North Dakota State University--Fargo

From the SelectedWorks of Jeremy Straub

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Testing and Integration Team Project Management

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Defining the Project

**Purpose:**
Provide the different teams of Open Orbiter with feedback on their code in terms of Unit, Integration and Acceptance testing in order to help develop a successful satellite. Supporting mission critical systems drives priority.

**Goals & Objectives:**
To aid in the software development cycle of the Open Orbiter. Inspecting the other team’s software as an individual unit and as a whole. Documenting all found errors explicitly so the other teams can reproduce and correct the error. Through out this process, the errors will be driven down to an acceptable risk threshold.

**Success Criteria:**
Software with all major errors found. This will be an ongoing project with three phases: Unit testing, Integration testing and acceptance testing. Each phase will contribute to software with all major errors found, resulting in a fully operational spacecraft.

Assisting teams in developing software by providing quality assurance. Each of the other teams individual code will be tested and examined for errors and bugs. The individual team projects will then be combined and this code will be again tested for errors and bugs. Finally, the completed software that is to be used on the satellite will need acceptance testing. This will be on the identical hardware that the satellite is to use.

**Project Dependencies:**
The test team is, by default, dependent on the other software teams. Therefore, test team’s schedule is based on the milestones set by the other teams. If goals are not met another team then it directly affects the test team’s productivity. Personnel related to the test team are a major dependency. The team member’s skills will affect the time it takes to go through, develop and implement test cases. There is also the possibility of personnel turn over causing existing team members to take on more work or newer members having to get up to speed quicker.

**Risks:**
Loss of volunteers, causing the project to redo testing and possibly miss a crucial software error. If a software error is not discovered the end product can fail its mission.

**Scope Specifications:**
Developing, implementing and performing of software tests for three phases: Unit, Integration and Acceptance testing. During each phase, discovering and documenting software errors. Maintaining healthy relationships with the other teams to ensure an effective development cycle resulting in reducing software errors to an acceptable risk.

**Out-of-Scope Specifications:**
Correcting the errors found during the testing cycle are the responsibility of the specific team. Correcting syntactical errors causing the code to not compile. Determining which errors need to be rectified and which are acceptable. In other words, determining the acceptable risk of the project.

**Stakeholders:**
The University of North Dakota, volunteers (developers, engineers and professors) who have invested valuable time and effort into making the CubeSat community, as this project is open source and will serve as a starting point or off the shelf solution to building a spacecraft and space research.

**References:**