**Risks and Opportunities**

Risk Occurrence Criteria

|  |  |  |
| --- | --- | --- |
| Level | Likelihood | Probability of Occurrence |
| 1 | Very Low | 10% |
| 2 | Low | 30% |
| 3 | Moderate | 50% |
| 4 | High | 70% |
| 5 | Very High | 90% |

Risk Consequence Criteria

|  |  |  |  |
| --- | --- | --- | --- |
| Level | Technical Performance | Schedule | Cost |
| 1 | Minimal or no consequence to technical performance. | Minimal or no impact. | Minimal or no impact. |
| 2 | Minor reduction in technical performance or supportability, can be tolerated with little or no impact on program | Able to meet key dates with very minor slip in schedule.  Slip <1 week | Minor budget increase or unit production cost increases.  < \*\* (1% of Budget) |
| 3 | Moderate reduction in technical performance or supportability. Will have a minor impact on program objectives. | Minor schedule slip. Able to meet key milestones with no schedule float.  Slip < 2 weeks | Moderate budget increase or unit production cost increase  < \*\* (5% of Budget) |
| 4 | Significant degradation in technical performance or major shortfall in supportability.  May jeopardize program success. | Program critical path affected.  Slip < 1 month | High budget increase or unit production cost increase  < \*\* (10% ofBudget) |
| 5 | Severe degradation in technical performance; Cannot meet system requirements or listed specifications.  Will jeopardize program success | Cannot meet key program milestones.  Slip <2 months | Exceeds allowable  threshold  > \*\* (10% of Budget) |

Risk Reporting Cube

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | 5 |  | 3 |  |  |  |
|  | 4 |  |  |  |  |  |
| 3 |  |  | 2 | 1 |  |
| 2 |  | 6,7 |  |  |  |
| 1 |  | 10 | 8,9 | 4,5 |  |
|  | 1 | 2 | 3 | 4 | 5 |
|  | Consequence | | | | | |

Risk Reporting List

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Number | Risk Statement | Level of Likelihood | Level of Consequence | Mitigation Method |
| 1 | If the SDSU machine shop remains closed due to the coronavirus, we will have to outsource parts. | 3 | 4 | Work closely with faculty to follow COVID-19 regulations and keep shop operational. |
| 2 | If we have to outsource parts, cost will dramatically increase, possibly causing the project to be over our initial budget. | 3 | 3 | Try to get a quote far in advance, possible discount for student teams. |
| 3 | If we are not able to work with the electrical engineering team, we will have to design the electrical system ourselves. | 2 | 5 | Separate electronics plan utilizing basic interface and minor automation. |
| 4 | If a part from outsourcing does not meet our design specs, it will have to be returned, delaying our current schedule. | 1 | 4 | Ensure drawings are clearly displayed to enhance clarity.  Order parts ahead of schedule to minimize potential impact. |
| 5 | If communication may suffer due to the virtual environment,this will lead to errors that compromise the design. | 1 | 4 | Regular online video meetings with clear work breakdown structure will ensure all team members are on the same page. |
| 6 | If a team member contracts coronavirus, the project may be put behind schedule due to loss in performance. | 2 | 2 | Team members will follow Federal and SDSU regulations/advice in staying healthy. |
| 7 | If a part breaks, we will have to reorder/remake it, putting us behind schedule and adding to the overall cost. | 2 | 2 | Will manufacture several copies of at-risk parts. |
| 8 | If lack of accountability in the virtual environment leads to loss of performance, this will put the project behind schedule. | 1 | 3 | Use of “Smartsheet” application will keep log of all tasks, including who is responsible and due date of listed tasks. |
| 9 | If an infectious team member spreads coronavirus to teammates, this will dramatically decrease performance which will cause the project to be behind schedule.  (Note: only if team decides to meet in person) | 1 | 3 | Team members will follow Federal and SDSU regulations/advice in staying healthy. |
| 10 | If water in our system leaks, possibly compromising electronics and requiring us to reorder parts. | 1 | 2 | Will test the water system outside of the unit, with no electronics installed. |

**Opportunities (Potential)**

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| --- | --- | --- |
| Level | Likelihood | Probability of Occurrence |
| 1 | Very Low | 10% |
| 2 | Low | 30% |
| 3 | Moderate | 50% |
| 4 | High | 70% |
| 5 | Very High | 90% |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Level | Cost | | | Schedule | Performance |
| R&D | Procurement | Manufacturing |
| 1 |  |  |  |  |  |
| 2 |  |  |  |  |  |
| 3 |  |  |  |  |  |
| 4 |  |  |  |  |  |
| 5 |  |  |  |  |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Number | Opportunity Statement | Level of Likelihood | Level of Consequence | Circumstances |
| 1 | Automated seed planting | 1 | 3.5 | User does not have to manually start the growing cycle |
| 2 |  |  |  |  |