AdV – Project: Map Production of the DTK50

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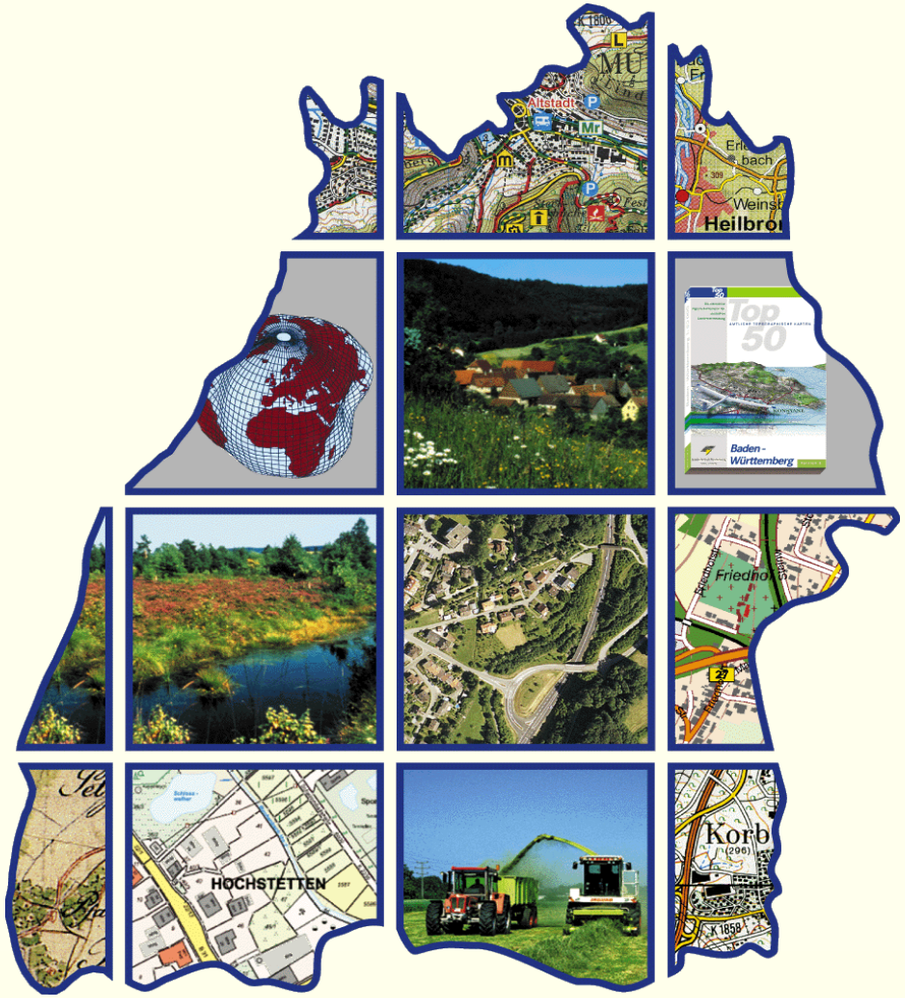
Landesamt für Geoinformation und Landentwicklung Baden-Württemberg (LGL)

(State Authority of Geoinformation and Land Development)

www.lgl-bw.de



Organisation:

LGL is a state authority assigned to the Ministery of Rural Region Baden-Württemberg (MLR)

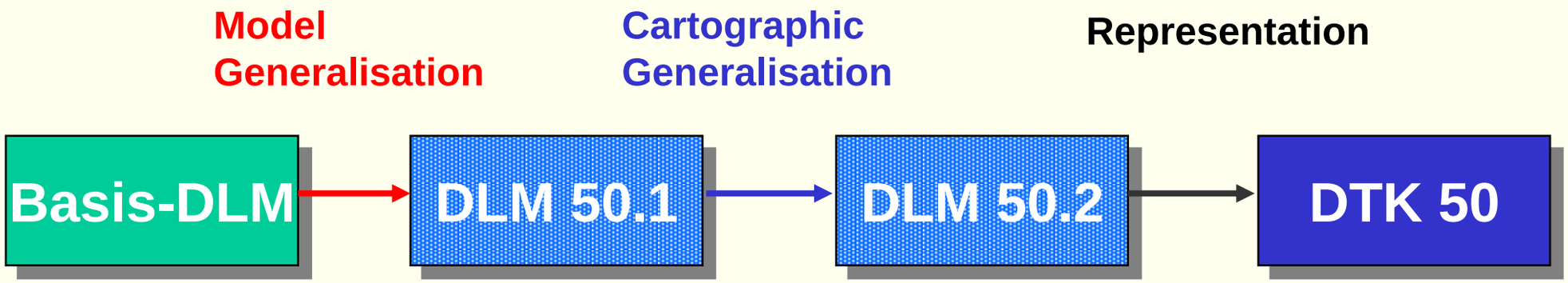
- Subdivided in 6 departments
- Central office in Stuttgart, Branch offices in Karlsruhe and Kornwestheim
- 500 persons staff

Core tasks :

- Providing of Geodata for whole BW
- Providing of updated topografical maps
- Supervision and coordination of landmanagement and cadastre

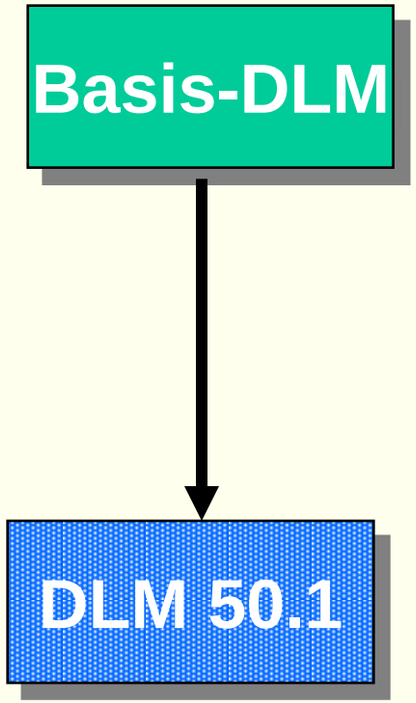
AdV- Project: ATKIS-Generalisation

Goal of the project:
Derivation of small scale topographic maps from the digital landscape model (DLM) “on demand“



Project Model Generalisation

Model generalisation is the automated derivation of a DLM of a lower structuring degree (data reduction) and granularity (richer data) than the base model**.**
It is completly rule-based system



Generalisation processes:

Semantic generalisation	- Classification - Object type combination - Area combination
Geometric generalisation	- Change of the geo-metry type - Geometric simplification

Object type combination - Example

Basis-DLM

DLM50.1

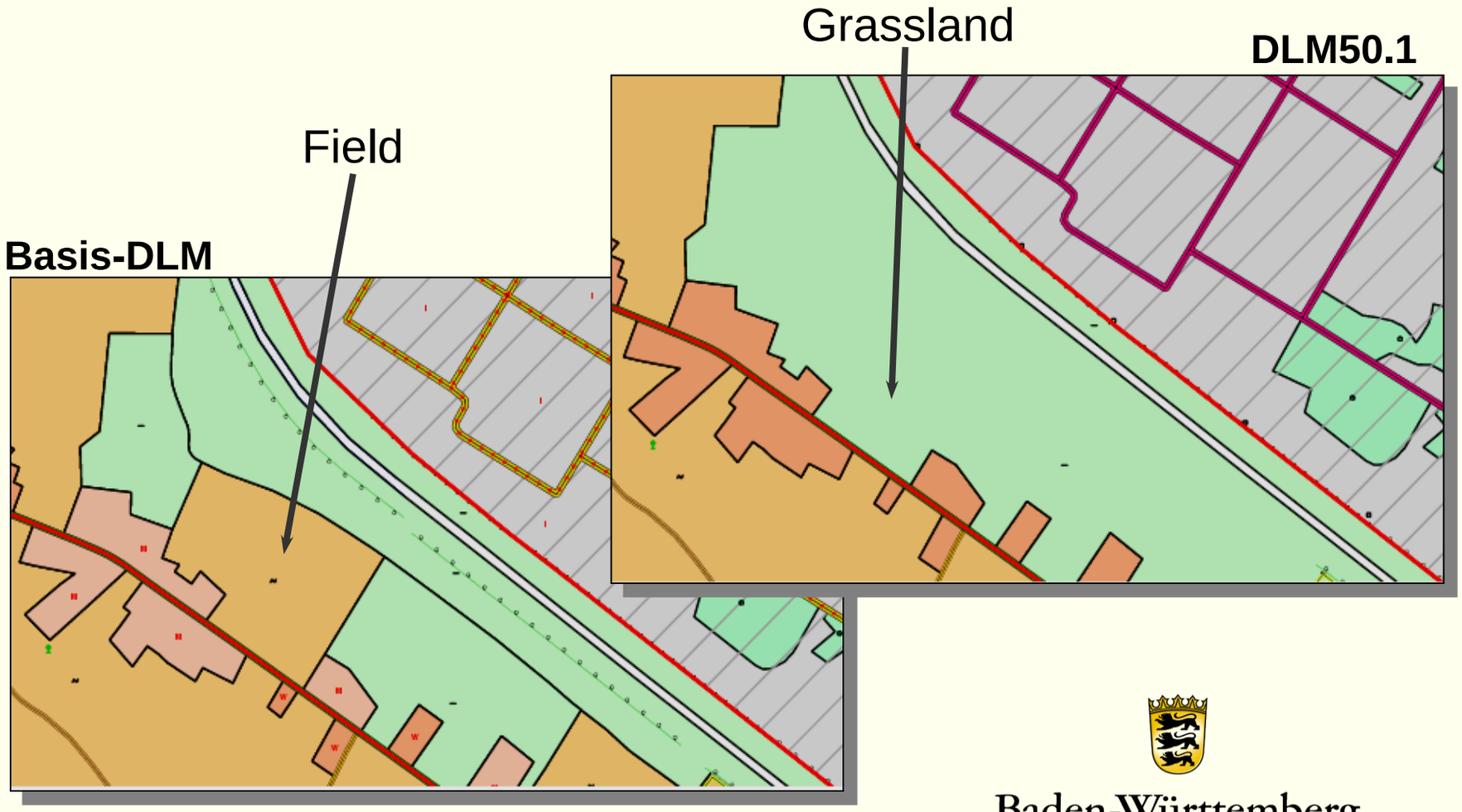
building area

Area of mixed use

Settlement area

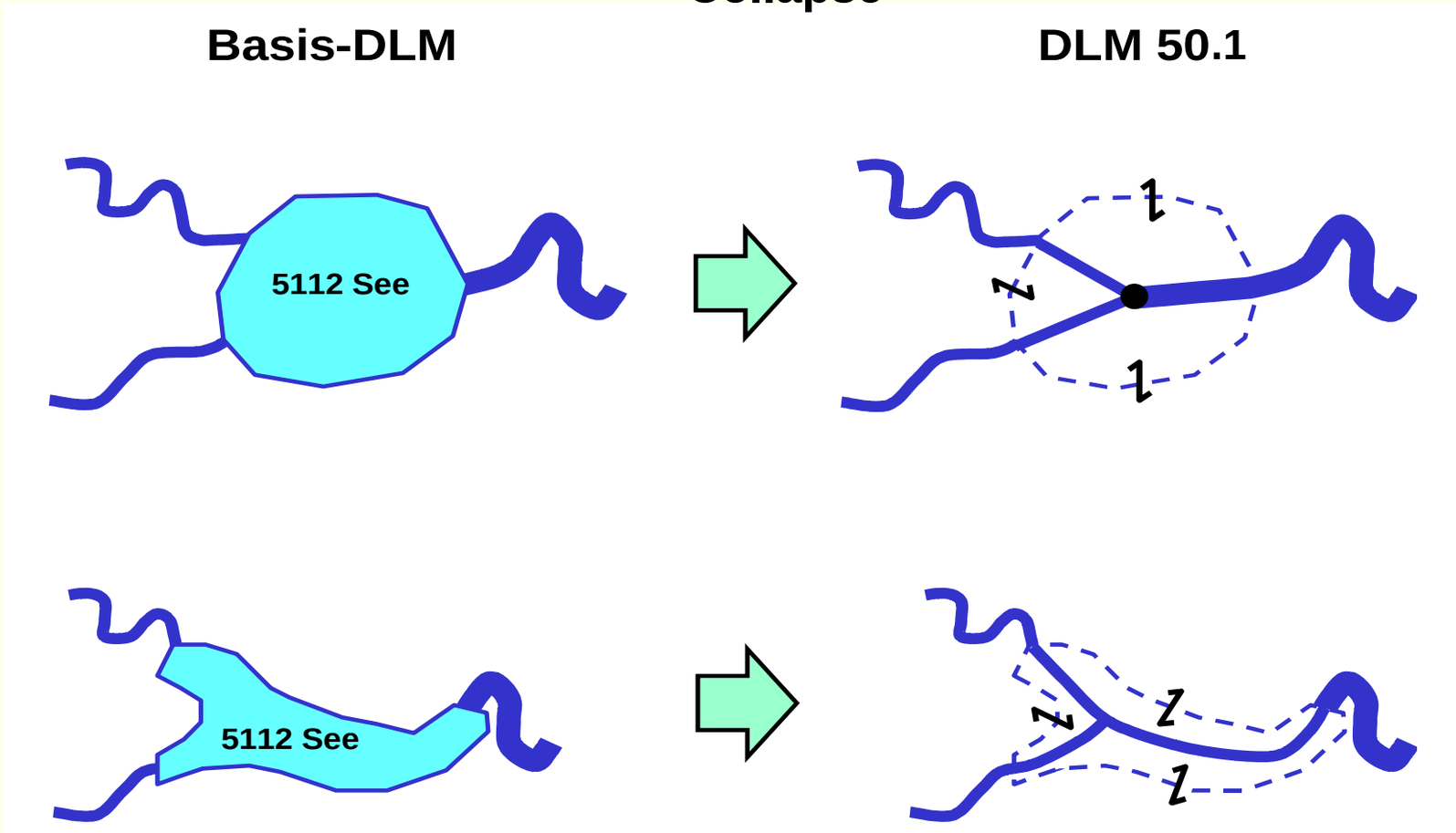
Area combination - Example

Combination of area objects
a) about the similarity

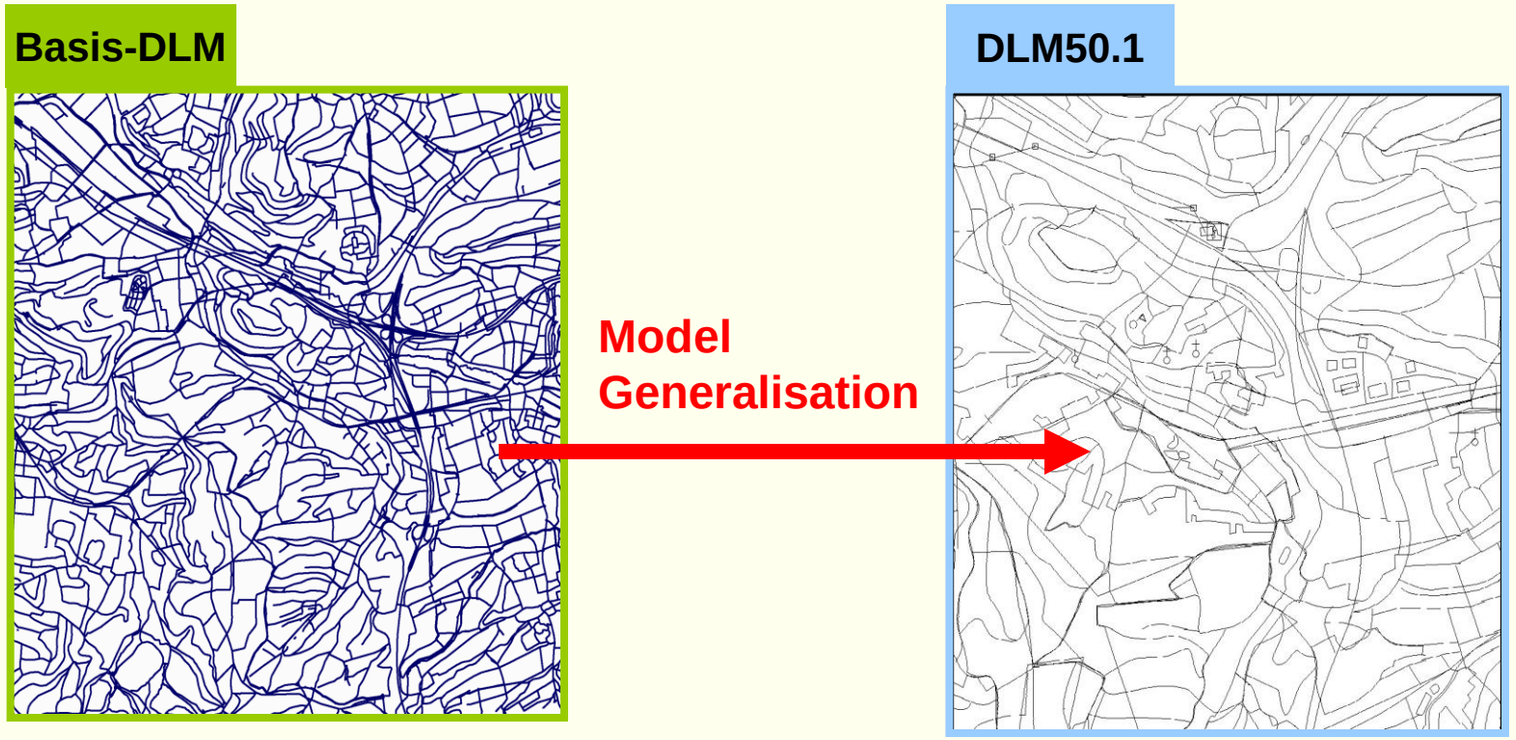


Change of the Geometry type - Example

From area – point
Collapse



Project Model Generalisation



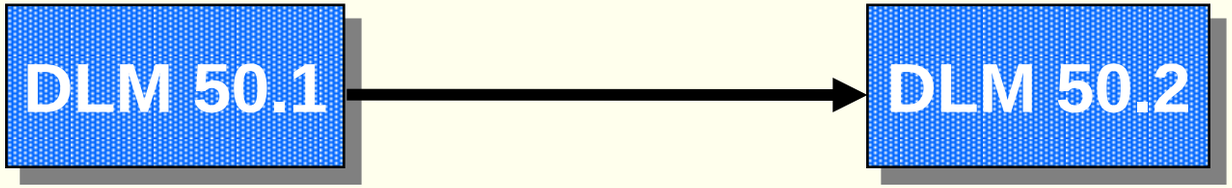
Results:

- 100% fully automated process
- Producing of a homogenious data set
- 35% reduction of the data volume
- Total processing runtime of whole BW data is 9 days

Project Cartographic Generalisation

Cartographic generalisation is the processing of a topologically correct and visually correct data set (based in style sheet catalogues)

It is a agent and constraint based process



Generalisation processes:

Cartographic generalisation methods and graphical conflicts are described by algorithms (Data Case)

Workflow with 45 checkpoints

Controled by constraints and parameters

(e.g. minimum size, minimum distance, form stability)

Cartographic Generalisation examples

- Typification of Identical Point Symbols
- Displacement of Point and Lines
- Simplification of Areas

Cartographic Generalisation examples

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- Displacement of Point and Lines
- Simplification of Areas

Cartographic Generalisation examples

- Displacement to Solve Point-Line Conflict
- Displacement to Preserve Constraints of Point Symbols depending on Line
- Diffusion of Lines

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Cartographic Generalisation examples

- Enlargement of Area
- Diffusion of Lines

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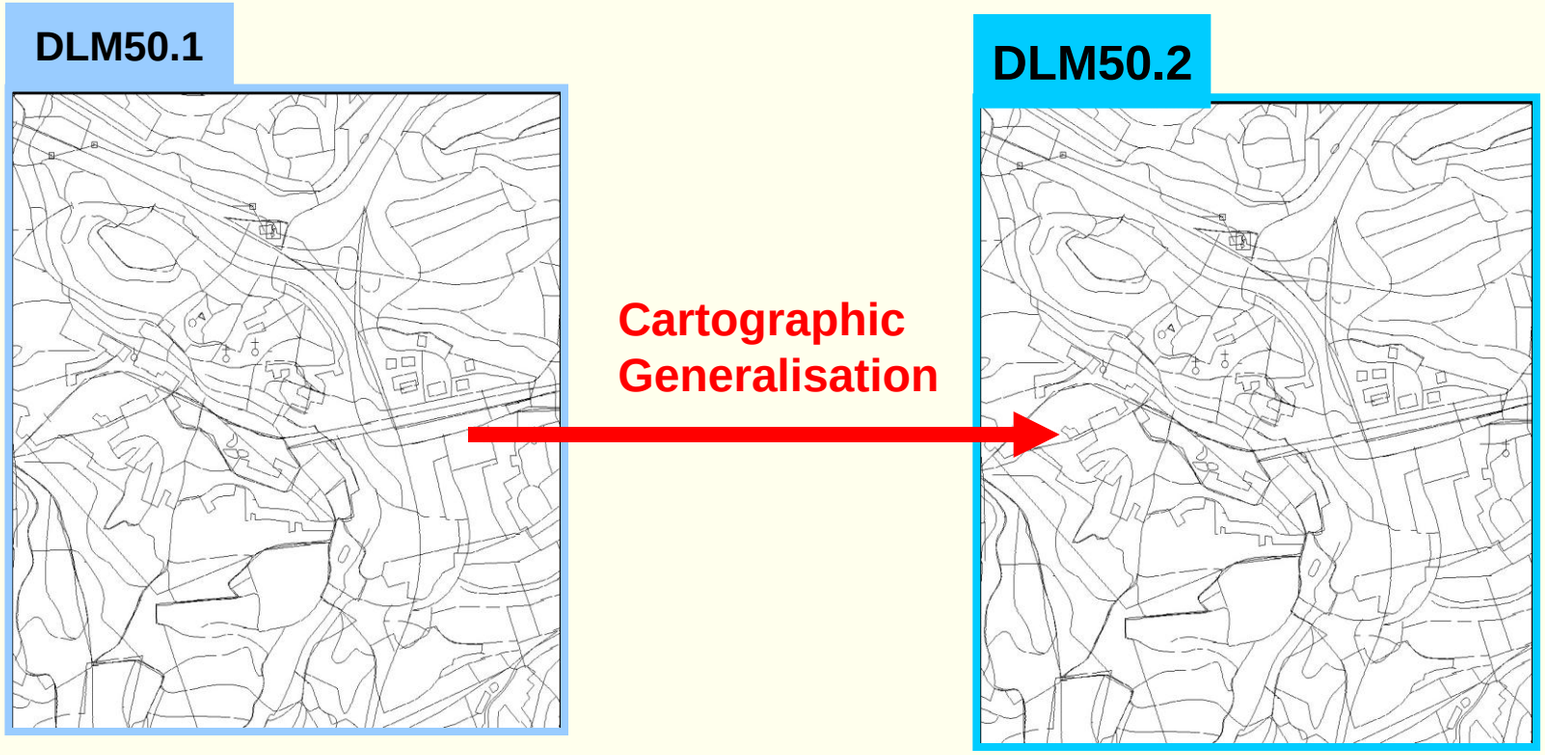
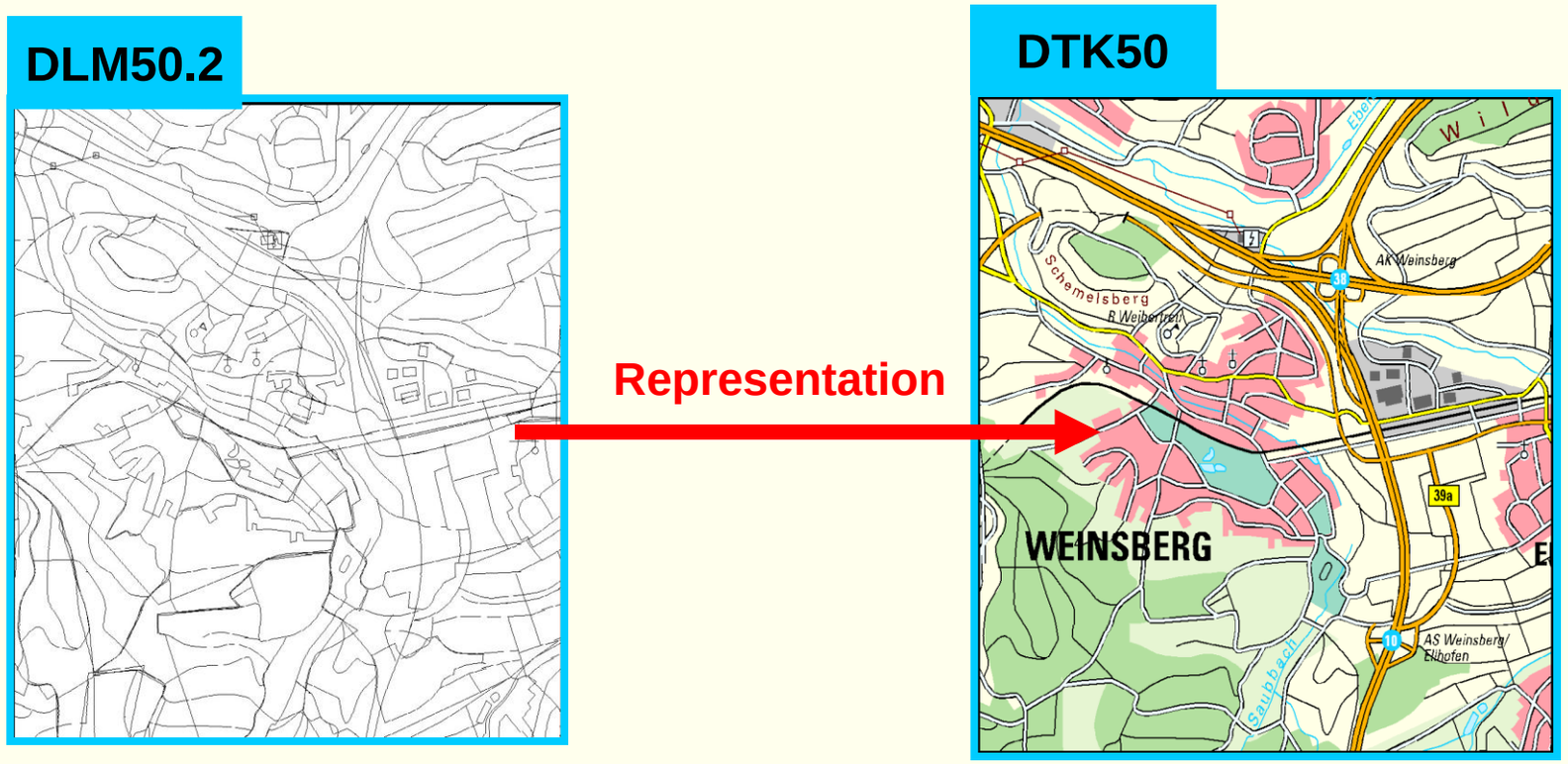
Project cartographic generalisation



Results:

- High degree of automation
- Managing of all generalization conflikts in one single workflow
- Identical and editor indepedent generalization results
- Total processing runtime of whole BW data in 8 weeks

Project Representation



Results:

- Automatic representation according style sheet catalog
- Possibility of interactive editing

Workflow of DTK50 Production

1Spatial

Lamps2

1Spatial

Clarity

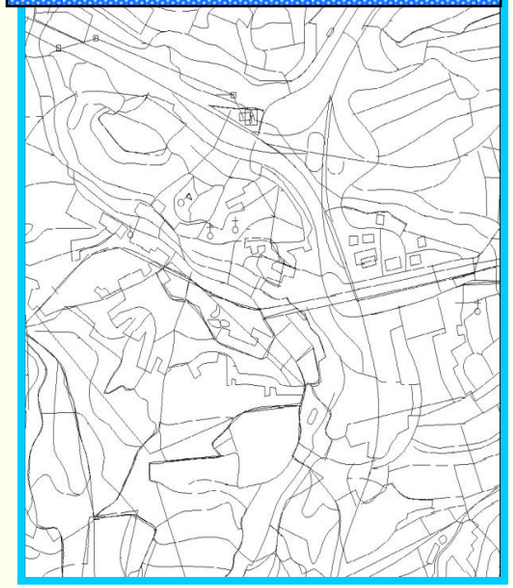
ESRI / AED

3A-Editor

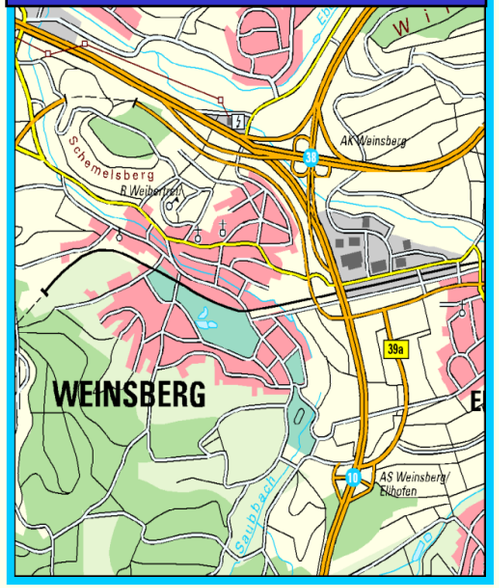
Basis-DLM

DLM 50.1

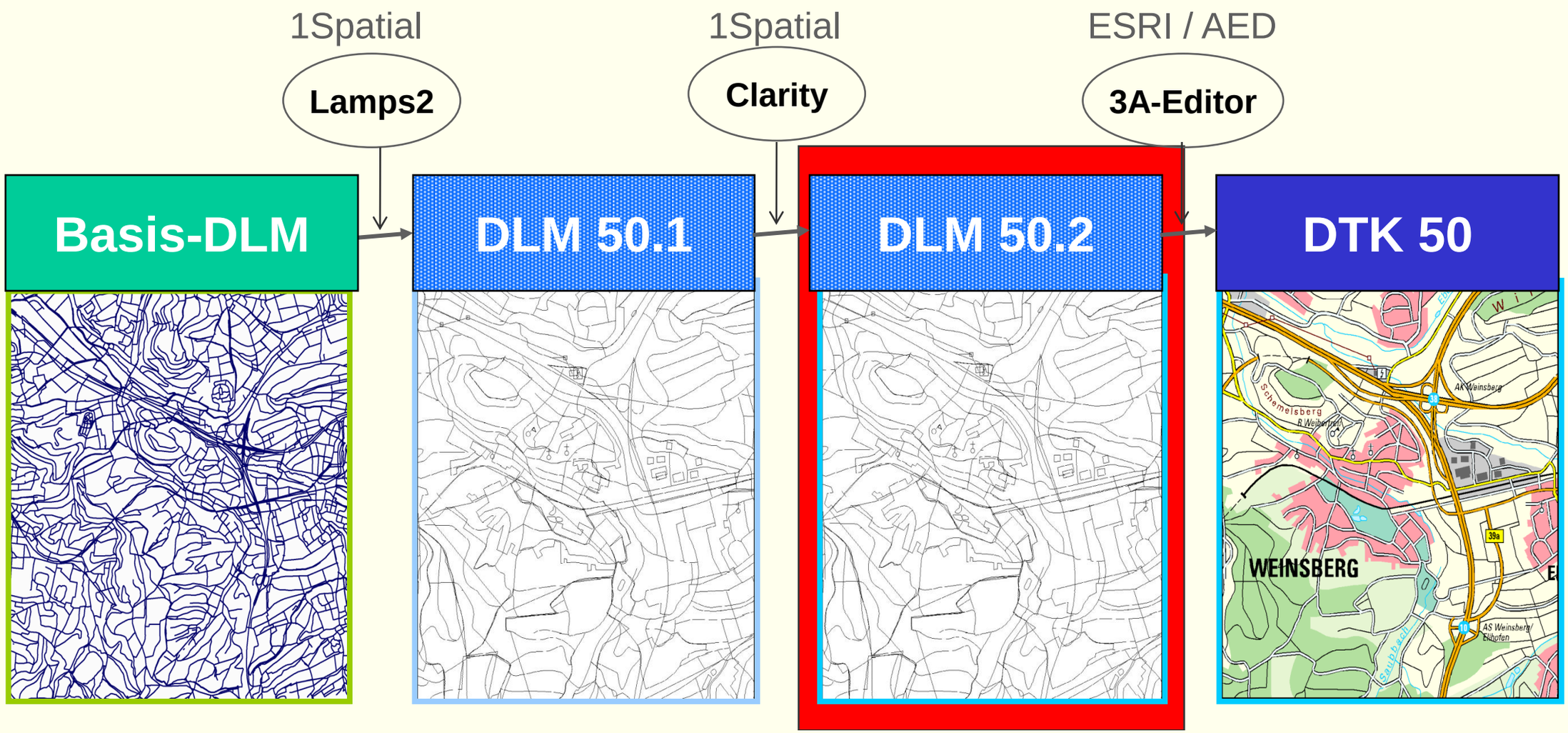
DLM 50.2



DTK 50

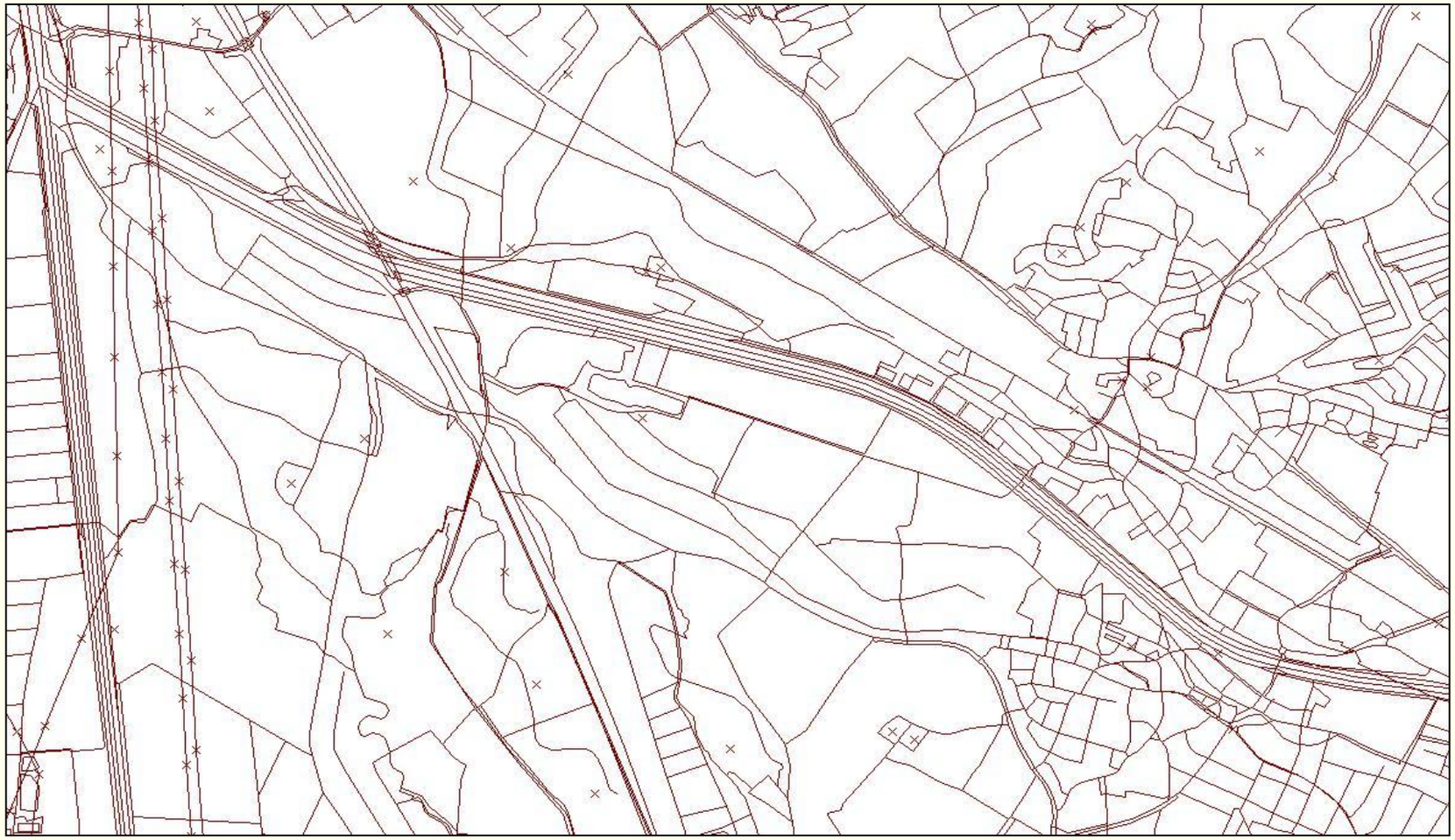


Workflow of DTK50 Production



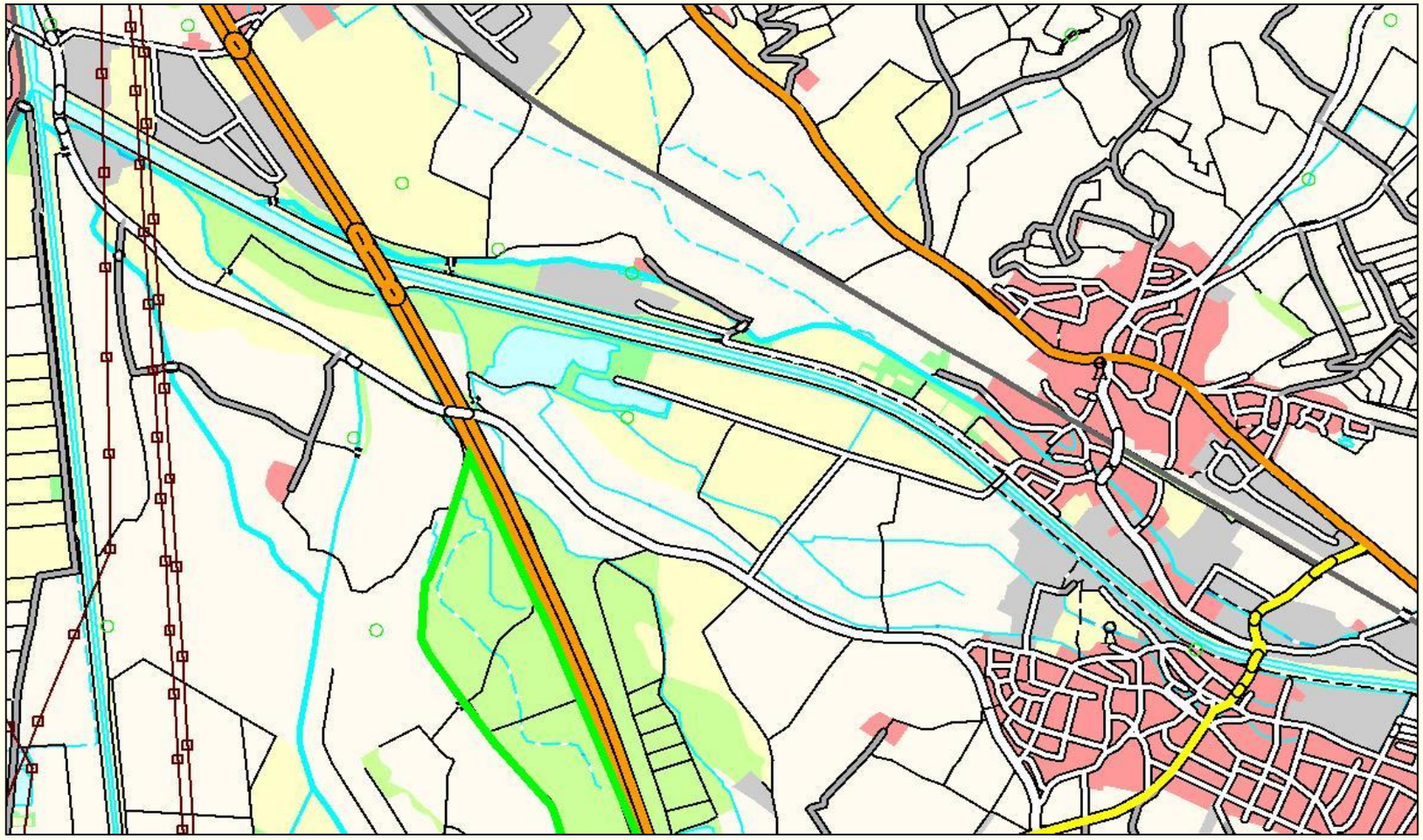
Example of DTK50 Production

Import of DLM50.1 Data



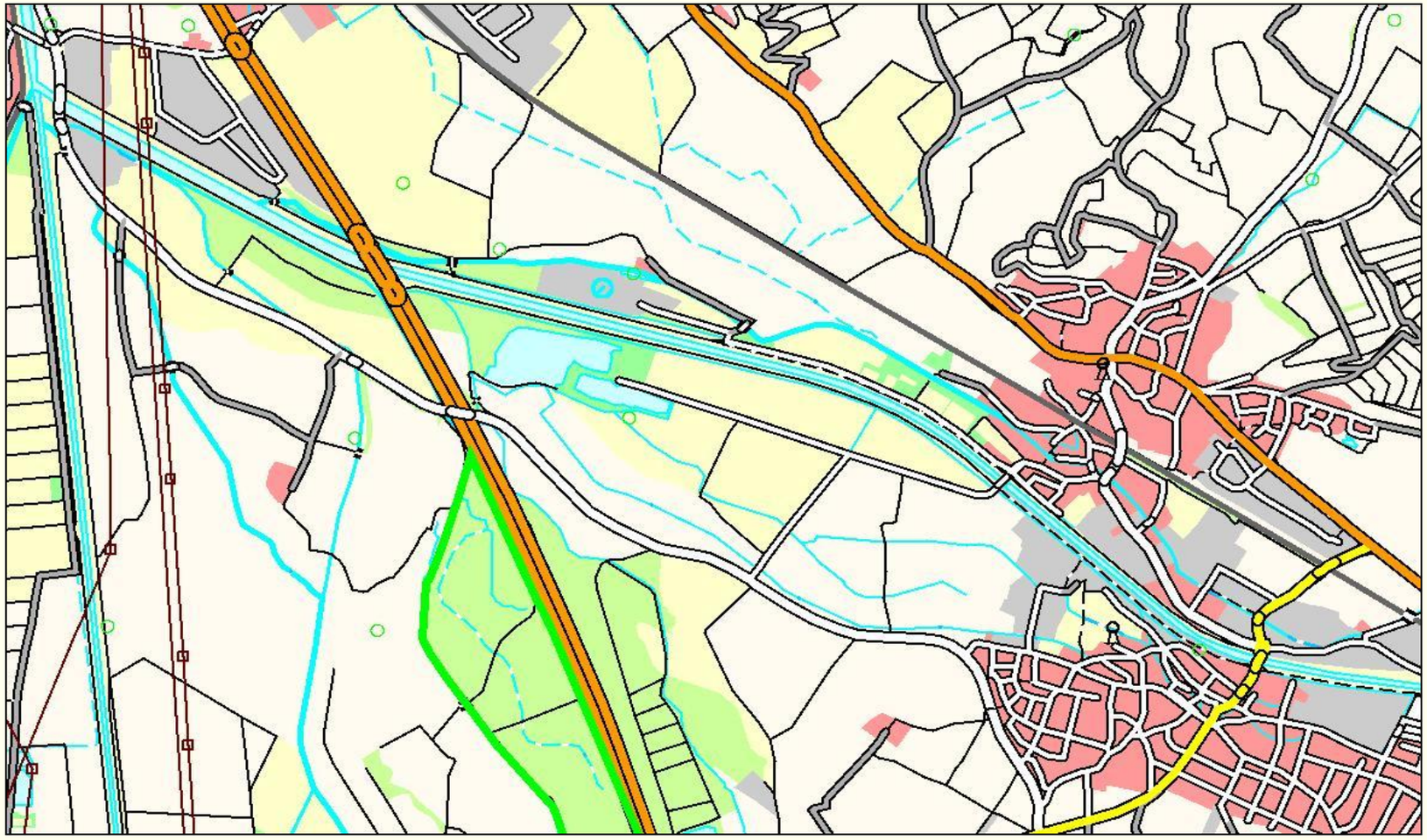
Example of DTK50 Production

Visualisation of DLM50.1 Data



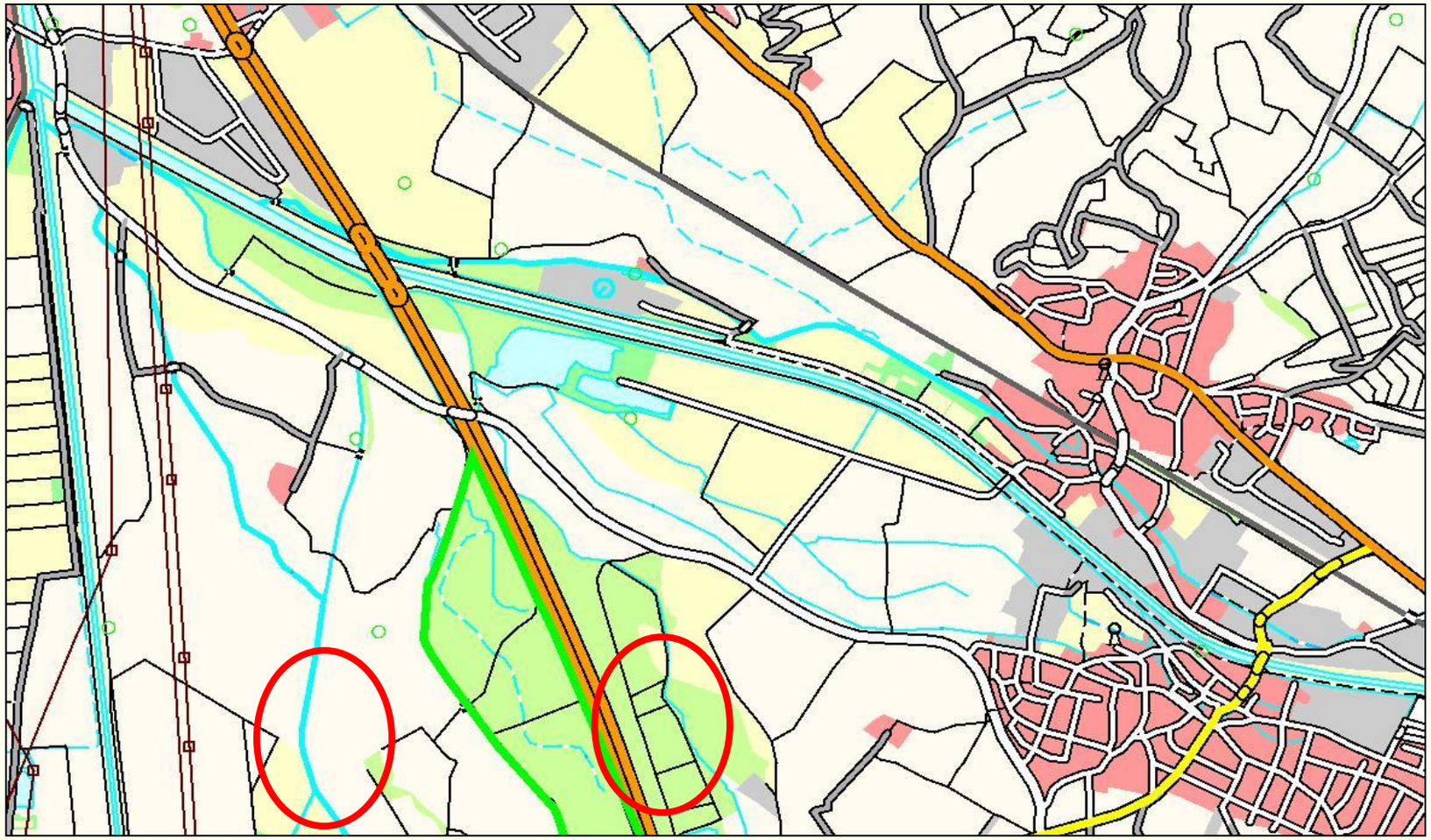
Example of DTK50 Production

Displacement to Solve Point-Line Conflict



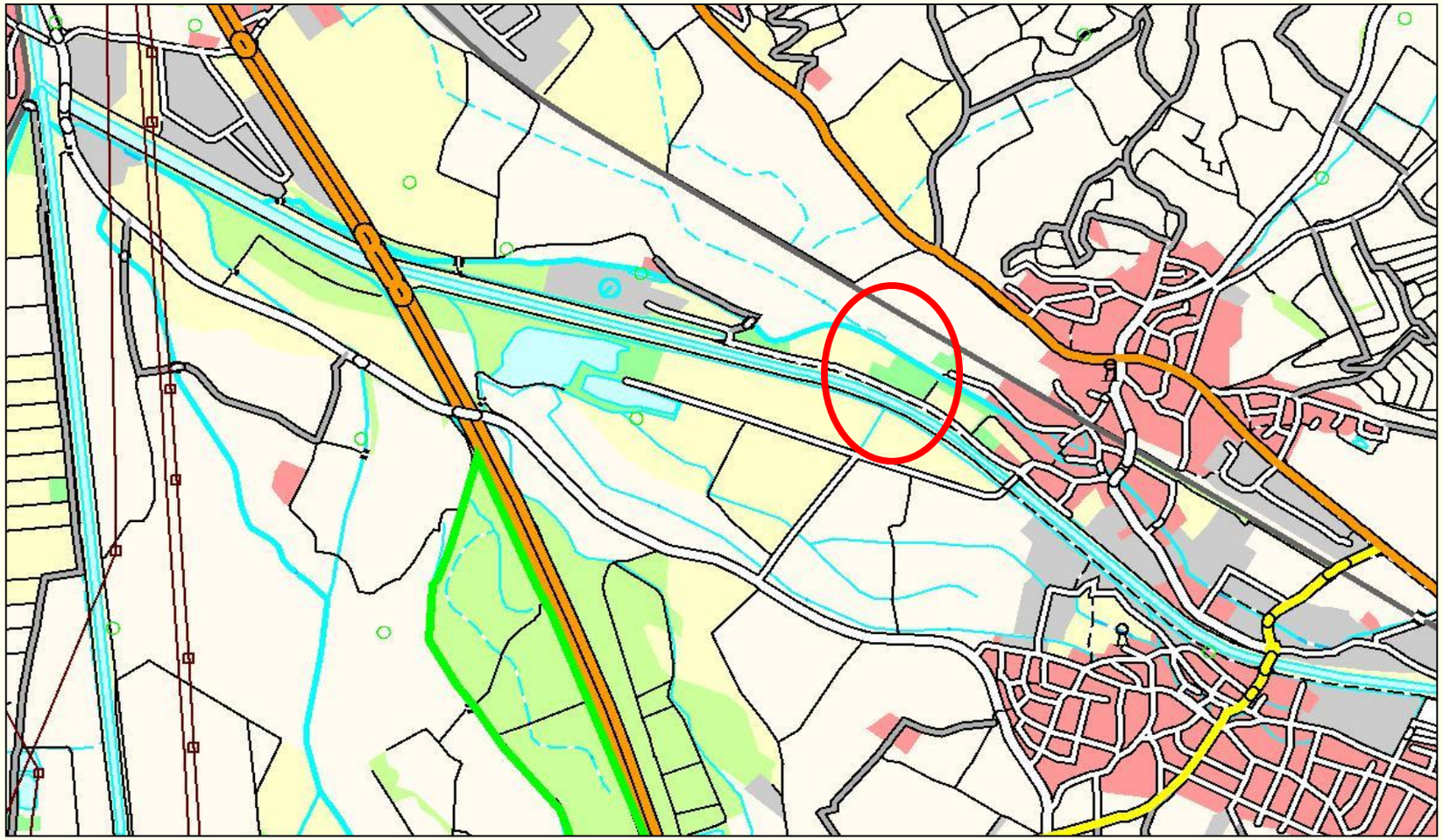
Example of DTK50 Production

Typification of Lines



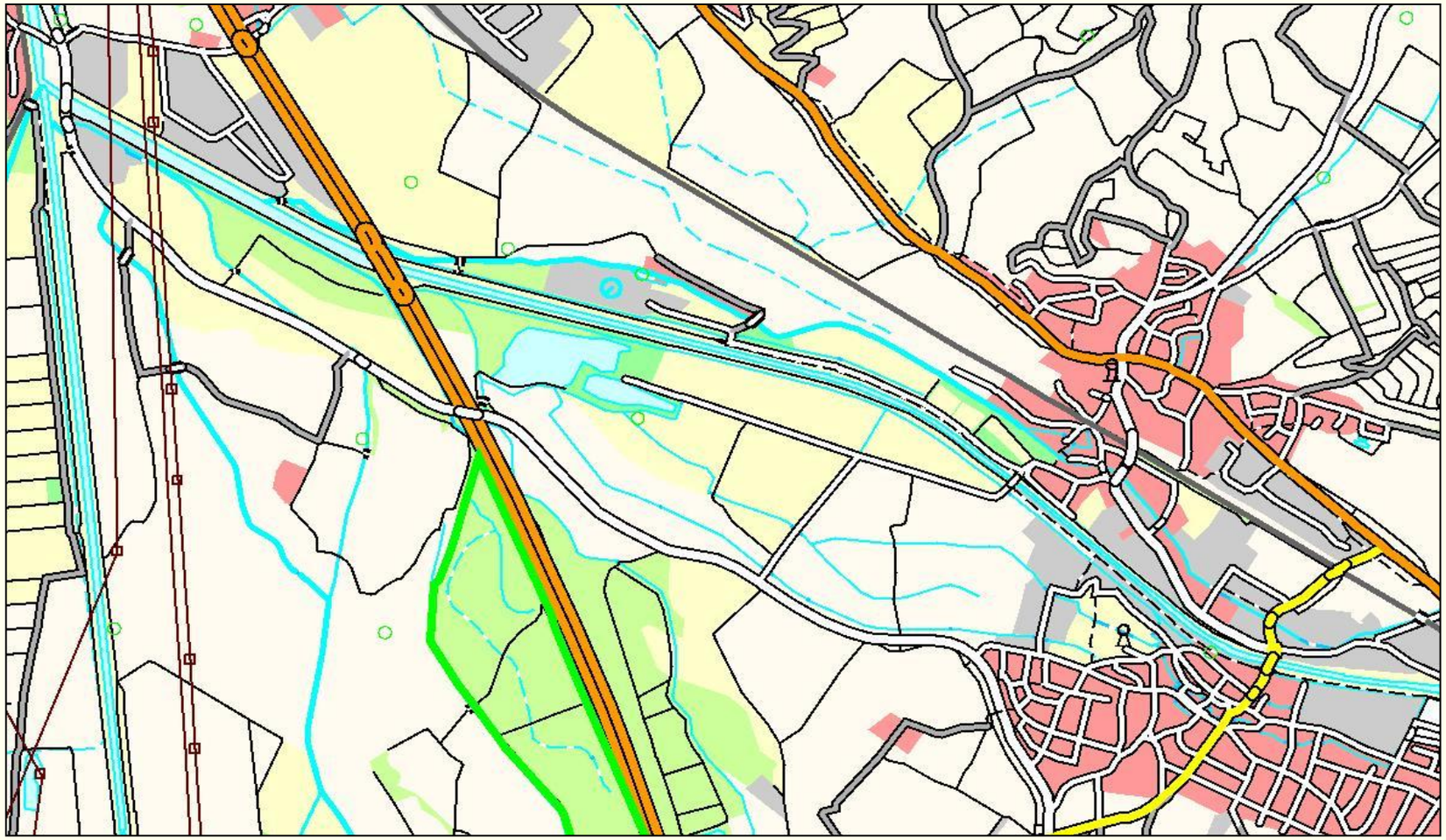
Example of DTK50 Production

Aggregation of areas



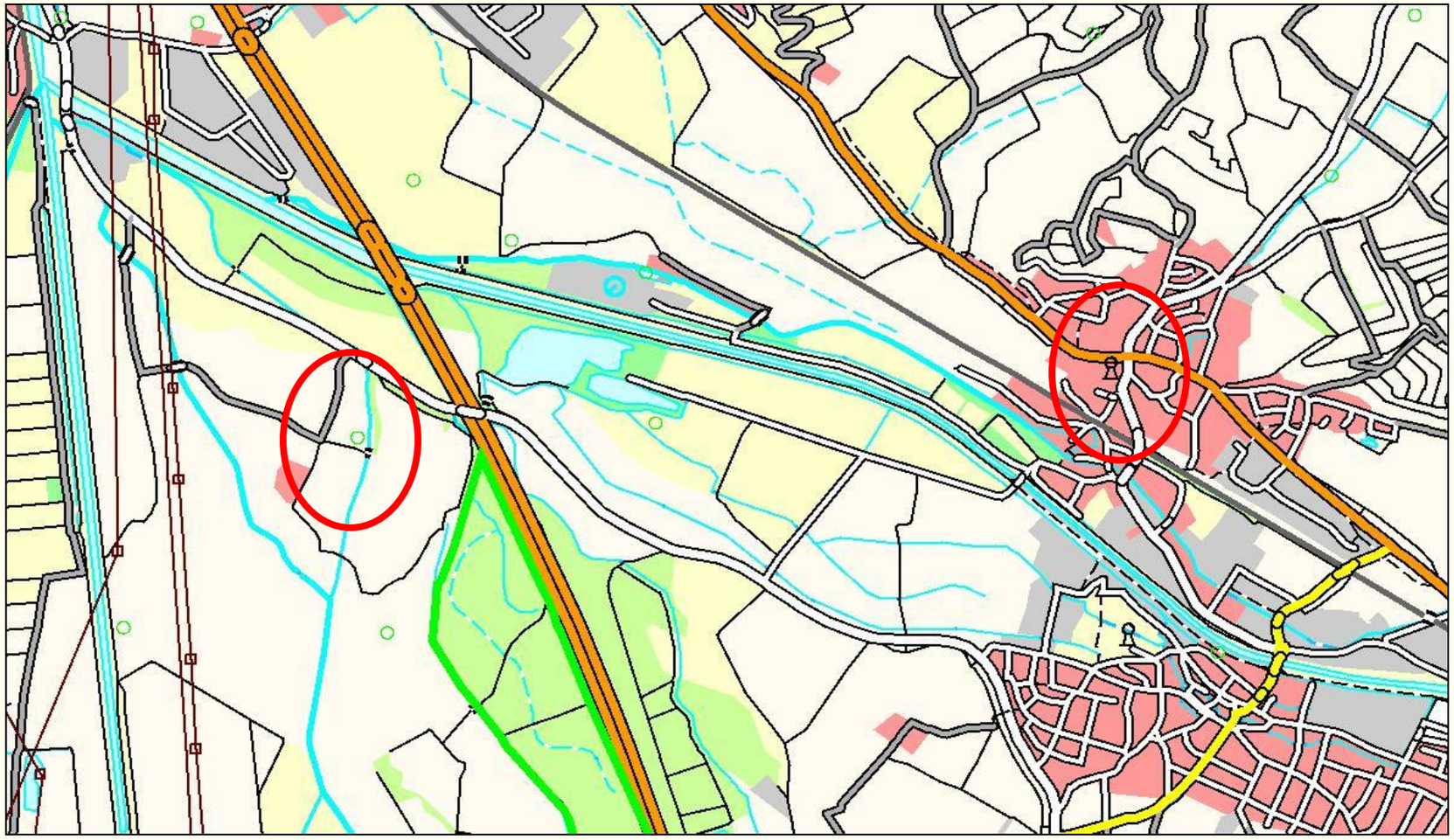
Example of DTK50 Production

Diffusion of Lines



Example of DTK50 Production

Diffusion of Points



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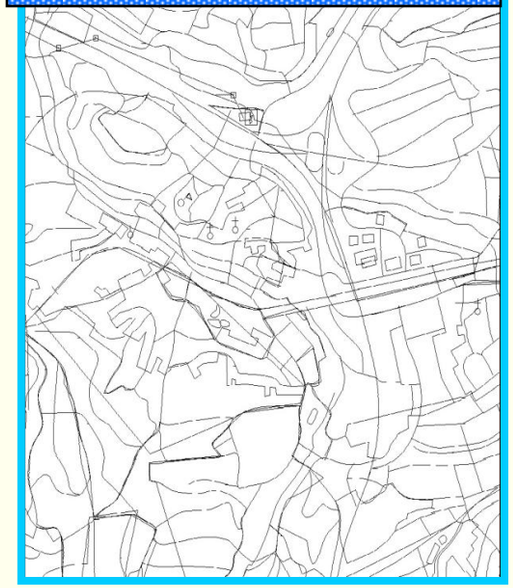
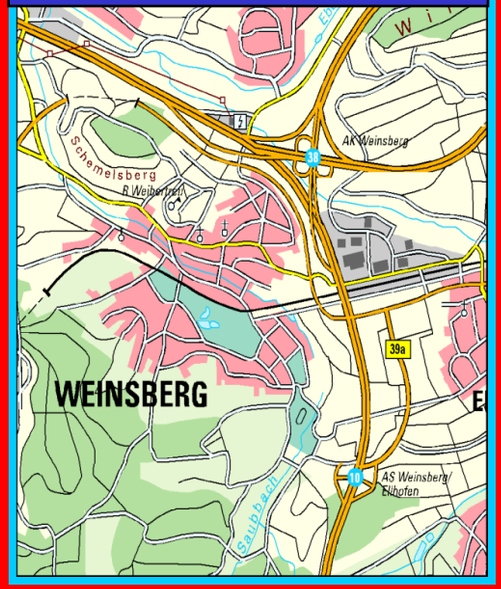
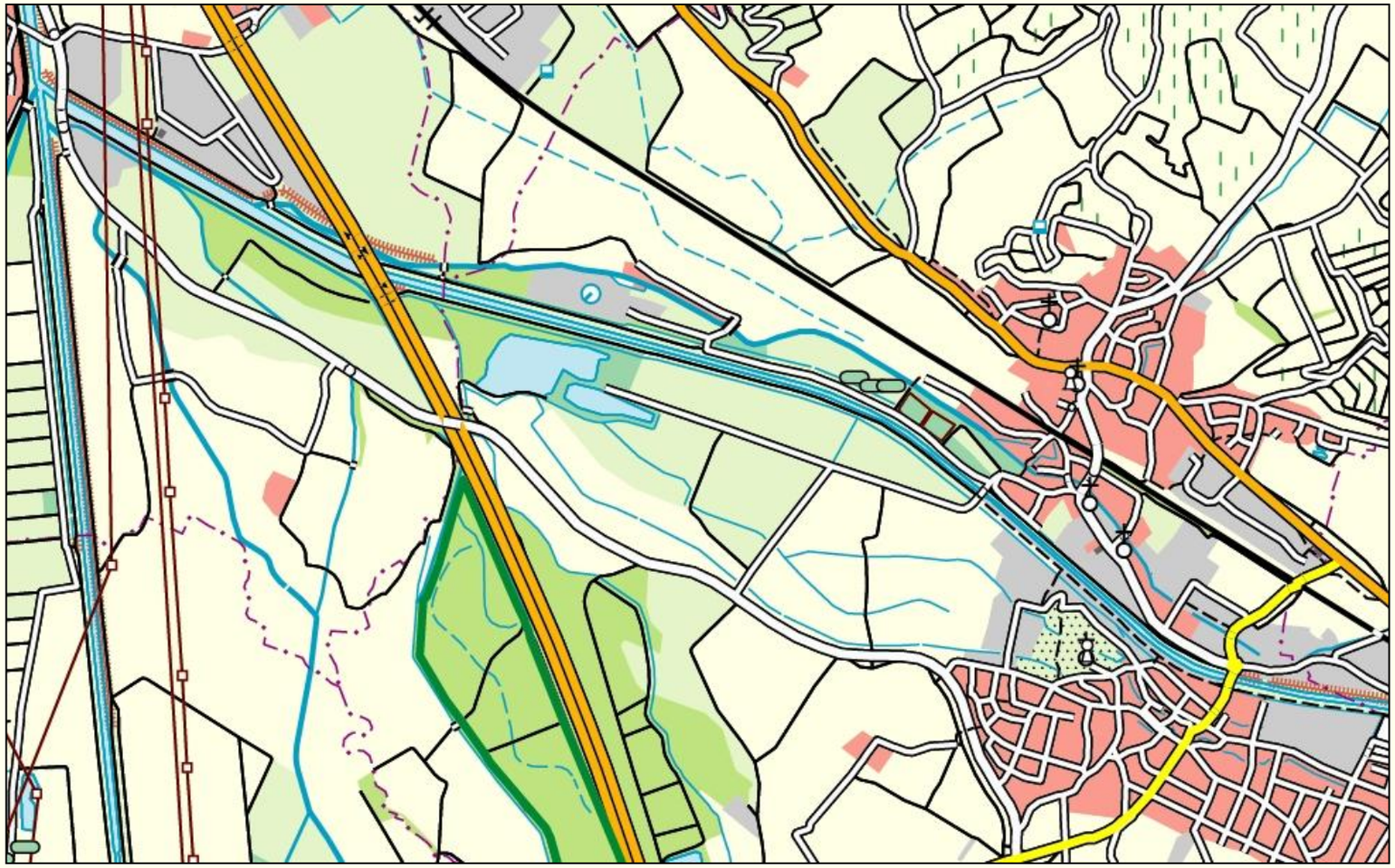


DTK 50



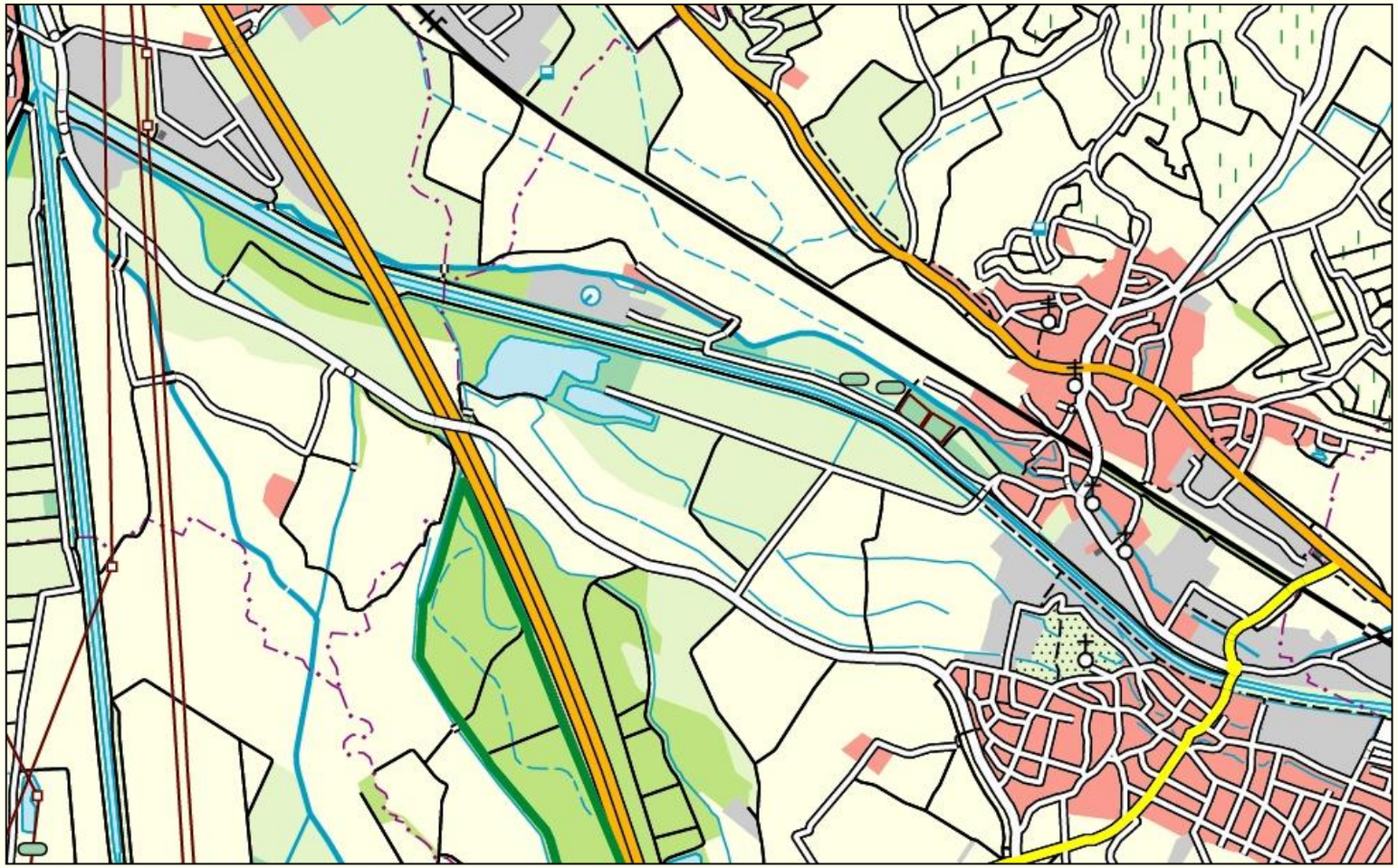
Example of DTK50 Production

Representation of the DLM50.2 Dataset



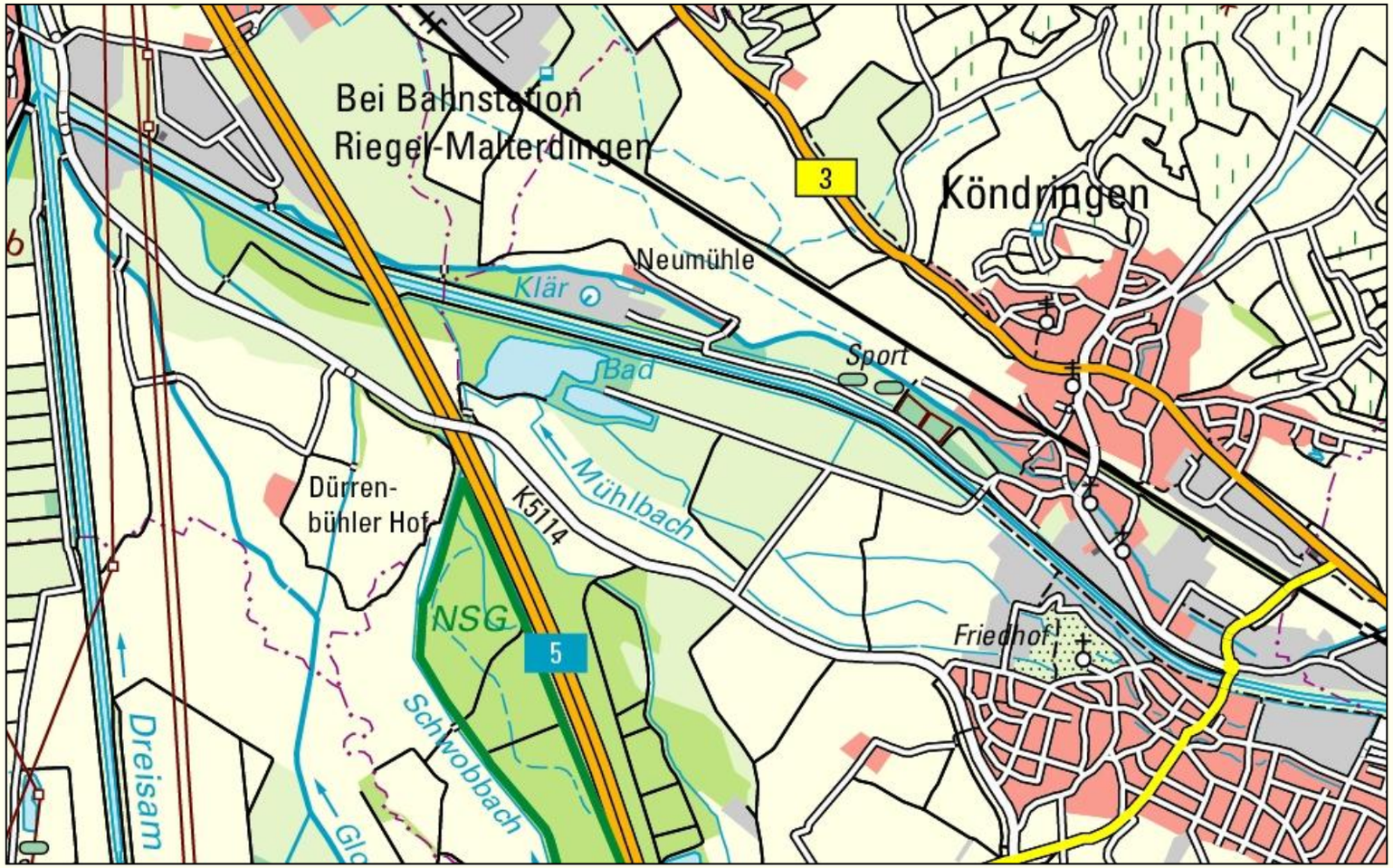
Example of DTK50 Production

Result of the interaktive work



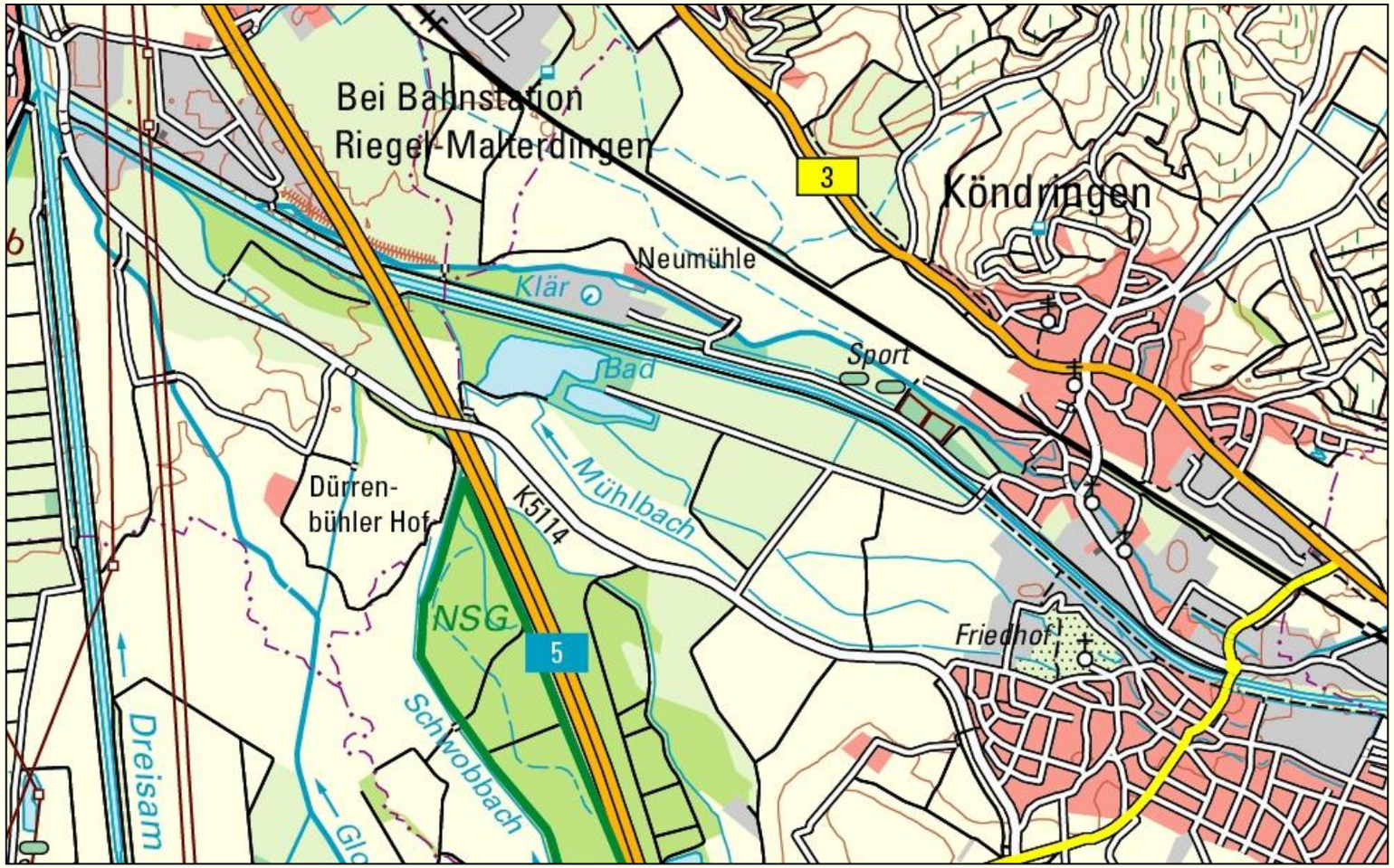
Example of DTK50 Production

Addition of the Labels



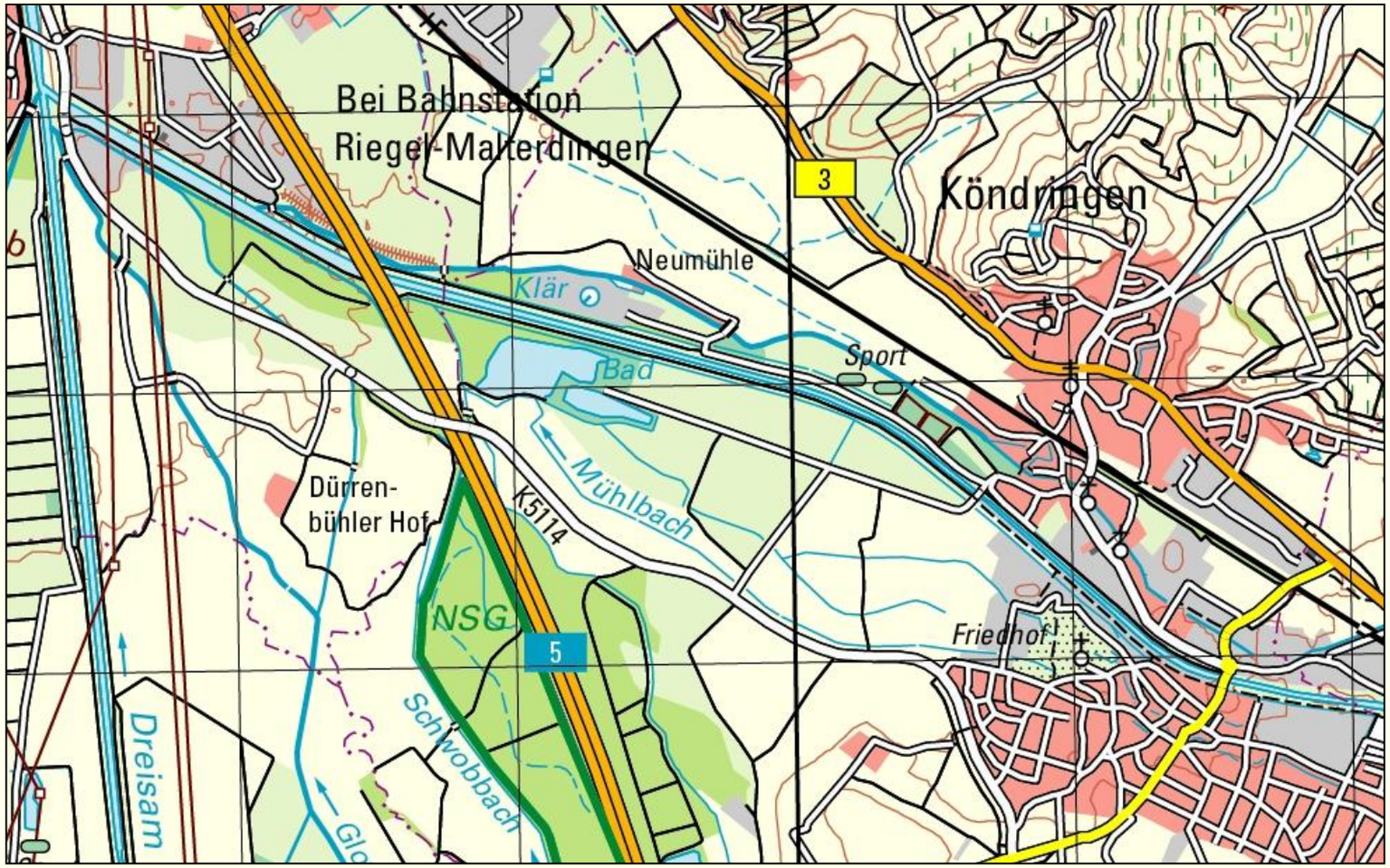
Example of DTK50 Production

Addition of the Contour Lines



Example of DTK50 Production

Addition of the UTM- Grid



DTK50 Map Production

Results:

Production of one map sheet DTK50

Model Generalisation (automatic) – 3 hours
Carographic Generalisation (automatic) – 7 hours

Interaktive Work – 8 days

= 3 weeks for producing one map sheet DTK50 (from BaseDLM to the printed DTK50)

Many thanks for your attention