**One Page Problem Definition of Spacecraft Security Monitor Senior Capstone Project**

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The objective of this project is to build an application which automatically detects, alerts, assesses and mitigates malicious cyber activity on the main spacecraft processor and communication bus. To do this, the team needs to install the platform on the testbed developed by the previous project team, enhance it, create attack scenarios, and implement the attacks against an operating system.

A successful result of the project will increase the capability to response against a cyberattack on the spacecraft. The customer, Aerospace Cooperation, can more deeply understand about the cyberattacks and responses on the spacecraft while the students in the team would develop and enhance their knowledge of systems and cybersecurity, such as operating systems, Field Programmable Gate Array (FPGA), MIL-STD-1553, buffer overflow attack, spoofing, denial of service.

The main intended customer is Aerospace Cooperation. However, any organization operating a spacecraft can be a customer because cybersecurity is critical especially to the spacecraft which is not easy to be manually controlled by an operator. The examples are the U.S. Air Force, NASA, and commercial companies.