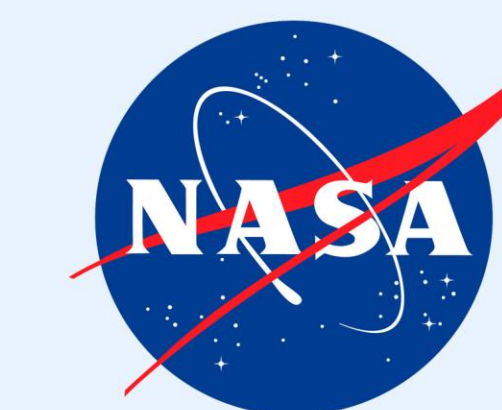


# Scalable Traffic Management for Emergency Response Operations (STEReO)

National Aeronautics and Space Administration

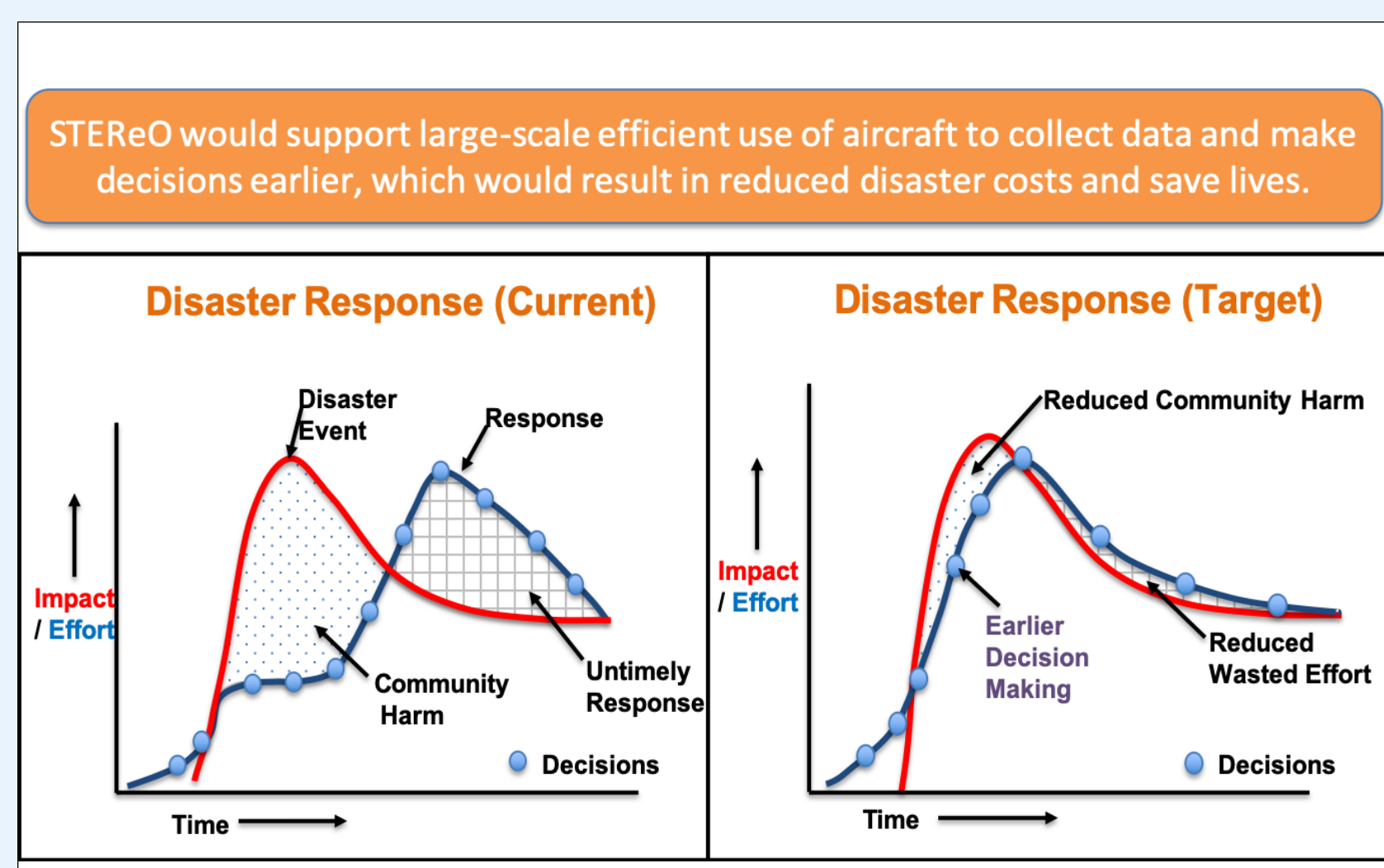


## TECHNOLOGY FOR IMPROVING THE RESPONSE TO NATURAL DISASTERS

### Overview/Description

Current-day emergency response operations require extensive manual coordination among a wide coalition of agencies, often under adverse conditions, leaving challenges to timely deployments and the sharing of gathered data needed for decision-making. With today's operating constraints and procedures, UAS vehicles are not able to participate much, even though they could be a great asset.

STEReO brings the latest advancements in UAS vehicle autonomy, resilient communications concepts, and UTM services, which will improve disaster response times, enable large-scale aircraft operations, improve operator awareness, and demonstrate safety and resiliency in these environments.



### Feasibility Assessment

#### Benefit if Feasible

- Improve efficiency and timeliness of the response and recovery phases of a disaster, resulting in substantial reductions to community harm
- Accelerate NASA's development of high-density resilient operations, benefitting other projects relying on increasing levels of autonomy and connectivity
- Safe scalability of airspace operations
- Advance the state-of-the-art in onboard automation, making integration of UAS vehicles into emergency response operations possible
- Enable the distribution of collected remote-sensing data to support better, more responsive decision-making by operators, and improved collaboration between operators



### Partners

- NASA Ames – UTM Architecture, On-board Autonomy, Health prognostics Service, Separation Service, UAS
- NASA Langley – Safe2Ditch, V2V, UAS
- NASA Glenn – Resilient communications
- Airmap – UTM Services
- DHS-FEMA – Domain Subject Matter Expertise
- DOI – Domain Subject Matter Expertise
- MPFD & LAFD – Domain Subject Matter Expertise
- CalOES – Domain Subject Matter Expertise

### Recent Results / Status

- Formulating detailed execution plans; identifying specific barriers/opportunities that will increase our outcomes
- Strengthening partnerships; pursuing private sector technologies, local/state/federal emergency response organizations, and inter-agency collaborations
- Planning stakeholder workshop
- Invited to present the STEReO concept at the Tactical Fire Remote Sensing Advisory Committee (TFRSAC) meeting

### Next Steps

- Conops development
- Stakeholder workshop
- Initial airborne assessment
- Tabletop exercise and simulation
- Wildfire flight demonstration
- Simulation of hurricane use-case
- Concepts and requirements document

### Publications

- coming soon...



CONVERGENT AERONAUTICS SOLUTIONS

Principal Investigator: Joey Mercer – joey.mercer@nasa.gov

Co-Principal Investigators: Lou Glaab - louis.j.glaab@nasa.gov / Corey Ippolito - corey.a.ippolito@nasa.gov