Enhance Collaboration and Consumption of Reality Data with Cloud Services

ContextCapture

Bentley Advancing Infrastructure

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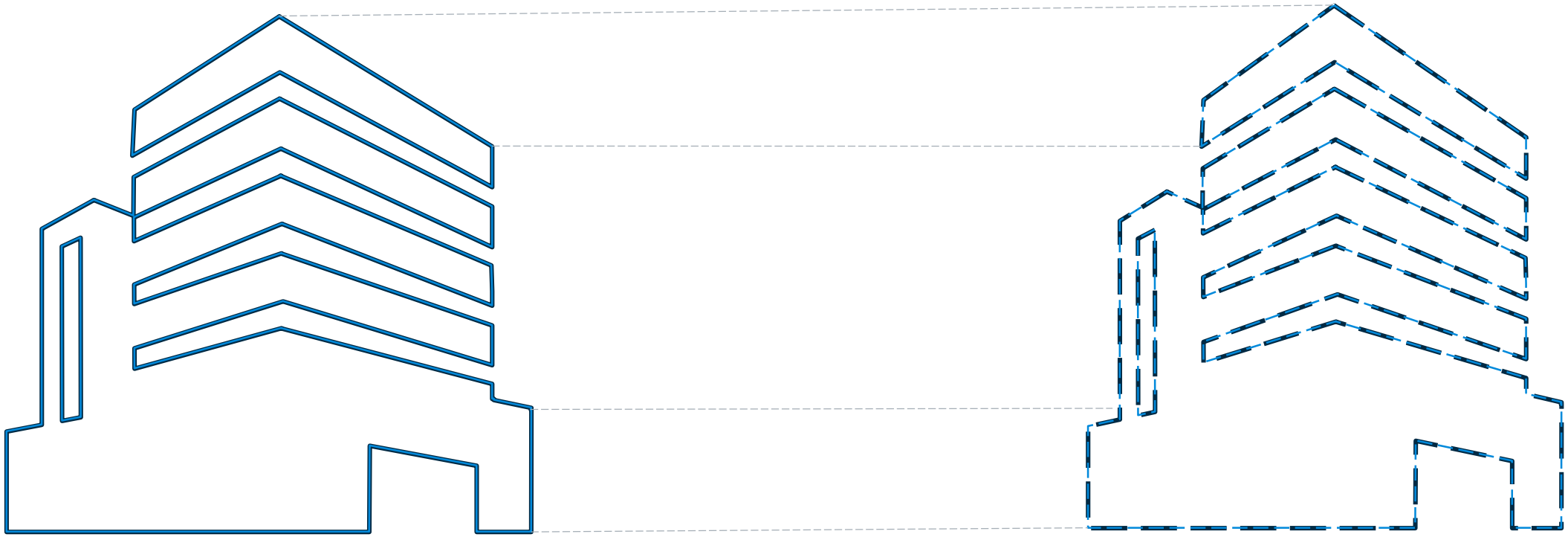

Connecting Reality and “Virtuality”

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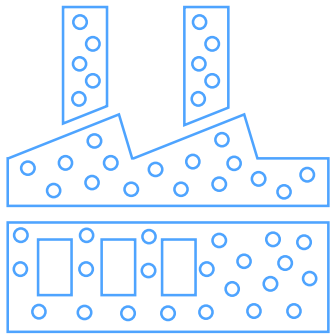
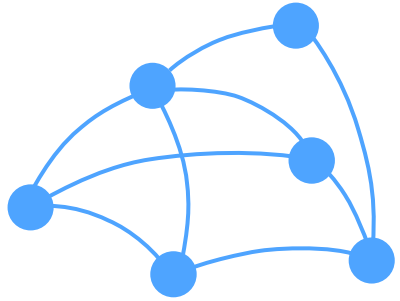
What is reality data?

- Data that provides digital context for all phases of an asset lifecycle.

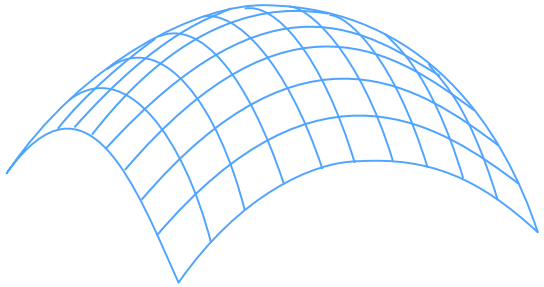
Photos



Point Cloud



Reality Mesh



Terrain

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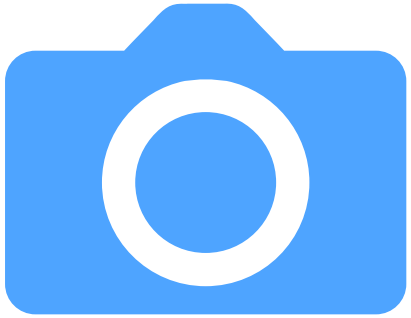
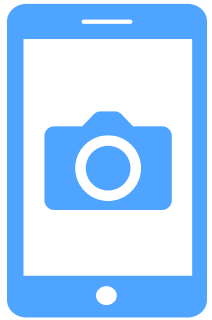
Acquiring reality data

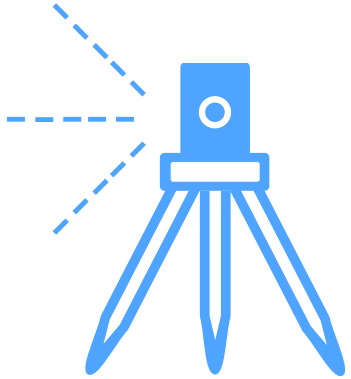
Drone



Handheld camera



Mobile phone



Laser scanner

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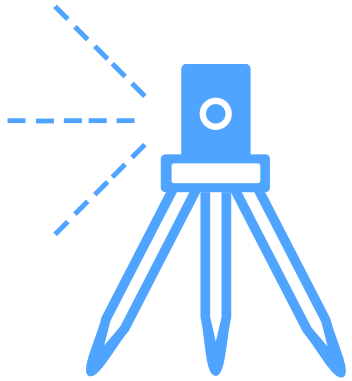
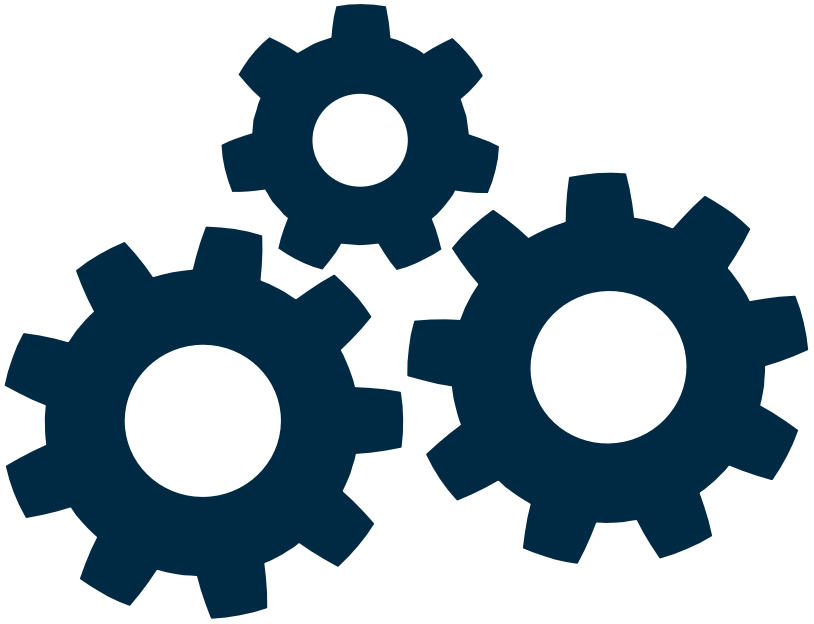
Processing reality data into a reality model

Photos



Laser scanner data



Reality model

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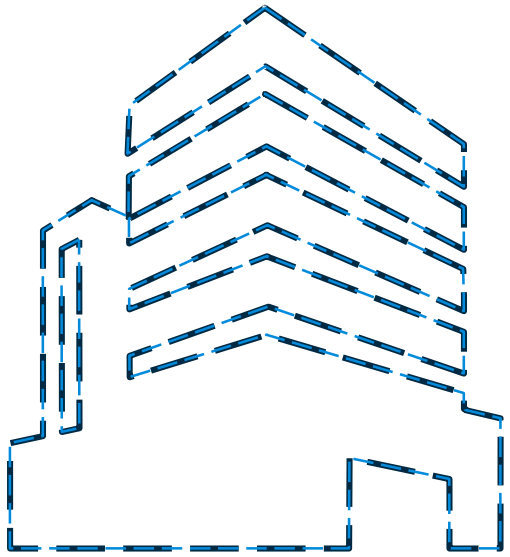
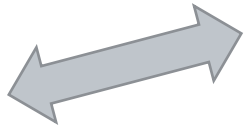
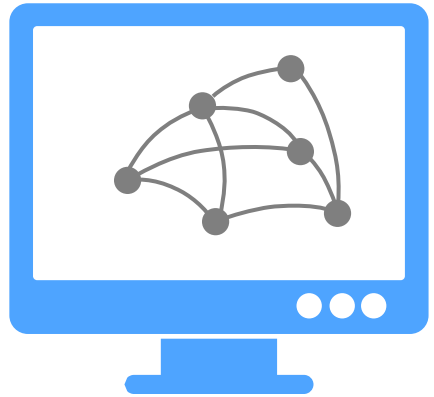
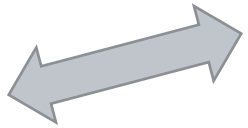
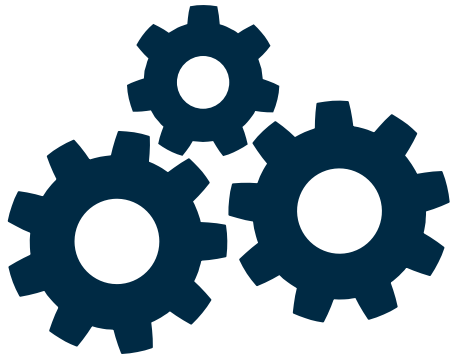
Collaboration and consumption of reality data











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What are the issues we face with Reality data….

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BIG Reality Data.. Terabytes..

.....1101001110011000110000100011000000011101010101010
0110010101010000101010101111111111111000000000010010
1010101001000100001110100111001100011000010001100000
0001110101010101001100101010100001010101011111111111
1000000000010010101010101001000100001110100111001100
0110000100011000000011101010101010011001010101000010
1010101111111101010101010101000010101010111111111111
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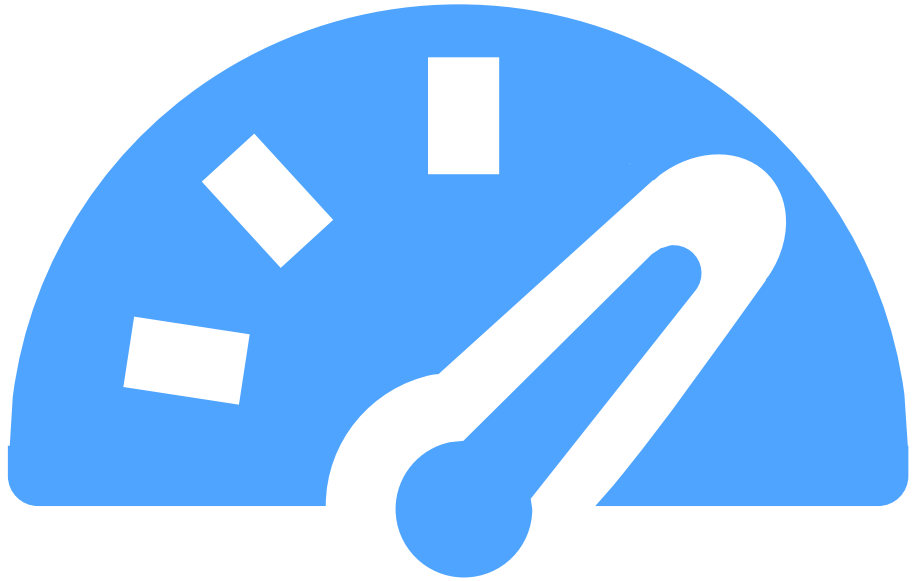

Performance needs

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Managing reality data

- Geographically dispersed project teams require easily accessible data that is readily available to all team members.

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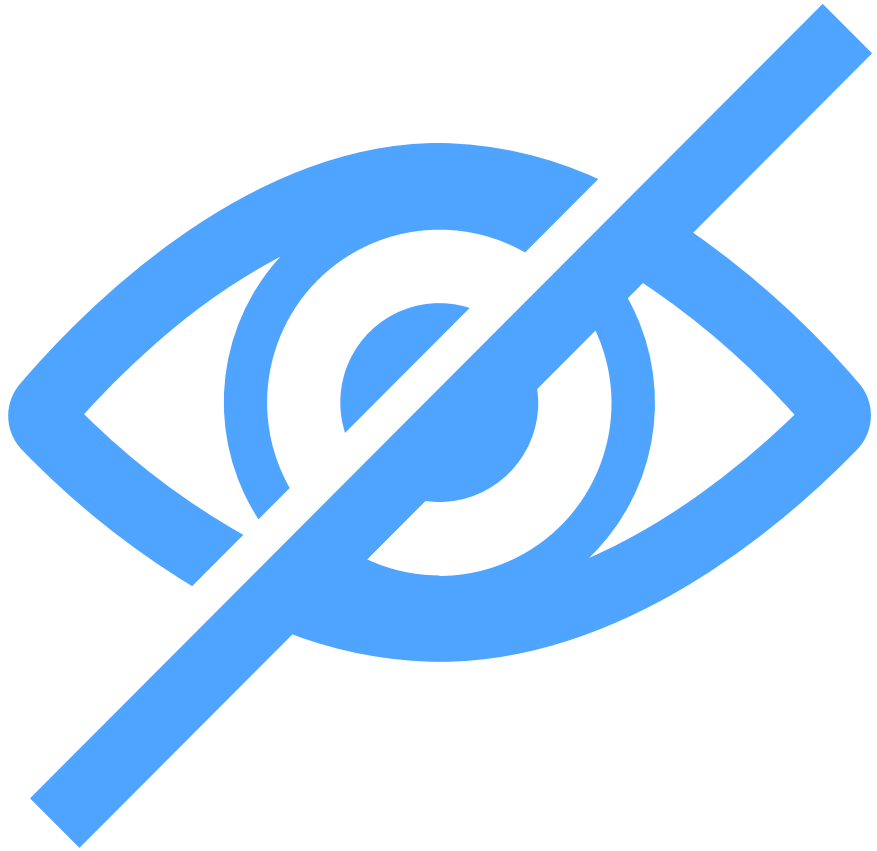
Sensitive – who can access?



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Sensitive – MUST stay in the country?

Legal

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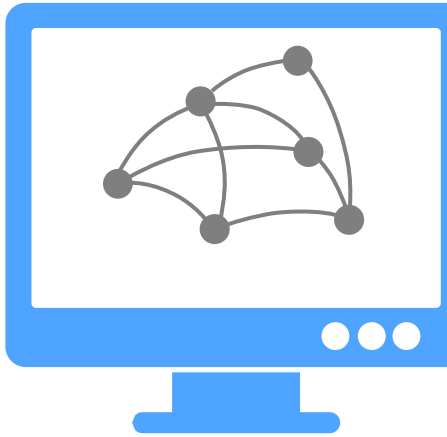
Getting the most value out of reality data

- Touching more people

- Enable team collaboration and information sharing

- Analysis and compatibility with users' existing workflows



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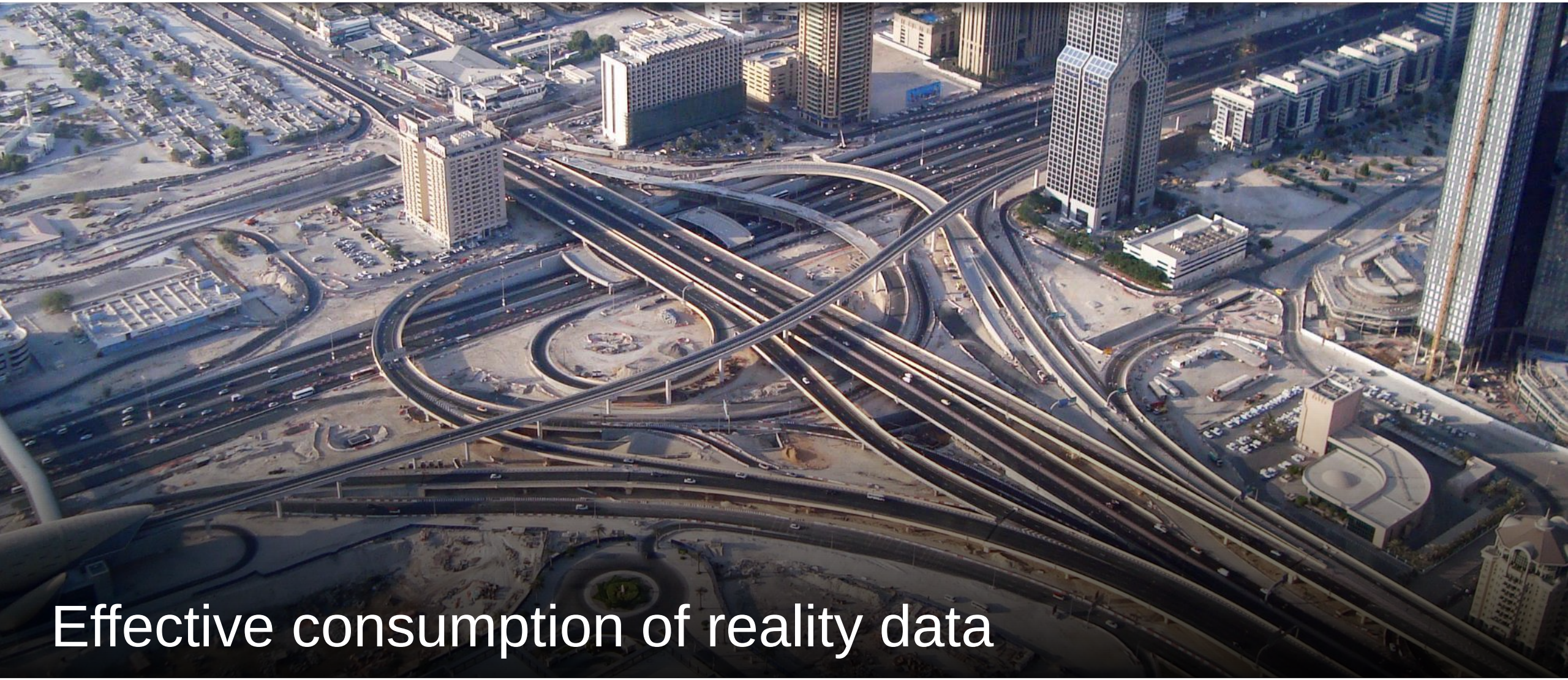

Effective consumption of reality data

Using on-premises & cloud services

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Advancing Infrastructure

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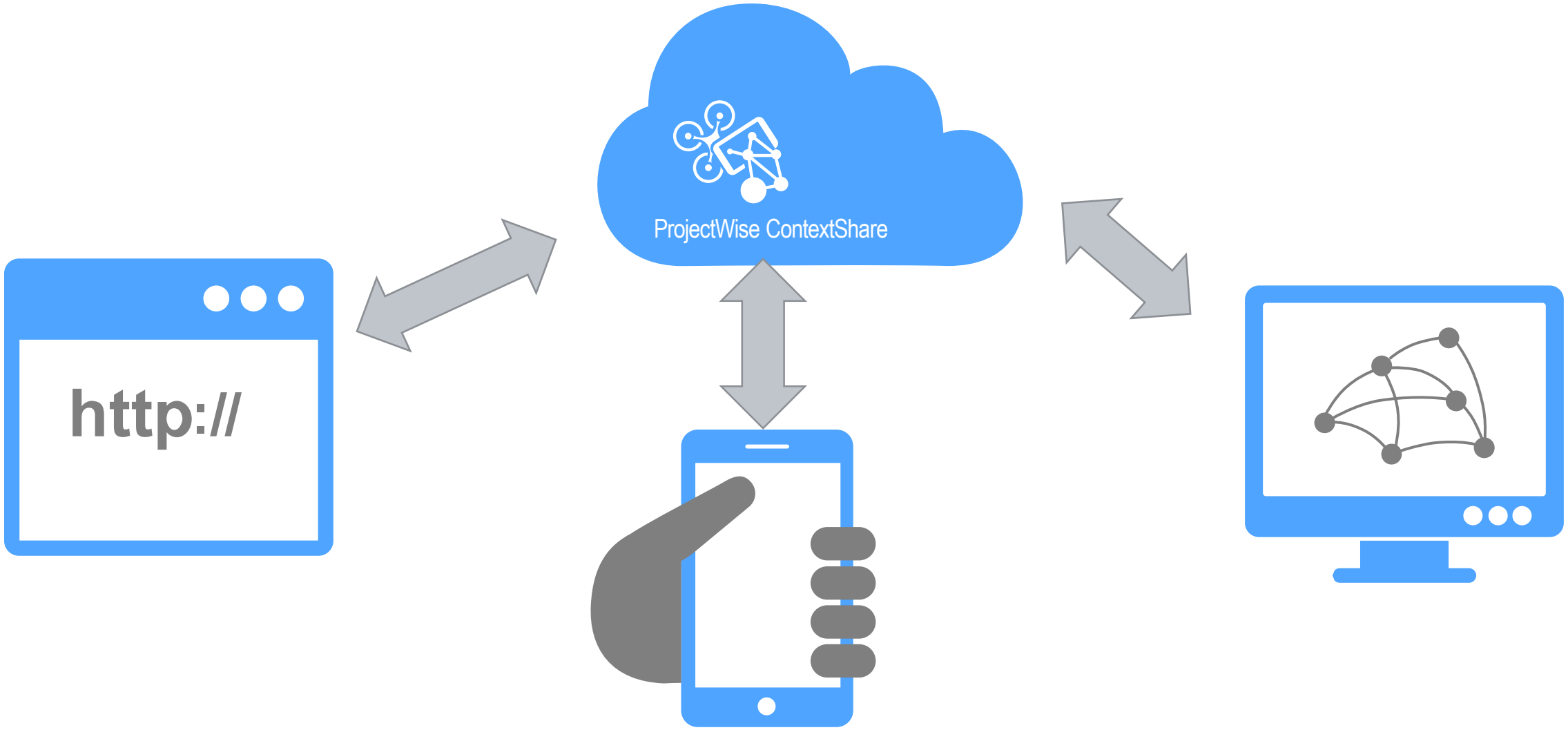
Manage and consume reality data with iTwin Services



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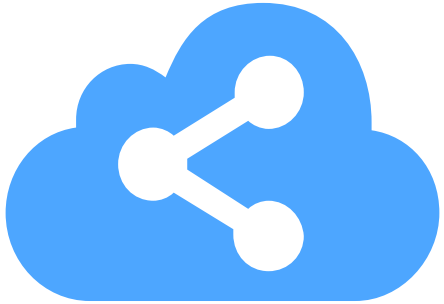
What is ProjectWise ContextShare?

- A cloud-based solution that enables organizations to manage large quantities of reality data including reality meshes, point clouds, orthophotos and terrains.

Securely manage and control access to your reality data



Share your reality data with team members of ProjectWise projects

Easily search, download or stream your reality data

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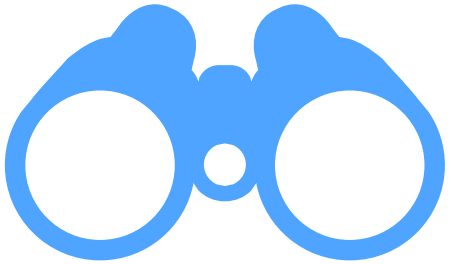
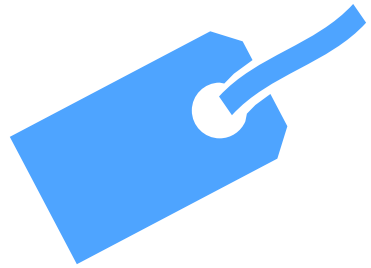
What is Reality Data Web Viewer?

- A cloud based solution allowing users to visualize, navigate and annotate large reality meshes and terrains.



Visualize reality meshes and terrains in a web browser using desktop and mobile devices

Use navigation tools to inspect and analyze reality meshes and terrains



Interactively link business and engineering data to reality meshes and terrains

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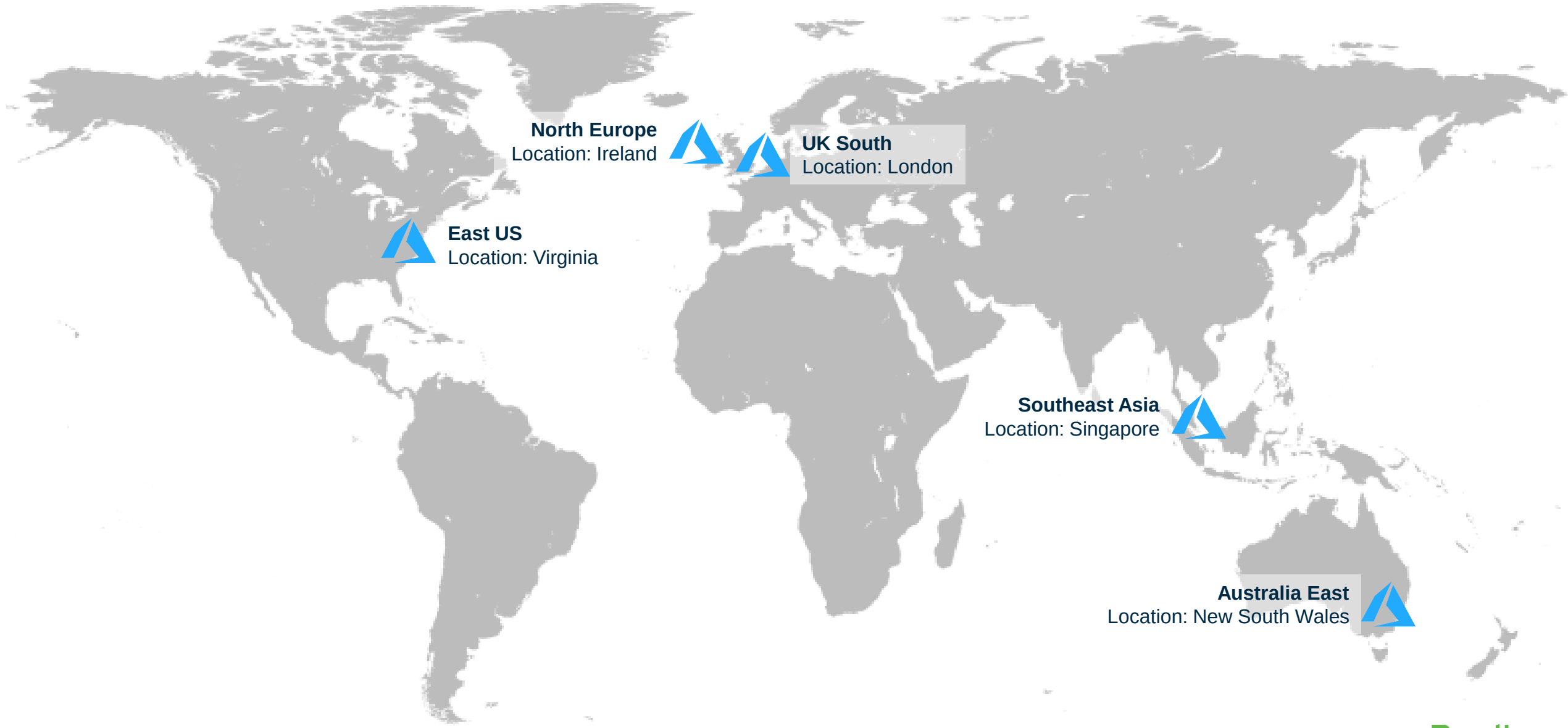
Supported datacenters



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Reality mesh streaming

- Download:
  - Use different applications to download and consume a reality mesh
  - Latency between operations
- Streaming:
  - Attach reality mesh from MicroStation-based applications
  - Ready to work within seconds

File Size	Download duration @ 8 MB/s
1 GB	~2 minutes
5 GB	~10 minutes
10 GB	~20 minutes

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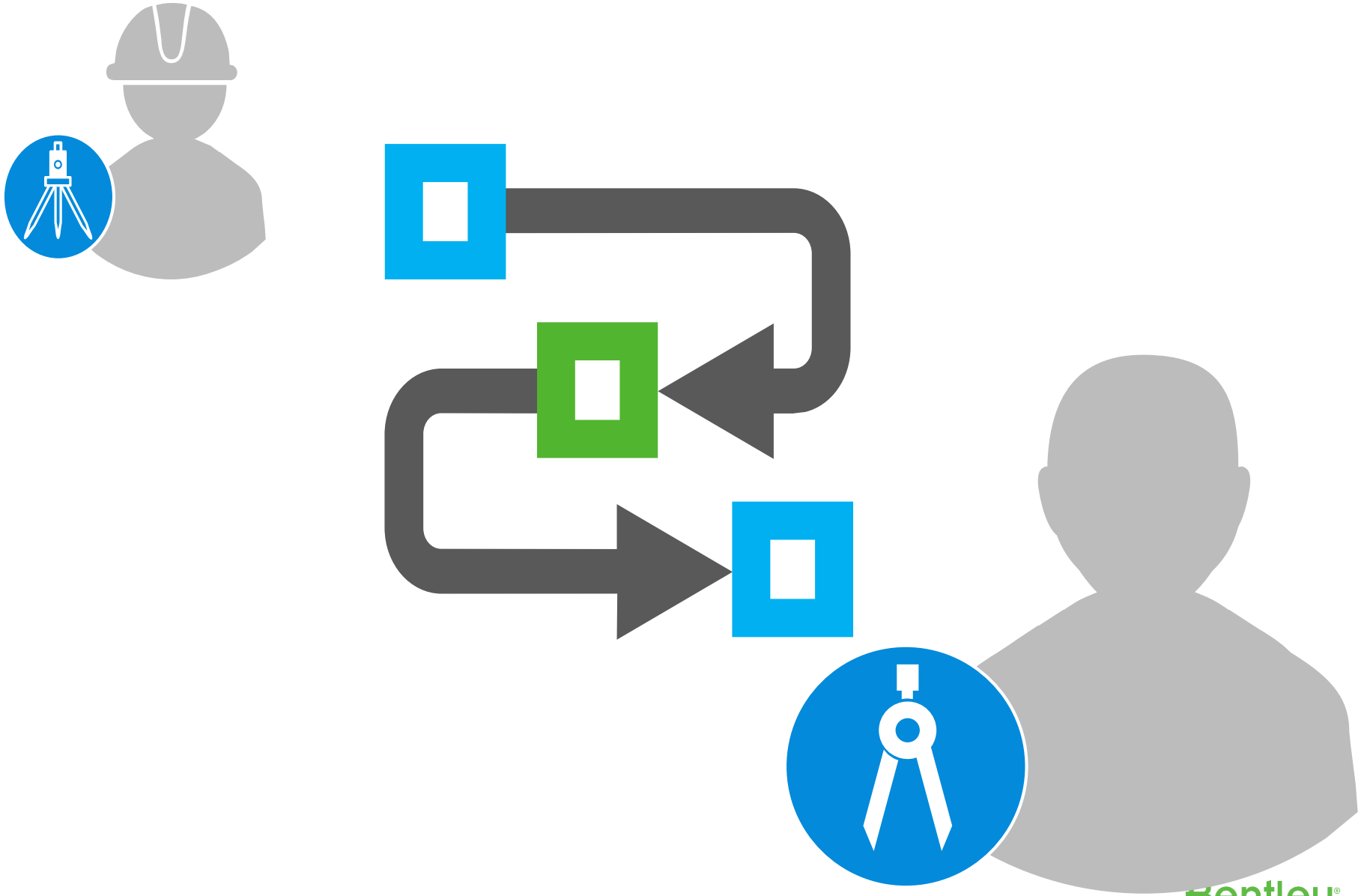
Some Workflows



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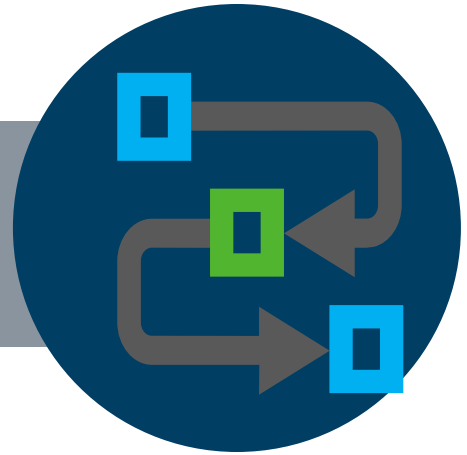
Inspection by photogrammetry and reality model annotation



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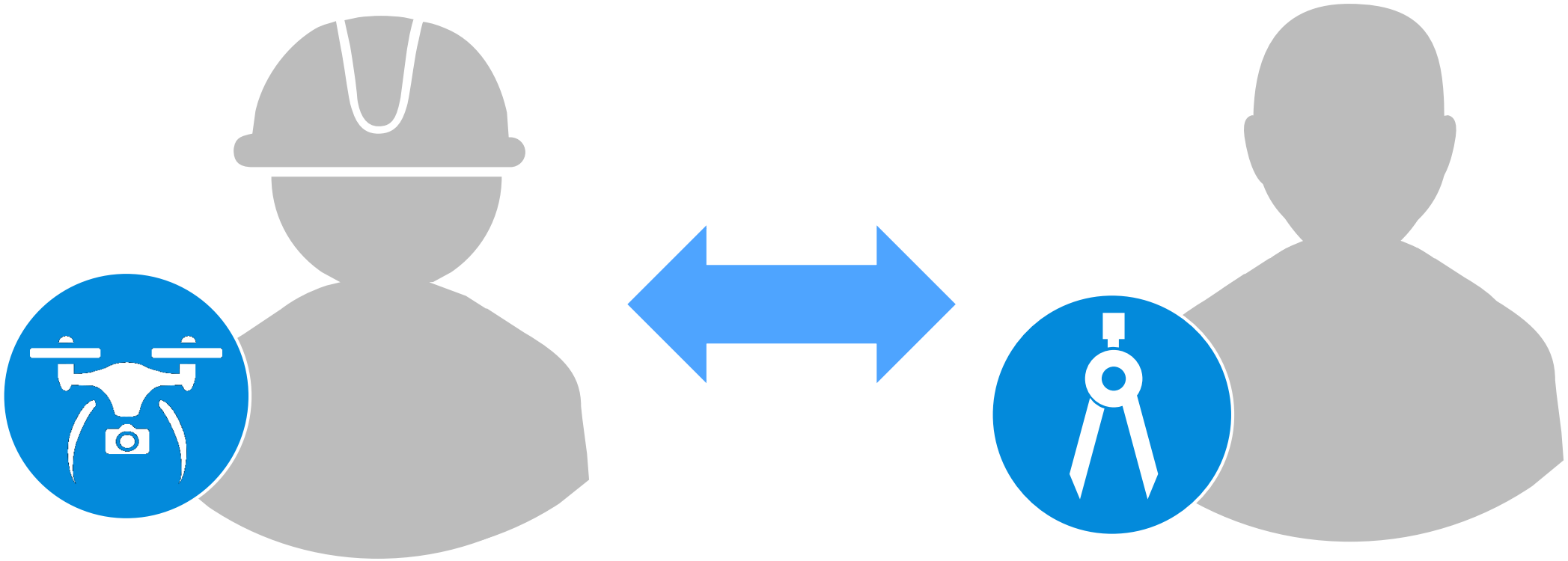
Collaboration



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Generate high-fidelity 3D reality meshes

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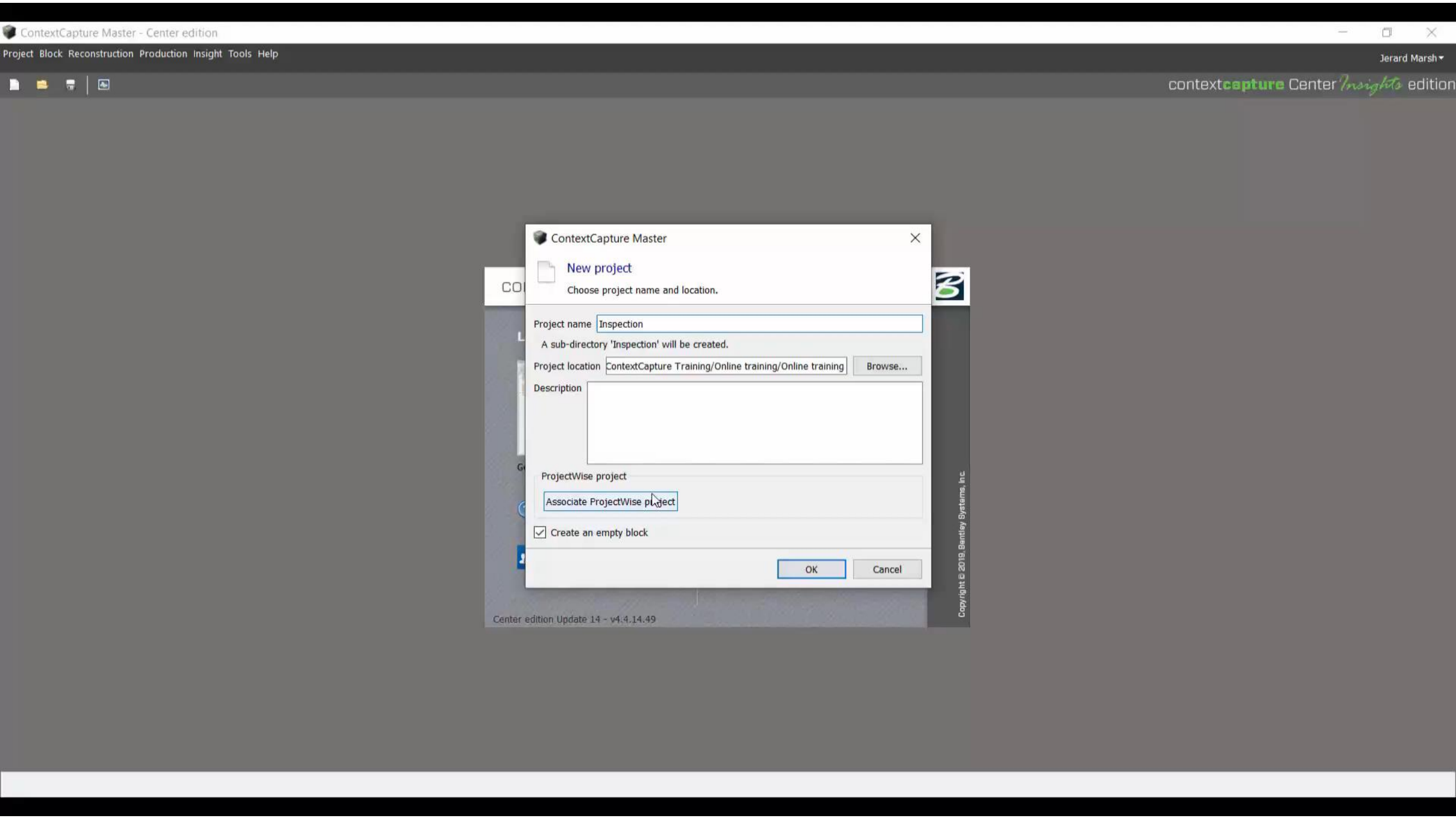
ContextCapture Master - Center edition
Project Block Reconstruction Production Insight Tools Help
Jerard Marsh
contextcapture Center Insights edition
ContextCapture Master
New project
Choose project name and location.
Project name Inspection
A sub-directory 'Inspection' will be created.
Project location ContextCapture Training/Online training/Online training
Browse...
Description
ProjectWise project
Associate ProjectWise project
Create an empty block
OK
Cancel
Center edition Update 14 - v4.4.14.49
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Review reality mesh in the Reality Data Web Viewer

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[ContextCapture] Processing of "Inspection - cloud - Version 1" has completed! - Message (HTML)

File Message Help ProjectWise Tell me what you want to do

Ignore Junk Delete Archive | Reply Reply All Forward Meeting IM More | Move to: ? Team Email Reply & Delete To Manager Done Create New | Move Rules OneNote Actions | Assign Policy Mark Unread Categorize Follow Up | Translate Find Related Select | Read Aloud | Zoom | Report Phish to SOC | Insights

Delete Respond Quick Steps Move Tags Editing Speech Zoom Bentley SOC

CC

Fri 04/10/2019 11:20

ContextCapture cloud processing service <no-reply@bentley.com>

[ContextCapture] Processing of "Inspection - cloud - Version 1" has completed!

To Jerard Marsh

If there are problems with how this message is displayed, click here to view it in a web browser.
Click here to download pictures. To help protect your privacy, Outlook prevented automatic download of some pictures in this message.

Bentley

ContextCapture cloud processing service

Processing of **"Inspection - cloud - Version 1"** has **completed**.

Open model in Reality Data Web Viewer

Access the ProjectWise Project.

Processing Report

Inputs:

Photos: **310 (6.1882 gigapixels)**

Settings:

Quality: **Extra**

Speed Factor: **Maximum**

Add team members for online review

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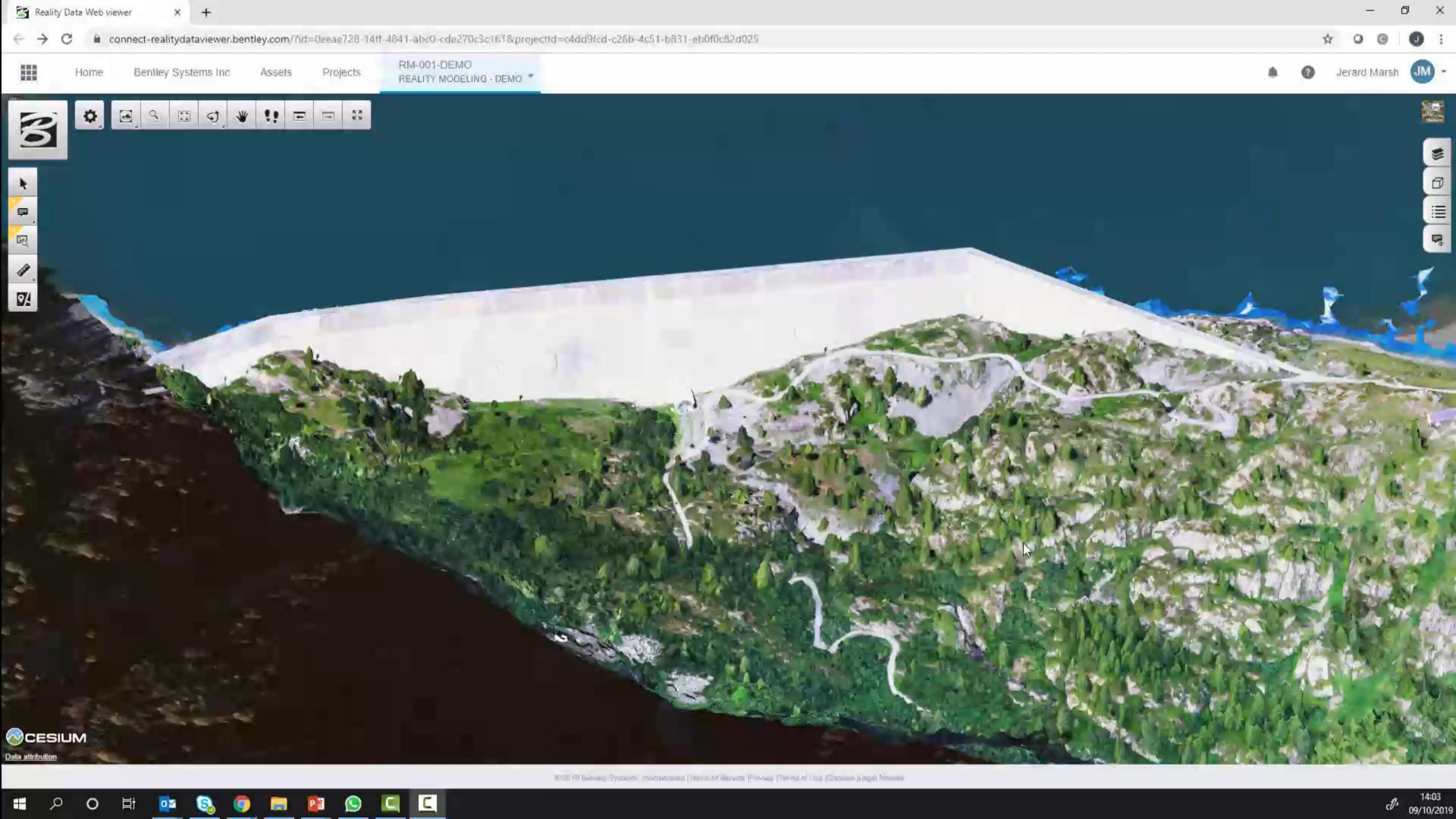
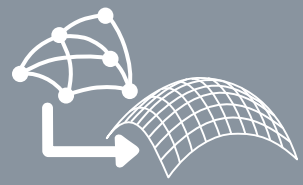

Reality Data Web viewer
connect-realitydataviewer.bentley.com/?id=0eeae728-14ff-4841-abc0-cde270c3c161&projectId=c4dd9fcd-c26b-4c51-b831-eb0f0c82d025
Home
Bentley Systems Inc
Assets
Projects
RM-001-DEMO
REALITY MODELING - DEMO
Jerard Marsh
JM
CESIUM
Data attribution
14:03
09/10/2019

Inspect and annotate the reality mesh and data



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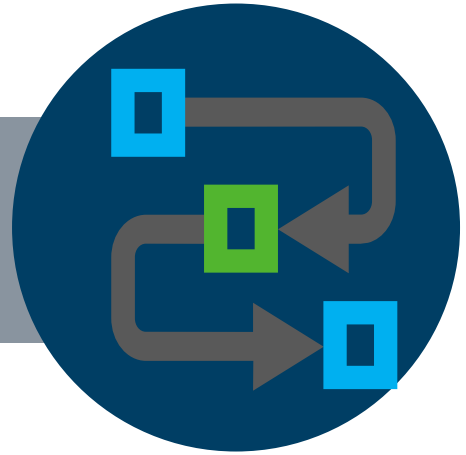
Support inspection workflows with Reality Data Web Viewer

Land survey by photogrammetry and terrain creation



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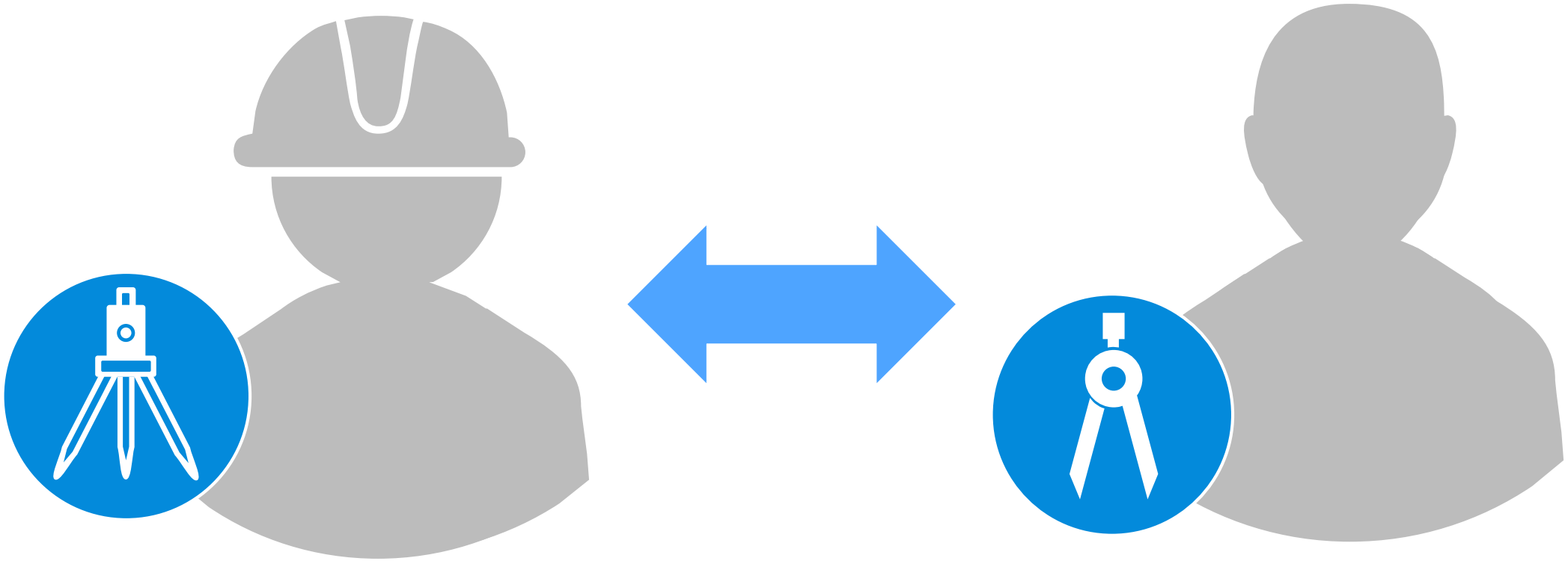
CLEARANCE
11 FT 0 IN
VEHICLES
OVER 11 FT
IN HEIGHT
PROHIBITED

Collaboration



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Generate high-fidelity 3D reality meshes

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ContextCapture Console

Open

New | Browse | Recent | Favorites | Search

No recent projects

You can browse files or create a new project

Stream reality mesh to MicroStation-based applications

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Recent WorkSets

You haven't opened any files from a WorkSet recently.

Browse for files, create a new file, or select another WorkSpace or WorkSet from the drop-down menus.

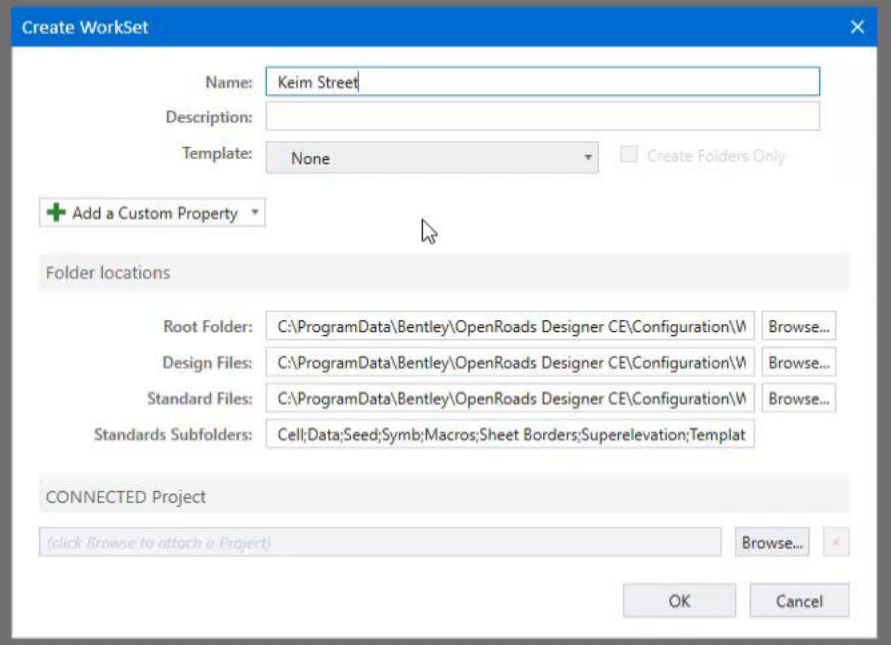
No WorkSpace
No WorkSet

OpenRoads Designer CONNECT Edition

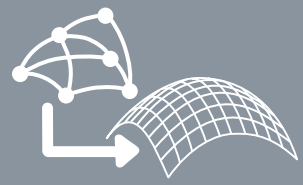
Imperial Standards

You have no WorkSets. Create one now?

Create a WorkSet



Extract ground surface from reality mesh



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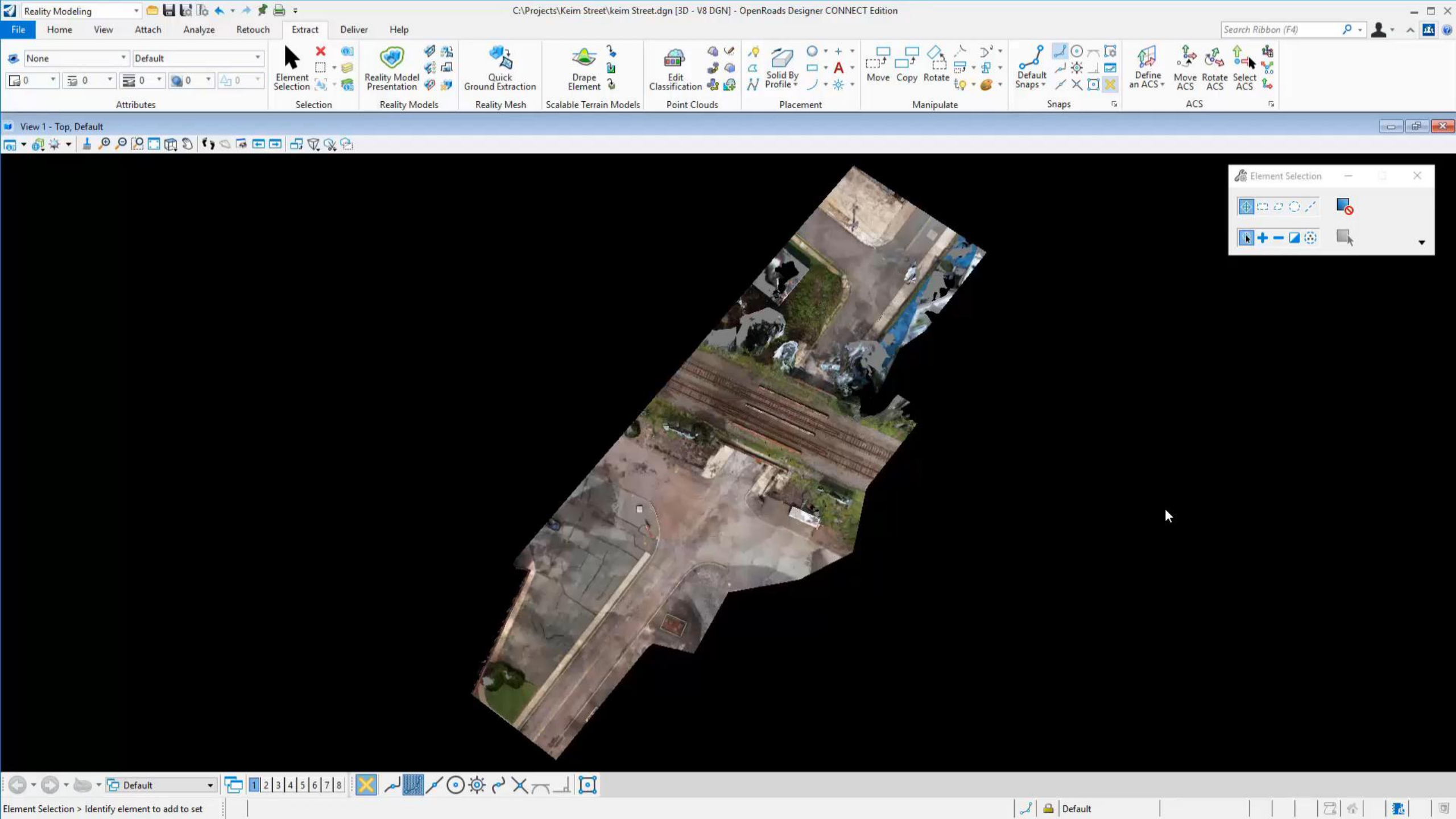
Reality Modeling
C:\Projects\Keim Street\keim Street.dgn [3D - V8 DGN] - OpenRoads Designer CONNECT Edition
File
Home
View
Attach
Analyze
Retouch
Extract
Deliver
Help
Search Ribbon (F4)
None
Default
Attributes
Element Selection
Selection
Reality Model Presentation
Reality Models
Quick Ground Extraction
Reality Mesh
Drape Element
Scalable Terrain Models
Edit Classification
Point Clouds
Solid By Profile
Placement
Move
Copy
Rotate
Manipulate
Default Snaps
Snaps
Define an ACS
Move ACS
Rotate ACS
Select ACS
ACS
View 1 - Top, Default
Element Selection
Default
Element Selection > Identify element to add to set
Default

Thank you!

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