



STEReO

Scalable

Traffic Management for

Emergency

Response

Operations



*help responders know
more, do more, safely*

GOAL

Apply NASA technologies and partner resources to the aviation aspects of emergency response operations in order to:

Reduce response times



Provide operational resiliency to dynamic changes



Scale aircraft operations



Current day challenges for emergency responders

①

Limited communication and infrastructure in damaged or remote areas

②

Airspace coordination and deconfliction is highly manual

③

Large amount of operations increase airspace complexity and the workload for managing it

④

Delayed turn-around time of remote sensing data

An airspace that supports additional and diverse mission types requires new tools and capabilities that ensure the safety, efficiency, and resiliency of aerial operations

Multidisciplinary Approach

Communications

Ad-hoc communication networks in areas where integral comms are degraded to support data exchange without burdening existing networks

UTM Services

Highly automated airspace management and standardized platform for data exchanges that alleviate workload associated with the incorporation of UAS operations

Human Factors

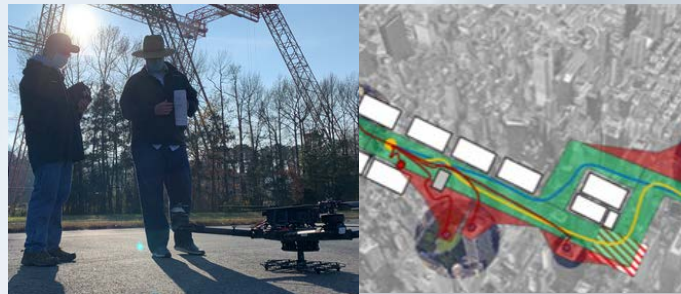
Virtual collaboration tools to distribute a common operating picture for all stakeholders for strategic planning and decision-making

Autonomy

Mission-driven capabilities, acting as a natural extension to the emergency response team, to support the safe separation between vehicles

Domain Expertise & Tools

Collaboration with subject-matter experts and stakeholders on problem definitions, barriers and solutions to ensure STEReO vision aligns with needs and goals of emergency responders



A feasibility study sponsored by NASA's Convergent Aeronautics Solutions Project

Fostering Innovation, Pushing Boundaries, and Overcoming Barriers

NASA Ames Research Center
UTM Services, Autonomy, Human Factors

Joey Mercer
joey.mercer@nasa.gov
Corey Ippolito
corey.a.ippolito@nasa.gov

NASA Langley Research Center

Autonomy, Human Factors
Robert McSwain
robert.g.mcswain@nasa.gov

NASA Glenn Research Center

Communications
Charles Sheehe
charles.j.sheehe@nasa.gov

www.nasa.gov

www.nasa.gov