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Space Administration



# Scalable Traffic Management for Emergency Response Operations (STEReO) Tabletop Simulation Traffic Evasion Autonomy Topic

Robert McSwain

*Aeronautics Systems Engineering Branch*

*NASA Langley Research Center*

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(757).864.9639

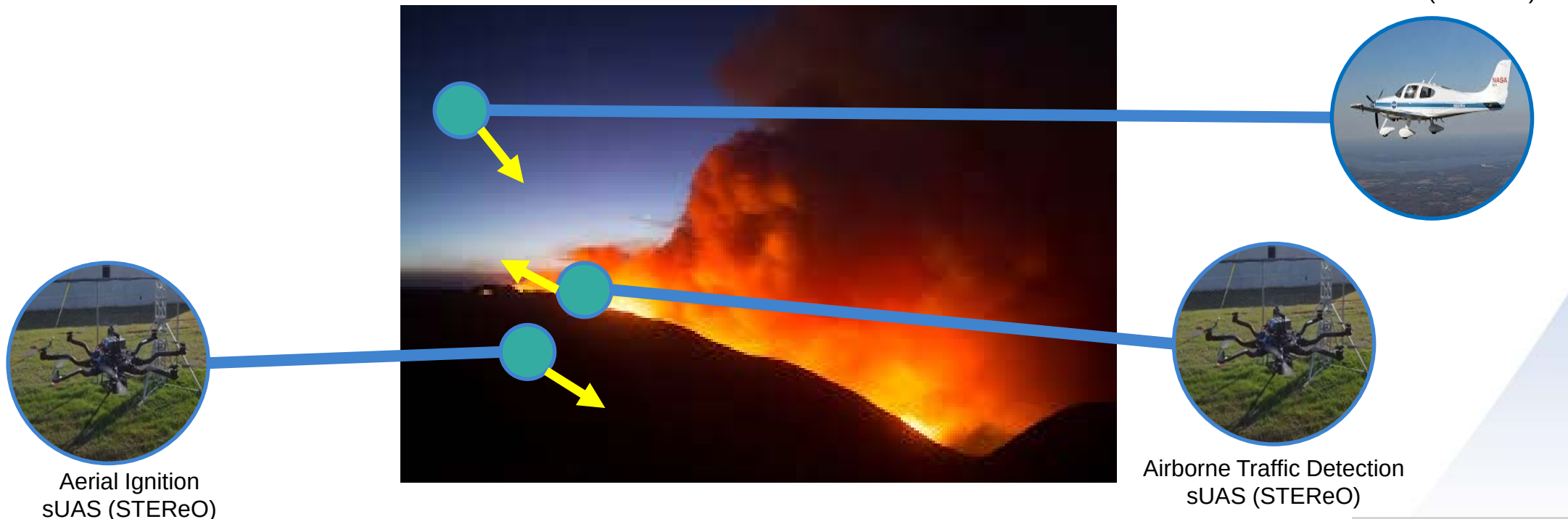
[Robert.G.McSwain@NASA.gov](mailto:Robert.G.McSwain@NASA.gov)

[www.nasa.gov](http://www.nasa.gov)  
<http://engineering.larc.nasa.gov/>



## ➤ Design Reference Mission Example (Aerial Ignition)

A UAS operator is tasked with conducting a prescribed burn, near the route of emergency air traffic. UAS in the fire traffic area are equipped with onboard autonomy that enables them to detect surrounding air traffic and take evasive maneuvers if a traffic hazard is predicted. During flight operator defined ditch sites are being assessed for emergency action based on autonomy onboard UAS. After a traffic hazard is predicted a coordinate response leads to one UAS to evade and another to ditch to prevent a traffic hazard.



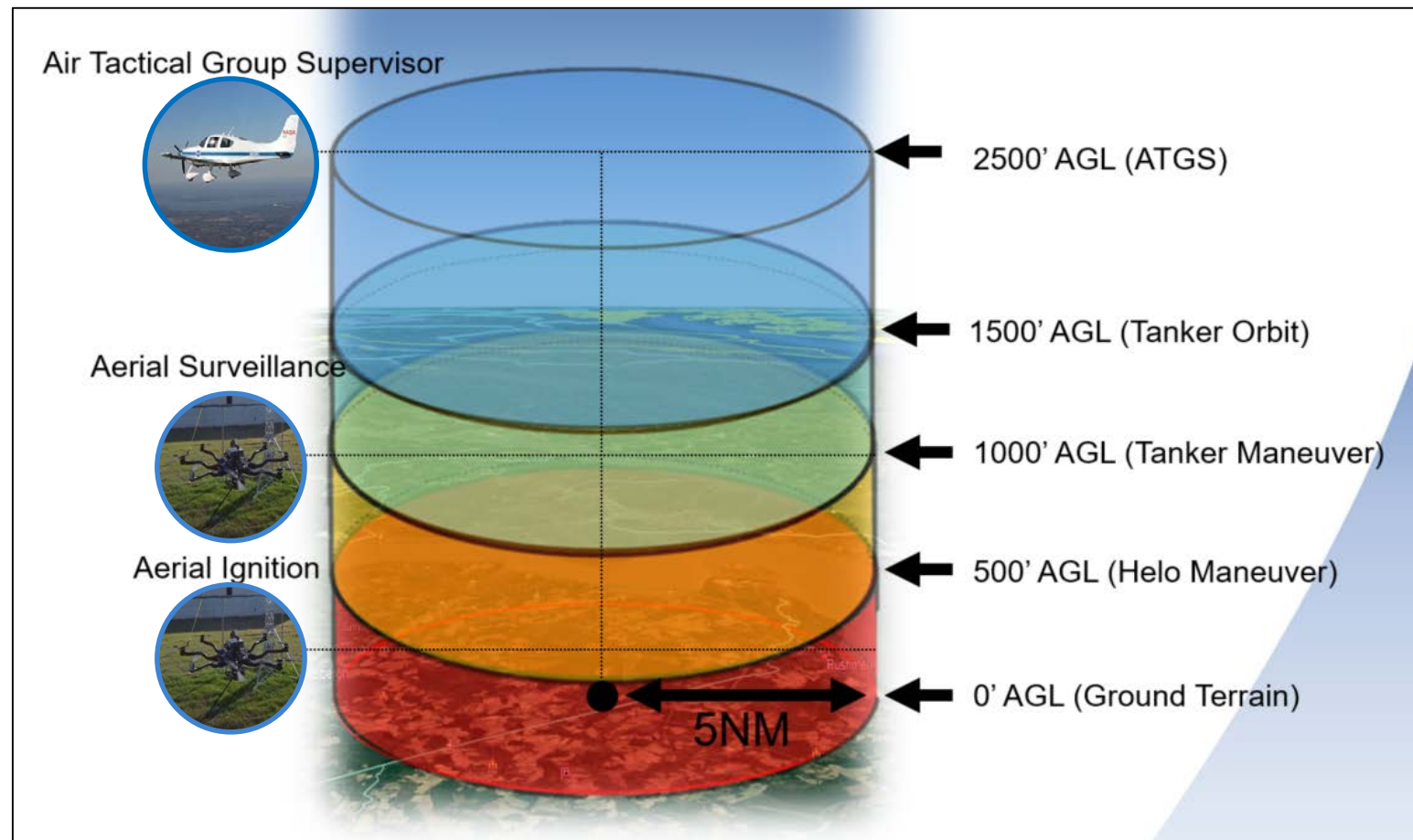
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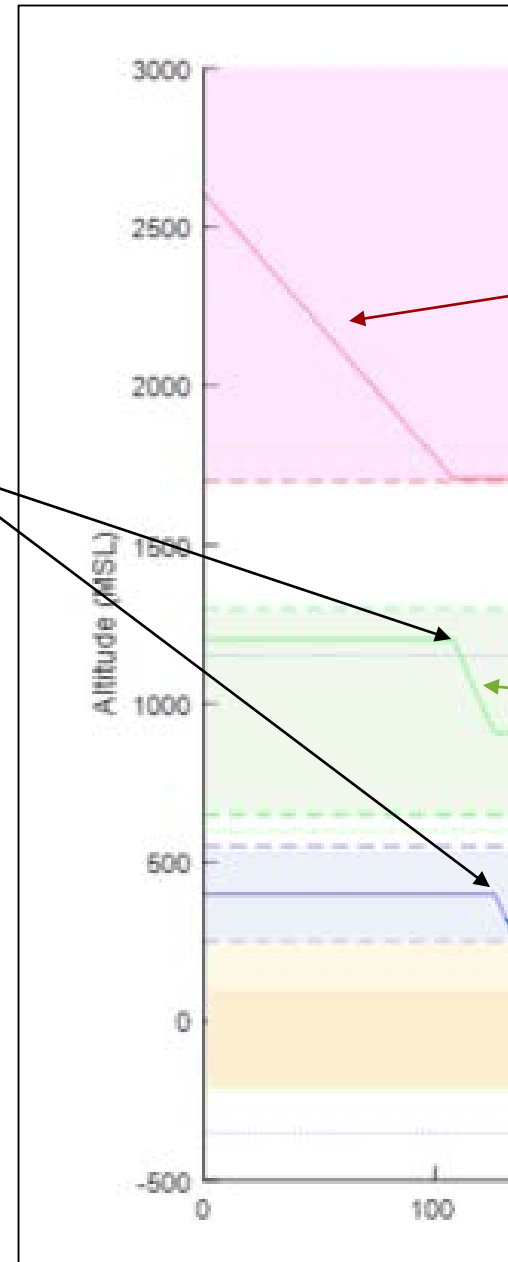
## ➤ Airspace Environment

Initial Conditions for Fire Traffic Area



# Traffic Evasion Autonomy Technology

## ➤ Airspace Autonomous Right of Way Altitude Incursions



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Emergency Response  
Aircraft (STEReO)



Airborne Traffic Detection  
sUAS (STEReO)



Aerial Ignition  
sUAS (STEReO)

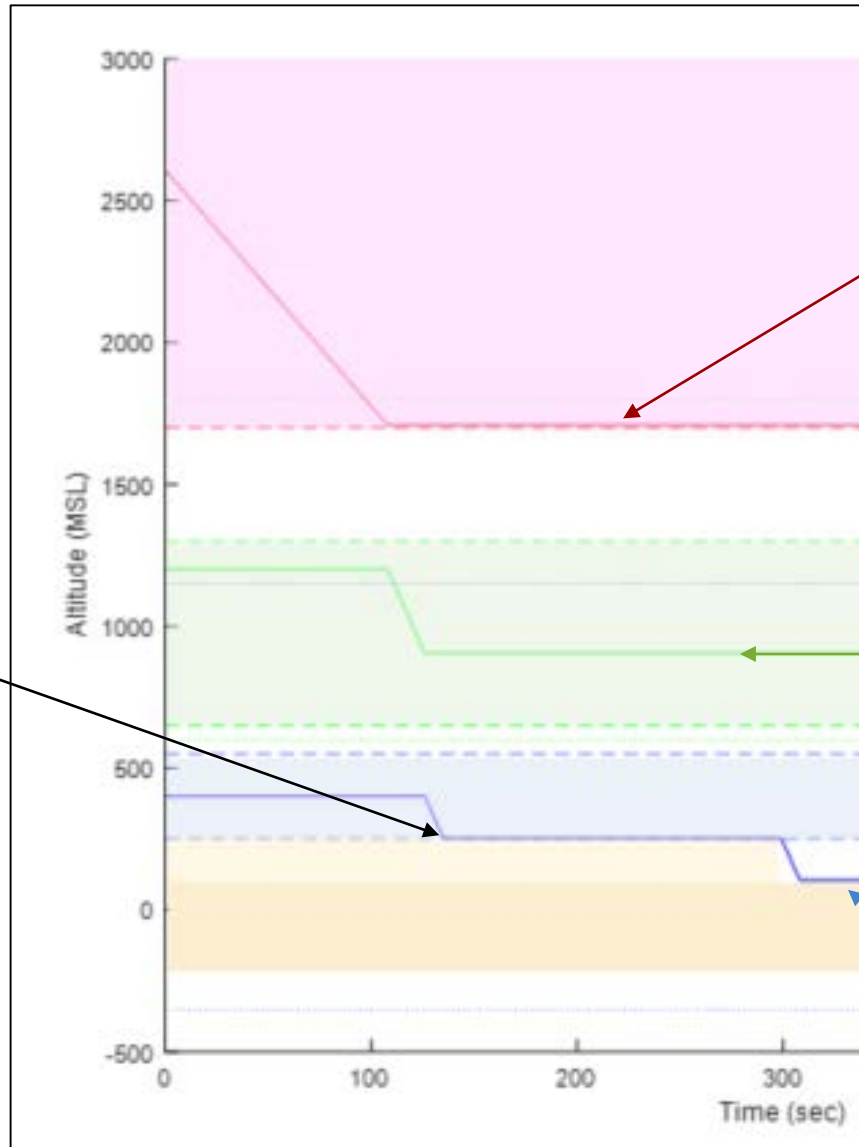


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- **Emergency Landing**  
Safest option is to land ASAP



Emergency Response  
Aircraft (STEReO)



Airborne Traffic Detection  
sUAS (STEReO)



Aerial Ignition  
sUAS (STEReO)



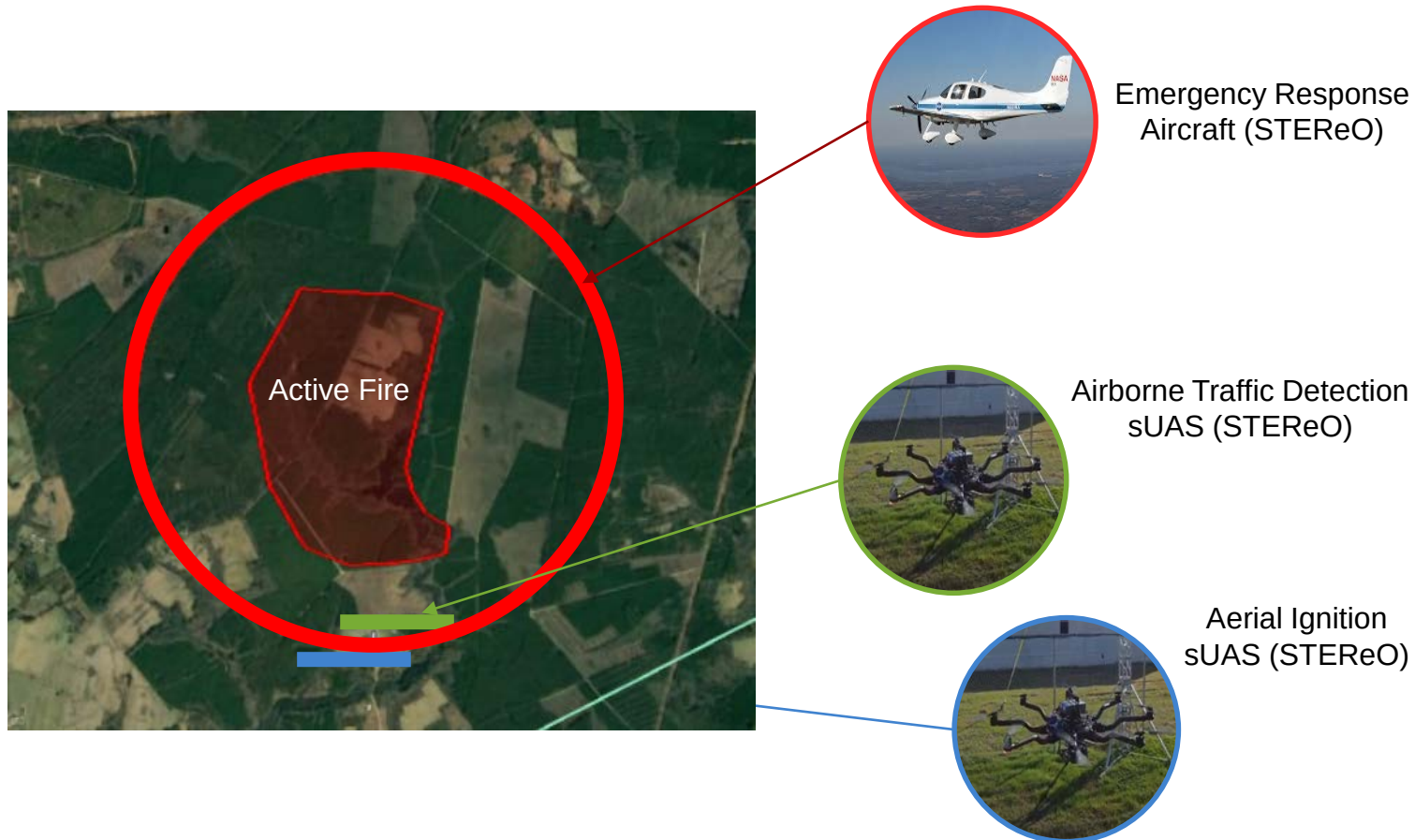
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## ➤ Flight Testing

Developing flight test plans with Aerial Tactical Group Supervisor mission for testing integrated S2D and ICAROUS





# STEReO

Scalable Traffic Management for Emergency Response Operations