Andromeda Program Concept

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Author	Kyle Emmi	1/16/2019
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Andromeda Program Concept

The Andromeda Program shall consist of 6 phases: Pre-Phase A, Phase A, Phase B, Phase C, Phase D, and Phase E. Pre-Phase A will consist of planning overall strategy for the program and will occur during the Winter Break of the 2018-19 academic year. Phase A will be the Technological Development piece of the program and will occur during the Spring of 2019. Phase B will be during the Fall of 2019 and shall end with a preliminary design for the team's first competition flight vehicle. Phase C will be completed halfway through the Spring of 2020 and will end with a finalized flight vehicle ready to be integrated. Phase D will occur in the later half of Spring 2020 and will be completed when the flight vehicle is integrated and final system tests have been run. Phase E will occur at competition when a flight is attempted.

Much of the technological development in the Andromeda Program will occur in Phases A and B. The primary and secondary goals for each subsystem are listed below.

	Avionics	**Recovery**	**Structures**	**Engine**
Primary Goal	Real time altitude detection	Pneumatic, dual-parachute deployment	Tested carbon fiber flight structures	Safe, reliable APCP solid motor
Secondary Goals	RF Beacon recovery			

Each of these goals will need to be broken down into smaller, more attainable goals in each subsystem's Technology Development Plan. The following chart should paint a clearer picture on where each subsystem should be technologically at the conclusion of each Phase for a successful Andromeda Program.

Phase	**Avionics**	**Recovery**	**Structures**	**Engine**
A	Reliable altitude detection	Reliable single deployment	Proven basic hardware	Data from small engine
B	Reliable recovery activation	Reliable dual deployment	Proven advanced hardware	Data from large engine
C	RF beacon operation	*Manufacturing*	*Manufacturing*	*Manufacturing*
D	RF beacon recovery	*Manufacturing*	*Manufacturing*	*Manufacturing*
E	*Flight*	*Flight*	*Flight*	*Flight*