

Continuous road network generalization throughout all scales

Radan Šuba, Martijn Meijers,
Peter van Oosterom

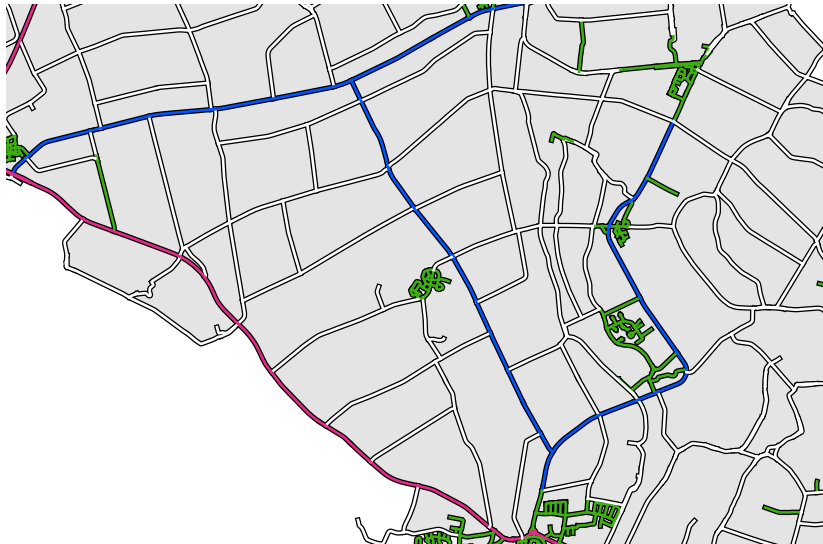


Enabling new technology

User Committee Meeting
22/03/2016, Bentley, Hoofddorp

Reminder from last time

small scale only



Road network generalization in vario-scale

Automatic process all roads from large to small scale in vario-scale manner

- Use the same structure for different purpose
- Gradual as much as possible
- Preserve connectivity

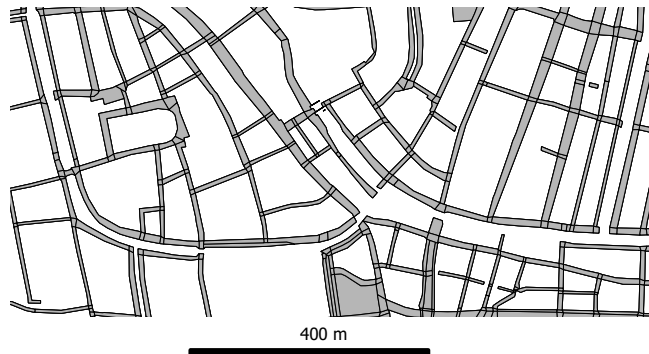
Our ultimate goal:



We have focused on lines so far.

Initial assumption

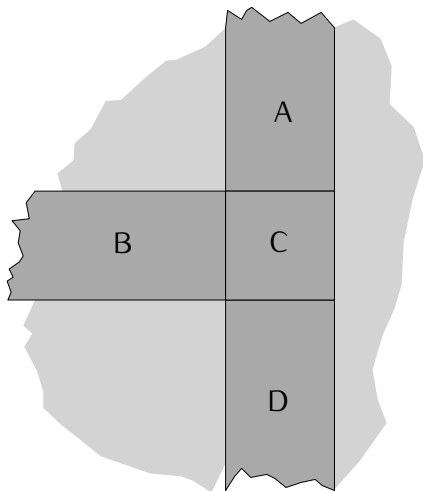
Roads are represented by areas and homogeneously demarcated.



- **Road connection** has two other road object incident.
- **Road junction** has two or more other road object incident.
- **Other**.

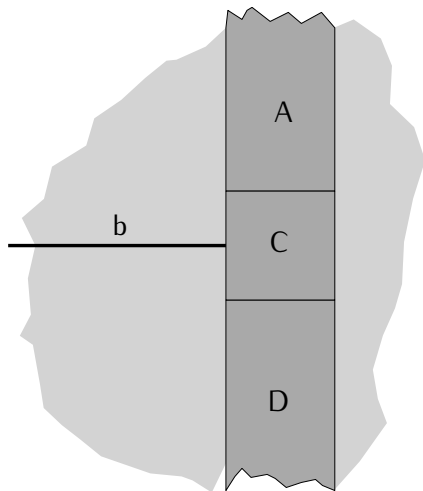
Abstraction

We divide map objects into road junction, road connection and others.



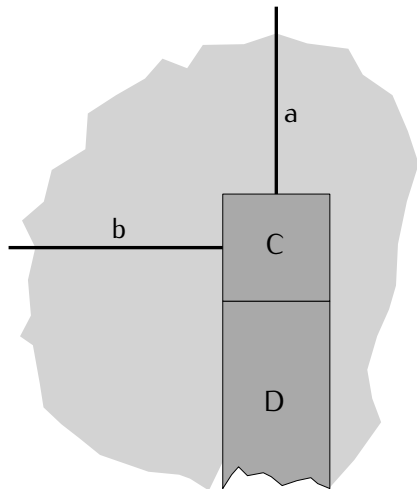
Abstraction

We divide map objects into road junction, road connection and others.



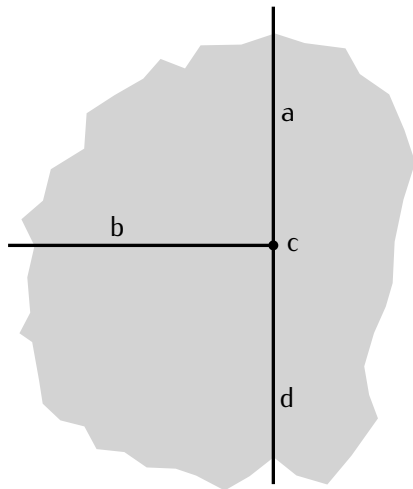
Abstraction

We divide map objects into road junction, road connection and others.

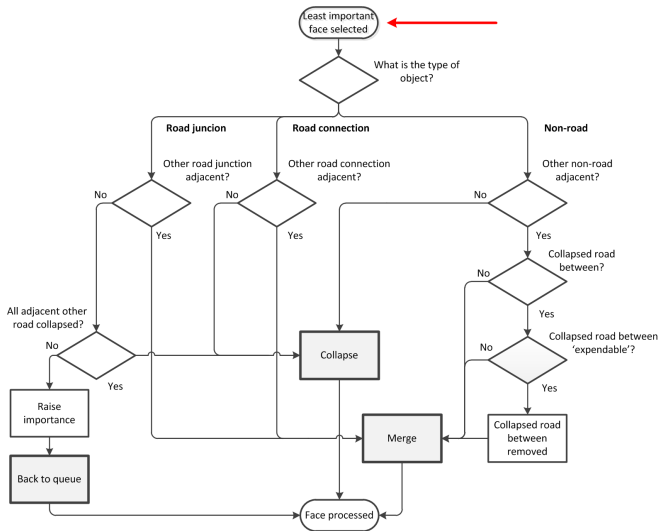


Abstraction

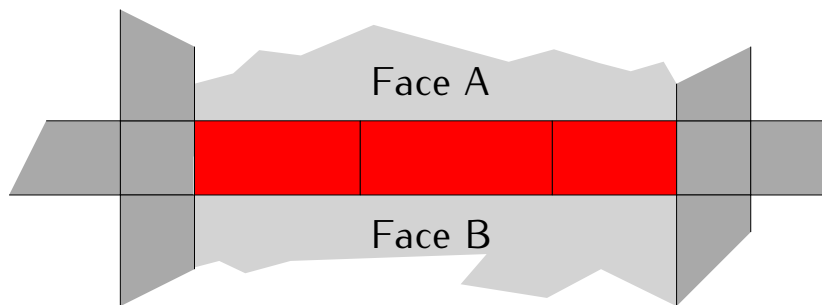
We divide map objects into road junction, road connection and others.



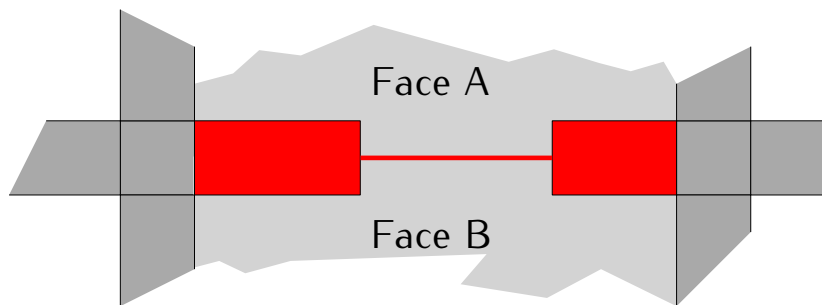
Decision tree for map object



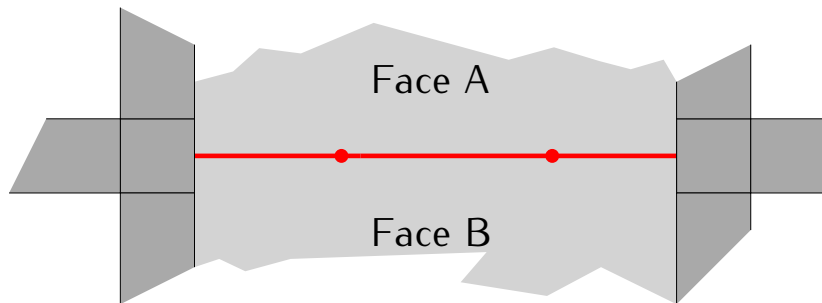
Transition zone - both representations are possible



Transition zone - both representations are possible

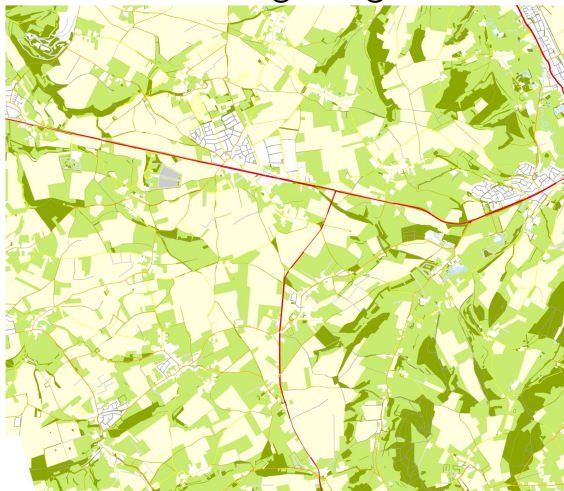


Transition zone - both representations are possible



Example

TOP10NL, near Maastricht, 9x9 km
13,200 features at the beginning



Detailed situation

structure



styled



Detailed situation

structure

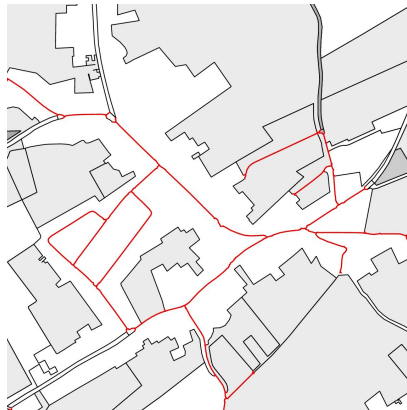


styled



Detailed situation

structure

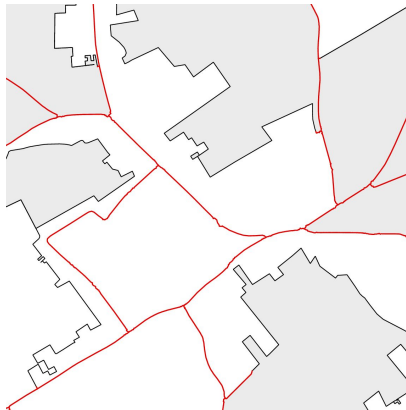


styled



Detailed situation

structure



styled



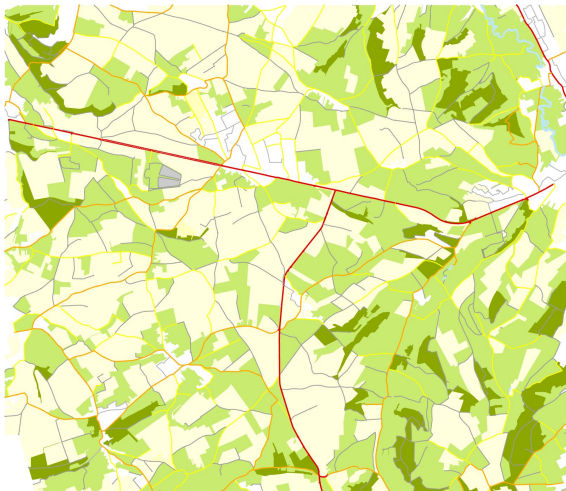
Whole 9x9 km, 0% processed



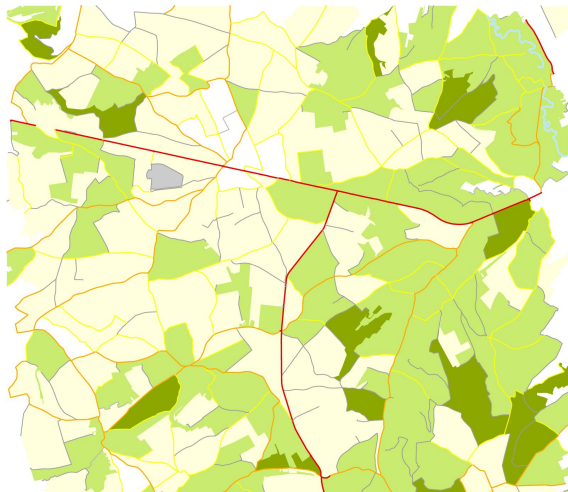
Whole 9x9 km, 86,9% processed



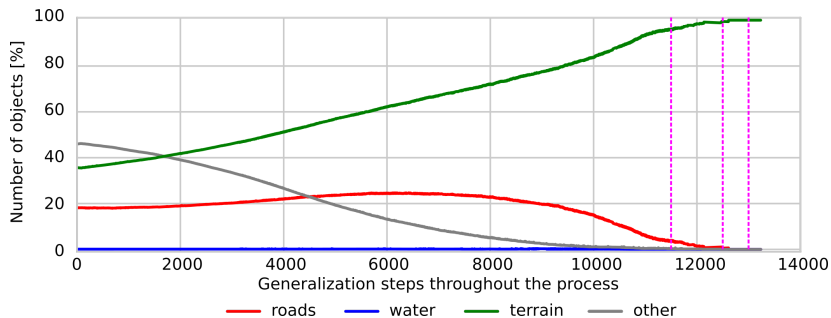
Whole 9x9 km, 94,4% processed



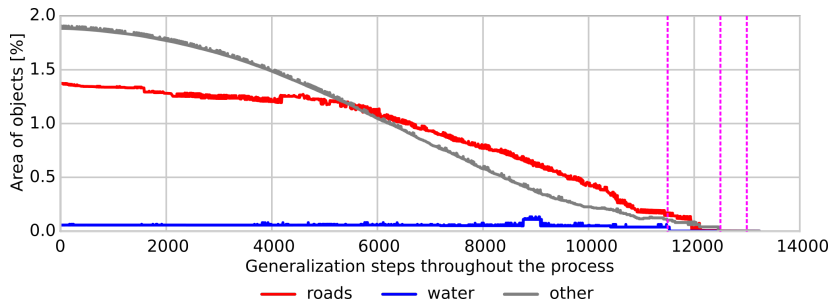
Whole 9x9 km, 98,2% processed



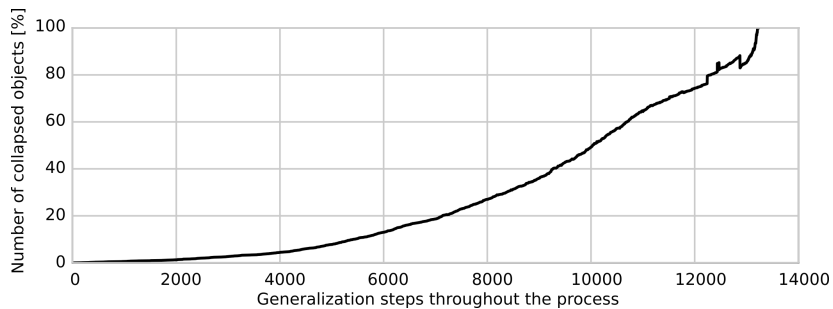
Number of objects throughout the process



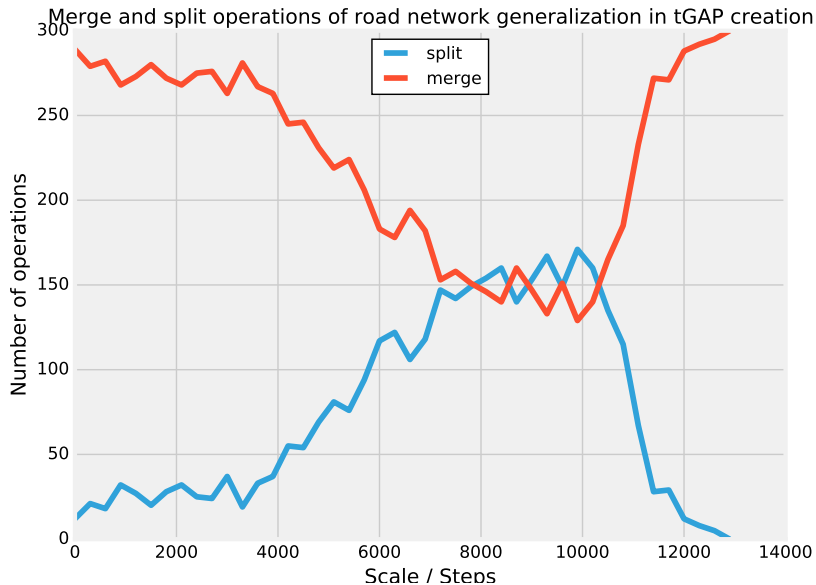
Area throughout the process



Collapsed objects throughout the process



Type of operation throughout the process



We've processed road network and other feature class simultaneously throughout all scales.

We've mixed line and area representation together.

Go bigger in the future, so far region 20x20 km.

Thanks for your attention

Radan Šuba

`r.suba@tudelft.nl`