



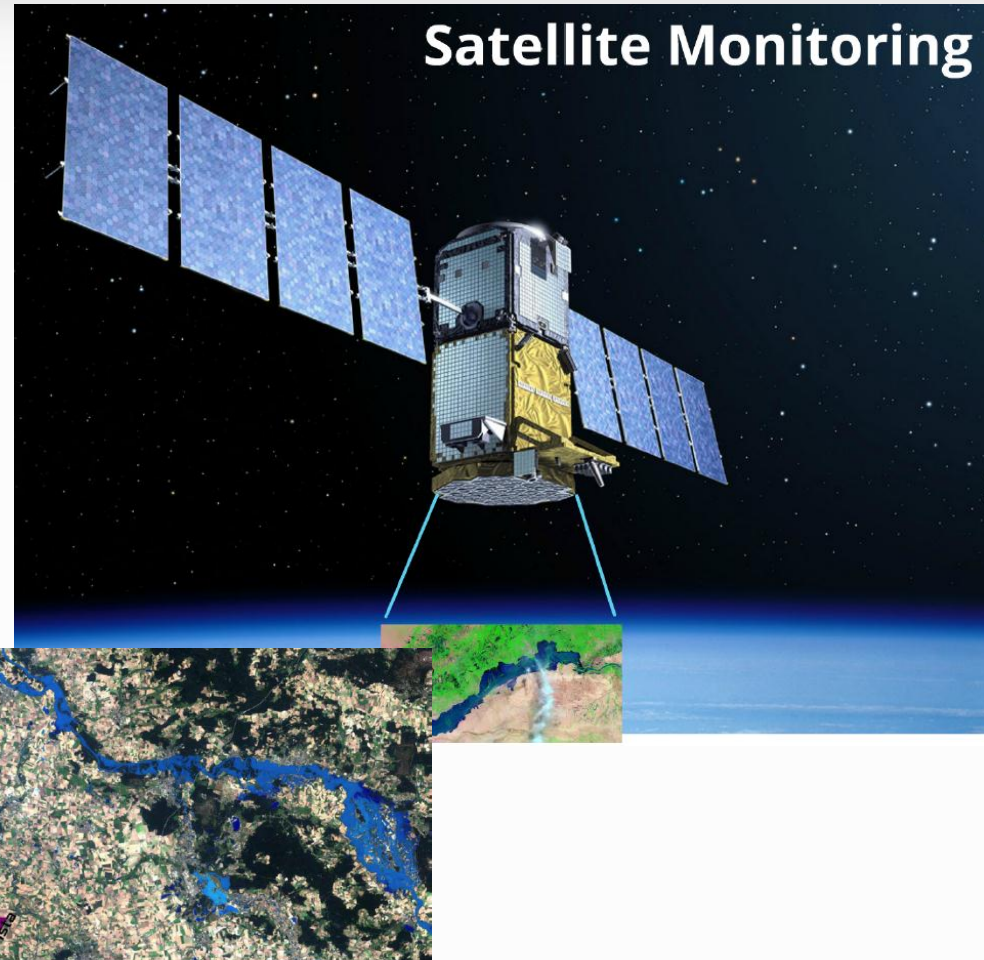
St.Petersburg Institute for Informatics and Automation
of the Russian Academy of Sciences

**MULTIDISCIPLINARY APPROACH
TO FLOOD FORECASTING ON THE BASE OF EARTH
OBSERVATION DATA AND HYDROLOGICAL MODELLING**

Existing methodologies and tools

1. Satellite monitoring

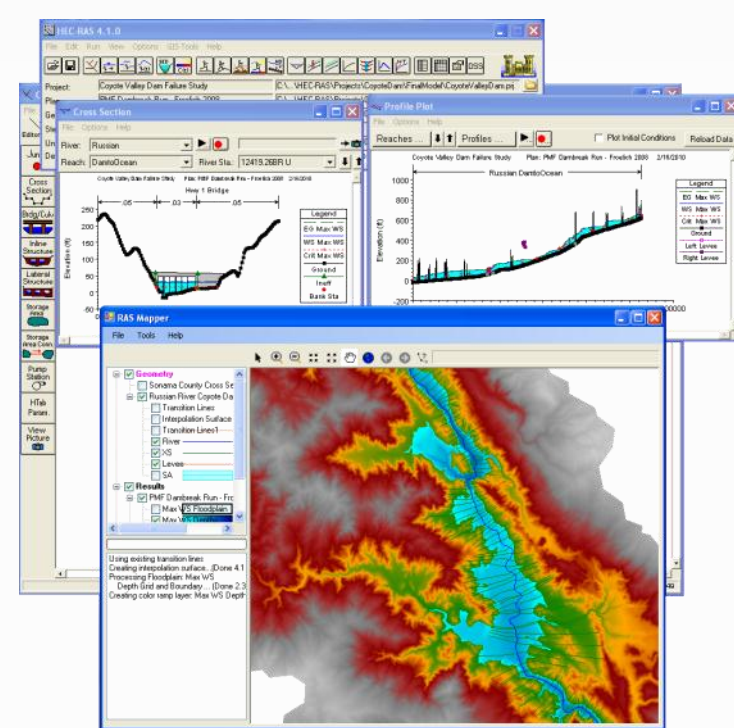
- post-event fixation of the flooding fact
- post-event damage analysis
- subjective forecasts by experts



Existing methodologies and tools

2. Long-range forecast

- modeling based on weather forecasts, snow cover, riverbed profiles, soil types, etc.
- greater complexity, low reliability of initial data

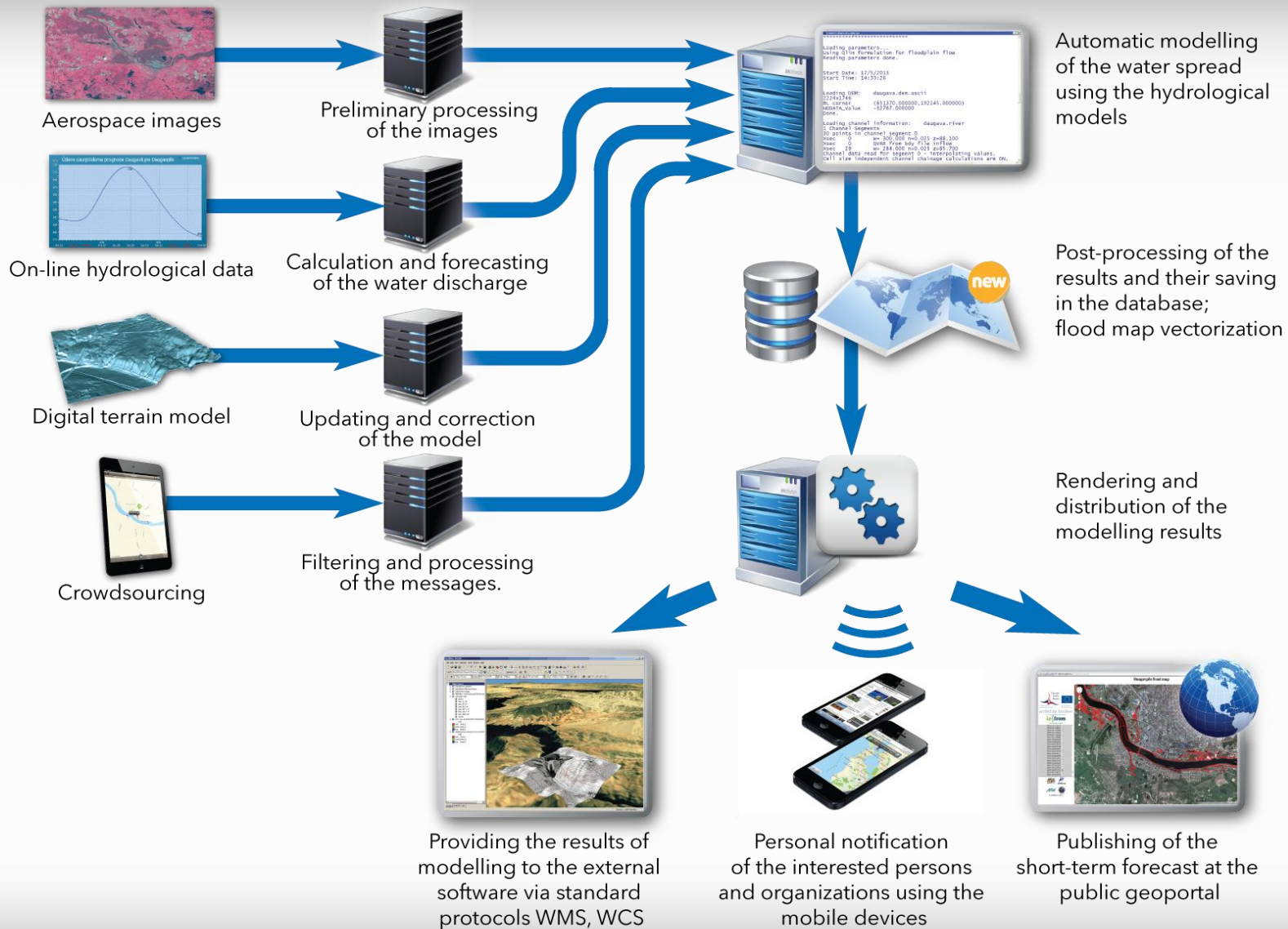


Basic direction

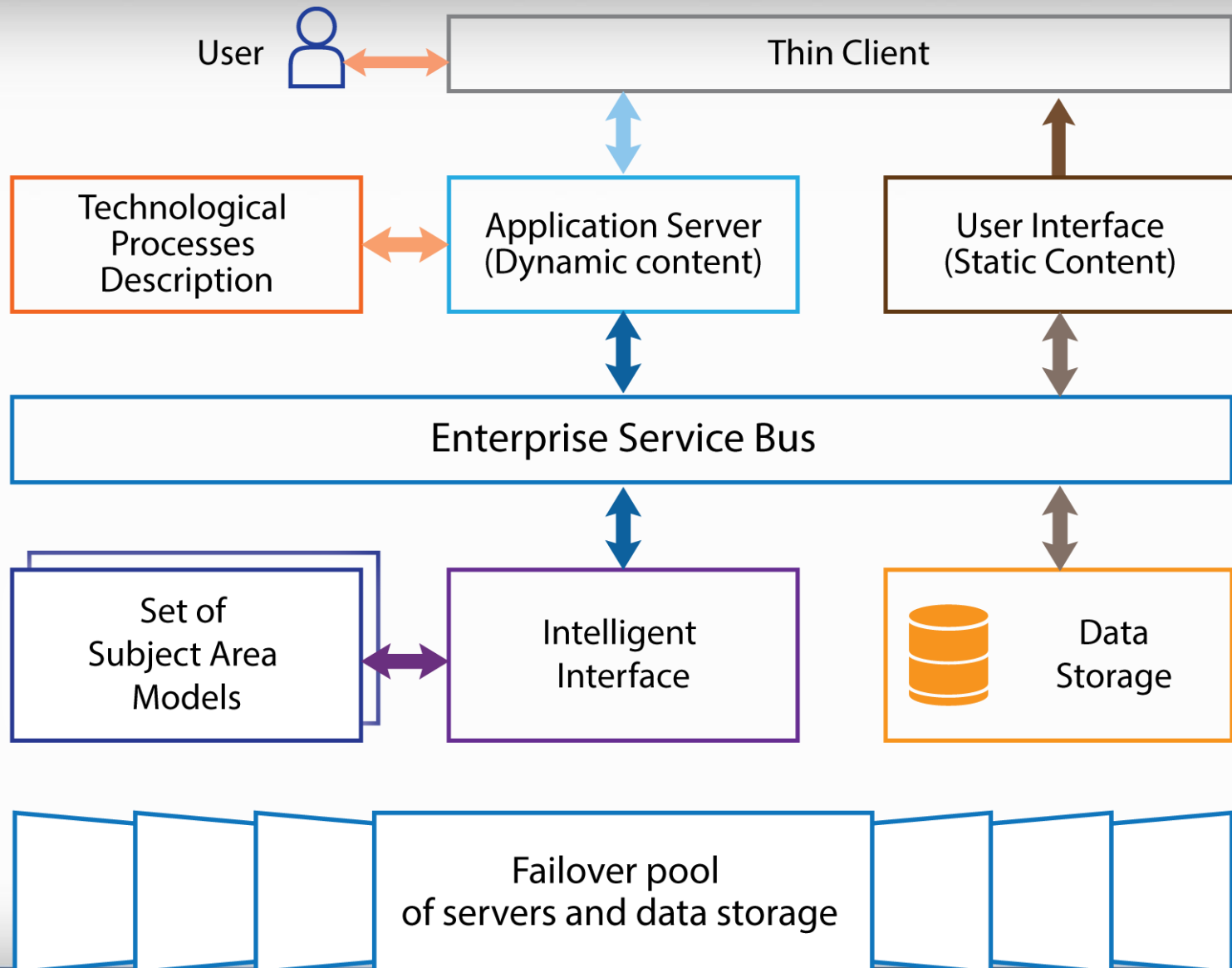


Operational Forecast
based on integrated use
of heterogeneous data

Floods operational forecasting system implementation



Software



RegionView - Information-analytical system to support activity on the territory



MOBILE SOLUTION FOR TERRITORY MONITORING AND MANAGEMENT



Structure of system and main advantages

RegionView is a modular distributed system comprising server applications, GIS servers and database servers. All components are designed with the use of open-source software and don't require the purchase of paid licenses.

The modular principle of construction and use of standard protocols of data exchange provide flexible placement of components of the system.

RegionView is a tool with professional features that don't require professional knowledge in geoinformatics, in Computer and Information Technology.



"INTEGRATED INTELLIGENT PLATFORM FOR MONITORING THE CROSS-BORDER NATURAL/TECHNOLOGICAL SYSTEMS"
"ESTONIA-LATVIA-RUSSIA CROSS BORDER COOPERATION PROGRAMME WITHIN THE EUROPEAN NEIGHBOURHOOD AND PARTNERSHIP INSTRUMENT 2007-2013"



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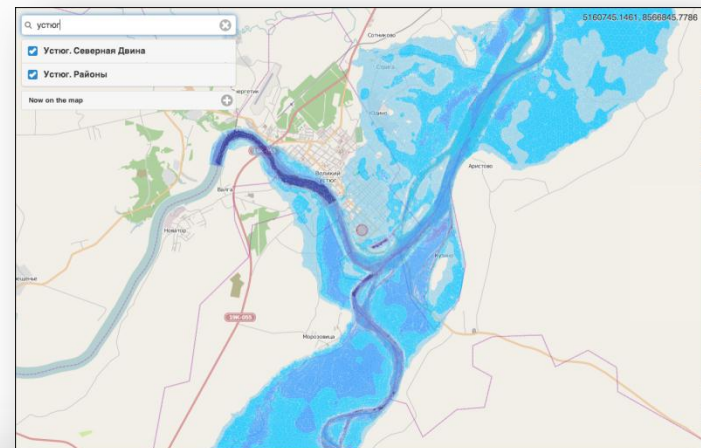


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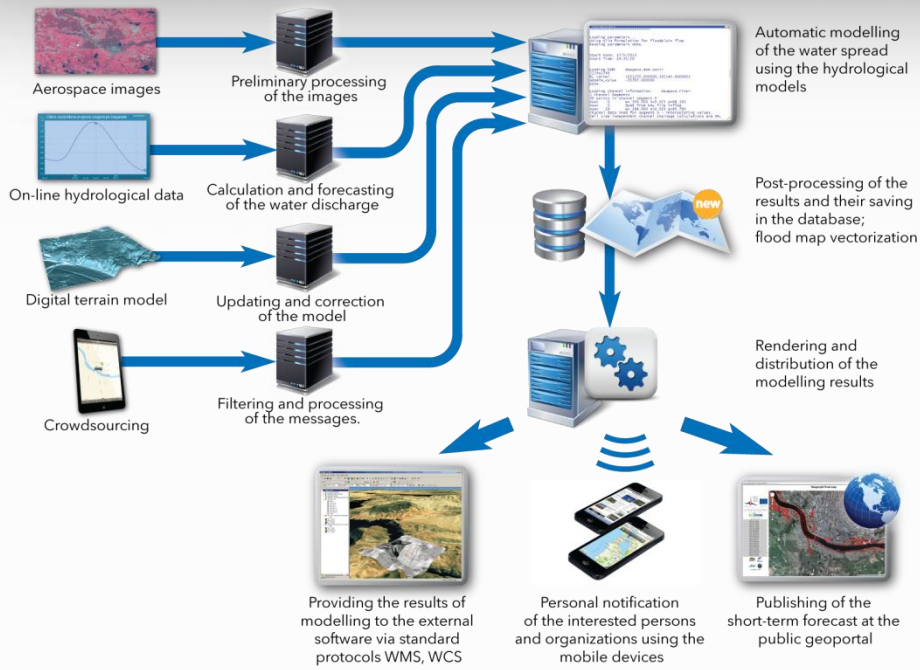
All complexity is hidden within the system



User has only one search box!



Stakeholders notification



Personalized Informing

The integration of simulation results with the electronic address system

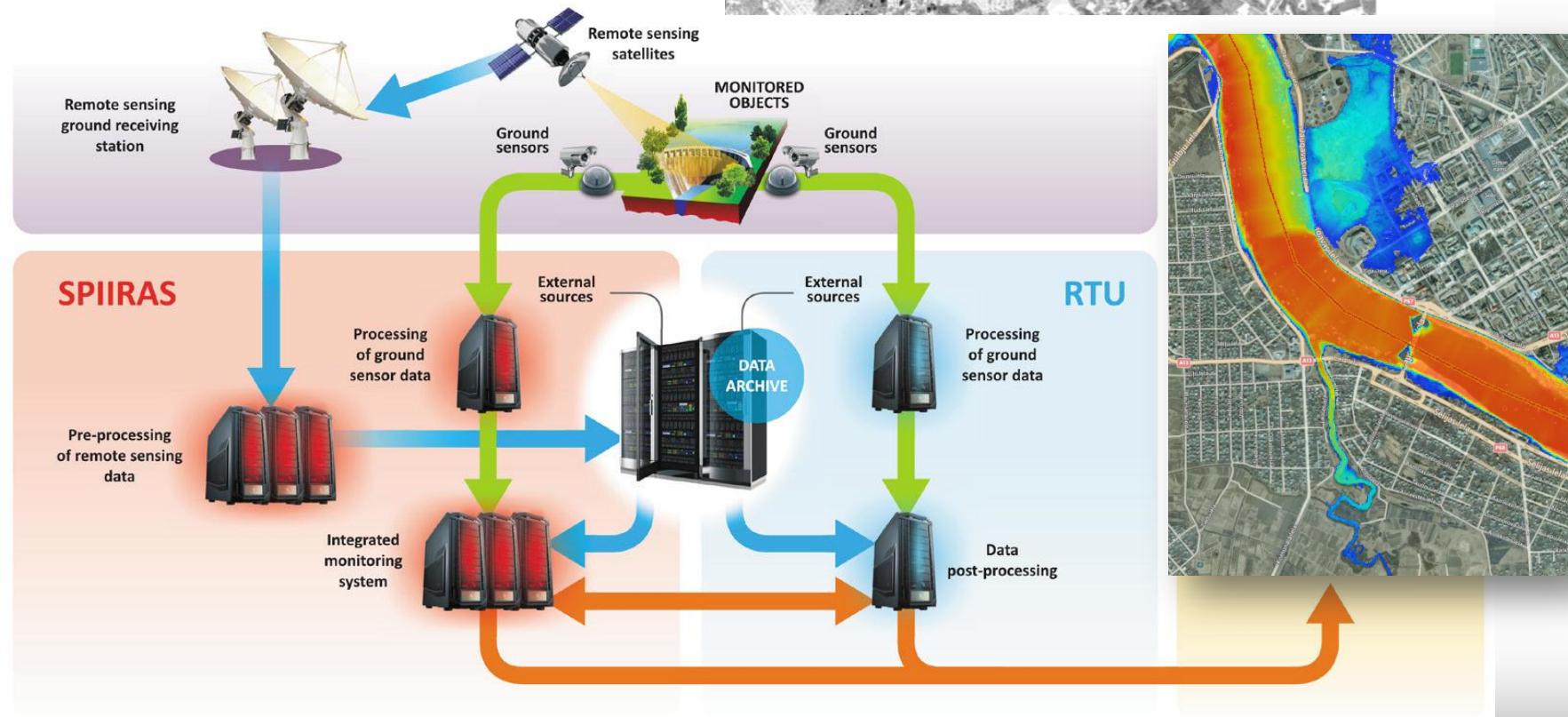
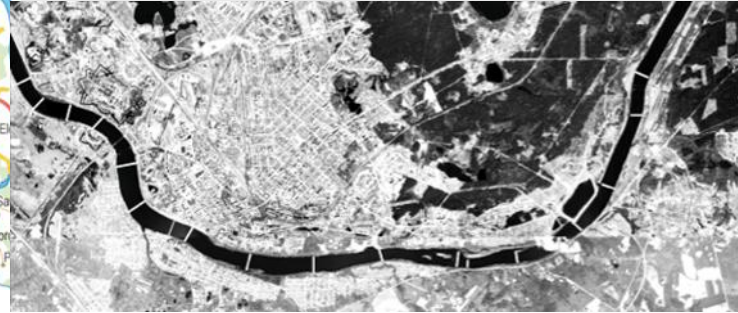
Houses in estimated flood area

Nometgu iela 1	Eduard Galler	(371) 78482159
Nometgu iela 3	Mia Wallin	(371) 78347759
Nometgu iela 5	Virpi Hiltunen	(371) 78289958
Nometgu iela 7	Hildrun Tyldum	(371) 78654456
Nometgu iela 9	Eva Gullfeldt	(371) 78951954

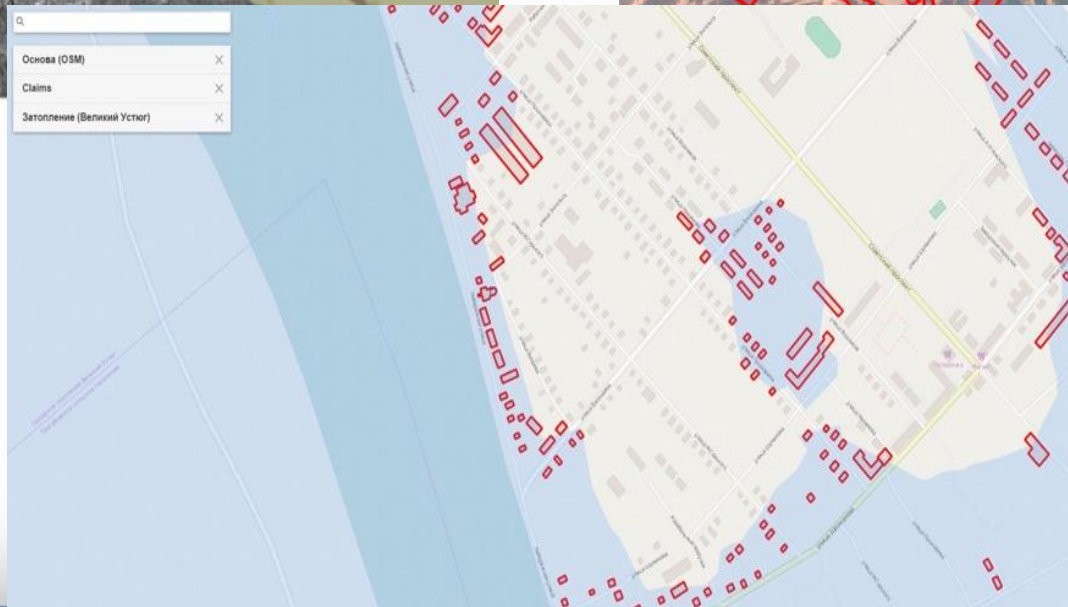
Automatic notification of residents (auto dialing, SMS)



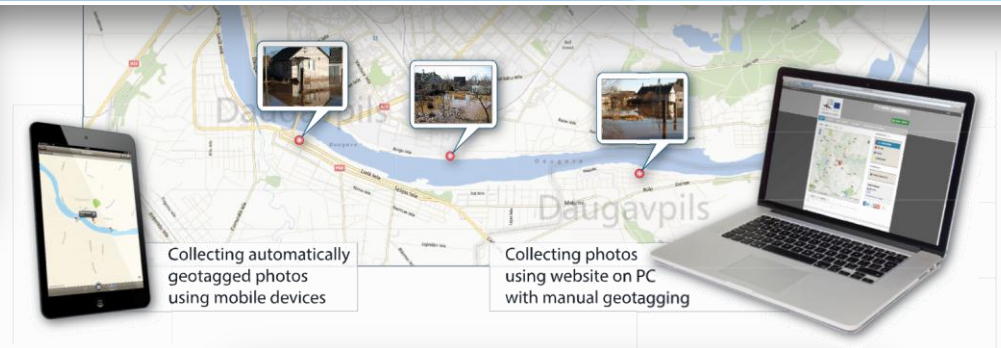
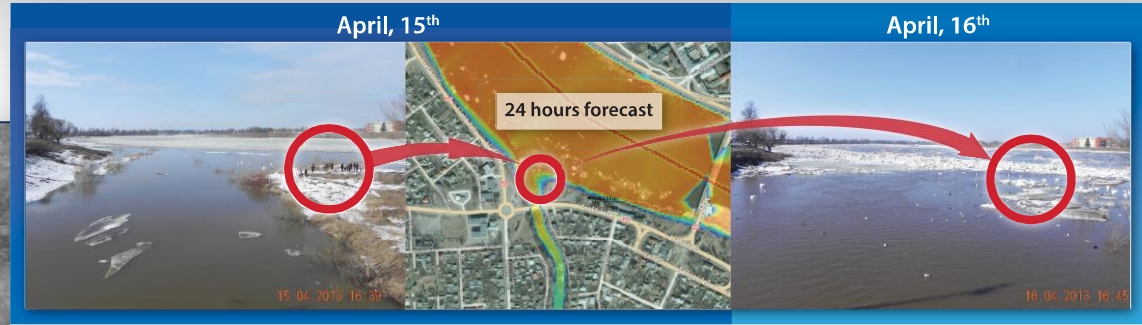
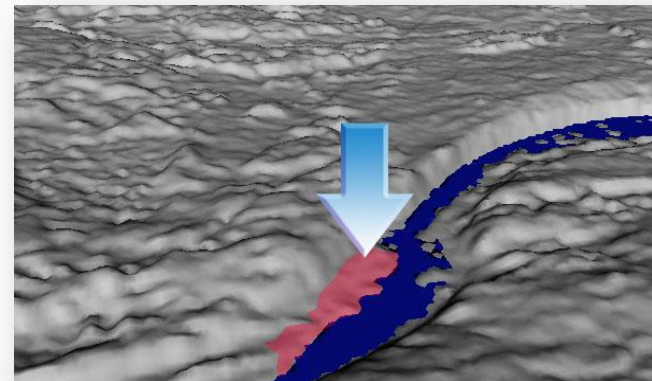
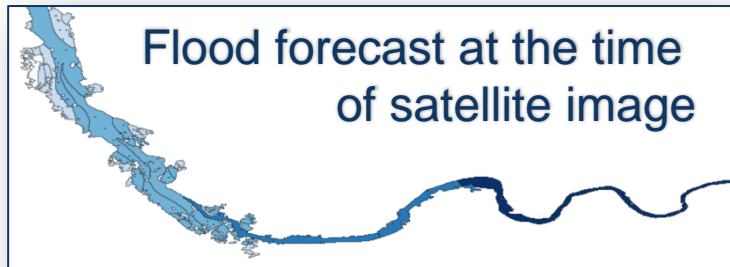
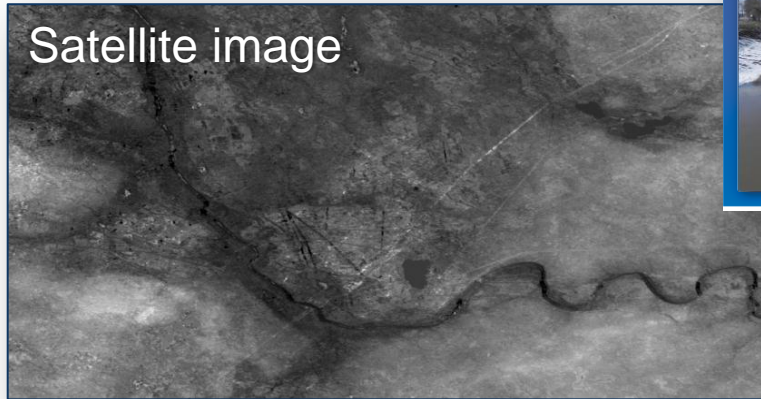
Case study: Flood monitoring and forecasting in Latvia (Project ELRI-184)



Case study: Flood monitoring and forecasting in Russia, r. Oka and r. Malaya Severnaya Dvina



Verification and input data correction



Hourly forecast of inundated areas

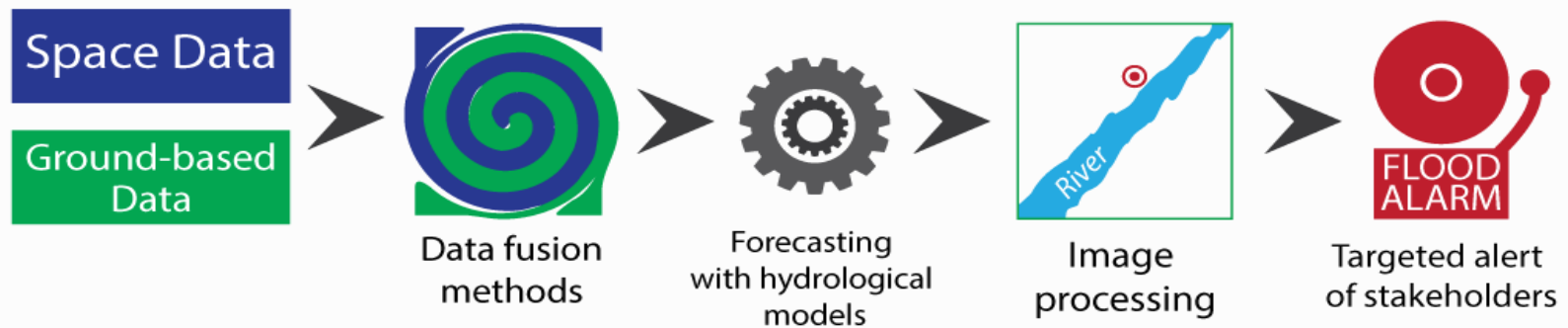


Analysis of possible inundation areas



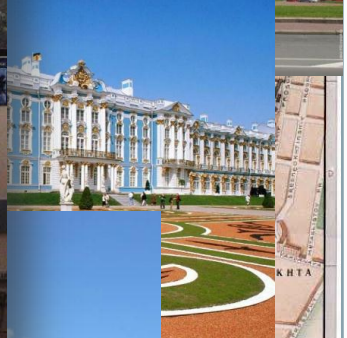
Main advantages

- Acceptable accuracy on the basis of *available space-ground data*
- Advance forecasting of the time and depth of flooding in *each specific* place
- *Timely warning* of persons and emergency services
- *Automatic* mode
- *User-friendly*



We are open to cooperation!

SPIIRAS Location



www.spiiras.su



***Thank you
for your attention!***

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www.litsam.ru