



ArcGIS® Reality Studio

Aerial Reality Mapping at Scale

What Is ArcGIS Reality Studio?

ArcGIS® Reality Studio is a powerful desktop product that enables aerial survey providers to create highly accurate and photo-realistic representations of the real world. It is specifically designed for citywide and countrywide reality mapping projects, allowing users to work with large collections of images captured by multicamera sensors across multiple flights. With ArcGIS Reality Studio, you can easily align and process this imagery, resulting in visually stunning representations. It is an essential tool for aerial survey providers who need to work with and analyze large volumes of imagery data. This stand-alone product can be used outside the ArcGIS system, but derived products are easily shared with ArcGIS core products.

Reality Mapping Powered by ArcGIS

Reality mapping goes beyond traditional image visualization, providing a highly realistic, immersive, and interactive virtual environment. Digital representations provide important context about spatial relationships, so you can explore an area and understand how it relates to what's around it. Now, you can zoom in, pan around, measure distances, and perform various analytical tasks on digital representations—all within one comprehensive system and all within the context of a map.

How It Works

Import: Load and manage data from multiple flights and multicamera systems.

Align: Optimize the relative and absolute orientation of imagery from multiple flights. Measure control points to correctly georeference your results. Reestimate camera parameters if necessary.

Process: Turn large collections of aligned images into high-quality 3D meshes, point clouds, digital surface models, and True Orthos.

Refine: Iterate the alignment and reconstruction to deal with challenging datasets.

Share: Seamlessly share your outputs via ArcGIS or use the web to efficiently share results with your organization and clients. Results are provided in open standard formats and ready for web streaming.



Imagery dataset provided by ©Bluesky Ltd.



What Can You Do with ArcGIS Reality Studio?

Create accurate, photo-realistic geospatial products.

Use best-in-class image alignment and processing to produce high-quality True Orthos and textured 3D meshes, even when there is glare or blurring in the input imagery. You can also align imagery from multiple capture sessions simultaneously in a single optimization process.

Process large, multiday captures in a single project.

Reduce project management overhead and time to value by processing large or multiday captures within a single project and distributing the workload across machines using distributed processing.

Deliver geospatial products faster.

Generate precise orthophotos and 3D meshes at any scale using automated workflows, eliminating the need for time-consuming manual postprocessing edits. Also, an intuitive user experience automatically determines the ideal parameters at each processing step, so you can create high-quality geospatial products with a minimal learning curve.

Use Cases for Reality Mapping with ArcGIS

Virtual Experience: Immersive and shared virtual experiences that help you, collaborators, and clients in remote exploration for a variety of applications across industries.

Data Visualization: Visualizing complex datasets in a spatial context, useful in data analysis, market research, and urban planning.

Asset Management: Efficiently managing and maintaining physical assets through accurate digital representations, benefiting organizations in various sectors—architecture, engineering, construction, urban planning, and more.

Risk Assessment: Assessing and mitigating risks in disaster management and security planning scenarios.

Environmental Monitoring: Monitoring and analyzing environmental changes for conservation efforts, resource management, and environmental impact assessments.

ArcGIS Reality and digital twins.

With ArcGIS Reality Studio, users create highly accurate 3D meshes, true orthos, and point clouds to use as an important piece when developing 3D digital twins of social, natural, and built environments.

MORE INFORMATION

Go to go.esri.com/RealityStudio to find resources or connect with the reality mapping sales team.



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