**Department of Computer Science and Engineering  
The University of Texas at Arlington**

Maverick Audio Visual Security Systems

(MAVS Systems)

Team Members: 

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**Table of Contents**

[1. General Organization 4](#_Toc299279496)

[1.1. Project Manager 4](#_Toc299279497)

[1.2. Project Oversight 4](#_Toc299279498)

[1.3. Roles and Responsibilities 4](#_Toc299279499)

[1.4. Project Constraints 6](#_Toc299279500)

[1.5. Project Assumptions 6](#_Toc299279501)

[1.6. Preliminary Schedule 6](#_Toc299279502)

[1.7. Preliminary Cost Estimate 6](#_Toc299279503)

[2. Scope Statement 8](#_Toc299279504)

[2.1. Overall Description 8](#_Toc299279505)

[3. Cost Management Plan 9](#_Toc299279506)

[3.1. Labor Management 9](#_Toc299279507)

[3.2. Materials Management 9](#_Toc299279508)

[4. Earned Value Management 10](#_Toc299279509)

[4.1. Earned Value 10](#_Toc299279510)

[4.2. Tracking Earned Value 10](#_Toc299279511)

[5. Scope Management Plan 11](#_Toc299279512)

[6. Work Breakdown Structure 12](#_Toc299279513)

[7. Quality Management Plan 25](#_Toc299279514)

[7.1. Purpose 25](#_Toc299279515)

[7.2. Plan Components 25](#_Toc299279516)

[8. Communications Plan 27](#_Toc299279517)

[8.1. Team Communication 27](#_Toc299279518)

[9. Change Management Plan 28](#_Toc299279519)

[9.1. Purpose of Integrated Change Management Plan 28](#_Toc299279520)

[9.2. Roles and Responsibilities 28](#_Toc299279521)

[9.3. Review and Approval Process 28](#_Toc299279522)

[9.4. Change Identification, Documentation, Implementation and Reporting 29](#_Toc299279523)

[9.5. Re-baselining 30](#_Toc299279524)

[10. Risk Management Plan 31](#_Toc299279525)

[10.1. Purpose of Risk Management Plan 31](#_Toc299279526)

[10.2. Roles and Responsibilities 31](#_Toc299279527)

[10.3. Risk Identification 31](#_Toc299279528)

[10.4. Risk Triggers 31](#_Toc299279529)

[10.5. Risk Analysis 32](#_Toc299279530)

[10.6. Risk Severity 33](#_Toc299279531)

[10.7. Risk Response Planning 33](#_Toc299279532)

[10.8. Risk Documentation and Reporting 33](#_Toc299279533)

[10.9. Risk Control 33](#_Toc299279534)

[11. Staffing Management Plan 35](#_Toc299279535)

[11.1. Purpose of the Staffing Management Plan 35](#_Toc299279536)

[11.2. Roles and Responsibilities 35](#_Toc299279537)

[11.3. Project Organization 35](#_Toc299279538)

[11.4. Resource Requirements 35](#_Toc299279539)

[11.5. Resource Staffing Plan 35](#_Toc299279540)

[11.6. Resource Constraints 35](#_Toc299279541)

[11.7. Staffing Contingency Plans 35](#_Toc299279542)

[11.8. Training Requirements 36](#_Toc299279543)

[12. Procurement Management Plan 37](#_Toc299279544)

[12.1. Purpose of the Procurement Management Plan 37](#_Toc299279545)

[12.2. Roles and Responsibilities 37](#_Toc299279546)

[12.3. Required Project Planning and Procurements 37](#_Toc299279547)

[12.4. Description of Items/Services to be acquired 38](#_Toc299279548)

[12.5. IT Acquisition Process 38](#_Toc299279549)

[12.6. Solicitation Planning 38](#_Toc299279550)

[12.7. Applicable Conditions 38](#_Toc299279551)

[13. Project Closeout Report 39](#_Toc299279552)

[13.1. Project Closeout Report 39](#_Toc299279553)

[13.2. Purpose of Closeout Report 39](#_Toc299279554)

[13.3. Administrative Closure 39](#_Toc299279555)

# General Organization

## Project Manager

Charles Beran has been named the Project Manager/Team Leader. In this capacity, he will be responsible for many of the administrative tasks inherent in a project of this size.

He will keep the project plan up to date by performing weekly reviews and modifications to ensure that the working document accurately represents the work outlook and cost estimations for the near term. He will also be responsible for meeting scheduling and oversight. This includes, but is not limited to, planning the agenda, keeping the meetings productive, disseminating meeting notes when necessary, and acting as an approval authority when the team stagnates over small details. He will also mediate conflicts should they arise. In addition to these duties, he will remain an active participant within the team, contributing to design, implementation, and research.

Throughout his professional career, Charles has been in a position of supervision and feels quite comfortable within that role. He is focused and results driven, with a clear vision that will help the team of high performing individuals use their respective talents effectively.

## Project Oversight

Professor Huber will be the immediate supervisor of MAVS Systems. He will schedule deadlines for deliverable submission and provide feedback on submitted work. He will also be an advisor that the team can go to with questions about upcoming deliverables, as well as providing technical advice when necessary.

The sponsor for the MAVS Systems project is David Levine. He will be responsible for outlining customer requirements. In addition, he will help outline some of the technical requirements of the design to ensure that product implementation stays on track to fit end user needs. His experience with mobile applications gives him unique perspective that will surely help the team accomplish its end goal of usability.

## Roles and Responsibilities

Since this project is quite large, MAVS Systems has several roles within the group that will help us distribute work and stay a high performing team. Delegation in this manner does more than just distribute work. This will also provide all team members a point of contact with accountability over a specific area, so if questions arise, they know who to go to.

**Table 1 - Roles & Responsibilities**

|  |  |  |
| --- | --- | --- |
| Roles/Responsibility | Resource | Description |
| Department Manager / Project Supervisor / Finance Manager | Manfred Huber/Mike O’Dell | * Provide Support * Supervise team’s progress * Set deadlines deliverables * Approve expenditures |
| Project Sponsor | David Levine | * Provide customer requirements * Review Deliverables * Approve Final Project |
| Technical Advisor | Marcus Oladell | * Provide assistance * Provide technical help |
| Project Manager / Team Leader | Charles Beran | * Project Planning * Quality assurance * Point of Contact for Stakeholders |
| Research | Charles Beran  Karl Feinauer  Hoang Tang  Brian Shef  Ivan Fan | * Conduct Research in areas including, but not limited to, mobile applications, security, audio/visual technologies, networking, and tools |
| Project Planner | Charles Beran | * Responsible for planning and assigning tasks * Responsible for regularly updating Microsoft Project Plan |
| Risk Manager | Hoang Tang | * Responsible for performing risk analysis weekly * Develop risk mitigation strategies * Keep the team up to date of impending risks and proposed mitigation |
| Hardware Development Manager | Karl Feinauer | * Oversees Hardware Development |
| Software Development Manager | Brian Shef | * Oversees Software Development |
| Documentation | Brian Shef | * Maintain, edit, and compile all documents, ensuring they are formatted properly |
| Treasurer | Ivan Fan | * Responsible for maintaining and updating all financial records |
| Change Manager | Brian Shef | * Responsible for coordinating requirement changes |
| Procurement Manager | Karl Feinauer | * Responsible for procuring materials * Responsible for maintaining current inventory of equipment |
| Testing Manager | Ivan Fan | * Responsible for supervision of unit and system testing. |

## Project Constraints

Time Constraint – The project has a strict time limitation. The prototype has to be delivered no later than December 2011.

Personnel – Since the team is fixed, there will be no additional personnel available for this project.

Limited availability of team members’ time – Since all team members have other obligations, there will be times of limited availability.

Financial plan – This project has a hard budget of $800. This cannot be deviated from and design must take this into consideration.

## Project Assumptions

* The prototype shall be delivered by December 11th, 2011.
* Team members shall devote at least 5 hours per week until the prototype is delivered.
* Team members shall complete assignments in accordance with project plan.
* The project sponsor shall be available for requirements elicitation and feedback.
* The project supervisor and technical advisor will be available for advice.
* Requirements are subject to change in accordance with change management plan.
* Feedback from stakeholders shall be returned by the date requested in order for their feedback to be considered.

## Preliminary Schedule

Preliminary Schedule and tentative deadlines for major deliverables and milestones:

* First Draft of SRD – 07/21/2011
* First Draft of charter – 07/19/2011
* Requirements Gate Review – 07/26/2011
* Final SRD – 07/28/2011
* Final Project Charter – 08/11/2011
* Final Baseline Project File – 08/11/2011
* Architectural Design Gate Review – 09/19/2011 (Tentative)
* Final Architectural Design Document – 09/26/2011 (Tentative)
* Detailed Design Review – 10/21/2011 (Tentative)
* Test Plan Review – 11/30/2011 (Tentative)
* Final Project Review – 12/09/2011 (Tentative)
* Project Wrap-up – 12/15/2011 (Tentative)

## Preliminary Cost Estimate

Below is a cost estimate plan for the MAVS Systems project. These values are subject to change.

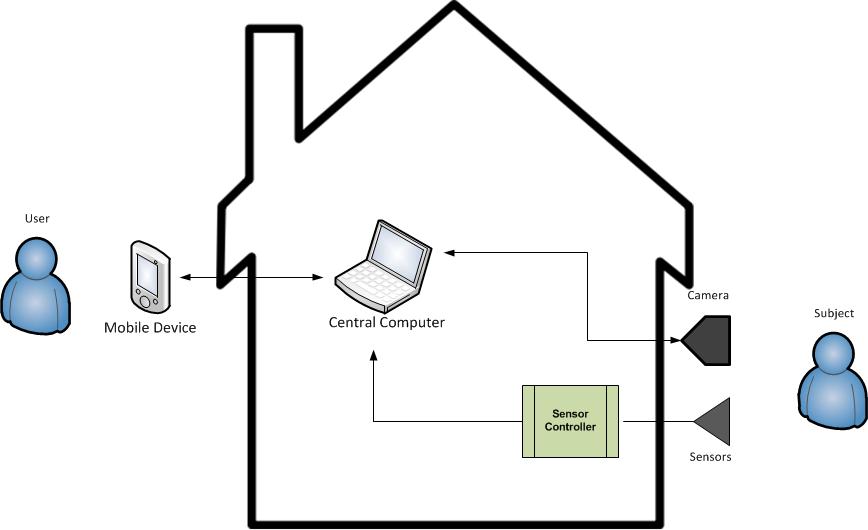
**Table 2 - Cost Estimate**

|  |  |
| --- | --- |
| **Component** | **Cost (estimate)** |
| Labor | 2000 Hours |
| Camera | $250 |
| Sensors (2) | $75 |
| Android Device | $200 |
| Integrated Circuit | $50 |
| Networking Cables | $20 |
| Miscellaneous Expenses | $205 |
| **Total** | **$800** |

# Scope Statement

## Overall Description

The MAVS System is a security system that gives the user total control and full capabilities concerning monitoring. The MAVS System is triggered primarily by sensors configured to the user’s specifications. The user can access streaming video and audio from an on-site camera with their mobile device. The user can also access these features from a central computer located on-site. The user can control the camera, configure the system settings, or instantly alert police to an emergency situation through a graphical interface from the mobile device. The MAVS System can be installed in homes, businesses, or any property with a secure point of entry.



**Figure 1 - Diagram of MAVS System**

# Cost Management Plan

## Labor Management

A cost management plan is very important for any project. Our team is constrained to five members to develop the project and has a limited schedule of 6 months. Therefore, our team has planned to work at least 25 man-hours per week during Senior Design I. This amount shall be increased to a minimum of 50 man-hours per week as we start work on architectural design. The total budget for labor is 1500 man hours.

The tasks shall be assigned based on the individual skills of the teammates and the individuals’ availability to work. Our team shall meet twice a week to monitor the progress of the project, which will be tracked by earned value. We shall discuss the team status and other potential issues affecting performance during our team meetings. We expect the specified timetable will keep us on-schedule as long as the project plan is kept current and accurate.

## Materials Management

The product components budget is set at $800. Dealing with this limited budget will be challenging due to the expensive tools, equipment and components required for our project. To help minimize cost, we will be purchasing the most inexpensive items. Additionally, we will be able to procure free software through the Microsoft Developer Network Academic Alliance (MSDNAA) and Dreamspark.com.

# Earned Value Management

## Earned Value

Earned value is the measure of progress of the project. MAVS Team will use Microsoft Project to track earned value. We will track projected and actual time spent on each task. In addition, we will track our proposed start and finish dates and compare them to actual timelines. Additionally, the CPI and SPI will be automatically computed for each task using MS Project custom field formulas.

## Tracking Earned Value

Planned hours will be estimated and allocated to each task and sub task in the Work Break down Structure of Microsoft Project file of the project. For task completion, we will use a 0/100 plan, meaning that a task’s percent complete will be zero until the task is complete. As subtasks are completed, they will be averaged together to compute the percent complete of header tasks. Time spent will be recorded by the team leader. Each team member is responsible for tracking and recording their hours and sending them to the team leader at the beginning of each week.

### Schedule Performance Index

Schedule Performance Index shall be used to measure the schedule efficiency throughout the project. This shall be calculated by taking a ratio of the earned value to the planned value. MAVS Team’s goal is to maintain a value of greater than one.

### Cost Performance Index

Cost Performance Index shall be used to measure the cost performance throughout the project. This shall be calculated by taking a ratio of the earned value to the actual cost measured in hours. MAVS Team’s goal is to maintain a value of greater than one.

# Scope Management Plan

The scope of the MAVS System project shall be developed by the project sponsor and MAVS Team during the requirements phase of the project. Any changes that might cause the scope to change shall be subjected to review. Changes to the scope after the System Requirements Document (SRD) is finalized shall be considered in future releases as a foreseeable modification and enhancement. During the requirements phase and initial draft of the SRD, changes to the scope shall be implemented as following:

* Stakeholders shall request changes to the scope by contacting a member of MAVS Team. Stakeholder shall provide justification for the scope changes.
* Proposed changes to the scope shall be reviewed at a team meeting.
* MAVS Team shall vote on changes to the scope.
* The scope shall be modified if the proposed changes pass by a majority of votes.
* Proposed changes not receiving a majority of votes shall be considered in future releases.

# Work Breakdown Structure

This project is large and has many parts; therefore, the project plan is broken down into several distinct sections. Below is an overview, followed by a detailed plan, which includes the tasks, broken down within each section.

**Table 3 - Overview**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **WBS** | Task Name | Planned Start | Planned Finish | Actual Start | Actual Finish | Planned Work | BCWS (Labor) | ACWP (Labor) | BCWP (Labor) | Percent Complete | SPI (Labor) | CPI (Labor) |
| **1** | **MAVS Systems** | **6/7/2011** | **12/9/2011** | **6/7/2011** | **NA** | **1311.5 hrs** | **199.17 hrs** | **167.75 hrs** | **243.5 hrs** | **51** | **1.22** | **1.45** |
| **1.1** | **Senior Design I** | **6/17/2011** | **7/19/2011** | **6/17/2011** | **NA** | **180.5 hrs** | **112.17 hrs** | **112.75 hrs** | **170.5 hrs** | **93.33** | **1.52** | **1.51** |
| **1.1.1** | **SRD** | **6/17/2011** | **7/19/2011** | **6/17/2011** | **NA** | **116 hrs** | **71.2 hrs** | **89.25 hrs** | **106 hrs** | **80** | **1.49** | **1.19** |
| **1.1.2** | **Project Plan** | **6/17/2011** | **7/19/2011** | **6/17/2011** | **7/6/2011** | **45 hrs** | **28.4 hrs** | **16 hrs** | **45 hrs** | **100** | **1.58** | **2.81** |
| **1.1.3** | **Project Charter** | **7/3/2011** | **7/19/2011** | **7/5/2011** | **7/12/2011** | **19.5 hrs** | **12.57 hrs** | **7.5 hrs** | **19.5 hrs** | **100** | **1.55** | **2.6** |
| **1.2** | **Senior Design II** | **8/23/2011** | **12/9/2011** | **NA** | **NA** | **722 hrs** | **0 hrs** | **0 hrs** | **0 hrs** | **0** | **0** | **0** |
| **1.2.1** | **ADS** | **8/23/2011** | **9/19/2011** | **NA** | **NA** | **109 hrs** | **0 hrs** | **0 hrs** | **0 hrs** | **0** | **0** | **0** |
| **1.2.2** | **DDS** | **9/19/2011** | **10/21/2011** | **NA** | **NA** | **100.5 hrs** | **0 hrs** | **0 hrs** | **0 hrs** | **0** | **0** | **0** |
| **1.2.3** | **Implementation** | **10/1/2011** | **10/31/2011** | **NA** | **NA** | **280 hrs** | **0 hrs** | **0 hrs** | **0 hrs** | **0** | **0** | **0** |
| **1.2.4** | **Testing** | **10/1/2011** | **12/2/2011** | **NA** | **NA** | **126.5 hrs** | **0 hrs** | **0 hrs** | **0 hrs** | **0** | **0** | **0** |
| **1.2.5** | **Project Completion** | **12/2/2011** | **12/9/2011** | **NA** | **NA** | **106 hrs** | **0 hrs** | **0 hrs** | **0 hrs** | **0** | **0** | **0** |
| **1.3** | **Administrative Tasks** | **6/7/2011** | **6/18/2011** | **6/7/2011** | **6/17/2011** | **30.5 hrs** | **30.5 hrs** | **22.5 hrs** | **30.5 hrs** | **100** | **1** | **1.36** |
| **1.4** | **Weekly Tasks** | **6/17/2011** | **12/1/2011** | **6/17/2011** | **NA** | **378.5 hrs** | **56.5 hrs** | **32.5 hrs** | **42.5 hrs** | **10.67** | **0.75** | **1.31** |
| **1.4.1** | **Team Meetings** | **6/17/2011** | **12/1/2011** | **6/17/2011** | **NA** | **250 hrs** | **40 hrs** | **20 hrs** | **30 hrs** | **12** | **0.75** | **1.5** |
| **1.4.2** | **Risk Management** | **6/17/2011** | **12/1/2011** | **6/17/2011** | **NA** | **27 hrs** | **6 hrs** | **3 hrs** | **3 hrs** | **12** | **0.5** | **1** |
| **1.4.3** | **Update Project Plan** | **6/17/2011** | **12/1/2011** | **6/17/2011** | **NA** | **26.5 hrs** | **5.5 hrs** | **4.5 hrs** | **4.5 hrs** | **12** | **0.82** | **1** |
| **1.4.4** | **Status Presentations** | **6/23/2011** | **6/24/2011** | **6/23/2011** | **NA** | **75 hrs** | **5 hrs** | **5 hrs** | **5 hrs** | **6.67** | **1** | **1** |

**Table 4 - Detailed Breakdown**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **WBS** | Task Name | Planned Start | Planned Finish | Actual Start | Actual Finish | Planned Work | BCWS (Labor) | ACWP (Labor) | BCWP (Labor) | Percent Complete | SPI (Labor) | CPI (Labor) |
| 1 | **MAVS Systems** | **6/7/2011** | **12/9/2011** | **6/7/2011** | **NA** | **1311.5 hrs** | **199.17 hrs** | **167.75 hrs** | **243.5 hrs** | **51** | **1.22** | **1.45** |
| 1.1 | **Senior Design I** | **6/17/2011** | **7/19/2011** | **6/17/2011** | **NA** | **180.5 hrs** | **112.17 hrs** | **112.75 hrs** | **170.5 hrs** | **93.33** | **1.52** | **1.51** |
| 1.1.1 | **SRD** | **6/17/2011** | **7/19/2011** | **6/17/2011** | **NA** | **116 hrs** | **71.2 hrs** | **89.25 hrs** | **106 hrs** | **80** | **1.49** | **1.19** |
| 1.1.1.1 | **Requirements Elicitation** | **6/17/2011** | **7/3/2011** | **6/17/2011** | **7/3/2011** | **50 hrs** | **50 hrs** | **44 hrs** | **50 hrs** | **100** | **1** | **1.14** |
| **1.1.1.1.1** | Research Home Security | 6/17/2011 | 6/27/2011 | 6/17/2011 | 6/27/2011 | 10 hrs | 10 hrs | 10 hrs | 10 hrs | 100 | 1 | 1 |
| **1.1.1.1.2** | Research Cameras | 6/17/2011 | 6/27/2011 | 6/17/2011 | 6/27/2011 | 10 hrs | 10 hrs | 10 hrs | 10 hrs | 100 | 1 | 1 |
| **1.1.1.1.3** | Research Sensors | 6/17/2011 | 6/27/2011 | 6/17/2011 | 6/27/2011 | 10 hrs | 10 hrs | 10 hrs | 10 hrs | 100 | 1 | 1 |
| **1.1.1.1.4** | Sponsor Meeting | 6/27/2011 | 6/27/2011 | 6/27/2011 | 6/27/2011 | 10 hrs | 10 hrs | 9 hrs | 10 hrs | 100 | 1 | 1.11 |
| **1.1.1.1.5** | Requirements Form | 7/3/2011 | 7/3/2011 | 7/3/2011 | 7/3/2011 | 10 hrs | 10 hrs | 5 hrs | 10 hrs | 100 | 1 | 2 |
| 1.1.1.2 | **Initial Draft** | **7/3/2011** | **7/15/2011** | **7/3/2011** | **7/5/2011** | **24 hrs** | **21.2 hrs** | **12.75 hrs** | **24 hrs** | **100** | **1.13** | **1.88** |
| **1.1.1.2.1** | Product Services and Summary | 7/3/2011 | 7/15/2011 | 7/3/2011 | 7/5/2011 | 1 hr | 0.88 hrs | 0.5 hrs | 1 hr | 100 | 1.13 | 2 |
| **1.1.1.2.2** | Environments | 7/3/2011 | 7/15/2011 | 7/3/2011 | 7/3/2011 | 1 hr | 0.88 hrs | 0.5 hrs | 1 hr | 100 | 1.13 | 2 |
| **1.1.1.2.3** | External Interface and Data Flows | 7/3/2011 | 7/15/2011 | 7/3/2011 | 7/3/2011 | 1 hr | 0.88 hrs | 0.5 hrs | 1 hr | 100 | 1.13 | 2 |
| **1.1.1.2.4** | Customer Requirements | 7/3/2011 | 7/15/2011 | 7/3/2011 | 7/3/2011 | 1 hr | 0.88 hrs | 0.5 hrs | 1 hr | 100 | 1.13 | 2 |
| **1.1.1.2.5** | Localization Requirements | 7/3/2011 | 7/15/2011 | 7/3/2011 | 7/3/2011 | 1 hr | 0.88 hrs | 0.25 hrs | 1 hr | 100 | 1.13 | 4 |
| **1.1.1.2.6** | Marketing and Sales Requirements | 7/3/2011 | 7/15/2011 | 7/3/2011 | 7/3/2011 | 1 hr | 0.88 hrs | 0.5 hrs | 1 hr | 100 | 1.13 | 2 |
| **1.1.1.2.7** | Administrative Requirements | 7/3/2011 | 7/15/2011 | 7/3/2011 | 7/3/2011 | 1 hr | 0.88 hrs | 1 hr | 1 hr | 100 | 1.13 | 1 |
| **1.1.1.2.8** | Development Requirements | 7/3/2011 | 7/15/2011 | 7/3/2011 | 7/3/2011 | 1 hr | 0.88 hrs | 0.75 hrs | 1 hr | 100 | 1.13 | 1.33 |
| **1.1.1.2.9** | Quality Assurance Requirements | 7/3/2011 | 7/15/2011 | 7/3/2011 | 7/3/2011 | 1 hr | 0.88 hrs | 0.5 hrs | 1 hr | 100 | 1.13 | 2 |
| **1.1.1.2.10** | Safety Requirements | 7/3/2011 | 7/15/2011 | 7/3/2011 | 7/5/2011 | 1 hr | 0.88 hrs | 0.5 hrs | 1 hr | 100 | 1.13 | 2 |
| **1.1.1.2.11** | Standards Compliance | 7/3/2011 | 7/15/2011 | 7/3/2011 | 7/5/2011 | 1 hr | 0.88 hrs | 0.5 hrs | 1 hr | 100 | 1.13 | 2 |
| **1.1.1.2.12** | Maintenance Requirements | 7/3/2011 | 7/15/2011 | 7/3/2011 | 7/3/2011 | 1 hr | 0.88 hrs | 0.5 hrs | 1 hr | 100 | 1.13 | 2 |
| **1.1.1.2.13** | Support Requirements | 7/3/2011 | 7/15/2011 | 7/3/2011 | 7/5/2011 | 1 hr | 0.88 hrs | 0.5 hrs | 1 hr | 100 | 1.13 | 2 |
| **1.1.1.2.14** | Performance Requirements | 7/3/2011 | 7/15/2011 | 7/3/2011 | 7/3/2011 | 1 hr | 0.88 hrs | 0.5 hrs | 1 hr | 100 | 1.13 | 2 |
| **1.1.1.2.15** | System Constraint Requirements | 7/3/2011 | 7/15/2011 | 7/3/2011 | 7/3/2011 | 1 hr | 0.88 hrs | 0.5 hrs | 1 hr | 100 | 1.13 | 2 |
| **1.1.1.2.16** | Exception Conditions and Handling | 7/3/2011 | 7/15/2011 | 7/3/2011 | 7/3/2011 | 1 hr | 0.88 hrs | 0.5 hrs | 1 hr | 100 | 1.13 | 2 |
| **1.1.1.2.17** | Early Subsets and Implementation Priorities | 7/3/2011 | 7/15/2011 | 7/3/2011 | 7/3/2011 | 1 hr | 0.88 hrs | 0.5 hrs | 1 hr | 100 | 1.13 | 2 |
| **1.1.1.2.18** | Forseeable modifications and Enhancements | 7/3/2011 | 7/15/2011 | 7/3/2011 | 7/3/2011 | 1 hr | 0.88 hrs | 1 hr | 1 hr | 100 | 1.13 | 1 |
| **1.1.1.2.19** | Acceptance Criteria | 7/3/2011 | 7/15/2011 | 7/3/2011 | 7/5/2011 | 1 hr | 0.88 hrs | 0.5 hrs | 1 hr | 100 | 1.13 | 2 |
| **1.1.1.2.20** | Design Guidelines | 7/3/2011 | 7/15/2011 | 7/3/2011 | 7/5/2011 | 1 hr | 0.88 hrs | 0.5 hrs | 1 hr | 100 | 1.13 | 2 |
| **1.1.1.2.21** | Assumptions | 7/3/2011 | 7/15/2011 | 7/3/2011 | 7/3/2011 | 1 hr | 0.88 hrs | 0.25 hrs | 1 hr | 100 | 1.13 | 4 |
| **1.1.1.2.22** | Sources of Information | 7/3/2011 | 7/15/2011 | 7/3/2011 | 7/5/2011 | 1 hr | 0.88 hrs | 0.5 hrs | 1 hr | 100 | 1.13 | 2 |
| **1.1.1.2.23** | Use Cases | 7/3/2011 | 7/15/2011 | 7/3/2011 | 7/5/2011 | 1 hr | 0.88 hrs | 0.5 hrs | 1 hr | 100 | 1.13 | 2 |
| **1.1.1.2.24** | Glossary of Terms | 7/3/2011 | 7/15/2011 | 7/3/2011 | 7/3/2011 | 1 hr | 0.88 hrs | 0.5 hrs | 1 hr | 100 | 1.13 | 2 |
| 1.1.1.3 | **SRD Draft Review** | **7/15/2011** | **7/17/2011** | **7/5/2011** | **7/6/2011** | **12 hrs** | **0 hrs** | **6 hrs** | **12 hrs** | **100** | **0** | **2** |
| **1.1.1.3.1** | Product Services and Summary | 7/15/2011 | 7/17/2011 | 7/5/2011 | 7/6/2011 | 0.5 hrs | 0 hrs | 0.25 hrs | 0.5 hrs | 100 | 0 | 2 |
| **1.1.1.3.2** | Environments | 7/15/2011 | 7/17/2011 | 7/5/2011 | 7/6/2011 | 0.5 hrs | 0 hrs | 0.25 hrs | 0.5 hrs | 100 | 0 | 2 |
| **1.1.1.3.3** | External Interface and Data Flows | 7/15/2011 | 7/17/2011 | 7/5/2011 | 7/6/2011 | 0.5 hrs | 0 hrs | 0.25 hrs | 0.5 hrs | 100 | 0 | 2 |
| **1.1.1.3.4** | Customer Requirements | 7/15/2011 | 7/17/2011 | 7/5/2011 | 7/6/2011 | 0.5 hrs | 0 hrs | 0.25 hrs | 0.5 hrs | 100 | 0 | 2 |
| **1.1.1.3.5** | Localization Requirements | 7/15/2011 | 7/17/2011 | 7/5/2011 | 7/6/2011 | 0.5 hrs | 0 hrs | 0.25 hrs | 0.5 hrs | 100 | 0 | 2 |
| **1.1.1.3.6** | Marketing and Sales Requirements | 7/15/2011 | 7/17/2011 | 7/5/2011 | 7/6/2011 | 0.5 hrs | 0 hrs | 0.25 hrs | 0.5 hrs | 100 | 0 | 2 |
| **1.1.1.3.7** | Administrative Requirements | 7/15/2011 | 7/17/2011 | 7/5/2011 | 7/6/2011 | 0.5 hrs | 0 hrs | 0.25 hrs | 0.5 hrs | 100 | 0 | 2 |
| **1.1.1.3.8** | Development Requirements | 7/15/2011 | 7/17/2011 | 7/5/2011 | 7/6/2011 | 0.5 hrs | 0 hrs | 0.25 hrs | 0.5 hrs | 100 | 0 | 2 |
| **1.1.1.3.9** | Quality Assurance Requirements | 7/15/2011 | 7/17/2011 | 7/5/2011 | 7/6/2011 | 0.5 hrs | 0 hrs | 0.25 hrs | 0.5 hrs | 100 | 0 | 2 |
| **1.1.1.3.10** | Safety Requirements | 7/15/2011 | 7/17/2011 | 7/5/2011 | 7/6/2011 | 0.5 hrs | 0 hrs | 0.25 hrs | 0.5 hrs | 100 | 0 | 2 |
| **1.1.1.3.11** | Standards Compliance | 7/15/2011 | 7/17/2011 | 7/5/2011 | 7/6/2011 | 0.5 hrs | 0 hrs | 0.25 hrs | 0.5 hrs | 100 | 0 | 2 |
| **1.1.1.3.12** | Maintenance Requirements | 7/15/2011 | 7/17/2011 | 7/5/2011 | 7/6/2011 | 0.5 hrs | 0 hrs | 0.25 hrs | 0.5 hrs | 100 | 0 | 2 |
| **1.1.1.3.13** | Support Requirements | 7/15/2011 | 7/17/2011 | 7/5/2011 | 7/6/2011 | 0.5 hrs | 0 hrs | 0.25 hrs | 0.5 hrs | 100 | 0 | 2 |
| **1.1.1.3.14** | Performance Requirements | 7/15/2011 | 7/17/2011 | 7/5/2011 | 7/6/2011 | 0.5 hrs | 0 hrs | 0.25 hrs | 0.5 hrs | 100 | 0 | 2 |
| **1.1.1.3.15** | System Constraint Requirements | 7/15/2011 | 7/17/2011 | 7/5/2011 | 7/6/2011 | 0.5 hrs | 0 hrs | 0.25 hrs | 0.5 hrs | 100 | 0 | 2 |
| **1.1.1.3.16** | Exception Conditions and Handling | 7/15/2011 | 7/17/2011 | 7/5/2011 | 7/6/2011 | 0.5 hrs | 0 hrs | 0.25 hrs | 0.5 hrs | 100 | 0 | 2 |
| **1.1.1.3.17** | Early Subsets and Implementation Priorities | 7/15/2011 | 7/17/2011 | 7/5/2011 | 7/6/2011 | 0.5 hrs | 0 hrs | 0.25 hrs | 0.5 hrs | 100 | 0 | 2 |
| **1.1.1.3.18** | Forseeable modifications and Enhancements | 7/15/2011 | 7/17/2011 | 7/5/2011 | 7/6/2011 | 0.5 hrs | 0 hrs | 0.25 hrs | 0.5 hrs | 100 | 0 | 2 |
| **1.1.1.3.19** | Acceptance Criteria | 7/15/2011 | 7/17/2011 | 7/5/2011 | 7/6/2011 | 0.5 hrs | 0 hrs | 0.25 hrs | 0.5 hrs | 100 | 0 | 2 |
| **1.1.1.3.20** | Design Guidelines | 7/15/2011 | 7/17/2011 | 7/5/2011 | 7/6/2011 | 0.5 hrs | 0 hrs | 0.25 hrs | 0.5 hrs | 100 | 0 | 2 |
| **1.1.1.3.21** | Assumptions | 7/15/2011 | 7/17/2011 | 7/5/2011 | 7/6/2011 | 0.5 hrs | 0 hrs | 0.25 hrs | 0.5 hrs | 100 | 0 | 2 |
| **1.1.1.3.22** | Sources of Information | 7/15/2011 | 7/17/2011 | 7/5/2011 | 7/6/2011 | 0.5 hrs | 0 hrs | 0.25 hrs | 0.5 hrs | 100 | 0 | 2 |
| **1.1.1.3.23** | Use Cases | 7/15/2011 | 7/17/2011 | 7/5/2011 | 7/6/2011 | 0.5 hrs | 0 hrs | 0.25 hrs | 0.5 hrs | 100 | 0 | 2 |
| **1.1.1.3.24** | Glossary of Terms | 7/15/2011 | 7/17/2011 | 7/5/2011 | 7/6/2011 | 0.5 hrs | 0 hrs | 0.25 hrs | 0.5 hrs | 100 | 0 | 2 |
| **1.1.1.4** | Final Review | 7/17/2011 | 7/17/2011 | 7/6/2011 | 7/6/2011 | 20 hrs | 0 hrs | 26.5 hrs | 20 hrs | 100 | 0 | 0.75 |
| 1.1.1.5 | **Requirements Draft Review Presentation** | **7/17/2011** | **7/19/2011** | **NA** | **NA** | **10 hrs** | **0 hrs** | **0 hrs** | **0 hrs** | **0** | **0** | **0** |
| **1.1.1.5.1** | Create Presentation | 7/17/2011 | 7/19/2011 | NA | NA | 5 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.1.1.5.2** | Practice Presentation | 7/17/2011 | 7/19/2011 | NA | NA | 5 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| 1.1.2 | **Project Plan** | **6/17/2011** | **7/19/2011** | **6/17/2011** | **7/6/2011** | **45 hrs** | **28.4 hrs** | **16 hrs** | **45 hrs** | **100** | **1.58** | **2.81** |
| **1.1.2.1** | Learn MS Project | 6/17/2011 | 6/17/2011 | 6/17/2011 | 6/17/2011 | 10 hrs | 10 hrs | 5 hrs | 10 hrs | 100 | 1 | 2 |
| **1.1.2.2** | Initial Draft SDI | 6/27/2011 | 7/15/2011 | 6/17/2011 | 7/4/2011 | 10 hrs | 9.2 hrs | 5 hrs | 10 hrs | 100 | 1.09 | 2 |
| **1.1.2.3** | Initial Draft SDII | 6/27/2011 | 7/15/2011 | 6/17/2011 | 7/4/2011 | 10 hrs | 9.2 hrs | 2 hrs | 10 hrs | 100 | 1.09 | 5 |
| **1.1.2.4** | Dependencies | 7/15/2011 | 7/19/2011 | 6/17/2011 | 7/4/2011 | 10 hrs | 0 hrs | 2 hrs | 10 hrs | 100 | 0 | 5 |
| **1.1.2.5** | Final Review | 7/19/2011 | 7/19/2011 | 7/3/2011 | 7/6/2011 | 5 hrs | 0 hrs | 2 hrs | 5 hrs | 100 | 0 | 2.5 |
| 1.1.3 | **Project Charter** | **7/3/2011** | **7/19/2011** | **7/5/2011** | **7/12/2011** | **19.5 hrs** | **12.57 hrs** | **7.5 hrs** | **19.5 hrs** | **100** | **1.55** | **2.6** |
| 1.1.3.1 | **Initial Draft** | **7/3/2011** | **7/14/2011** | **7/5/2011** | **7/9/2011** | **13 hrs** | **12.57 hrs** | **6.75 hrs** | **13 hrs** | **100** | **1.03** | **1.93** |
| 1.1.3.2 | **Initial Draft Review** | **7/14/2011** | **7/19/2011** | **7/7/2011** | **7/12/2011** | **6.5 hrs** | **0 hrs** | **0.75 hrs** | **6.5 hrs** | **100** | **0** | **8.67** |
| **1.1.3.2.1** | General Organization | 7/14/2011 | 7/19/2011 | 7/7/2011 | 7/12/2011 | 0.5 hrs | 0 hrs | 0 hrs | 0.5 hrs | 100 | 0 | 0 |
| **1.1.3.2.2** | Scope Statement | 7/14/2011 | 7/19/2011 | 7/7/2011 | 7/12/2011 | 0.5 hrs | 0 hrs | 0 hrs | 0.5 hrs | 100 | 0 | 0 |
| **1.1.3.2.3** | Cost Management Plan | 7/14/2011 | 7/19/2011 | 7/7/2011 | 7/8/2011 | 0.5 hrs | 0 hrs | 0 hrs | 0.5 hrs | 100 | 0 | 0 |
| **1.1.3.2.4** | Earned Value Management | 7/14/2011 | 7/19/2011 | 7/7/2011 | 7/8/2011 | 0.5 hrs | 0 hrs | 0 hrs | 0.5 hrs | 100 | 0 | 0 |
| **1.1.3.2.5** | Scope Management Plan | 7/14/2011 | 7/19/2011 | 7/7/2011 | 7/12/2011 | 0.5 hrs | 0 hrs | 0 hrs | 0.5 hrs | 100 | 0 | 0 |
| **1.1.3.2.6** | Work Breakdown Structure | 7/14/2011 | 7/19/2011 | 7/7/2011 | 7/12/2011 | 0.5 hrs | 0 hrs | 0 hrs | 0.5 hrs | 100 | 0 | 0 |
| **1.1.3.2.7** | Quality Management Plan | 7/14/2011 | 7/19/2011 | 7/7/2011 | 7/12/2011 | 0.5 hrs | 0 hrs | 0 hrs | 0.5 hrs | 100 | 0 | 0 |
| **1.1.3.2.8** | Communications Plan | 7/14/2011 | 7/19/2011 | 7/7/2011 | 7/10/2011 | 0.5 hrs | 0 hrs | 0.25 hrs | 0.5 hrs | 100 | 0 | 2 |
| **1.1.3.2.9** | Change Management Plan | 7/14/2011 | 7/19/2011 | 7/7/2011 | 7/10/2011 | 0.5 hrs | 0 hrs | 0.25 hrs | 0.5 hrs | 100 | 0 | 2 |
| **1.1.3.2.10** | Risk Management Plan | 7/14/2011 | 7/19/2011 | 7/7/2011 | 7/12/2011 | 0.5 hrs | 0 hrs | 0 hrs | 0.5 hrs | 100 | 0 | 0 |
| **1.1.3.2.11** | Staffing Management Plan | 7/14/2011 | 7/19/2011 | 7/7/2011 | 7/12/2011 | 0.5 hrs | 0 hrs | 0 hrs | 0.5 hrs | 100 | 0 | 0 |
| **1.1.3.2.12** | Procurement Management Plan | 7/14/2011 | 7/19/2011 | 7/7/2011 | 7/12/2011 | 0.5 hrs | 0 hrs | 0.25 hrs | 0.5 hrs | 100 | 0 | 2 |
| **1.1.3.2.13** | Project Closeout Report | 7/14/2011 | 7/19/2011 | 7/7/2011 | 7/12/2011 | 0.5 hrs | 0 hrs | 0 hrs | 0.5 hrs | 100 | 0 | 0 |
| 1.2 | **Senior Design II** | **8/23/2011** | **12/9/2011** | **NA** | **NA** | **722 hrs** | **0 hrs** | **0 hrs** | **0 hrs** | **0** | **0** | **0** |
| 1.2.1 | **ADS** | **8/23/2011** | **9/19/2011** | **NA** | **NA** | **109 hrs** | **0 hrs** | **0 hrs** | **0 hrs** | **0** | **0** | **0** |
| **1.2.1.1** | Architectural Design | 8/23/2011 | 9/2/2011 | NA | NA | 10 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.2.1.2** | Compatibility Study | 8/23/2011 | 9/2/2011 | NA | NA | 10 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.2.1.3** | External Layers & Interfaces | 8/23/2011 | 9/2/2011 | NA | NA | 10 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.2.1.4** | Sub-components | 8/23/2011 | 9/2/2011 | NA | NA | 10 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.2.1.5** | Data Flows | 8/23/2011 | 9/2/2011 | NA | NA | 10 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.2.1.6** | Inputs & Outputs | 8/23/2011 | 9/2/2011 | NA | NA | 10 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.2.1.7** | Combine & Review | 8/23/2011 | 9/2/2011 | NA | NA | 10 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| 1.2.1.8 | **Initial Draft** | **9/2/2011** | **9/9/2011** | **NA** | **NA** | **6 hrs** | **0 hrs** | **0 hrs** | **0 hrs** | **0** | **0** | **0** |
| **1.2.1.8.1** | General | 9/2/2011 | 9/9/2011 | NA | NA | 1 hr | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.2.1.8.2** | Introduction | 9/2/2011 | 9/9/2011 | NA | NA | 1 hr | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.2.1.8.3** | Layer Definition | 9/2/2011 | 9/9/2011 | NA | NA | 1 hr | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.2.1.8.4** | Inter-Subsystem Dataflows | 9/2/2011 | 9/9/2011 | NA | NA | 1 hr | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.2.1.8.5** | Subsystem Descriptions | 9/2/2011 | 9/9/2011 | NA | NA | 1 hr | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.2.1.8.6** | Testing Considerations | 9/2/2011 | 9/9/2011 | NA | NA | 1 hr | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| 1.2.1.9 | **Initial Draft Review** | **9/9/2011** | **9/16/2011** | **NA** | **NA** | **3 hrs** | **0 hrs** | **0 hrs** | **0 hrs** | **0** | **0** | **0** |
| **1.2.1.9.1** | General | 9/9/2011 | 9/16/2011 | NA | NA | 0.5 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.2.1.9.2** | Introduction | 9/9/2011 | 9/16/2011 | NA | NA | 0.5 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.2.1.9.3** | Layer Definition | 9/9/2011 | 9/16/2011 | NA | NA | 0.5 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.2.1.9.4** | Inter-Subsystem Dataflows | 9/9/2011 | 9/16/2011 | NA | NA | 0.5 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.2.1.9.5** | Subsystem Descriptions | 9/9/2011 | 9/16/2011 | NA | NA | 0.5 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.2.1.9.6** | Testing Considerations | 9/9/2011 | 9/16/2011 | NA | NA | 0.5 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.2.1.10** | Final Review | 9/17/2011 | 9/17/2011 | NA | NA | 10 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| 1.2.1.11 | **Architectural Gate Review Presentation** | **9/17/2011** | **9/19/2011** | **NA** | **NA** | **20 hrs** | **0 hrs** | **0 hrs** | **0 hrs** | **0** | **0** | **0** |
| **1.2.1.11.1** | Draft Presentation | 9/17/2011 | 9/18/2011 | NA | NA | 10 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.2.1.11.2** | Assemble Presentation | 9/17/2011 | 9/18/2011 | NA | NA | 5 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.2.1.11.3** | Practice Presentation | 9/18/2011 | 9/19/2011 | NA | NA | 5 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| 1.2.2 | **DDS** | **9/19/2011** | **10/21/2011** | **NA** | **NA** | **100.5 hrs** | **0 hrs** | **0 hrs** | **0 hrs** | **0** | **0** | **0** |
| **1.2.2.1** | Detailed Design | 9/19/2011 | 9/23/2011 | NA | NA | 10 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.2.2.2** | Architecture Overview | 9/19/2011 | 9/23/2011 | NA | NA | 10 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.2.2.3** | Detailed Component Design | 9/19/2011 | 9/23/2011 | NA | NA | 10 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.2.2.4** | Detailed Sub-Component Design | 9/19/2011 | 9/23/2011 | NA | NA | 10 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.2.2.5** | Detailed Interfaces | 9/19/2011 | 9/23/2011 | NA | NA | 10 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.2.2.6** | Combine & Review | 9/19/2011 | 9/23/2011 | NA | NA | 10 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| 1.2.2.7 | **Initial Draft** | **9/23/2011** | **9/30/2011** | **NA** | **NA** | **7 hrs** | **0 hrs** | **0 hrs** | **0 hrs** | **0** | **0** | **0** |
| **1.2.2.7.1** | Introduction | 9/23/2011 | 9/30/2011 | NA | NA | 1 hr | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.2.2.7.2** | Architecture Overview | 9/23/2011 | 9/30/2011 | NA | NA | 1 hr | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.2.2.7.3** | Component Design | 9/23/2011 | 9/30/2011 | NA | NA | 1 hr | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.2.2.7.4** | Quality Assurance | 9/23/2011 | 9/30/2011 | NA | NA | 1 hr | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.2.2.7.5** | Requirements Traceability Matrix | 9/23/2011 | 9/30/2011 | NA | NA | 1 hr | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.2.2.7.6** | Acceptance Plan | 9/23/2011 | 9/30/2011 | NA | NA | 1 hr | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.2.2.7.7** | Appendices | 9/23/2011 | 9/30/2011 | NA | NA | 1 hr | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| 1.2.2.8 | **Initial Draft Review** | **9/30/2011** | **10/7/2011** | **NA** | **NA** | **3.5 hrs** | **0 hrs** | **0 hrs** | **0 hrs** | **0** | **0** | **0** |
| **1.2.2.8.1** | Introduction | 9/30/2011 | 10/7/2011 | NA | NA | 0.5 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.2.2.8.2** | Architecture Overview | 9/30/2011 | 10/7/2011 | NA | NA | 0.5 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.2.2.8.3** | Component Design | 9/30/2011 | 10/7/2011 | NA | NA | 0.5 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.2.2.8.4** | Quality Assurance | 9/30/2011 | 10/7/2011 | NA | NA | 0.5 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.2.2.8.5** | Requirements Traceability Matrix | 9/30/2011 | 10/7/2011 | NA | NA | 0.5 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.2.2.8.6** | Acceptance Plan | 9/30/2011 | 10/7/2011 | NA | NA | 0.5 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.2.2.8.7** | Appendices | 9/30/2011 | 10/7/2011 | NA | NA | 0.5 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.2.2.9** | Final Review | 10/8/2011 | 10/8/2011 | NA | NA | 10 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| 1.2.2.10 | **Detailed Design Presentation** | **10/8/2011** | **10/21/2011** | **NA** | **NA** | **20 hrs** | **0 hrs** | **0 hrs** | **0 hrs** | **0** | **0** | **0** |
| **1.2.2.10.1** | Create Presentation | 10/8/2011 | 10/14/2011 | NA | NA | 10 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.2.2.10.2** | Practice Presentation | 10/14/2011 | 10/21/2011 | NA | NA | 10 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| 1.2.3 | **Implementation** | **10/1/2011** | **10/31/2011** | **NA** | **NA** | **280 hrs** | **0 hrs** | **0 hrs** | **0 hrs** | **0** | **0** | **0** |
| **1.2.3.1** | Camera | 10/1/2011 | 10/31/2011 | NA | NA | 20 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.2.3.2** | Sensors | 10/1/2011 | 10/31/2011 | NA | NA | 20 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.2.3.3** | Server | 10/1/2011 | 10/31/2011 | NA | NA | 80 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.2.3.4** | Android Application | 10/1/2011 | 10/31/2011 | NA | NA | 80 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.2.3.5** | Integrated Circuit | 10/1/2011 | 10/31/2011 | NA | NA | 80 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| 1.2.4 | **Testing** | **10/1/2011** | **12/2/2011** | **NA** | **NA** | **126.5 hrs** | **0 hrs** | **0 hrs** | **0 hrs** | **0** | **0** | **0** |
| 1.2.4.1 | **Testing Implementation** | **10/1/2011** | **11/15/2011** | **NA** | **NA** | **50 hrs** | **0 hrs** | **0 hrs** | **0 hrs** | **0** | **0** | **0** |
| **1.2.4.1.1** | Unit Hardware Testing | 10/1/2011 | 11/15/2011 | NA | NA | 10 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.2.4.1.2** | Unit Software Testing | 10/1/2011 | 11/15/2011 | NA | NA | 10 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.2.4.1.3** | Sub-component testing | 10/1/2011 | 11/15/2011 | NA | NA | 10 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.2.4.1.4** | Component Testing | 10/1/2011 | 11/15/2011 | NA | NA | 10 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.2.4.1.5** | Integration Testing | 10/1/2011 | 11/15/2011 | NA | NA | 10 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| 1.2.4.2 | **Complete System Testing** | **11/15/2011** | **11/20/2011** | **NA** | **NA** | **30 hrs** | **0 hrs** | **0 hrs** | **0 hrs** | **0** | **0** | **0** |
| **1.2.4.2.1** | Verification | 11/15/2011 | 11/20/2011 | NA | NA | 10 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.2.4.2.2** | Validation | 11/15/2011 | 11/20/2011 | NA | NA | 10 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.2.4.2.3** | Acceptance | 11/15/2011 | 11/20/2011 | NA | NA | 10 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| 1.2.4.3 | **Initial Draft** | **11/20/2011** | **11/25/2011** | **NA** | **NA** | **11 hrs** | **0 hrs** | **0 hrs** | **0 hrs** | **0** | **0** | **0** |
| **1.2.4.3.1** | Introduction | 11/20/2011 | 11/25/2011 | NA | NA | 1 hr | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.2.4.3.2** | References | 11/20/2011 | 11/25/2011 | NA | NA | 1 hr | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.2.4.3.3** | Test Items | 11/20/2011 | 11/25/2011 | NA | NA | 1 hr | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.2.4.3.4** | Risks | 11/20/2011 | 11/25/2011 | NA | NA | 1 hr | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.2.4.3.5** | Features to be Tested | 11/20/2011 | 11/25/2011 | NA | NA | 1 hr | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.2.4.3.6** | Features NOT to be Tested | 11/20/2011 | 11/25/2011 | NA | NA | 1 hr | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.2.4.3.7** | Approach (Strategy) | 11/20/2011 | 11/25/2011 | NA | NA | 1 hr | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.2.4.3.8** | Item Pass/Fail Criteria | 11/20/2011 | 11/25/2011 | NA | NA | 1 hr | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.2.4.3.9** | Test Deliverables | 11/20/2011 | 11/25/2011 | NA | NA | 1 hr | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.2.4.3.10** | Test Schedule | 11/20/2011 | 11/25/2011 | NA | NA | 1 hr | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.2.4.3.11** | Approvals | 11/20/2011 | 11/25/2011 | NA | NA | 1 hr | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| 1.2.4.4 | **Initial Draft Review** | **11/25/2011** | **11/30/2011** | **NA** | **NA** | **5.5 hrs** | **0 hrs** | **0 hrs** | **0 hrs** | **0** | **0** | **0** |
| **1.2.4.4.1** | Introduction | 11/25/2011 | 11/30/2011 | NA | NA | 0.5 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.2.4.4.2** | References | 11/25/2011 | 11/30/2011 | NA | NA | 0.5 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.2.4.4.3** | Test Items | 11/25/2011 | 11/30/2011 | NA | NA | 0.5 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.2.4.4.4** | Risks | 11/25/2011 | 11/30/2011 | NA | NA | 0.5 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.2.4.4.5** | Features to be Tested | 11/25/2011 | 11/30/2011 | NA | NA | 0.5 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.2.4.4.6** | Features NOT to be Tested | 11/25/2011 | 11/30/2011 | NA | NA | 0.5 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.2.4.4.7** | Approach (Strategy) | 11/25/2011 | 11/30/2011 | NA | NA | 0.5 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.2.4.4.8** | Item Pass/Fail Criteria | 11/25/2011 | 11/30/2011 | NA | NA | 0.5 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.2.4.4.9** | Test Deliverables | 11/25/2011 | 11/30/2011 | NA | NA | 0.5 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.2.4.4.10** | Test Schedule | 11/25/2011 | 11/30/2011 | NA | NA | 0.5 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.2.4.4.11** | Approvals | 11/25/2011 | 11/30/2011 | NA | NA | 0.5 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.2.4.5** | Final Review | 11/30/2011 | 12/2/2011 | NA | NA | 10 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| 1.2.4.6 | **Test Plan Presentation** | **11/30/2011** | **12/2/2011** | **NA** | **NA** | **20 hrs** | **0 hrs** | **0 hrs** | **0 hrs** | **0** | **0** | **0** |
| **1.2.4.6.1** | Create Presentation | 11/30/2011 | 12/1/2011 | NA | NA | 10 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.2.4.6.2** | Practice Presentation | 12/1/2011 | 12/2/2011 | NA | NA | 10 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| 1.2.5 | **Project Completion** | **12/2/2011** | **12/9/2011** | **NA** | **NA** | **106 hrs** | **0 hrs** | **0 hrs** | **0 hrs** | **0** | **0** | **0** |
| 1.2.5.1 | **Prototype Presentation** | **12/2/2011** | **12/9/2011** | **NA** | **NA** | **20 hrs** | **0 hrs** | **0 hrs** | **0 hrs** | **0** | **0** | **0** |
| **1.2.5.1.1** | Create Presentation | 12/2/2011 | 12/3/2011 | NA | NA | 10 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.2.5.1.2** | Practice Presentation | 12/2/2011 | 12/9/2011 | NA | NA | 10 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| 1.2.5.2 | **Project Closeout** | **12/2/2011** | **12/9/2011** | **NA** | **NA** | **86 hrs** | **0 hrs** | **0 hrs** | **0 hrs** | **0** | **0** | **0** |
| 1.2.5.2.1 | **Project Notebook** | **12/2/2011** | **12/9/2011** | **NA** | **NA** | **65 hrs** | **0 hrs** | **0 hrs** | **0 hrs** | **0** | **0** | **0** |
| **1.2.5.2.2** | Set up display | NA | NA | NA | NA | 10 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.2.5.2.3** | Reset lab computers | NA | NA | NA | NA | 1 hr | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.2.5.2.4** | Clean out workspace | NA | NA | NA | NA | 10 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| 1.3 | **Administrative Tasks** | **6/7/2011** | **6/18/2011** | **6/7/2011** | **6/17/2011** | **30.5 hrs** | **30.5 hrs** | **22.5 hrs** | **30.5 hrs** | **100** | **1** | **1.36** |
| **1.3.1** | Team Selection | 6/7/2011 | 6/18/2011 | 6/7/2011 | 6/17/2011 | 5 hrs | 5 hrs | 5 hrs | 5 hrs | 100 | 1 | 1 |
| **1.3.2** | Team Name Selection | 6/17/2011 | 6/18/2011 | 6/7/2011 | 6/17/2011 | 2.5 hrs | 2.5 hrs | 1 hr | 2.5 hrs | 100 | 1 | 2.5 |
| **1.3.3** | Project Selection | 6/17/2011 | 6/18/2011 | 6/7/2011 | 6/17/2011 | 2.5 hrs | 2.5 hrs | 1 hr | 2.5 hrs | 100 | 1 | 2.5 |
| **1.3.4** | Tool Selection | 6/17/2011 | 6/18/2011 | 6/7/2011 | 6/17/2011 | 10 hrs | 10 hrs | 5 hrs | 10 hrs | 100 | 1 | 2 |
| **1.3.5** | Tool Configuration | 6/17/2011 | 6/18/2011 | 6/7/2011 | 6/17/2011 | 10 hrs | 10 hrs | 10 hrs | 10 hrs | 100 | 1 | 1 |
| **1.3.6** | Logo Creation | 6/17/2011 | 6/18/2011 | 6/7/2011 | 6/17/2011 | 0.5 hrs | 0.5 hrs | 0.5 hrs | 0.5 hrs | 100 | 1 | 1 |
| 1.4 | **Weekly Tasks** | **6/17/2011** | **12/1/2011** | **6/17/2011** | **NA** | **378.5 hrs** | **56.5 hrs** | **32.5 hrs** | **42.5 hrs** | **10.67** | **0.75** | **1.31** |
| 1.4.1 | **Team Meetings** | **6/17/2011** | **12/1/2011** | **6/17/2011** | **NA** | **250 hrs** | **40 hrs** | **20 hrs** | **30 hrs** | **12** | **0.75** | **1.5** |
| **1.4.1.1** | Team Meeting 1 | 6/17/2011 | 6/17/2011 | 6/17/2011 | 6/17/2011 | 10 hrs | 10 hrs | 5 hrs | 10 hrs | 100 | 1 | 2 |
| **1.4.1.2** | Team Meeting 2 | 6/24/2011 | 6/24/2011 | 6/24/2011 | 6/24/2011 | 10 hrs | 10 hrs | 5 hrs | 10 hrs | 100 | 1 | 2 |
| **1.4.1.3** | Team Meeting 3 | 7/3/2011 | 7/3/2011 | 7/3/2011 | 7/3/2011 | 10 hrs | 10 hrs | 10 hrs | 10 hrs | 100 | 1 | 1 |
| **1.4.1.4** | Team Meeting 4 | 7/9/2011 | 7/9/2011 | 7/10/2011 | NA | 10 hrs | 10 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.1.5** | Team Meeting 5 | 7/15/2011 | 7/15/2011 | 7/17/2011 | NA | 10 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.1.6** | Team Meeting 6 | 7/22/2011 | 7/22/2011 | NA | NA | 10 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.1.7** | Team Meeting 7 | 7/29/2011 | 7/29/2011 | NA | NA | 10 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.1.8** | Team Meeting 8 | 8/5/2011 | 8/5/2011 | NA | NA | 10 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.1.9** | Team Meeting 9 | 8/12/2011 | 8/12/2011 | NA | NA | 10 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.1.10** | Team Meeting 10 | 8/19/2011 | 8/19/2011 | NA | NA | 10 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.1.11** | Team Meeting 11 | 8/26/2011 | 8/26/2011 | NA | NA | 10 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.1.12** | Team Meeting 12 | 9/2/2011 | 9/2/2011 | NA | NA | 10 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.1.13** | Team Meeting 13 | 9/9/2011 | 9/9/2011 | NA | NA | 10 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.1.14** | Team Meeting 14 | 9/16/2011 | 9/16/2011 | NA | NA | 10 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.1.15** | Team Meeting 15 | 9/23/2011 | 9/23/2011 | NA | NA | 10 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.1.16** | Team Meeting 16 | 9/30/2011 | 9/30/2011 | NA | NA | 10 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.1.17** | Team Meeting 17 | 10/7/2011 | 10/7/2011 | NA | NA | 10 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.1.18** | Team Meeting 18 | 10/14/2011 | 10/14/2011 | NA | NA | 10 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.1.19** | Team Meeting 19 | 10/21/2011 | 10/21/2011 | NA | NA | 10 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.1.20** | Team Meeting 20 | 10/28/2011 | 10/28/2011 | NA | NA | 10 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.1.21** | Team Meeting 21 | 11/4/2011 | 11/4/2011 | NA | NA | 10 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.1.22** | Team Meeting 22 | 11/11/2011 | 11/11/2011 | NA | NA | 10 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.1.23** | Team Meeting 23 | 11/18/2011 | 11/18/2011 | NA | NA | 10 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.1.24** | Team Meeting 24 | 11/25/2011 | 11/25/2011 | NA | NA | 10 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.1.25** | Team Meeting 25 | 12/1/2011 | 12/1/2011 | NA | NA | 10 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| 1.4.2 | **Risk Management** | **6/17/2011** | **12/1/2011** | **6/17/2011** | **NA** | **27 hrs** | **6 hrs** | **3 hrs** | **3 hrs** | **12** | **0.5** | **1** |
| **1.4.2.1** | Risk Management 1 | 6/17/2011 | 6/17/2011 | 6/17/2011 | 6/17/2011 | 1 hr | 1 hr | 1 hr | 1 hr | 100 | 1 | 1 |
| **1.4.2.2** | Risk Management 2 | 6/24/2011 | 6/24/2011 | 6/24/2011 | 6/24/2011 | 1 hr | 1 hr | 1 hr | 1 hr | 100 | 1 | 1 |
| **1.4.2.3** | Risk Management 3 | 7/1/2011 | 7/1/2011 | 7/1/2011 | 7/1/2011 | 1 hr | 1 hr | 1 hr | 1 hr | 100 | 1 | 1 |
| **1.4.2.4** | Risk Management 4 | 7/9/2011 | 7/9/2011 | NA | NA | 3 hrs | 3 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.2.5** | Risk Management 5 | 7/15/2011 | 7/15/2011 | NA | NA | 1 hr | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.2.6** | Risk Management 6 | 7/22/2011 | 7/22/2011 | NA | NA | 1 hr | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.2.7** | Risk Management 7 | 7/29/2011 | 7/29/2011 | NA | NA | 1 hr | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.2.8** | Risk Management 8 | 8/5/2011 | 8/5/2011 | NA | NA | 1 hr | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.2.9** | Risk Management 9 | 8/12/2011 | 8/12/2011 | NA | NA | 1 hr | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.2.10** | Risk Management 10 | 8/19/2011 | 8/19/2011 | NA | NA | 1 hr | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.2.11** | Risk Management 11 | 8/26/2011 | 8/26/2011 | NA | NA | 1 hr | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.2.12** | Risk Management 12 | 9/2/2011 | 9/2/2011 | NA | NA | 1 hr | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.2.13** | Risk Management 13 | 9/9/2011 | 9/9/2011 | NA | NA | 1 hr | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.2.14** | Risk Management 14 | 9/16/2011 | 9/16/2011 | NA | NA | 1 hr | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.2.15** | Risk Management 15 | 9/23/2011 | 9/23/2011 | NA | NA | 1 hr | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.2.16** | Risk Management 16 | 9/30/2011 | 9/30/2011 | NA | NA | 1 hr | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.2.17** | Risk Management 17 | 10/7/2011 | 10/7/2011 | NA | NA | 1 hr | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.2.18** | Risk Management 18 | 10/14/2011 | 10/14/2011 | NA | NA | 1 hr | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.2.19** | Risk Management 19 | 10/21/2011 | 10/21/2011 | NA | NA | 1 hr | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.2.20** | Risk Management 20 | 10/28/2011 | 10/28/2011 | NA | NA | 1 hr | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.2.21** | Risk Management 21 | 11/4/2011 | 11/4/2011 | NA | NA | 1 hr | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.2.22** | Risk Management 22 | 11/11/2011 | 11/11/2011 | NA | NA | 1 hr | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.2.23** | Risk Management 23 | 11/18/2011 | 11/18/2011 | NA | NA | 1 hr | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.2.24** | Risk Management 24 | 11/25/2011 | 11/25/2011 | NA | NA | 1 hr | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.2.25** | Risk Management 25 | 12/1/2011 | 12/1/2011 | NA | NA | 1 hr | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| 1.4.3 | **Update Project Plan** | **6/17/2011** | **12/1/2011** | **6/17/2011** | **NA** | **26.5 hrs** | **5.5 hrs** | **4.5 hrs** | **4.5 hrs** | **12** | **0.82** | **1** |
| **1.4.3.1** | Plan Update 1 | 6/17/2011 | 6/17/2011 | 6/17/2011 | 6/17/2011 | 0.25 hrs | 0.25 hrs | 0.25 hrs | 0.25 hrs | 100 | 1 | 1 |
| **1.4.3.2** | Plan Update 2 | 6/24/2011 | 6/24/2011 | 6/24/2011 | 6/24/2011 | 0.25 hrs | 0.25 hrs | 0.25 hrs | 0.25 hrs | 100 | 1 | 1 |
| **1.4.3.3** | Plan Update 3 | 7/1/2011 | 7/1/2011 | 7/1/2011 | 7/1/2011 | 4 hrs | 4 hrs | 4 hrs | 4 hrs | 100 | 1 | 1 |
| **1.4.3.4** | Plan Update 4 | 7/9/2011 | 7/9/2011 | NA | NA | 1 hr | 1 hr | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.3.5** | Plan Update 5 | 7/15/2011 | 7/15/2011 | NA | NA | 1 hr | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.3.6** | Plan Update 6 | 7/22/2011 | 7/22/2011 | NA | NA | 1 hr | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.3.7** | Plan Update 7 | 7/29/2011 | 7/29/2011 | NA | NA | 1 hr | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.3.8** | Plan Update 8 | 8/5/2011 | 8/5/2011 | NA | NA | 1 hr | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.3.9** | Plan Update 9 | 8/12/2011 | 8/12/2011 | NA | NA | 1 hr | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.3.10** | Plan Update 10 | 8/19/2011 | 8/19/2011 | NA | NA | 1 hr | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.3.11** | Plan Update 11 | 8/26/2011 | 8/26/2011 | NA | NA | 1 hr | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.3.12** | Plan Update 12 | 9/2/2011 | 9/2/2011 | NA | NA | 1 hr | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.3.13** | Plan Update 13 | 9/9/2011 | 9/9/2011 | NA | NA | 1 hr | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.3.14** | Plan Update 14 | 9/16/2011 | 9/16/2011 | NA | NA | 1 hr | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.3.15** | Plan Update 15 | 9/23/2011 | 9/23/2011 | NA | NA | 1 hr | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.3.16** | Plan Update 16 | 9/30/2011 | 9/30/2011 | NA | NA | 1 hr | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.3.17** | Plan Update 17 | 10/7/2011 | 10/7/2011 | NA | NA | 1 hr | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.3.18** | Plan Update 18 | 10/14/2011 | 10/14/2011 | NA | NA | 1 hr | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.3.19** | Plan Update 19 | 10/21/2011 | 10/21/2011 | NA | NA | 1 hr | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.3.20** | Plan Update 20 | 10/28/2011 | 10/28/2011 | NA | NA | 1 hr | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.3.21** | Plan Update 21 | 11/4/2011 | 11/4/2011 | NA | NA | 1 hr | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.3.22** | Plan Update 22 | 11/11/2011 | 11/11/2011 | NA | NA | 1 hr | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.3.23** | Plan Update 23 | 11/18/2011 | 11/18/2011 | NA | NA | 1 hr | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.3.24** | Plan Update 24 | 11/25/2011 | 11/25/2011 | NA | NA | 1 hr | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.3.25** | Plan Update 25 | 12/1/2011 | 12/1/2011 | NA | NA | 1 hr | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| 1.4.4 | **Status Presentations** | **6/23/2011** | **6/24/2011** | **6/23/2011** | **NA** | **75 hrs** | **5 hrs** | **5 hrs** | **5 hrs** | **6.67** | **1** | **1** |
| **1.4.4.1** | Presentation 1 | 6/23/2011 | 6/24/2011 | 6/23/2011 | 6/24/2011 | 5 hrs | 5 hrs | 5 hrs | 5 hrs | 100 | 1 | 1 |
| **1.4.4.2** | Presentation 2 | NA | NA | NA | NA | 5 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.4.3** | Presentation 3 | NA | NA | NA | NA | 5 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.4.4** | Presentation 4 | NA | NA | NA | NA | 5 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.4.5** | Presentation 5 | NA | NA | NA | NA | 5 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.4.6** | Presentation 6 | NA | NA | NA | NA | 5 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.4.7** | Presentation 7 | NA | NA | NA | NA | 5 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.4.8** | Presentation 8 | NA | NA | NA | NA | 5 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.4.9** | Presentation 9 | NA | NA | NA | NA | 5 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.4.10** | Presentation 10 | NA | NA | NA | NA | 5 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.4.11** | Presentation 11 | NA | NA | NA | NA | 5 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.4.12** | Presentation 12 | NA | NA | NA | NA | 5 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.4.13** | Presentation 13 | NA | NA | NA | NA | 5 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.4.14** | Presentation 14 | NA | NA | NA | NA | 5 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |
| **1.4.4.15** | Presentation 15 | NA | NA | NA | NA | 5 hrs | 0 hrs | 0 hrs | 0 hrs | 0 | 0 | 0 |

# Quality Management Plan

## Purpose

The purpose for a quality management plan is to ensure all requirements and product specifications are reliable. The plan outlined below will be used as a guideline to ensure MAVS system will present the highest quality feasible.

## Plan Components

### Documentation

All team members will review the documentation for consistency throughout the project before any final draft is due. All team members will be responsible for the sections they are assigned and are expected to meet all deadlines the team sets forth. All documentation will also be peer reviewed. All documentation will be version controlled via GitHub and Google Documents.

### Software

All software development will be of a modular design and will be coded using general coding standards. Generic classes, methods, and naming conventions will be used for readability and consistency. The code written will be tested extensively and debugged accordingly. The code that is changed and updated will be documented and version controlled to ensure project recovery.

### Design

The architecture design specifications and detailed design specification will be used to outline the project’s design development. This documentation will be used to develop a simple and good design. Each component of the system will be developed via a modular structure to allow re-usability, readability, and consistency. The project design will be documented in our Architectural Design and Detailed Design which will be subject to peer review. The design will also ensure that the project does not deviate from the initial scope.

### Test Plan

Each component of the project will be tested to ensure that all the functionality of the project is performing up to standards. Any errors that come up in the testing phase will be noted in an error log to assist in the debugging process. After all the components are integrated together, the whole system will be tested thoroughly until the team deems the product acceptable. This will be documented in the Systems Test Plan which will be subject to peer review.

### Hardware

The hardware will be implemented by each component and then integrated fully into the project. During this time the hardware will be tested for reliability and functionality. Once the tests are passed the individual components will be integrated into the project. From there, all the hardware will be tested accordingly.

# Communications Plan

## Team Communication

The team communication plan is an outline allowing the stakeholders to be aware of the project status, deliverables, and events.

### Team Meetings

For Senior Design, Team MAVS shall schedule meetings as needed. During the team meetings we will discuss current progress, assign tasks, and future assignments. The team will also use this time to prepare for presentations and voice any concerns or issues that any member may have.

### Email

Team MAVS will primarily use Google Groups email as a form of communication. The team leader will email a list of items to be discussed in the next team meeting. One team member will be assigned to take team minutes during the team meetings, and email what was discussed as a means for record taking and tracking actual time spent in team meetings. The team will discuss anything else pertinent to the project through email as needed.

### Skype

Team MAVS will use Skype for video conferencing when one or more team members are unable to make a team meeting in person. Skype will also be used if a team member is out of town as a means of communicating with that member. Skype also will be used as a mean of communicating quickly with other team members via chat, call, or video.

### Cell Phones

Team MAVS will use cell phones as a secondary means of communication. Cell Phones will be used to contact another team member for urgent matters, team problems, or any other issues that need to be handled.

# Change Management Plan

## Purpose of Integrated Change Management Plan

The MAVS System is a complex project that will inevitably involve change. In order to control the amount of change the project will undertake, we as a team have set up a change process in order to control change. Change will be considered throughout the life of the project.

The purpose of the Integrated Change Control Plan is to define all processes, practices, tools, review bodies, and authority necessary to monitor and control project performance, identified change and the potential impact of change on project objectives. The process outlined below was decided by all team members as MAVS Systems’ change control plan. This will allow the team to determine whether the change presented will be implemented or rejected.

## Roles and Responsibilities

### Project Sponsor

The project sponsor will be allowed to suggest changes to the product through the requirements and implementation phase as he/she sees fit***.***

### Project Manager

The project manager will be responsible to access the presented change and schedule a team meeting to discuss this change. The project manager will also fill out the change control form as displayed in 9.4.

### Project Team

The project team will be responsible for attending the scheduled change control meeting as well as provide any input on the feasibility of the change. The team will be responsible to analyze the time and cost management vigorously before voting on whether the change will be accepted or rejected.

### Other Stakeholders

Other Stakeholders will be able to present changes as related to the process. One team member will be an overseer of the change control process to ensure all areas are discussed and the change control form is filled out in its entirety.

## Review and Approval Process

A change that is presented by any stakeholder will be subjected to intense scrutiny before being accepted or rejected. The suggestions will be discussed in a team meeting scheduled by the team leader. During these meetings, the team will discuss the feasibility, time, cost, and relevance of the proposed change. If the team decides to proceed with the change, the team leader will begin filling out the change control form. After the form is filled out entirely and the team member responsible to oversee the change control process approves, the form will be emailed to the project’s sponsor. Once the sponsor and team leader signs the change control form, the change will be approved and finalized. If further changes need to be discussed on the change presented, the change will have to go through the change control process again.

## Change Identification, Documentation, Implementation and Reporting

The changes that are approved will have to be documented on the change control form. The document will be emailed to the team sponsor, stakeholders, and team members to have on record. At this time the team will begin to integrate the change into the project plan without deterring too far away from the original project. The projects WBS will be updated accordingly.

The following form will be used to document all changes.

|  |  |
| --- | --- |
| **MAVS Systems Change Request Form** | |
|  | |
| |  |  | | --- | --- | | **Person making initial request:** |  | | **Date of initial request:** |  | | **Brief Title:** |  | | **Description:** |  | |  |  | | |  |  | | --- | --- | | **Priority:** | **Critical**  **High**  **Standard**  **Low** | | **Type:** | **Hardware**  **Firmware**  **Software**  **Other** | | **Component(s):** |  | | **Meeting Date:** |  | | **Due Date:** |  | | **Comments:** |  | |
| MAVS Systems signature: | Date Signed: |

**Figure 2 – MAVS Systems Change Request Form**

## 

## Re-baselining

Re-baselining the project is setting a certain plan in the WBS for cost management and schedule updates. Baselining will be done in the beginning stages of the project and is expected to develop throughout the life of the project. As change is implemented and accepted, the team will conduct a meeting to discuss whether re-baselining is needed. If it is needed, the team will update the WBS structure to accommodate the changes. When the team decides if re-baselining is needed, the team leader will notify via email the sponsor, and all stakeholders.

# Risk Management Plan

## Purpose of Risk Management Plan

Risk management is required by our project so that we are not caught off guard by a detrimental event that could have been prevented or at least lessened in severity. Bad luck is a given, risk management is a way to lessen the impact.

## Roles and Responsibilities

* **Project Sponsor:** Responsible for informing team of issues he foresees. He is not responsible for actively seeking risks, just informing the team of potential risks.

* **Project Manager:** Responsible for consulting with risk manager to come up with contingency plans and present them to the team for approval.
* **Project Team:** Responsible for actively gathering information about any risks they can think of that might affect the project.
* **Project Stakeholders:** Responsible for informing team of issues he foresees. He is not responsible for actively seeking risks, just to inform the team of any that he knows of.
* **Risk Manager:** Responsible for evaluating and ranking all risks. He is also in charge of informing other team members of potential risks and developing a risk mitigation plan.

## Risk Identification

In each team meeting, we will brainstorm about what new risks have arisen and what risks have changed. The risk manager will be in charge of making the changes to our risk repository.

## Risk Triggers

Risk triggers are events that let the team know about possible risks. These triggers shall be analyzed and necessary action shall be taken, inhibiting these triggers from turning into problems.

The following are some risk triggers for MAVS Team:

* Missing Internal Deadlines
* Failing Reviews
* Team Member Feedback
* Sponsor Alert
* Risk Exposure/Rank Change
* Team Conflicts

## Risk Analysis

After we identify risks, we classify them based on probability of loss and size of loss. Size of loss is a duration that we think we will lose if the risk comes to fruition based on experience. The probability of loss is determined by the adjective we feel best describes the probability of loss. The adjective is equated to a percentage based on the following table.

**Table 5 - Risk Probability Definition**

|  |  |
| --- | --- |
| **Description** | **Probability** |
| Highly Likely | 90% |
| Very Good Chance | 75% |
| Probable | 66% |
| Likely | 50% |
| Improbable | 33% |
| Unlikely | 25% |
| Highly Unlikely | 10% |

We then multiply the probability of loss by the size of loss to get the risk exposure.

**Table 6 - Risk Analysis**

|  |  |  |  |
| --- | --- | --- | --- |
| **Risk** | **Probability of Loss** | **Size of Loss (weeks)** | **Risk Exposure (weeks)** |
| Team members burned out | 60% | 3 | 1.8 |
| Schedule omits necessary tasks | 75% | 1.5 | 1.125 |
| Team member becomes unavailable | 25% | 1 | .25 |
| A delay causes cascading Delays | 25% | 1 | .25 |
| Learning curve is steeper than thought | 50% | 1 | .5 |
| Missed deadline | 33% | 1 | .33 |

## Risk Severity

The following table shows the severity we have designated for some of our risks.

**Table 7 - Risk Severity**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Risk** | **Priority** | **Strategy** | **Description of Action** | **Trigger** |
| Team members burned out | High | Mitigation | Constantly monitor schedule and extend deadlines if necessary | Missing Internal Deadlines, Sign of fatigue, Team conflicts, Team Member Feedback |
| Schedule omits necessary tasks | High | Mitigation | Constantly monitor schedule and set many mini-milestones | To do additional tasks becomes evident |
| Team member becomes unavailable | Medium | Mitigation | Alert team as soon as conflict arises | Team Member Feedback |
| A delay causes cascading Delays | Medium | Mitigation | Early detection of risks | Any delay |
| Learning curve is steeper than thought | Low | Mitigation | Adding research time into the planning process | Missing Internal Deadlines  Team Member Feedback |
| Missed internal deadline | Low | Mitigation | Schedule padding shall be implemented in high risk & most uncertain areas | Missing Internal Deadlines  Team Member Feedback |

## Risk Response Planning

Our risk response plan tells how we are going to deal with risk when they are identified. First, we will try to avoid risks by taking the path with lowest risk. This is done through researching alternatives that pose a lower risk. Second we will try to lower the impact of a risk through research and as a result will lower the amount of time loss a risk would cause. After the risks are analyzed, we will create a plan on how to minimize the risk.

## Risk Documentation and Reporting

Google Groups will be used to track risks. Team members will create a new post if a risk is identified. The risk manager will keep the group up to date of impending risks and mitigation strategies using Google Groups posts.

## Risk Control

Risks will constantly be reported to the risk manager who will compile in a central document that is readily available to all team members. The risk manager will publicize the top ten risks during weekly team meetings. Upon activating a risk trigger, the risk manager will alert the team so any contingency plan can be acted upon.

# 11. Staffing Management Plan

## Purpose of the Staffing Management Plan

The staffing management plan outlines the staff needed for MAVS Systems to complete the Senior Design project. This plan defines how MAVS Systems shall handle addition or loss of project personnel.

## Roles and Responsibilities

Please refer to Section 1.3 – Roles and Responsibilities

## Project Organization

Please refer to Section 1.3 – Roles and Responsibilities

## Resource Requirements

The MAVS System requires expertise in multiple areas including multiple hardware platforms, multiple software platforms, animal behavior, human behavior, crime prevention, building construction, materials, development tools, project tools, presentation tools, collaboration tools, and documentation tools. This project requires excellent oral and written communication skills. Individual team members are responsible for obtaining the required skills necessary to fulfill their duties. Members of MAVS Systems are responsible for following the rules outlined in this document.

## Resource Staffing Plan

All five team members have been assigned roles and responsibilities, detailed in section 1.3. The MAVS Systems team makeup has been frozen for the duration of the project. However, outside parties will assist MAVS Systems. Professor Mike O’Dell, Marcus Oladell, Professor Manfred Huber, Senior Design I, and Senior Design II have agreed to review specific project deliverables. Additional consultants might be brought on for advice or to assist in certain areas.

## Resource Constraints

MAVS Systems is limited to the five members detailed in section 1.3. No other personnel shall join the team for the duration of the project.

## Staffing Contingency Plans

The five members of MAVS Systems, the team sponsor, and development manager are listed in section 1.3. Additional staff shall not be added to the team for the duration of the project. If any MAVS Systems team members leave the project, the project manager will divide up the duties of the team among the remaining team members. If the project manager leaves, MAVS Systems shall hold a vote at the next team meeting for the new project manager. If the team sponsor leaves, the project lead and development manager shall find another team sponsor. If the development manager leaves, MAVS Systems will work with Senior Design I, Senior Design II and the UTA CSE department to find a new development manager. If the project budget is reduced, MAVS Systems shall work with the sponsor and development manager to secure additional sources of funding.

## Training Requirements

The MAVS System requires a wide variety of knowledge across multiple hardware and software platforms, building construction, development tools, project tools, presentation tools, collaboration tools and documentation tools. Team members are responsible for learning the tools necessary to fulfill their obligations. All stakeholders are available to assist individual team members for their education. In certain circumstances, MAVS Systems might conduct team training sessions.

# Procurement Management Plan

## Purpose of the Procurement Management Plan

MAVS Team and Senior Design are unable to create or supply all the products and services necessary to complete the project. MAVS Team needs to use external sources for expertise in certain areas to assist in completing all required project deliverables. Procurement planning gives the project team knowledge and confidence to obtain quality products and services from qualified vendors in a timely manner.

## 12.2. Roles and Responsibilities

The following section is an expansion of the information in Section 1.3 – Roles and Responsibilities as it relates to the Procurement Management Plan. The information in section 12.2 does not supersede section 1.3.

**Project Sponsor – Dr. David Levine**

Dr. Levine shall specify functional requirements and can suggest components to fulfill these requirements.

### Technical Advisor – Marcus Oladell

### Mr. Oladell shall provide technical advice for obtaining technical components for the MAVS System.

**Department Manager – Dr. Manfred Huber**

Dr. Huber shall approve the purchase of all parts before any purchase order is made.

**Project Team – MAVS Systems**

MAVS Team shall determine the product components required to construct the MAVS System prototype along with best way to obtain the components.

**Procurement Manager – Karl Feinauer**

Mr. Feinauer shall fill out the purchase orders and meet with Professor O’Dell to obtain the required project components. Mr. Feinauer shall track the delivery of the project components.

**Treasurer – Ivan Fan**

Mr. Fan shall keep track of the budget, and maintain financial records for the duration of the project. He shall keep a list of owners of the borrowed components.

## 12.3. Required Project Planning and Procurements

MAVS Team shall determine the product components required, and purchase the components during the design phase. Purchasing of the product components shall start no earlier than after the requirements gate review is passed. Exceptions can be made for components with a long delivery time or borrowed components. Product components shall be ordered no later than ten days before the components are required. For low cost components, additional quantities may be ordered to keep as backup.

## Description of Items/Services to be acquired

The MAVS System shall detect events via various sensors, and use a network camera to capture an active video feed of the outside of a domicile. The system will also send alerts to the user through their mobile phone. The following is a list of the major product components required to construct the MAVS System. MAVS Team reserves the right to alter this list.

* Network Camera
* Various sensors (e.g. motion sensors, glass break sensors, etc.)
* Microcontroller to control sensors
* Computer to run notification system
* Cellphone running Android 2.0 or later with Internet access
* Internet connectivity for the notification system

## IT Acquisition Process

MAVS Team shall make a list of all product components required to construct the MAVS System prototype, along with a business case and projected costs. The list shall be reviewed and optimized by MAVS Team to minimize the required resources. For product components that can be borrowed, team members shall contact the stakeholders to obtain the components. For components that must be purchased, a vendor shall be determined based on price, performance, total cost and availability. The procurement manager shall fill out the purchase orders and meet with the department manager for approval.

The procurement manager shall order and receive the project components.

## Solicitation Planning

MAVS Team shall make a list of all product components required to construct the MAVS System prototype. A list of stakeholder and vendors shall be compiled who are able to provide individual components. Stakeholders and vendors shall be selected based on price, performance, total cost and availability. Team members shall contact stakeholders for borrowed components. The procurement manager shall follow the process for purchasing necessary product components.

## Applicable Conditions

The MAVS System project budget shall not exceed $800. Items may be borrowed from Dr. Levine, past Senior Design projects, or other stakeholders. These items shall be returned after completion of the project.

# Project Closeout Report

## Project Closeout Report

The project closeout report is an opportunity for MAVS Team to analyze the MAVS System project after completion. The report helps MAVS Team learn from their mistakes and improve planning for future projects. The report gives another team a place to start for future development of the MAVS System. The exact contents of the closeout report are specified by the department manager.

## Purpose of Closeout Report

The MAVS System closeout report insures personnel, contract, administrative and financial issues are resolved, and documents are archived. Lessons learned are captured in the project closeout report helping future teams not to repeat the same mistakes MAVS Team made. The report requires the MAVS Team closely examine the MAVS System project after the project is finished and the prototype is delivered. The closeout report exists as a starting point for future development of the MAVS System product. The report serves as a starting point for future projects by the MAVS System team members.

## Administrative Closure

### Were the objectives of the project met?

After the MAVS System prototype is completed, the prototype shall be compared to the Service Requirements Document (SRD) evaluating the requirements specified in the document. The review shall be done by MAVS Team and the project sponsor. Requirements not fulfilled shall be documented in the closeout report for future reference.

### Archiving Project Artifacts

MAVS Team shall store and maintain all project documents from the beginning of the project. The documents will be stored on XP-Dev.com (Subversion), SkyDrive and Dropbox. All final versions of team documents shall be bound in team binders after the completion of the project. Each individual project notebook shall be stored at a location at the discretion of each team member. Individual project notebooks can be reviewed by contacting the team member owning the notebook. The following important documents shall be maintained:

* Copies of Purchase Requests
* Meeting Agendas
* Team Status Presentations Documents
* System Requirements Document
* Change Requests
* Project Charter
* Project Plan
* Architectural Design Specification
* Detailed Design Specification
* System Test Plan

### Lessons Learned

MAVS Team shall keep a record of lessons learned in the individual status reports. Major lessons learned shall be documented in the project closeout report to avoid repetition of mistakes. Team members shall record major lessons learned in their individual project notebook as well. Lessons learned shall be incorporated into the risk management plan where applicable.

### Final Customer Acceptance

After the MAVS System prototype is completed, MAVS Team shall meet with the team sponsor. The meeting shall review the prototype with the requirements defined in the SRD. The prototype shall be demonstrated for our team sponsor at the meeting or shortly afterwards with other stakeholders present. If the sponsor is satisfied with the prototype, the prototype shall be delivered to the department manager and the sponsor shall sign acceptance documents. If the sponsor is not satisfied, a plan shall be implemented to satisfy the sponsor in a future release.

### Financial Records

The MAVS System treasurer outlined in section 1.3 shall be responsible for documenting all financial transactions and storing copies of purchase requests. The financial records shall be maintained in Dropbox.

### Final Project Performance Report

The final project performance report shall be created after the project is completed. The information in this report shall be compiled from feedback from MAVS Team, project sponsor, department manager, and all other project stakeholders. The performance report shall be used for information for future projects. The report shall review the following:

* System Requirements Document
* Architectural Design Specification
* Project Charter
* Project Plan
* Detailed Design Specification
* System Test Plan
* Final Source Code Files, Build Instructions, & Scripts
* Product Installation & Set-up Instructions
* Product User’s Manual
* Demo Instructions
* Follow-on Project Instructions
* Team Status Presentations Documents
* Meeting Agendas
* Change Requests
* Copies of Purchase Requests