

Unmanned Aerial Systems Flight and Payload Challenge



Project Summary

esc Aerospace has access to disruptive battery technology ready for use in sUAS that will provide energy density **>400 Wh/kg, a 2X improvement over current technology.**

Our unique approach:

- **Exceptionally Qualified Team:** decades of experience in all technical, management and public safety applications
- **Optimized Power System:** New technology battery provides > 2X more power density than LiPo.
- **Real-Time Mission Management System (MSS):** Leverage current MMS enhanced Power Management and take into consideration payload, environmental/operational conditions



Provide mission planners/operators with the ability to plan and execute optimal missions that ultimately ... **save lives.**

Participant Summary

esc Aerospace - Project Management and SE. Extensive, global, UAS and space systems integration experience.

HyCarb - Power Subsystem. Advanced graphene/carbon nanotube batteries hold the promise to deliver 5X improvements in the near future. HyCarb will develop an energy dense battery specific to the needs of this challenge.

ASEC – Systems Engineering support. An industry leader in Public Safety sUAS operations and training. Through ASEC we have access to the national and local UAS community.

University Resource – Provides access to numerous resources at Embry-Riddle Aeronautical Univ. (ERAU) as well as UCF.

Technical Outcome

The HyCarb target energy density for the challenge subsystem is 480 Wh/kg

Our real-time MMS with enhanced power management combined with the HyCarb battery will enable our sUAS to achieve greater than **2X the normalized flight time** of most commercially available sUAS.