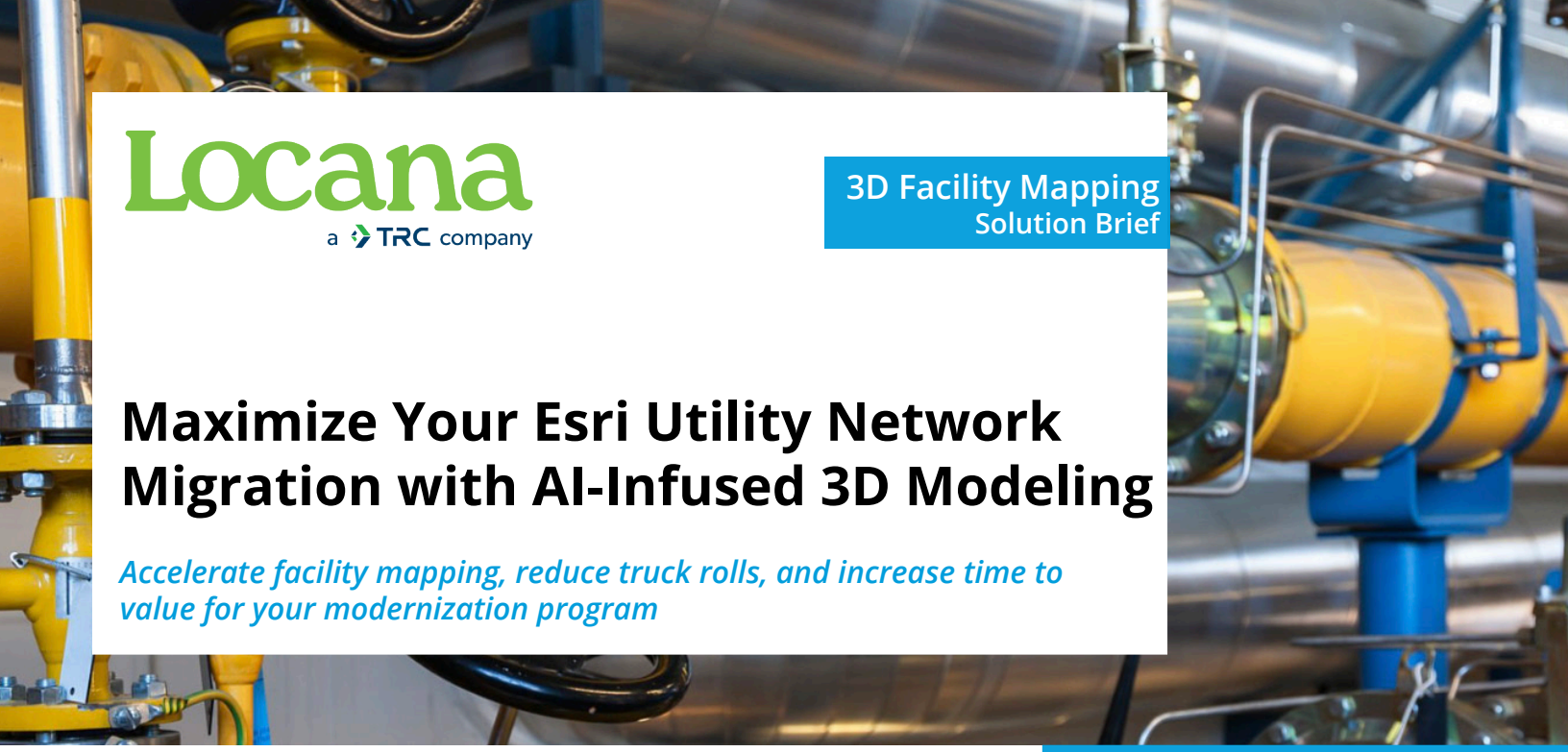


Locana
a TRC company

3D Facility Mapping
Solution Brief

Maximize Your Esri Utility Network Migration with AI-Infused 3D Modeling

Accelerate facility mapping, reduce truck rolls, and increase time to value for your modernization program

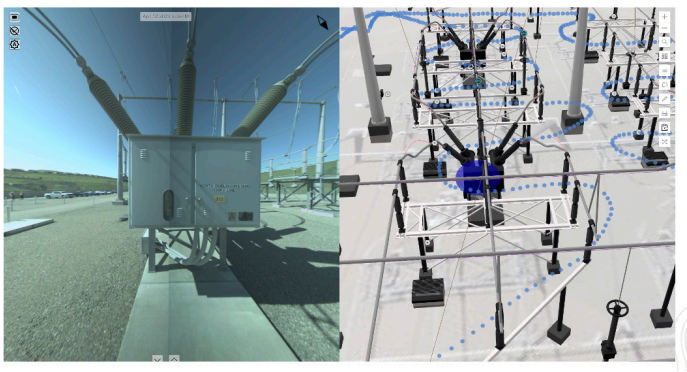
Facilities lack quality data

Low quality or missing data, or data that lacks spatial accuracy, introduces risk and reduces efficiency for workers managing assets and facilities. The importance of these datasets amplifies when migrating to the Esri Utility Network (UN). Esri's UN allows you to connect transmission and distribution network models, but it requires timely and accurate correction or creation of facility data to achieve the highest ROI. Without it, facility visits take longer, projects suffer, and overall field team effectiveness decreases.

Utilities need a cost-effective solution to quickly and accurately capture equipment details in their facilities. Accurate information like make, model, serial number, pressure or voltage of throughput, and x/y/z location provide real value for field workers performing facility management tasks. Manual collection of this information increases time and budget while lowering accuracy. Technology like Lidar can automate data collection, but it's still a lengthy process and requires costly equipment. Sometimes imagery is available, but it's often inconsistent, incomplete, and low quality to extract details.

Benefits of 3D Facility Mapping

- Accurate facility data delivers higher value from your UN migration
- AR fueled by 3D facility data reduces truckrolls by allowing remote work
- 3D data and AI feature extraction for facility mapping has a short time to value



3D and AI deliver results

What if you could overcome these challenges within days and on budget? Using specialized cameras and machine learning (ML) modeling, companies can now attain high-quality facilities data like never before. Locana, a TRC Company's 3D station modeling solution generates precise, complete asset and GIS data for facilities, reducing time to value from months to days. With a single-day station visit, image capture teams can record the facility's complete collection of equipment and its location. From there, image processing tools identify specific equipment and details like their serial numbers. Overlay this information with the spatial location in GIS, and you have all the pieces needed to connect the distribution and transmission networks inside of Esri's UN data model.

How it works

The first step involves capturing the imagery data by walking through the facility using GeoCam's unique 360-degree camera technology. You secure a visual representation of the interior using 3D point clouds. Once captured, the imagery data is fed into Locana's precision-trained ML models to find and label each piece of equipment, including valves, meters, pipes, and electrical lines. Visually legible serial numbers and other data are also extracted and stored with the new feature record and the z-enabled spatial location.

Locana's ML libraries and GeoCam's 3D image capture work together to deliver complete, accurate, spatially intelligent asset records for facility mapping. Data supplied by 3D station modeling connects the distribution and transmission networks within Esri's UN. GeoCam's point cloud generation technology also enables a 3D digital twin of your facility. This digital twin allows your team to inspect the facility, identify needed maintenance tasks, and prepare for new construction projects without extra truck rolls.

Using GeoCam's image capture, Locana's 3D station modeling also allows teams to explore the facility remotely in a virtual reality (VR) experience by overlaying information and objects in the real world. Taking advantage of UN-related facility data, it supplies immersive experiences using 360-degree views with location accuracy. Field and facility crews can review, compare, and analyze assets, resources, work orders, and terrain, reducing truck rolls and increasing performance.

Things to Remember

1. Low quality or missing facility data introduces risk to workers
2. Upstream and downstream data in UN need accurate facility data to connect
3. You can lower cost and accelerate a time to value with Locana's 3D mapping

3D station modeling generates precise, complete asset and GIS data for facilities within days