

# Virtual Exploration of Urban Spatial Changes due to Regional Tramway Line Creation

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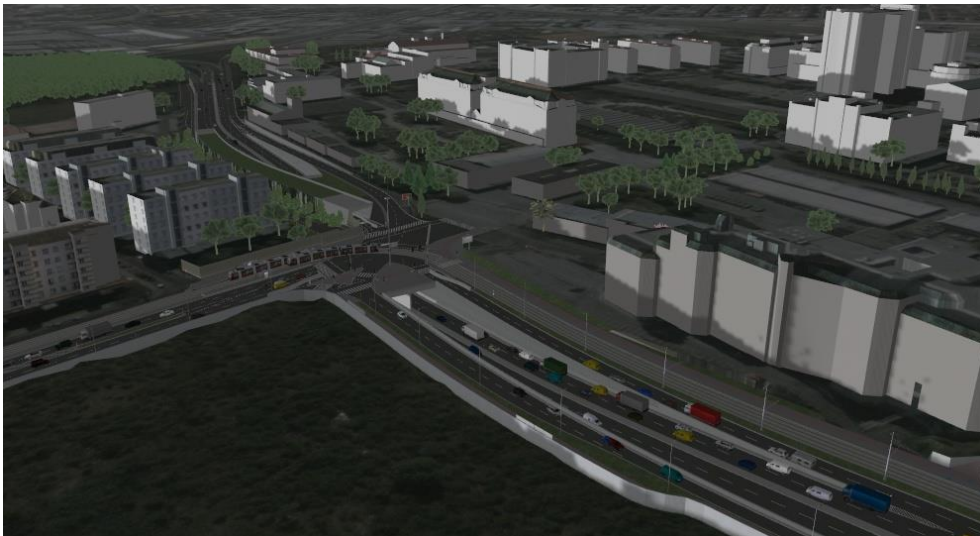
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# Purpose (1)

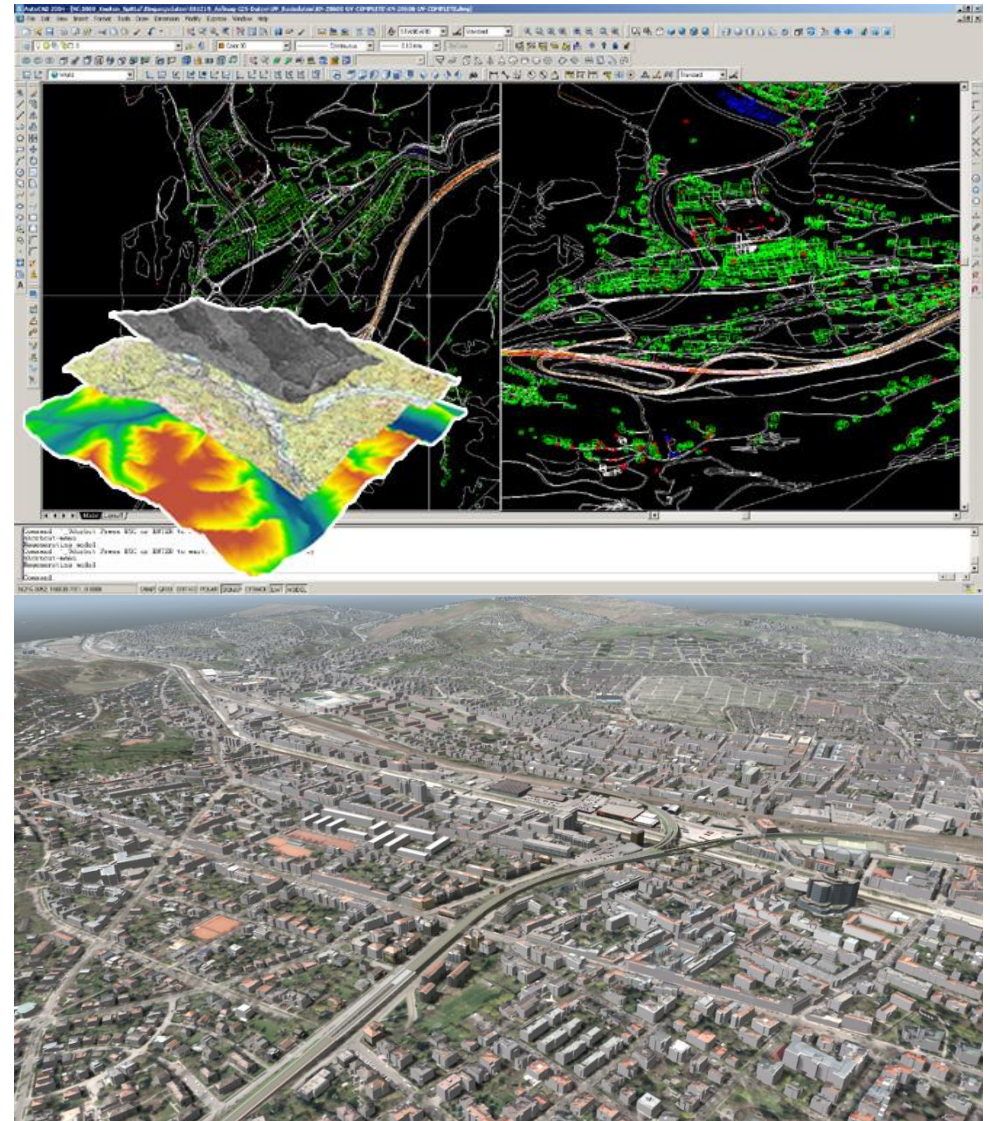
## Infrastructure visualization and planning

- interactive decision support system
- shows impact of construction projects
- perspective for people from different fields
- vegetation, lighting, shadows...



# Purpose (2)

- large scale & geospatially accurate
- GIS Interface/Extension
- extensible
- endpoint and “node” in company partner’s pipeline



# Features – General

- scenes & layer management
- process different (GIS) data
  - mesh: vrml, obj, ...
  - grid: Terrain
  - points: Object placement
  - lines: Power lines, Annotations
  - polygons: extrusion for buildings
  - Ortho photos: Texturing (terrain, roofs, ...)



# Features – 3D & 2D View

- accurate in both views
- linked movement
- linked features
- custom maps
- WMTS Service (OGC compliant)



# Features – Projected Textures

## Display on terrain and geometry

- Metadata & Annotations
- Ortho photos



# Features – Actor Animation System

## Street networks & Controls

- shape files
- traffic "simulation"

## Prebaked Animation

- Pre-simulated 2D/3D data

## Camera

- camera paths
- street networks



# Features – Layer Switching

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# Features – Variant Analysis

## Show impact of

- Different scenarios
- Alternatives
- Milestones
- ...



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# Features – Output

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- screenshots
- videos with camera animation
- panorama screenshots & videos
- traffic simulation to key frames
- scene cutout



# Use Case – Innsbruck Tramway Line



# Use Case – Benefits



- New connection between different streets
- Improvement to traffic flow
- Access to public transportation



# Use Case – Benefits



- Realistic detailed rendering can be distracting
- Use overlays/annotations for highlights
- Show stakeholders details

# Use Case – Benefits



- Removal of old and derelict buildings
- New exclusive track for tramway
- No additional load on existing streets

# Use Case – Benefits



- Spacing and placement of new stations
- New access to important parts of the city
- Dedicated station for youth hostel



**Thank you for your attention!**

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