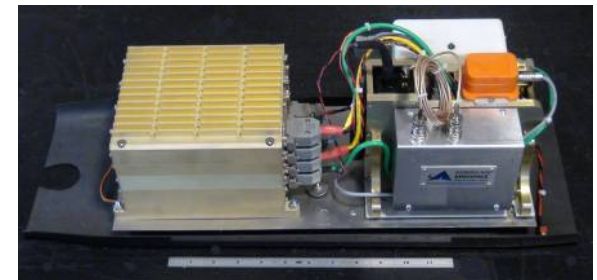


RS-16 UAS™ March Campaign & Multispectral Tactical Mapping Payload

David Yoel
Founder & CEO
TFRSAC
April 17, 2013

About AAAI

- At American Aerospace, we build complete, long endurance unmanned aircraft systems capable of performing safe and successful missions at low capital and operating cost
- We provide tactical mapping payloads for civil government and commercial customers using the latest COTS sensors and technologies
- AAAI also offers unmanned flight services, helping our customers cost-effectively accelerate their research, development, test, engineering and training programs



AAAI Products and Services

- **Flight Services**
 - Utilizing RS-16 and RS-20 Unmanned Aircraft Systems
- **Technical Services**
 - UAS technical services including COAs, Experimentals...
 - Building mission systems around customer air vehicles
- **Mission Systems**
 - RS-16 and RS-20 Mission Systems
- **Multispectral Tactical Mapping Payloads**
- **Mobile Operations Centers**
 - Shelter-based and Trailer-based

The Recon System 16 Unmanned Aircraft System

- The RS-16 UAS is a complete, medium altitude long endurance mission system, including:
 - Aircraft & Avionics
 - Payloads
 - RF Systems
 - Launcher/Charging System
 - Ground Control Station
 - Mobile Operations Center
 - Support Equipment
 - Spares & Consumables
 - Logbooks, Manuals...
 - FAA Approvals
 - Training Program
 - Field Support...



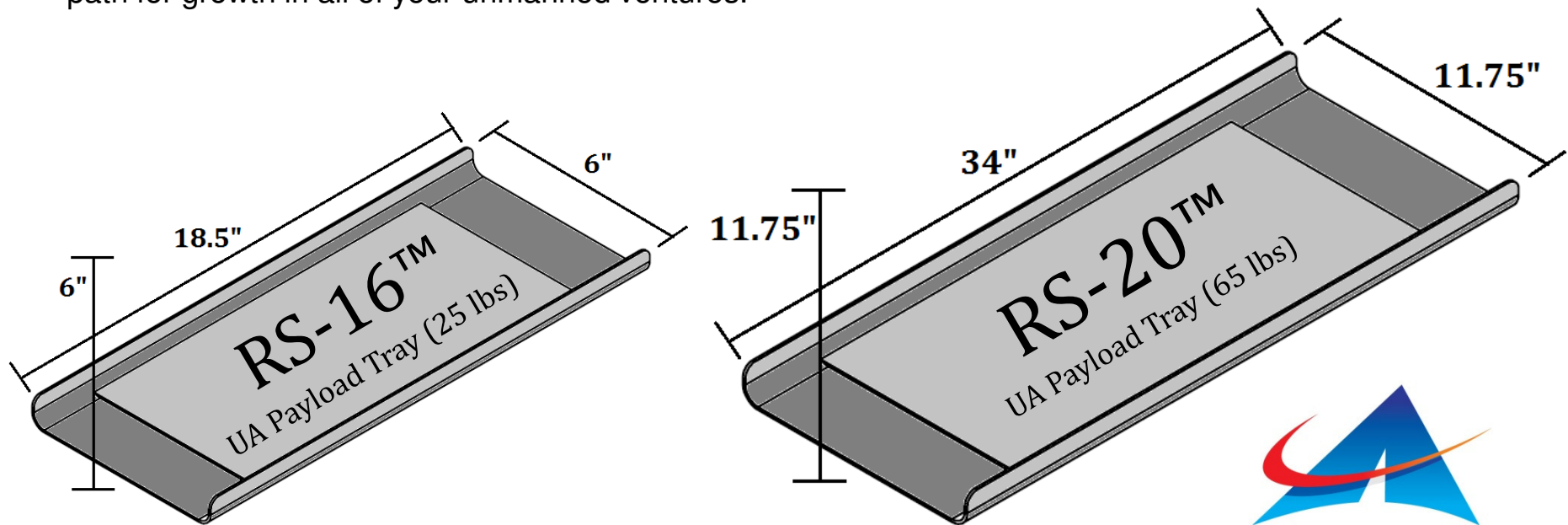
RS-16 and RS-20 UAS Specifications

Type	RS-16™ UA		RS-20™ UA	
Wingspan	12' 11"	3.9 m	17' 3"	5.2 m
MGTW	85 lbs	39	165 lbs	75 kg
Endurance	12-16 hrs		12-16 hr	
Ceiling	15,000'	4,572 m	15,000'	4,572 m
Max Speed	65 kts	120 km/hr	90 kts	167 km/hr
Internal Payload Envelope	6 x 6 x 18.5"	150 x 150 x 470 mm	10.75 x 10.75 x 34"	273 x 273 x 863 mm
Payload Capacity	25 lbs	11.4 kg	65 lbs	30 kg
Payload Power	100 watts		400 watts	
Launch	Pneumatic Catapult		Pneumatic Catapult	
Recovery	Belly Land		Belly Land	
Wing Hard Points	No		Yes	



Modular Payload Integration

AAAI systems are designed for modular integration of customer payloads. With ample size, weight and power, simple C2 and RF interfaces for real-time control, ample bandwidth, long endurance and range access across the country, we provide rapid integration, flight test, and support of customer payloads at a fraction of the price of competitor Tier II UA systems – creating a path for growth in all of your unmanned ventures.



iMOC™ - interoperable Mobile Operations Centers

- Complete, Mobile, Self-Contained, Climate-Controlled Work Environments Capable of:
 - Command and control of unmanned aircraft
 - Supporting flight operations with manned and unmanned aircraft
 - Data Product Generation and Dissemination
 - iMOCs can be networked to expand area of operation
 - Transport of complete mission system with 1 vehicle
- Set up and launch in ~1 hour
- Trailer and Skid-based iMOC configurations available

Trailer-Based iMOC



- Entire Mission System fits in one iMOC & sets up in ~1 hour

Shelter-Based iMOC

- Entire RS-16 Mission System fits in one iMOC
- Transportable by helicopter, ship or truck
- iMOCs can be networked
- AAI can integrate with customer-supplied shelters and/or vehicles

iMOC Mini™

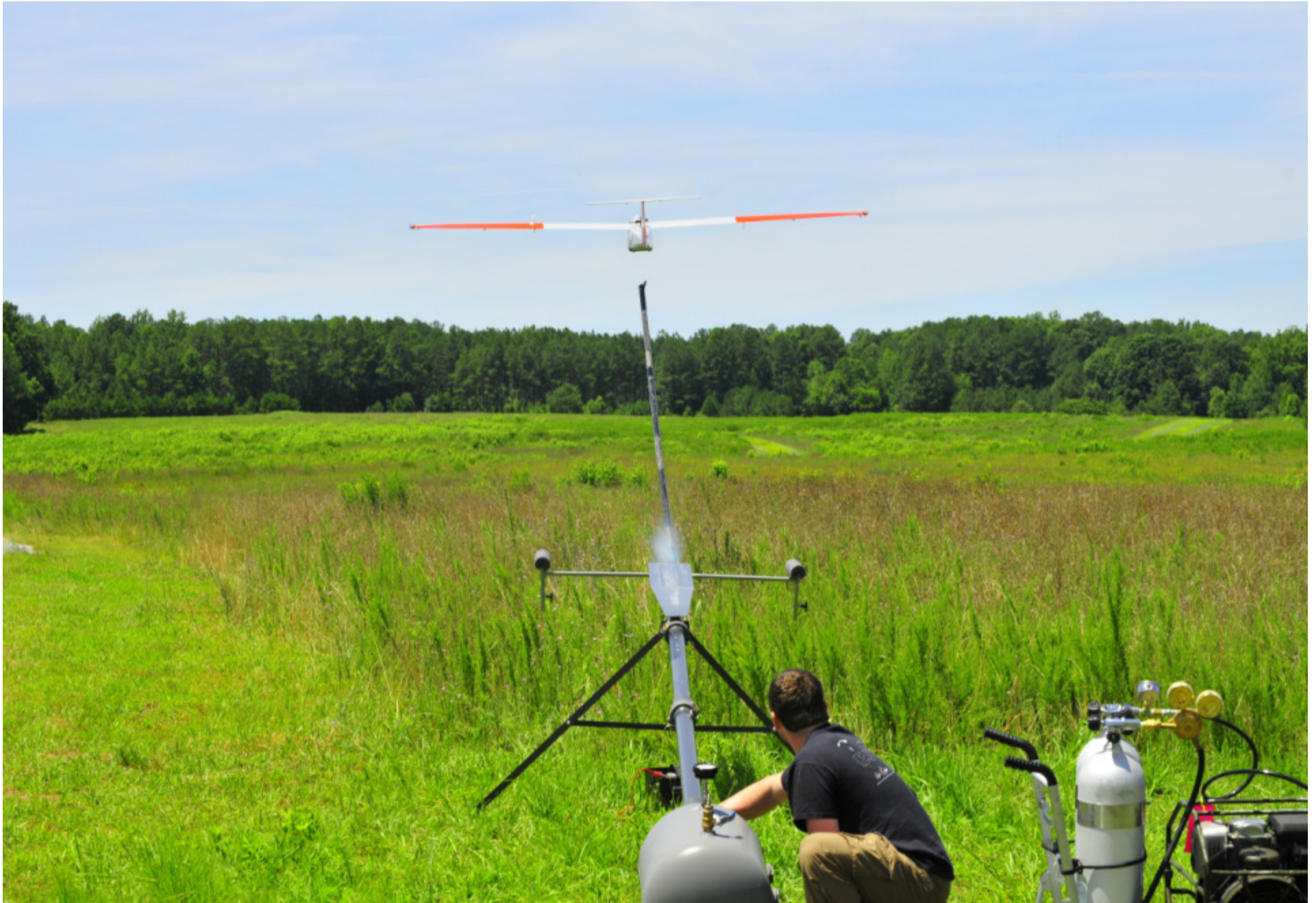




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Air Vehicle Operator Station with live feed from TailCam
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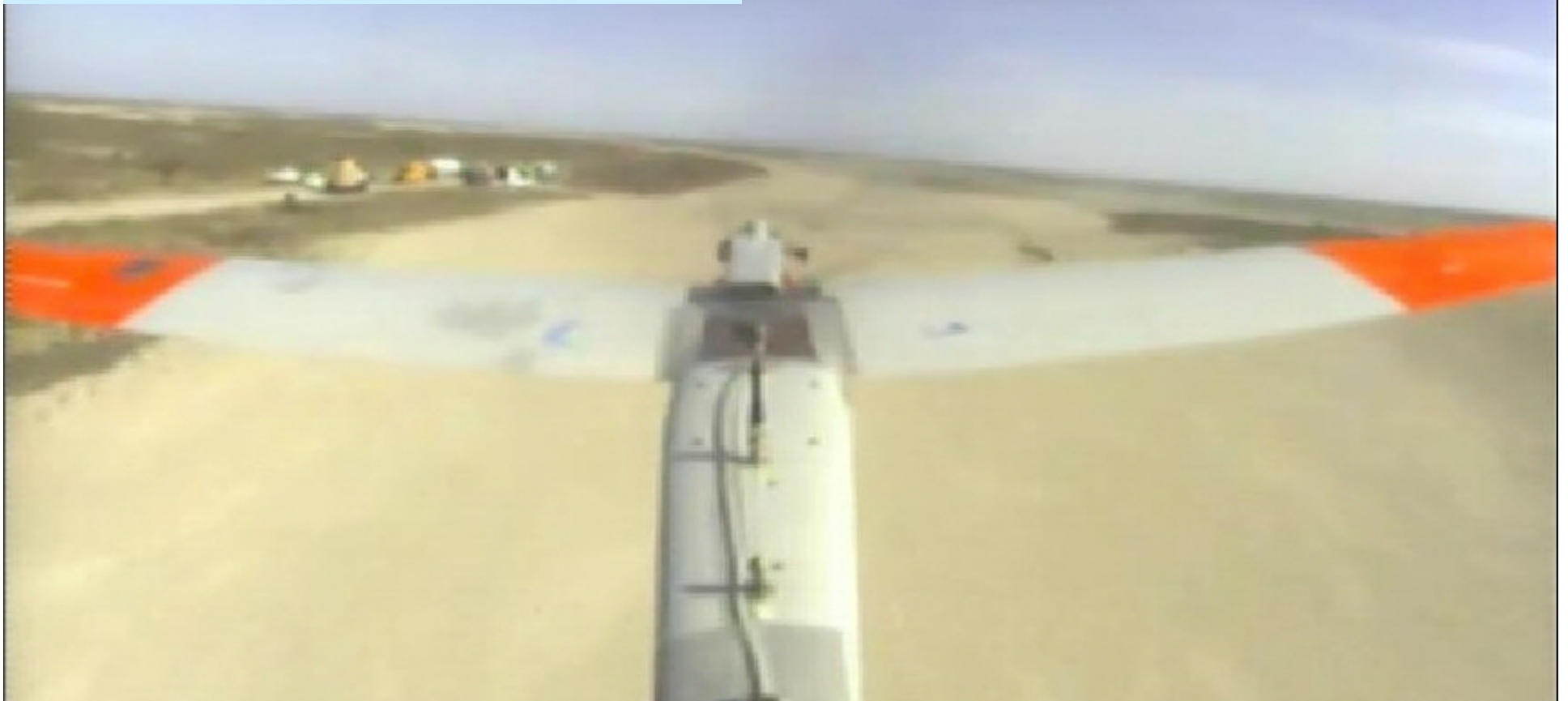
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Auto landing on unimproved surfaces

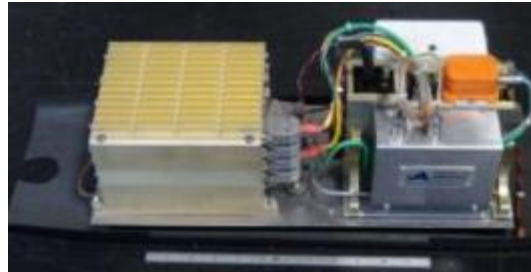
- Gravel
- Sand
- Mud Flats
- Roadways
- Tarmacs
- Runways
- Grass Fields



Real-Time Multispectral HD Tactical Mapping Payload



- Manned Aircraft
 - Cessna 172
 - Cessna 182
 - Cessna 206
 - Vulcanair P.68 Observer
 - Bell 206 Helicopter



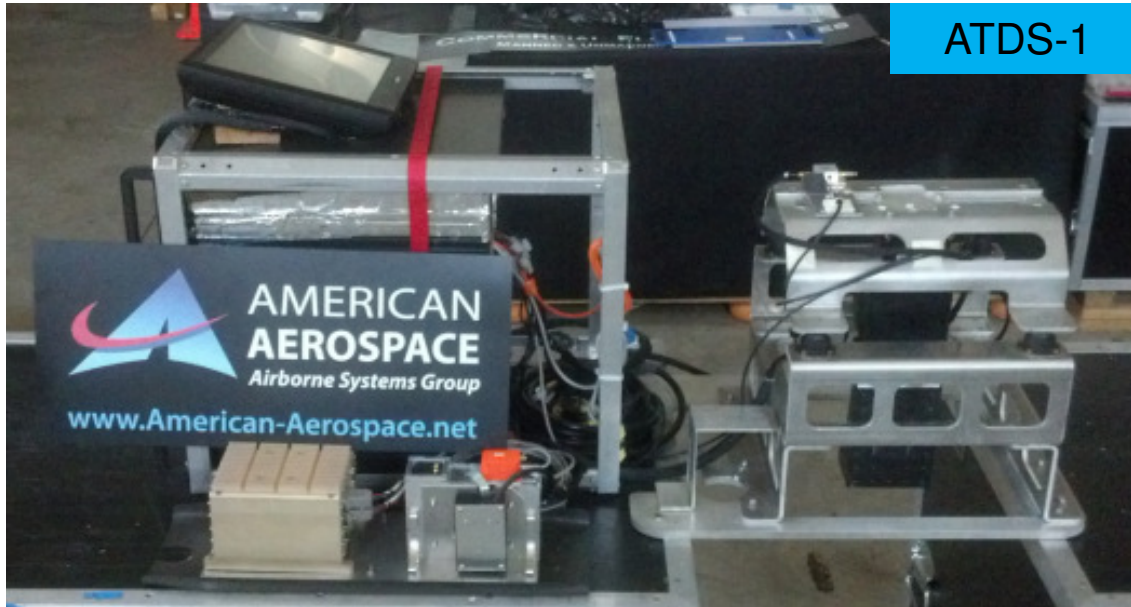
- Unmanned Aircraft
 - RS-16 UAS™
 - RS-20 UAS™

- Same payload flies on both manned and unmanned aircraft
- Switch configurations in less than one hour
- Workflows are independent of air vehicle

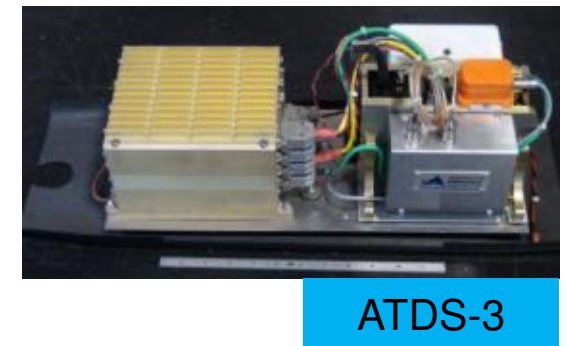
Current Sensor Suite								
AAAI Multispectral Tactical Mapping Payload								
					1,000' AGL		3,000' AGL	
Camera	Type	Band (microns)	Pixels (MPx)	HFOV (Degrees)	Ground Sample Distance (Inches)	Swath Width (Ft)	Ground Sample Distance (Inches)	Swath Width (Ft)
Visible*	Progressive	.45 to .65	2.073	18.4	2.0	324	6.0	972
Infrared	Interlaced	8 to 12	0.307	18.4	6.0	324	18.2	972
Ultraviolet	Interlaced	0.3 to 0.4	0.307	18.4	6.0	324	18.2	972

* Visible camera has motorized zoom lens with 2.5 to 52 degree range

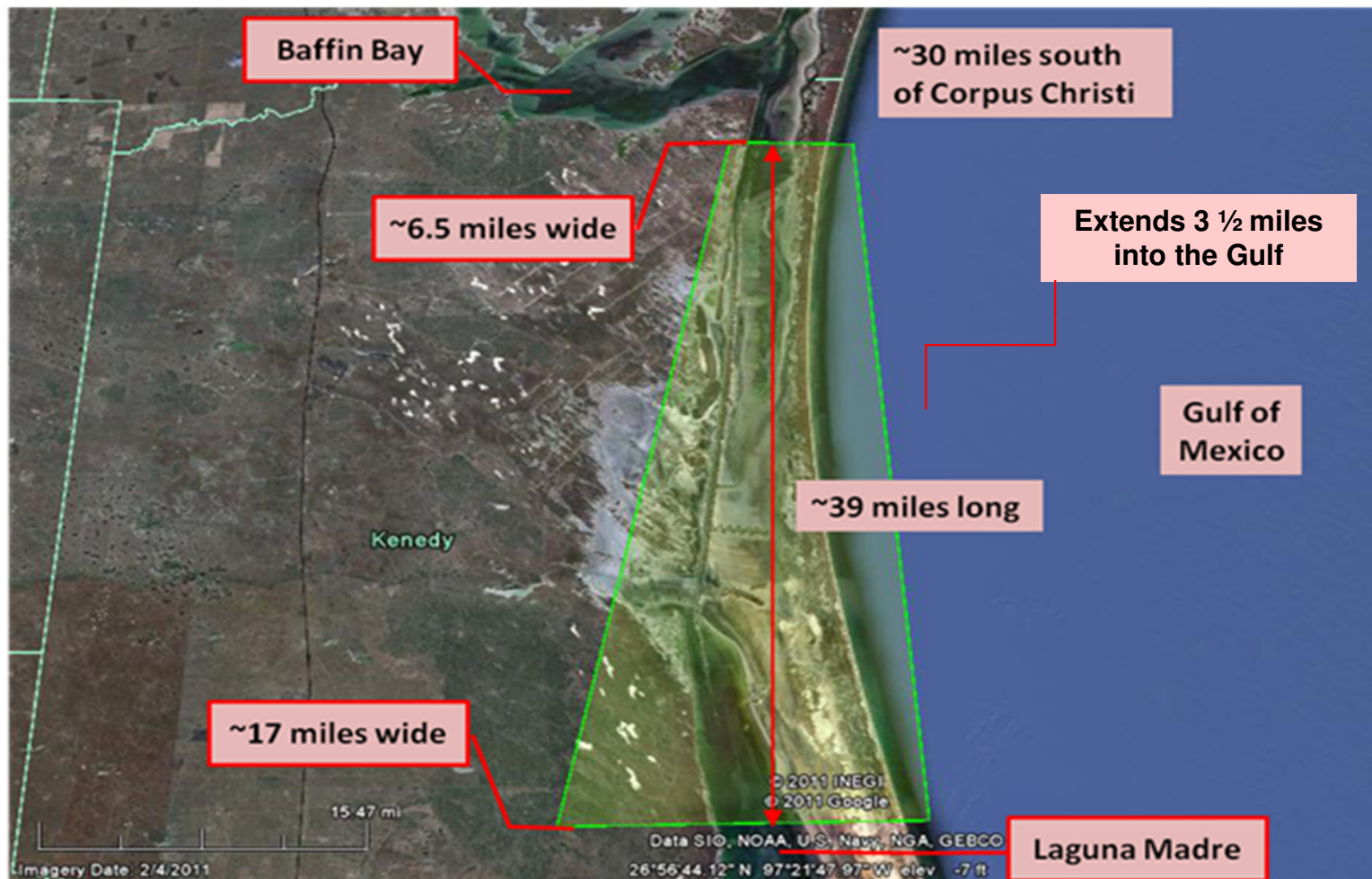
ATDS Configurations

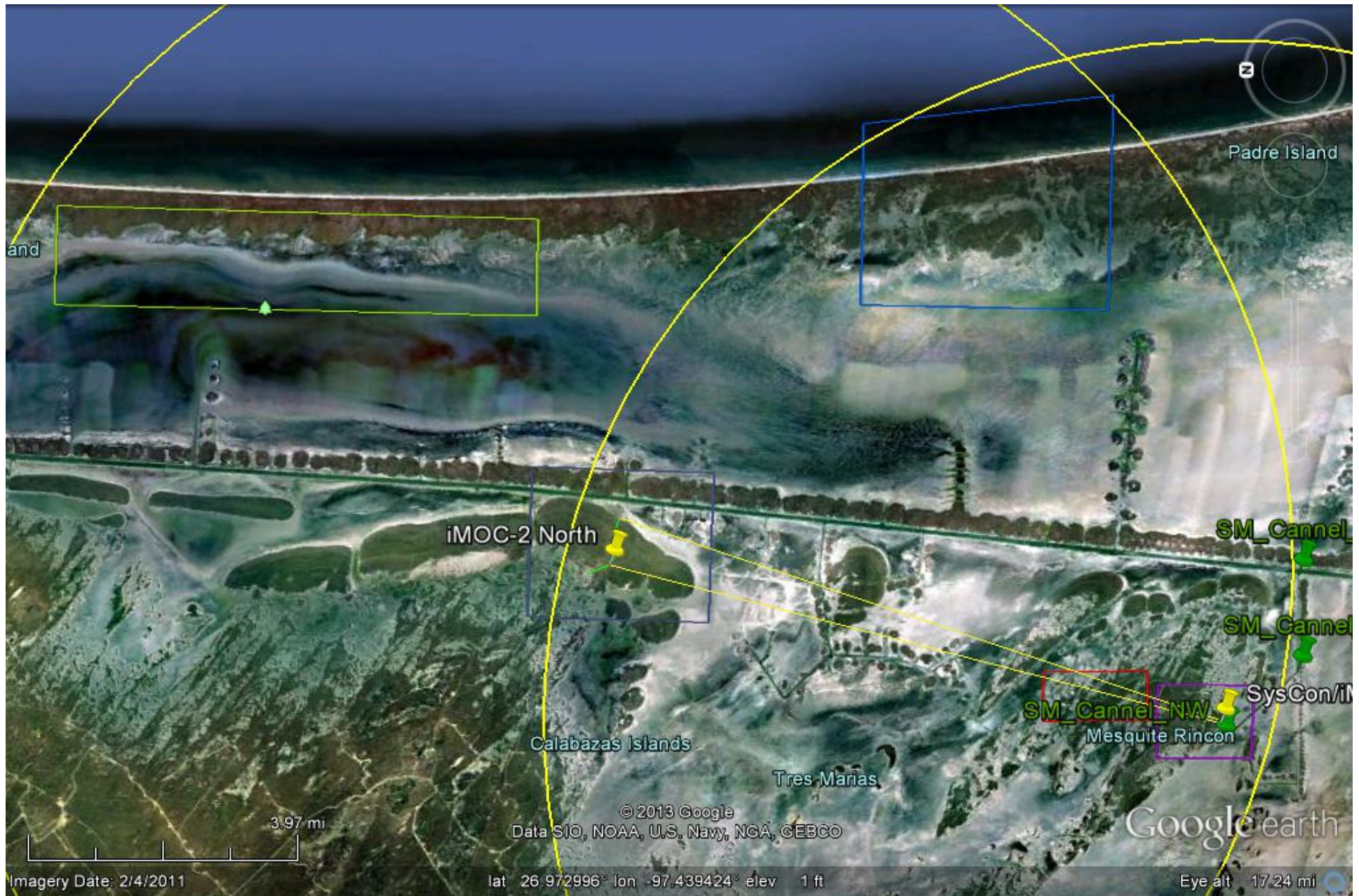


- Manned Aircraft
 - Cessna 172
 - Cessna 182
 - Cessna 206
 - Vulcnaire P.68 Observer
 - Bell 206
- Unmanned Aircraft
 - RS-16 UAS™
 - RS-20 UAS™



COA Envelope





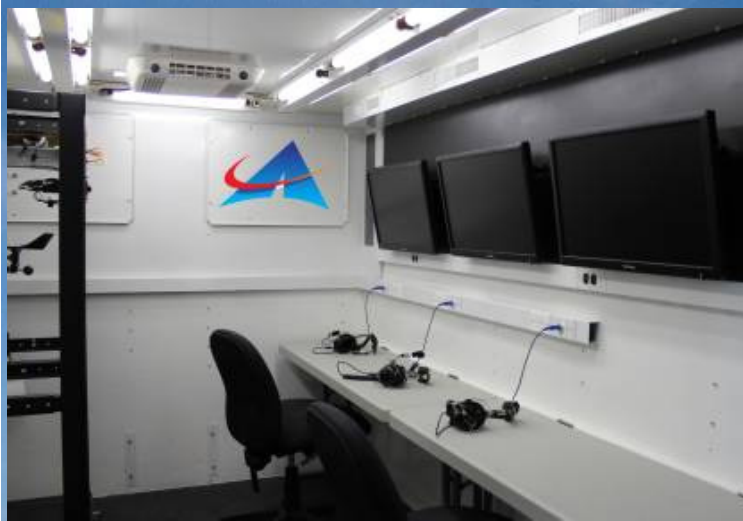
Aircraft on Launcher



MOC-1 & Field Hanger



MOC-2



RS-16 from Chase Aircraft

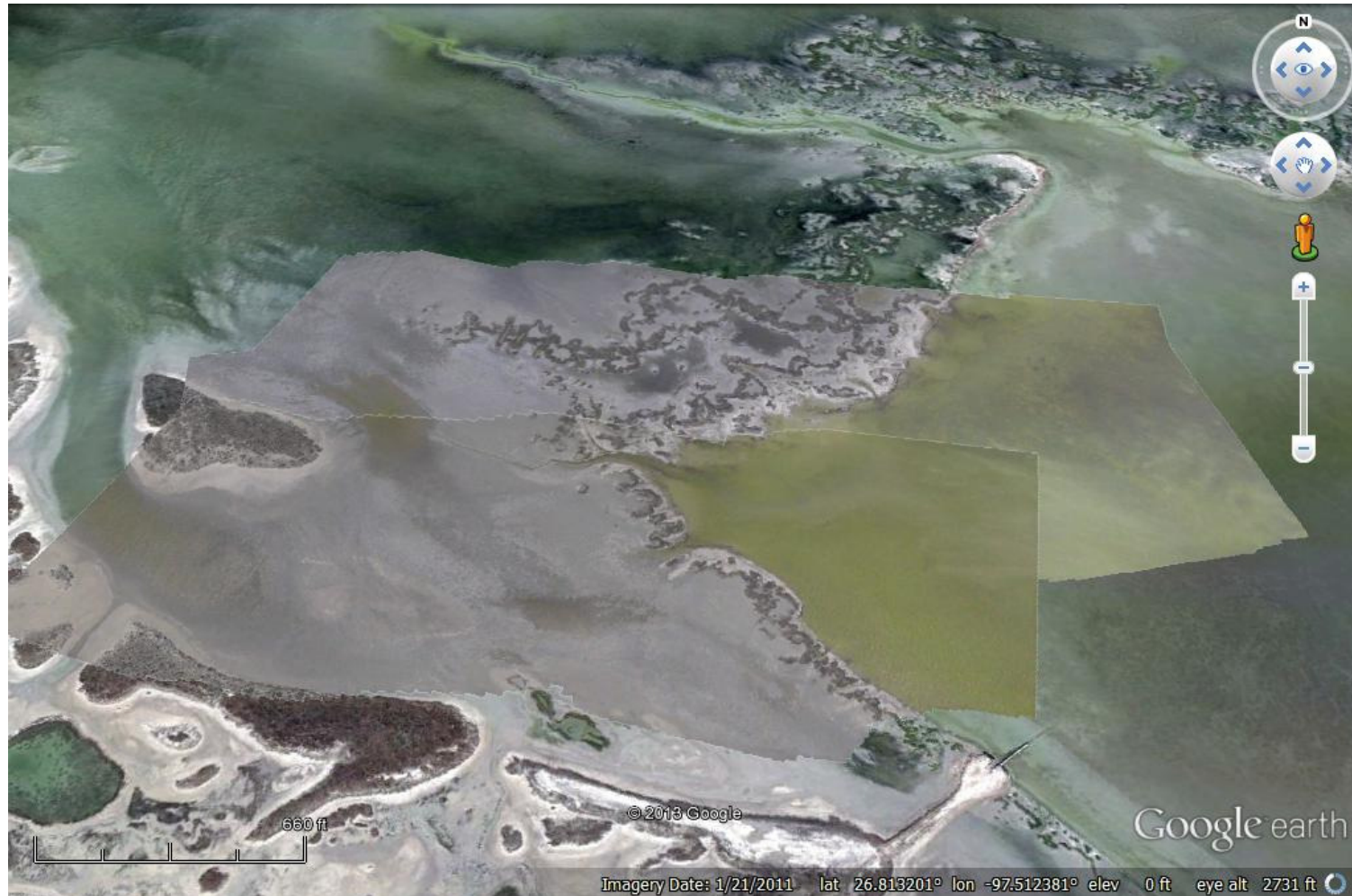


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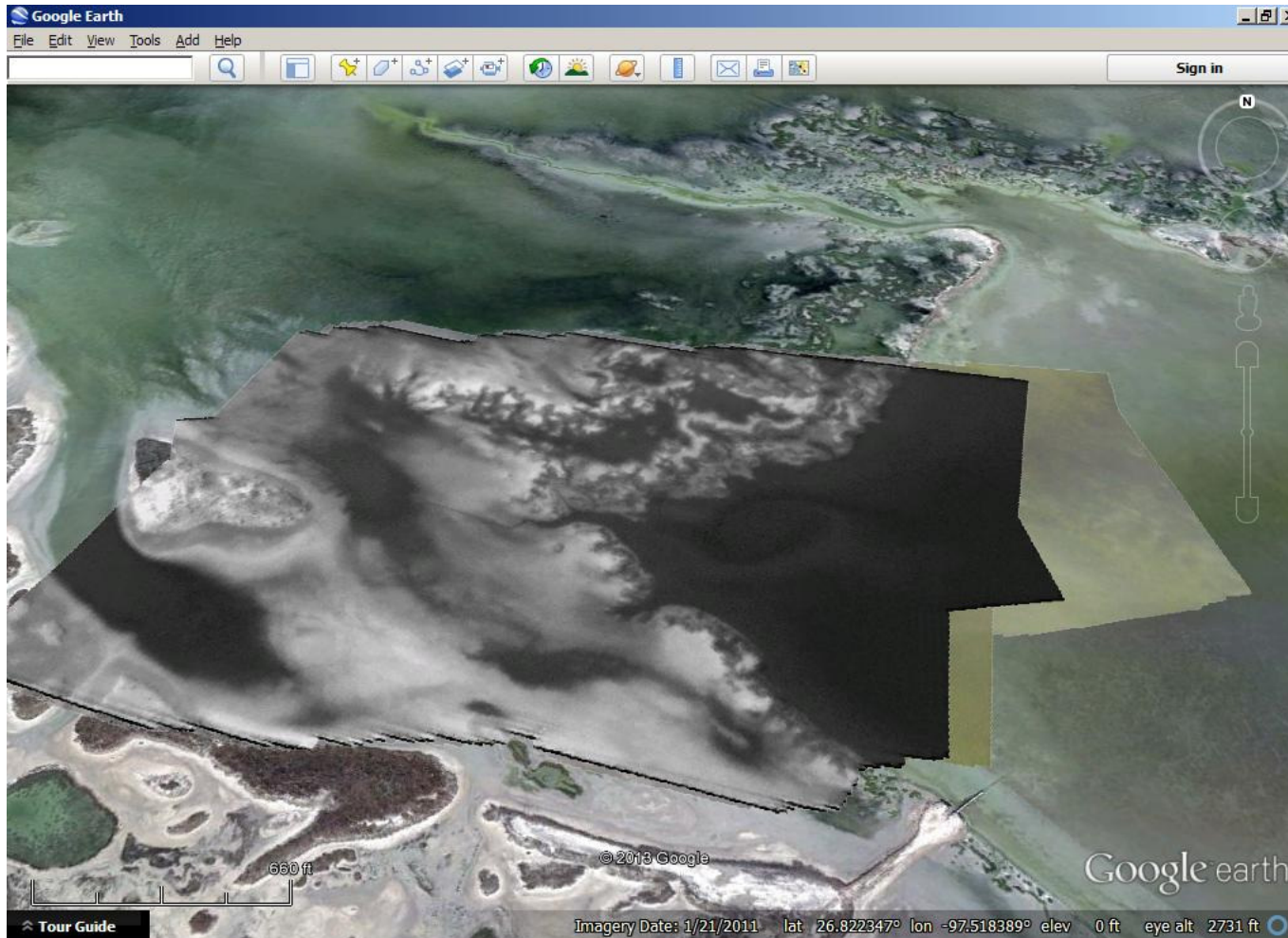
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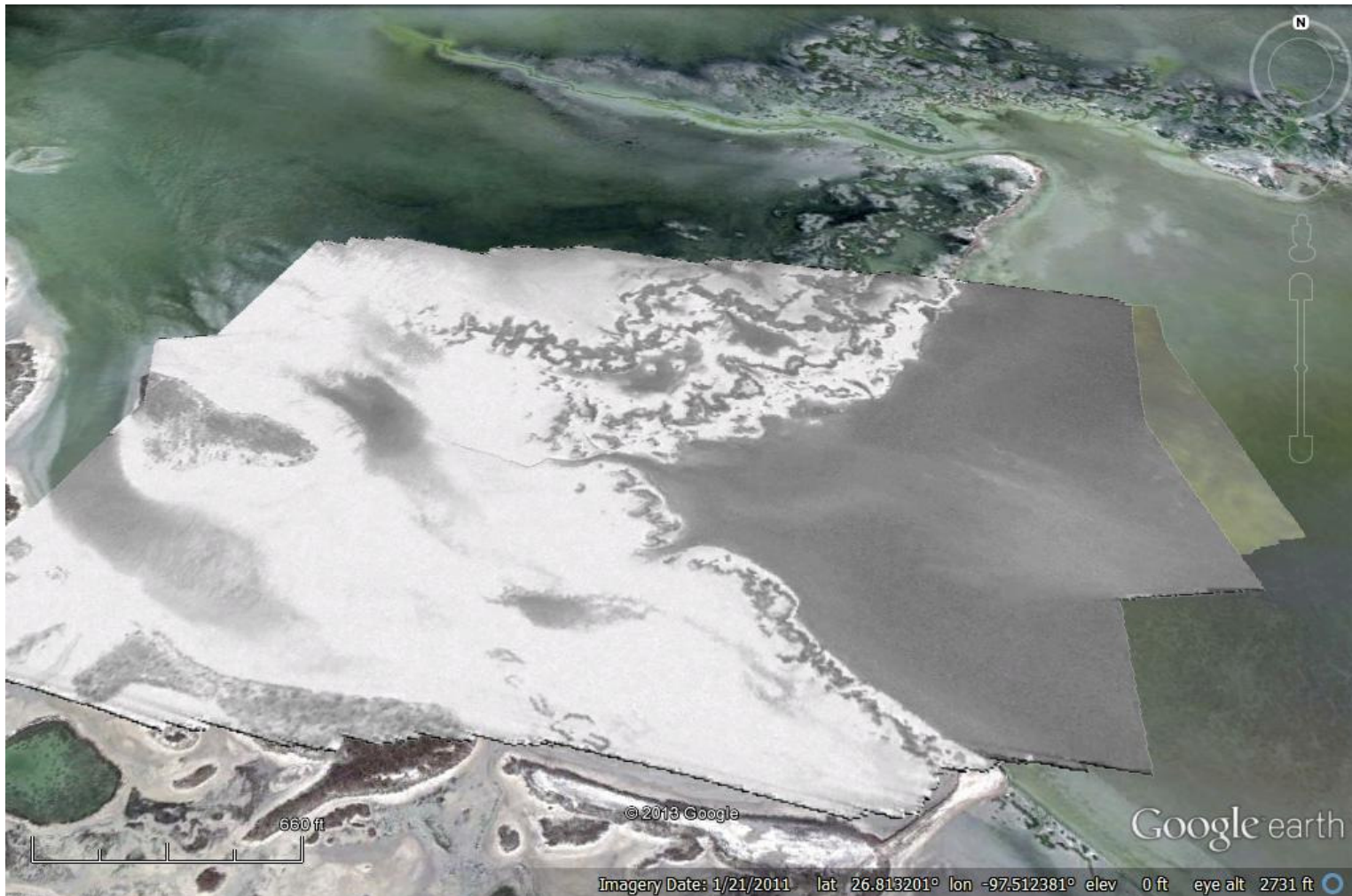
Salt Marsh - EO Mosaic



Salt March - LWIR Mosaic



Salt Marsh - UV Mosaic

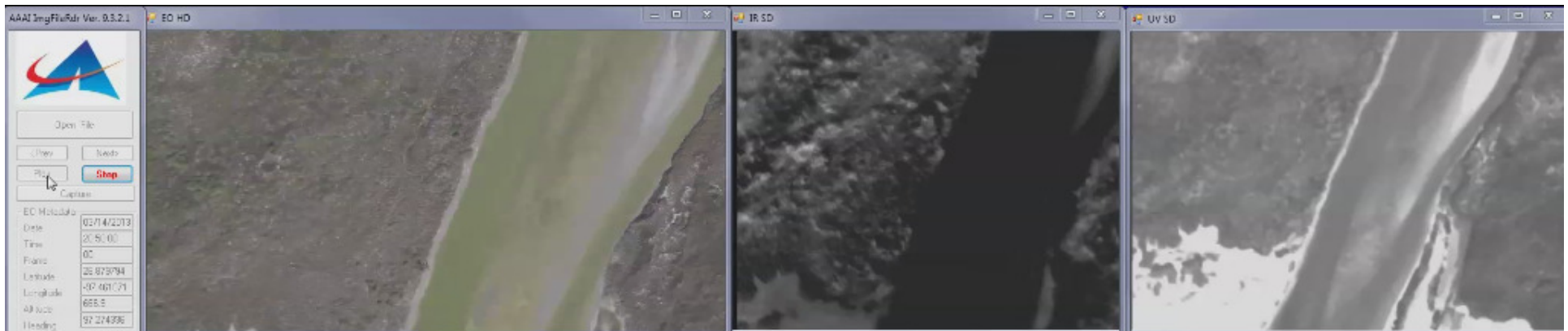
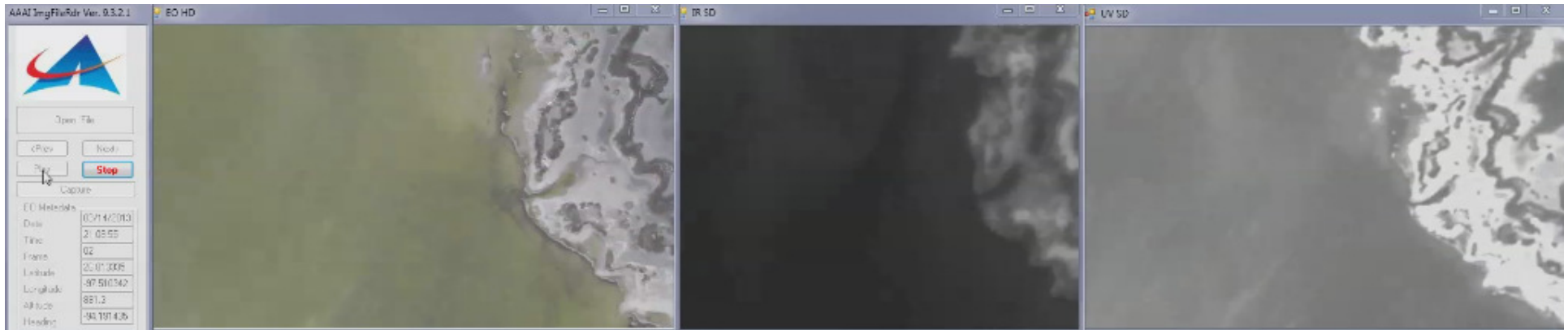


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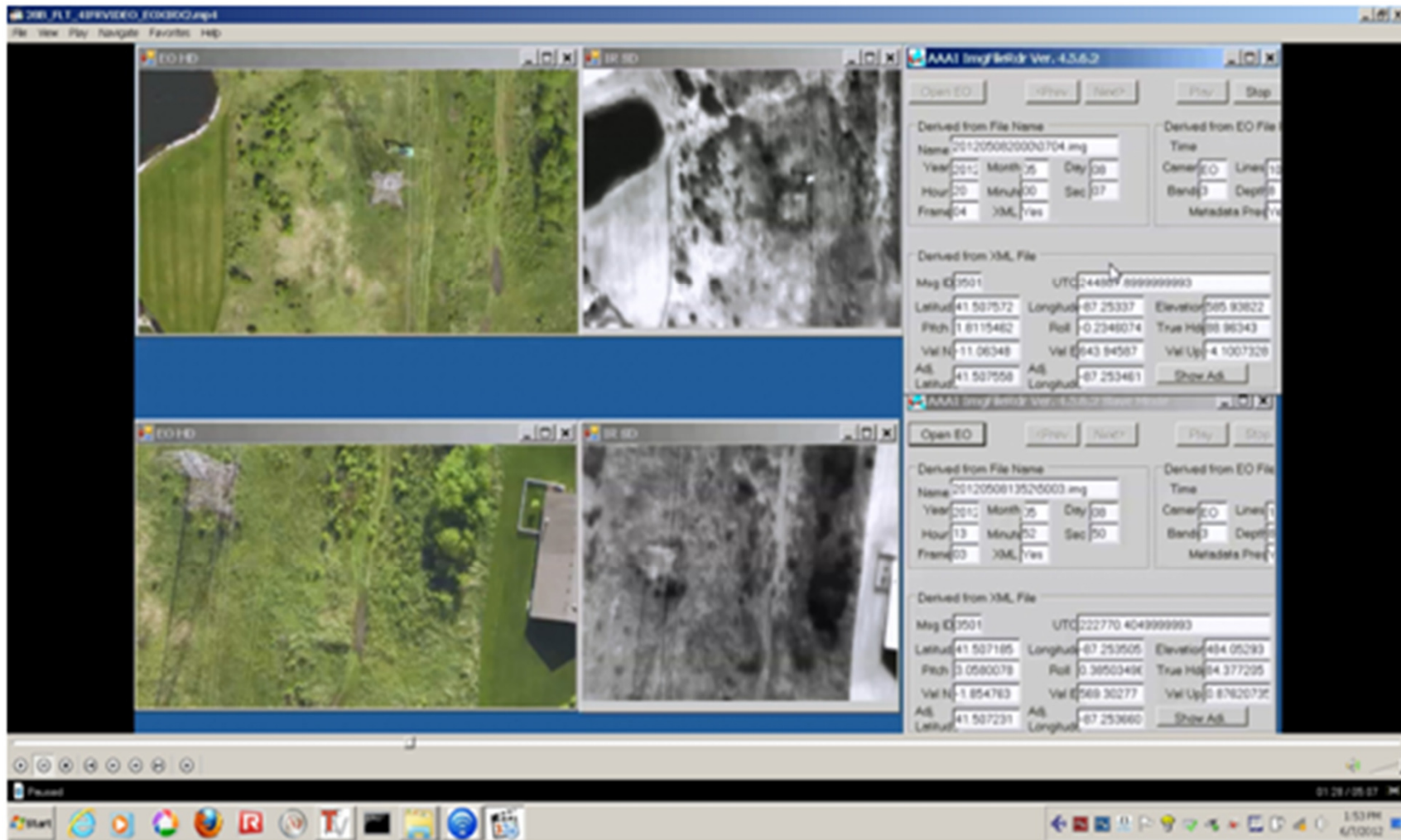
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Multispectral Salt Marsh Videos

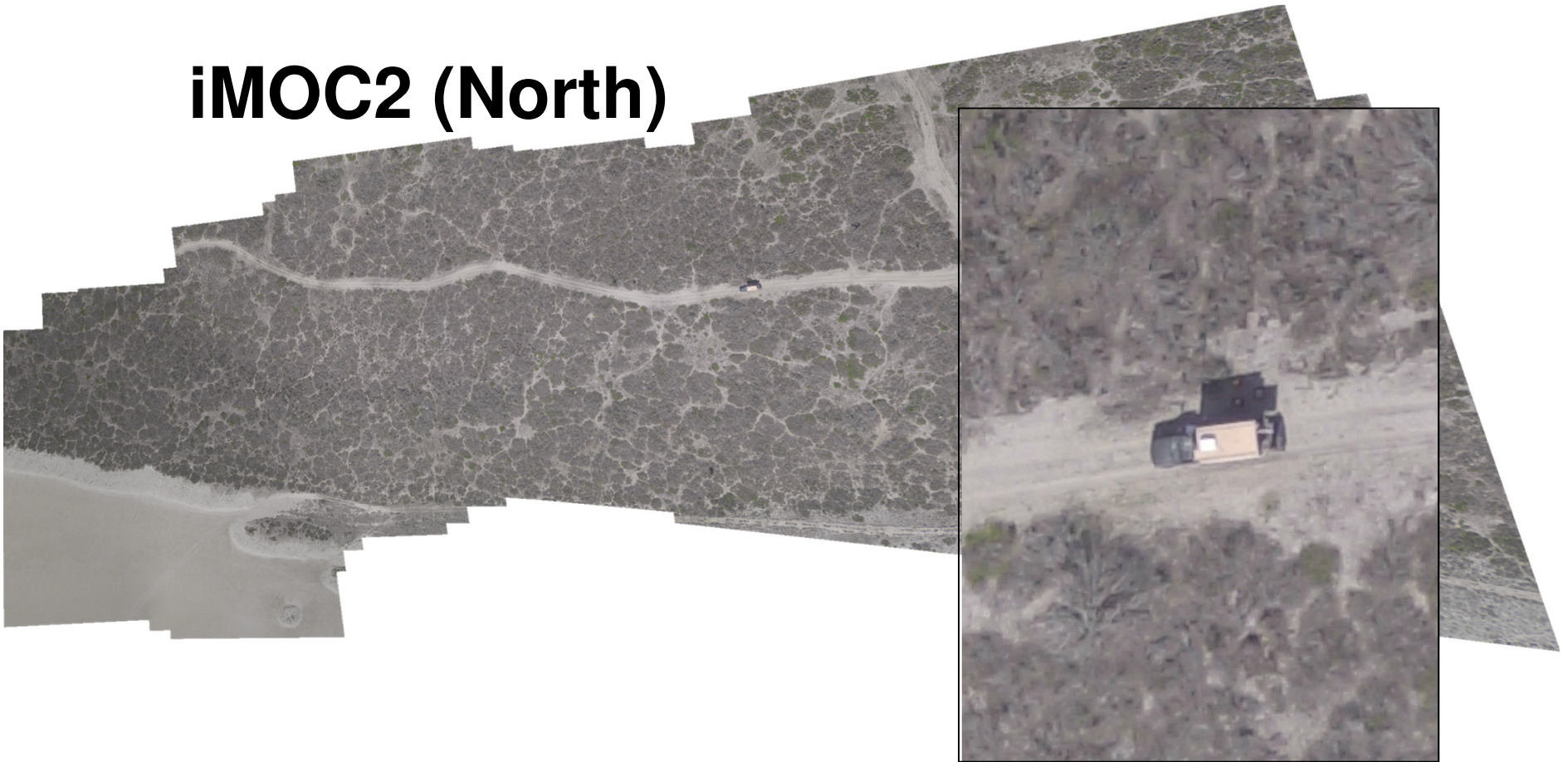


Real-Time Multispectral Master-Slave “GeoVideo” (patent pending)



HDEO Mosaic

iMOC2 (North)

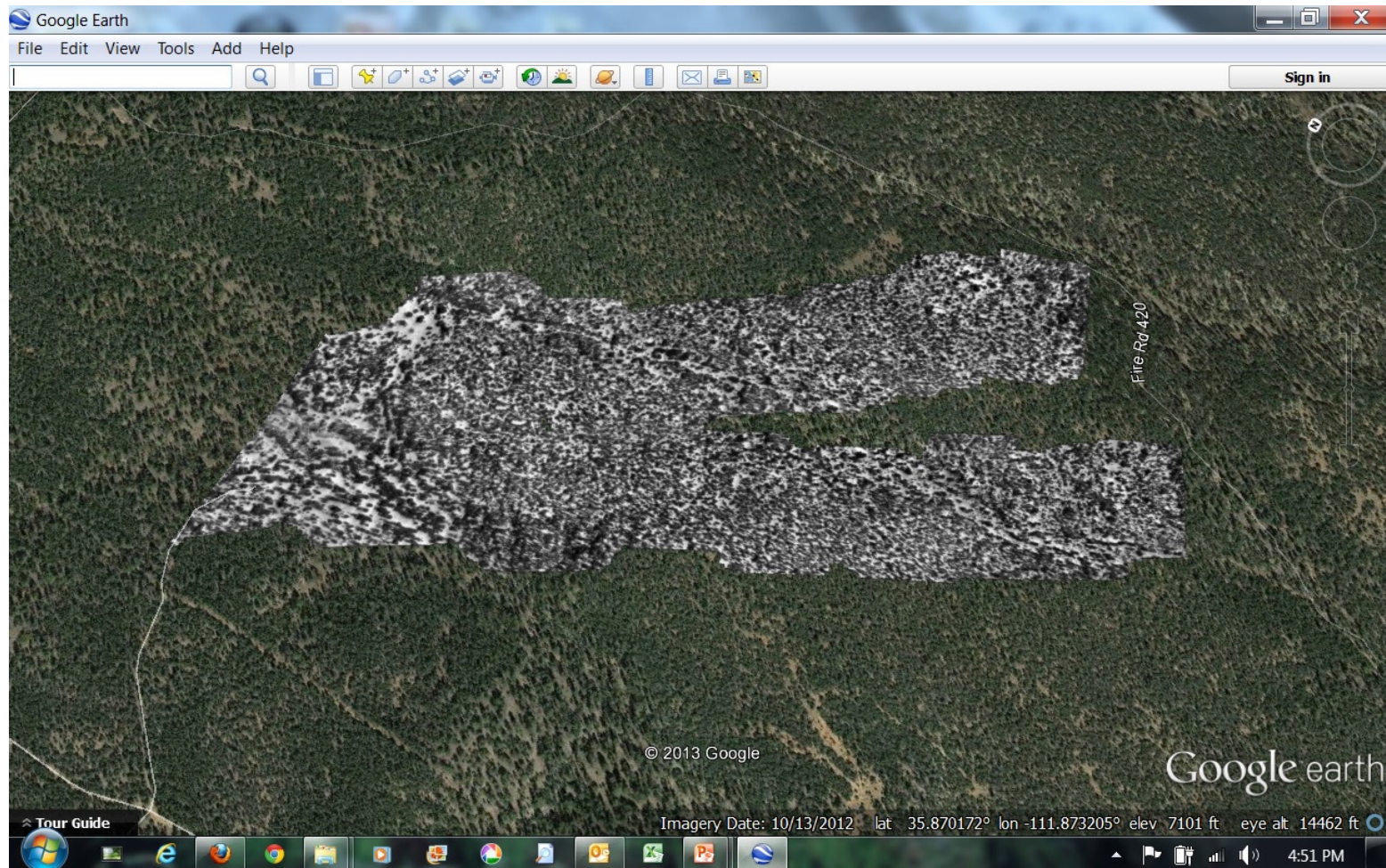


Wildland Fire Support

- Tactically taskable tool for Incident Commander
- Day and night operations without putting pilots in harm's way
 - Real-time visible and infrared streaming video on map
 - Fire perimeters
 - Active fire fronts
 - Hot spots outside lines of containment
 - Fire fuel information
 - Real-time dissemination of actionable data products
 - Real-time locating of fire crews and equipment for increased safety and effectiveness
 - Communications Relay
 - Efficiently extending ground communications through airborne relay
 - High resolution geo-corrected imagery for post-fire assessments



LWIR Mosaic



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