



BRIGHAM YOUNG UNIVERSITY
AUVSI CAPSTONE TEAM

Capstone Fall Camp Documents

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Objective Statement

ID	Revision	Date	Description	Author	Checked By
PC-001	0.3	09-13-18	Revisions after design review	Brandon McBride	Kameron Eves

Improve upon last year's BYU AUVSI unmanned aerial system (UAS) by improving path planning, obstacle avoidance, visual object detection, and payload delivery by April 1, 2019 with a budget of \$3,500 and 2,500 man hours.

Requirements Matrix

ID	Revision	Date	Description	Author	Checked By
RM-001	0.2	09-14-18	Revisions after design review	Derek Knowles	Kameron Eves

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Team Charter

ID	Revision	Date	Description	Author	Checked By
PC-002	0.2	09-14-18	Revisions after design review	Jacob Willis	Kameron Eves

Team Member Names	Contact Information	Preferred Contact Method in Order of Preference
Andrew Torgesen	andrew.torgesen@gmail.com 661-210-5214	Slack, Email, Text
Brandon McBride	brandon.mcbride4@gmail.com 801-520-9165	Slack, Phone, Email
Derek Knowles	knowles.derek@gmail.com 405-471-4285	Slack
John Akagi	akagi94@gmail.com 858-231-4416	Slack, Email, Text
Brady Moon	bradygmoon@gmail.com 435-828-5858	Slack, Text, Call
Tyler Miller	tylerm15@gmail.com 385-399-3472	Slack, Text
Ryan Anderson	rymanderson@gmail.com 208-789-4318	Slack
Jake Johnson	jacobcjohnson13@gmail.com 801-664-7586	Slack, Text, In Person
Tyler Critchfield	trcritchfield@gmail.com 206-939-8274	Text, Email, Slack
Jacob Willis	jbwillis272@gmail.com 208-206-1780	Slack, Email, Text
Connor Olsen	connorolsen72@gmail.com 385-230-3932	Slack, Text, Email
Kameron Eves	ccackam@gmail.com 702-686-2105	Text, Email, Slack

Team Member Names	Strengths related to teamwork and the team's assigned task	Weaknesses related to teamwork and the team's assigned task
Andrew Torgesen	Organization, ROS, General Programming, Mathematics, Controls	Sometimes impatient with slow progress, Airframe design
Brandon McBride	C++, Python, MATLAB, Some ROS	Mornings
Derek Knowles	Python, Basic OpenCV, Rapid Prototyping	Late nights
John Akagi	Python, MATLAB, Asking Questions	ROS, Computer Vision, Airframe Design
Brady Moon	MATLAB, Python, Willing to ask the contentious questions	ROS
Tyler Miller	Firmware, C++, C, ROS-Flight	Airframe, Computer Vision
Ryan Anderson	C++, MATLAB, Git, Bash, Structural design, Writing	Computer Vision, Python
Jake Johnson	OpenCV, Python, C++, A little bit of ROS, Linux	Airframe design, Not enough ROS
Tyler Critchfield	Advanced Dynamics, MATLAB, Command Line, Git, C++, Editing	ROS, Haven't taken controls
Jacob Willis	Embedded Linux (C), Hardware, Project Management, Git	ROS, Airframe Design
Connor Olsen	C++, OOP, Embedded Linux, Matlab, PCB Design, Taking notes	ROS
Kameron Eves	Previous Flying Experience, Writing, Matlab, Business Theory	ROS, Computer Vision

Collaboration

- We will conduct weekly group meetings on Monday where each subgroup will present on progress and milestones
- With larger artifacts (more than 1 page), two people will check the author's work: one for clarity and one for technical accuracy. Otherwise, one person will check it.

- On Slack, each subsystem team will use different channels.
- When working on documentation that is to be submitted to an outside party, we will follow our formalized protocol for collaborative LaTeX document generation (see LaTeX documentation for protocol).
- We will use Git as version control.

Roles and Responsibilities

- Andrew Torgesen: Team Lead, Editor in Chief of All Documentation
- Connor Olsen: Agenda and Meeting Minutes
- Tyler Miller: Space Scheduling
- Ryan Anderson: Task Manager
- Kameron Eves: Subsystem Integration Coordinator
- Team Lead: Ensure Everyone's Opinions are Heard
- Everyone: Devil's Advocate
- Jacob Wills and Tyler Miller: Ensure Uniformity and Clarity in Code Style
- Jacob Willis: Safety Officer

Schedule and Due Dates

Schedule:

- Meet weekly all together on **Mondays at 8:00am**
- Artifacts for the weekly reports are to be turned in by **Tuesday**

Due Dates:

- Obtain Opportunity Development stage approval by **October 15, 2018**
- Obtain Concept Development stage approval by **November 15, 2018**
- Obtain Subsystem Engineering stage approval by **February 15, 2019**
- Obtain System Refinement stage approval by **March 10, 2019**

Requirements for Attendance and Tardiness

- Each member of the team will attend and be on time to all applicable meetings.
- If any member will be late (≥ 5 minutes), he must provide advance notice on Slack.

Acceptable Reasons for Missed Deadlines and Meetings

- Family/Personal Emergency
- Miscellaneous excuses as approved by the team via Slack

*Note that unless otherwise approved by the team, studying and preparing for midterms or finals is NOT an acceptable excuse.

Protocol for Deadlines and Meetings

- Assignments will be made during weekly meetings and included in meeting minutes.
- The next week's meeting agenda will include following up on the previous assignments.

As soon as team member becomes aware of the fact that they will miss a meeting or deadline the must:

- Notify the team on Slack
- If applicable, ask on Slack for help to complete the deliverable

Note that:

- The subsystem team has first responsibility to ensure missed tasks are completed.
- The team member who misses a meeting will be responsible for inquiring about what they missed.

Quality of Code and Documentation

- An agenda will be prepared and minutes kept for every team meeting.
- Monday team meetings will not require a formal presentation or special preparation.
- Code will be written according to the style guide.
- Deliverables will follow the LaTeX formatting guide.

Moral and Interpersonal Communication

- Team members will make a conscious effort to make all feel heard and comfortable sharing ideas.
- The team lead will ensure all feel heard and comfortable sharing ideas.
- Team members will make a conscious effort to persevering through challenges.
- Team members will make a conscious effort to be comfortable asking for help.
- Team members will ask for help early and often.

- Team members will make a conscious effort to expect and learn from mistakes.

Methods of Organization

- Tasks will be tracked on Trello.
- Assignments will be tracked in meeting minutes.
- Subteams will hold frequent “stand-up” meetings.

Concept Selection (Controls Subteam)

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Concept Selection (Vision Subteam)

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Concept Definition (Controls Subteam)

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