SDL/17-1891C

SPACE DYNAMICS LABORATORY

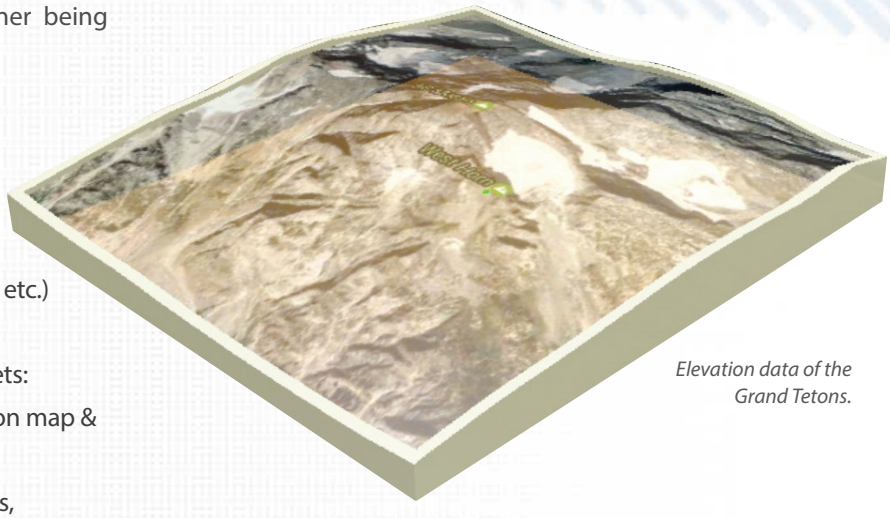
ARTMAP

AUGMENTED REALITY TABLETOP MISSION AGGREGATE PLANNER

ARTMAP is a 3-D augmented reality mission planner being developed by the Space Dynamics Laboratory (SDL).

ARTMAP capabilities include:

- Immersive, 3-D geographical environment
- 3-D application platform can be placed on a table, floor, or wall & scaled to fit most areas
- Static 3-D assets (S3-DA) (including buildings, trees, etc.) can be added to the map at run time
- Dynamic 3-D assets (D3-DA) (including military assets: planes, tanks, ships, etc.) can be added to the mission map & given animation waypoints at run time
- Map drawing tools with lines & arrows, circles, boxes, polygons & text
- Operational intelligence
- Real-time situational awareness
- Mission cloning for quick contingency planning
- Tactical planning with red/blue/green/yellow teams
- Network multi-device viewing & collaboration
- Line-of-sight display for a selected asset
- Street view capability
- Track live field operatives against mission plan



Elevation data of the Grand Tetons.

ARTMAP leverages the Microsoft® HoloLens™ device to generate an augmented environment.

Note: Images were captured using the HoloLens camera and are a lower resolution than in the actual product.

Digital 3-D content can be viewed, placed, and manipulated in a real-world environment.

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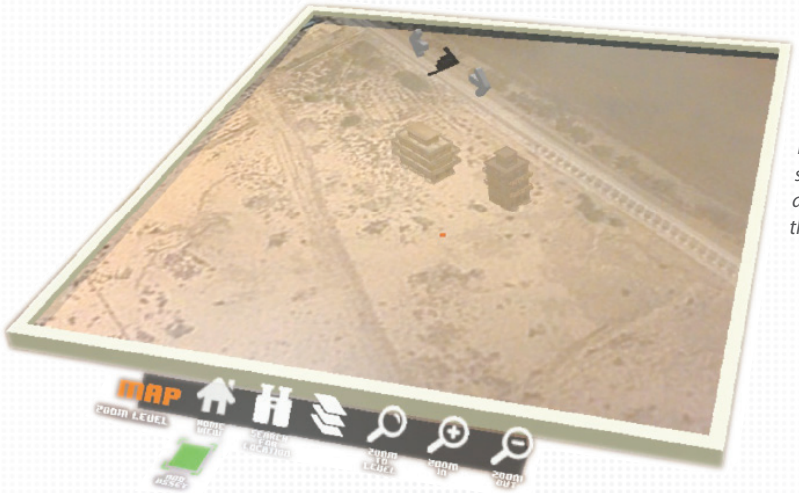
For more information or to set up a demo, please email rex.nethercott@sdl.usu.edu

ARTMAP



Iraq map location with static 3-D buildings. The add asset menu is showing with the stealth bomber selected.

HIGH-LEVEL FEATURES

- Application accepts voice or gesture input commands & produces visual 3-D graphics, animation & voice synthesis for output
- Any geolocation can be searched for & displayed on a tiled, multi-zoom capable, 3-D elevation map
- 3-D map tools enable users to pan, zoom & rotate the map & map assets
- Rooms can be joined on the network, and each room can have multiple missions
- Missions can be created & loaded; ARTMAP automatically stores edits
- D3-DA can be animated to move to waypoints, shoot targets & perform other commands; S3-DA persist across missions
- Users can store asset actions in the master mission timeline, where each asset has its own sub-timeline
- Timeline playback can be paused, scrubbed & speed-controlled for analyzing & editing

APPLICATION VIEWS

- **Home View:** Acts as a main navigation hub & enables users to use verbal or tap gestures to access the other main views
- **Edit View:** Enables users to place the map platform on any flat, physical room surface & to scale, move & rotate the map using the edit tools
- **Mission View:** Shows a listing of all loadable missions currently available in the database for loading into the map view
- **Map View:** Provides users with mission planning & playback tools
- **Globe View:** Provides a global 3-D world view with mission-tappable geospatial markers to load mission into the map view
- **Network View:** Enables multiple HoloLens™ users, in the same location or remotely connected on the same network, to jointly review & plan missions

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