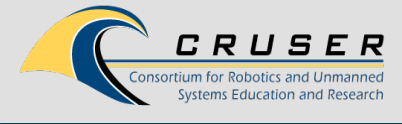# Development of Autonomous Capabilities for MC3

MC3 Ground Stations

- Develop autonomous, optimized satellite commanding and data exfiltration capability and incorporate into baseline pass scheduling for implementation at each ground station. Particularly: develop intelligent, script-based commanding and intelligent, response-based-on-downlinked-data feedback to the commanding script.

- Develop a specification of standardized commands and data formats to simplify new satellite automation for generic satellite tasking, i.e., to perform basic satellite functions, or housekeeping tasks

- Develop applications ("apps") that can be used to retrieve and view status and data from any location using a computer or mobile device.

- Software code for autonomous, optimized commanding, to be demonstrated using the MC3 ground station network;

- Computer and mobile device applications permitting human-in-the-loop situational awareness and monitoring of the autonomous systems from any location;

- Advanced drivers controlling new and innovative ground station hardware; and

- Thesis work, Directed Study reports, and other autonomous and optimization documentation.

- The number of very small satellites is rapidly proliferating.

- The "many satellite, few ground station" problem is becoming more important.

- Develop autonomous, optimized capabilities for the Mobile CubeSat Command and Control (MC3) ground station system

- Rapid increase in demand drives the need for autonomous, optimized commanding of the ground stations, as well as the capability to view ground station status and data from any location.

FY18 Call for Proposals

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