

# Floreon<sup>+</sup>: Integration of different thematic areas

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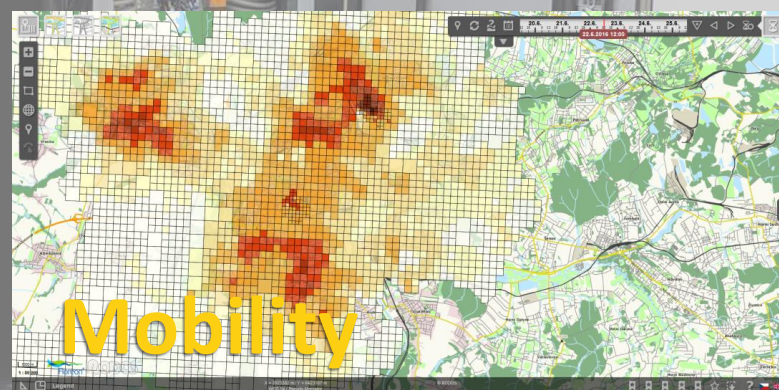
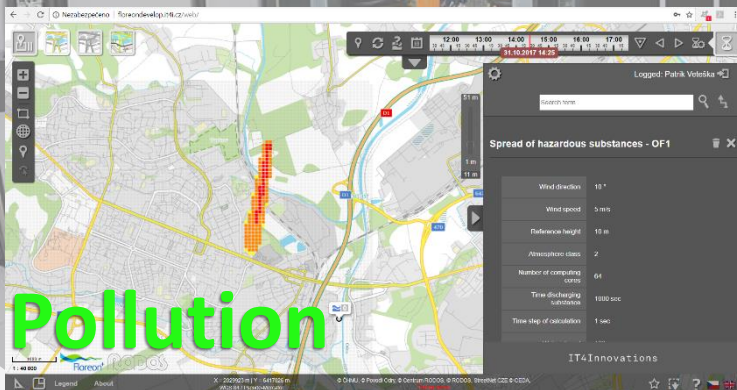
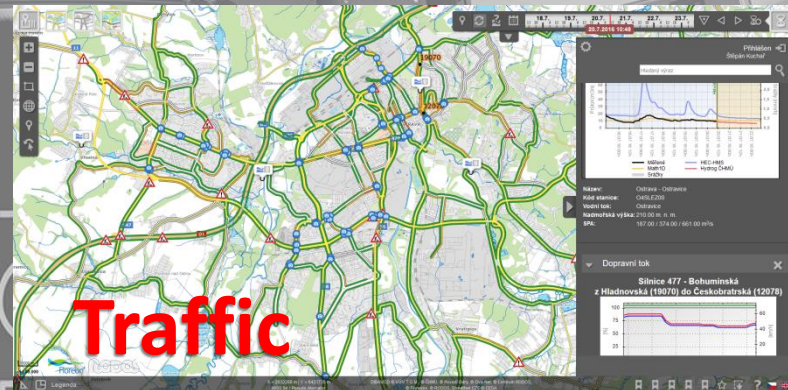
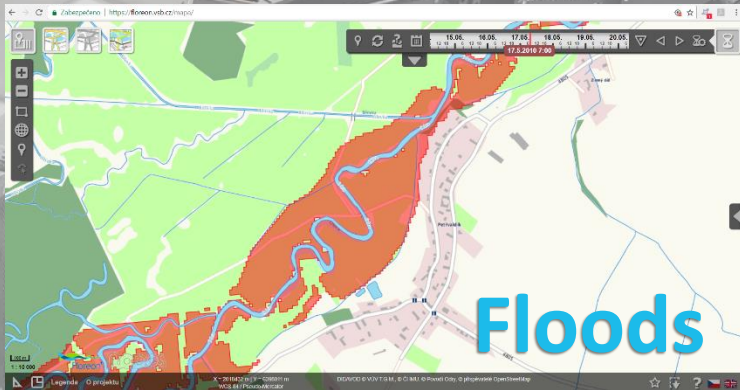
The background of the slide is a photograph of a server room. Several server racks are visible, with their doors open, revealing internal components and bundles of orange and blue network cables. The room has a clean, industrial appearance with recessed ceiling lights.

# FLOREON+

**FLO**ods **RE**cognition **on** the **Net**

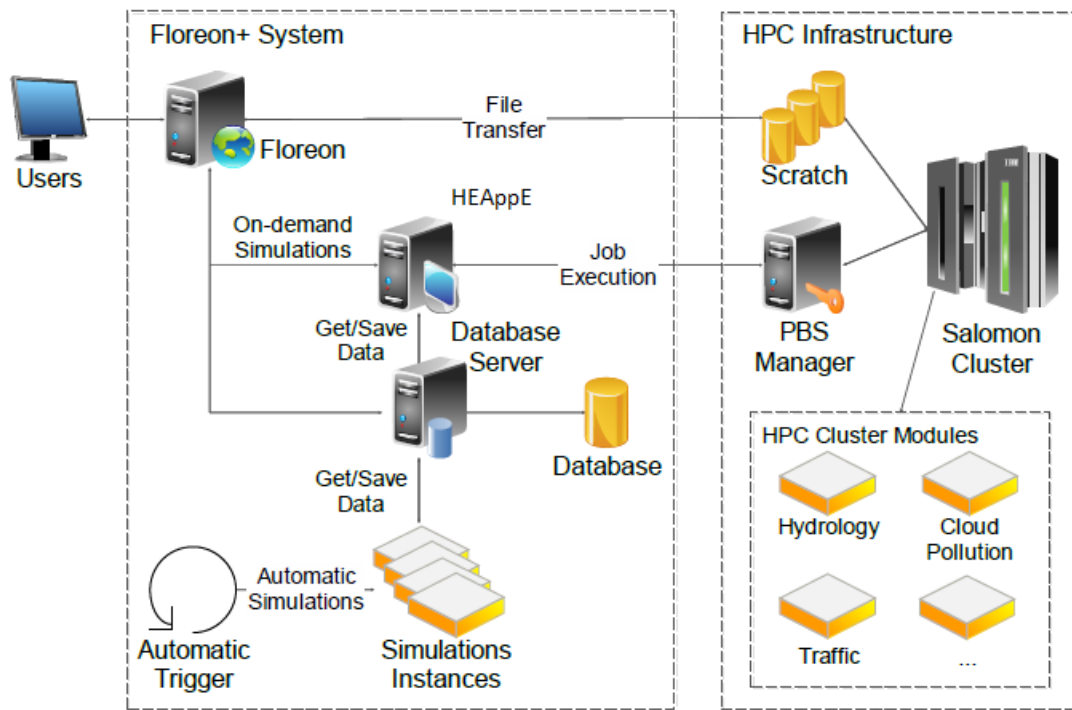
Under development since 2006

# Floreon+ Web-based User Interface



# System Architecture

- Consist of interconnected parts and modules
- uses HPC infrastructure
- user execute simulation via web GUI



Floreon+ system architecture overview

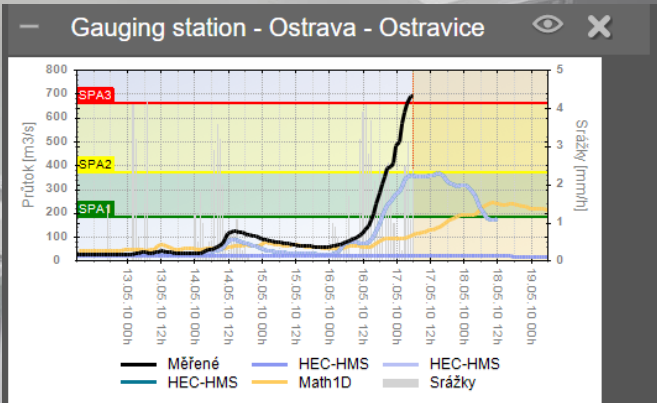
## Automatic Simulations

- Executed automatically in predefined time interval
- Visualized directly to GUI
- Mainly for Hydrologic modeling and traffic monitoring

## On-demand Simulations

- User can execute simulation with specified parameters
- Implemented as HPC modules

# Stored Events



**Name:** Ostrava - Ostravice  
**Station code:** O4SLEZ00  
**Watercourse:** Ostravice  
**Altitude:** 210.00 m a.s.l.  
**FAD:** 187.00 / 374.00 / 661.00 m<sup>3</sup>/s



AutomaticEvent #197	20.09.2017 14:00:00	27.09.2017 14:00:00	2
AutomaticEvent #187	18.09.2017 02:26:00	18.09.2017 04:03:00	1
Povodňe 2010	15.05.2010 02:00:00	19.05.2010 23:00:00	3

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# Hydrologic Modelling

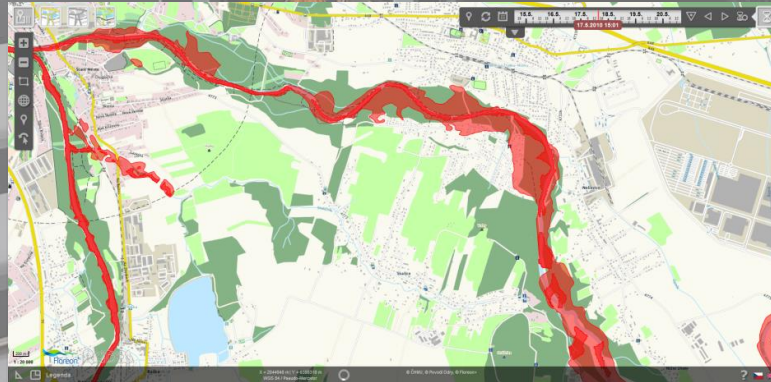
Rainfall-runoff modelling and hydrodynamic modelling for the 4 main catchments in Moravian Silesian region: Opava, Odra, Olše and Ostravice

- monitoring and prediction of river flow and floods
- data gathered from the network of measuring stations
- precipitation forecast from Medard model

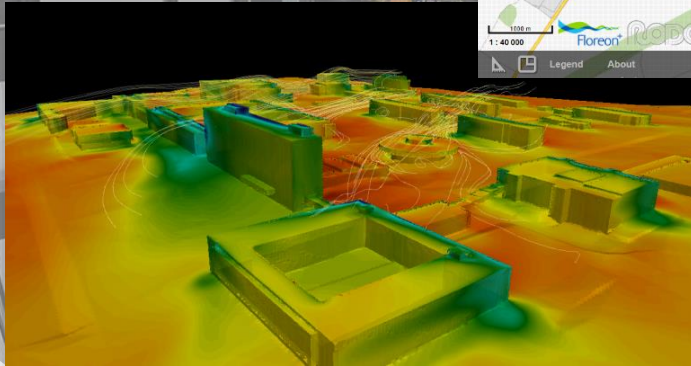
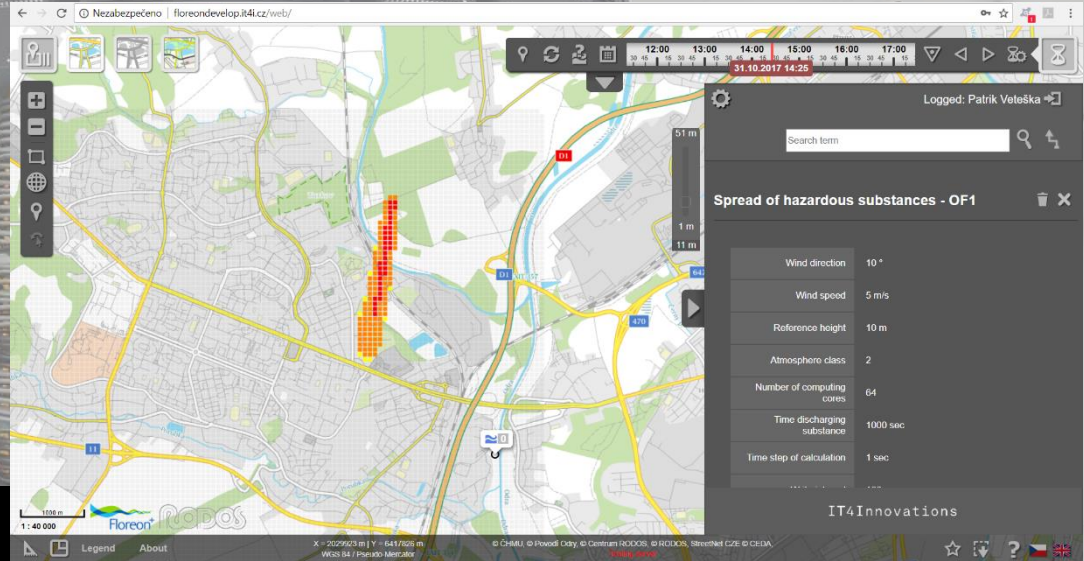
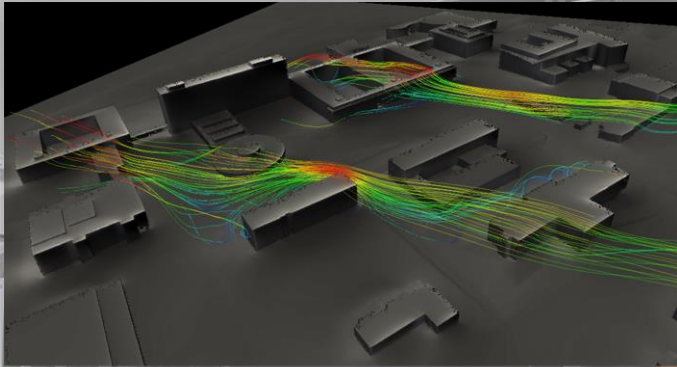
Used models

- 2 semi-distributed rainfall-runoff models Math1D a HEC-HMS
- 1 hydrodynamic model HEC-RAS

Simulations run automatically every hour with predictions for 2 days

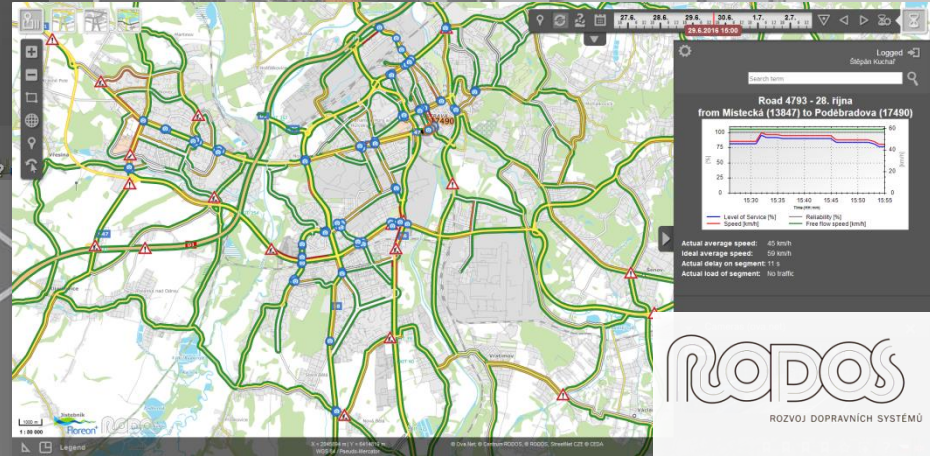
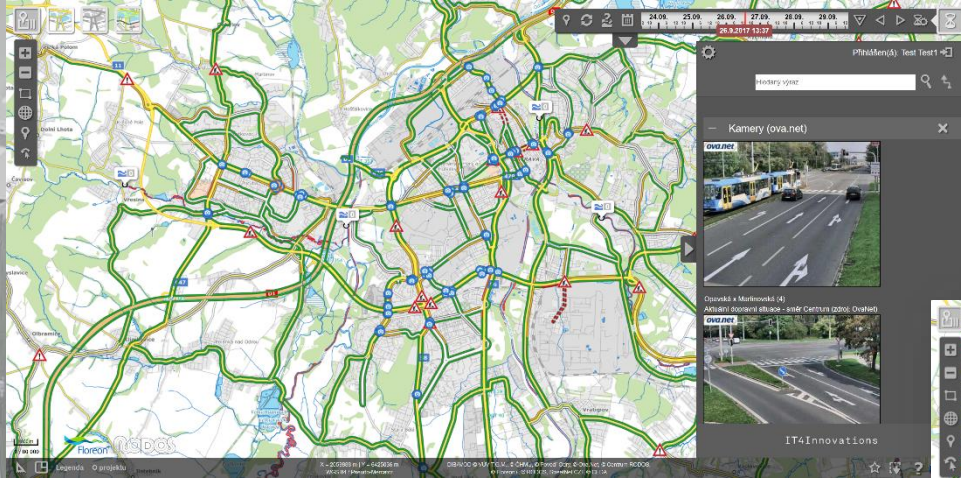


# Cloud Pollution Modelling

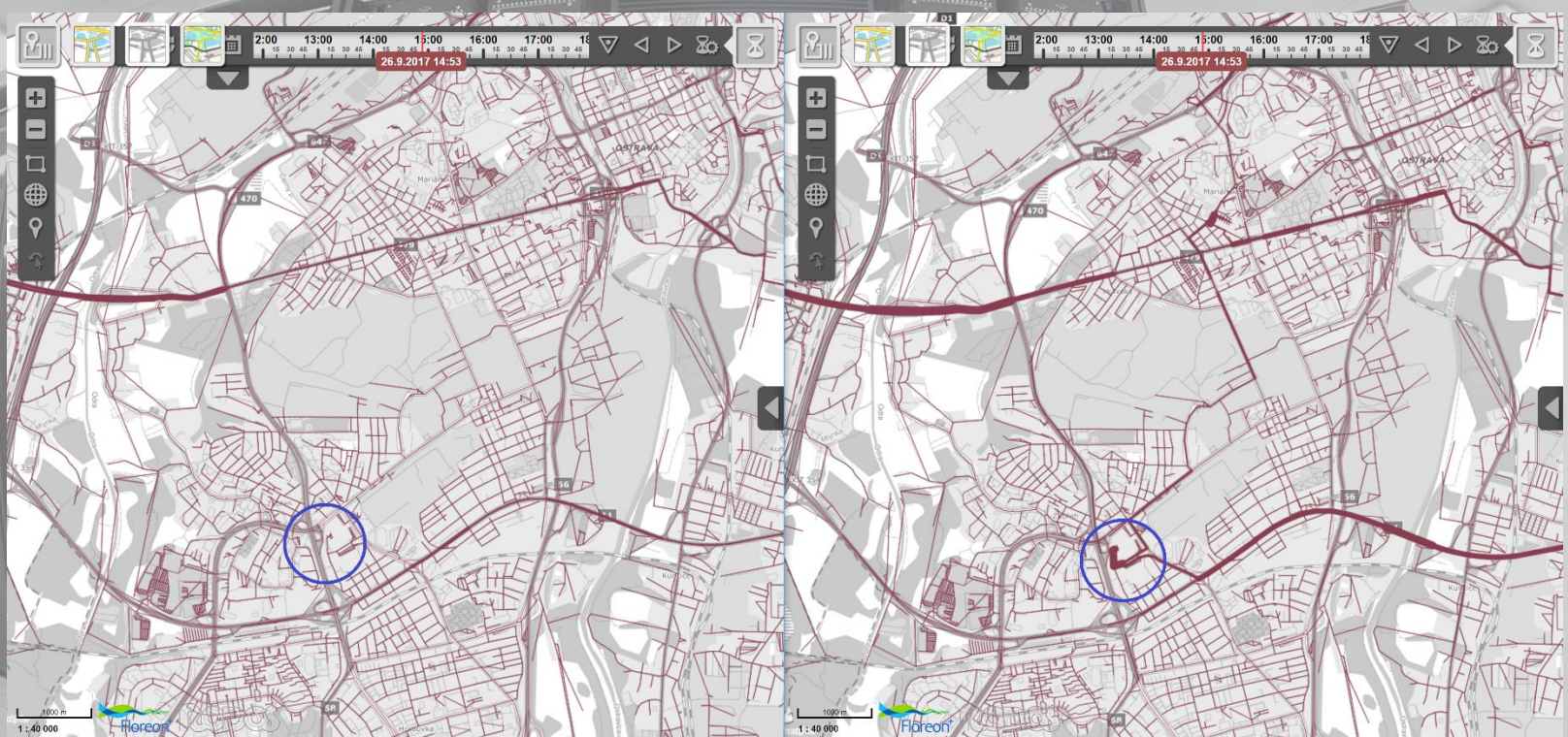




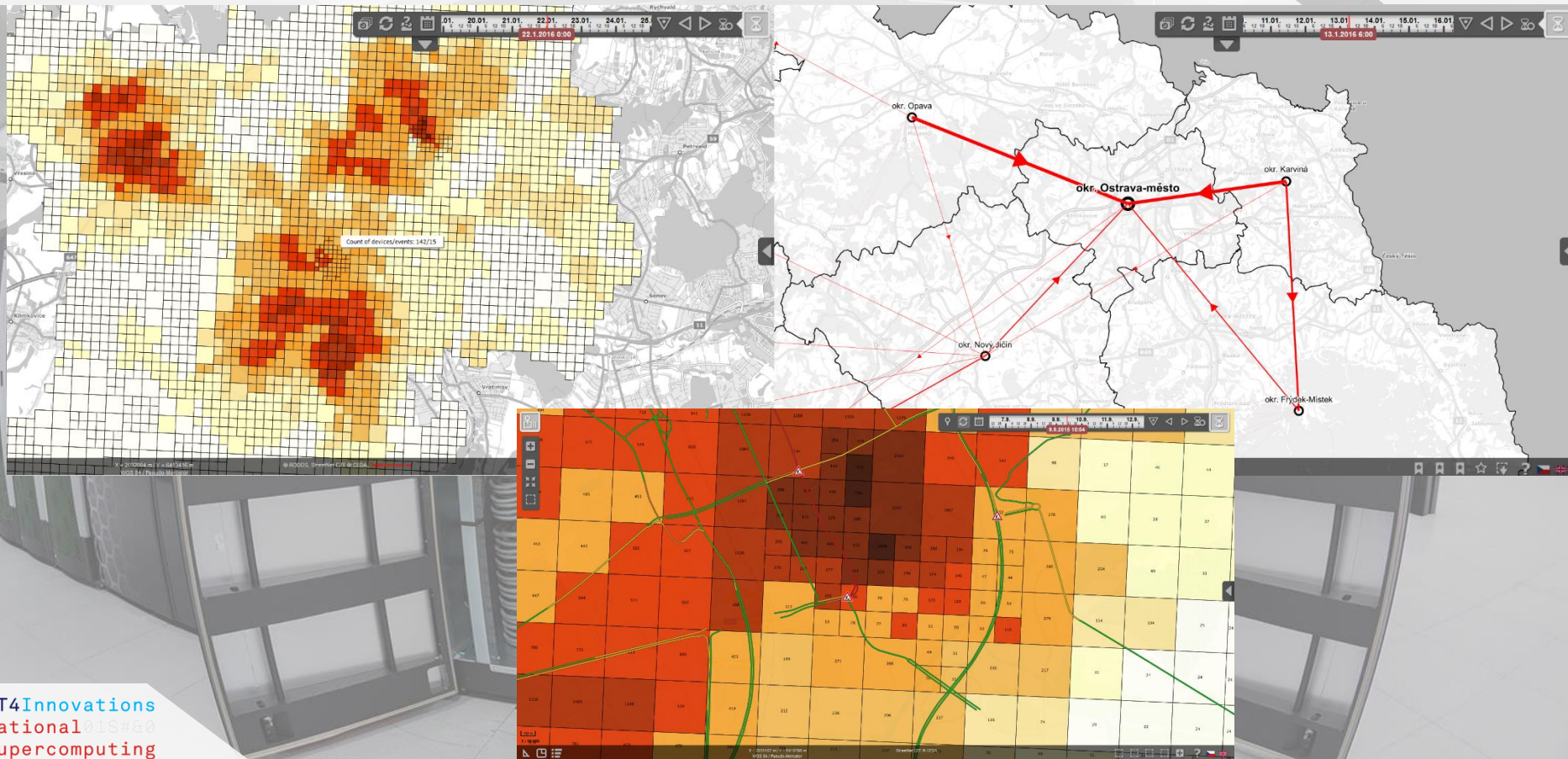
# Traffic Monitoring and Modelling



# Traffic Monitoring and Modelling (2)



# Mobility of Population

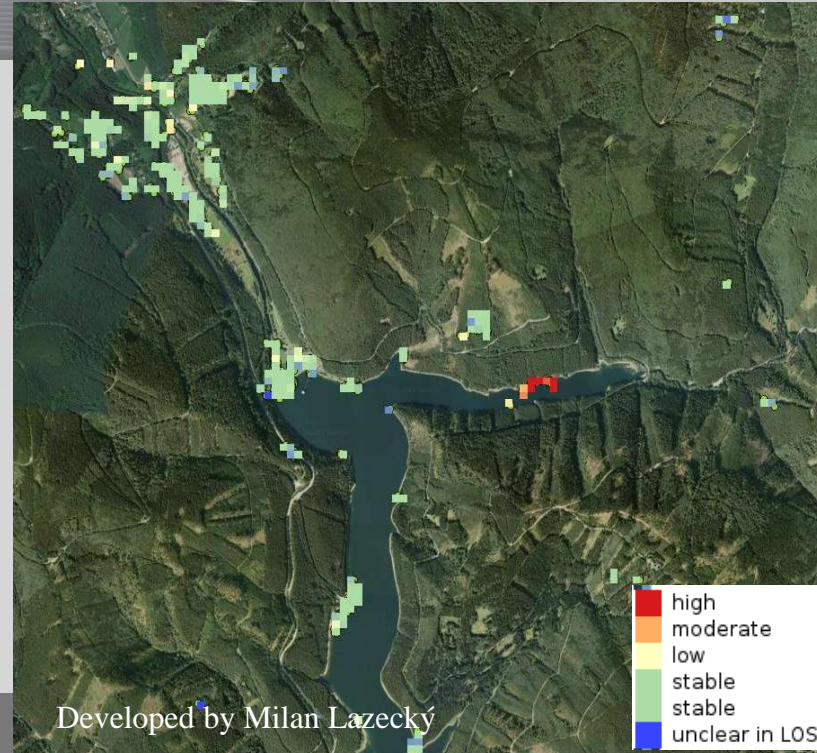


# Different Domains Interaction



# Future Work

- **Different domains interaction**
  - Interaction route planning and flooding
- **Thematic domains integrations**
  - Landslides
  - Flash floods





# FLOREON+