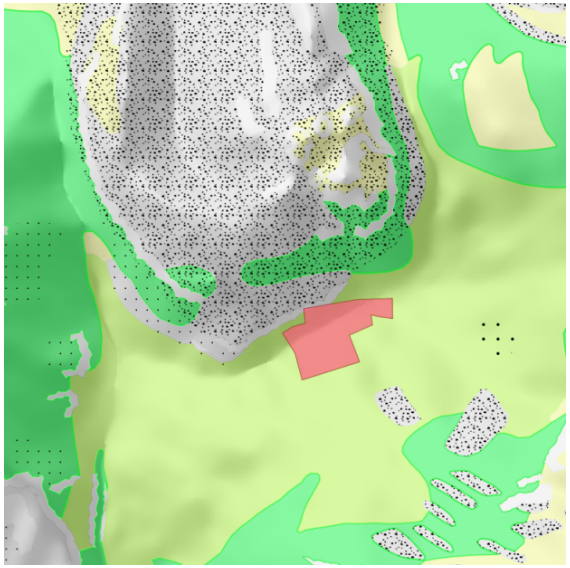
Motivation: Environmental Monitoring

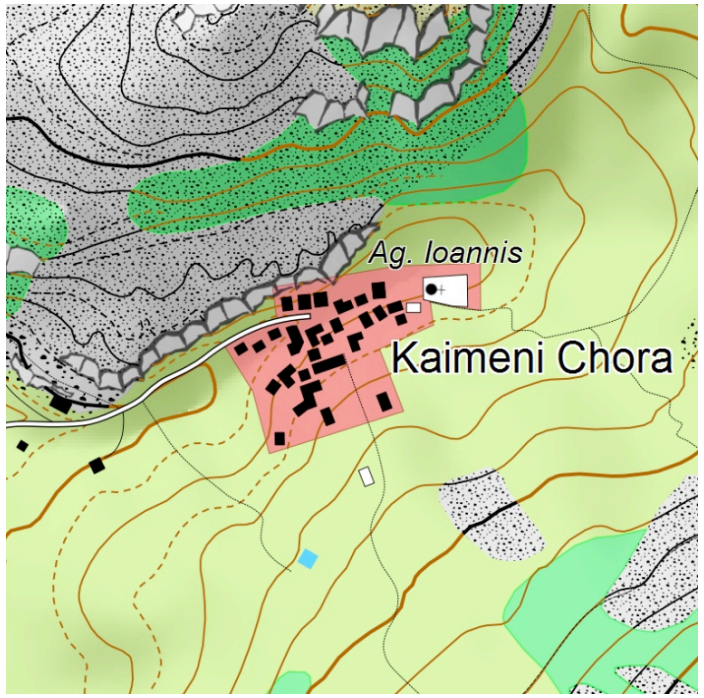


How about Cartography?

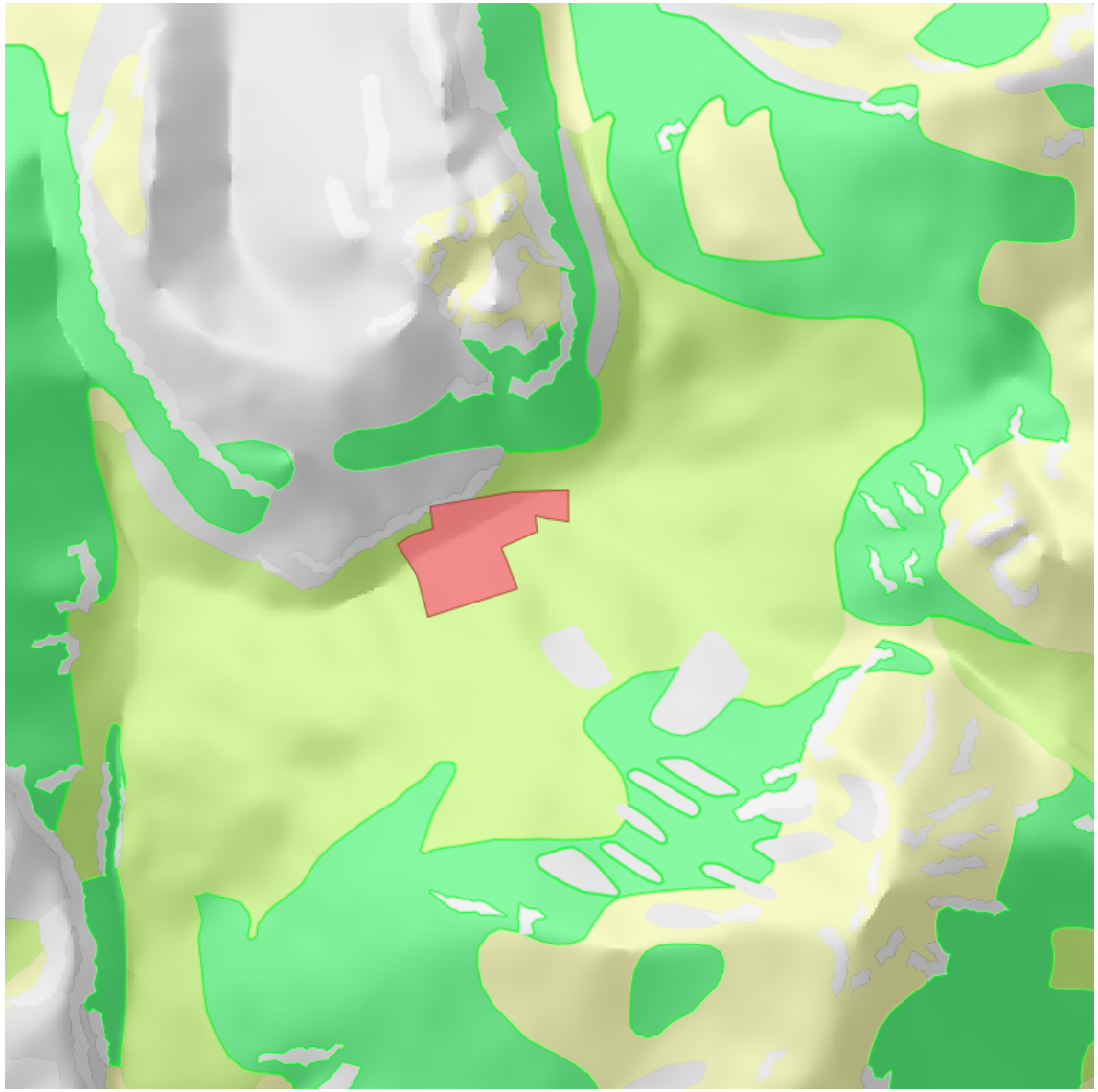
- Cartography with SLD/SE (and extensions *) by example!



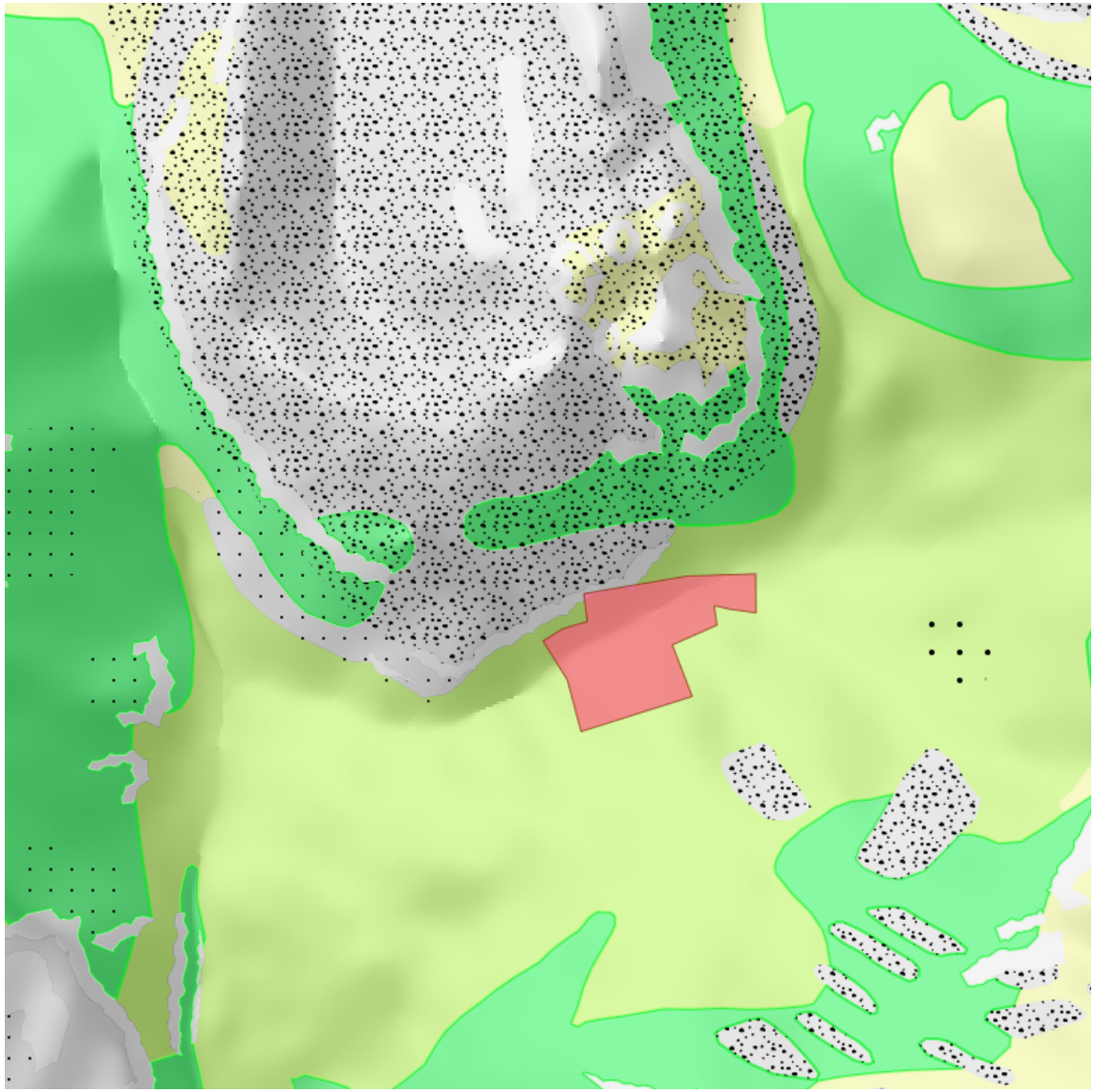




Cartography with SLD/SE – the Basics

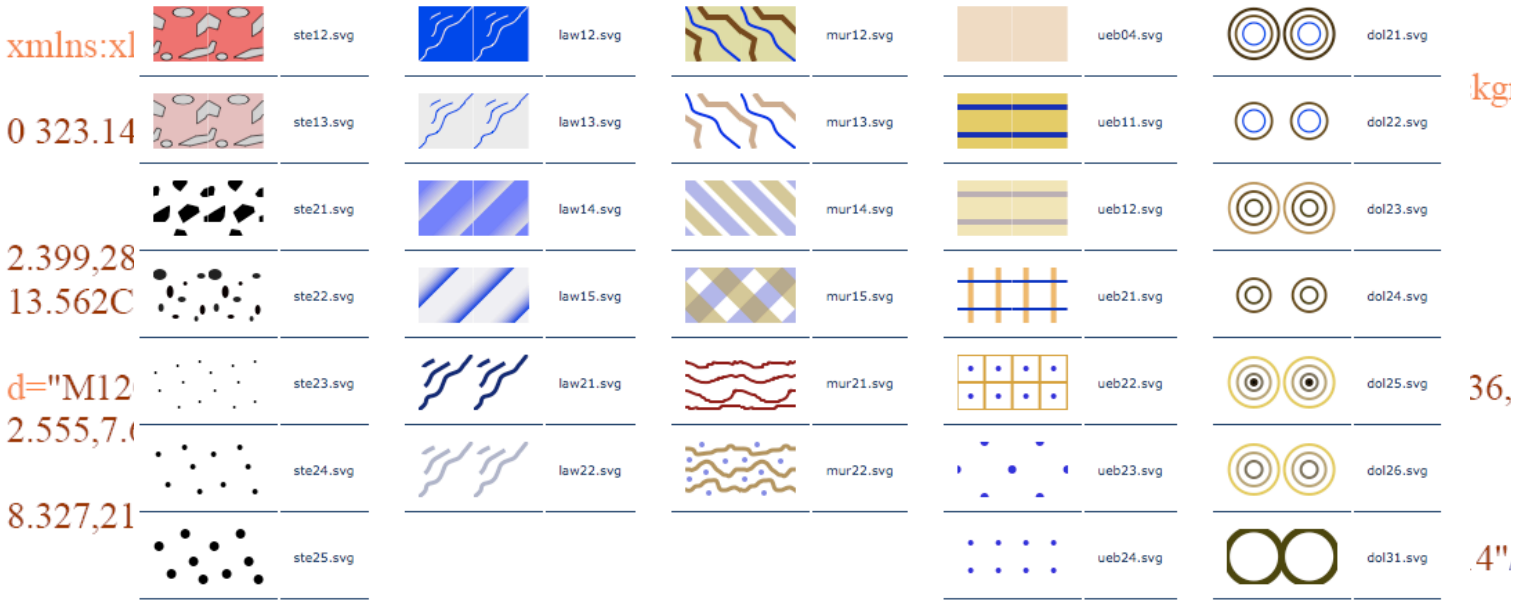


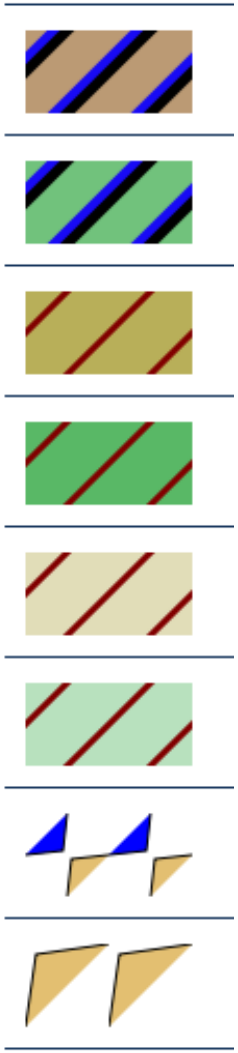
Cartography with SLD/SE – Patterns *



Cartography with SLD/SE – Patterns *

```
<PolygonSymbolizer xmlns="http://www.opengis.net/sld">
  <Fill>
    <pattern width="50" height="50" x="0" y="0">
xmlns:xl
0 323.14
2.399,28
13.562C
d="M12
2.555,7.
8.327,21
1.657,11.553,4.066,14.323c3.689,1.786,13.587,0.037,17.712-0.172c0.69-13.617-1.821-15.08-15.126
      <!-- further path definitions were omitted  -->
    </svg>
  </pattern>
 </Fill>
</PolygonSymbolizer>
</Rule>
```



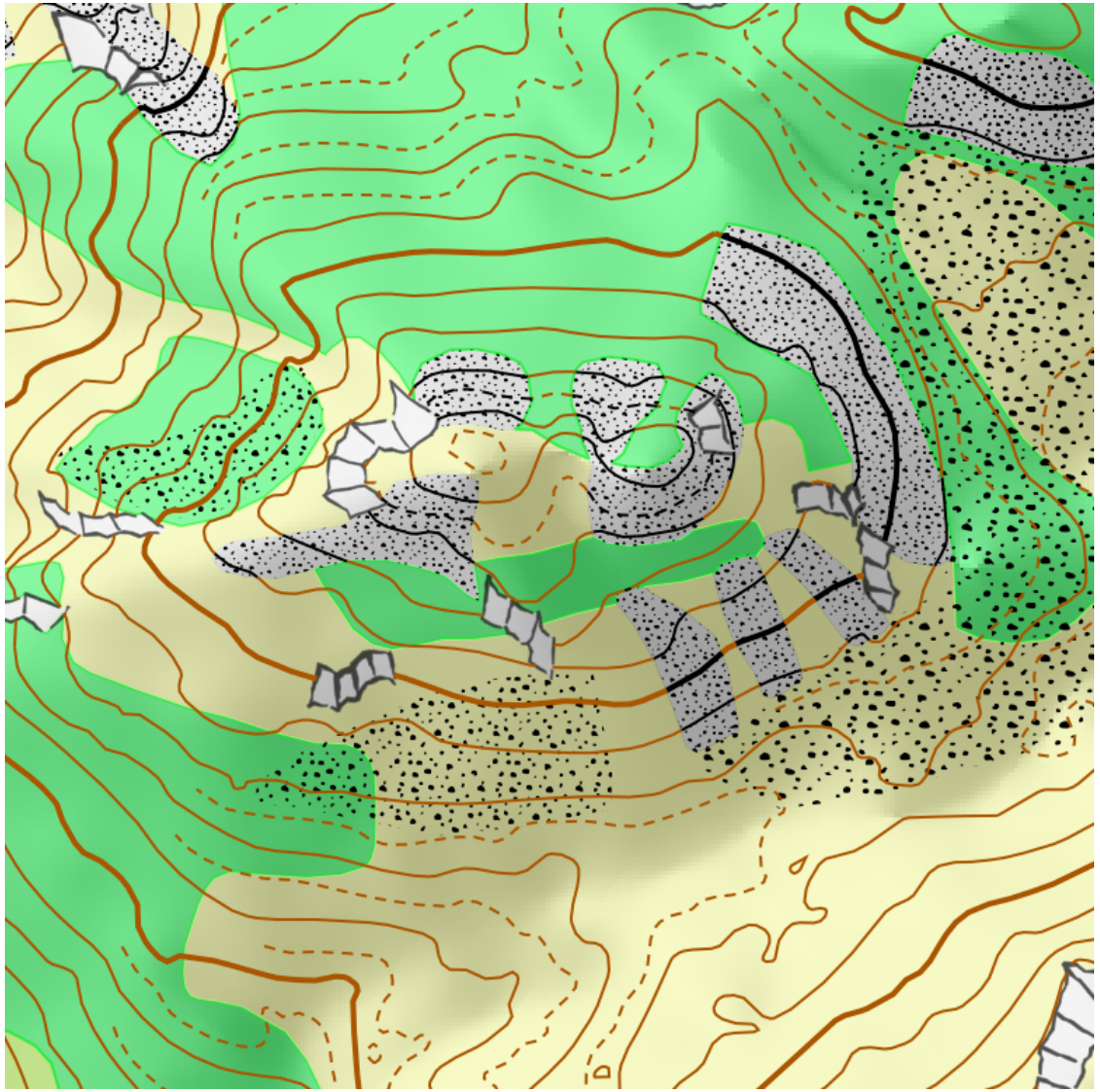


[after Eberle, 2009]

Cartography with SLD/SE – Line Types

Cartography with SLD/SE – Line Types (*)

Cartography with SLD/SE – Line Patterns



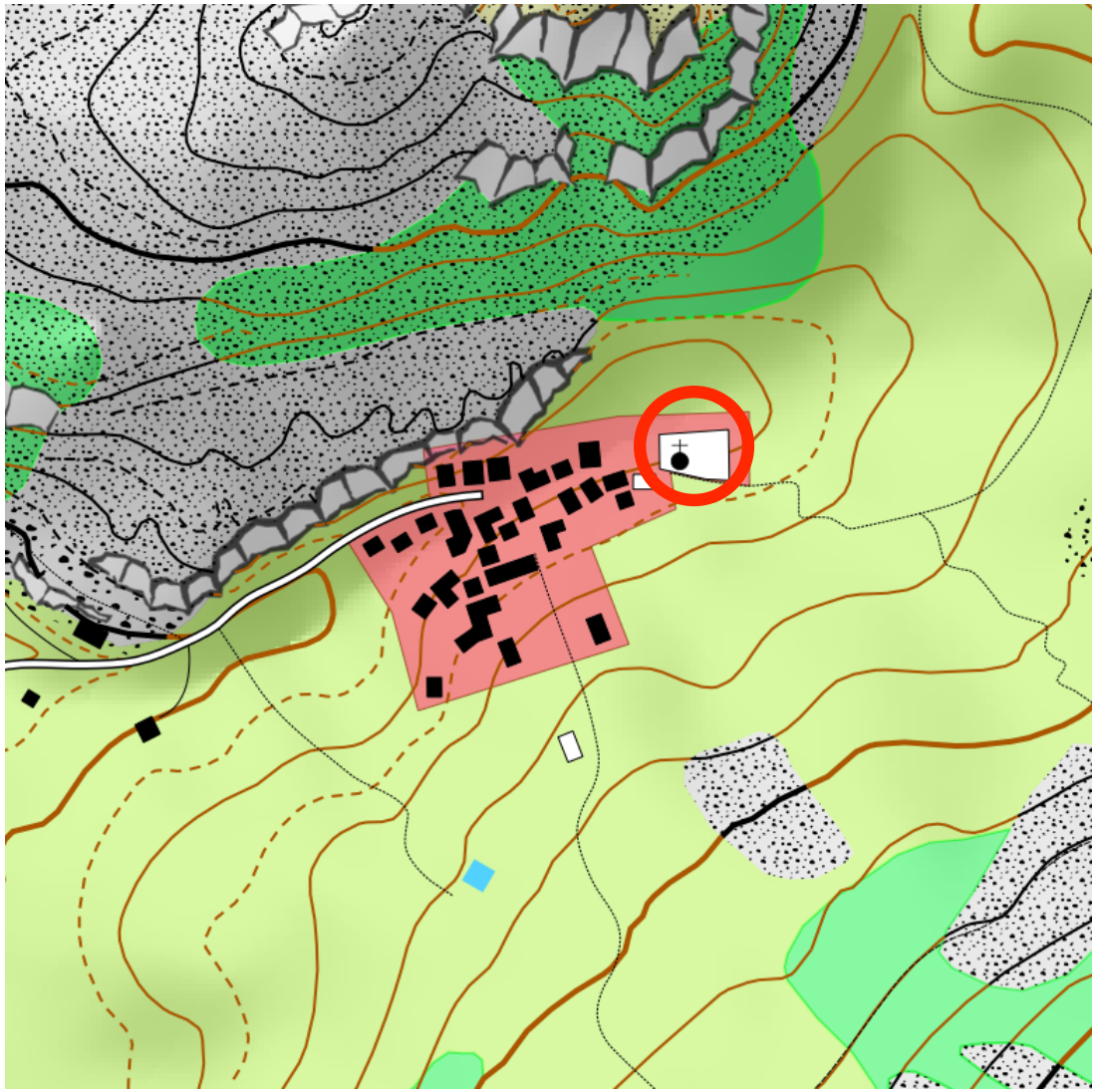
Cartography with SLD/SE – Line Patterns

```
<LineSymbolizer xmlns="http://www.opengis.net/sld">
  <Stroke xmlns="http://www.opengis.net/sld">
    <CssParameter xmlns="http://www.opengis.net/sld" name="stroke" >#aa5500</CssParameter>
    <CssParameter xmlns="http://www.opengis.net/sld" name="stroke-dasharray" >4 3</CssParameter>
    <CssParameter xmlns="http://www.opengis.net/sld" name="stroke-width" >1</CssParameter>
  </Stroke>
</LineSymbolizer>
```

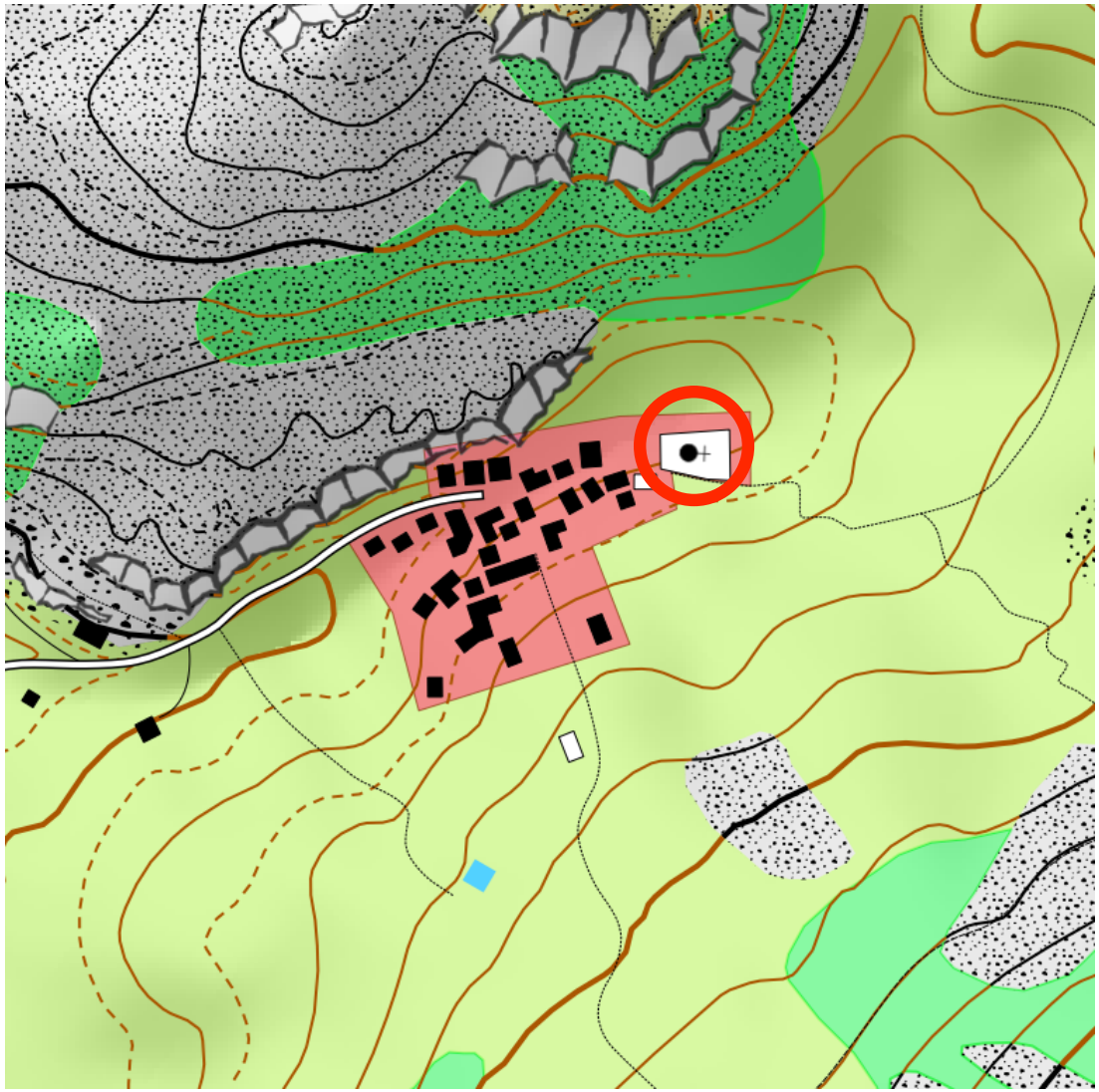
Cartography with SLD/SE – Point Symbols *

```
<PointSymbolizer xmlns="http://www.opengis.net/sld">
  <Graphic>
    <Mark>
      <SvgSymbol>
        <svg xmlns="http://www.w3.org/2000/svg" width="200px" height="200px" viewBox="0 0 200 200">
          <path d="M102.226,74.337c40.447,0,63.413,31.938,63.663,68.447h34.057c0-56.83-35.564-106.75-
98.445-106.75S0.554,85.954,0.554,142.784h36.393C37.215,106.275,61.776,74.337,102.226,74.337z"/>
        </svg>
      </SvgSymbol>
    </Mark>
    <Size>20</Size>
    <Rotation>
      <PropertyName xmlns="http://www.opengis.net/ogc">ET_ANGLE</PropertyName>
    </Rotation>
  </Graphic>
</PointSymbolizer>
```

Cartography with SLD/SE – Point Symbols



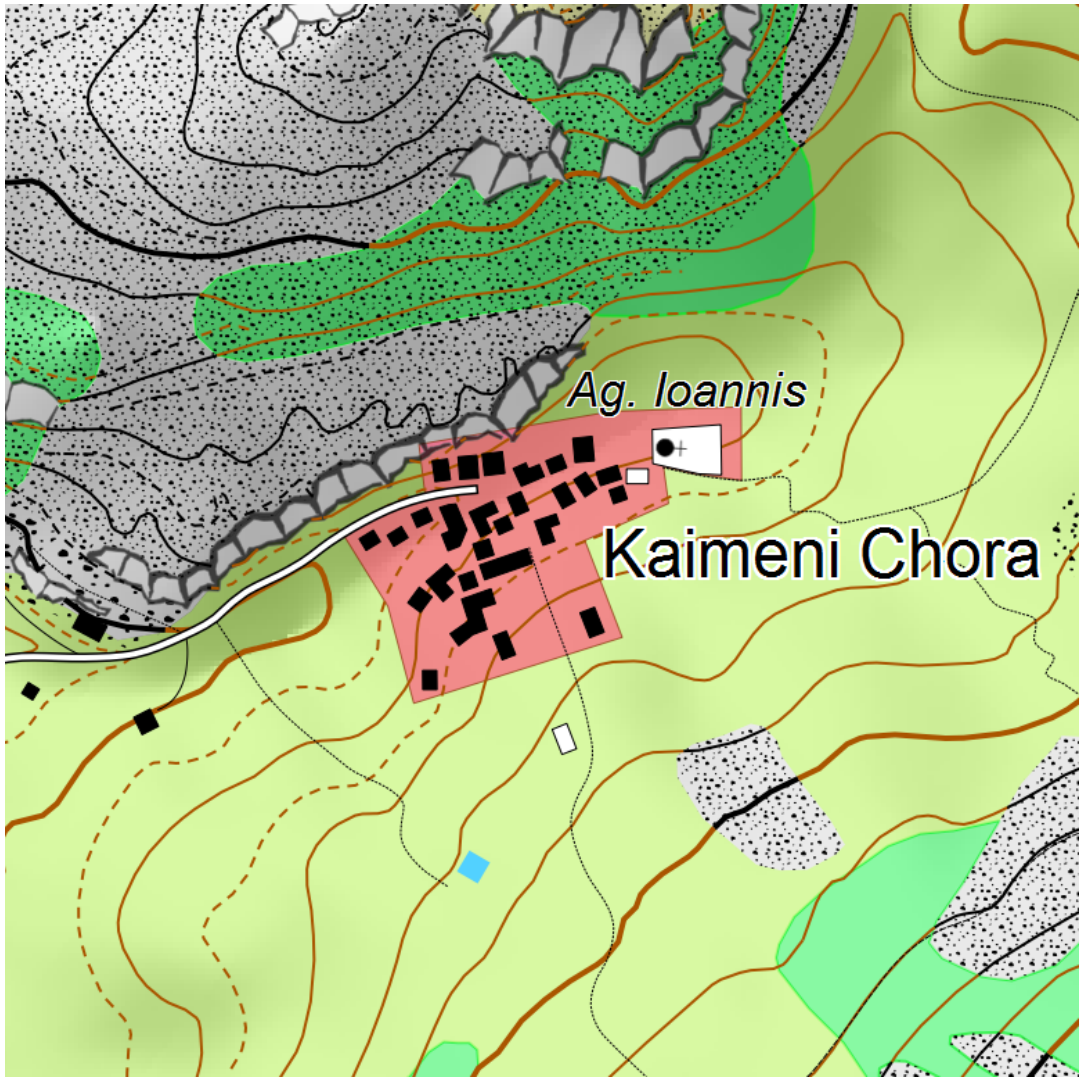
Cartography with SLD/SE – Point Symbols *



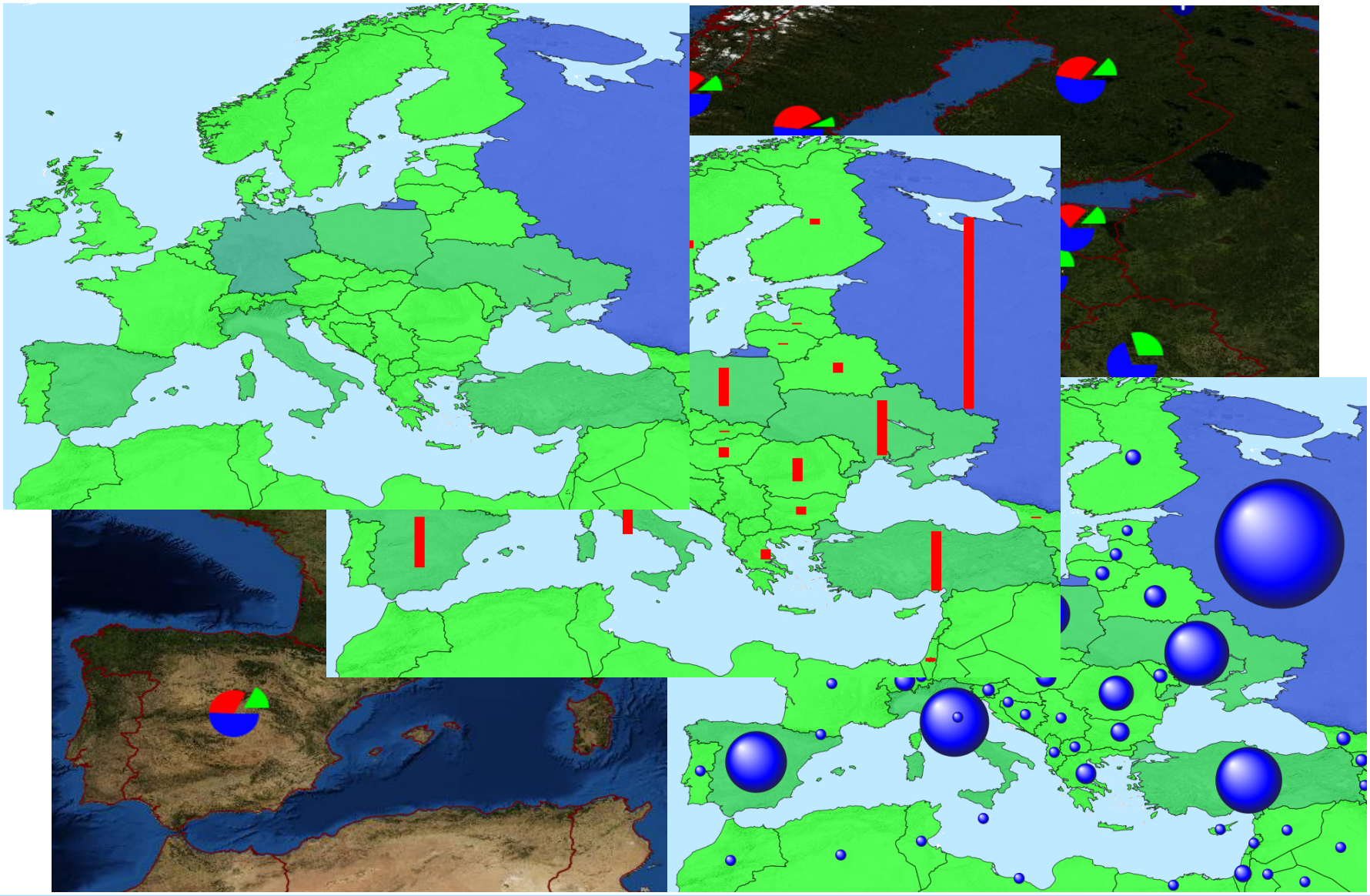
Cartography with SLD/SE – Text & Labels

```
<TextSymbolizer>
  <Geometry>
    <ogc:PropertyName>LABELPOS</ogc:PropertyName>
  </Geometry>
  <Label>
    <ogc:PropertyName>Name</ogc:PropertyName>
  </Label>
  <Font>
    <SvgParameter name="font-family">Arial</SvgParameter>
    <SvgParameter name="font-family">Sans-Serif</SvgParameter>
    <SvgParameter name="font-style">italic</SvgParameter>
    <SvgParameter name="font-size">26</SvgParameter>
  </Font>
  <Halo>
    <Radius>1</Radius>
    <Fill>
      <SvgParameter name="fill">#ffffff</SvgParameter>
    </Fill>
  </Halo>
  <Fill>
    <SvgParameter name="fill">#000000</SvgParameter>
  </Fill>
</TextSymbolizer>
```

Cartography with SLD/SE – Text & Labels



And More: Thematic Maps *



Conclusions

- Cartography with SLD/SE:
  - It is possible!
  - It is being improved (with future versions of the SE standard)

Questions?

- Ionut Iosifescu (iosifescu@karto.baug.ethz.ch)