



**POLIZEI**  
Nordrhein-Westfalen  
Landeskriminalamt

bürgerorientiert · professionell · rechtsstaatlich



**Project „SKALA“**

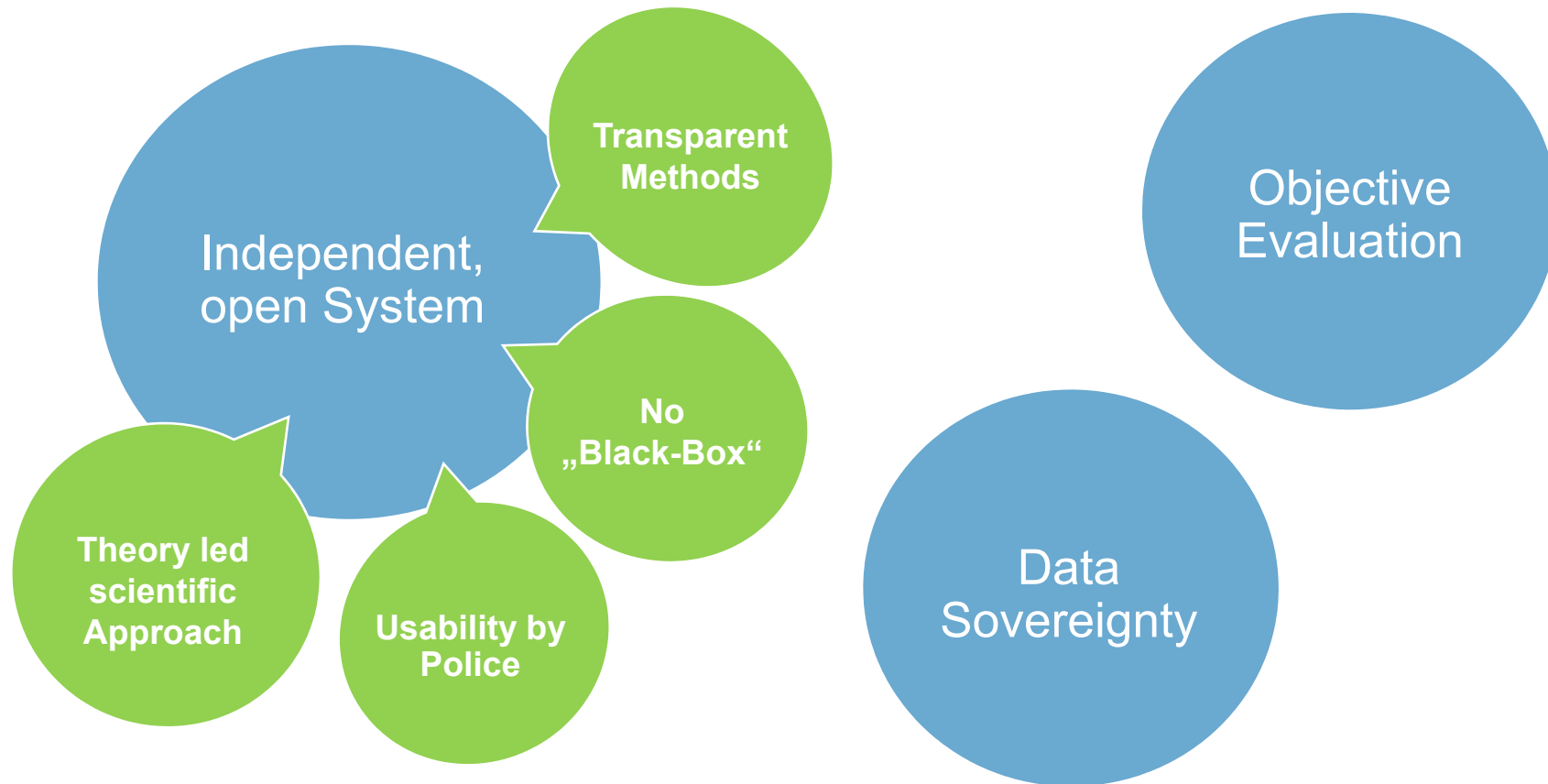
**Predictive Policing in North Rhine-Westfalia**

## SKALA – Project Aim

The aim of the project is to examine the possibilities and limitations of the prediction of crime and to survey the efficiency and effectiveness of the corresponding police interventions.



## SKALA – Claims and Philosophy





## SKALA – Methodology

Theory led scientific approach



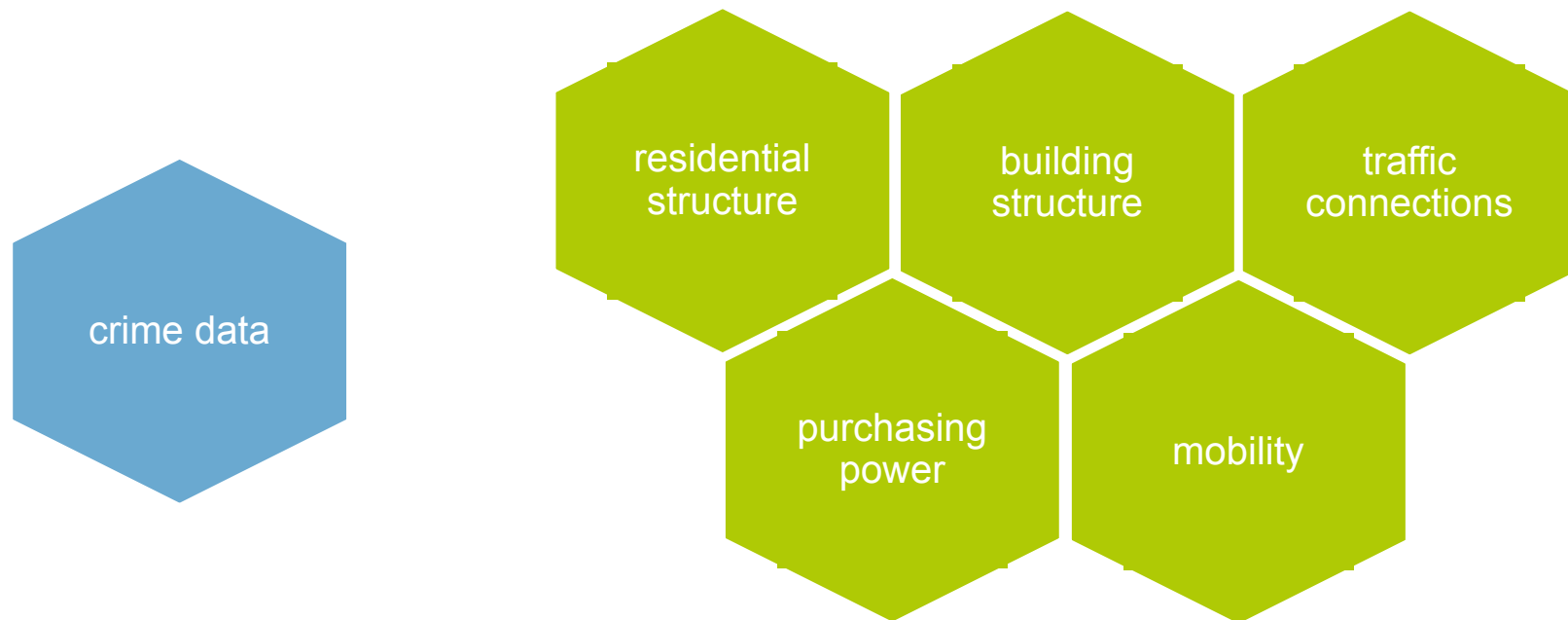
## SKALA – Methodology

Theory led scientific approach – example:

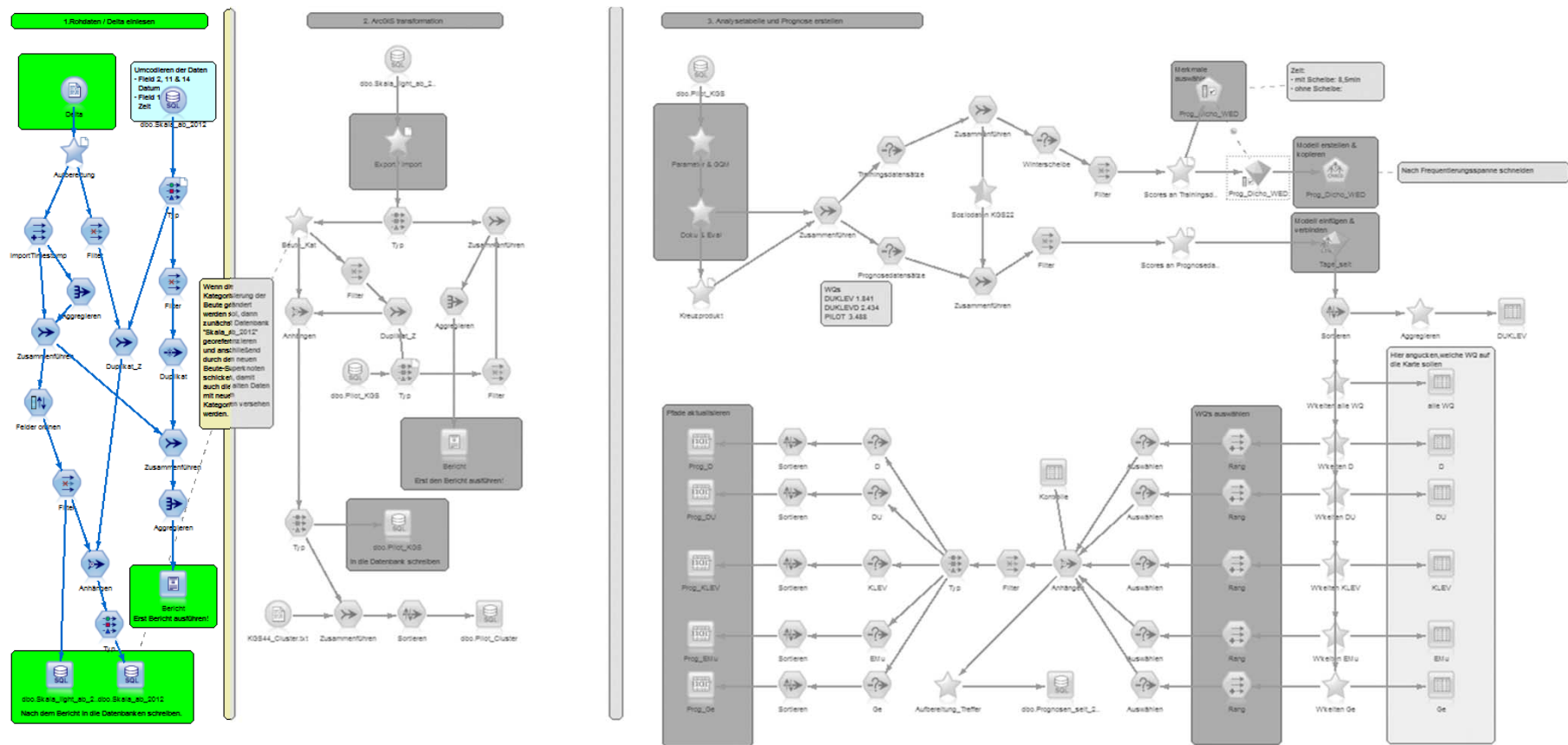
Rational-choice theories are based on the assumption that a perpetrator carries out a cost-benefit assessment before committing a burglary, for example.

- **Hypothesis:** The higher the value of the expected goods in an object, the higher the probability of a burglary.
- **Indicators for measurement:** purchasing power, rent index, exclusiveness of the house, ...

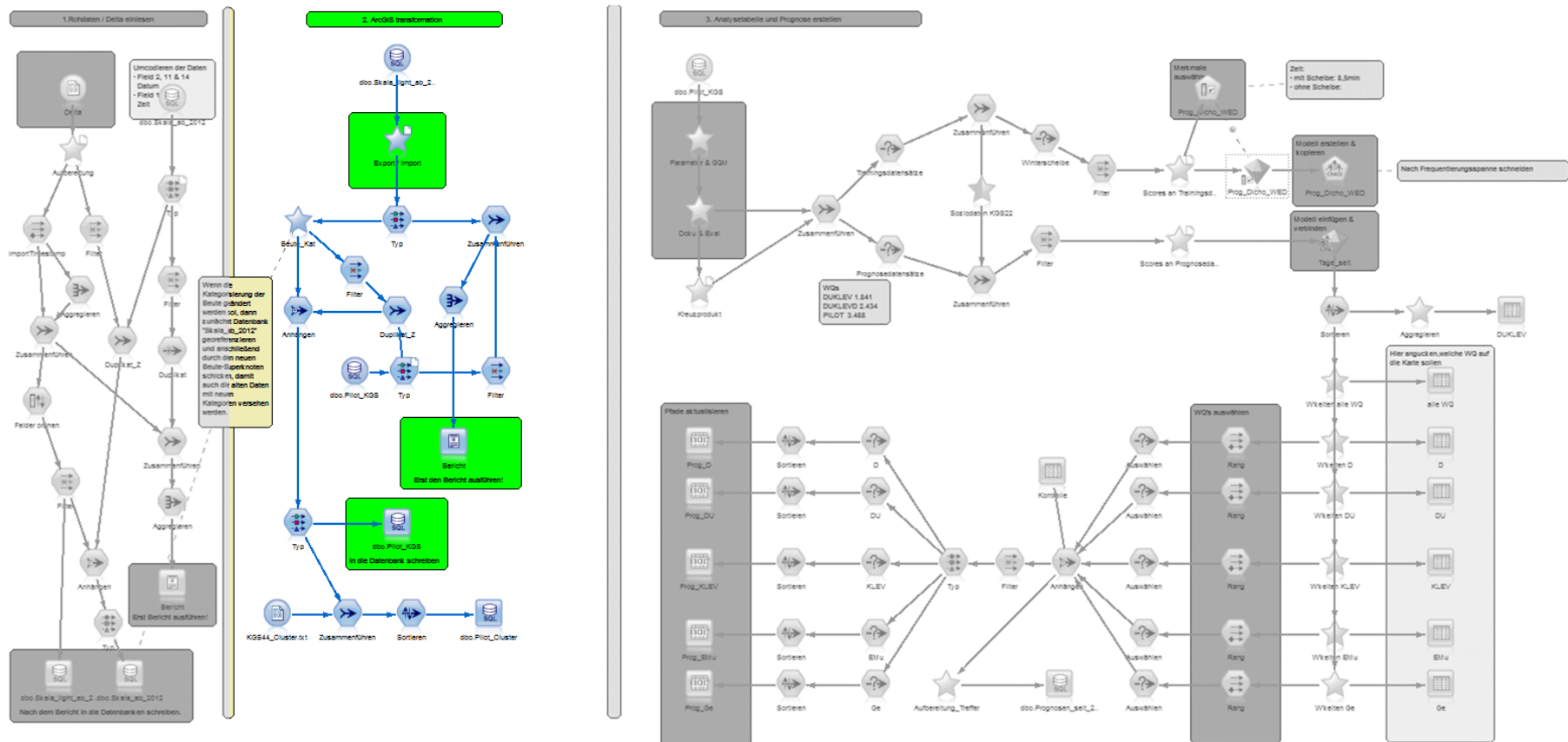
## SKALA – Data



# SKALA – Data-Mining-Model: input

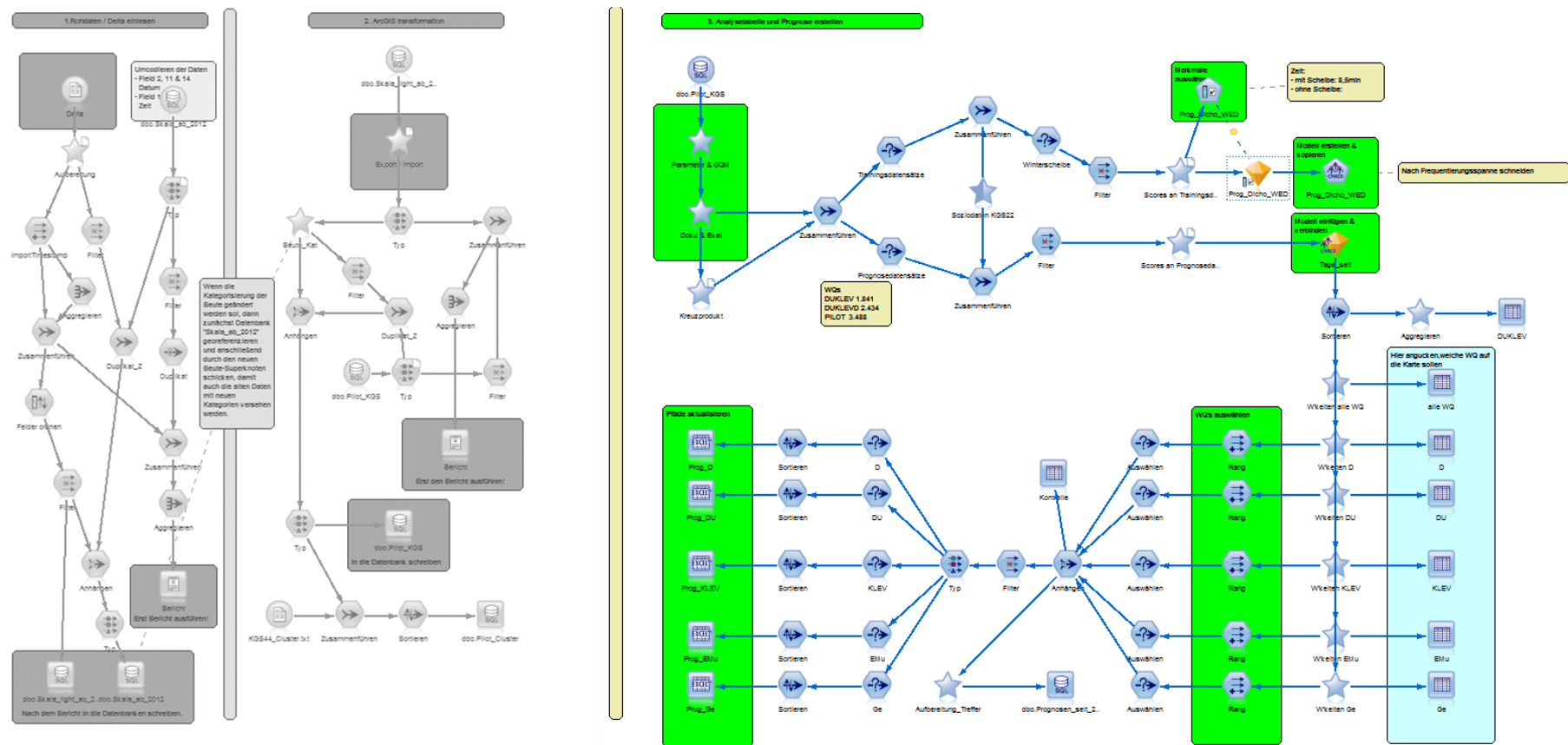


## SKALA – Data-Mining-Model: geo-processing





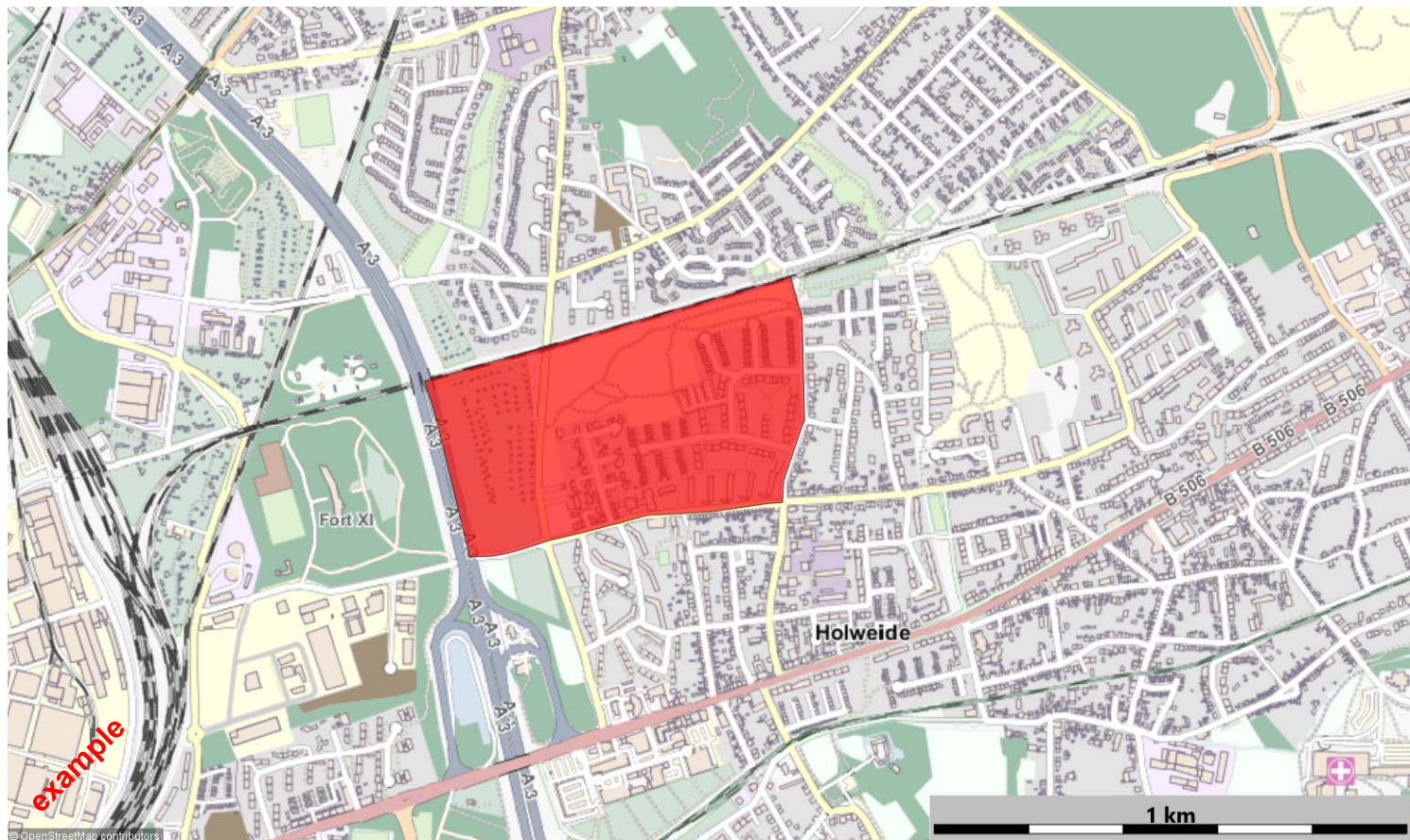
# SKALA – Data-Mining-Model: prediction



## SKALA – Practical Implementation

- Weekly predictions using complex statistical methods
- Prediction of domestic burglary, commercial burglary and car theft
- Pilot authorities (cities) are Bonn, Cologne, Duesseldorf, Duisburg, Essen and Gelsenkirchen
- Adaption to local conditions (police experience remains central)

## SKALA – Visualization of prediction areas



## SKALA – Visualization of prediction areas with heatmaps



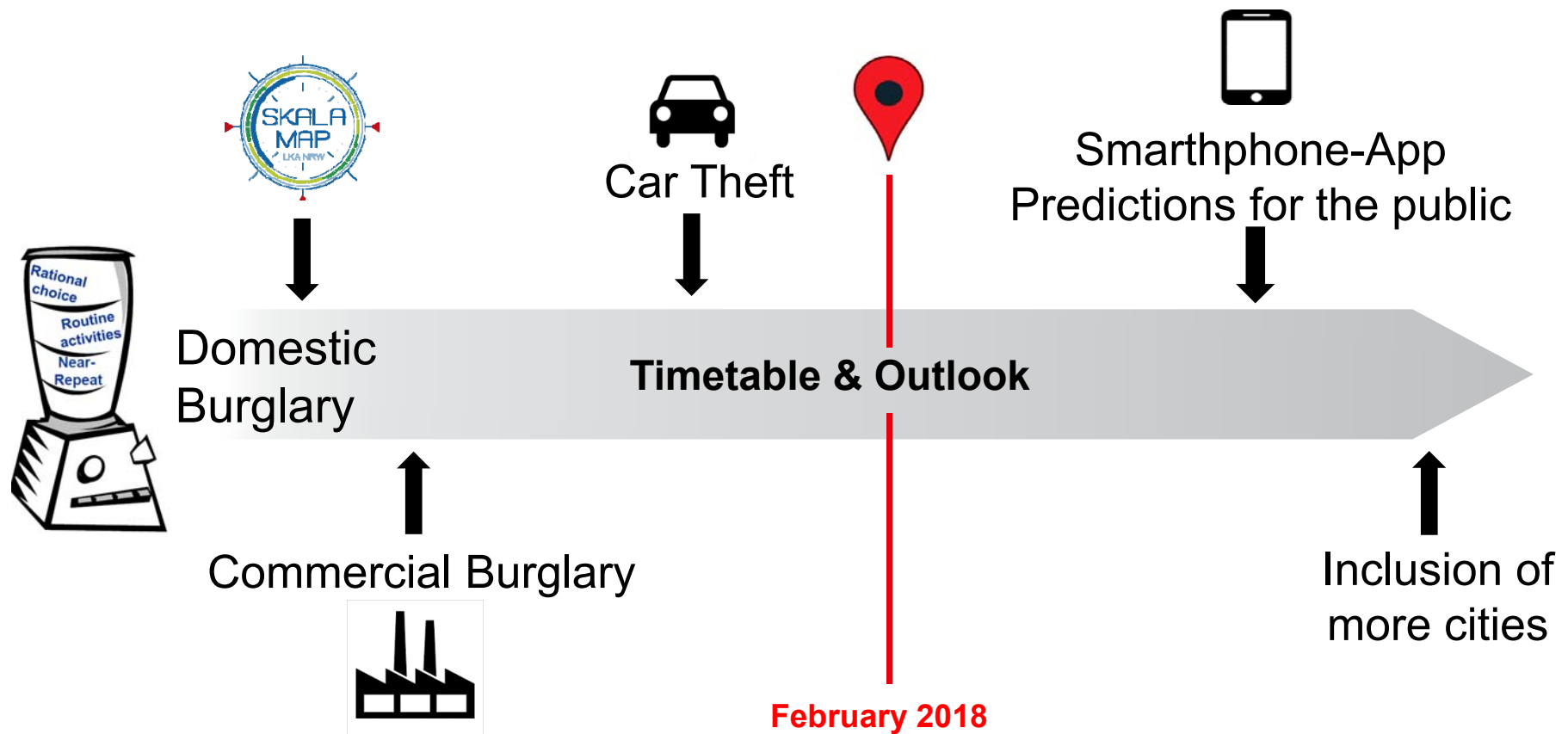
## SKALA – Limitations

- Poor predictions and good police actions achieve the same result ("no crime/no burglary")
- Evaluation is difficult, because it's hard to measure something that police tries to prevent

## SKALA – Possibilities

- Predictive Policing is possible
- Burglary probabilities used to be up to four times higher in predicted specific residential quarters
- The prediction accuracy is linked with data quality and temporal availability
- SKALA supports local operation planning

## SKALA – Timetable & Outlook



Thank you for your attention.

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