Special Operations Solutions

SPECIAL OPERATIONS SOLUTIONS

Contextual ISR

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specopsolutions.com

Introduction

Special Operations Solutions, LLC (SOS) specializes in technical and engineering support for airborne, ground, maritime and virtualized systems.

SOS provides engineering solutions and consulting for all life cycle phases. Our team of engineers have designed and developed power distribution units, system architectures, data links, video distribution solutions and complex aircraft networks.

Founded in 2008 and headquartered in Tysons, Virginia, USA.

Offices in Washington DC metro, Harrisonburg, VA, and Bangalore India.

Subsidiary in India called GeoOpsis which focuses on GIS software development.

SOS's customers are U.S. Army, U.S. Air Force, Solar Ship, Bertolini (Airship do Brasil)

ISR

Intelligence, Surveillance, and Reconnaissance (ISR) is the ability to capture data from various sources and analyze it to create intelligence.

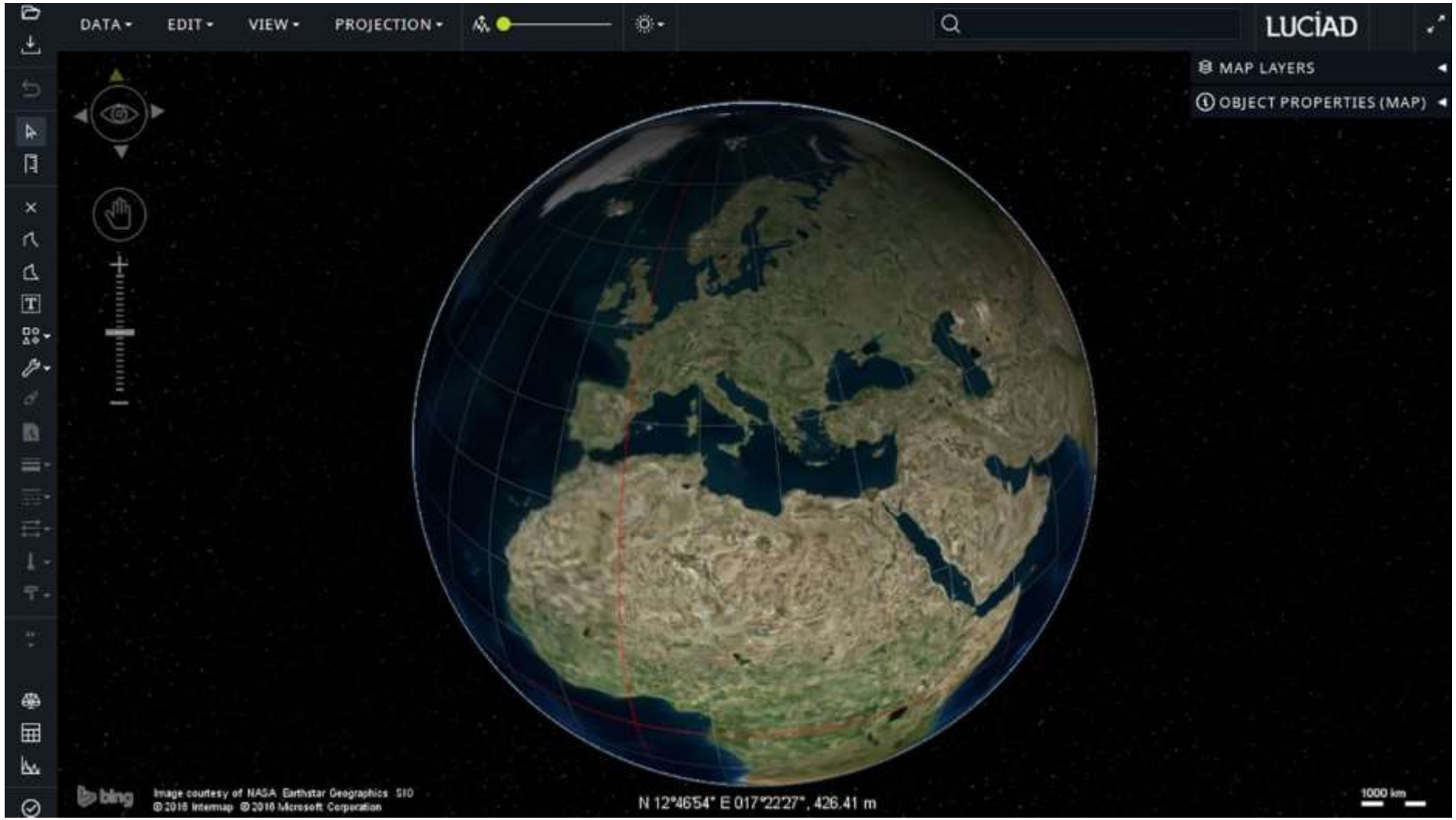
Aerial ISR is another name for aerial remote sensing. The sources are sensors (i.e. radars, EO/IR full motion video, multispectral, hyperspectral, signals and communications equipment, etc).

Full motion video (FMV) is the center of most data collections. FMV consists of any system that has at least one camera system. Most defense FMV sensors contain at least two sensors (visible and thermal). ISR assets including commercial off-the-shelf drones provide a camera on it.

At the GEOINT event in May, NGA Director Robert Cardillo said,
"And whether our new persistent view of the world comes from space, air, sea, or ground – in five years, there may be a million times more than the amount of geospatial data that we have today. Yes, a million times more."

Step 1: Get A Map

SOS partnered with Luciad to create a 2D and 3D map using standardized data from various sources.



Step 2: Get A Database

SOS created a database schema which can ingest most standardized datasets from various sensors and reports. This can occur for real-time data (i.e. active FMV sensor) or archived data (recorded FMV).

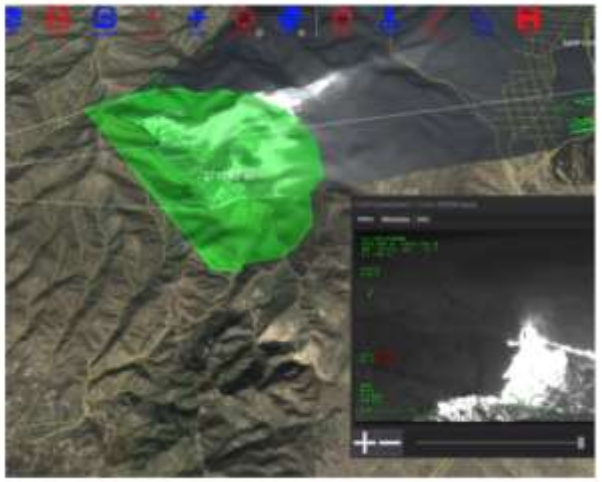
Step 3: Add Tools

Color Balancing

Haze Reduction

Histogram Equalization

Multi-Layers

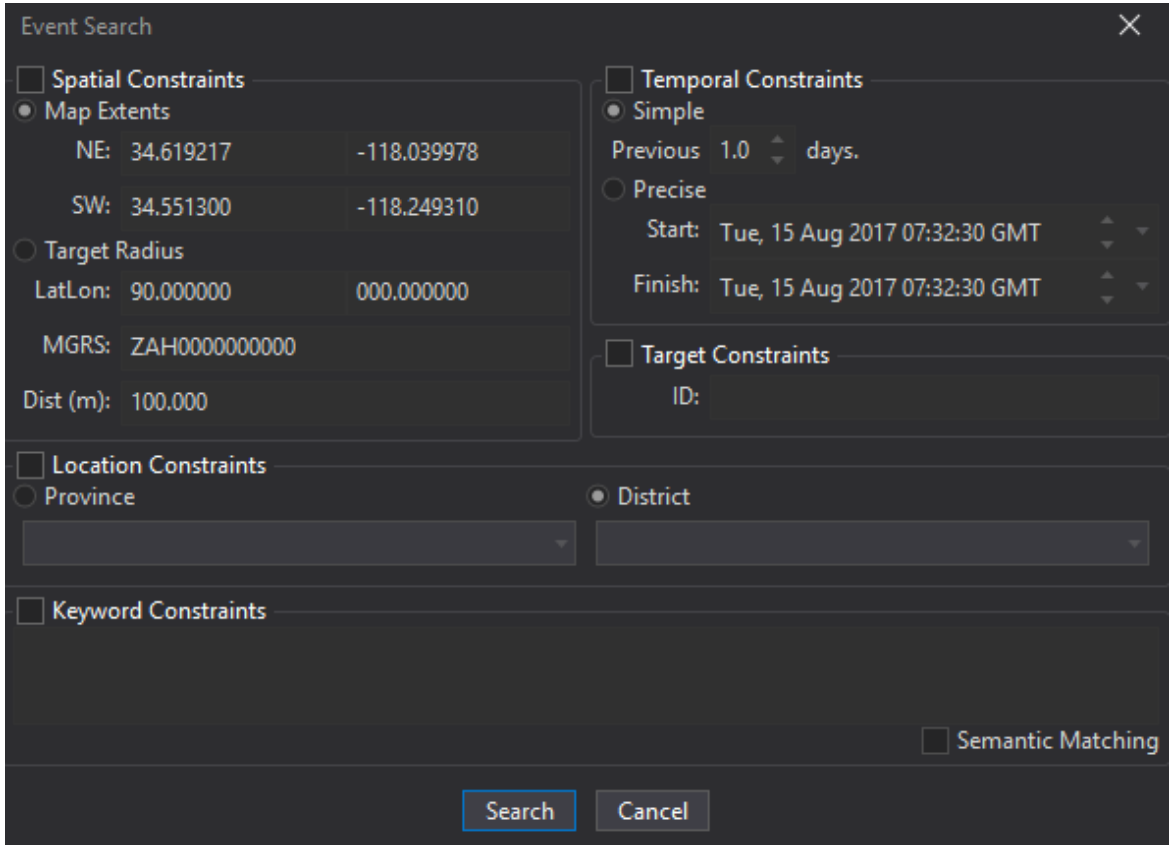


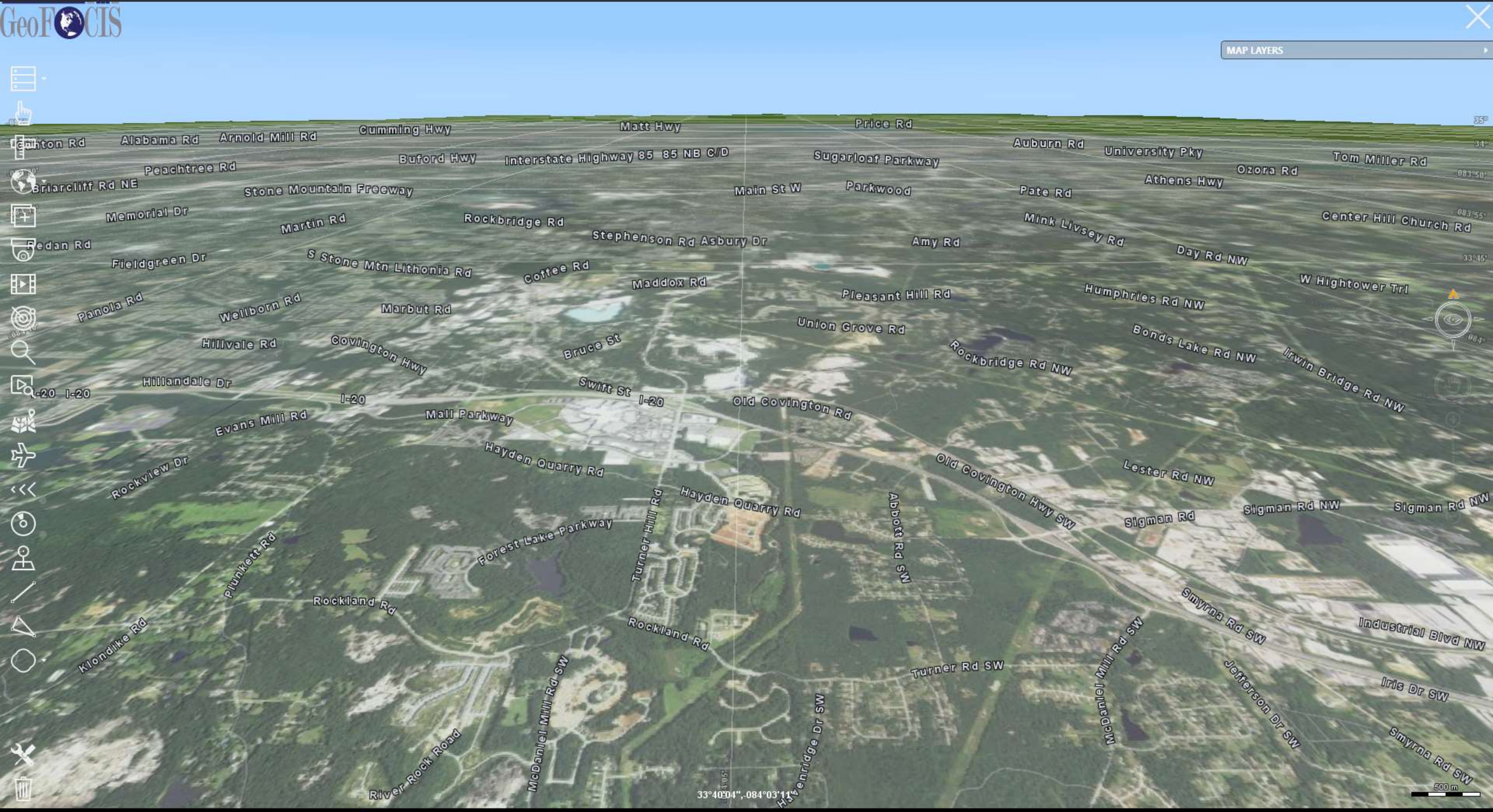
Measurements, Annotations, etc

Change Detection

Step 4: Add Context

SOS allowed users to query the database based on keywords, spatial, and temporal constraints.

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MAP LAYERS
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Peachtree Rd
Memorial Dr
Redan Rd
Fieldgreen Dr
Panola Rd
Wellborn Rd
Hillvale Rd
Hillandale Dr
I-20
Evans Mill Rd
Rockview Dr
Plunkett Rd
Klondike Rd
River Rock Road
Rockland Rd
Forest Lake Parkway
Hayden Quarry Rd
Mall Parkway
Swift St
Bruce St
Covington Hwy
Marbut Rd
Martin Rd
Stone Mountain Freeway
Alabama Rd
Arnold Mill Rd
Cumming Hwy
Buford Hwy
Interstate Highway 85
85 NB C/D
Matt Hwy
Main St W
Rockbridge Rd
Stephenson Rd
Asbury Dr
S Stone Mtn Lithonia Rd
Coffee Rd
Maddox Rd
Union Grove Rd
Old Covington Rd
Turner Hill Rd
Abbott Rd SW
McDaniel Mill Rd SW
Havenridge Dr SW
Turner Rd SW
Price Rd
Sugarloaf Parkway
Parkwood
Amy Rd
Pleasant Hill Rd
Auburn Rd
University Pky
Athens Hwy
Pate Rd
Mink Livsey Rd
Ozora Rd
Tom Miller Rd
Center Hill Church Rd
Day Rd NW
W Hightower Trl
Humphries Rd NW
Bonds Lake Rd NW
Irwin Bridge Rd NW
Rockbridge Rd NW
Old Covington Hwy SW
Lester Rd NW
Sigman Rd
Sigman Rd NW
Smyrna Rd SW
Industrial Blvd NW
Iris Dr SW
Jefferson Dr SW
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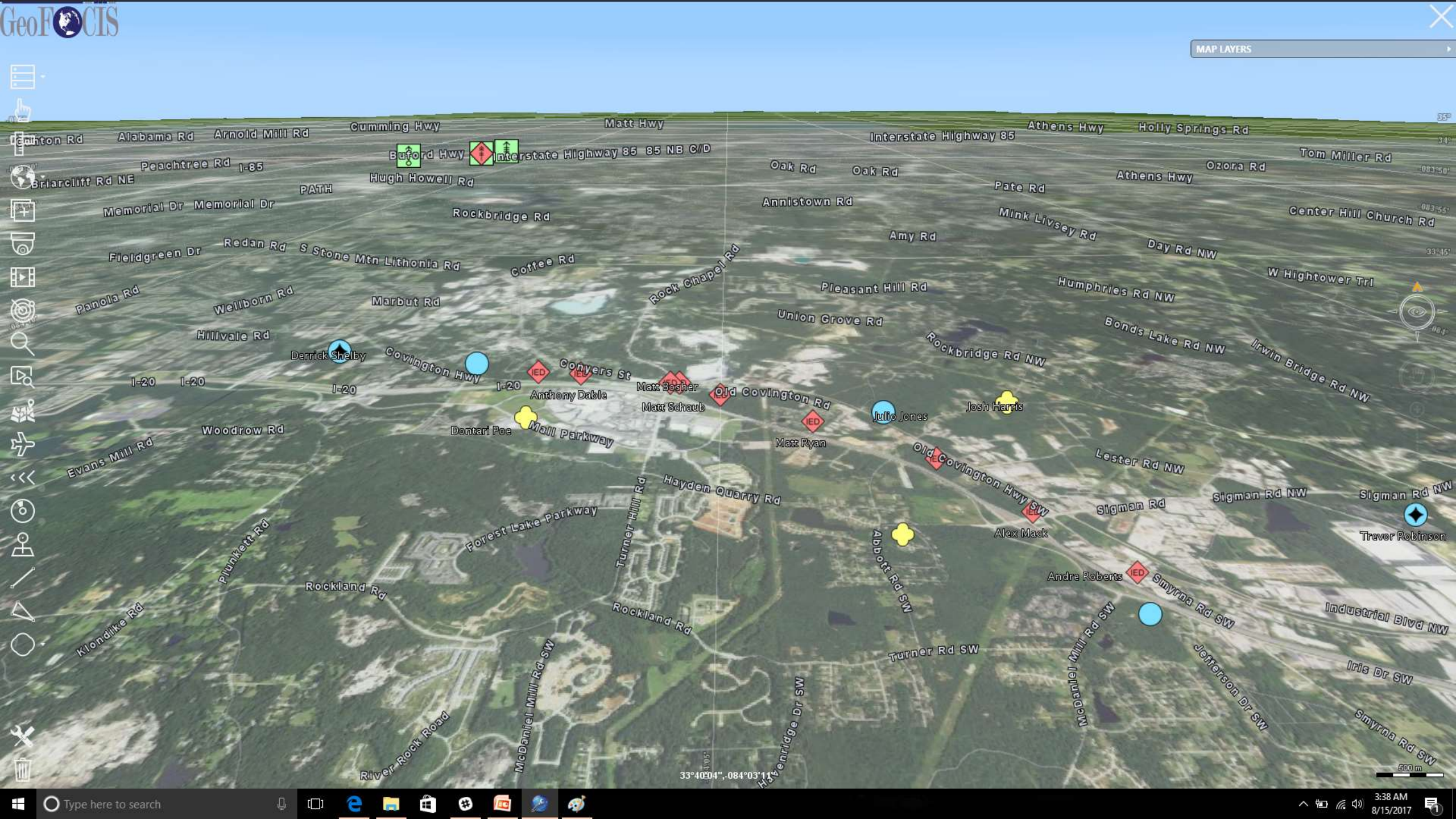
8/15/2017


GeoFOCUS
MAP LAYERS
Cumming Hwy
Matt Hwy
Athens Hwy
Holly Springs Rd
Alabama Rd
Arnold Mill Rd
Buford Hwy
Interstate Highway 85
85 NB C/D
Interstate Highway 85
Tom Miller Rd
Peachtree Rd
I-85
Oak Rd
Oak Rd
Ozora Rd
Briarcliff Rd NE
Hugh Howell Rd
Athens Hwy
PATH
Pate Rd
Memorial Dr
Memorial Dr
Annistown Rd
Rockbridge Rd
Mink Livsey Rd
Center Hill Church Rd
Amy Rd
Fieldgreen Dr
Redan Rd
S Stone Mtn Lithonia Rd
Coffee Rd
Day Rd NW
Rock Chapel Rd
W Hightower Trl
Pleasant Hill Rd
Humphries Rd NW
Panola Rd
Wellborn Rd
Marbut Rd
Union Grove Rd
Bonds Lake Rd NW
Hillvale Rd
Rockbridge Rd NW
Irwin Bridge Rd NW
Derrick Shelby
Covington Hwy
Convers St
I-20
I-20
I-20
I-20
Anthony Dable
Matt Bosher
Old Covington Rd
Matt Schaub
Josh Harris
Julio Jones
Dontari Poe
Mall Parkway
Matt Ryan
Woodrow Rd
Old Covington Hwy SW
Lester Rd NW
Evans Mill Rd
Hayden Quarry Rd
Sigman Rd
Sigman Rd NW
Sigman Rd NW
Forest Lake Parkway
Turner Hill Rd
Alex Mack
Trevor Robinson
Plunkett Rd
Abbott Rd SW
Andre Roberts
Smyrna Rd SW
Rockland Rd
Rockland Rd
Industrial Blvd NW
Klondike Rd
McDaniel Mill Rd SW
Turner Rd SW
McDaniel Mill Rd SW
Jefferson Dr SW
Iris Dr SW
River Rock Road
Haverridge Dr SW
Smyrna Rd SW
33°40'04",-084°03'11"
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3:38 AM
8/15/2017

GeoFOCIS

MAP LAYERS

Geospatial Fused Operations Combined Information System

Unclassified

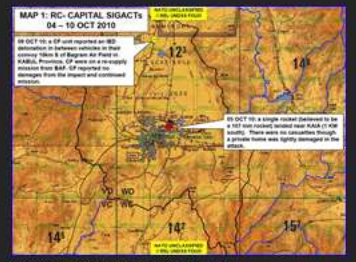
References

- **DMS:** 33°42'09"N 084°06'08"W
- **MGRS:** 16SGC6857732941

Suspicious: 01Jun2017 11:32:38.481Z

(Unclassified)

A CF unit reported an IED detonation in between vehicles in their convoy 16km S of Bagram Air Field in KABUL Province. CF were on a re-supply mission from BAF. CF reported no damages from the impact and continued mission.
#ied #explosion #roadside No casualties though private home was slightly damaged
A single rocket (believed to be a 107 mm rocket) landed near KAIA (1 KM south). There were no casualties though a private home was lightly damaged in the attack.



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Unclassified

Cumming Hwy
Buford Hwy
Interstate Highway 85
Hugh Howell Rd
Rockbridge Rd
Coffee Rd
Marbut Rd
Wellborn Rd
Hillvale Rd
Panola Rd
Fieldgreen Dr
Redan Rd
S Stone Mtn Lithonia Rd
Memorial Dr
Peachtree Rd
I-85
PATH
Briarcliff Rd NE
Alabama Rd
Arnold Mill Rd
Derrick Shelby
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Robert Alfred
Anthony Dable
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Mall Parkway
Bruce St
I-20
Woodrow Rd
Evans Mill Rd
Forest Lake Parkway
Plunkett Rd
Rockland Rd
Klondike Rd
River Rock Road
McDaniel Mill Rd SW
Turner Rd SW
Abbott Rd SW
Alex Mack
Andre Roberts
IED
Smyrna Rd SW
Jefferson Dr SW
Iris Dr SW
Industrial Blvd NW
Holly Springs Rd
Tom Miller Rd
Ozora Rd
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Center Hill Church Rd
Day Rd NW
W Hightower Trl
Bonds Lake Rd NW
Irwin Bridge Rd NW
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Sigman Rd
Sigman Rd NW
Trevor Robinson

33°40'04",-084°03'11"

500 m

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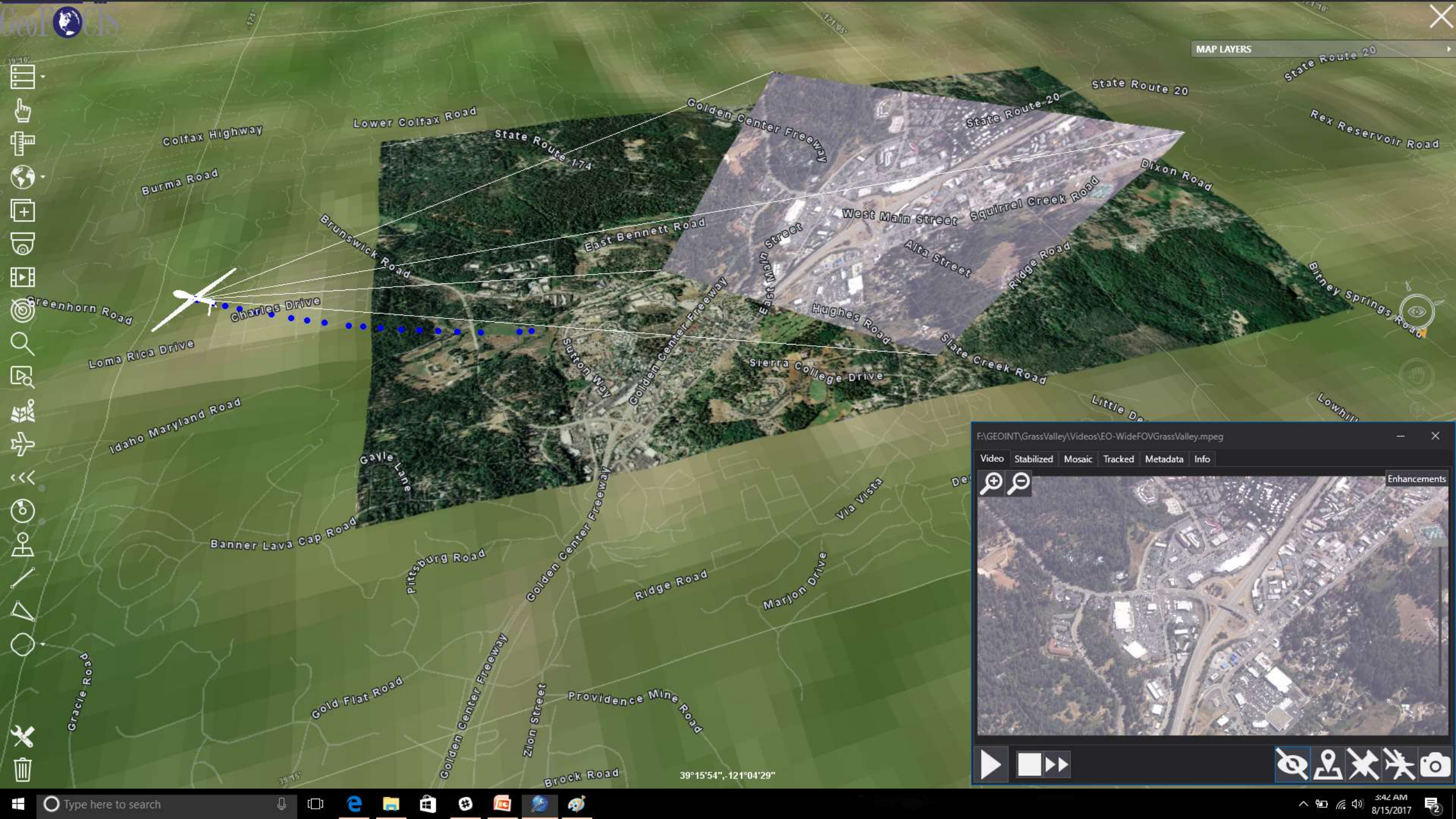
8/15/2017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West Main Street
Squirrel Creek Road
Dixon Road
East Main Street
Alta Street
Ridge Road
Bitney Springs Road
Greenhorn Road
Charles Drive
Hughes Road
Loma Rica Drive
Sutton Way
Sierra College Drive
Slate Creek Road
Idaho Maryland Road
Gayle Lane
Via Vista
Banner Lava Cap Road
Pittsburg Road
Ridge Road
Marjon Drive
Gracie Road
Gold Flat Road
Zion Street
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Brock Road
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Stabilized
Mosaic
Tracked
Metadata
Info
Enhancements
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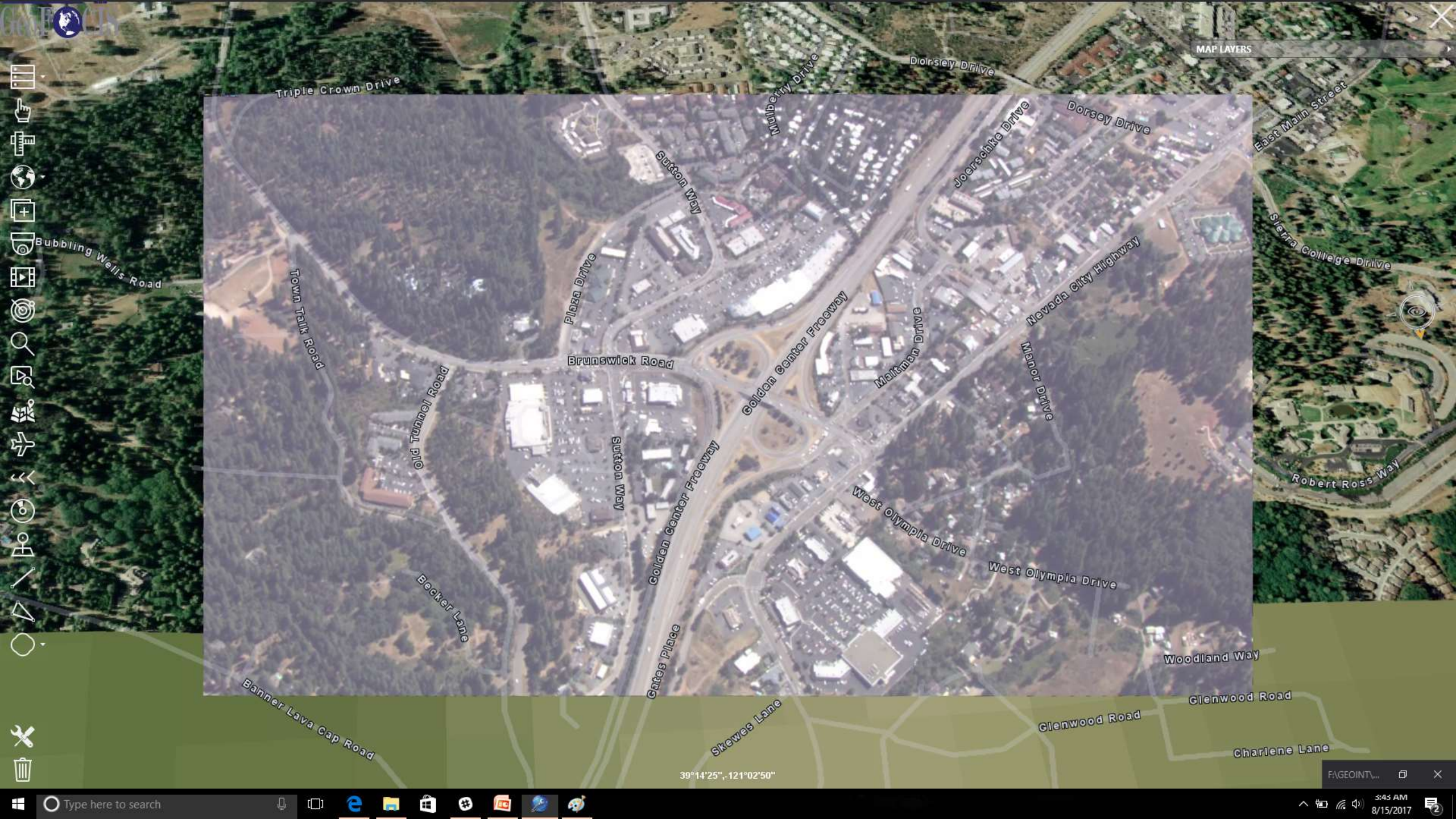
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Mulberry Drive
Dorsey Drive
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Sierra College Drive
Bubbling Wells Road
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Plaza Drive
Town Talk Road
Brunswick Road
Old Tunnel Road
Golden Center Freeway
Maltman Drive
Nevada City Highway
Manor Drive
Sutton Way
Golden Center Freeway
West Olympia Drive
West Olympia Drive
Robert Ross Way
Becker Lane
Gates Place
Woodland Way
Banner Lava Cap Road
Skewes Lane
Glenwood Road
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Charlene Lane
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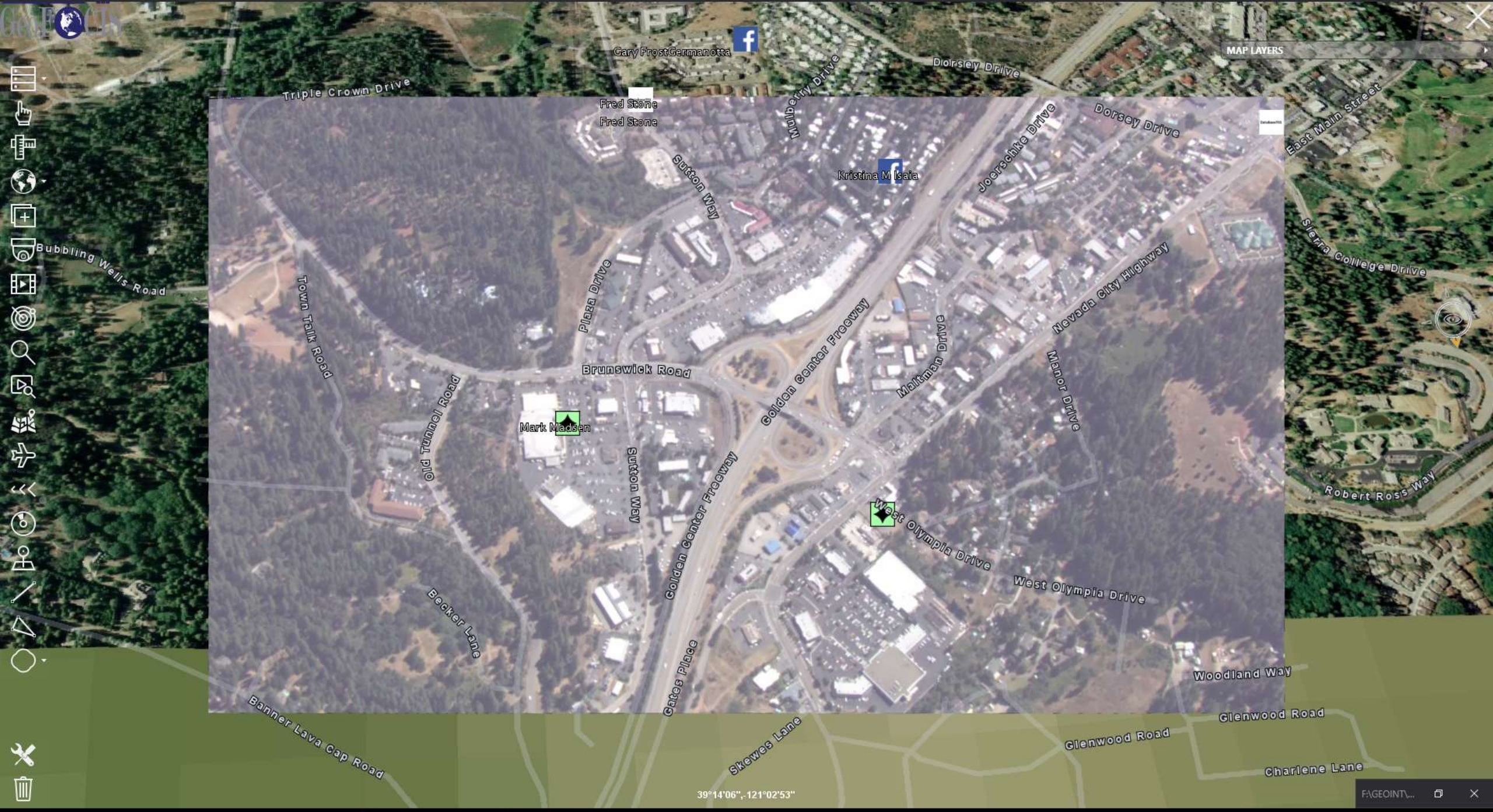
8/15/2017


MAP LAYERS
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Triple Crown Drive
Fred Stone
Fred Stone
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Dorsey Drive
Kristina M Isaia
Joerschke Drive
Dorsey Drive
East Main Street
Sierra College Drive
Sutton Way
Bubbling Wells Road
Town Talk Road
Plaza Drive
Brunswick Road
Golden Center Freeway
Maltman Drive
Nevada City Highway
Manor Drive
Old Tunnel Road
Mark Madsen
Sutton Way
Golden Center Freeway
West Olympia Drive
West Olympia Drive
Robert Ross Way
Becker Lane
Gates Place
Woodland Way
Glenwood Road
Glenwood Road
Banner Lava Cap Road
Skewes Lane
Charlene Lane
39°14'06",-121°02'53"
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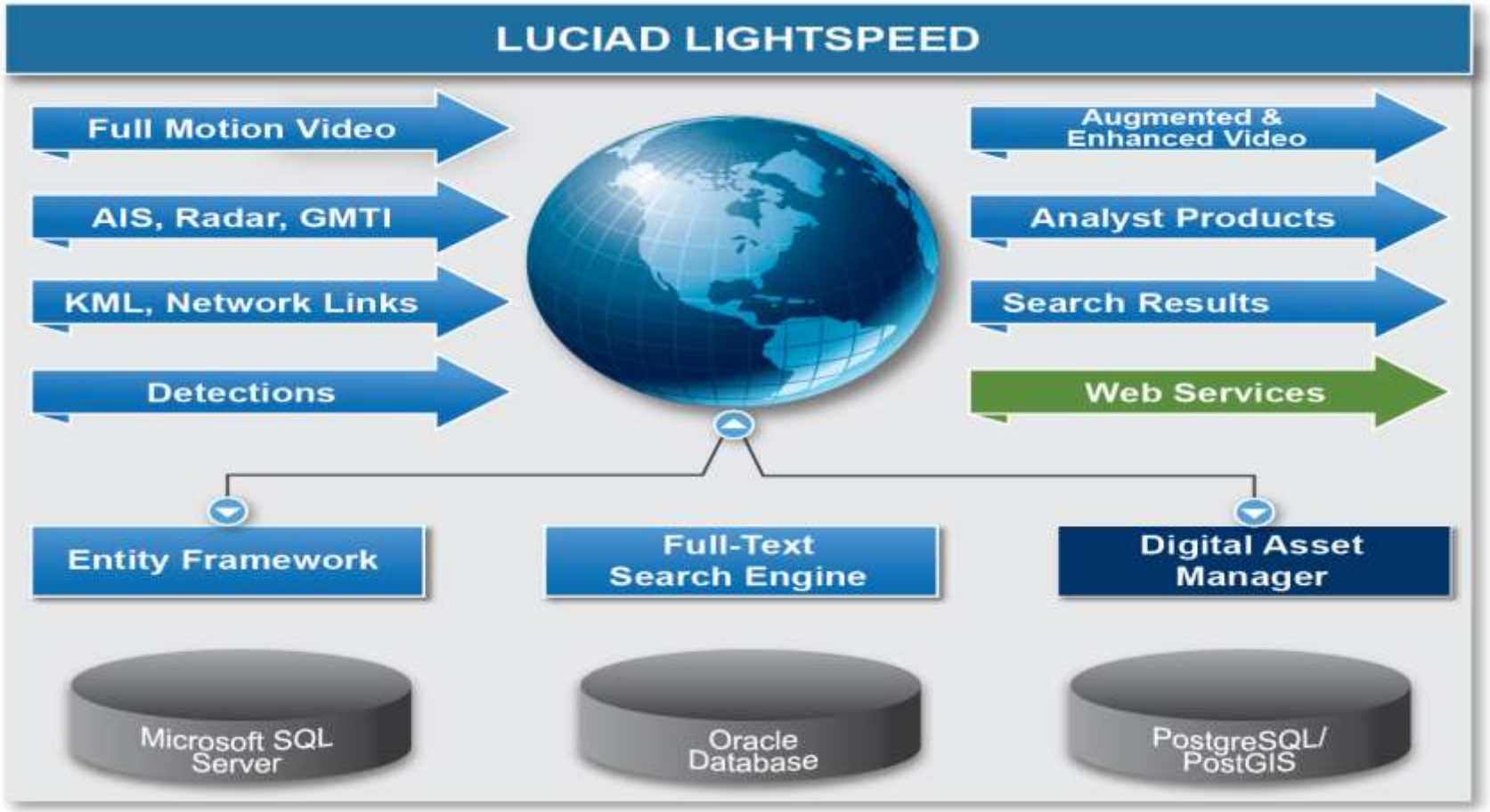
8/15/2017

GeoFOCIS Architecture

GEOFOCIS embeds the LuciadLightspeed engine and uses it to display a 3D globe with high-resolution reference imagery, road networks, AIS, radar and real-time video-on-terrain. It further augments the display with feature data, such as, previous sensor detections, stored in its geospatial database.



SOS uses LuciadFusion to build high resolution Luciad globes using imagery from commercial sources such as Digital Globe. The globes are compacted into one file and sent to a deployed stand alone environment to use in a portable fashion..


GeoFOCIS