

AMSAT MPPT Project Risk Assessment

ID	Risk Item	Effect	Cause	Likelihood	Severity	Importance	Action to Minimize Risk	Owner
	<i>Describe the risk briefly</i>	<i>What is the effect on any or all of the project deliverables if the cause actually happens?</i>	<i>What are the possible cause(s) of this risk?</i>	-	-	L*S	<i>What action(s) will you take (and by when) to prevent, reduce the impact of, or transfer the risk of this occurring?</i>	<i>Who is responsible?</i>
1	Progress falls behind project plan timeline	Decreased quality	School workload, unforeseen problems in circuit operation.	3	2	6	Maintain progressive advancement on tasks, transfer tasks to other members if applicable, proper planning and simulation.	TEAM
2	Change in engineering specification	Possible redesign of circuit	AMSAT update of mission orbit/environment	1	2	2	Evaluate needed changes, redesign circuit as needed	Brent
3	Absent Team Member	Reduced productivity	Schedule or Illness	1	1	1	If applicable perform missing members tasks for the duration, make sure missing member gets info from meeting	Ian
4	Project Budget Overrun	Possible lack of needed components; Overbudget	Unforeseen components or development board	2	3	6	Proper planning and design of margins. Reduction in system complexity if applicable	Brent
5	Team Member Performance Decline	Team is less productive	School, conflict	1	2	2	Maintain team cooperation, moderation of conflict	Dan
6	DC-DC Overheat	Deliverable doesn't meet engineering specifications	Improper design, PCB layout	1	3	3	Thorough design review	Dan
7	PCB Area Overrun	All MPPT circuits will not fit onto FOX-2 PCB	Circuit too large/complex	2	3	6	Minimize complexity and increase density of PCB components	Bryce
8	System Oscillation	DC-DC circuits create oscillations (unstable) during operation	Improper circuit design, Temperature	2	3	6	With proper analysis and placement of components/RC scrubbers this risk should be minimal	Brent
9	Microcontroller Communication Bus Failure	No status transmissions to Fox-2 IHU	Improper MCU, too slow data bus speed, Improper routing	1	2	2	With proper analysis and design this risk is minimal	Ian
10	Deliverable does not meet customer needs	MPPT will not operate correctly for customer's application.	Improper understanding of customer needs, FOX-2 mission change, System Failure	1	3	3	Proper planning and customer communication.	Bryce

Likelihood scale	Severity scale
1 - This cause is unlikely to happen	1 - The impact on the project is very minor. We will still meet deliverables on time and within budget, but it will cause extra work
2 - This cause could conceivably happen	2 - The impact on the project is noticeable. We will deliver reduced functionality, go over budget, or fail to meet some of our Engineering Specifications.
3 - This cause is very likely to happen	3 - The impact on the project is severe. We will not be able to deliver, or what we deliver will not meet the customer's needs.

“Importance Score” (Likelihood x Severity) – use this to guide your preference for a risk management strategy	
Prevent	Action will be taken to prevent the cause(s) from occurring in the first place.
Reduce	Action will be taken to reduce the likelihood of the cause and/or the severity of the effect on the project, should the cause occur
Transfer	Action will be taken to transfer the risk to something else. Insurance is an example of this. You purchase an insurance policy that contractually binds an insurance company to pay for your loss in the event of accident. This transfers the financial consequences of the accident to someone else. Your car is still a wreck, of course.
Accept	Low importance risks may not justify any action at all. If they happen, you simply accept the consequences.