LARGE-SCALE ENVIRONMENT-MODELING WITH ARA'S LANDFORM ENGINE™

ARA

- **GENERATE MODELS FOR ANY LOCATION WORLDWIDE** Including denied areas

- **EFFICIENTLY AND ACCURATELY VISUALIZE LARGE 3D SCENES**

- **ALIGN IMAGERY, CORRECTING FOR ERRORS IN SATELLITE POSE**

- **CREATE HIGH-RESOLUTION TERRAIN MODELS (DSM, DTM)**

- **DEPLOY ON THE CLOUD, A LOCAL CLUSTER, OR A SINGLE WORKSTATION**

- **COMPACT, CAD-LIKE, LOW-POLYGON 3D MODELS** Lightweight for smartphones

- **GOVERNMENT OFF-THE-SHELF (GOTS)**

3D BUILDING/TERRAIN RECONTRUCTION

Landform Engine™ uses advanced photogrammetry to create 3D models from high-resolution, level 1B satellite imagery. Instead of stopping at the typical high-polygon output produced by many photogrammetry processes, Landform offers post-processing steps to optimize model geometry for use within simulators. Advanced modeling applies a Geon fitting process to produce crisp low-polygon building shapes, making it easier to visualize large 3D scenes. 3D models are designed to be crisp-lined, accurate, visually appealing, and have a lighter runtime memory footprint. Because Landform uses satellite imagery, users can generate models for any location worldwide.
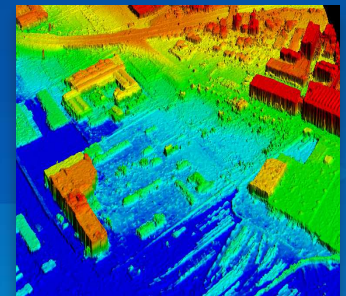

WIREFRAME DISPLAY OF OPTIMIZED BUILDINGS

DATA OUTPUT

The Landform Engine's pipeline outputs 3D models along with other useful 2D raster and vector products:

- 3D textured and wireframe buildings
- High-resolution 0.3m Digital Surface Model (DSM), bare-earth Digital Terrain Model (DTM)
- Material classification raster images
- High-resolution ortho-rectified imagery with shadows and clouds removed
- 2D vector road outlines
- Bridge and elevated roadway 3D models

DIGITAL SURFACE MODEL

MATERIAL CLASSIFICATION

Automatically generate accurate building, bridge, and elevated roadway 3D models from high-resolution satellite imagery.

LANDFORM ENGINE™

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Applied Research Associates, Inc. (ARA) was founded in 1979, in Albuquerque, New Mexico, to offer science and engineering research to solve problems of national importance. ARA delivers leading-edge products and solutions for national defense, homeland security, aerospace, healthcare, transportation, and manufacturing. With over 1,700 employee-owners at locations in the U.S. and Canada, ARA offers a broad range of technical expertise in defense technologies, civil engineering, computer software and simulation, systems analysis, biomedical engineering, environmental technologies, and blast testing and measurement.

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