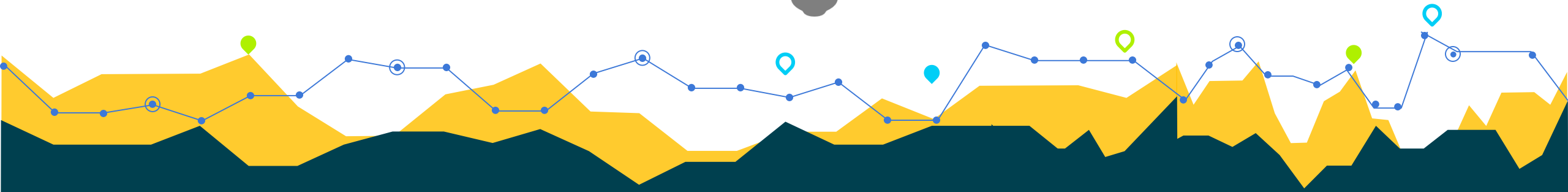


Dopravní modelování v prostředí webového prohlížeče

představení technologie Spark Traffic Modeler

Karel Jedlička (Plan4all)

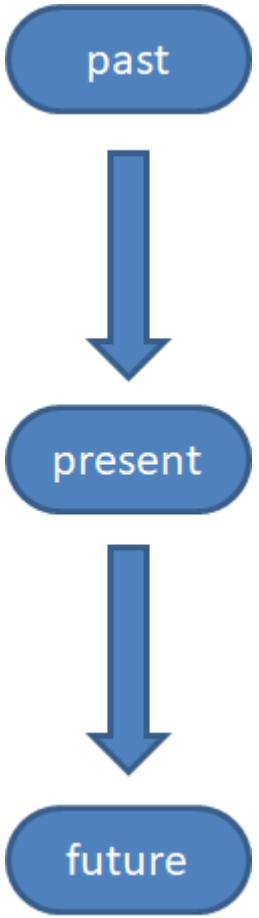
O projektu

- www.polivisu.eu

STM: Traffic management

Tool for effective traffic management being able to:

- Explore and analyse the *past traffic*
- Get real-time information about the *current traffic*
- Be able to model *"what-if" analysis* of city traffic
  - *tactical level* ~ planned cultural or sport events
  - *strategic level* ~ planned roadworks



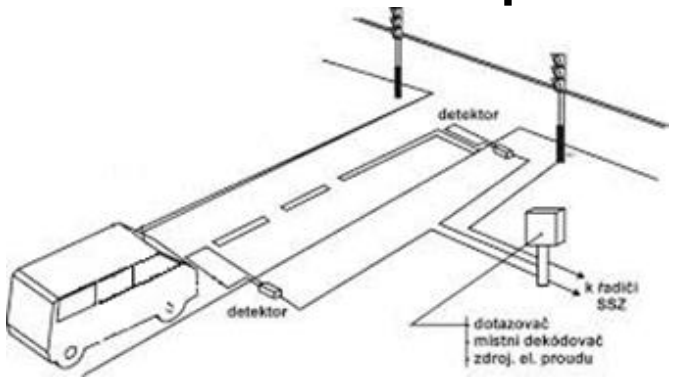
STM: Traffic management

PoliVisu

Explore and analyse the past traffic

past

- Traffic loops sensors -> Traffic profiles dataset

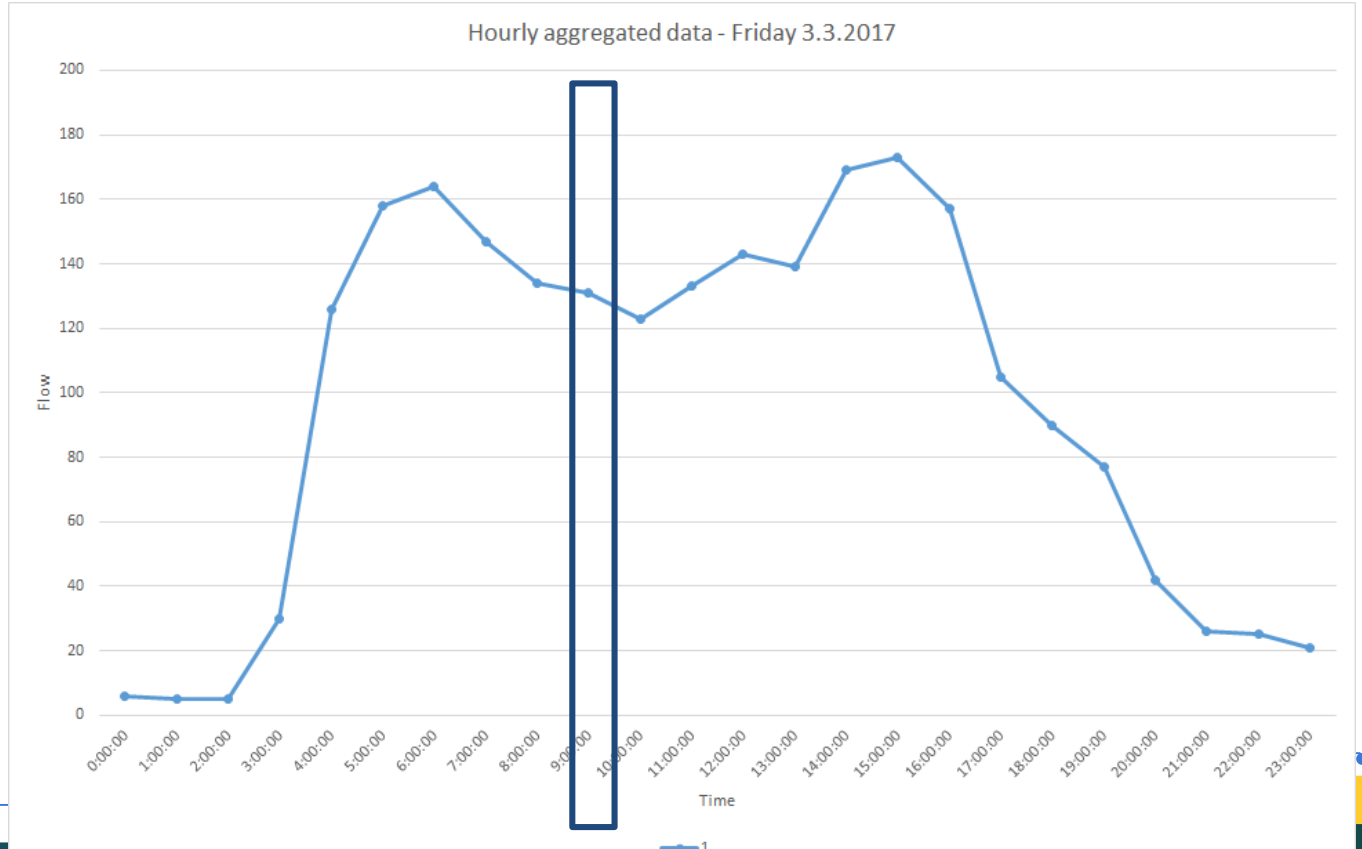


STM: Traffic management

Traffic profiles dataset

past

- Initial data
  - Time range: 2017/03/01 - 2018/02/28
  - 627 sensors in 307 profiles
  - Frequency: 90 seconds
  - Observations: 220 millions
- Data processing
  - Filtering of non-valid values
  - Interpolation of missing data
  - Aggregation by hour (2,7 millions of processed records.)

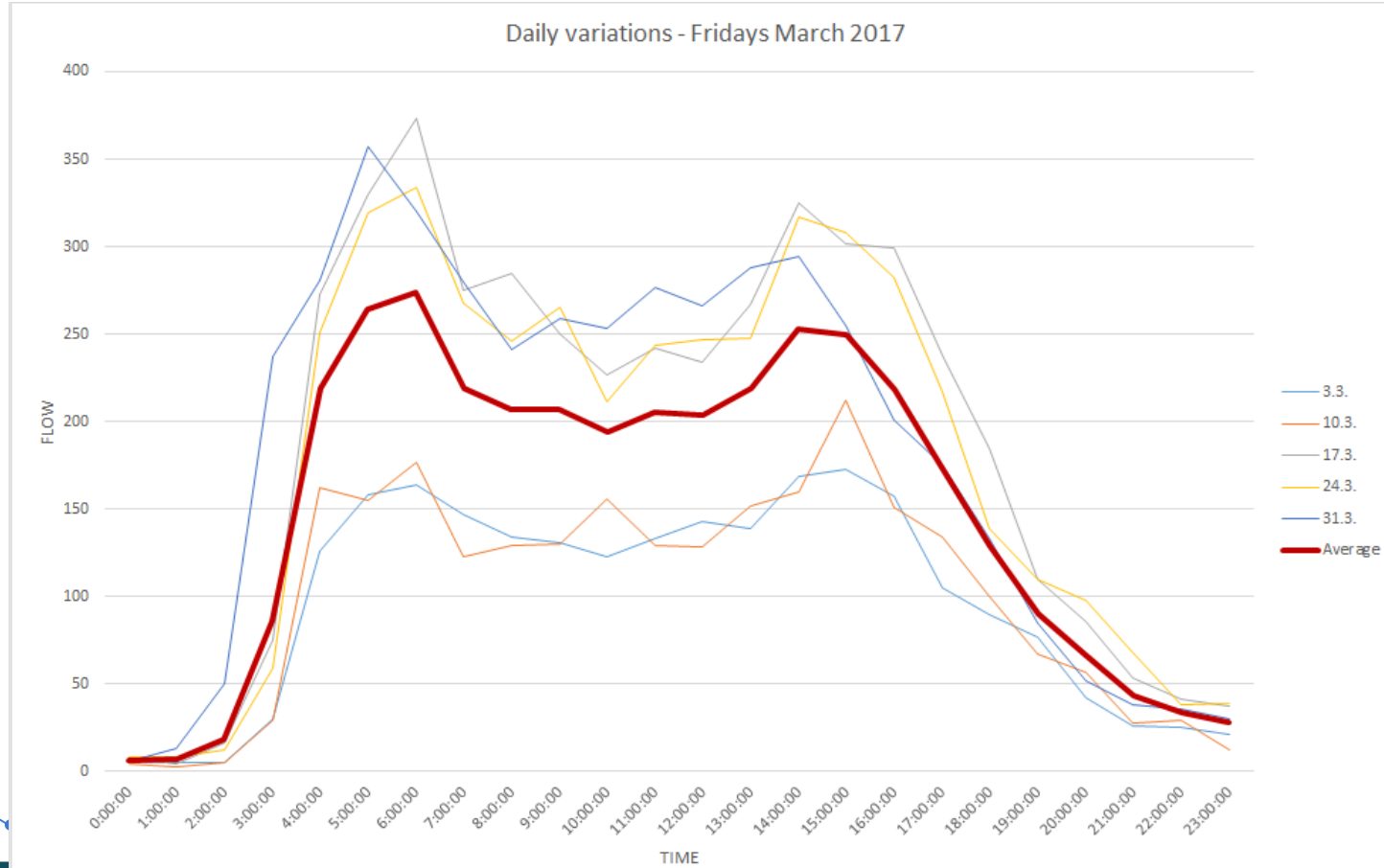


STM: Traffic management

Traffic profiles dataset

past

- Curves for different days of the week (Monday - Friday, weekend)
  - Can be averaged for
    - each month of a year
    - spring, summer, fall, winter
  - Can be created for different segment types (tangential, radial, radial, ...)



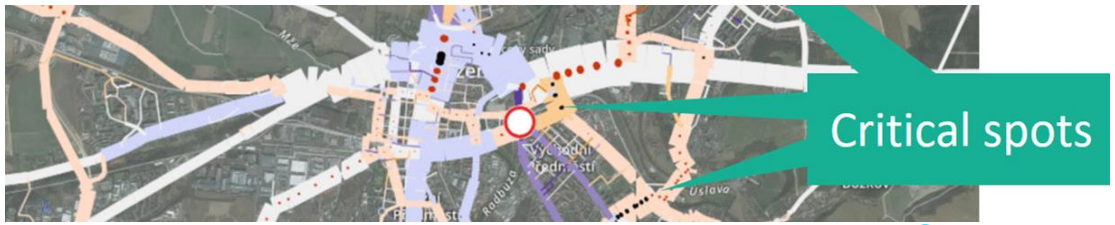
STM: Traffic management

PoliVisu

Explore and analyse the past traffic

past

- Usage of the traffic profiles dataset:
  - Basic traffic model calibration
  - Exploratory analysis in WebGlayer
  - Visualisation of past traffic & comparison of traffic at different days

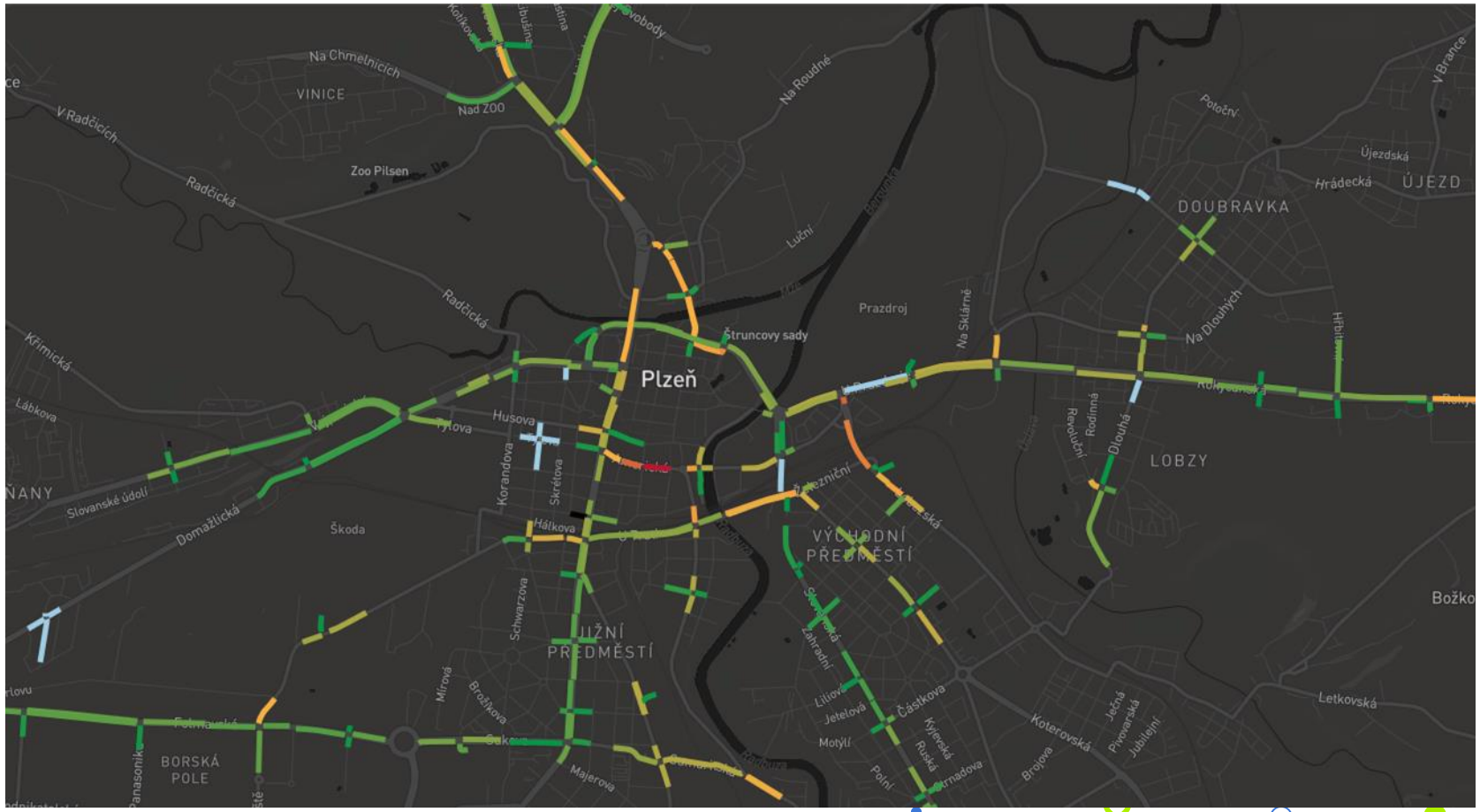


STM: Traffic management

Get real-time information about the current traffic

present

- + 90s

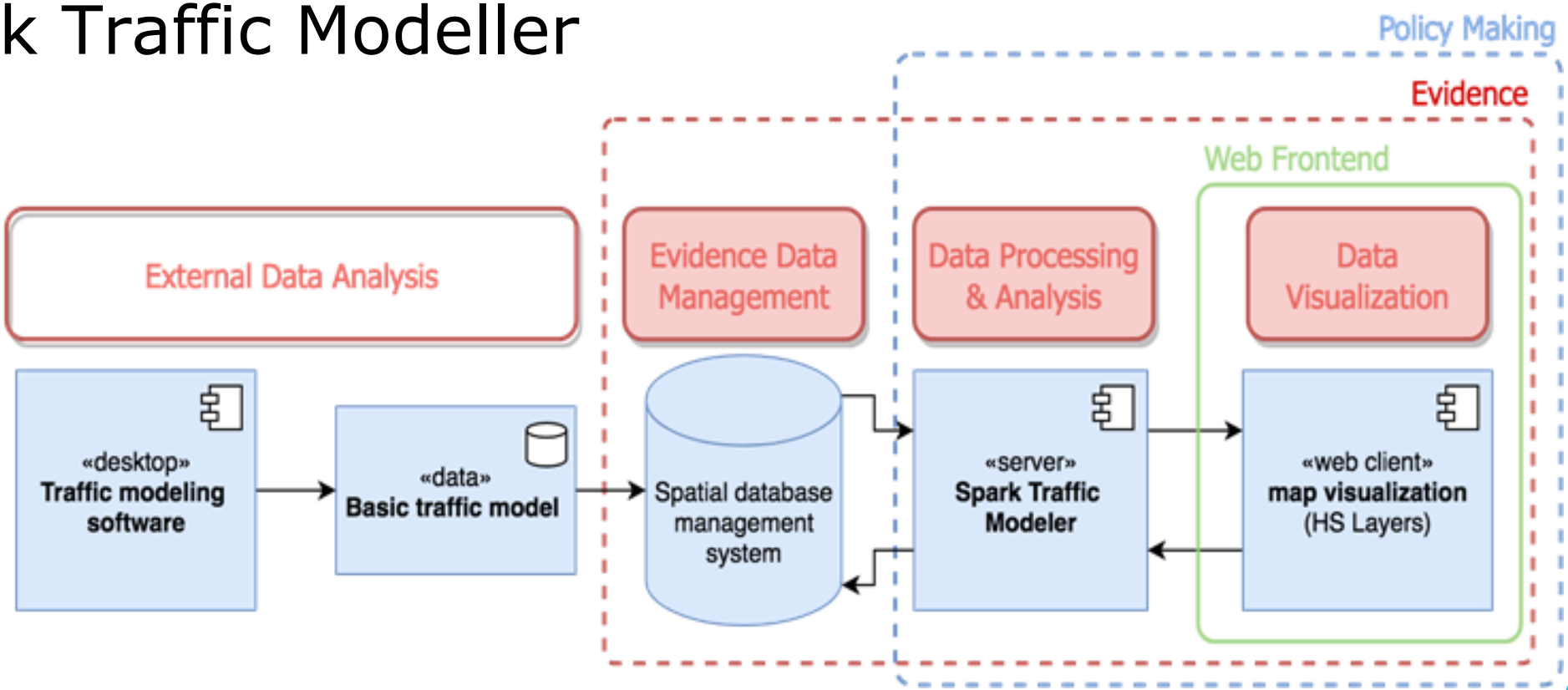


STM: Traffic management

Be able to model “what-if” analysis of city traffic

future

- Spark Traffic Modeller

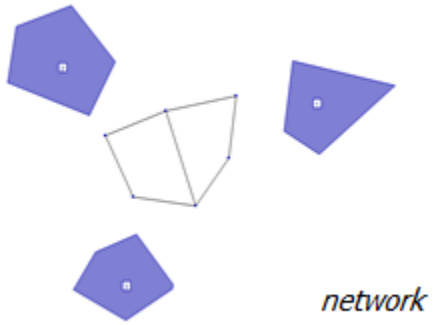


STM: Traffic modelling

Steps of traffic modelling

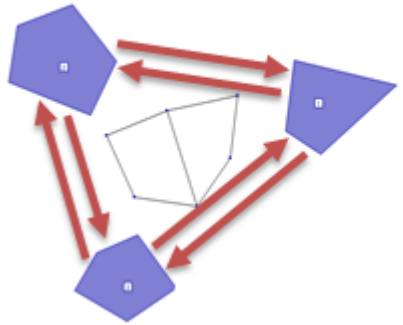
future

1. Traffic Source / Target



network zones

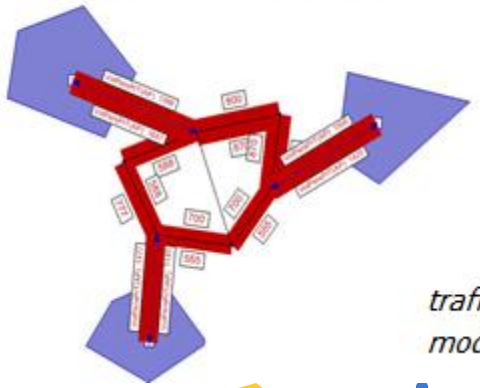
2. OD matrix



3. Modal split

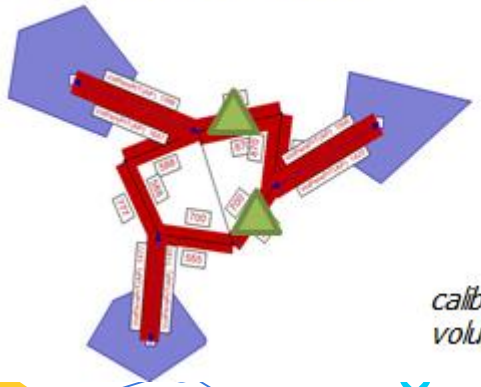
- **Individual:**
  - car
  - cyclist
  - pedestrian
- **Public:**
  - bus
  - train
  - city public ...

4. OD Matrix to network



traffic volume model

5. Network calibration



calibrated traffic volume model

STM: Traffic modelling

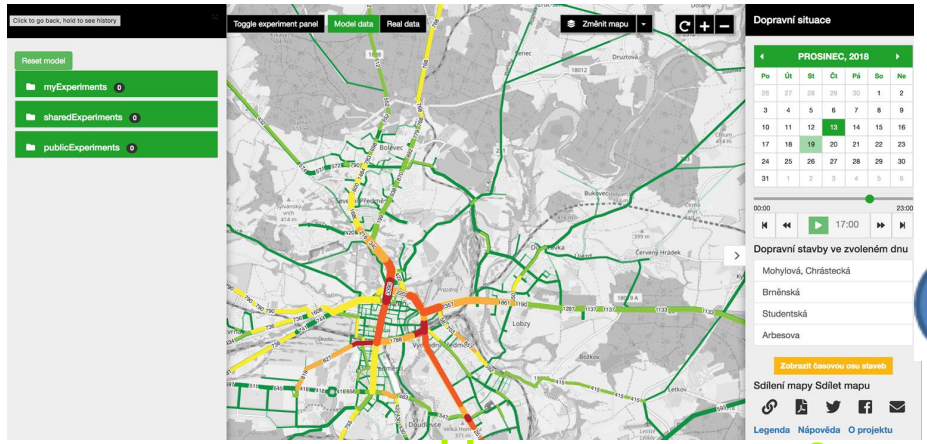
Integrated application able to

- explore and analyse the past traffic
- get information about the current traffic
- be able to model "what-if" analysis of city traffic
  - Editing attributes of existing road network
  - Adding new road segments
  - Changing attributes of traffic generators

past

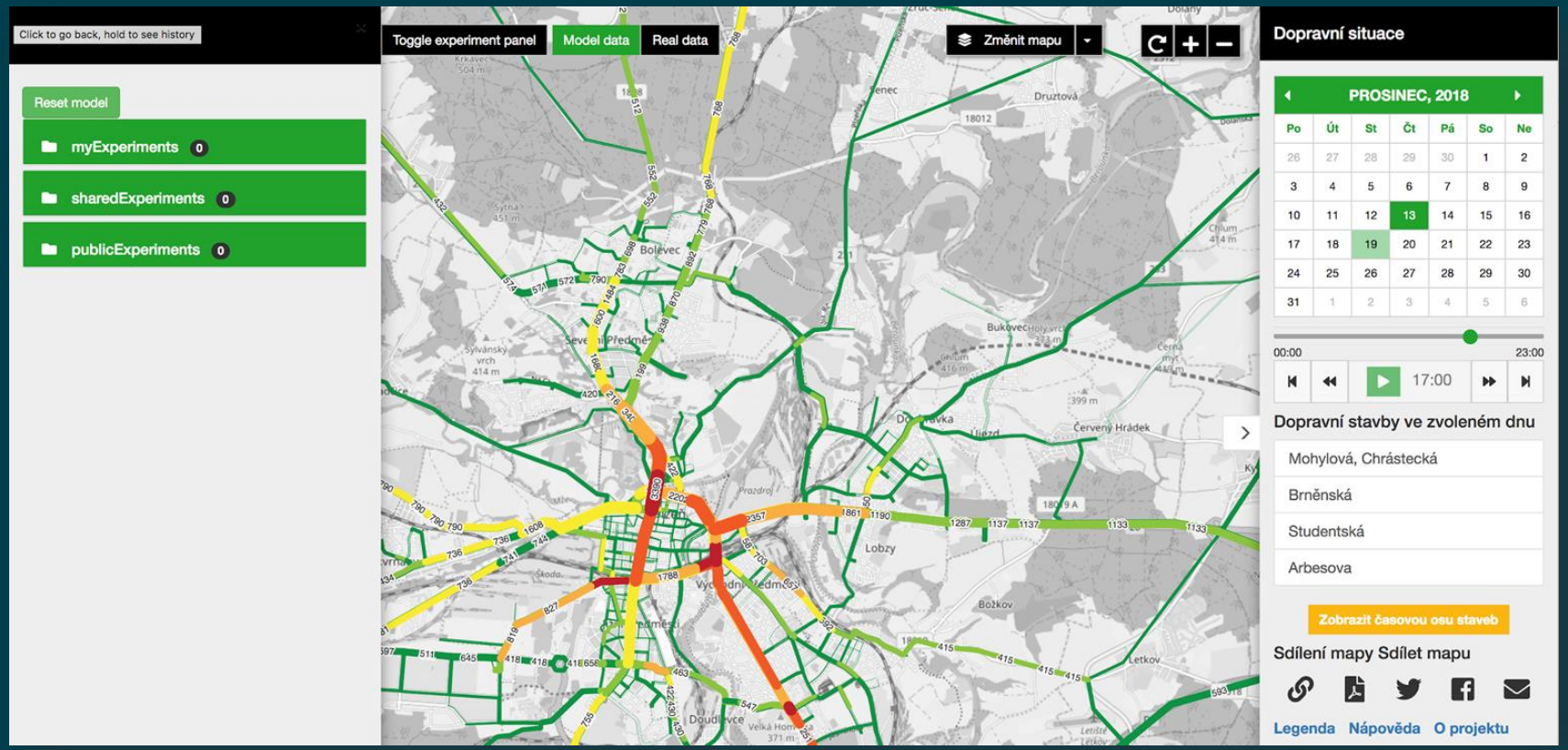
present

future



- Deployed in Pilsen, Mechelen, …

Traffic is dynamic,
your decision making should be too!



Questions?