



virtualcitySYSTEMS

ERSTELLEN

VERWALTEN

VERÖFFENTLICHEN



BUOLUS

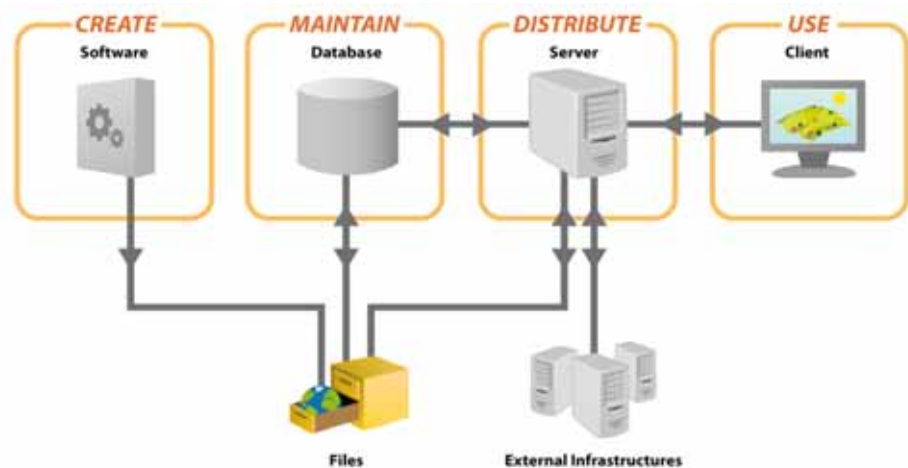
3D-Stadtmodelle

Maximilian Sindram

msindram@virtualcitysystems.de

virtualcitySYSTEMS – Experts for 3D City Models

- Founded 2005
- 20 Employees
- Head Quarter Berlin, Office Grafing
- **Leading expert in CityGML based 3D City Models**



Customers

- Federal State of **Bavaria**, **Berlin Partner** for Business and Technology
- Germany: Berlin, **Hamburg**, Frankfurt, Cologne, Stuttgart, Nuremberg, Hannover, Dresden, Dortmund, Potsdam, Loerrach, Kempten, Regensburg, Ludwigsburg, Bottrop, Kassel, Karlsruhe, Freiburg, ...
- International: **Singapore**, **Rotterdam**, **Helsinki**, **Vienna**, **Zurich**, Salzburg, Linz, Innsbruck, Bregenz, Feldkirch, ...



CADFEM Group



24+
COMPANIES

500+
EMPLOYEES

14+
COUNTRIES

CADFEM®



ANSYS-Channel Partner

Shareholdings in

- ▶ CADFEM, Germany
- ▶ CADFEM (Suisse), Switzerland
- ▶ CADFEM (Austria), Austria
- ▶ CADFEM UK CAE, UK
- ▶ CADFEM Ireland, Ireland
- ▶ MESco, Poland
- ▶ SVS FEM, Czech Republic, Slovakia
- ▶ CADFEM CIS, Russia
- ▶ CADFEM Ukraine, Ukraine
- ▶ CADFEM Afrique du Nord, Tunisia, Morocco, Algeria
- ▶ CADFEM Americas, USA
- ▶ Ozen Engineering, USA
- ▶ CADFEM Engineering Services India, India
- ▶ Pera-CADFEM Consulting, China
- ▶ CADFEM SEA, Southeast Asia



CAE-Companies

Shareholdings in

- ▶ CADFEM Medical, Germany
Simulation driven Therapy Planning
- ▶ Componeeering, Finland
Composites Analysis and Design
- ▶ Dynardo, Germany
Robust Optimization
- ▶ InuTech, Germany
Numerical Solutions
- ▶ virtualcitySYSTEMS, Germany
VirtualCities



Start-ups

Investments in

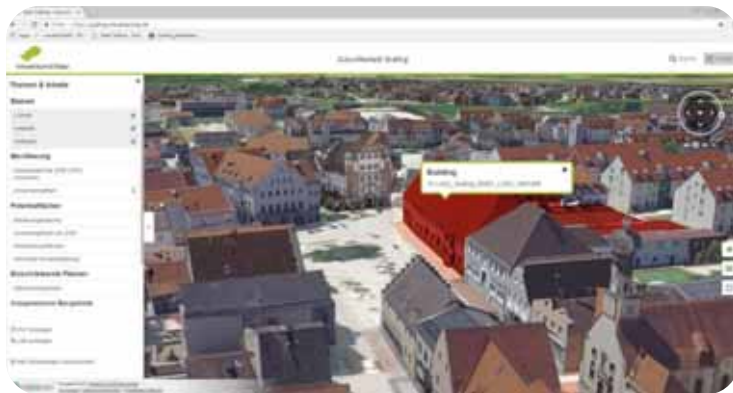
- ▶ 3D Content Logistics, Germany
Urban Analytics
- ▶ Bring! Labs, Switzerland
Bring! simplifies Grocery Shopping
- ▶ Climeworks, Switzerland
CO₂ Capturing
- ▶ Digital Masterpieces, Germany
Your photo & video app community
- ▶ DistallMotion, Switzerland
Robot-supported Endoscopic Surgery
- ▶ ITfficient, Switzerland
Big Data & Predictive Analytics for SMBs
- ▶ Léman Micro Devices, Switzerland
Blood Pressure Device for Mobile Phones
- ▶ Seerene, Germany
Software Analytics



TechNetAlliance

- ▶ Worldwide Network of CAE-Specialist
- ▶ 55+ Companies
- ▶ 25+ Countries
- ▶ 300+ CAE-Experts

One City Model Platform – Many Applications...



Information Platform



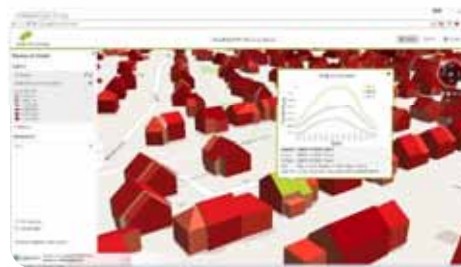
City Marketing



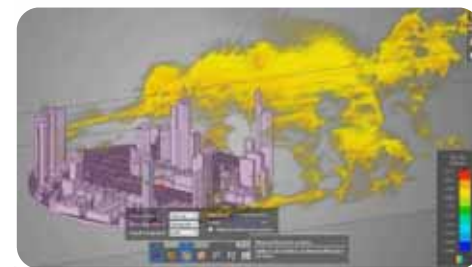
Urban Planning



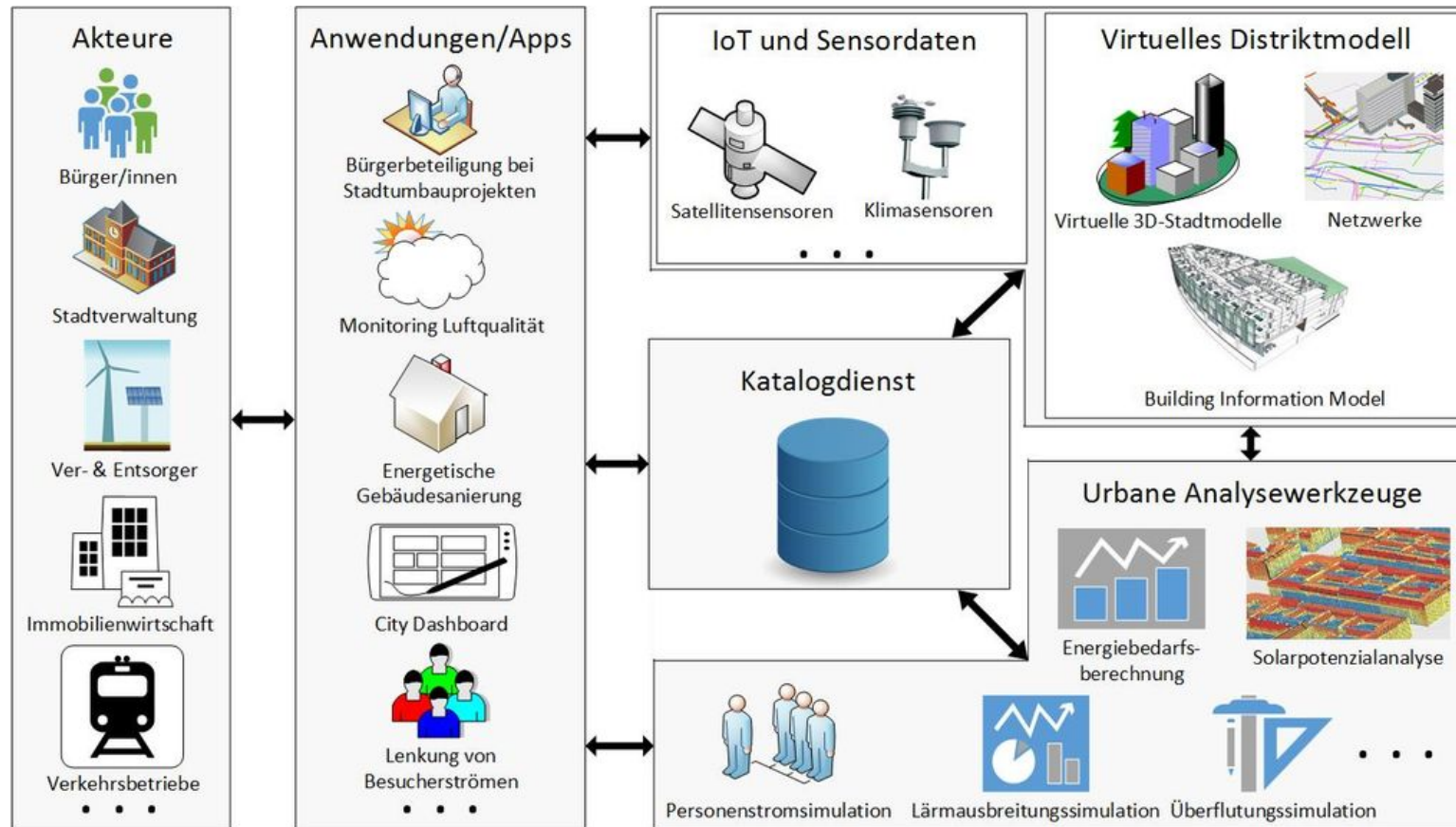
Urban Analytics



Urban Simulation



SDDI – Smart District Data Infrastructure





Filter & Inhalte

- Behörden und Institutionen
- Schulen
- Familien und Kinder
- Freizeit und Kultur
- Hotels und Gastronomie
- Berlin-Partner

Cluster / Branchen

- Gesundheitswirtschaft
- IKT, Medien, Kreativwirtschaft
- Verkehr, Mobilität, Logistik
- Automotive
- Luft- und Raumfahrt
- Schieneverkehrstechnik
- Elektromobilität
- Logistik
- Verkehrstelematik
- Energie/stechnik

- PDF erzeugen
- Link erzeugen
- Filter und Einstellungen zurücksetzen



Wirtschafts-
förderung



- Themen & Inhalte
- Grundkarten
 - Openstreetmap layer
 - Luftbild (2018)
 - Gelände
- Stadtmodelldaten
 - Gebäude
- Flächen
 - Grünflächen

Grünflächen Rosenheim

Citizen Participation

Samantha Fisher · 5 hour
The pedestrians should recapture the public space. In recent years, accidents have been caused by motorists.

Isalah Coleman · 2 hour
In this land-use area more living space needs to be created.

Nevaah Wallace · 2 hour
Please do not forget to include a daycare during the planning phase. In the vicinity there live many young families.

Comment

I have read and agree to the [Terms & Conditions.](#)





Collaborative
Urban
Planning



Herzlich willkommen im WirtschaftsAtlas des Berlin Business Location Centers

Suche Filter Hilfe



**BIM
Integration**



Planungsmodelle

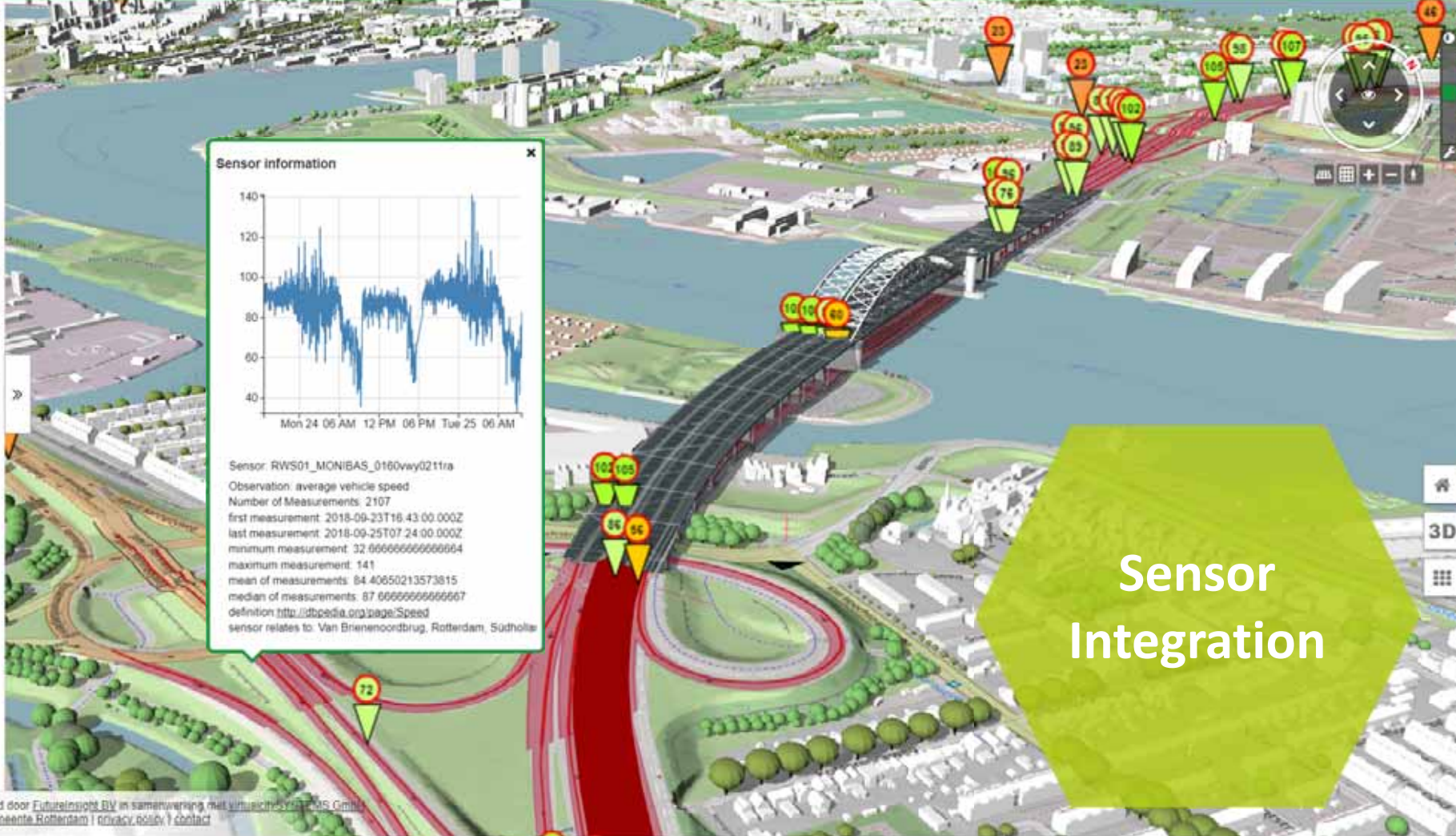
Content

- Basislagen
- Algemeen
 - Gebouwen - model (LOD1)
 - Gebouwen - model (LOD2)
 - Gebouwen - textuur (LOD2)
 - Bruggen- Model
 - Bruggen met textuur
- Thema's

Sensor positions

- STAPI general
- STAPI traffic flow
- STAPI traffic speed

Create Link
Reset settings



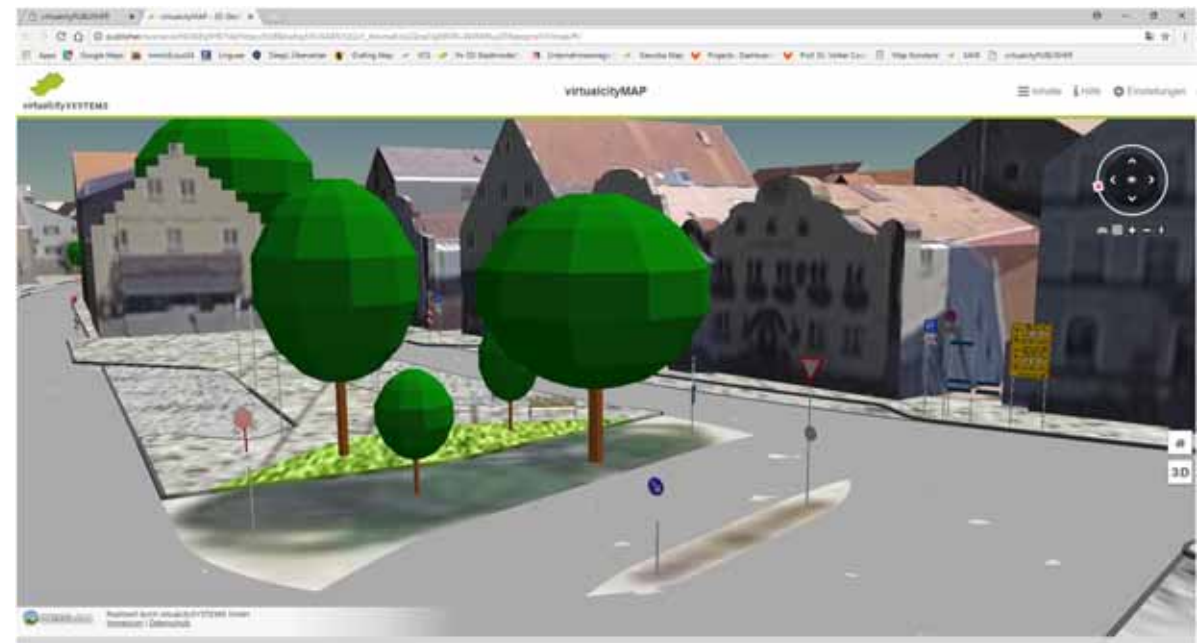
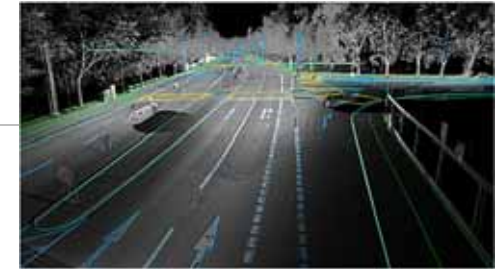
Sensor
Integration

Live Services & Applications...



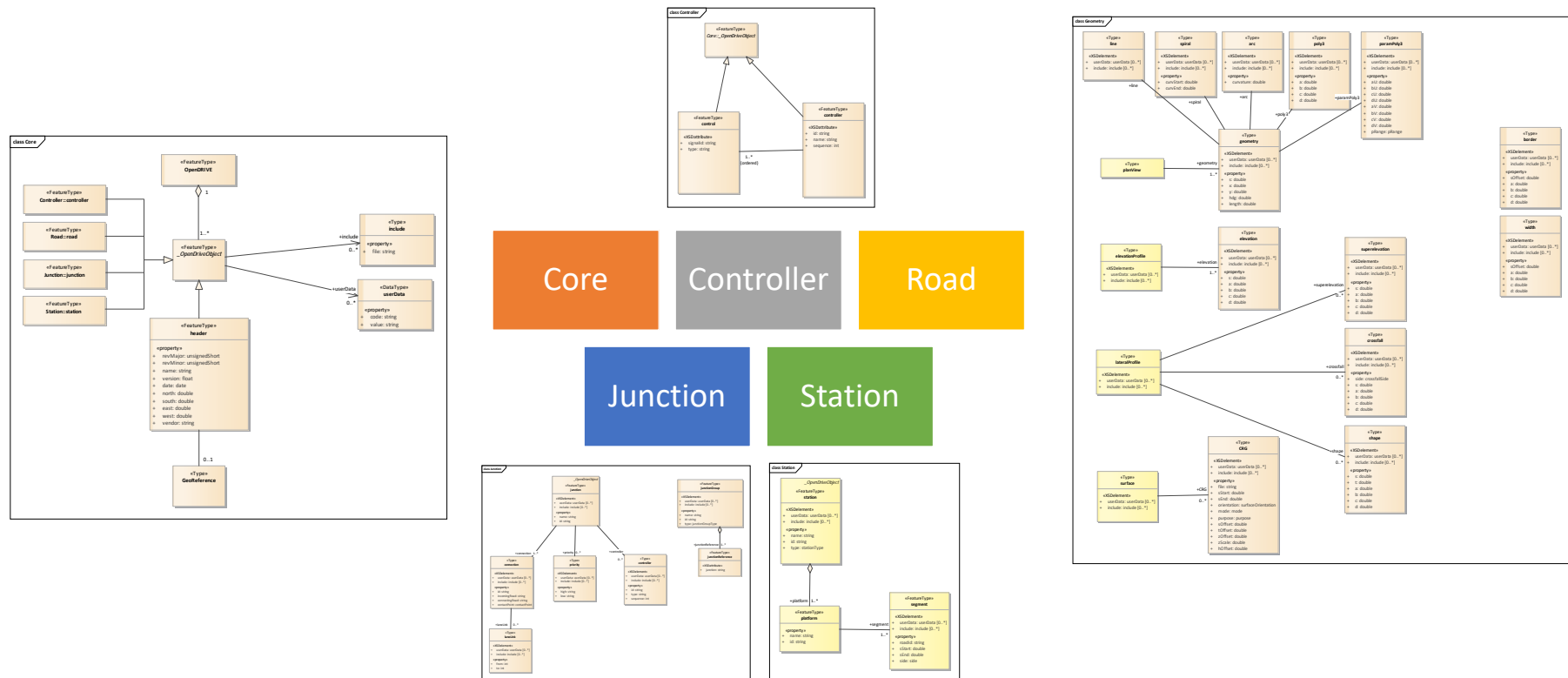
Mobility

- Straßenraummodellierung und Verkehrssimulation



Mobility – OpenDrive & CityGML

- UML-Modell von OpenDrive (ASAM Transfer Project)



<https://www.asam.net/project-detail/asam-opendrive-transfer-project/>

Content

Buildings and Energy

Buildings

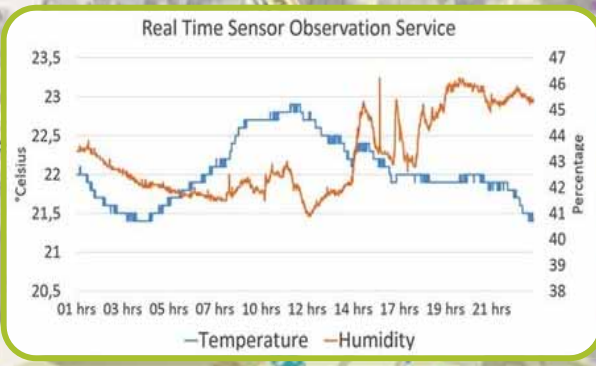
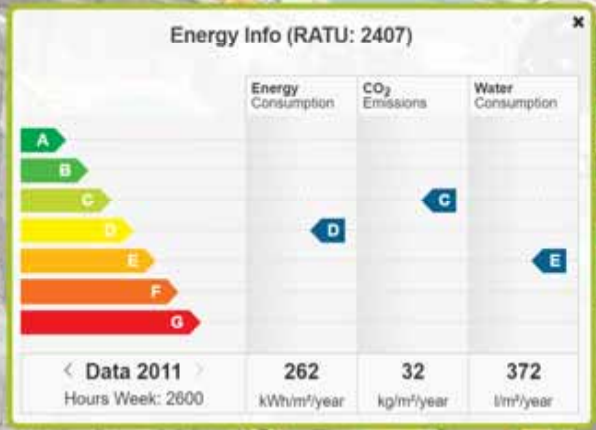
Classe CO2

- Class = A
- Class = B
- Class = C
- Class = D
- Class = E
- Class = F
- Class = G

Viewpoints

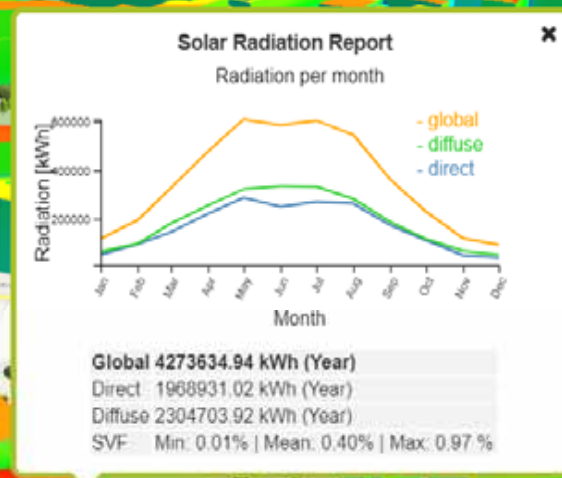
- Helsinki
- City Center
- Hakaniemi

Create PDF
 Create Link
 Reset settings

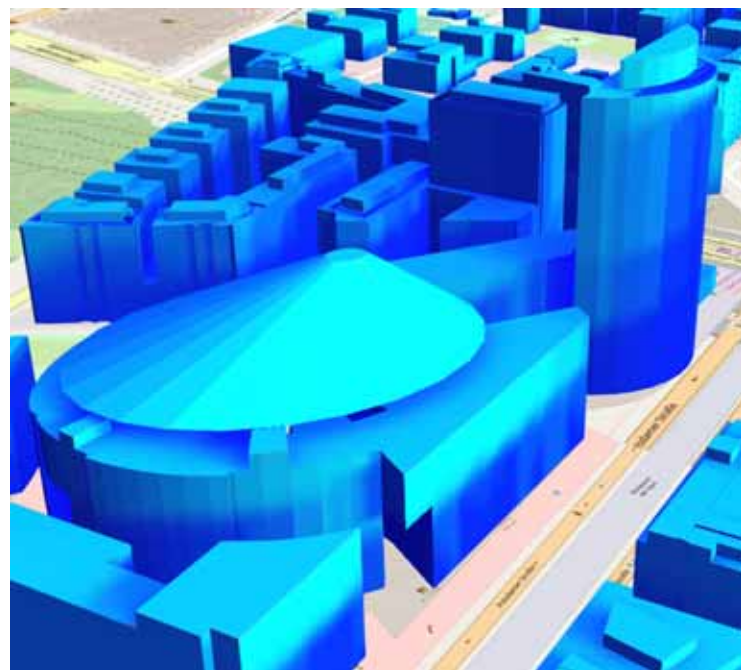


**Energie-
planung**

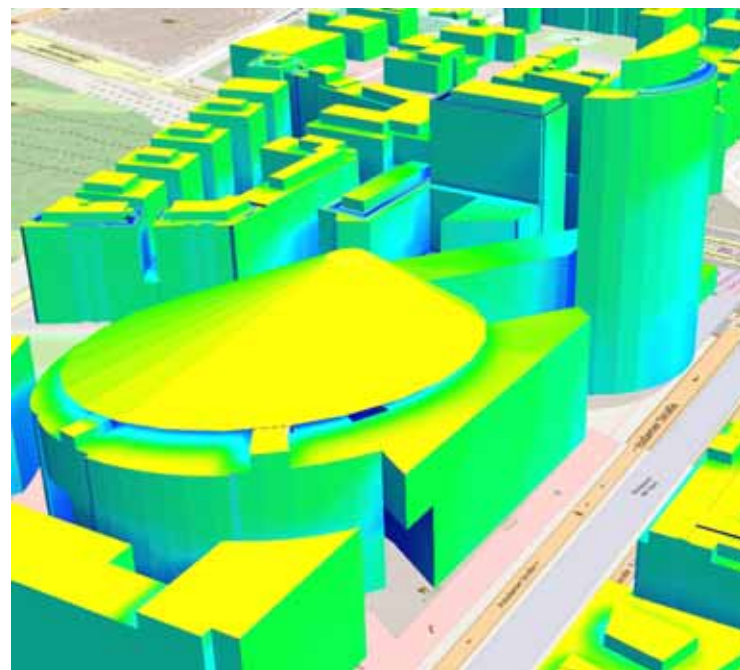
3D Solar Irradiation Analysis per Surface



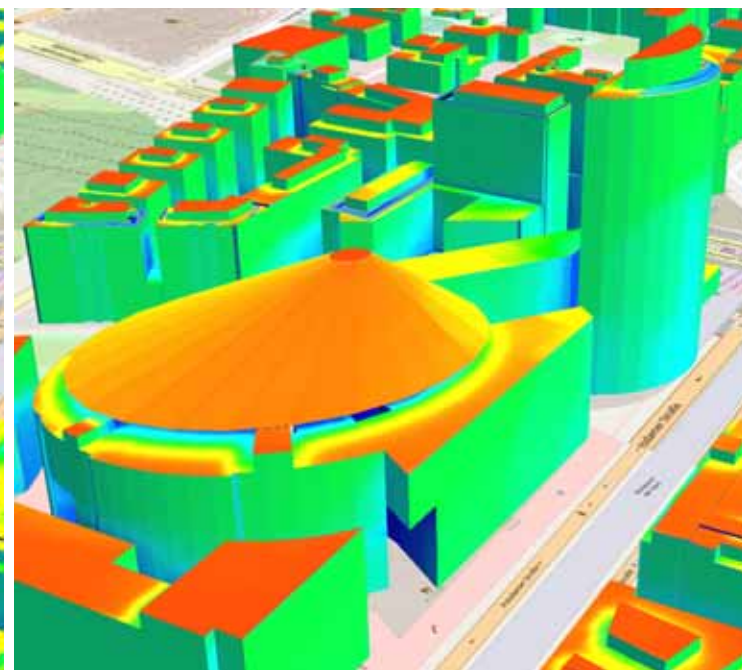
Ergebnisse – Globalstrahlung



Januar



April



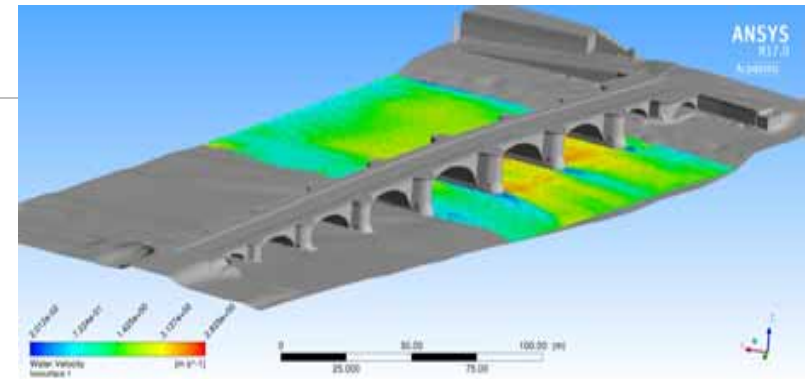
Juli



Flood Protection

Forschungsprojekt Dresden

- Kopplung von 2D and 3D-Simulation
- Schadensanalyse basierend auf CityGML
- Visualisierung in der vcMAP



Hochwasserschutz

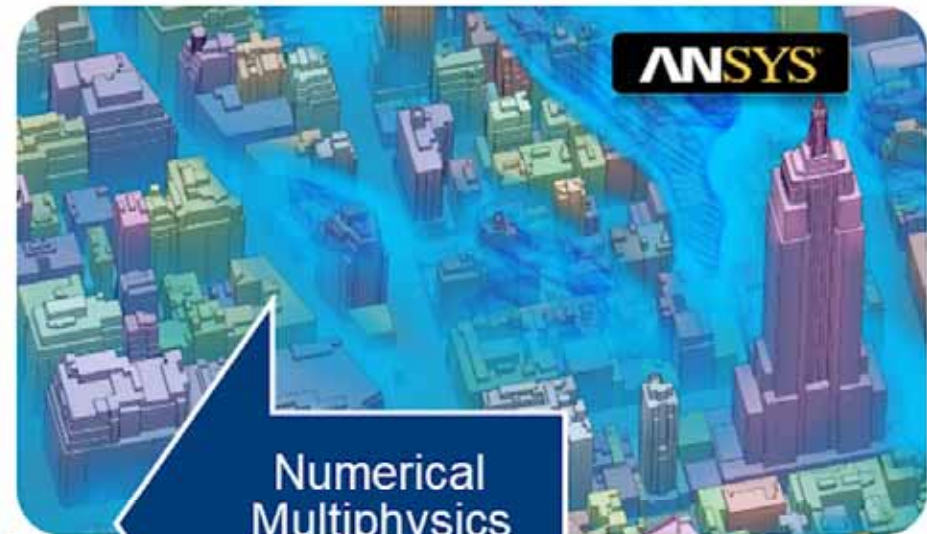
Integration Starkregensimulation (DHI Wasy)





Semantic 3D
City Models

&



Numerical
Multiphysics
Simulations

Urban Discovery Cloud



virtualcitySYSTEMS



BIM – Data Integration & Real Estate Management



Detailliertes Gebäudemodell mit Metainformationen

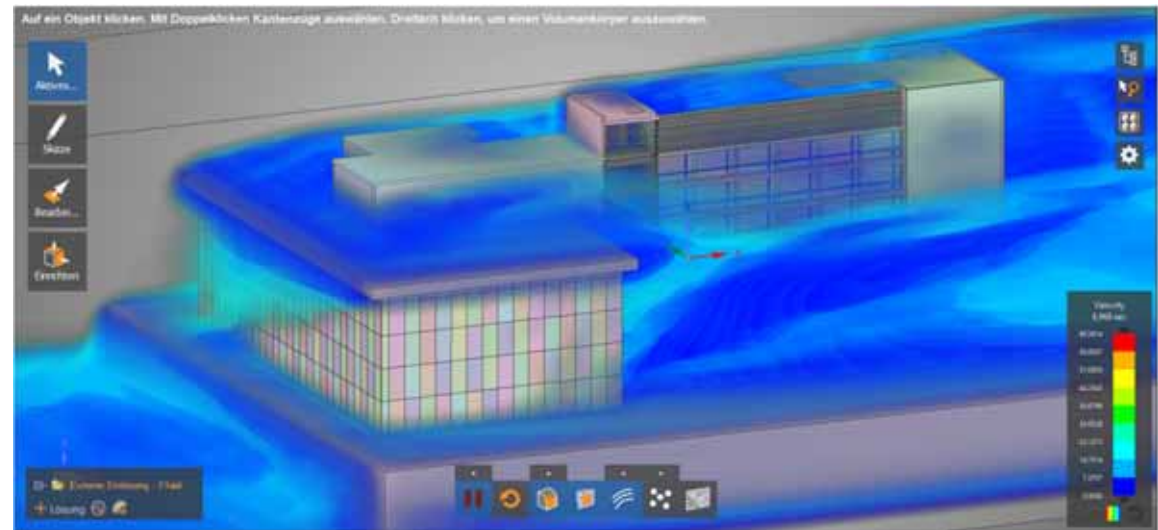
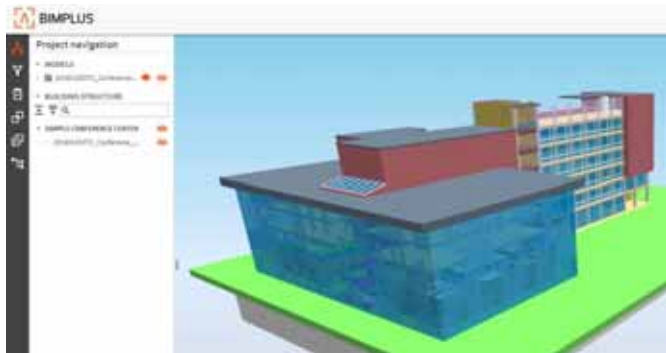
Visualisierung von klassifizierten Punktwolken

- Gebäude
- Oberfläche
- Vegetation
- Umgebung

Detailliertes Geschossmodell mit Metainformationen

Pilotproject ALLPLAN

- **BIMPLUS 3D GIS Extension** → Management & Planning beyond single Buildings
- **BIMPLUS Extension for Building & Urban Simulation**



ANSYS Discovery Live

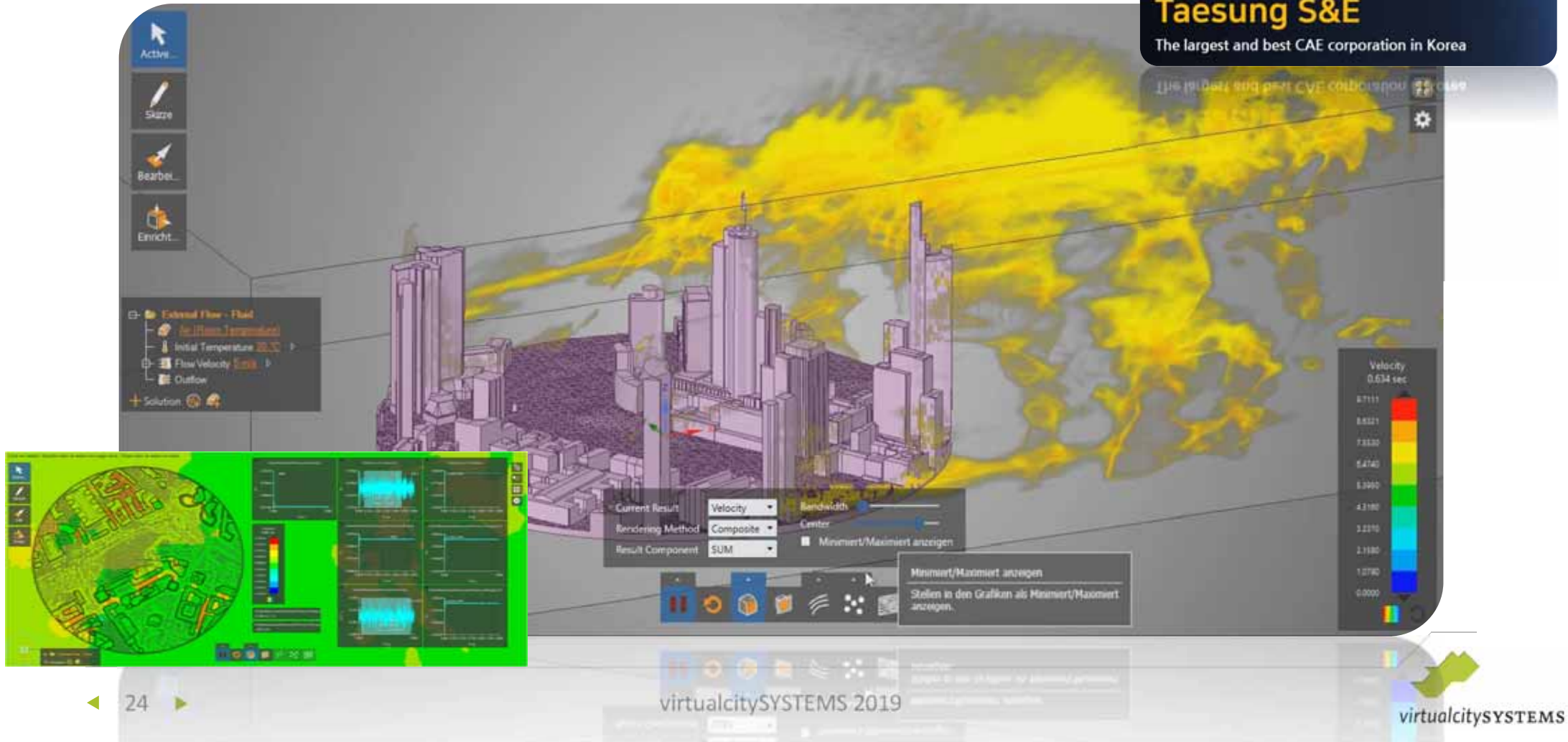
facebook NAVER Cafe NAVER blog edu tsne online

TSNE Company Product

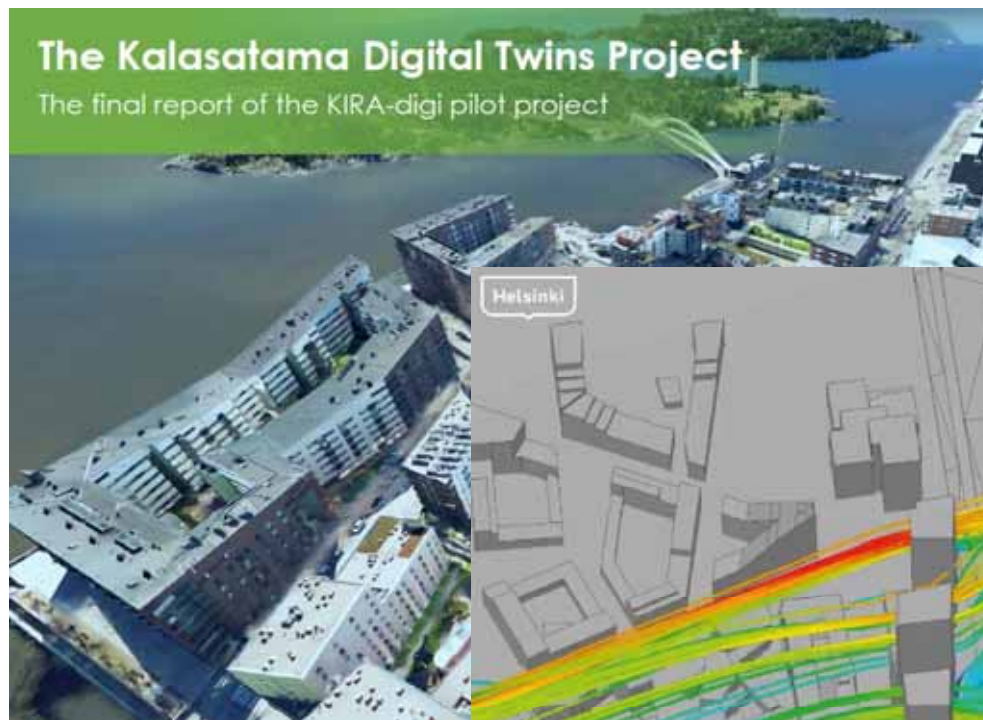
www.tsne.co.kr

Taesung S&E

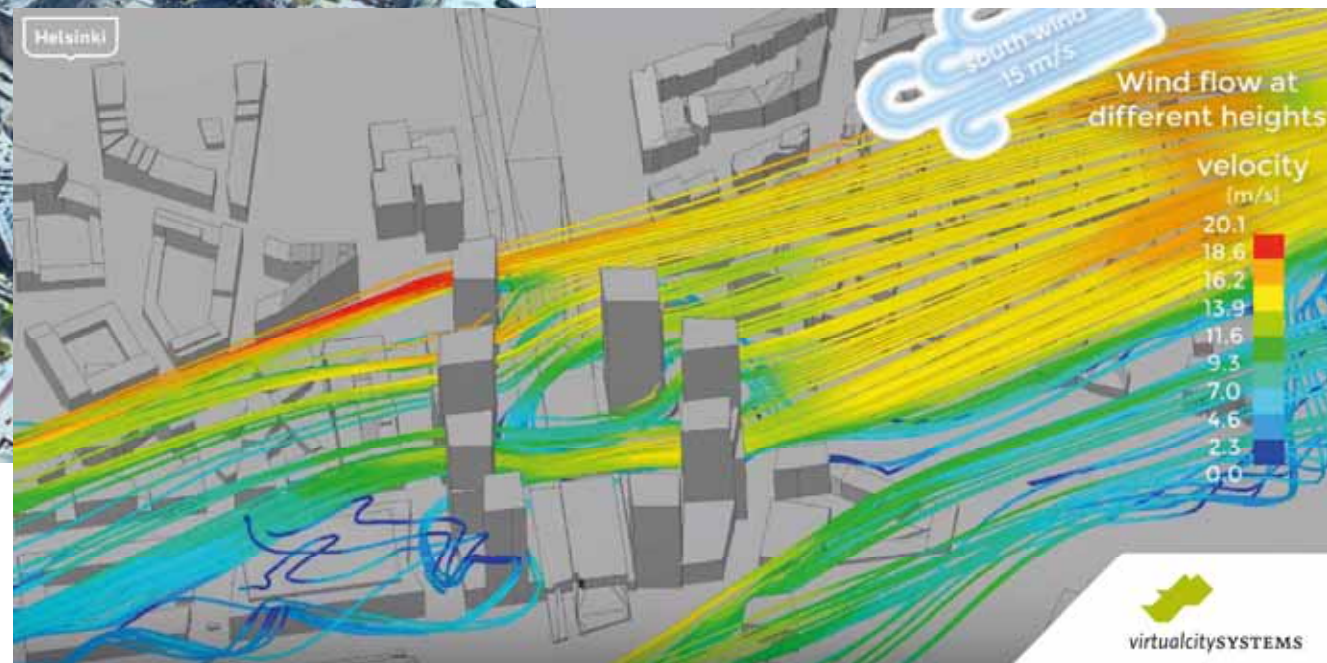
The largest and best CAE corporation in Korea



ANSYS Discovery Live – Smart City Helsinki



https://www.youtube.com/watch?v=Zynv4a_TIIU&feature=youtu.be



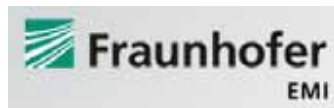
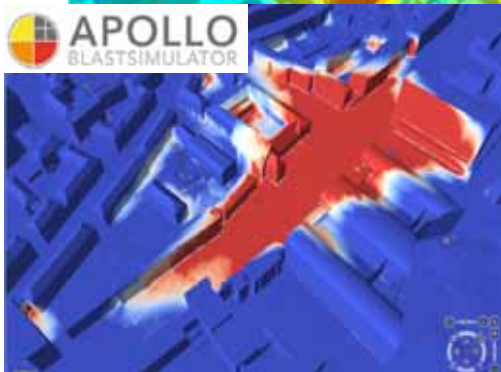
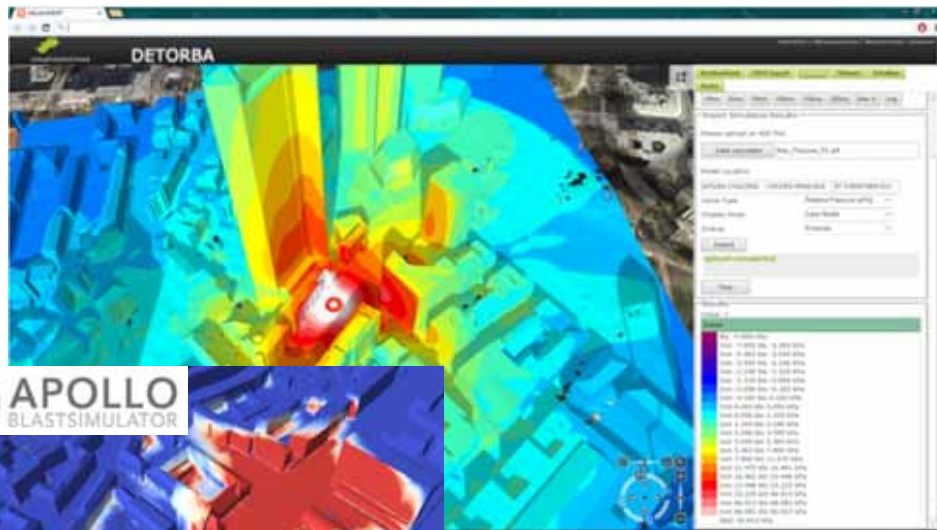
Blast Protection

GEFÖRDERT VOM



Bundesministerium
für Bildung
und Forschung

- New Funded R&D project (BMBF)
- Coordination: Explosive ordnance clearance Düsseldorf (NRW)



- Blast pressure wave & fragment distribution



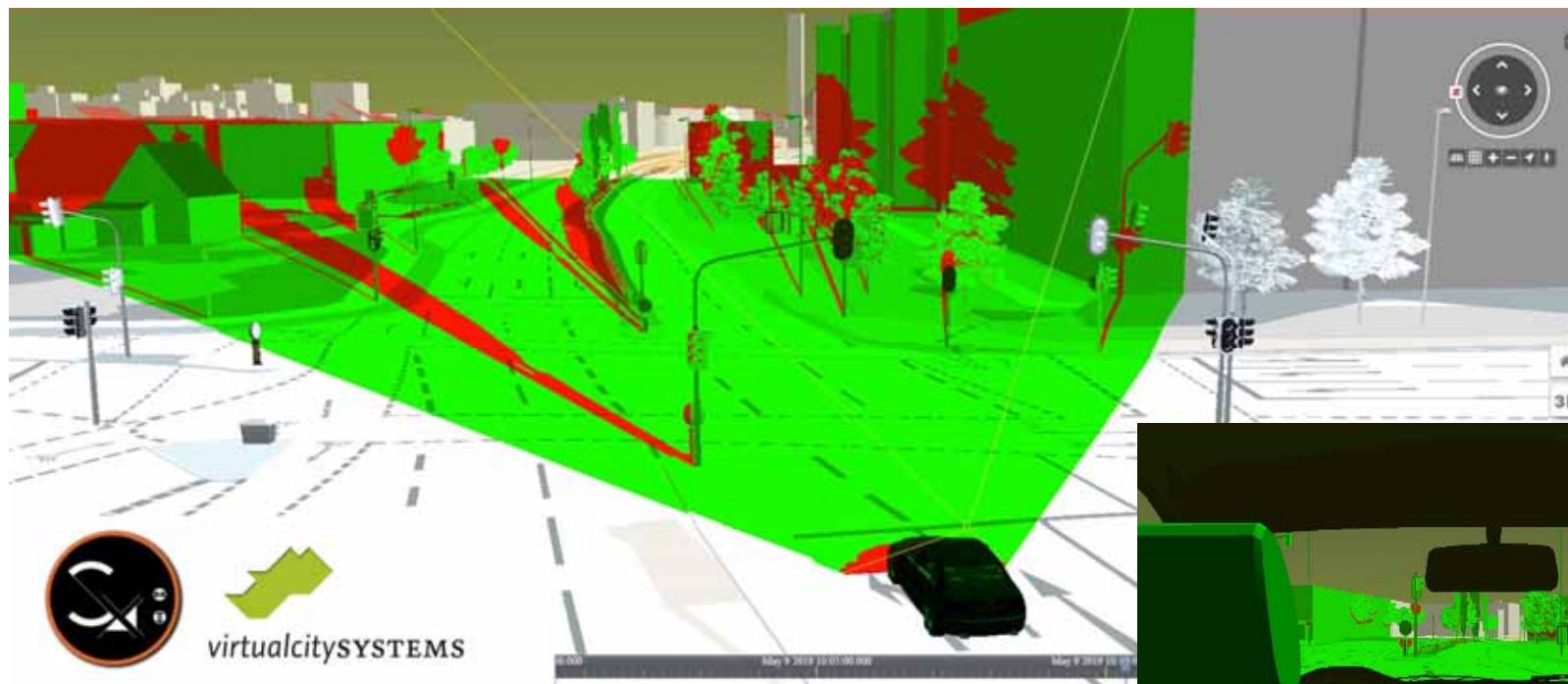
Mobility – R&D-Project SAVE:



Gefördert durch:



aufgrund eines Beschlusses
des Deutschen Bundestages



<https://save-in.de>



Audi
Electronics Venture GmbH



ASAP



KATHOLISCHE UNIVERSITÄT
EICHSTÄTT-INGOLSTADT



Stadt Ingolstadt

Technische Hochschule
Ingolstadt



TWT

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