Using Simultaneous Graphic Generalisation in a System for Real-Time Maps

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Disposition

1. Background
2. Prototype system
3. Case study
4. Discussion topics
Graphic generalisation
Simultaneous graphic generalisation

Original map

Simplification
Exaggeration
Smoothing
Displacement

Generalised map
System architecture for real-time maps

Client

WMS/OLS request

GML → Image data

Extended WFS

Generalization and integration

Web Feature Service

WFS request

JPEG, SVG, etc.

Generalized GML

Original GML
Integration
Topological relationships

Client

Generalisation service + structuring

Generalisation service

Geo-database

WFS service

WFS service

GML2

GML3 with topological relationships
Prototype system

1. Request data
2. GML parsing
3. Structuring cartographic data
4. Simultaneous graphic generalisation (c/c++ environment)
5. Update the coordinates
6. Visualize the result

JTS/JUMP/Java

WFS request

GML data

Remote server
Case study
Case study – processing time

<table>
<thead>
<tr>
<th></th>
<th>Retrieving data (ms)</th>
<th>Structuring data (ms)</th>
<th>Generalising data (ms)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test 1</td>
<td>1182</td>
<td>331</td>
<td>881</td>
</tr>
<tr>
<td>Test 2</td>
<td>1272</td>
<td>330</td>
<td>891</td>
</tr>
</tbody>
</table>
Discussion
Discussion topics

Feature generalisation interface

Topological relationships