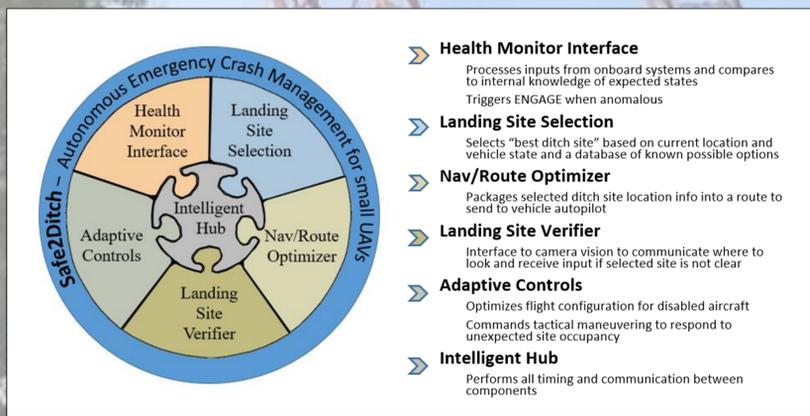


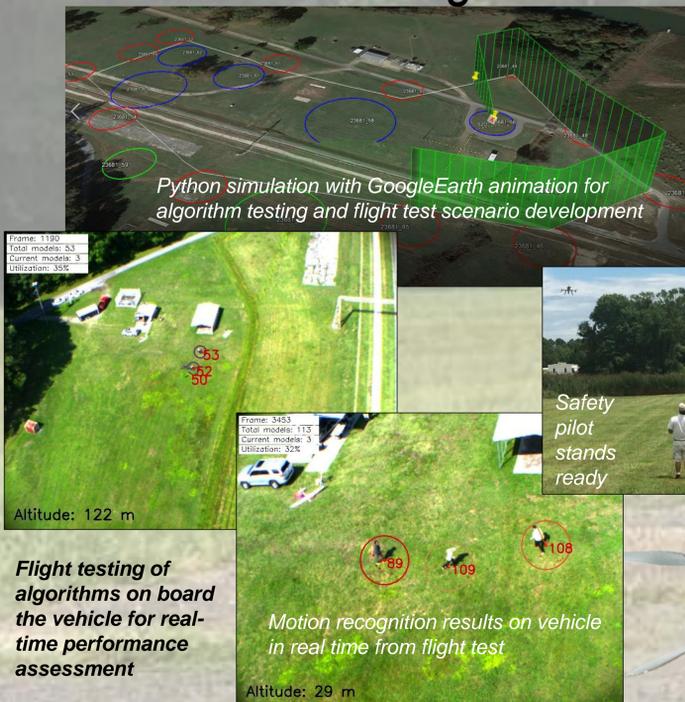


Safe2Ditch logo created for LaRC TOPS brochure



Safe2Ditch Component Overview from Fast Track to Market 2017

Simulation to Flight Test



Safe2Ditch Prototype

Safe2Ditch

Autonomous Crash Management to a Safe and Clear Ditch Site

Lou Glaab (LaRC ED/ASEB)
Trish Glaab (LaRC SACD/ASAB)

Overview/Description

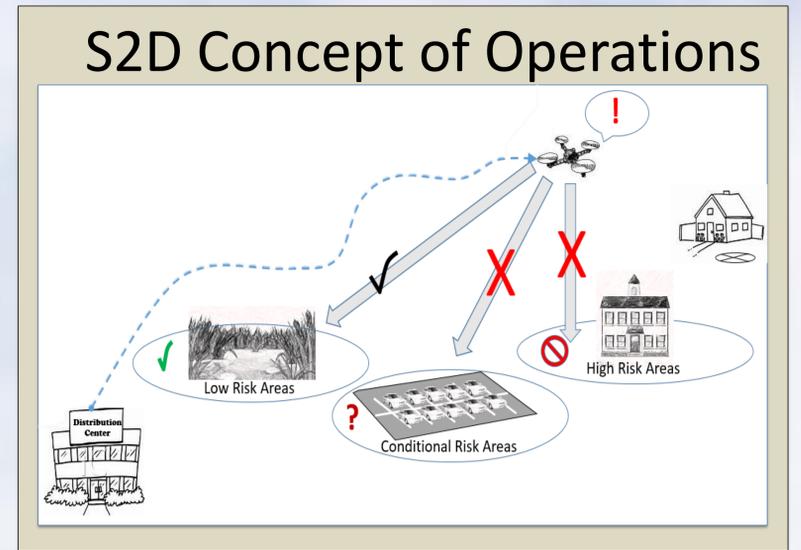
Safe2Ditch is an autonomous crash management system that resides on a small processor onboard a small Unmanned Aerial Vehicle (UAV). The system's exclusive mission is emergency management to get the vehicle safely to the ground in the event of an unexpected critical flight issue. Safe2Ditch uses its intelligent algorithms, knowledge of the local area, and knowledge of the disabled vehicle's remaining control authority to select and steer to a crash location that minimizes risk to people and property. Most importantly, it does this autonomously – without any input from a pilot or ground operation.

Project History

- February 2015 SACD Directorate Innovation Award sponsorship
- November 2015 Flight Tests, Langley North 40 and Oliver Farms
- January 2016 Provisional Patent application
- February 2016 SACD Directorate Innovation Award sponsorship
- June 2016 Fast Track to Market award, funding and marketing
- September 2016 BYU support for motion detection
- January 2017 Patent Application
- May 2017 First licensee
- July 2017 NASA Langley public webinar
- August 2017 Flight Tests, Langley CERTAIN 1 range

Next Steps for FY18

- Prototype Integration and flight test of Site Verification (motion recognition) and Adaptive Controls for avoidance of ditch site occupants
- Health Monitor component installation and test (auto-engage)
- Marketing and licensing in partnership with LaRC Technology Office



Concept Description from First Award Pitch

Publicity

Wired, June 20, 2017
NEW NASA TECH TELLS DRONES WHEN THEY'RE BROKEN—AND HELPS THEM LAND

UAS Magazine, May 24, 2017
NASA engineers develop safe landing system for small UAS

New Atlas, May 15, 2017
Self-analyzing drones could perform their own emergency landings

Fortune, May 2017
NASA's New Tech Could Help Drones Safely Land During Emergencies

Background Image: Safe2Ditch flight test with radio-controlled car and humans as ditch site occupants