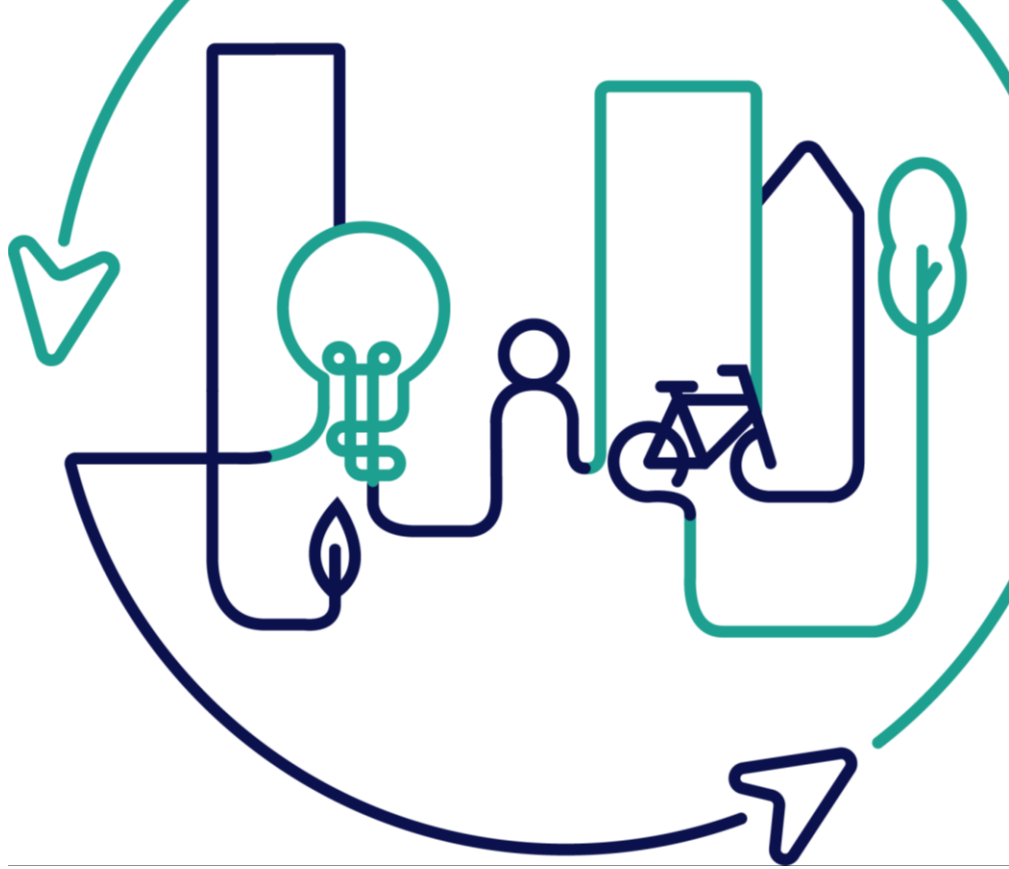
EUROPEAN URBAN INITIATIVE

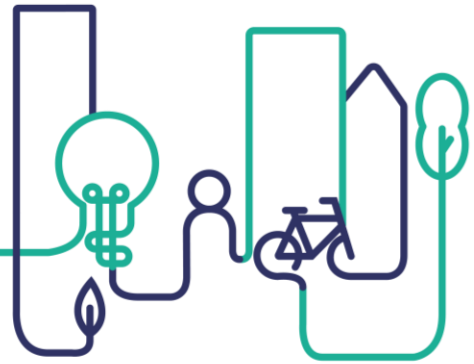


Co-funded by the European Union

Workshop 8 - Tallinn Digital Twin

Enhancing the accessibility and value of data to create useful tools for city planning

Markus Annilo, Digital Twin Technology Manager
Stina Heikkilä, EUI Session Moderator



Co-funded by
the European Union

Start with slido

Join at **slido.com** with **#2760124**

Go to the **“polls” tab**

slido

How familiar are you with the Digital Twin concept?

ⓘ Start presenting to display the poll results on this slide.

slido

What best describes your area of work?

ⓘ Start presenting to display the poll results on this slide.

AIMS OF THIS SESSION

- Understand the concept of Digital Twins through the experience of Tallinn
- To discuss and map the role of Digital Twins in fostering innovation ecosystems for sustainable urban development

Digital twin and Tallinn

Markus Annilo

Tallinn

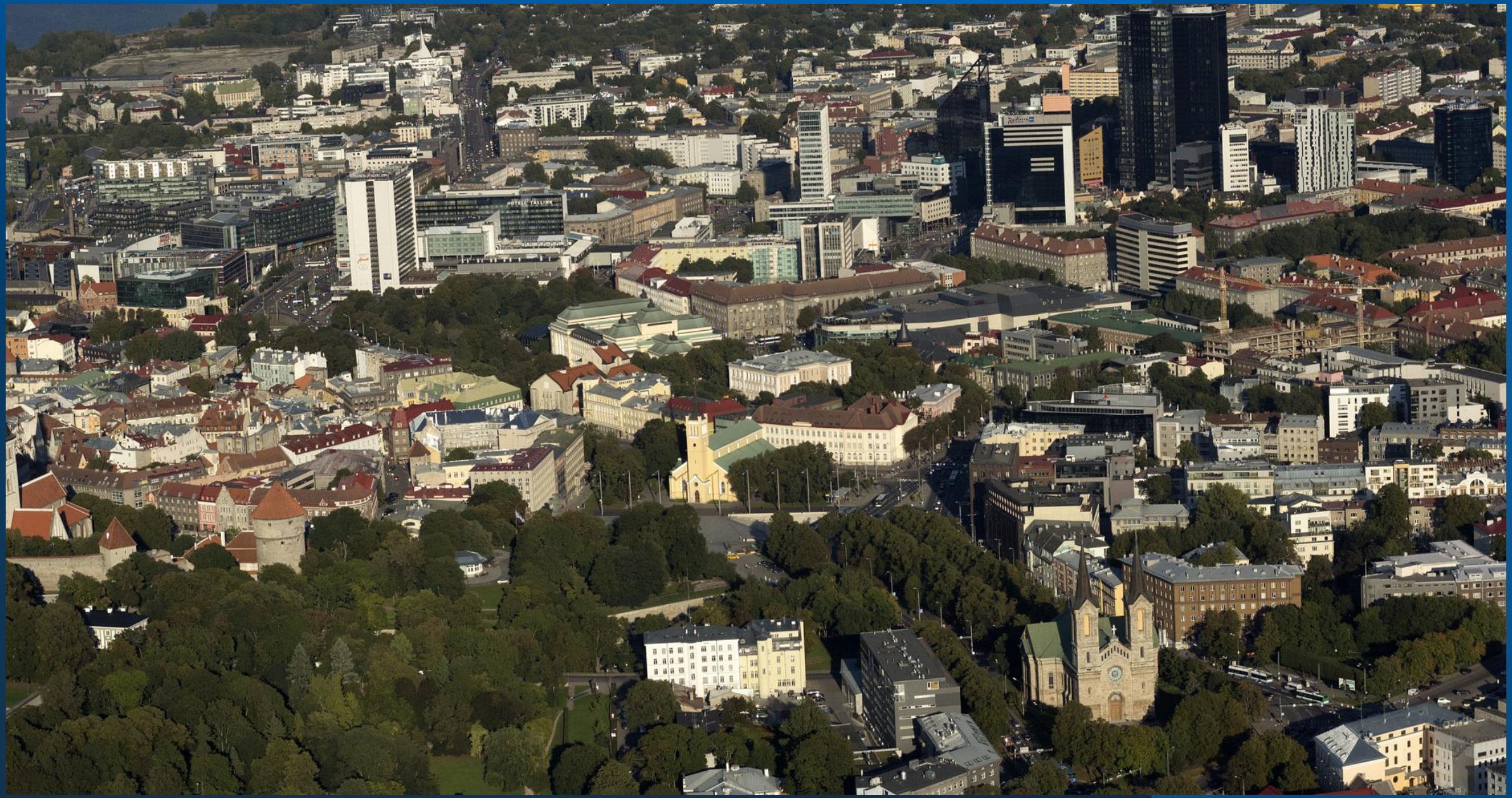
What could be considered a digital twin?

Digital twin?

A virtual model of a real system that is in constant sync with its physical counterpart

IEEE/ISO standard 26531:2015 "Standard Terms and Definitions for Intelligent Manufacturing Systems"

What about Tallinn's digital twin?

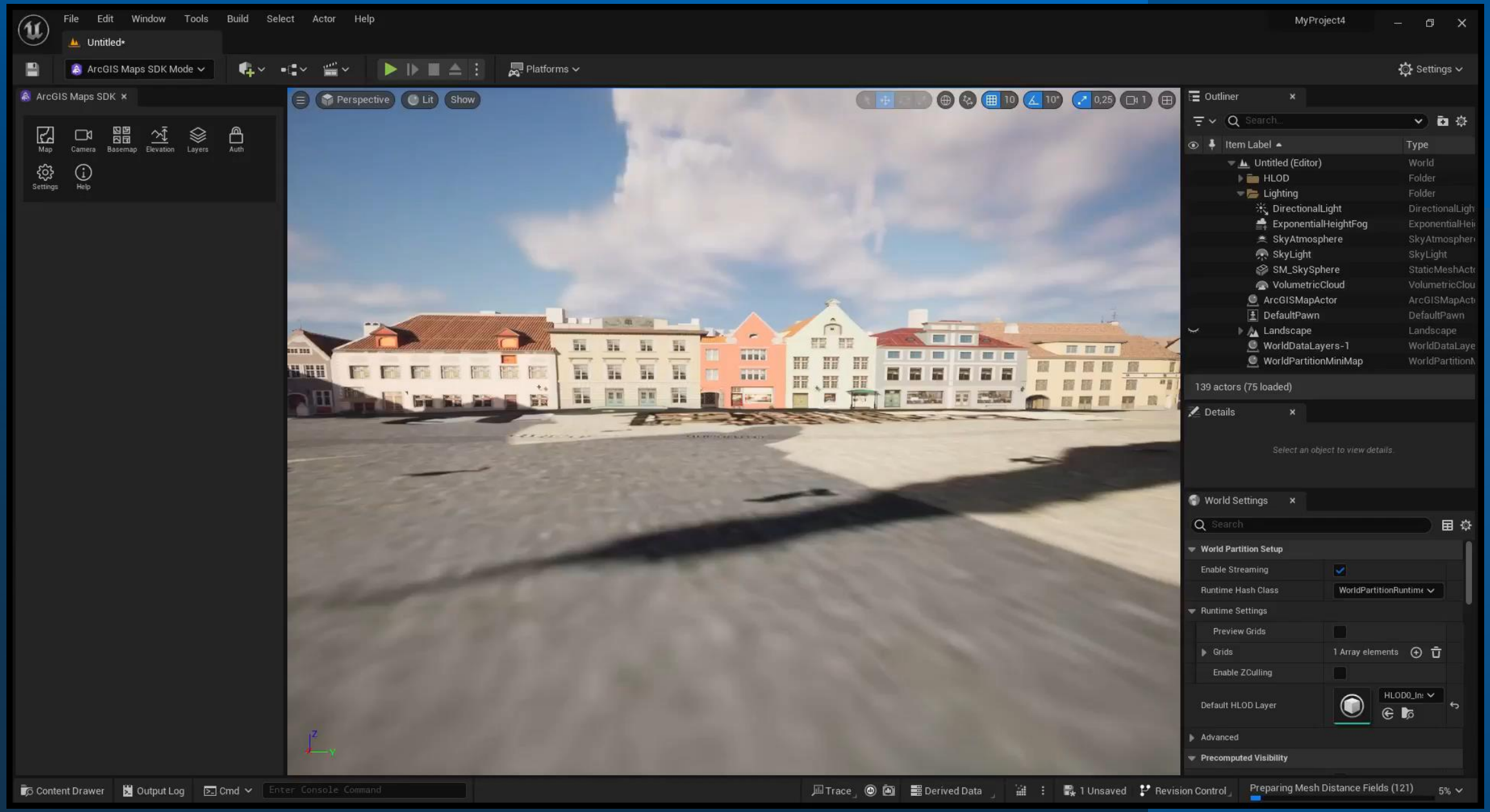

HOTELL TALLINK

MINSK
KIIEV
MILAANO
PARIIS
FRANKFURT

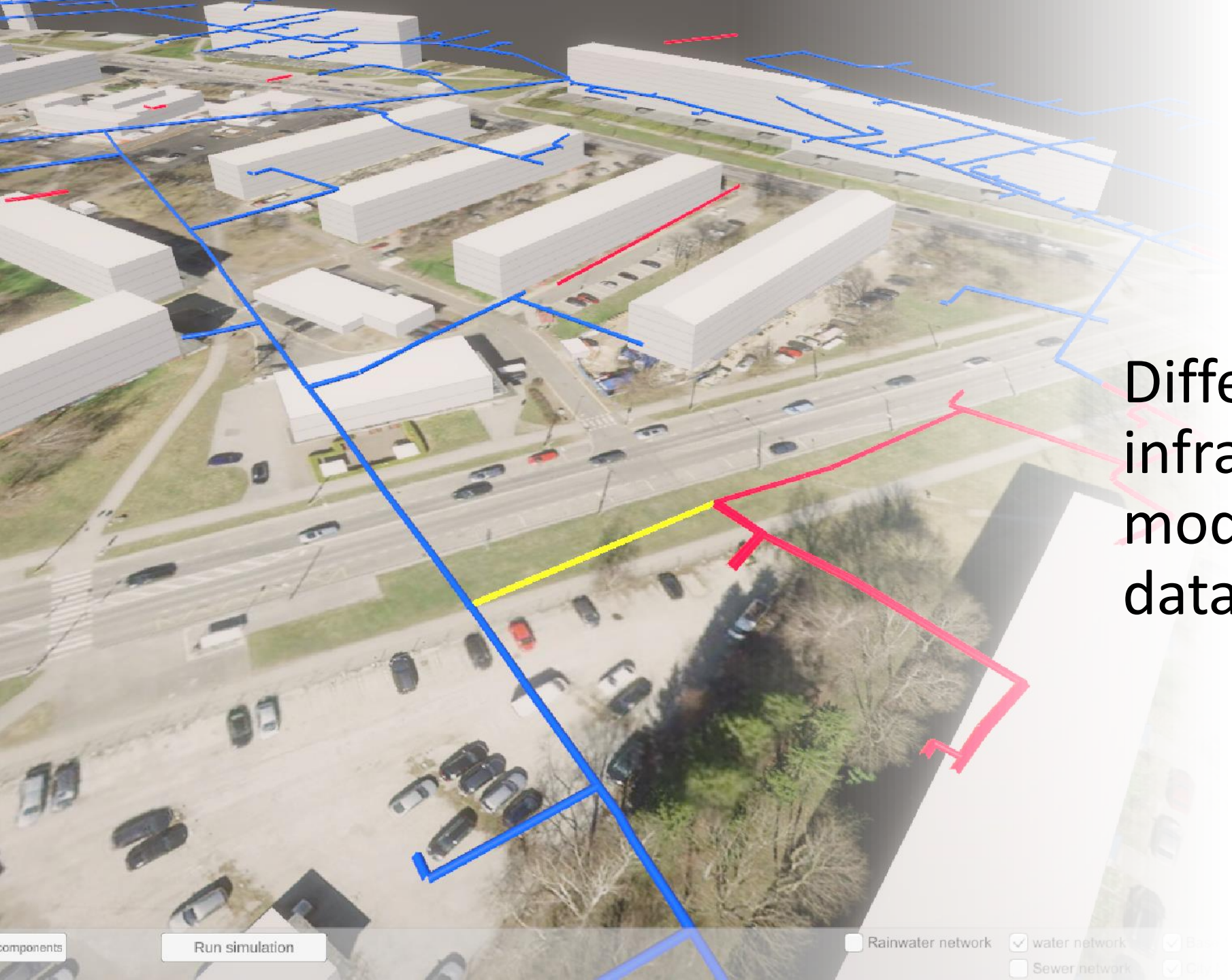
How to build a platform?

- Data management and collection
- Analysis and operation of technical systems
- Decision-making and development of Tallinn

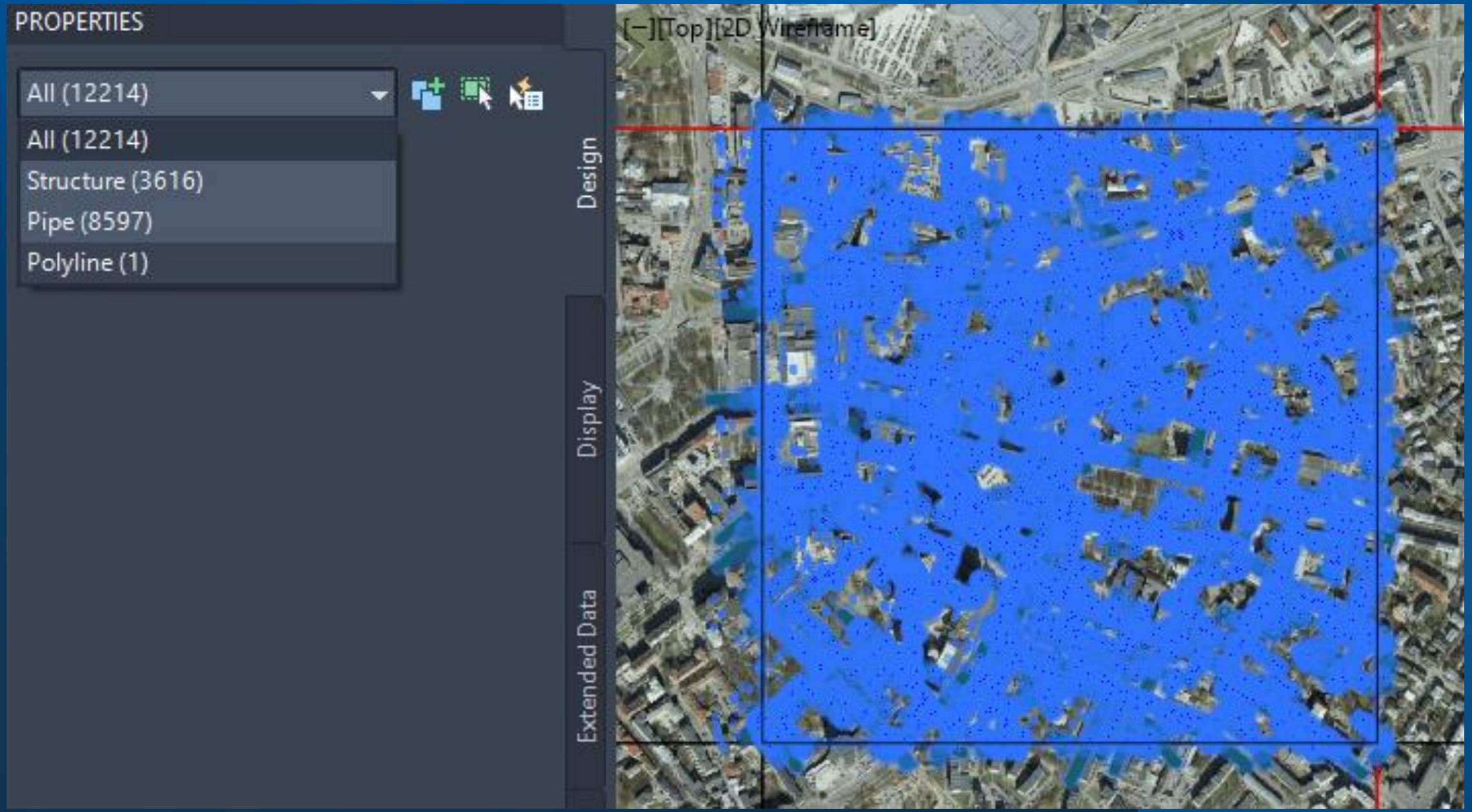
3D city model

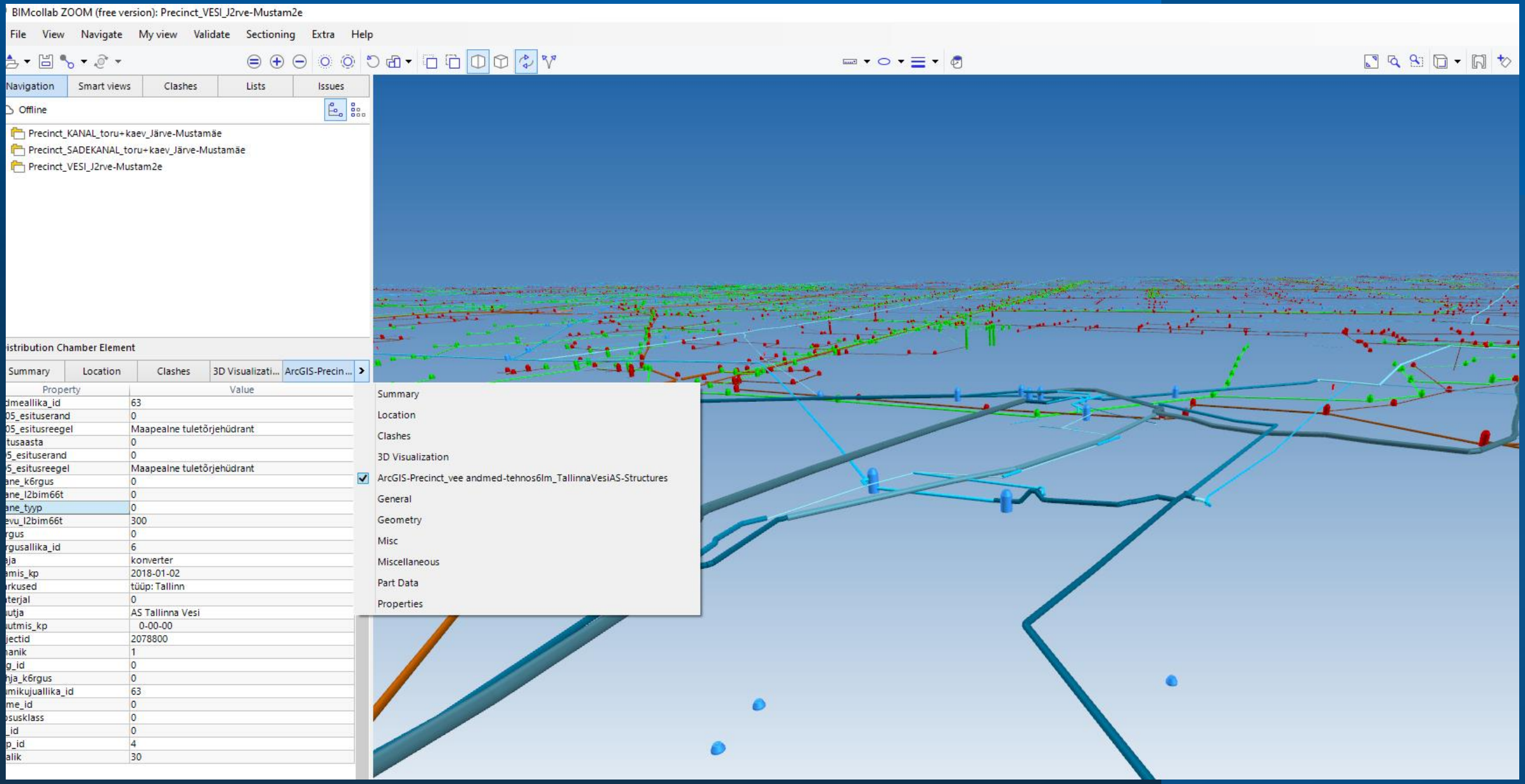

File
Edit
Window
Tools
Build
Select
Actor
Help
MyProject4
Untitled*
ArcGIS Maps SDK Mode
Platforms
Settings
ArcGIS Maps SDK
Map
Camera
Basemap
Elevation
Layers
Auth
Settings
Help
Perspective
Lit
Show
Outliner
Search...
Item Label
Type
Untitled (Editor)
World
HLOD
Folder
Lighting
Folder
DirectionalLight
ExponentialHeightFog
SkyAtmosphere
SkyLight
SM_SkySphere
VolumetricCloud
ArcGISMapActor
DefaultPawn
Landscape
WorldDataLayers-1
WorldPartitionMiniMap
139 actors (75 loaded)
Details
Select an object to view details.
World Settings
Search
World Partition Setup
Enable Streaming
Runtime Hash Class
Runtime Settings
Preview Grids
Grids
1 Array elements
Enable ZCulling
Default HLOD Layer
Advanced
Precomputed Visibility
Content Drawer
Output Log
Cmd
Enter Console Command
Trace
Derived Data
1 Unsaved
Revision Control
Preparing Mesh Distance Fields (121)
5%

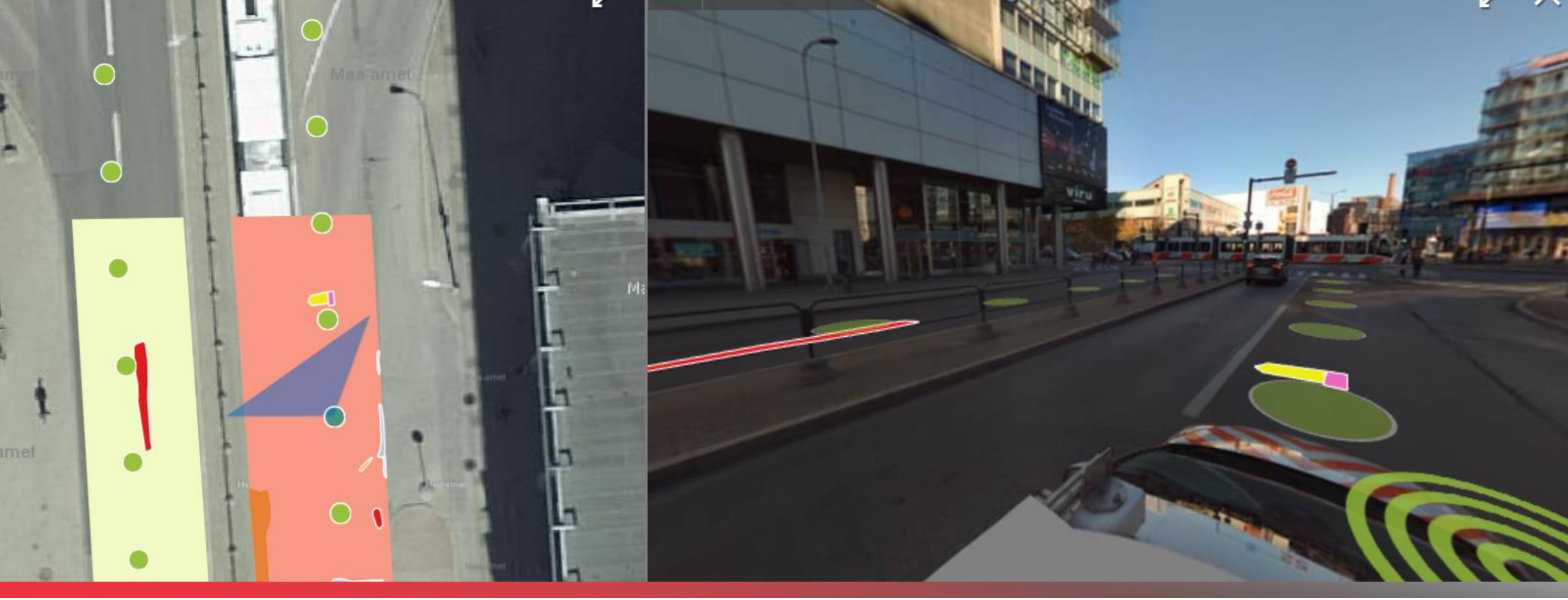
3d.tallinn.ee



Different infrastructure models and databases


PROPERTIES
All (12214)
All (12214)
Structure (3616)
Pipe (8597)
Polyline (1)
Design
Display
Extended Data
[−][Top][2D Wireframe]


BIMcollab ZOOM (free version): Precinct_VESI_J2rve-Mustam2e
File View Navigate My view Validate Sectioning Extra Help
Navigation Smart views Clashes Lists Issues
Offline
Precinct_KANAL_toru+kaev_Järve-Mustamäe
Precinct_SADEKANAL_toru+kaev_Järve-Mustamäe
Precinct_VESI_J2rve-Mustam2e
istribution Chamber Element
Summary Location Clashes 3D Visualizati... ArcGIS-Precin...
Property Value
dmeallika_id 63
05_esituserand 0
05_esitusreegel Maapealne tuletõrjehüdrant
tusaasta 0
5_esituserand 0
5_esitusreegel Maapealne tuletõrjehüdrant
ane_k6rgus 0
ane_l2bim66t 0
ane_tyyp 0
evu_l2bim66t 300
rgus 0
rgusallika_id 6
aja konverter
mis_kp 2018-01-02
rkused tüüp: Tallinn
terjal 0
utja AS Tallinna Vesi
utmis_kp 0-00-00
jectid 2078800
anik 1
g_id 0
hja_k6rgus 0
mikujuallika_id 63
me_id 0
susklass 0
_id 0
p_id 4
alik 30
Summary
Location
Clashes
3D Visualization
ArcGIS-Precinct_vee andmed-tehnos6lm_TallinnaVesiAS-Structures
General
Geometry
Misc
Miscellaneous
Part Data
Properties



New technologies for data and their processing

Tallinn

Digital twin for citizen

Tallinn

What's next?

- First available services.
- Cooperation and open communication with different parties.
- Web portal for digital twin

Thanks!

Tallinn

Markus Annilo
Digikaksiku tehnoloogiajuht
Markus.annilo@tallinnlv.ee
+372 56872315

LINKING DIGITAL TWIN TECHNOLOGY TO INNOVATION ECOSYSTEMS & SUSTAINABLE URBAN DEVELOPMENT

- Some ideas…

Governance

- Efficient use of public funds (e.g. shortened planning processes)
- Improved public engagement in city planning

Environment & Climate

- Improved traffic planning to minimise air pollution and CO2 emissions
- Improved spatial planning to help nature protection
- Improved Climate Change Adaptation and Disaster Risk Reduction and Prevention

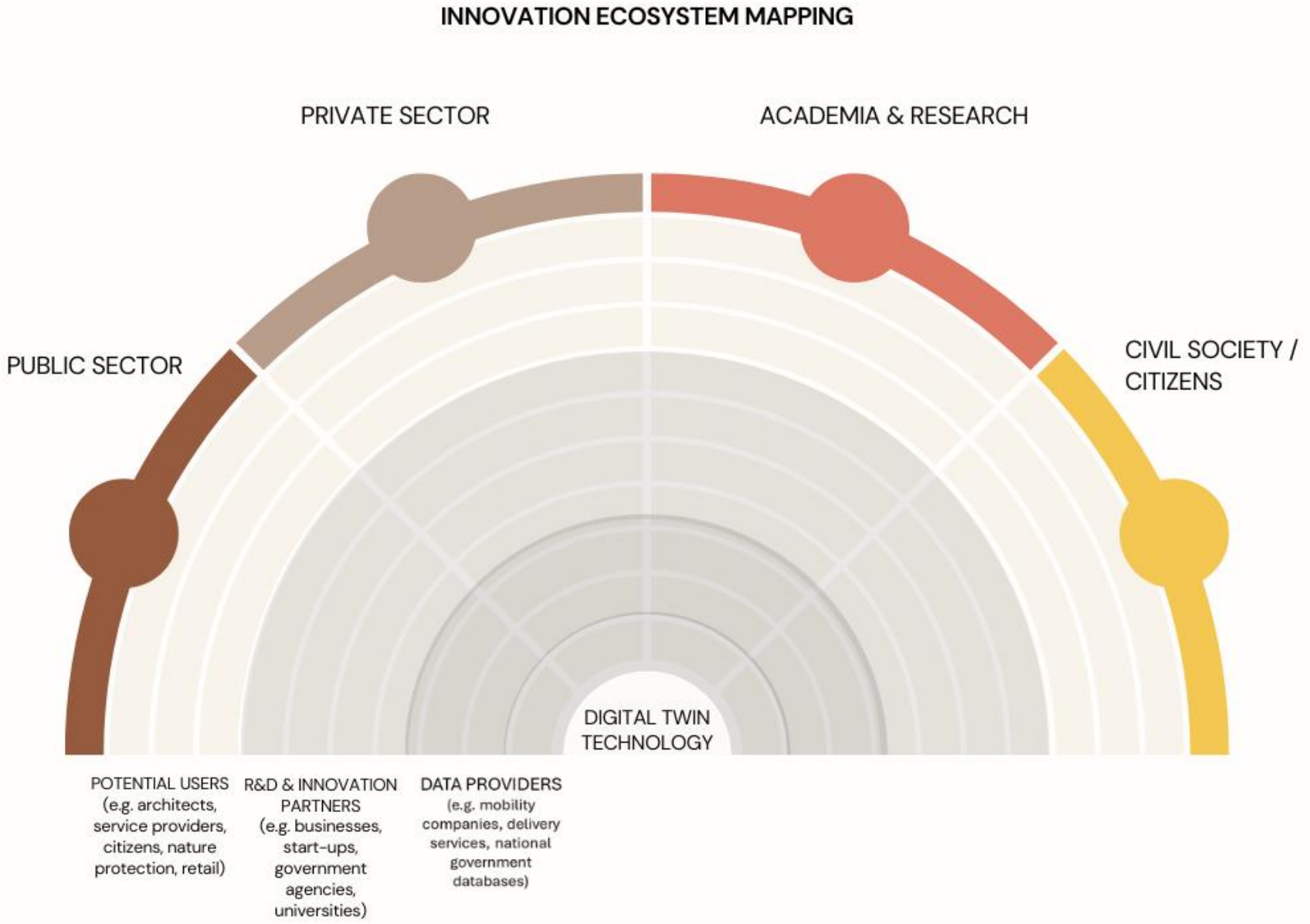
Social and cultural

- Improved accessibility (e.g. access for people with disabilities, child-friendliness)
- Simulation of planning concepts (e.g. 15 min city)
- Cultural heritage conservation (e.g. post conflict)

Economy

- Business development support
- Planning retail locations
- Attracting international R&D

LET'S MAP THE ECOSYSTEM



HOW WE WILL WORK – 30 minutes

1. Gather in **groups of 4-5** around the canvases
2. **Introduce who you are** and your area of work and experience with Digital Twins and /or Innovation Ecosystems, as relevant
3. Discuss **one possible impact area at a time** and map who could be the different actors in the ecosystem around digital twin technology
4. **Share your insights** with the big group

Start with slido

Join at **slido.com** with **#2760124**

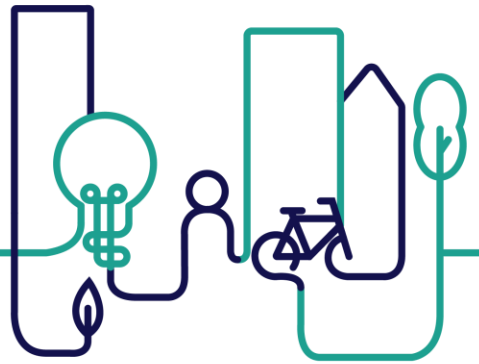
Go to the **“polls” tab**

slido

Where do you see the highest potential for impact towards sustainable urban development provided by Digital Twins technology?

ⓘ Start presenting to display the poll results on this slide.

What’s next?

09:45	Interactive Workshops
10:15	Coffee break
11:30	Meet the cities and funders
12:30	Lunch
14:00	Making it all happen
15:30	What’s next?
16:00	Closing together

Thank you