

Considering the Impact of Future Climate Change on the Resilience of a City

- Surface Run-Off due to Heavy Storm Events in the City of Wuppertal -

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Motivation

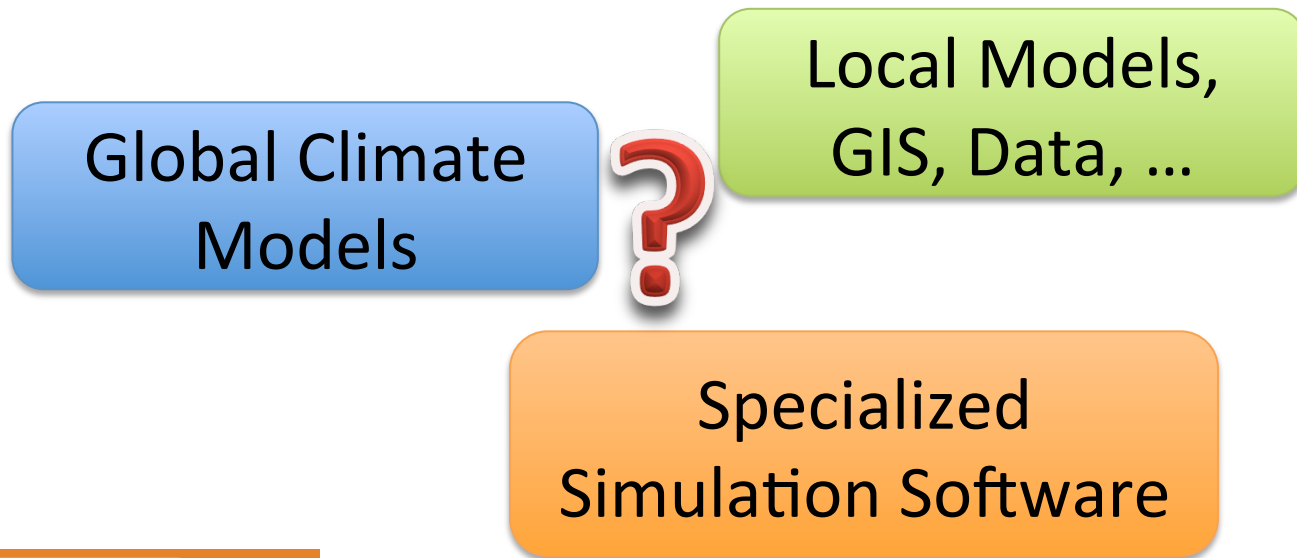


Motivation



But...

- Complex information systems and workflows
- Heterogenous components and tools
- Not easy to use and understand for non-specialists



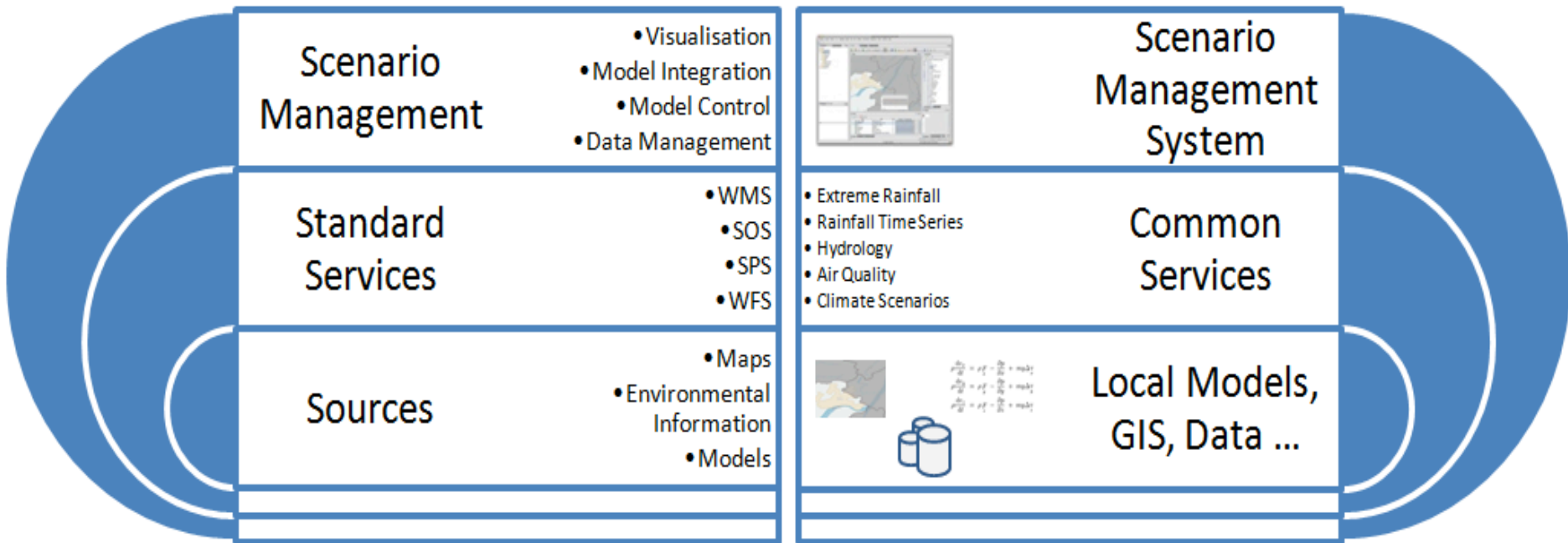
SUDPLAN Sustainable Urban Development Planner for Climate Change Adaptation

- European Project in the 7th Framework Programme
FP7-ICT-2009-6
- 9 Partners - Research, IT and Pilot cities



Goal: „...developing an **easy-to-use web-based planning, prediction, decision support and training tool**, for the use in an **urban context**, based on a **what-if scenario** execution environment, which will help to assure population’s health, comfort, safety and life quality as well as **sustainability of investments in utilities and infrastructures within a changing climate.** “

SUDPLAN - System Overview



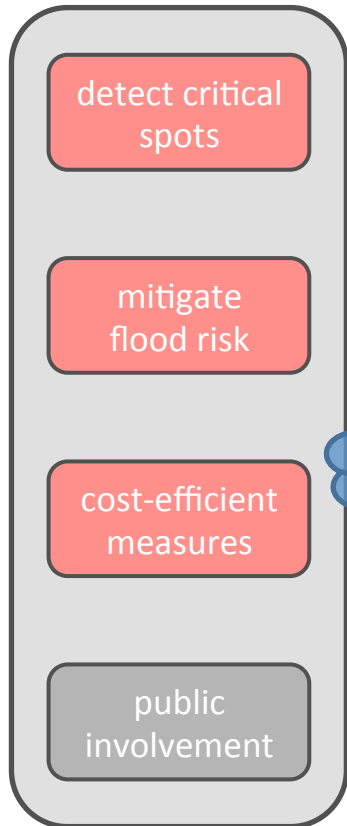
City of Wuppertal

- Located in the steep and narrow valley of the Wupper River
- run-off from 350 kilometers of creeks (over 800 creek sections) and 650 kilometers of drainage channel system

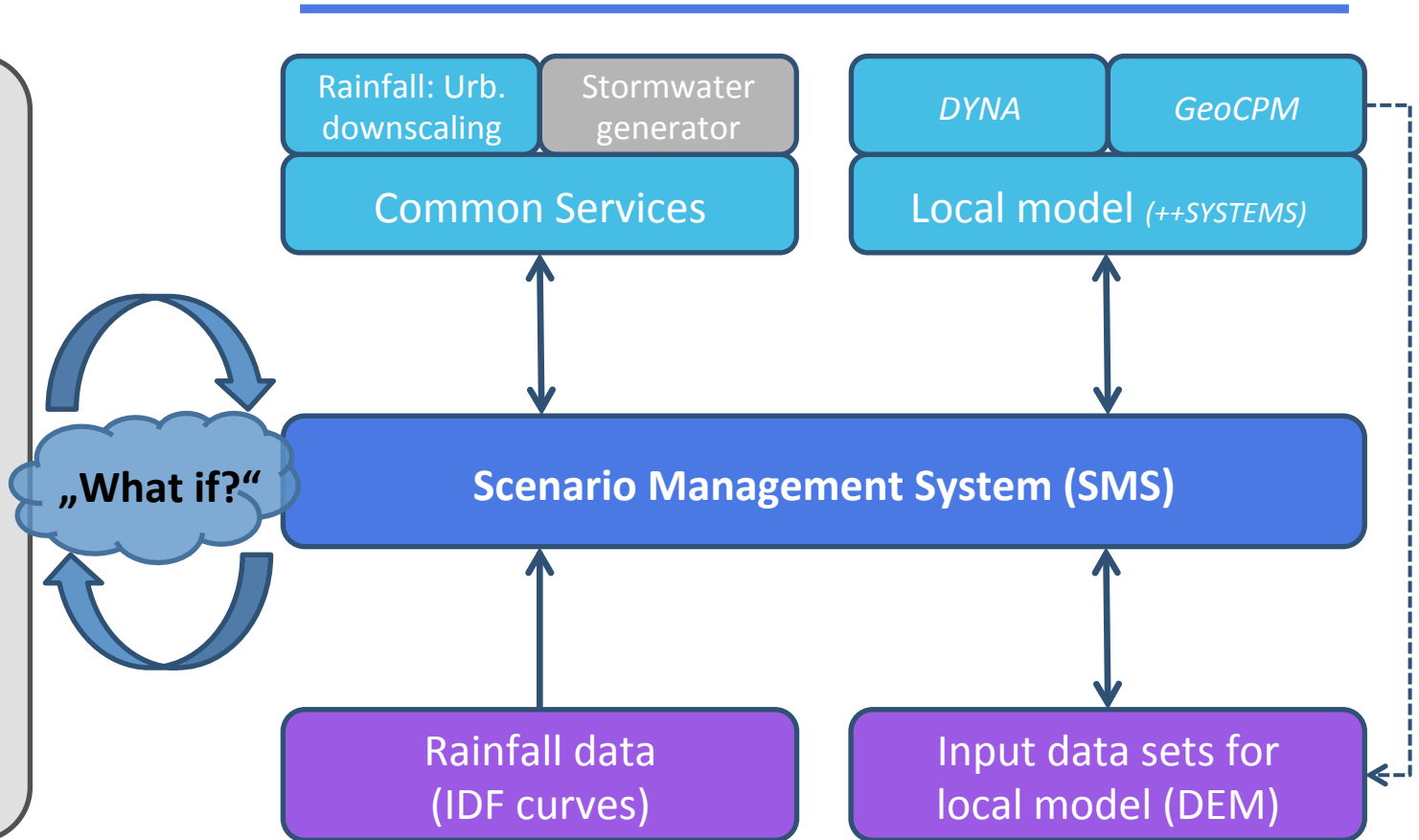


Wuppertal Use Case

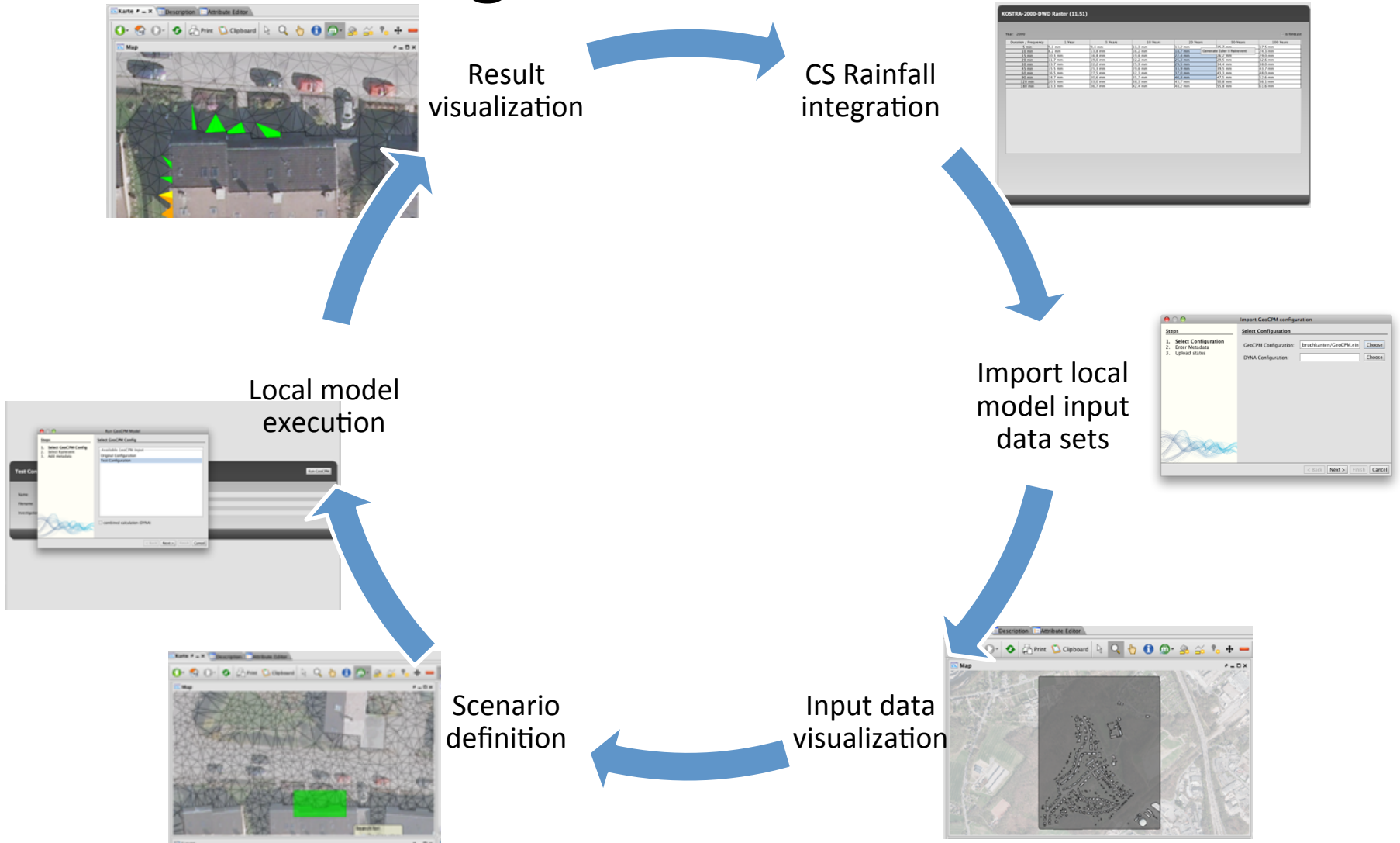
Issues ...



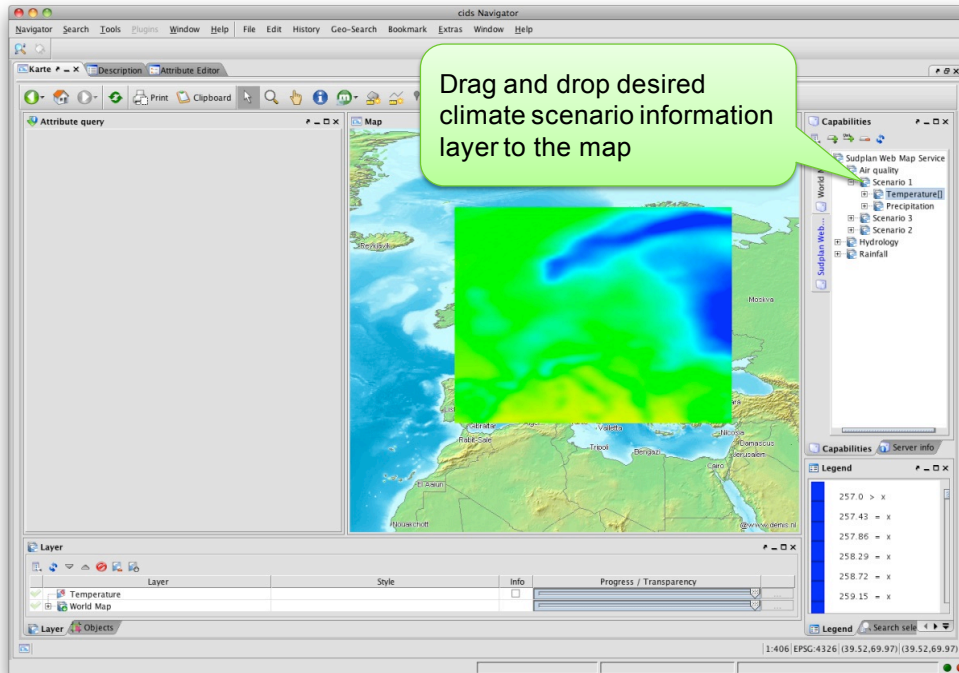
... and the tool to manage them



Integrated Workflow



Select/Inspect Climate Scenarios (European Scale)



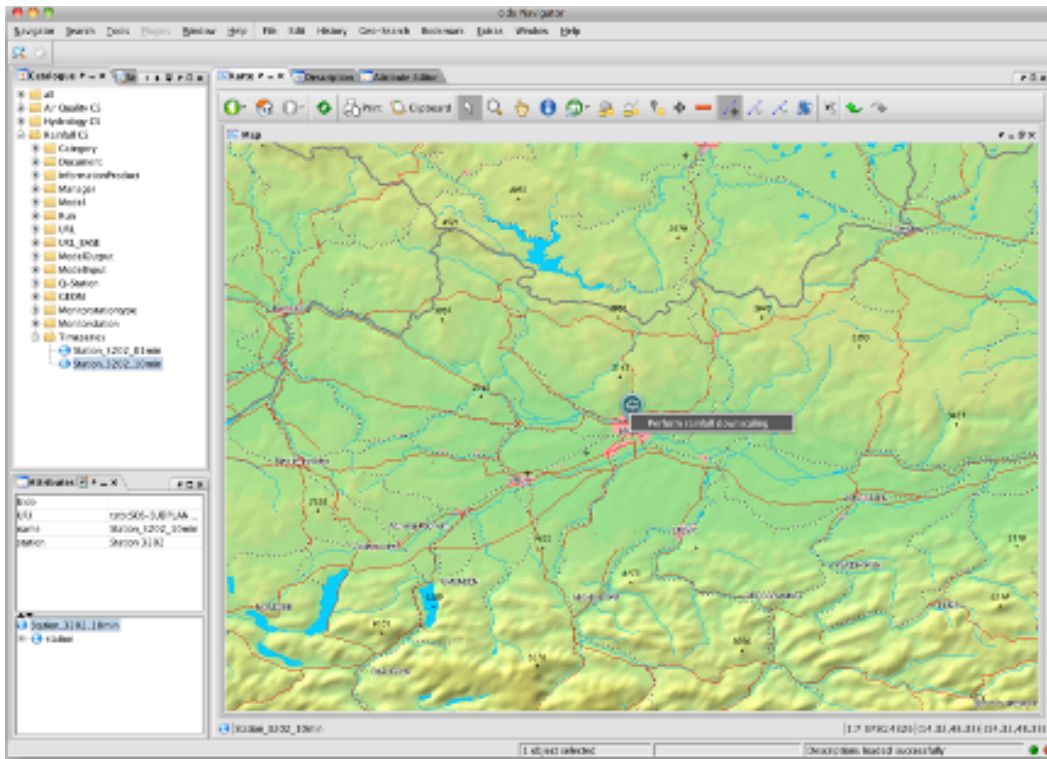
Select/Inspect Climate Scenarios (European Scale)

Drag and drop desired climate scenario information layer to the map

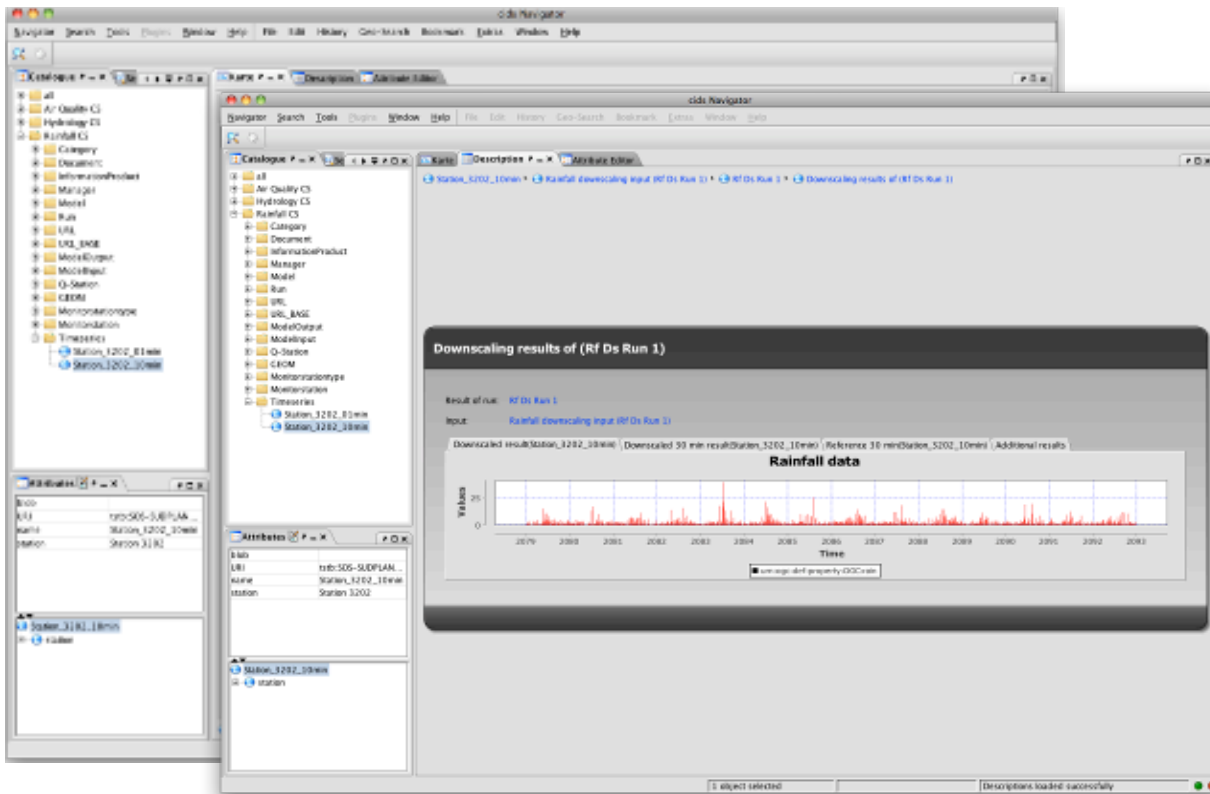
View time-series information

Year	Temperature (Kelvin)
1990	273.5
1995	276.5
2000	278.0
2005	278.5
2010	278.5
2015	279.0
2020	280.0
2025	281.5
2030	283.0

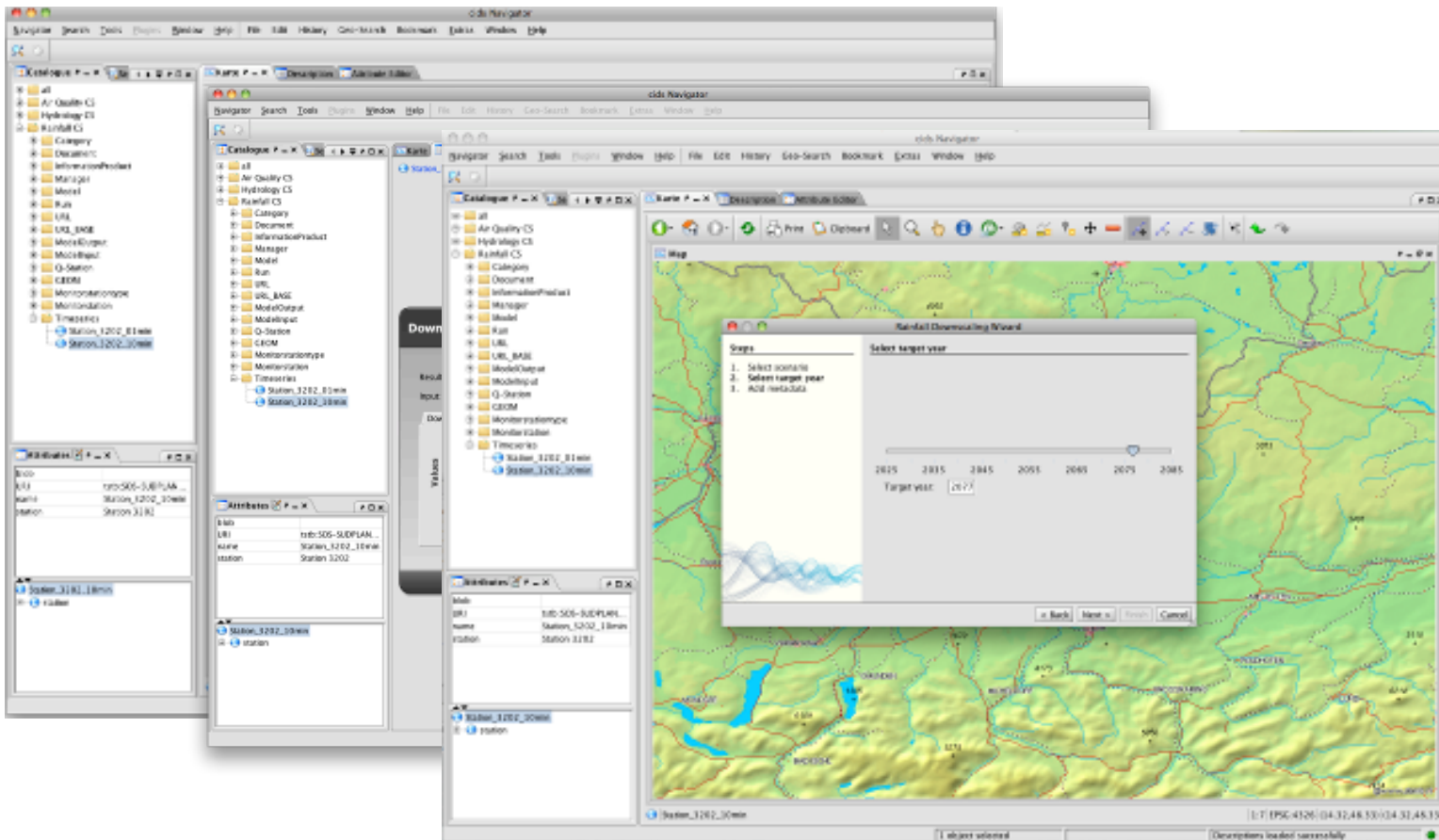
Urban Rainfall downscaling using historical time series



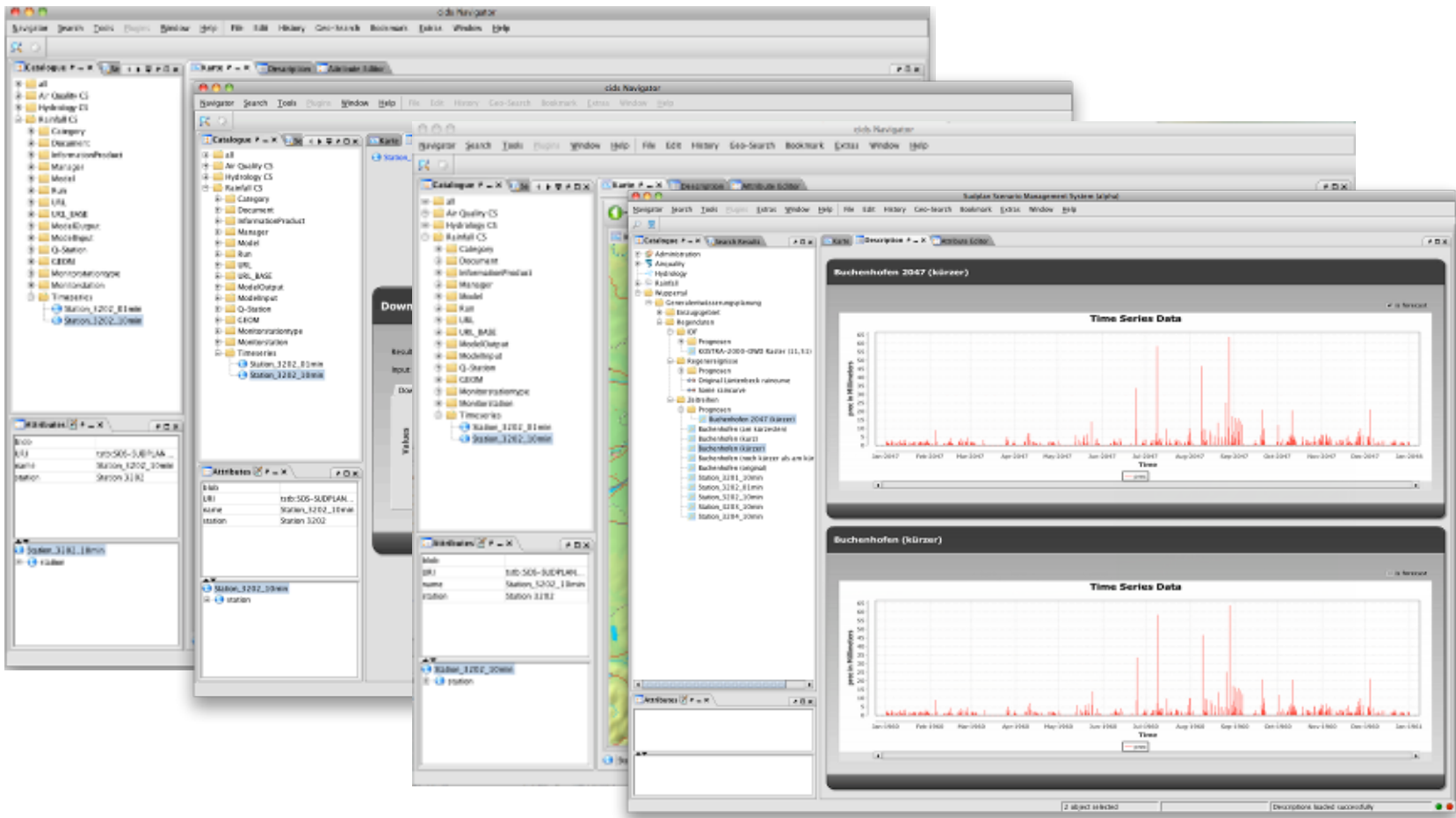
Urban Rainfall downscaling using historical time series



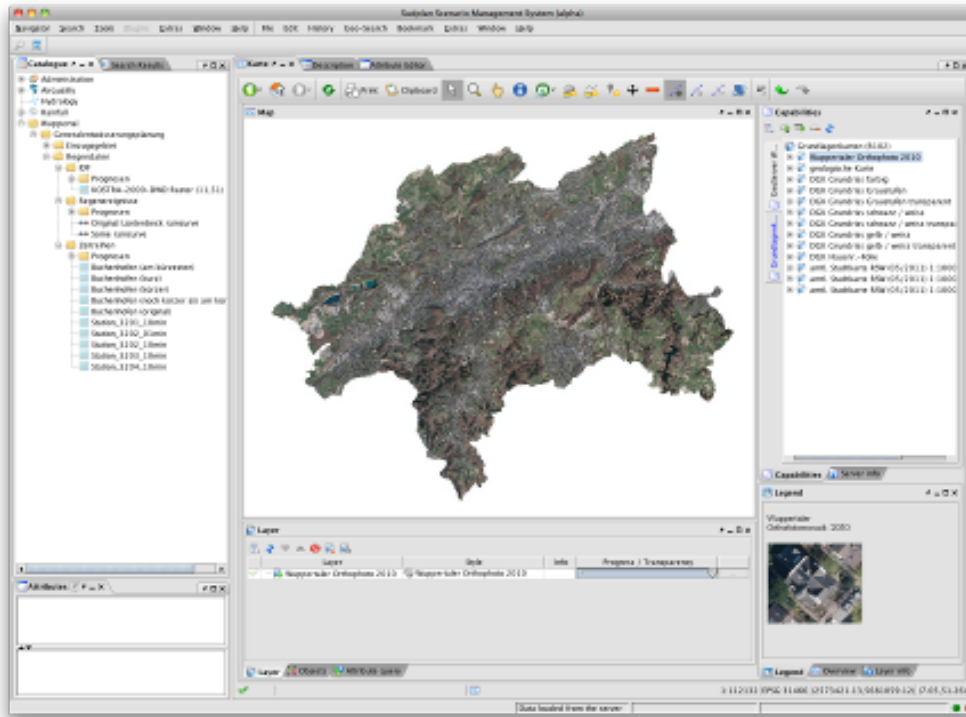
Urban Rainfall downscaling using historical time series



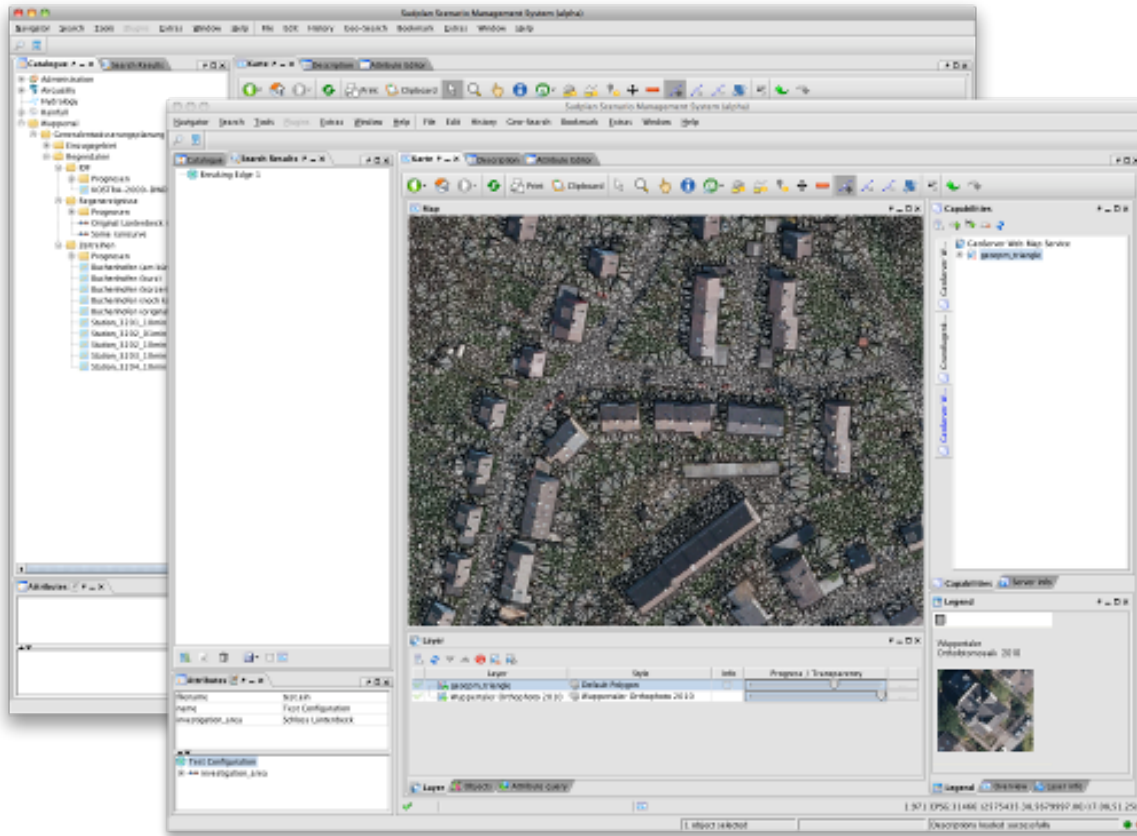
Urban Rainfall downscaling using historical time series



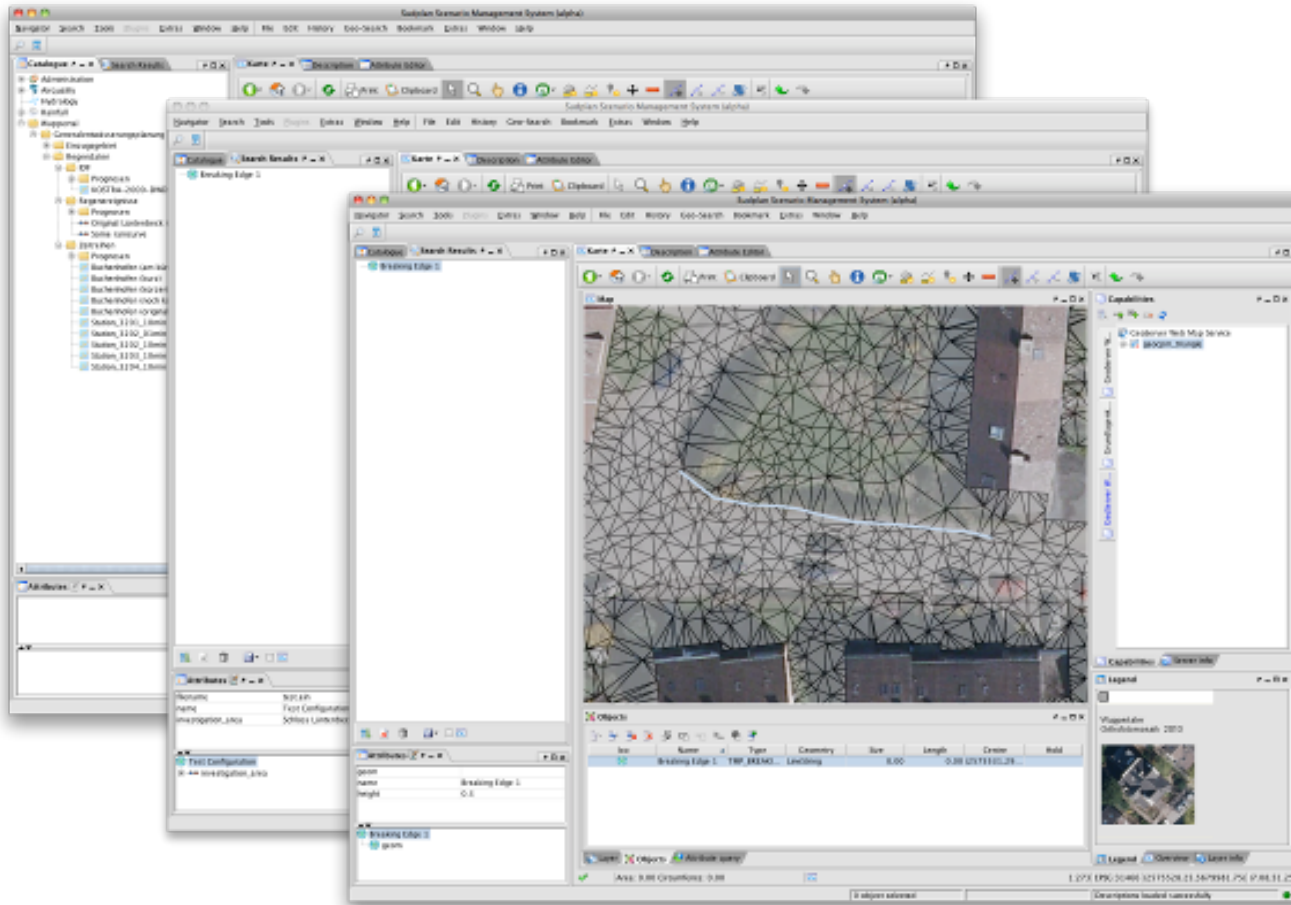
Running the Local Model



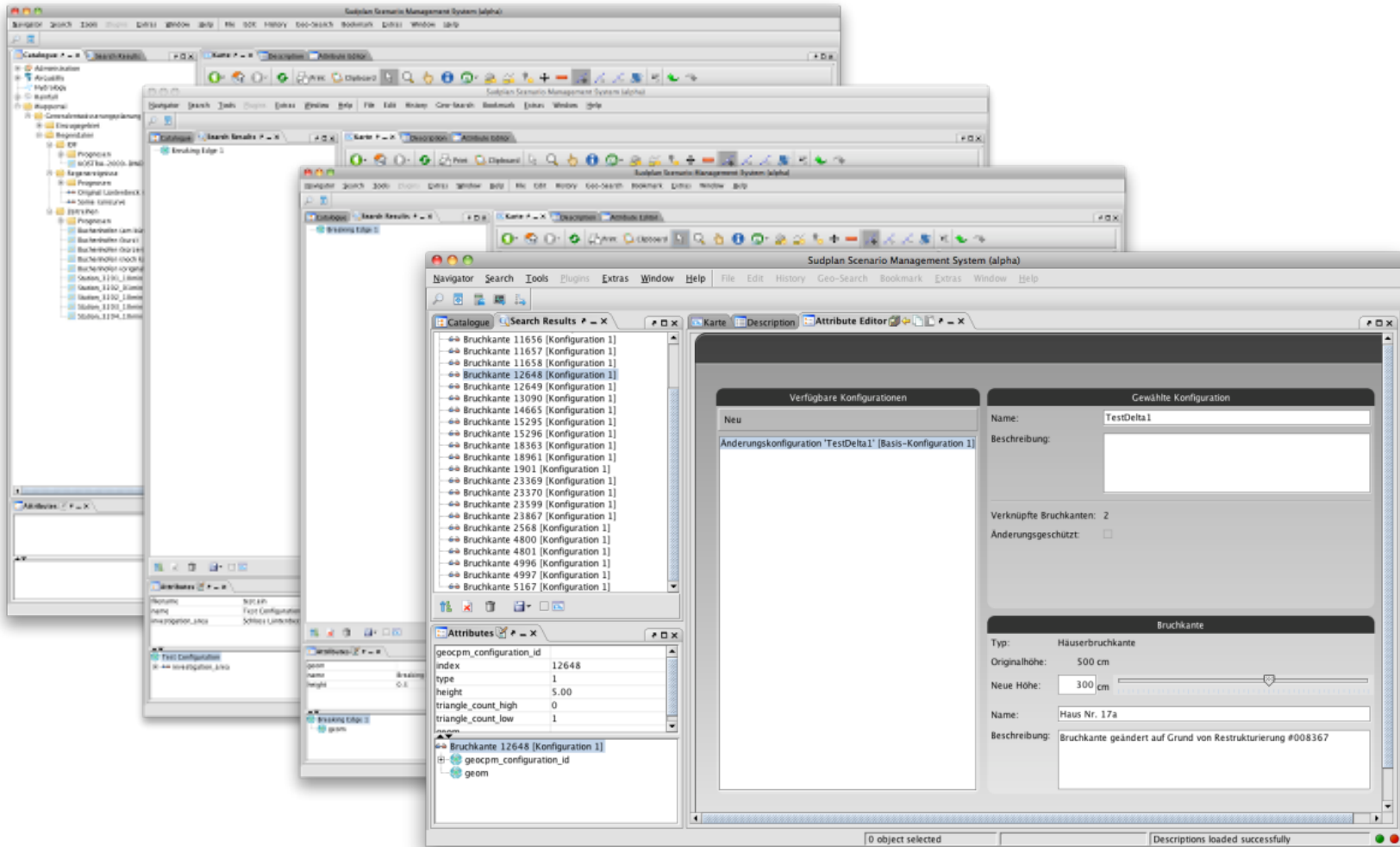
Running the Local Model



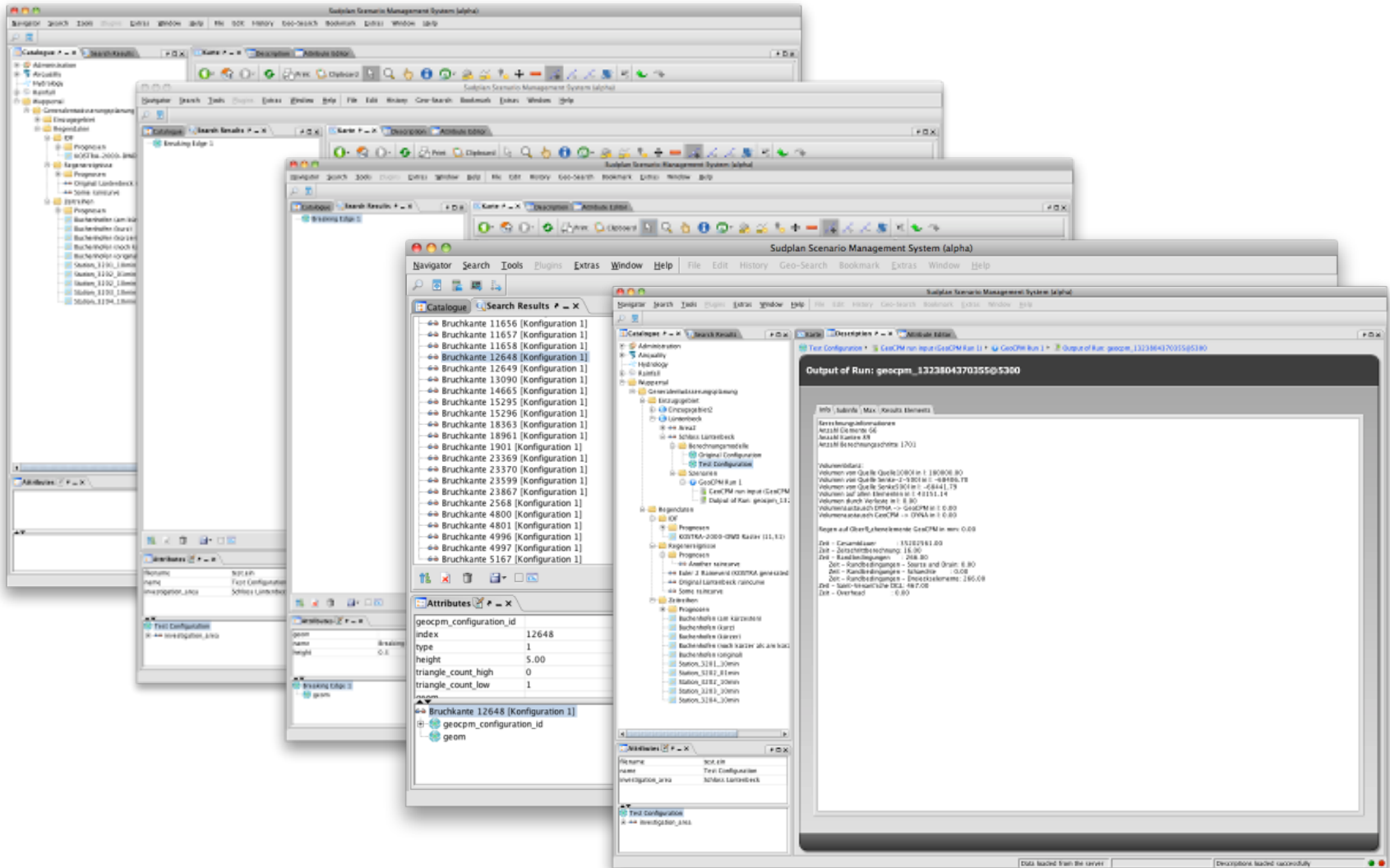
Running the Local Model



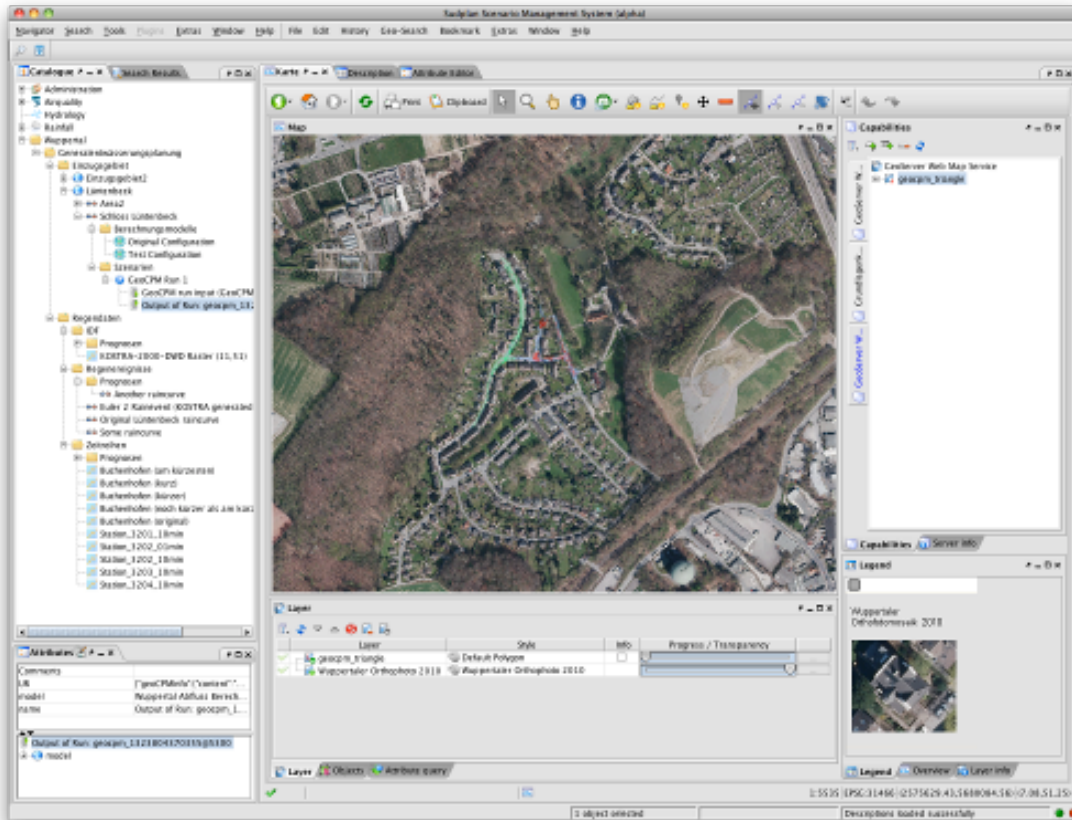
Running the Local Model



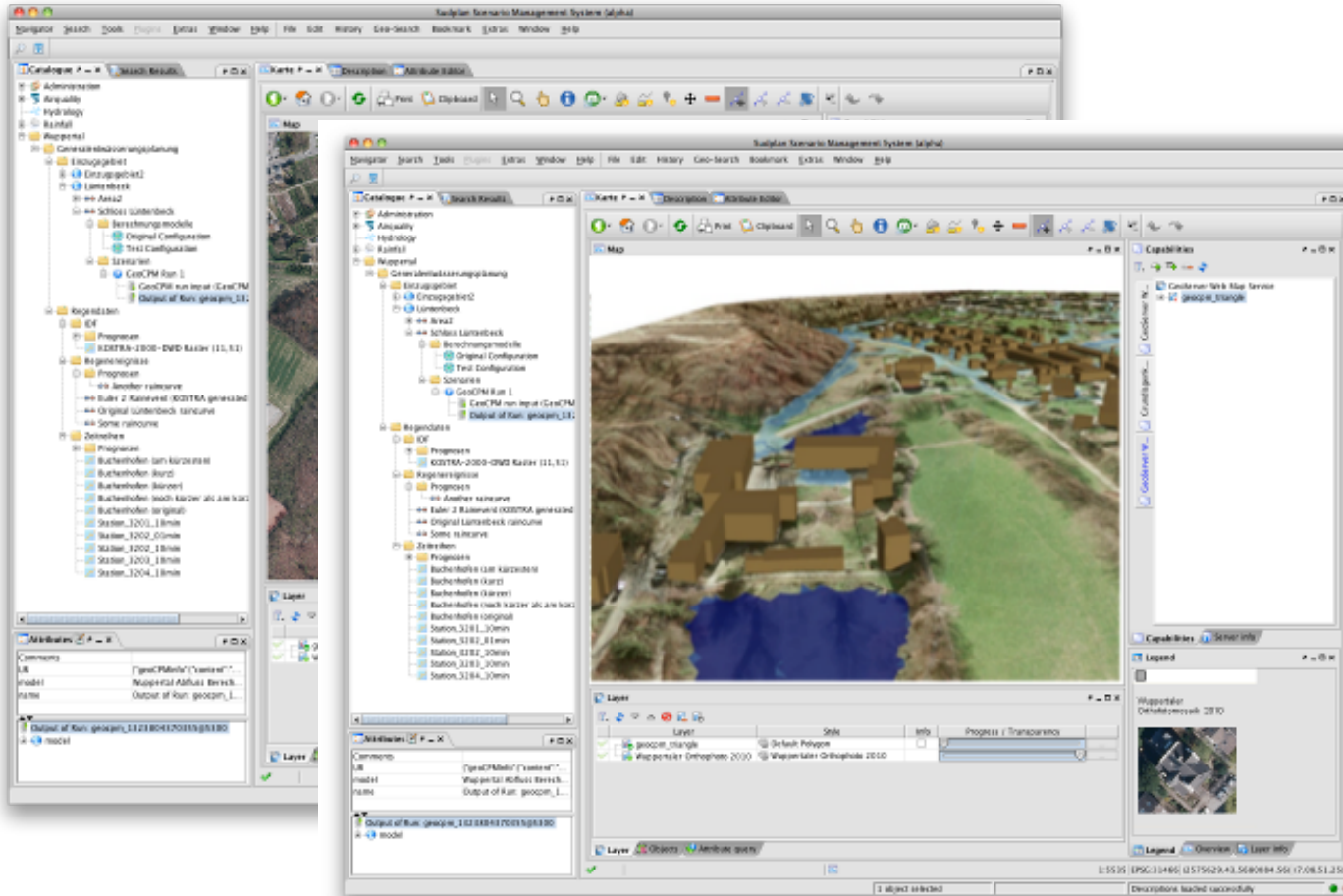
Running the Local Model



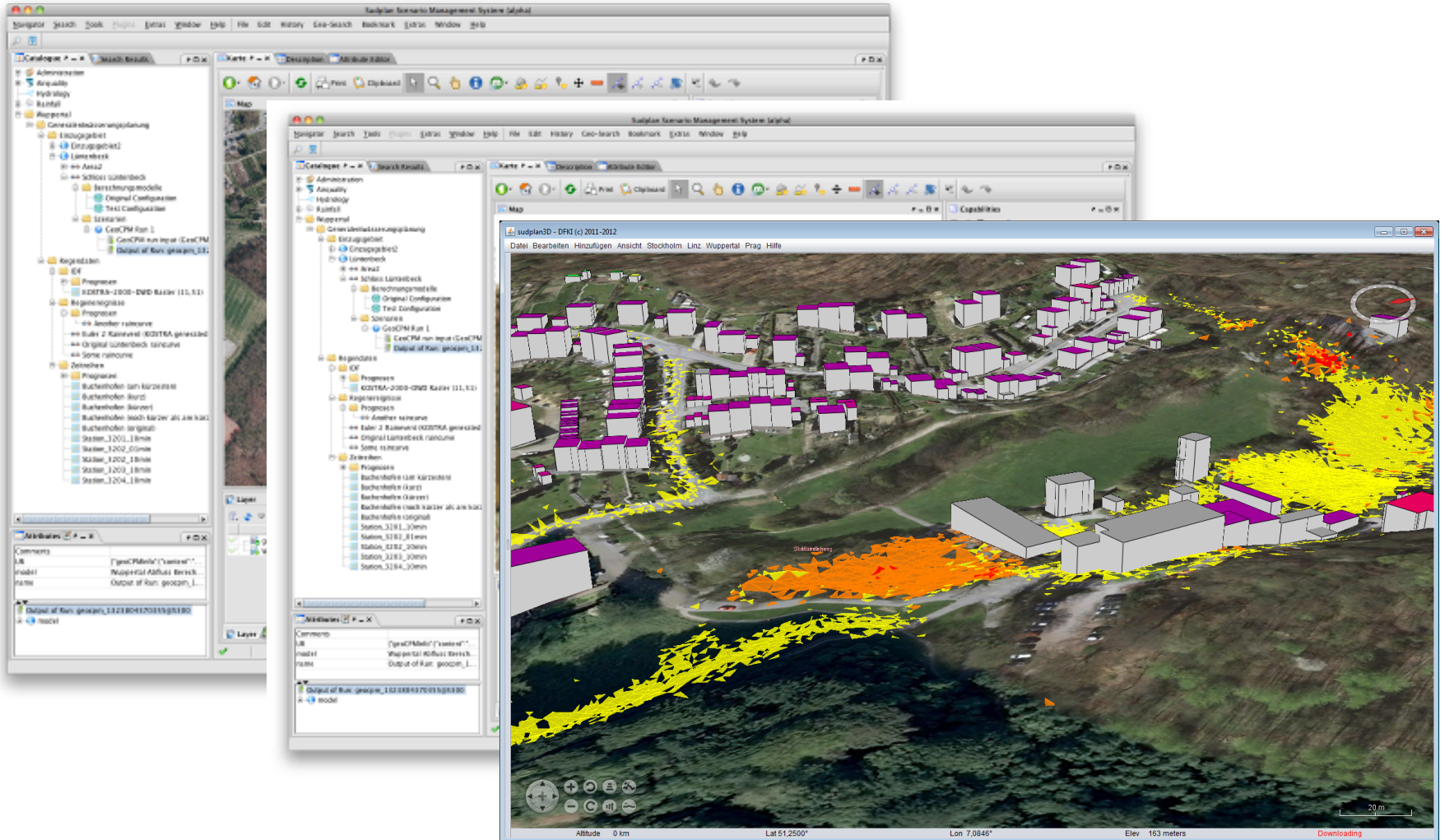
Visualise the results of the model run



Visualise the results of the model run



Visualise the results of the model run



Project Partners

1. Swedish Meteorological and Hydrological Institute
2. Austrian Institute of Technology
3. cismet GmbH
4. Czech Environmental Information Agency
5. Apertum IT AB
6. Deutsches Forschungszentrum für Künstliche Intelligenz
7. Stockholm Uppsala Air Quality Management Association
8. City of Wuppertal
9. Technische Universität Graz

The logo for SMHI (Swedish Meteorological and Hydrological Institute) consists of the letters "SMHI" in a bold, black, sans-serif font.The logo for AIT (Austrian Institute of Technology) features the letters "AIT" in a large, grey, sans-serif font, with "AUSTRIAN INSTITUTE OF TECHNOLOGY" in a smaller, red, sans-serif font to the right.The logo for cismet GmbH features a stylized orange circle with a white dot inside, followed by the word "cismet" in a blue, sans-serif font. Below it, the text "cismet GmbH | www.cismet.de | info@cismet.de | Fon-Fax 0700 cismet.de" is written in a small, black, sans-serif font.The logo for cenia features a circular pattern of small dots forming a spiral, with the word "cenia" in a green, sans-serif font to the right.The logo for APERTUM features the word "APERTUM" in a blue, sans-serif font, with a large blue "D" and "E" to the left. To the right, the text "Deutsches Forschungszentrum für Künstliche Intelligenz GmbH" is written in a smaller, black, sans-serif font.The logo for LF (Stockholms och Uppsala Läns Luftvårdsförbund) features the letters "LF" in a large, blue, sans-serif font, with "STOCKHOLMS OCH UPPSALA LÄNS LUFTVÅRDSFÖRBUND" in a smaller, black, sans-serif font to the right.The logo for Wuppertal features a stylized black graphic of a bridge or structure, followed by the word "Wuppertal" in a bold, black, sans-serif font.The logo for TU Graz features a stylized red graphic of a building or structure, followed by the letters "TU" in a bold, black, sans-serif font, and "Graz" in a smaller, black, sans-serif font below it.

Questions?



SUPLAN is a project co-funded by the European Framework Program 7, under challenge ICT-2009-6.4 ICT for Environmental Services and Climate Change Adaptation of the Information and Communication Technologies program, project number 247708.

SUDPLAN

SUDPLAN website with information, videos, demo application:

<http://www.sudplan.eu>

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Augmented Vision

German Research Center for
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Kaiserslautern, Germany

