

**19<sup>th</sup>** EUROPEAN WEEK of  
REGIONS and CITIES

11 - 14 OCT  
2021

*Together for Recovery*

*Stories from the  
ground:  
Experience of Pilsen  
city from the DUET  
project*

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IS-practice, City of Pilsen



**#EURegionsWeek**



# Pilsen Smart City is not only about its digital twin

## Smart City Pilsen

It's where we want to live

[View the Projects](#)

Mobility

Living

Economy

Environment

People

eGovernment



Mobilní aplikace FC Viktoria Plzeň



Karkulka PMDP



SIT Port, the port open to anyone.



Web města Plzně



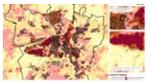
Vybavenost základních škol



Využití dronů pro integrovaný záchranný systém



Eduroam



Plzeň - analýza satelitních snímků



HYDROGEN HORIZON AUTOMOTIVE CHALLENGE - H2AC



Moje PMDP



Stadionová WiFi FC Viktoria Plzeň



Bezpečnost dětí - opatření na ZŠ



TutaPlzeň



Elektronické vyřízení povolení pro předzahradku



Tichá linka



Naše firmy - jak vybrat další školu



Pilsen CUBE II



Dynamický dispečink



Open data



Vizualizace intenzity dopravy



Kamery ve vozzech MHD



Síť internetu věcí



Plzni To



Free WiFi



Bateriové trolejbusy



Centrum Robotiky



Úhrada jízdného bezkontaktní platební kartou



Elektronický Portál Občana EPO



Integrovaná zastávka



Klikací rozpočet města



Aplikace Plzeň - občan



Plzeňská karta



## Pilsen journey towards its digital twin



OpenTransportNet

2014-2017

Traffic Modeller starts



PoliVisu

2017-2020

Traffic analysis and  
simulation for policy making



DUET

2019-2022

Simulations across multiple  
inter-connected domains



S4AllCities

2020-2022

Digital twin and simulations  
for crisis management

# Our strengths since beginning

- Political support
- Smart city as an agenda approved by the City Council
- Technically skilled personnel
- Advanced technical infrastructure managed by the city
- State-of-the art UAVs



# Expectations

- Improving mobility in the city
- Nourishing innovation
- Startups support
- Engaging students and data enthusiasts
- Extending scope of Pilsen Smart City
- Support informed and data-driven policy making





## Challenges

- Few opportunities to join EU projects consortia
- Lack of personnel experience with international innovation projects
- Language barrier
- Administration of EU projects
- Bring different city organisations to work together
- Changing mindsets and work routines of city personnel



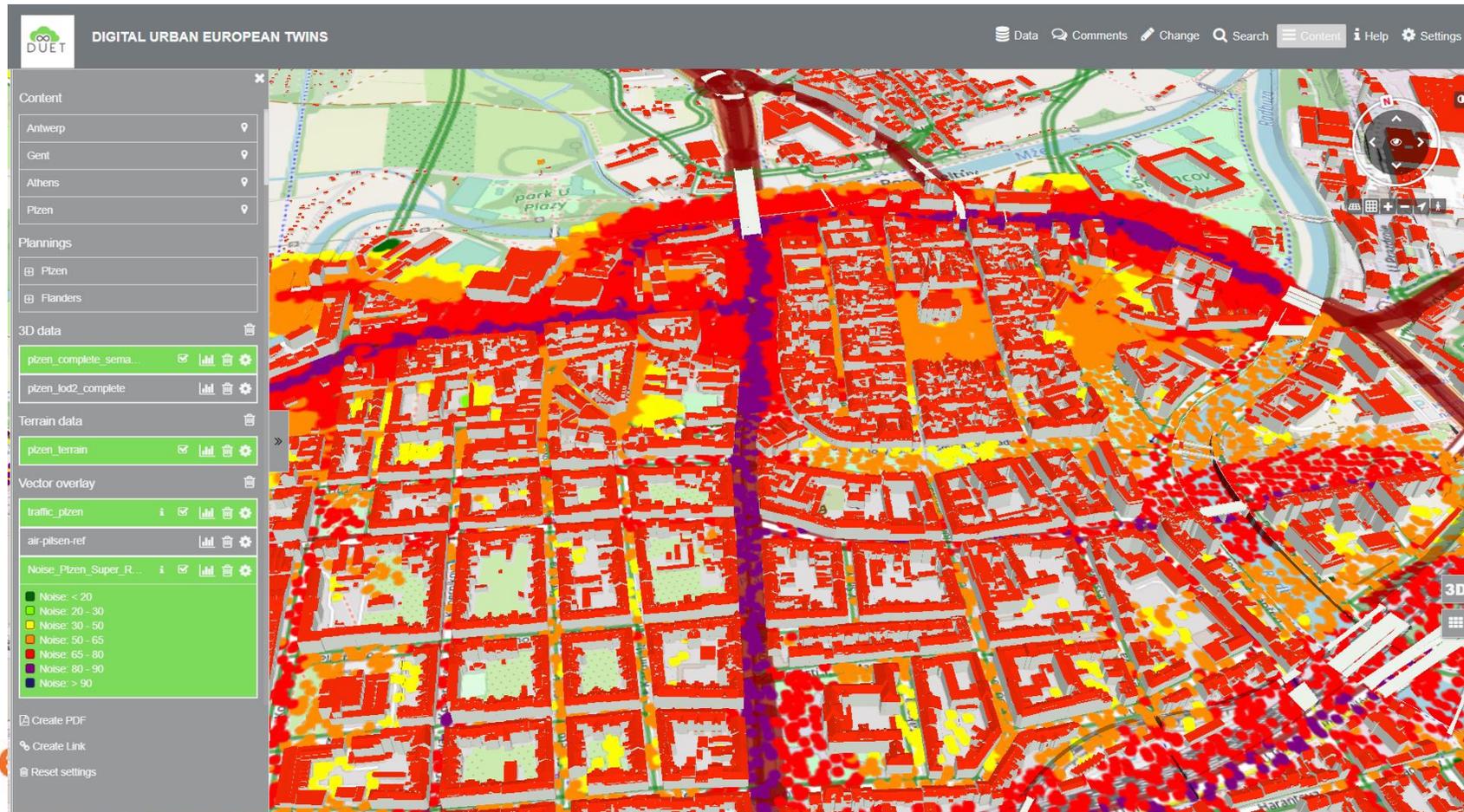
## DUET's main added value for the city

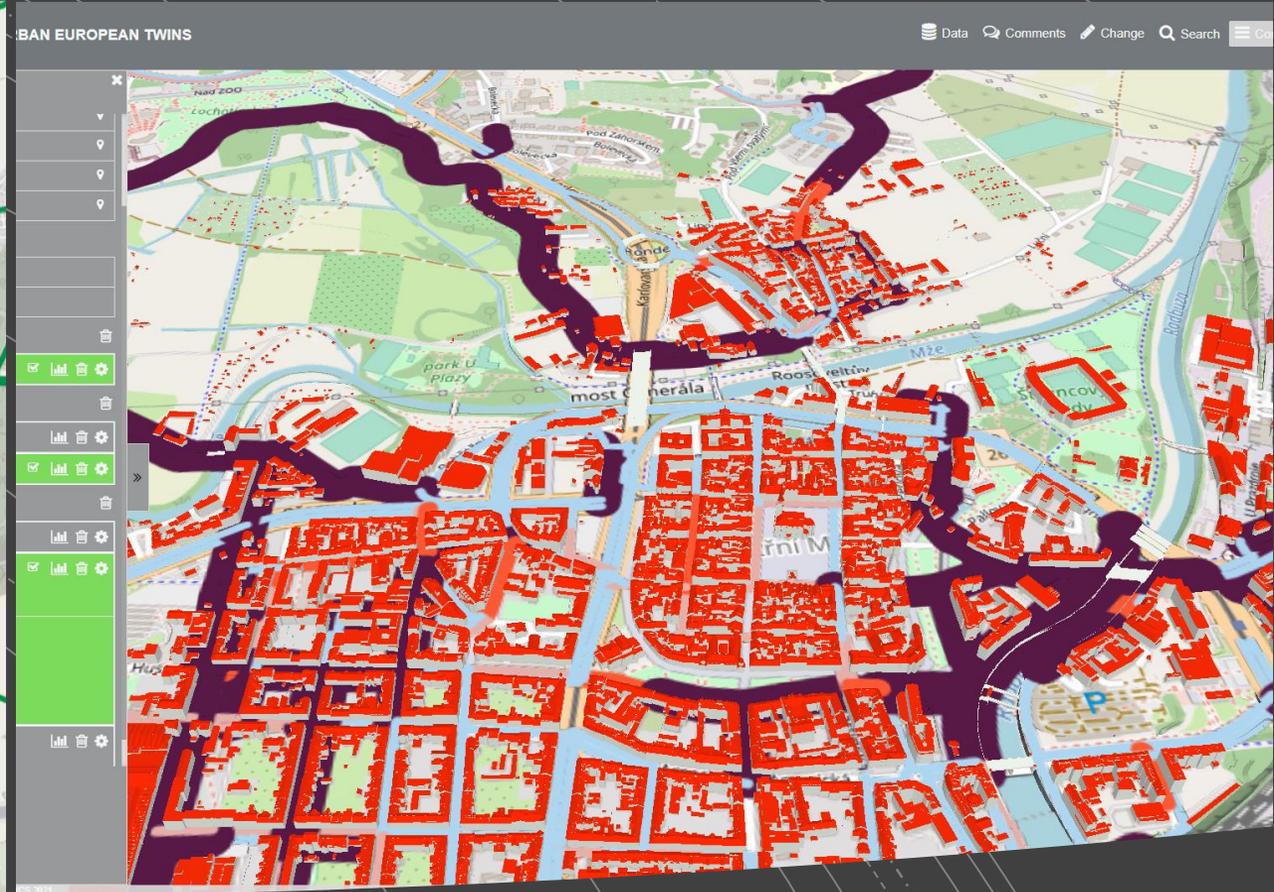
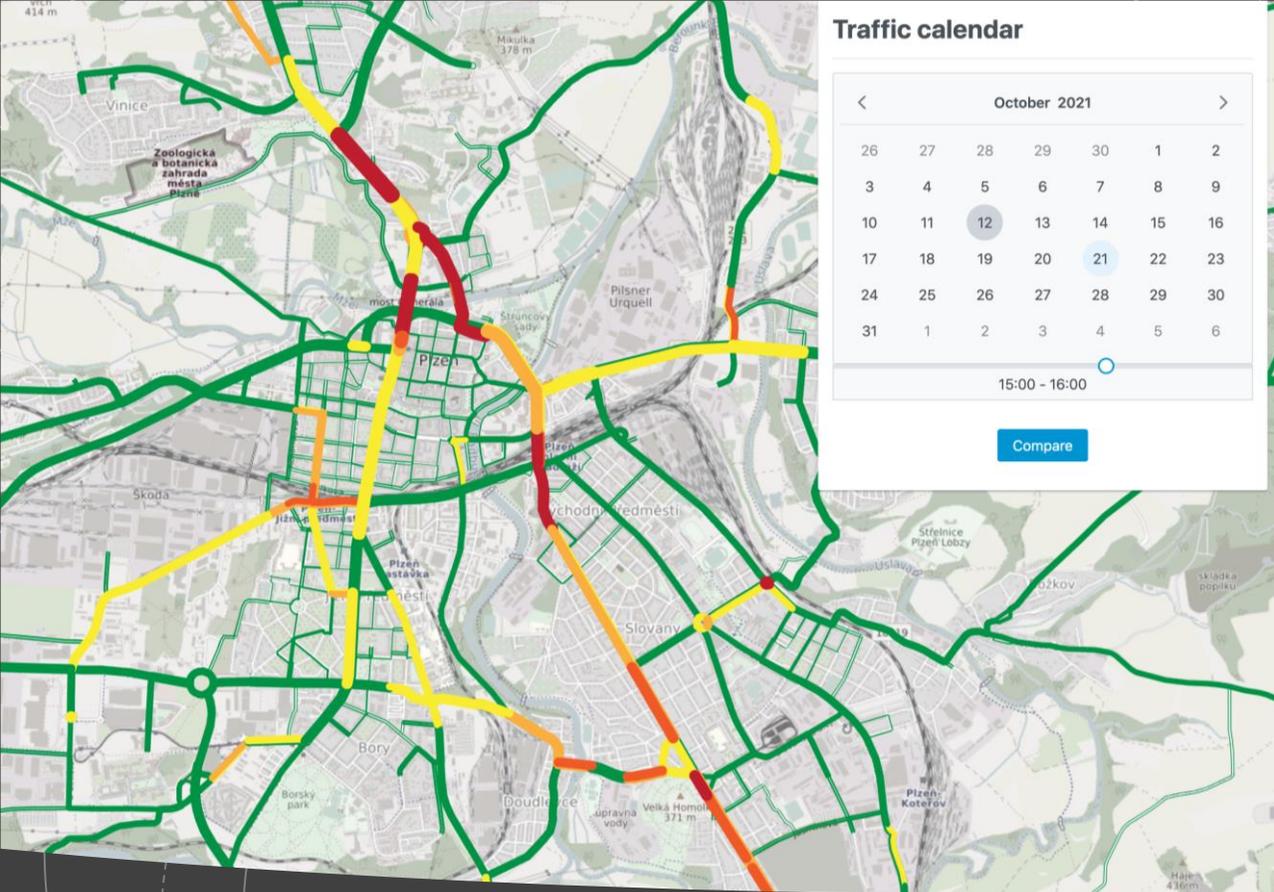
- **interaction of simulation models** in different domains

Traffic

Air quality

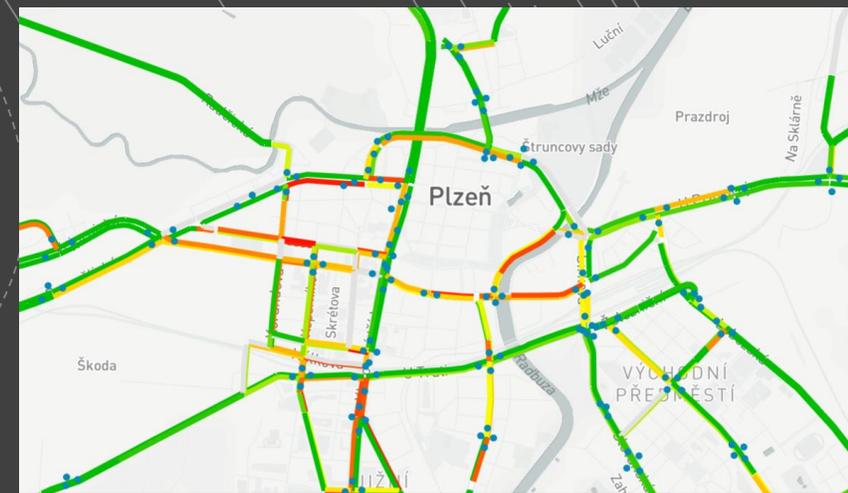
Noise

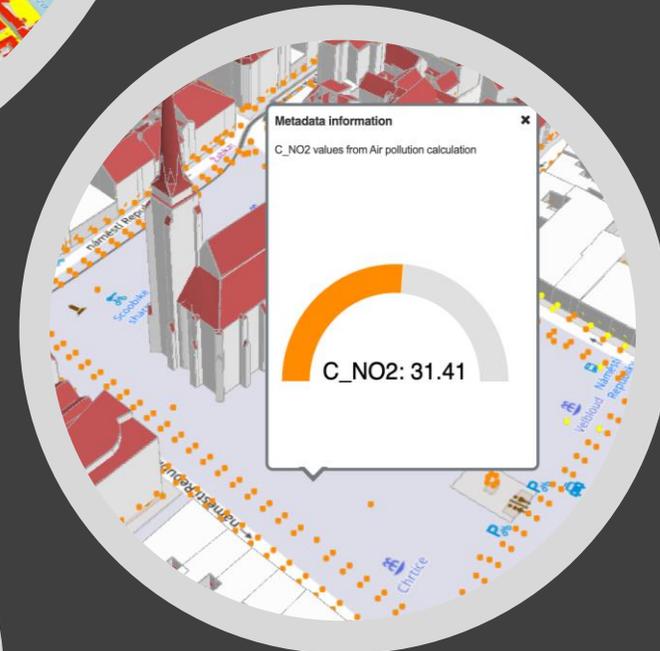




# Traffic Visualisations

- 2D view & 3D view, delta visualization in the DT
- Sensor data, floating car data (historical and real-time) with GLayer
- Future traffic simulation with Traffic Modeller





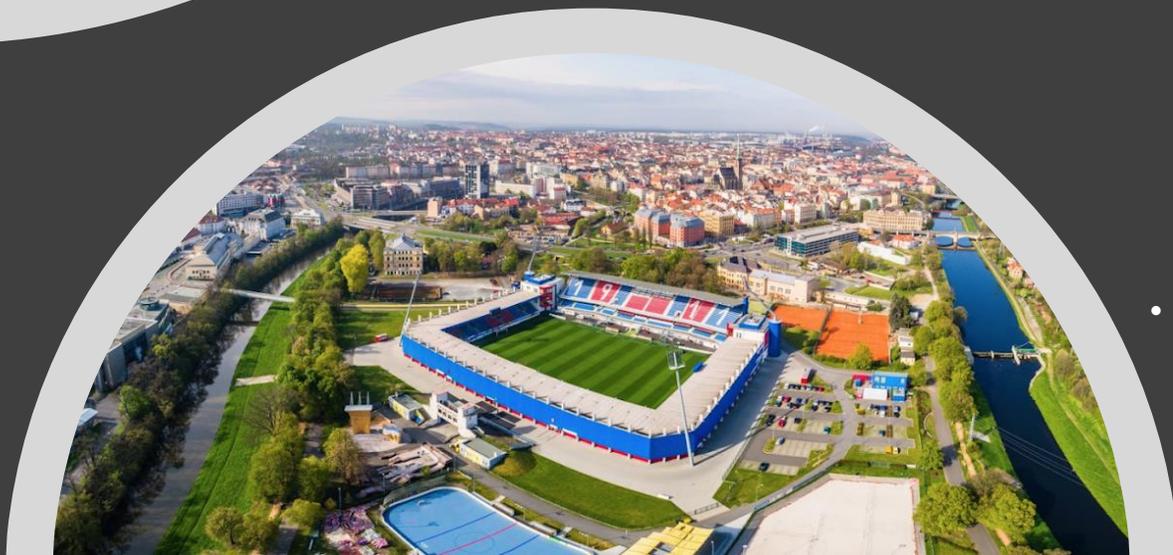
# Air pollution map

- Computed in real-time based on data from the Traffic model
- Concentrations calculated for 500.000 points across the city



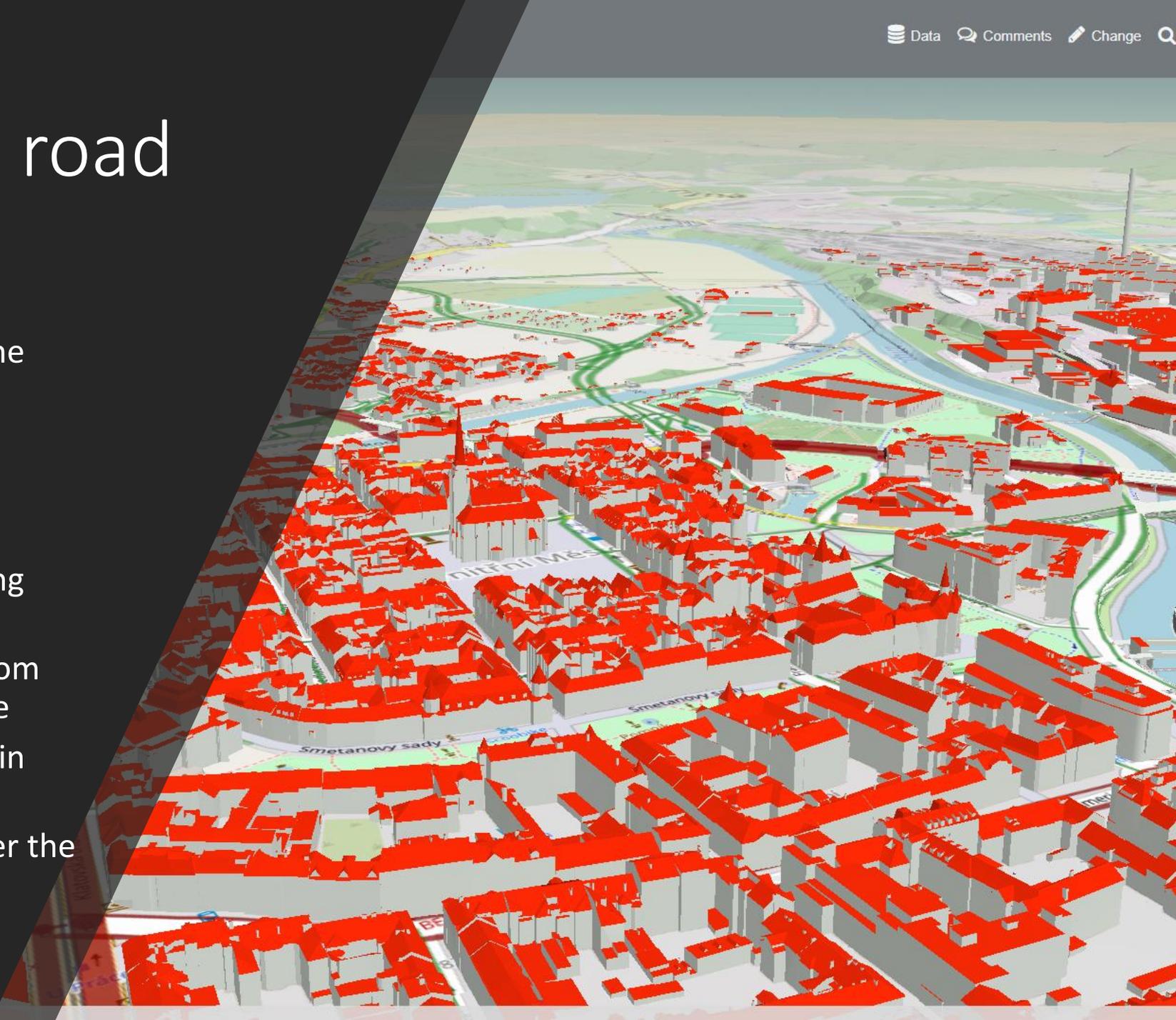
# S4AllCities Pilsen pilot

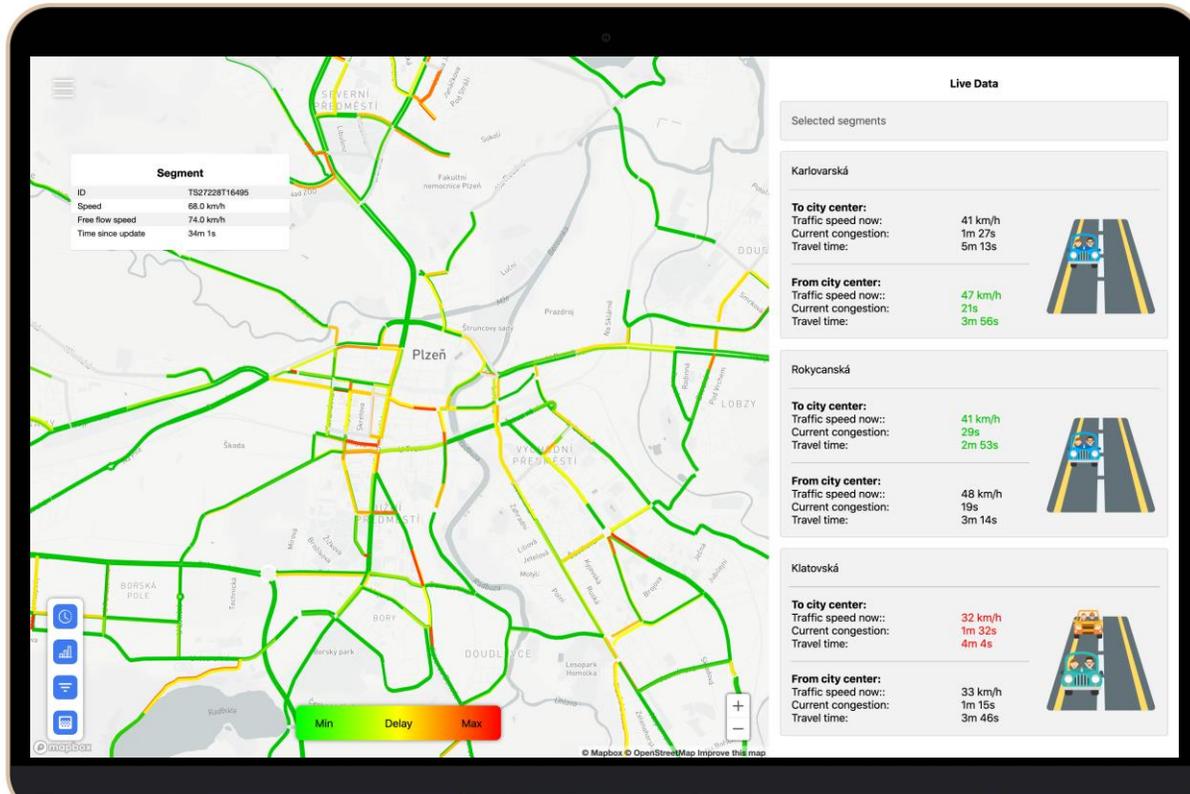
- Digital twin for crisis management
- Technologies and simulation tools to prevent terrorist attacks, cyber attacks and other threats
  - 3D model
  - UAVs
  - Sensors
  - Crowd behaviour, traffic, fire & smoke modelling
  - Video analytics
    - Weapons detection
    - Suspicious behavior detection
    - Abandoned luggage detection
- participation of the Integrated Rescue System



# Bumps along the road

- Engagement and commitment of stakeholders
- Adoption of new technologies in the daily work of city administration
- Compatibility with existing tools
  - e.g with ESRI ArcGIS
- Additional investments needed to adopt new technologies both during and after innovation projects
  - e.g. module to publish data from the traffic management centre
  - Procuring 3D data of the city (in LOD2.3)
  - Maintenance and support after the project funding





## Benefits

- New tools to support policy making
- Research and innovation
- New technologies
- New experience
- International contacts
- Reputation of the city
- EU funding

# Lessons learned

- Building expertise and personnel skills is a long run
- Additional investments in technology necessary
- Focus on achievable results that are realistic to be adopted and financed in the long term
- Next research project opportunities will come

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*Together for Recovery*

Thank You.

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@DuetH2020

