



## iTwin<sup>®</sup> Capture

### Add Real-world Insights to Your Digital Twins with Reality Modeling

iTwin Capture offers the highest fidelity and most versatile means of capturing reality to serve as the digital context for design, and engineering, construction, and operations workflows.

With iTwin Capture, you can go beyond simply creating a digital twin of real-world conditions. The capability enables you to continuously update your digital twin with valuable information extracted from a variety of reality data—including photos, point clouds, and reality meshes—by leveraging automated analysis software.

iTwin Capture brings reality capture to everyone, enabling all infrastructure practitioners to access these capabilities and create, manage, and share reality data, as well as extract insights. This connected reality data environment serves as a single source of truth to advance your infrastructure workflows.

#### **CAPTURE, CREATE, AND ENHANCE REALITY DATA**

With iTwin Capture, you can import any reality data to enable various consumption workflows. The application allows you to create engineering-ready reality data—such as reality meshes, classified point clouds, anonymized images, and orthophotos of any size and resolution—using any digital camera, scanner, or mobile mapping device. Use an advanced set of features, such as masks, water constraints, or advanced retouching capabilities to enhance your reality data.

iTwin Capture allows you to reliably and quickly produce reality meshes of any scale at the best quality on the market, from objects measuring a few centimeters to entire cities. The precision of the resulting reality mesh is only limited by the image resolution you use.

Cloud-powered iTwin Capture workflows simplify and scale your projects, allowing anyone on your team to easily document as-is situations affordably and with less investment of time and resources, reducing your costs. Scale your production and deliver projects on time by leveraging parallel cloud-processing capabilities.

You can access your reality mesh using iTwin Capture Mobile or iTwin Capture Console.

- ♦ iTwin Capture Console is a desktop application to instantly upload images and point clouds. It allows ground control definition to create accurate reality meshes.
- ♦ iTwin Capture Mobile is an augmented reality capture and aided application to keep your digital twin updated by collecting and processing reality data on the fly.

These same capabilities are also available in iTwin Capture Modeler, a desktop processing application.

#### **MANAGE AND SHARE REALITY DATA**

iTwin Capture Manage and Extract empowers you to federate all your reality data, no matter the size or type, in a connected reality data environment. The application allows you to gain the ability to securely manage, store, grant user access, and share large amounts of reality modeling data to all authorized stakeholders on any device. Working in a connected data environment improves your workflow by sharing and syncing your reality data instantly across project teams and applications, allowing everyone to receive the right information at the right time and make more informed and timely decisions. By organizing, cataloging, and indexing your reality data, you will enable effective searches and accelerate your workflows.

#### **VALIDATE, EXTRACT INSIGHTS, AND DELIVER REALITY DATA**

Visually assess the quality of your reality data by using control alignment and dimensions with a dedicated application before handing it over to engineering and operations teams.

By leveraging artificial intelligence and machine learning, you can release the entire value of your reality data and turn it into real-world insights for data-driven decisions. Automated feature extraction and defect detection, combined with efficient asset inventory and feature extraction workflows, can save you hours of tedious work.

Deliver your reality data in engineering-ready formats to be consumed in any CAD or GIS workflow, or by using the iTwin Platform.

#### **WHY ITWIN CAPTURE?**

Every digital twin should provide users with immediate access to real-world insights across their workflows. With iTwin Capture, we are committed to making reality modeling an everyday part of your work, just like smartphones, cloud services, and collaborative applications.

iTwin Capture is a comprehensive, cost-effective solution that allows you to continuously update a 4D single source of truth. It empowers reality data capture to provide field-based, insight-driven decisions. With iTwin Capture, you can make data actionable so that stakeholders can receive the right information at the right time and make more informed and timely decisions throughout the lifecycle of projects.

## SYSTEM REQUIREMENTS

**MINIMUM:** 8 GB of RAM, NVIDIA, AMD or Intel GPU, Microsoft Windows 10/11 (64 bit) or Microsoft Windows Server 2012/2016/2019 (64 bit)

**RECOMMENDED:** 64 GB of RAM, NVIDIA GeForce RTX 2080Ti GPU, Intel 9-4.0GHz CPU, Microsoft Windows 10/11 (64 bit) or Microsoft Windows Server 2012/2016/2019 (64 bit)

**BROWSER COMPATIBILITY:** Edge, Chrome, and Firefox

# iTwin Capture At-A-Glance

## REALITY MESH PROCESSING

- ◆ Import reality data of any type (image, point cloud, video) in various formats
- ◆ Create reality meshes, orthophotos, and point clouds
- ◆ Ensure accurate georegistration by handling RTK-GPS or ground control points
- ◆ Leverage unique parallel computing to reach unmatched processing speed
- ◆ Enjoy advanced level-of-detail technology to ensure smooth navigation on city-scale scenes

## REALITY DATA CONVERSION

- ◆ Transform point cloud data optimized for web-streaming to support your downstream operations

## REALITY DATA MANAGEMENT AND SHARING

- ◆ Share images, point clouds, and meshes straight from user interface and invite all project stakeholders to collaborate in single environment
- ◆ Manage access rights and levels of permission to secure the project environment

- ◆ Import, manage, and align reality data of any type in a simple, streamlined way using a wide range of predefined templates
- ◆ Refine reality data quality by removing extra "noise," such as people or vehicles, merging sub-parts, or correcting positional accuracy

## INSIGHTS AND FEATURES EXTRACTION

- ◆ Leverage machine learning to automatically highlight defects impacting infrastructure to support inspection tasks (cracks, spalling)
- ◆ Define ground occupation of your 3D scenes, such as terrain or roofs
- ◆ Extract any asset from massive reality data into smart CAD/GIS resources
- ◆ Verify quality control extracted features and run advanced quality assessment
- ◆ Leverage profiles and cross-sections, bridge clearance, and clash detection to perform and report deep analysis using reality data

## VALIDATION AND DELIVERY

- ◆ Review reality data (images, point clouds, and meshes) in a web environment for visual checks
- ◆ Assess quality of alignment with open mapping layers
- ◆ Verify dimensions with coordinates, length, or area measurement capabilities prior to delivery



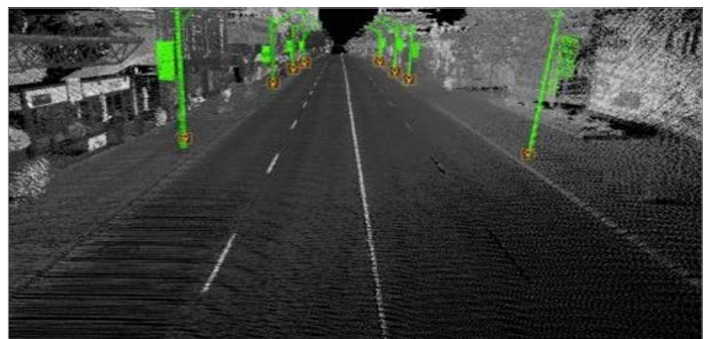
Enjoy advanced level-of-detail technology to ensure smooth navigation on city-scale scenes. Image courtesy of Municipality of Graz.



Leverage machine learning to automatically detect defects impacting infrastructure, such as cracks or spalling, to support inspection tasks. Image courtesy of West Virginia DOT.



Review reality meshes in a web environment for visual checks. Image courtesy of Alabama DOT.



Extract any asset from massive reality data into smart CAD/GIS resources.