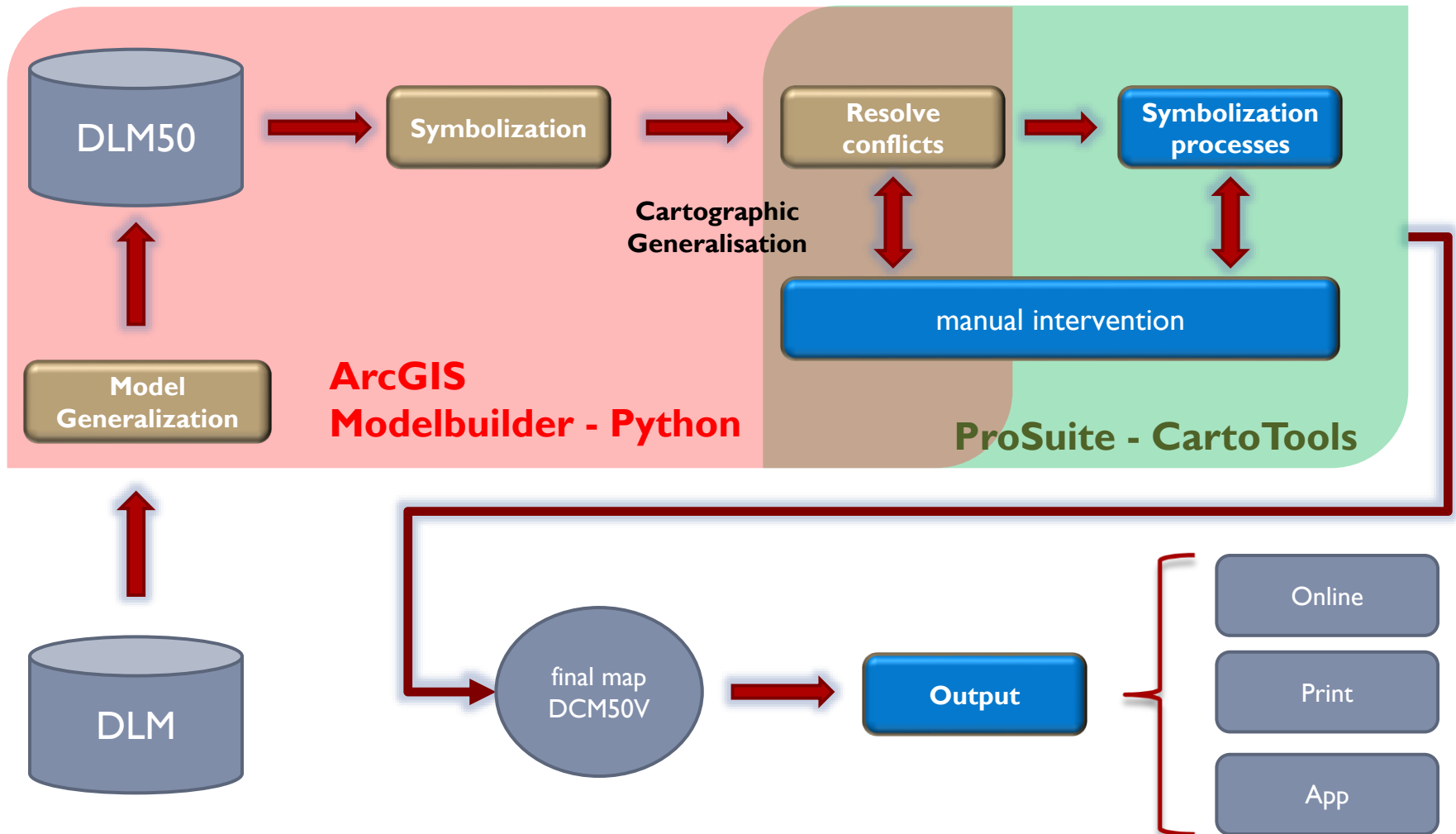


# Automated Generalization

## From Base Models to 1:50k Map – the GIS based Approach at BEV

Andreas Pammer  
Alexander Knapp

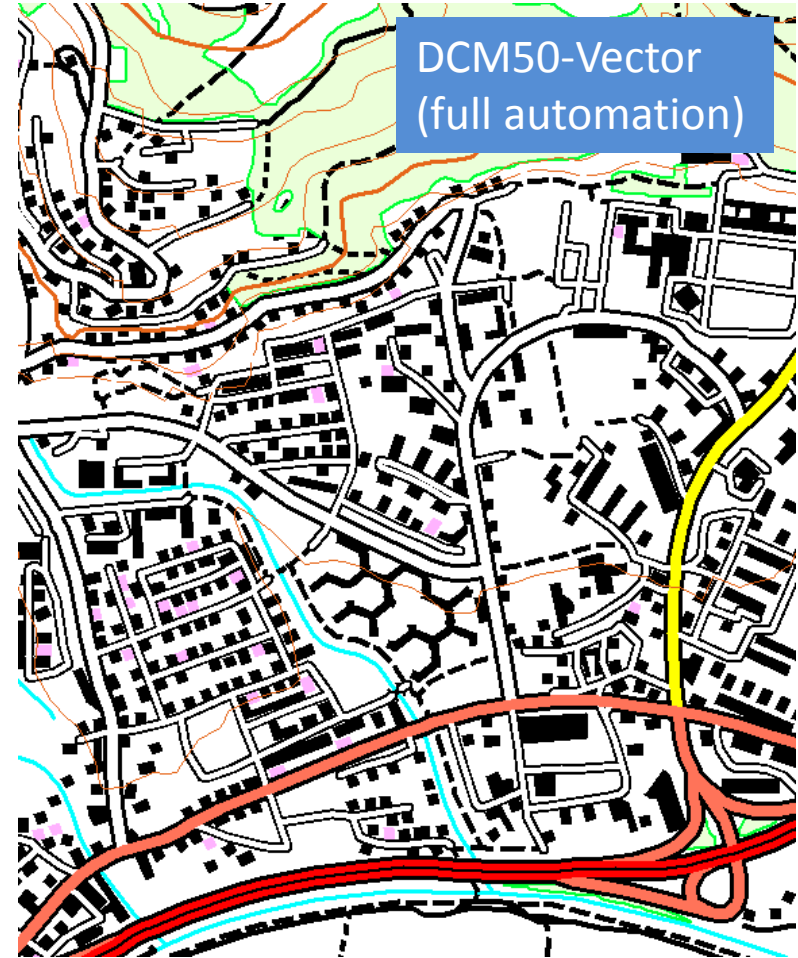
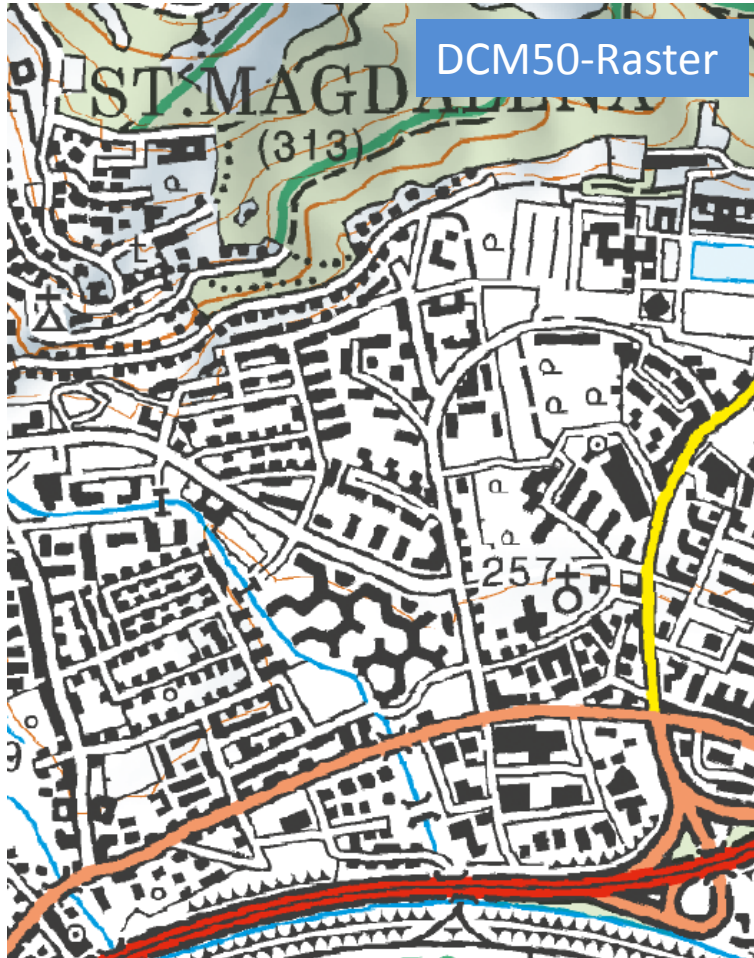
# Software Framework



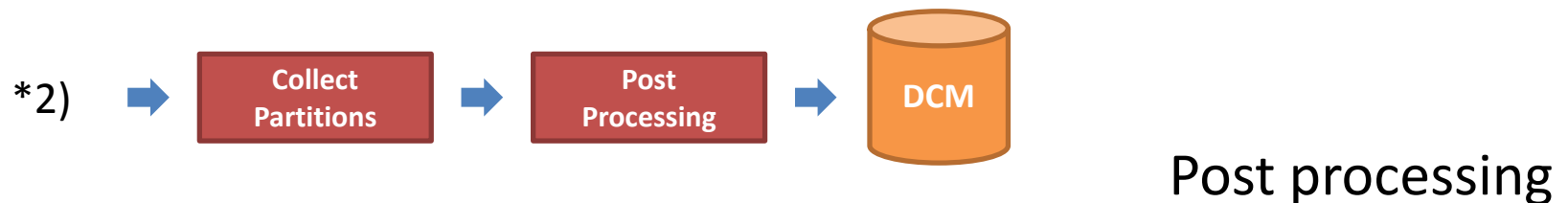
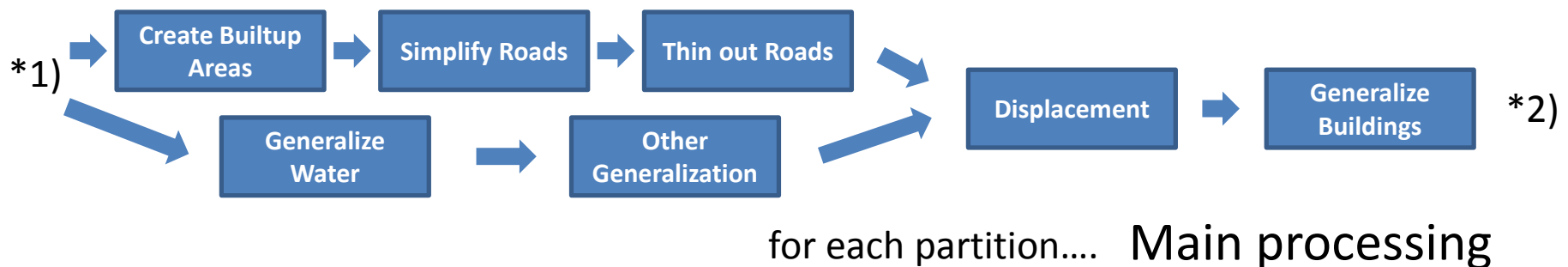
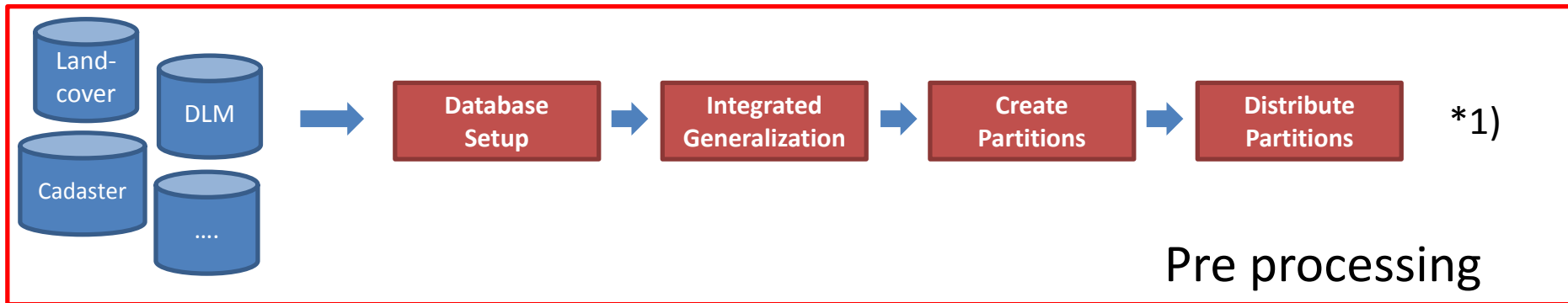
# Main Principles for generating DCM50V

- Keep traditional appearance but allow change of symbology
- Follow principles of cartographic generalisation
- Keep good cartographic quality
- Keep manual intervention at minimum

# DCM50V – What we achieved so far



# Automated Generalization

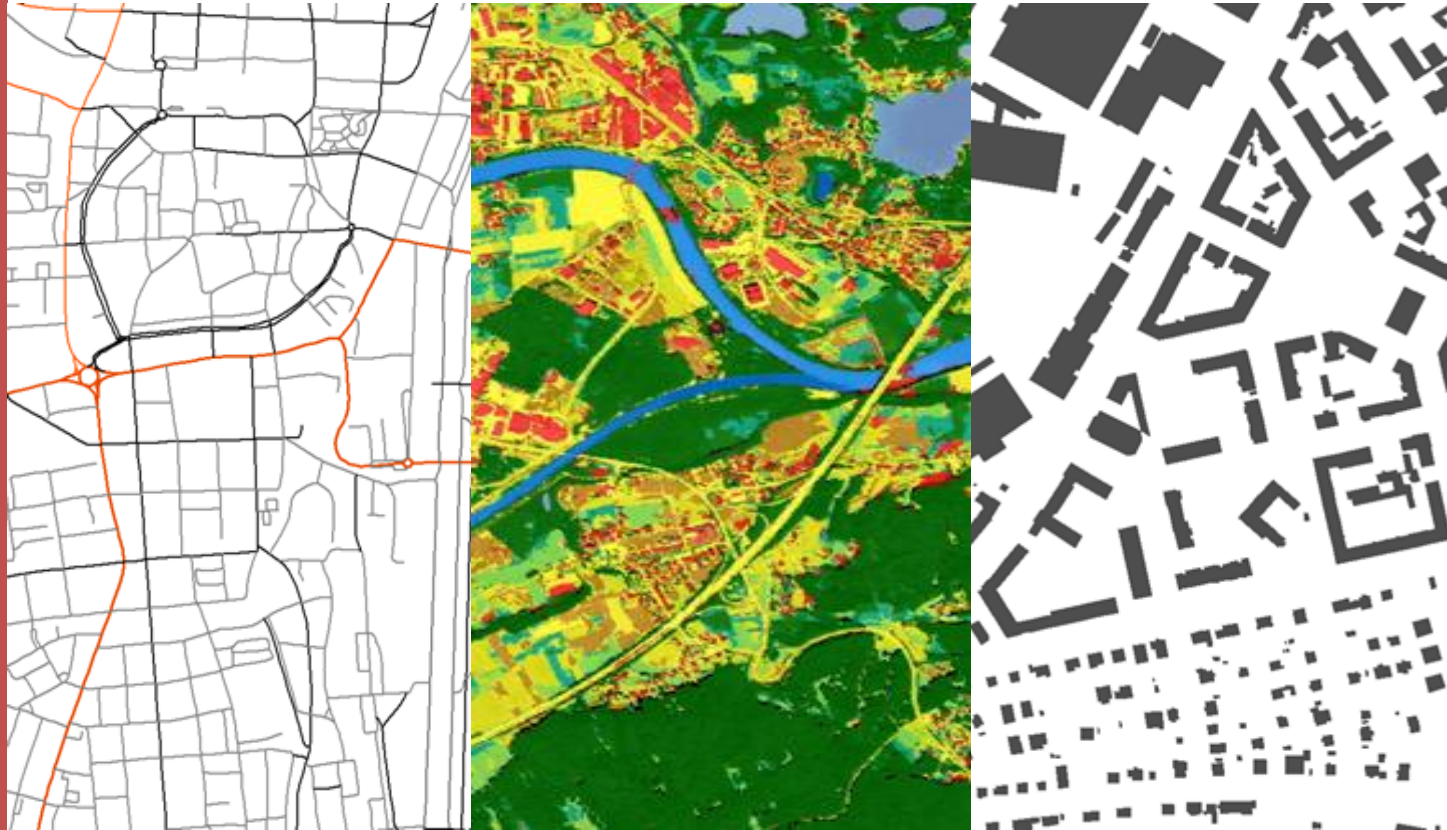


# Base Data

DLM - Digital  
Landscape Model

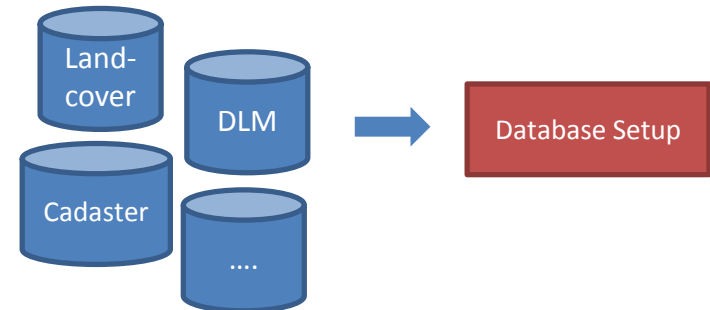
Land Cover

Cadaster Data  
(Buildings)



# Database Setup

- Collect base data
  - DLM
  - Cadaster
  - Landcover
  - ...
- Bring data to common projection
- Set up a common database

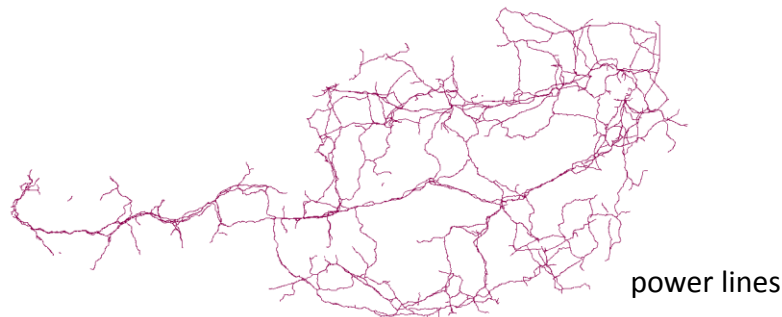




# Integrated Generalization

- Low data volume of some feature classes
- Therefore nationwide generalization  
e.g. railways, power lines

Integrated  
Generalization

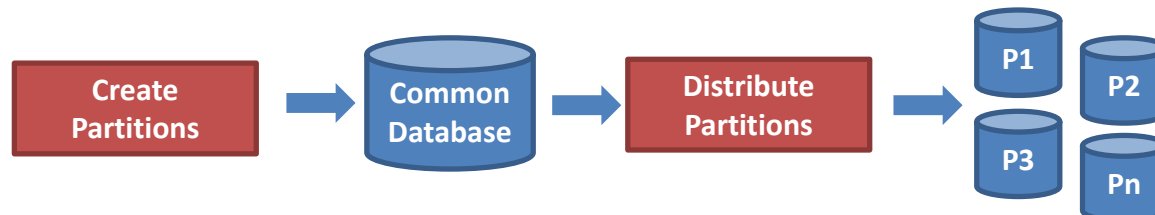


- Generalization of primary road network
  - Needed for partitions

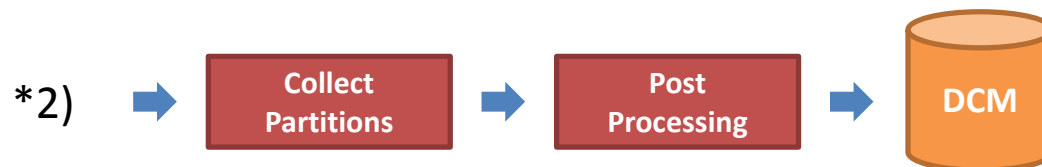
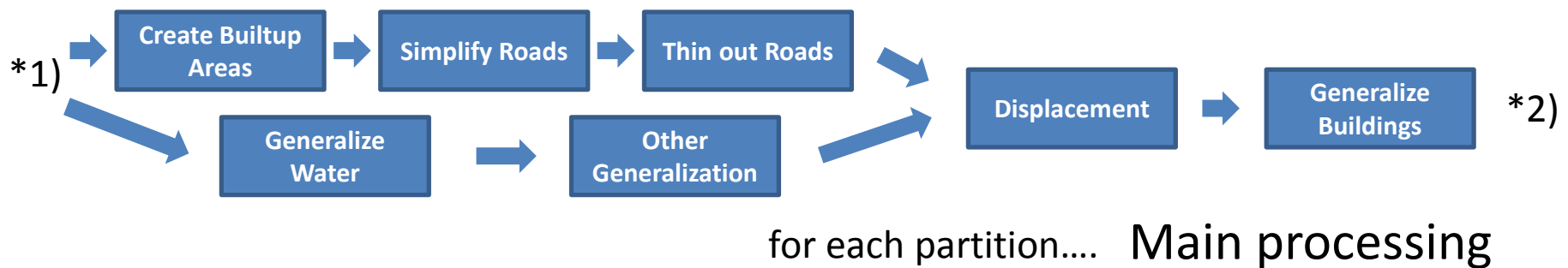
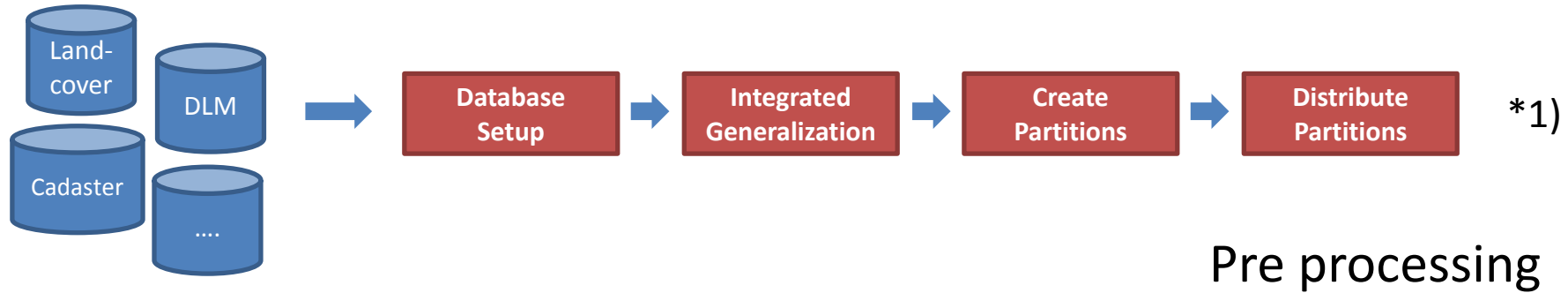


# Create Partitions

- To reduce data processing volume
- Build partition polygons based on primary roads & national border
- Distribute partitions



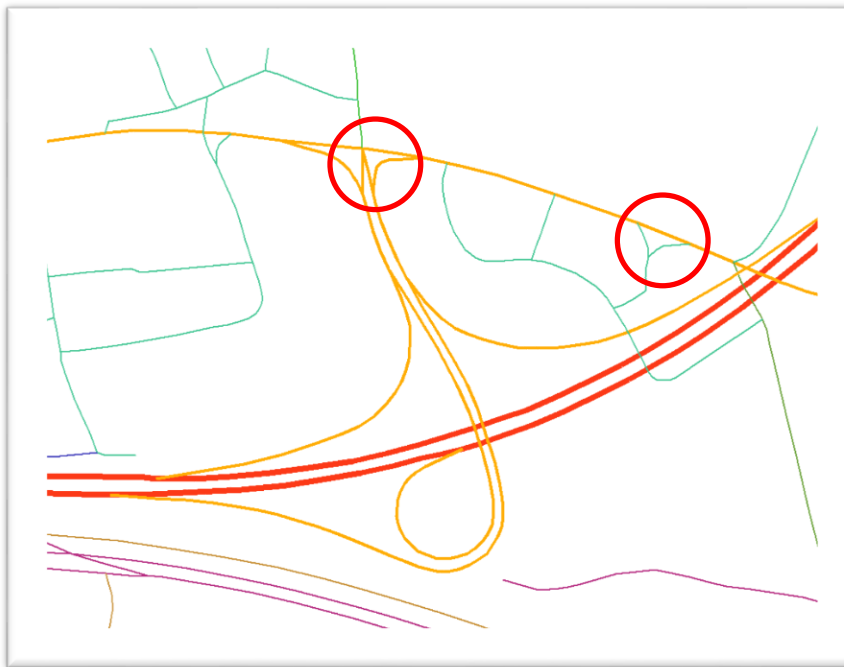
# Automated Generalization



# Simplify Roads

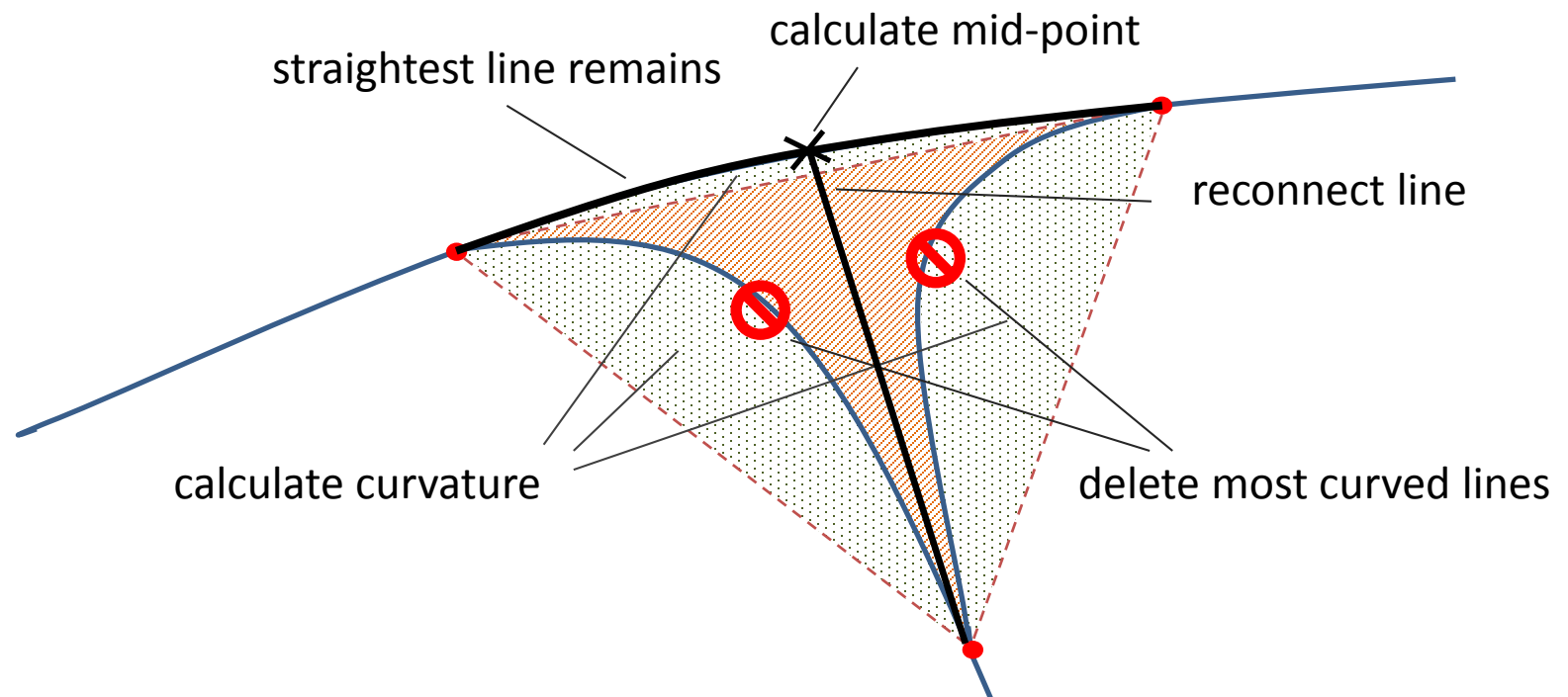
- Reduction of geometrical complexity
- Merge dual/parallel roads

Simplify Roads



# Simplify Roads

- Resolve Junctions



# Thin Roads

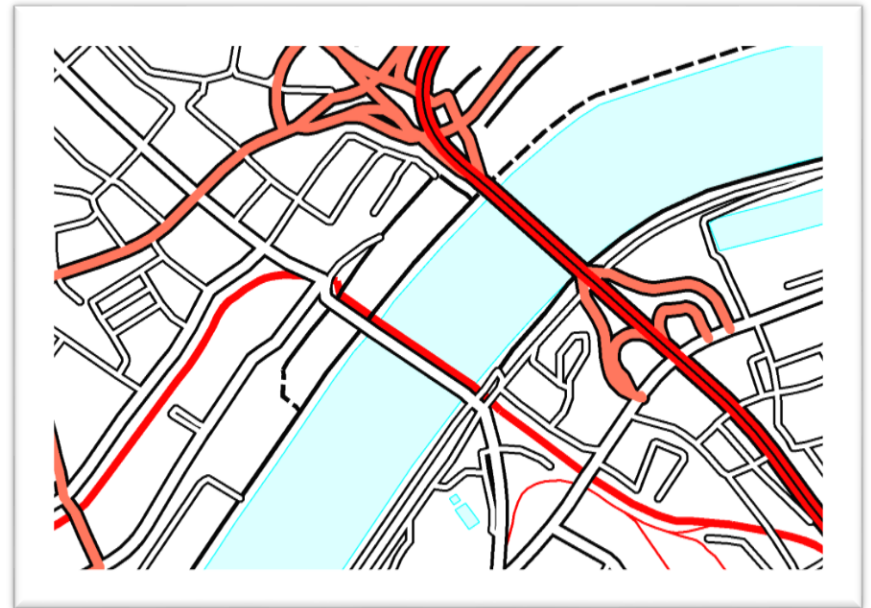
- Generate a road network with reduced density



Red segments  
are deleted

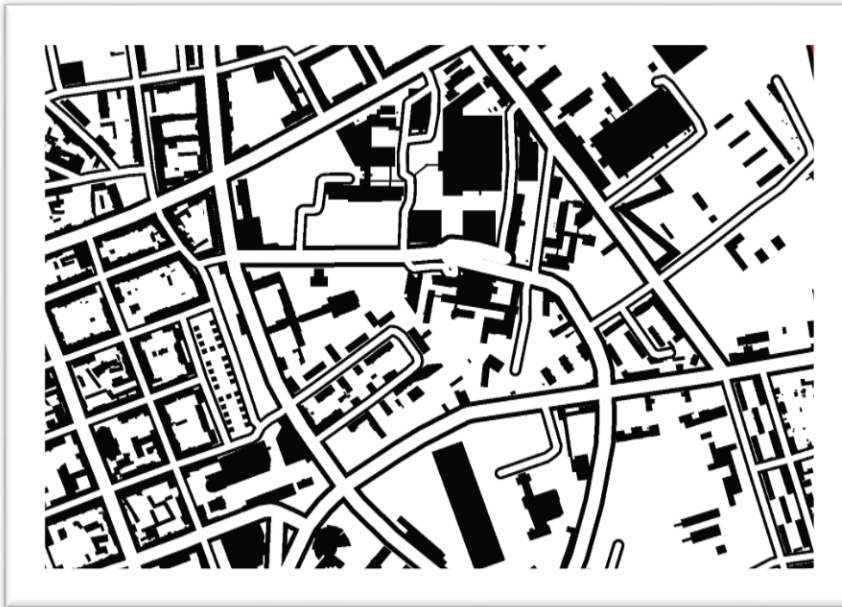
# Displacement

- Resolve graphic conflicts among symbolized line features



# Generalize buildings

- Simplify building polygons
- Resolve symbol conflicts





## Conclusion / The Road Ahead

- Map production as analytical process
- Out of the box tools are very helpful but cannot solve every cases
- Generalisation process depends very much on base data
- The role of cartographer is going to change
- Further optimization of automated process
- Proof of concept to finish in 2016

# Questions?

andreas.pammer@bev.gv.at  
alexander.knapp@bev.gv.at

