



NASA's System-Wide Safety Project

Safety Demonstrator Series

Challenge

- To explore, understand, and overcome technical barriers associated with assuring the safety of future emergency response aviation operations.
- To demonstrate In-Time Safety Management System (IASMS) capabilities in real-world flight operations.

Expected Impacts

- Development and demonstration of a first of its kind system-wide safety framework that supports increasingly autonomous, complex airspace operations.
- Delivery of data to generate new operational safety standards through a series of increasingly challenging operational use cases such as wildfire fighting, hurricane relief and recovery, and medical courier.

Proposed Solution

- The increasingly autonomous and complex operations will be enabled by:
 - ✓ **Monitoring**—developing tools to monitor and alert for anomalies
 - ✓ **Assessing**—estimating the severity of risks posed by monitored hazards
 - ✓ **Mitigating**—performing actions that lessen the impact of hazards and
 - ✓ **Assuring**—proving the system does only what it is supposed to do, incorporating the best use of human-machine teams to accomplish goals.

NASA's System-Wide Safety Project Will Demonstrate Safety in:



Emergency Response



Wildfire Fighting



Natural & Urban Disasters



Medical Delivery

Results

- Increase the maturity of technologies, placed within a system-wide safety framework, that measure and help ensure safety.
- Provide recommendations for a system-wide safety framework, validated by disaster-recovery oriented operational evaluations.

Next Steps

- Enabling novel applications of UAS for safer and more effective disaster response operations.
- Advance technologies that improve safety more generally in advanced air mobility operations.

Partners and/or Participants

- Federal Government Agencies: Safety Demonstrator Series concept of operations and hazard analysis
- California Department of Forest and Fire Protection: Safety Demonstrator Series concept of operations and hazard analysis for wildfire fighting
- Standards Committees: recommendations inform safety framework requirements

