VIREO / Day16 / Flight33

TEST: Gather data for offline fault detection by injecting stuck surface fault with nominal controller. Right elevon stuck at 5 deg trailing-edge up with nominal controller. Data used for off-line fault diagnosis.

RESULT: Good flight, but detectability will be low unless changes in trajectory are performed.

EVENTS:

1. Second flight wherein stuck surface faults are injected WITHOUT controller reconfiguration. The goal is to see what the nominal controller does when a fault is injected. The flight data will be useful for offline fault detection.
2. Aircraft switched into alpha mode (both surfaces operational) and it transitions to a left cirle at 250 ft AGL, 30 kts, 150 m radius.
3. The aircraft was then commanded to follow a box route. The sharp turns required to perform the box excited the controller and the stuck surface turned out to be problematic. To help the aircraft regain control, we needed to switch into alpha. This back and forth between alpha and bravo was repeated till the end of mission.