iTwin® Capture, the Reality Capture Solution for Cesium® Users

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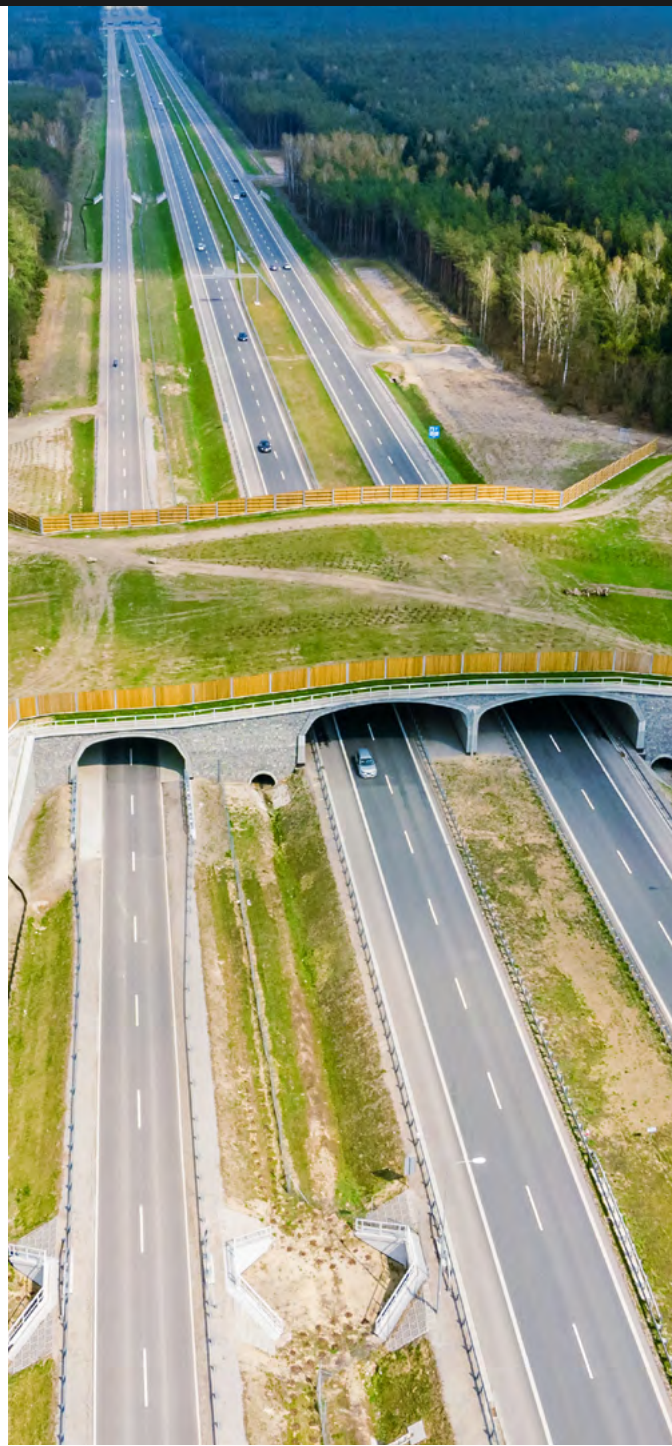


Introduction

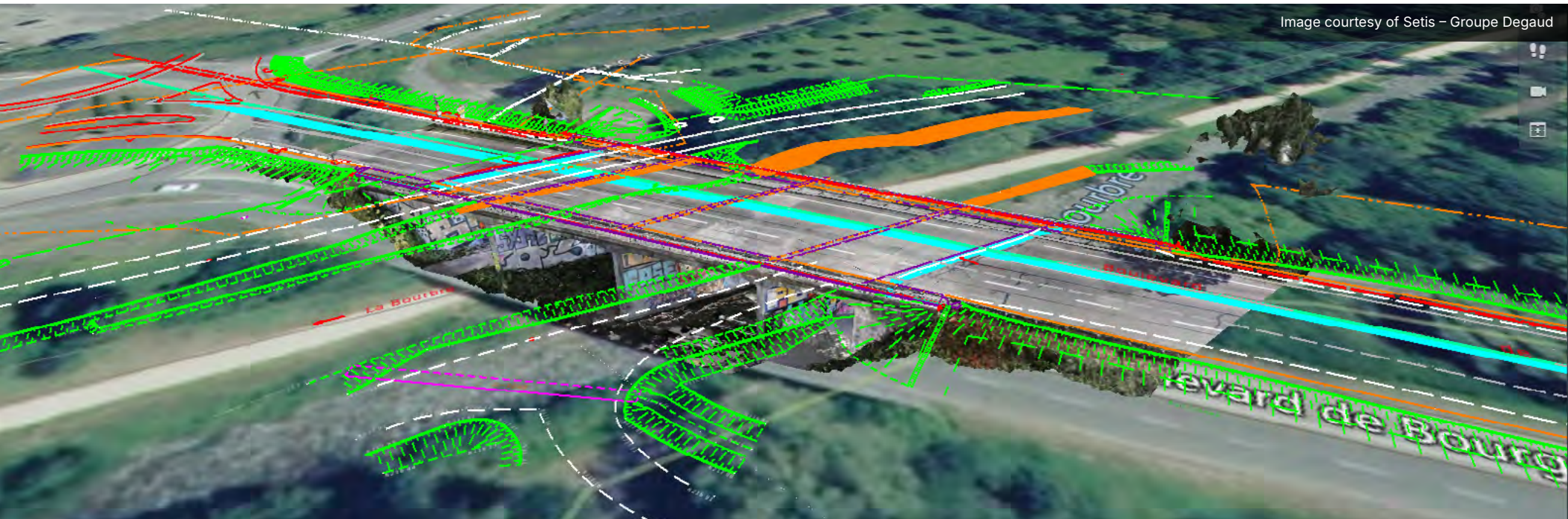
Cesium's acquisition by Bentley Systems in 2024 is a game-changer for all reality data stakeholders around the globe. Millions of Cesium users are now able to connect with the most advanced and complete reality capture solution in the world—iTwin Capture. Processing, viewing, sharing, and analyzing reality data has never been as smooth and efficient.

Make your real world easier with iTwin Capture

iTwin Capture brings reality capture to everyone, enabling any geospatial or infrastructure practitioner to create, manage, and extract information from reality data and enrich infrastructure digital twins.

As reality experts, we know that you may struggle with:

- Aligning data coming from multiple sources
- Simplifying large-scale mapping and data capture
- Ensuring high levels of accuracy
- Generating value beyond data collection
- Supporting high variability in a project's profile
- Reducing the cost of analysis



Make your real world easier with iTwin Capture

With iTwin Capture, we address these challenges, and we improve your reality data workflows based on four main cloud services—from capture to delivery. A set of robust and well-documented application programming interfaces (APIs) will allow a smooth connection to these services.

- **Reality Modeling service** – Turns images or point clouds into meshes.
- **Reality Management service** – Hosts and manages access rights to reality data.
- **Reality Analysis service** – Executes automatic feature extraction from reality data.
- **Reality Conversion service** – Converts the reality data format.

Image courtesy of Microsoft

Make your real world easier with iTwin Capture

Capture, create, and enhance reality data

iTwin Capture enables you to create and enhance engineering-ready reality data—such as reality meshes, classified point clouds, anonymized images, gaussian splatting, and orthophotos of any size and resolution—using any digital camera, scanner, or mobile mapping device.

An all-in-one reality capture solution to advance your reality data workflows

Manage and share reality data
Organize, catalog, and index reality data to enable effective searches. Accelerate workflows while making data universally accessible to authorized stakeholders on many devices.

Validate, analyze, and extract insights
Visually assess the quality of reality data that is optimized for streaming and web publishing. Leverage automatic feature extraction and machine learning to quickly turn reality data into field truth insights for data-driven decisions.

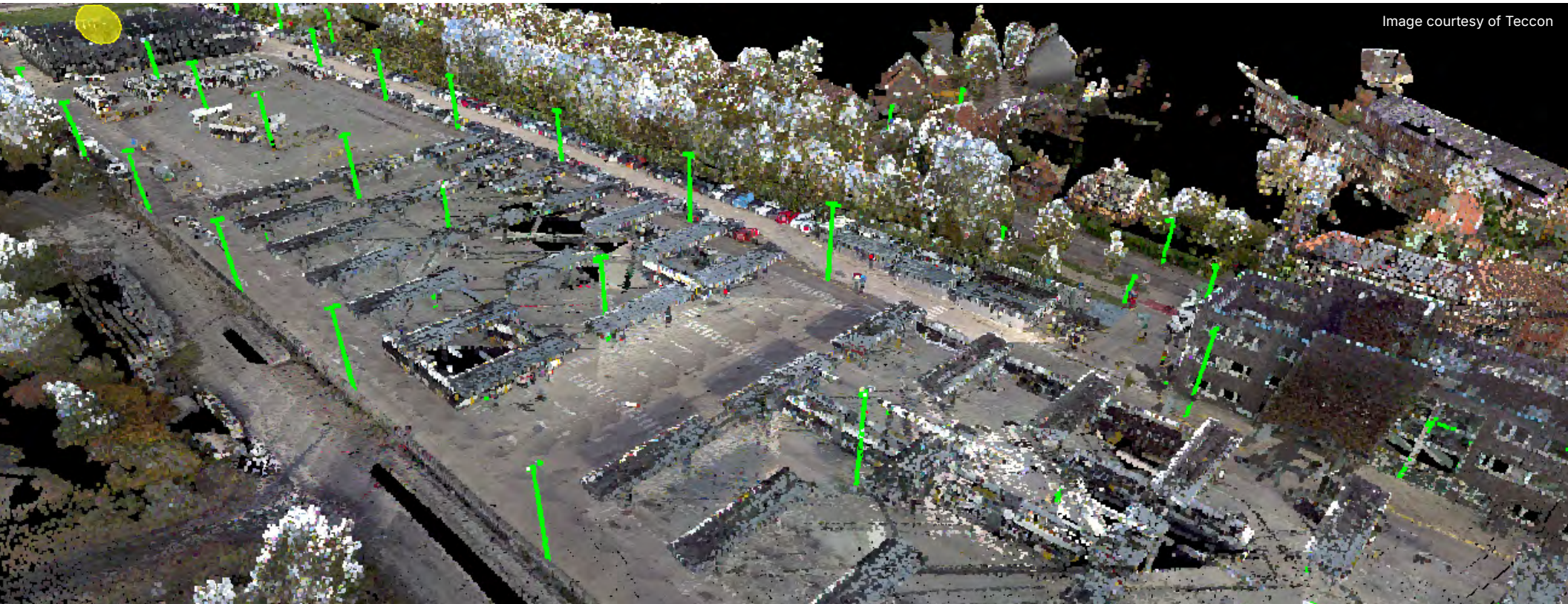


Image courtesy of Teccon

Top reasons for Cesium users to adopt iTwin Capture

Create unlimited and high-precision reality data of any size and type

Import any reality data to enable various consumption workflows. Create engineering-ready reality data—such as reality meshes, point clouds, gaussian splatting, and orthophotos—using any digital camera, scanner, or mobile mapping device. iTwin Capture's reality mesh creation capabilities are among the best on the market and are only limited by the image or point cloud quality you use, ensuring high levels of accuracy.

Image courtesy of Microsoft

Top reasons for Cesium users to adopt iTwin Capture

Stream reality data of any kind and enjoy the highest viewing performance
Meshes, point clouds, and now Gaussian splats, delivered as 3D Tiles, are all perfectly supported in the Cesium environment. Since processing and streaming capabilities are developed by a single team, viewing performances are unmatched and offer the best 3D navigation experience. Benefit from updated level-of-detail technology pushing back the limits of web-based viewing, especially on city-scale scenes.

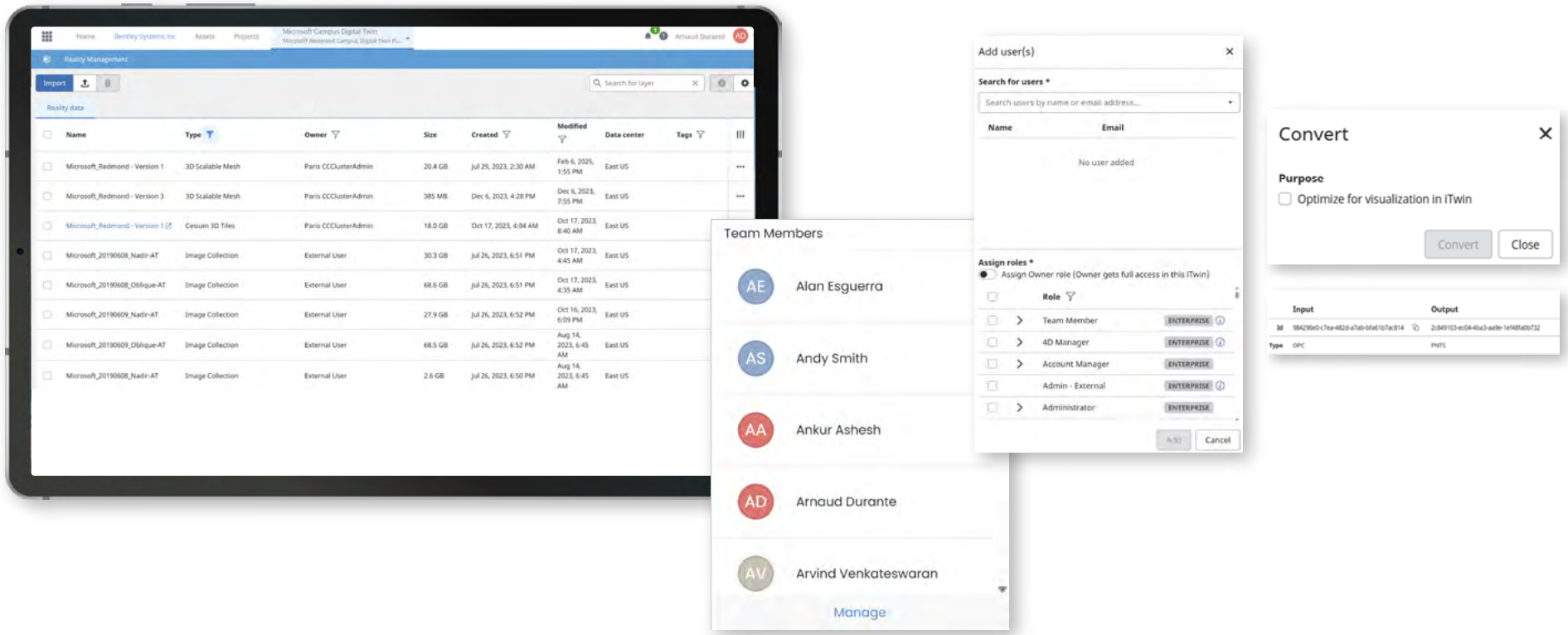
Image courtesy of Microsoft

Top reasons for Cesium users to adopt iTwin Capture

Manage reality data and associated permissions efficiently

Cesium connects with Bentley's Reality Management service. It empowers you to federate all your reality data, no matter the size or type, in a connected reality data environment. This service allows you to securely manage, store, grant user access, and share large amounts of reality data to all authorized stakeholders on any device. It offers a user-friendly data administration system, as well as a secure permission management dashboard, to all existing Cesium users.

For legacy Bentley users, reality data already hosted under the Reality Management service can be converted to 3D Tiles or consumed straight away in Cesium environment—the most popular and efficient web viewer.

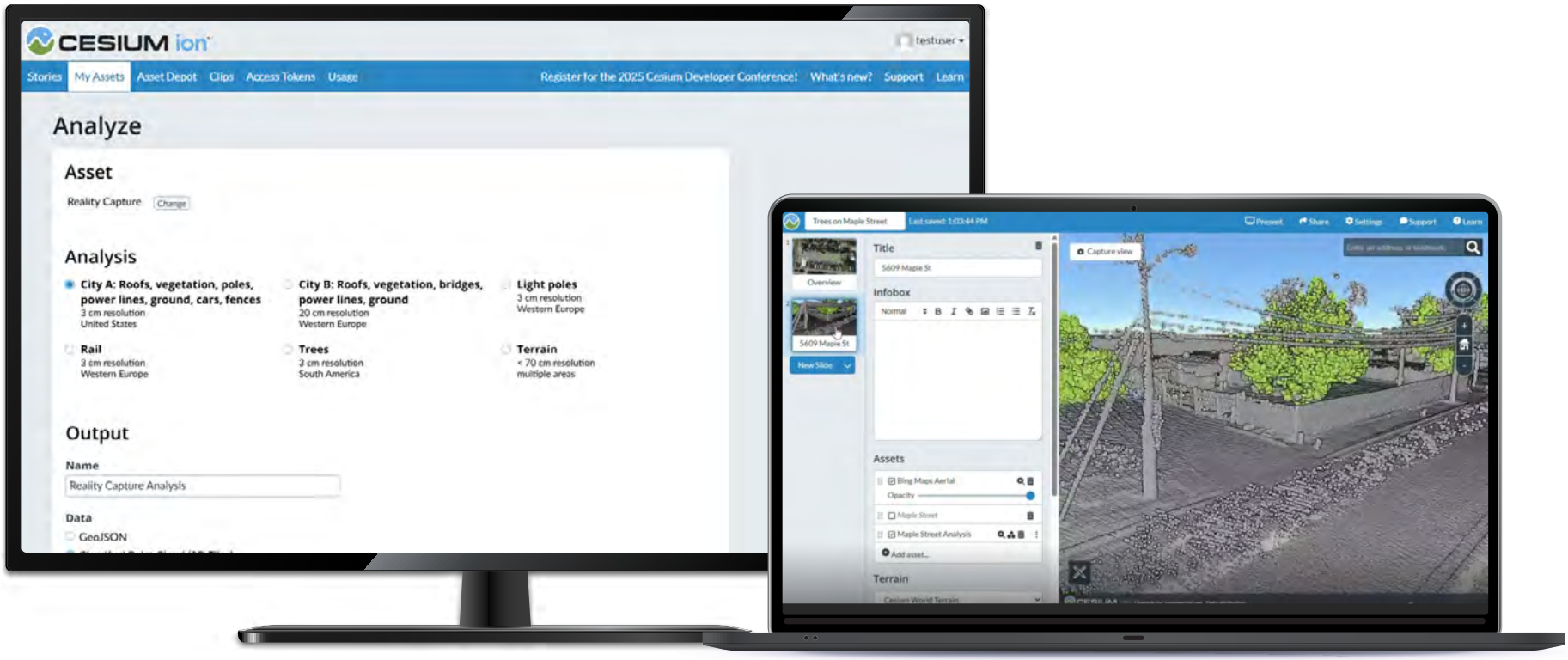


Top reasons for Cesium users to adopt iTwin Capture

Analyze reality data and leverage AI to extract intelligence

Cesium ion now uses Bentley's Reality Analysis service. By leveraging AI and machine learning, the Reality Analysis service can unlock the entire value of your reality data and turn it into real-world insights for data-driven decisions. Leveraging advanced AI algorithms, it scans point clouds, meshes, or images, as well as delivers most demanded deliverables of any infrastructure-related project in the best 3D navigation platform.

Automatically classified point clouds and geospatial features empower asset inventory, defect detection, and urban mapping workflows—delivering instant and massive time savings and accelerating your operations.



Generate real-world ROI with iTwin Capture

Aid in decision-making

- Open access to data and being able to share with stakeholders help improve communication and decision-making processes.
- Leveraging a digital context to support design and engineering, construction, and operations workflows helps you make better decisions.
- Teams can mitigate risk, improve decisions, and optimize outcomes through access and visibility to data.

Increase productivity and reduce risks

- Being able to share data with stakeholders increases productivity and project quality.
- It is possible to speed up reality data workflows using an interoperable solution.
- Teams can easily access the most up-to-date reality data.

Image courtesy of Yunex

Start adding reality capture to your projects

See how iTwin Capture can help advance your infrastructure workflows by adding reality data and real-world insights to your digital twins for better decision-making.

Learn more about iTwin Capture for Cesium **Contact a Bentley colleague**

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