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

ALWAYS HOME

Team: Always Home

Project: Smart Door

Team Members:
James Lunsford
Khuong Nguyen
Juan Duarte
Jay Otterbine
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<td>Administrative Closure</td>
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1 General Organization

1.1 Project Manager

The project manager of this project is James Lunsford, who was chosen as the team leader and the project manager due to his experience with management and his desire to take the leader role. The project manager will be responsible for making agenda, maintaining Microsoft Project and assign tasks to other team members based on their ability. He will also oversee all individual tasks and urge team member to make sure everyone is on track.

1.2 Project Oversight

The project will be handled in multiple cooperative ways. First of all, on an internal control level, each team member will record his progress and stay in touch with other team members via an online project management tool. The project manager will monitor the progress of each individual task that he assigned to each team member earlier to make sure the task is properly handled and finished on time. Once the tasks are completed, a team review will be performed on each individual task to ensure that everything properly flows together and is concise. Finally, on an external control level, team will meet with the sponsor to discuss with him the progress and the direction the project is going so he can provide guidance and participate in the project validation process.

1.3 Roles and Responsibilities

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<th>Assigned To</th>
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<td>Project Sponsor</td>
<td>• Provide team with guidance and expertise.</td>
<td>Sean Jones of ICU Security &amp; Surveillance</td>
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<td></td>
<td>• Act as the customer for whom the project is intended to serve.</td>
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<td>Project Supervisor</td>
<td>• Mentoring and consultation.</td>
<td>Dr. Michael O’Dell</td>
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<td></td>
<td>• Plan Approval</td>
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<td>• Assign Tasks.</td>
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<td>• Create milestone for deliverables.</td>
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### 1.4 Project Constraints

Team will have to deal with certain constraints during the project including timing, cost and resources. Specifically, the constraints are as follows:

- Small project budget ($800).
- Time constraint. Team members have tie schedule due to some of team members have work.
- Video streaming on android is not well supported.
- Multiple platform and compatibility among platforms.

### 1.5 Project Assumptions

The assumptions our group has made for this project include:

- Product will make use of existing technologies.
- Team will usually meet once a week. If there is nothing important, team won’t meet.
- Product will be implemented on Android operating system.
- Deliverables will be completed and submitted by project due dates.
- Team will make the best effort to deliver the product as expected by project supervisor and customer.
## 1.6 Preliminary Schedule and Cost Estimates

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<th>Project Milestones</th>
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<td>ADS Baseline</td>
<td>01/20/2014</td>
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2 Scope Statement

The goal of the Smart Door is to provide a system to facilitate, and improve interactions with visitors to one’s home or business. The Smart Door offers real time notification when the door bell is rung, or the door is opened or closed. The system features two way audio and one way video from the door to the mobile application. The mobile application will allow the user to view a live feed of the door, and also lock and unlock the door remotely. The system will include a web application that will contain a history of all the events the door records. The history will consist of a log of every time the door opens and closes with a timestamp, and a log of every door-to-mobile video interaction with a timestamp. The video log will allow the user to view, delete, and download the videos.

Team Always home has agreed to complete all priority one requirements called out in the acceptance criteria of the SRS so that our product will be fully functioning in its intended features. In order to do this we have identified research areas, prioritized the requirements and begun studying the areas of development where our expertise has been identified as insufficient. Based on the analysis and research we have completed so far we believe that we can meet all acceptance criteria by the project due date.

Based on our analysis and progress during the previous four months we anticipate completing all goals in regard to scope of the product development.
3 Cost Management Plan

3.1 Cost Drivers and Tracking
The development costs of the creation of Smart door by Always Home are being monitored along two separate tracks. The first budget is the traditional financial variety. The driving factor for the financial budget is the costs of electronic components for the prototype. The financial budget will be tracked in a simple ledger described below. The other track is the labor budget. The main driver for the labor budget is the set of requirements agreed to be completed in order to fulfill the acceptance criteria laid out in the SRS. The labor budget is both planned and tracked in the MS Project plan. These mechanisms are examined in further detail in the following sections of the cost management plan.

3.2 Proposed Monetary Budget
The monetary budget for the development of the Smart Door prototype is not anticipated to approach the eight hundred dollar limit. We are using open source development tools and operating environments so the software budget is negligible. For the android app we will use Google’s development kit in the Eclipse IDE and use android the 4.1.2 OS emulator for testing. For web development and we will open source tools to develop the framework outlined in our ADS document. All of these tools are open source with no restrictions on commercialization of products developed under the open source license. In the hardware development domain we anticipate a greater need for monetary expenditure. The Smart Door prototype requires many components including a microcontroller, electronically operated deadbolt, camera, microphone, speaker, Wi-Fi adapter and a case to contain the components. In addition to the listed components we need to buy multiple microcontrollers to evaluate which is best suited for this application. Fortunately one of the team members has been able to arrange for his employer, Fidelity, to supply microcontrollers for evaluation and prototyping purposes. This means that our total budget will not need to include any microcontrollers which will bring the cost well below our eight hundred dollar threshold.
3.3 Proposed Hour Budget

Unlike the monetary budget, the effort budget is already stretched and likely to exceed the allocated time. The estimation efforts produced for the Smart Door SRS indicate that the project will take from six to nine months with the effort of five people working twenty hours per week. This is a total effort of 2400 to 3600 person hours which is unfortunately well above the budget of two thousand hours. The estimation effort was conducted as a worst case estimate due to the relative inexperience of team Always Home and the fact that the team members have not worked together before. Nonetheless, the estimation result led to planning for project slowdowns and the need to find extra effort. The team will closely track our progress against the schedule laid out in the project plan so that we can stay on pace to finish next May. In the event that the schedule begins to slip we have two methods of adding effort. Our first effort generating technique will be for all team members to commit to working an extra five hours per week on the project. By adding five hours per week each the team will be able to extend the effort generated by six hundred person hours. As a last chance rebalancing in case we fall severely behind our schedule the team will work a normal schedule over the Christmas break. By working twenty hours each per week over this break we can add an additional four hundred person hours of effort to the schedule. In the worst case, we could potentially add one thousand hours of effort to the development schedule which should produce ample time to overcome even the most challenging obstacle.

3.4 Budgetary Analysis

After completing approximately half of the development effort we are completely on budget. Considering the monetary aspect we have spent $0 from our budget so far. Some individual team members have contributed donuts, eggrolls, and energy drinks to help the development effort but this does not come from the project budget. As for the effort budget we have overran by about 20 hours or 4%. The team is comfortable with this amount and has high hopes for achieving similar success in this area next semester.
4 Earned Value Management

4.1 Purpose

Earned Value will serve as a consistent way to measure the productivity of both the individuals of our team, and the team as a whole for Always Home. We will track earned value, as well as other performance metrics, and save them in our Microsoft Project Plan file to ensure we are staying on track with our project development. We will also be using Freedcamp to have an easy to access to-do list for our team to update task we are completing that is associated with our Microsoft Project Plan. These values will be updated by individuals by Friday for each team meeting on Freedcamp and then transferred to Microsoft Project Plan by one team member.

4.2 Components

- BCWS – Planned Value
  - Budgeted Cost of Work Scheduled
- ACWP – Actual Cost
  - Actual Cost of Work Performed
- BCWP – Earned Value
  - Budgeted Cost of Work Performed

4.3 Performance Indices

- CPI – Cost Performance Index
  \[ CPI = \frac{BCWP}{ACWP} = \frac{\text{Earned Value}}{\text{Actual Cost}} \]
- SPI – Schedule Performance Index
  \[ SPI = \frac{BCWP}{BCWS} = \frac{\text{Earned Value}}{\text{Planned Value}} \]
4.4 Earned Value Analysis

In order to accomplish our goals for earned value we must accomplish the following:

- Keep our CPI ≥ 1.0, which shows we spent less time than we estimated or right on schedule. If it falls below 1.0 we spent too much time on task than we had planned.
- Keep our SPI ≥ 1.0, which shows we are ahead of schedule and have finished task ahead of the due date. If it falls below 1.0, then we are behind in our deliverables.

The CPI will track our time budget and it will show if we are spending too much time on things, or finishing quicker than we thought. The SPI will track our schedule and will tell us if we completed more tasks than originally scheduled, or if we have not met some deadlines. By doing this, we will be able to evaluate our estimates better according for each deliverable and task.
5 Scope Management Plan

5.1 Purpose
The Scope Management Plan will formalize both the scope of the Smart Door project and the procedures put in place to facilitate changes to scope. Team Always Home’s project Scope is intended to be like the Constitution; it may not be perfect, but it is almost impossible to change.

At this point in the development process both our system requirements specification and acceptance criteria have been approved by ICU security who agrees that the Smart Door specification will meet all of their needs for a portable web enabled doorway interaction device. Keeping this in mind the scope management plan has been developed to help maintain focus and preclude enlargement of the project beyond what Always Home can accomplish before May of 2014.

5.2 Statement of Scope
The scope of the Smart Door is defined in the System Requirements Specification and above in Section 2 of this document. The scope statement in Section 2 is considered the formal definition of the scope of the Smart Door system. Both the sponsor and the development team agree that adhering to this scope will produce a fully functional product. For this reason the development team will not change the scope by adding or removing features except by following the procedures outlined below in the Feature Expansion and Scope Change Procedure sections of this document.

5.3 Feature Expansion
Adding features or expanding defined capabilities will not necessarily improve or diminish the product but does have a high likelihood of delaying delivery. Additionally our schedule has a hard cutoff date in May 2014. For these two reasons it is in the best interest of the development team to limit changes to the project requirements and project scope. As much as we resist changes we realize that in some cases change will be necessary for this reason the Scope Change Procedures are defined below.
5.4 Scope Change Procedure

The currently established procedure for adding or reducing the functionality of the Smart Door system is that all members of the development team shall agree on the change to the feature set. Before formalizing the SRS all team members agreed that the requirements and functionality described therein fully described the Smart Door while not conflicting with each other. Since our sponsor, ICU Security, does not have an interest in the actual development effort they will be consulted in the event of a change to the project but they cannot veto or overrule the decisions of the development team.

Due to high likelihood that not all team members will agree to any particular proposed change there is a process for dispute resolution. If there are one or two dissenting team members who do not agree with a particular proposed change then it will be up to the domain leader to decide whether or not the change will be implemented.
6 Work Breakdown Structure

6.1 Work Breakdown Structure

I. System Requirements Spec

Guidance: Requirements Worksheet
System Requirements Specification Guide

Dates:
1st Draft Due: 10/9/2013
Always Home Deadline: 10/27/2013
Requirements Gate Review: 10/30/2013 – 11/08/2013
Baseline Due: 10/29/2013

Content Items
1. Intro Material
2. Table of Contents
3. Document Revision History
4. List of Figures
5. List of Tables

A. Product Concept

B. Product Description and Functional Overview
1. Schedule Analysis
2. External Inputs and Outputs
3. Product Interfaces

C. Customer Requirements
D. Packaging Requirements
E. Performance Requirements
F. Safety Requirements
G. Maintenance and Support Requirements
H. Other Requirements
I. Acceptance Criteria
J. Use Cases

K. Feasibility Assessment
1. Scope Analysis
2. Research
3. Technical Analysis
4. Cost Analysis
5. Resource Analysis
6. Schedule Analysis

L. Future Items

II. Project Charter
Guidance: Charter Guideline
Dates: 1st Draft Due: 10/09/2013
Always Home Deadline: 10/16/2013
Baseline Due: 12/04/2013

Content Items
A. General Organization
1. Project Manager
2. Project Oversight
3. Roles and Responsibilities
4. Project Constraints
5. Project Assumptions
6. Preliminary Schedule and Cost Estimates
B. Scope Statement
C. Cost Management Plan
D. Earned Value Management
E. Scope Management Plan
F. Work Breakdown Structure
G. Quality Management Plan
H. Communications Plan
I. Change Management Plan
1. Purpose of Integrated Change Management Plan
2. Roles and Responsibilities
3. Review and Approval Process
4. Change Identification, Documentation, Implementation and Reporting
J. Risk Management Plan
1. Purpose of Risk Management Plan
2. Roles and Responsibilities
3. Risk Identification
4. Risk Triggers
5. Risk Analysis
6. Risk Severity
7. Risk Response Planning
8. Risk Documentation and Reporting
9. Risk Control
K. Procurement Management Plan
   1. Purpose of the Procurement Management Plan
   2. Roles and Responsibilities
   3. Required Project Procurements and Timing
   4. Description of Items/Services to be acquired

L. Project Closeout Report
   1. Purpose of Closeout Report
   2. Administrative Closure
   3. Lessons Learned
   4. Plans for Post Implementation Review (PIR)
   5. Final Customer Acceptance
   6. Financial Records
   7. Final Project Performance Report

III. ADS
   Guidance: Architecture Documentation Guidelines
              Architecture Gate Review Checklist
   Dates: Rough Draft: 12/04/2013
          “Gate Review”: 12/11/2013

   Content Items
   A. Introduction
   B. Meta Architecture
   C. Layer Definition
   D. Inter-Subsystem Data Flow
   E. UI Layer – Hardware I/O
   F. UI Layer – Web GUI
   G. UI Layer – Android GUI
   H. Application Process Layer – Microcontroller Application
   I. Application Process Layer – Web Application
   J. Application Process Layer – Android Application
   K. Data Process Layer – Server OS
   L. Data Process Layer – Microcontroller Data Controller
   M. Data Process Layer – Server Data Controller
   N. Operating System Dependencies
   O. Requirement Traceability Matrix
   P. Testing Considerations
IV. MS Project file

Guidance: Sample Project file from Paul


Content Items

Q. Roles
R. Assign Values
S. Weekly Reporting
T. Architecture Design Specification
## 6.2 Microsoft Project Plan

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### Project Summary
- **Total Work (Hours):** 400
- **Total Work (Cost):** $40,000
- **Total Work (Cals):** 2000
- **Total Work (PMP):** 100%
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</table>
7 Quality Management Plan

7.1 Purpose
The Quality Management Plan (QMP) is necessary to ensure product design and implementation meets specifications. It will be used as a way to validate and verify our product solves the original problem given. This includes our requirements and those of our stakeholders.

7.2 Requirements Analysis and Review
This is a continual review process that ensures that specified requirements are still feasible and within the scope of our design. The SRS requirements are not engraved in stone. The team will constantly monitor our requirements and receive stakeholder feedback to ensure product viability.

7.3 Feasibility
This is similar to the requirements analysis and review, except this focuses on our team’s ability to meet project requirements. If the team is unable to deliver a product that meets its specifications then we will need to determine how feasible the feature is that is not meeting requirements. This is a combination of Risk Management, but requires a QMP for qualitative and quantitative analysis.

7.4 Documentation
Documentation is critical to the success of our product. It not only increases the longevity of the product by allowing other developers to extend its capabilities, but it also acts as a risk mitigation tool for identifying design and implementation mistakes. Our documentation should be of such quality that all members on the team are able to discern each other’s design from their description.

7.5 Coding Review and Analysis
The coding review will help the team in two areas. First, it will allow additional team members to verify and validate the implementation to reduce errors and confusion. Second, we will all have knowledge of the system, which will make our design process more cohesive. It essentially serves to reinforce our product design.

7.6 Testing
Although testing is one of the final stages of our product design, it is one of the only ways to verify our product meets its specification before it hits final stages. The tests will be designed such that stakeholders can visually verify our product meets the SRS.
8 Communications Plan

8.1 Internal Communication

8.1.1 GroupMe
The GroupMe application will be used by the development team as a medium to post quick questions and answers that the whole team needs to evaluate.

8.1.2 Oovoo
The oovoo application will be used to hold team meetings when the team is not able to meet physically. The application allows the team to teleconference and view each other’s computer screen which we will use to write and revise documents as a group.

8.1.3 Freedcamp
The Freedcamp application will be used by the development team to exchange documents, assign work deliverables, and review documents.

8.1.4 Email
Email communication will be used to announce deadlines, weekly meeting agendas, meeting times, sponsor meetings, and lengthy messages.

8.1.5 Phone
Phone calls will be used for urgent questions which only a single team member is able to answer.

8.1.6 Team Meetings
Mandatory meetings will be held every Fridays at 10AM. Optional meetings will be held Wednesdays at 3PM and Saturdays at 12PM. The mandatory meetings will have an agenda emailed at the beginning of the week, and will be used to update the team on the progress made and difficulties encountered. The optional meetings will be used to solve problems and work towards a deliverables in groups.

8.1.7 Git
The Git hub application will be used to hold the projects source code, merge code, and to keep a history of the source code versions.
9 Change Management Plan

9.1 Purpose of Integrated Change Management Plan

Changes are inevitable in a large-scale project. A good plan has to adapt and handle changes well when they arise. While we would like to plan a project so we could avoid alterations at much as we can, it’s vital that we need to have a change management plan for a project. This plan works as a guide on how to take care of changes whenever they come up throughout each phase of development. It helps ensure the ability to thoughtfully and cleverly handle the changes of team members.

9.2 Roles and Responsibilities

Project Sponsor:
The project sponsor may suggest potential changes with the team during a meeting. He will be the major source for proposed changes to the project. In fact, the final decision is for the project sponsor to make. He’s able to approve or reject any other modifications throughout the development process.

Project Manager:
The project manager is in charge of scheduling meetings with sponsors and stakeholders when a potential change is likely arise. He will discuss the qualities of a change proposed by either the sponsor or any stakeholder. Modification suggestions from the any source must first go through the project manager before it takes any further step.

Project Team:
Throughout the project, a team member may suggest any changes to the project. Team will then discuss the possibility of pros and cons of making the proposed changes. Finally, review and vote will be performed before passing the proposal change to the sponsor for approval.

Other Stakeholders:
Other stakeholders can propose alterations to the project. These proposal modifications may be evaluated by the team but no further action will be made unless either of the team or sponsor approves the changes and continues to follow the steps explained.

9.3 Review and Approval Process

When a change is firstly brought up by any source, it must go through the project manager. Changes will be briefly explained in the Change Proposal form. If the project manager finds the proposal change is at least discussable, he will then brought that up to the team in the weekly
meeting. Review and vote of team members will decide whether the proposal changes will be passed on to the sponsor for either passing or rejecting.

### 9.4 Change Identification, Documentation, Implementation and Reporting

The form below is used when an individual would like to propose a change to the project

<table>
<thead>
<tr>
<th>Requester's name: _____________________</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description of Change Requested:</td>
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<tr>
<td></td>
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<tr>
<td>Why is it necessary?</td>
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<td></td>
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<tr>
<td></td>
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<tr>
<td>What this change will impact:</td>
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<tr>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Name</th>
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**Sponsor**

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**CEO**

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10 Risk Management Plan

10.1 Purpose of Risk Management Plan

Due to the complexity, scope, and timeline of our project we must perform a proper risk assessment to ensure we have plans to deal with project exigencies. We have chosen to quantify this uncertainty using probabilities of particular events that could occur and how these events will impact our project. We have chosen to use time to represent the impact of our risks since it is the most crucial element to project completion.

10.2 Roles and Responsibilities

- **Project Sponsor:** Our sponsor, Sean Jones, has extensive experience in home security. Using his expertise we will attempt to mitigate any technological technical risks by probing him for guidance and knowledge on various aspects of our system design and implementation.

- **Project Manager:** As our team leader, James Lunsford, helps to employ the teams energies on the right tasks. He will constantly do sanity checks to make sure we are sticking to our SRS and will also make valuable contributions to project development in his domain.

- **Project Team:** As a team, we have done a requirement and process review to analyze and assess our requirements in accordance with our budget, time, technology and individual capabilities to determine the risks that will impact us the most.

- **Project Stakeholders:** Since our product has both residential and business applications, we are always considering the opinion of people around us – from students and faculty, to family members and business owners. We will also continue to coordinate with Professor O’Dell to ensure our requirements remain feasible.

- **Risk Manage:** The Risk Manager is has been reassigned as a responsibility of Jay Otterbine. He is responsible for tracking risk and directing the team in risk management and avoidance strategies.

10.3 Risk Identification

Although our Risk Manager heads the responsibility in Risk Management, it is critical that the team is proactive in identifying and resolving risk. Specifically, we will keep a repository of risks, small or large, and our progress towards resolution. If the team sees that a particular risk is critical, or has been ongoing, then we will elevate its risk priority to focus more team effort to finding a solution.
10.4 Risk Triggers

Potential triggers that should prompt the team into risk management/avoidance measures. This list is by no means encompasses all the risks our team faces. It is only a guideline of the areas of risk that we have anticipated.

- The team begins to miss deadlines
- Trivial team arguments
- Unproductive team meetings
- Divergence from requirements or team-assigned goals
- Drop in quality of work
- Emotional indicators of stress or non-school related issues
- Requirements changes
- High-risk design areas
- Design interfaces/testing

10.5 Risk Analysis

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<th>Risk Group</th>
<th>Risk</th>
<th>Priority</th>
<th>Prob (%)</th>
<th>Cost (days)</th>
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<td>Streaming Audio/Video</td>
<td>1-Crit</td>
<td>25</td>
<td>7</td>
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<tr>
<td>Schedule</td>
<td>Learning Curve – Languages, APIs, HW interfaces</td>
<td>1-Crit</td>
<td>15</td>
<td>7</td>
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<td>Schedule</td>
<td>Time Management</td>
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<td>50</td>
<td>3</td>
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<tr>
<td>Team</td>
<td>Non-school Stressors</td>
<td>3-Mod</td>
<td>50</td>
<td>3</td>
</tr>
<tr>
<td>Technical</td>
<td>Interface Compatibility</td>
<td>1-Crit</td>
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<tr>
<td>Budget</td>
<td>Cash Shortage</td>
<td>3-Mod</td>
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<td>Technology</td>
<td>Hardware Failure</td>
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<td>Technical</td>
<td>Troubleshooting</td>
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<td>25</td>
<td>7</td>
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<tr>
<td>Team/Sponsor</td>
<td>Feature Creep</td>
<td>3-Mod</td>
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### 10.6 Risk Severity

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<td>Streaming Audio/Video</td>
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<td>Schedule</td>
<td>Learning Curve – Languages, APIs, HW interfaces</td>
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</tr>
<tr>
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<td>Time Management</td>
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<tr>
<td>Team</td>
<td>Non-school Stressors</td>
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<tr>
<td>Technical</td>
<td>Interface Compatibility</td>
<td>Severe</td>
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<td>Budget</td>
<td>Cash Shortage</td>
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<td>Technology</td>
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<tr>
<td>Team/Sponsor</td>
<td>Feature Creep</td>
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### 10.7 Risk Response Planning

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<td>Streaming Audio/Video</td>
<td>Management</td>
<td>There are several choices to implement streaming indirectly. Version limiting is also an option, since newer versions offer greater streaming capabilities.</td>
</tr>
<tr>
<td>Learning Curve – Languages, APIs, HW interfaces</td>
<td>Management</td>
<td>Team members will become experts in their domain and teach working knowledge to team members. This focuses our efforts and broadens knowledge base.</td>
</tr>
<tr>
<td>Time Management</td>
<td>Management</td>
<td>Project Manager will monitor log of each individual’s time spent, and rebalance workload. Team members will also voice concerns of upcoming schedule conflicts (i.e. Exams, Family, Extracurricular, etc…)</td>
</tr>
<tr>
<td>Non-school Stressors</td>
<td>Management</td>
<td>Similar to time management, but all team members will be responsible for monitoring each other. Team must be concerned with each other’s welfare.</td>
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<tr>
<td>Interface Compatibility</td>
<td>Management</td>
<td>Currently doing substantial research to avoid incompatibility surprises. Also reviewing multiple designs for contingencies.</td>
</tr>
<tr>
<td>Cash Shortage</td>
<td>Avoidance</td>
<td>Investigate requirements to ensure we are making economically sound purchases. Use multiple compare shopping – there is never just one tool for the job.</td>
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<tr>
<td>Hardware Failure</td>
<td>Management</td>
<td>Must ensure team and individual awareness and validation of designs and implementation – no square peg round hole incidents.</td>
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<td>------------------</td>
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<td>----------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Troubleshooting</td>
<td>Management</td>
<td>Ensure team members know and utilize the right tool for the job. Take advantage of school, faculty, and internet resources.</td>
</tr>
<tr>
<td>Feature Creep</td>
<td>Avoidance</td>
<td>Attempt to avoid modifying requirements without documented justification and team approval.</td>
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**10.8 Risk Documentation and Reporting**

The team will use a combination of work and error logs, and GitHub’s comprehensive tracking system to suss out potential risks. We will also document solutions to risk issues to ensure mistakes aren’t repeated, which will also serve as a log of our design process and its evolution.

**10.9 Risk Control**

We will use our communication tools to ensure quick communication of potential risks and to brainstorm solutions. Risk priority will determine what topics are given time during team meetings or risks that may require additional resources for resolution.
11 Procurement Management Plan

11.1 Purpose of the Procurement Management Plan
The procurement management plan will detail the process that must be followed in order to acquire the items necessary for the project. The process will ensure that only the items essential to the project completion are purchased. The plan will detail the roles and responsibilities of team members in the procurement process, the time that each item will be acquired, and the items necessary for the project.

11.2 Roles and Responsibilities
Project Manager
Mike O’Dell will have the final say in all purchase orders.

Project Team
Team members will be responsible for researching the items that fall in their assign domains.
- Juan Duarte – Android
- James Lunsford – Enclosures
- Khuong Nguyen – Web/Microcontrollers accessories
- Jay Otterbine – Software

After thorough Research the researcher will present to the rest of the team the top options, and the whole team will vote on the items presented. In case of a tie the team leader James Lunsford will be responsible or the tie breaker.

Project Sponsor
The team sponsor Sean Jones will provide the team procurement consulting for all hardware components.

11.3 Required Project Procurements and Timing
The procurement plan is necessary to ensure that the team acquires the essential items within a safe time frame of the implementation phase. The procurement of items will begin after research has been completed, and all system requirements have been identified. All items will be purchased two week before the implementation phase to allow a cushion for shipping delays.
11.4 Description of Items/ Services to be acquired

List of items the project needs to fully function:

- Micro-controller
- Camera
- USB Soundcard
- Microphone
- Speaker
- USB WIFI Dongle
- Wireless Doorbell
- Electronic Deadbolt
- Enclosure
- Mounting Screws
- Mounting Bracket
12 Project Closeout Report

12.1 Purpose of Closeout Report

Team Always Home project Closeout Report will document several aspects of the project that would normally be captured in the post-mortem or retirement analysis of a project. The information captured in the project closeout report will include, but is not limited to, the following items: Project artifacts, development documentation, lessons learned, post implementation review procedures, acceptance evaluation results, financial records, and final project performance report.

12.2 Administrative Closure

12.2.1 Were the objectives of the project met?

The project will be evaluated against the acceptance criteria from the SRS and the requirements traceability matrix from the ADS. If the Smart Door project has completed all defined from these two development artifacts than the projects technical objectives have been met. In addition to technical objectives there are individual objectives as well, these are not formally defined but they will be reported in the lessons learned section of the closeout report.

12.2.2 Archiving Project Artifacts

Since the Smart Door project is a novel development effort the documentation created during development will be valuable for maintenance and future development efforts. To this end, digital copies of the project documentation will be entrusted with Mr. O’Dell so that he may host it on the Senior design website. Additionally hard copies of the project documentation will be archived by the CSE department at UTA in accordance with department policy. Documentation to be archived wil include, at a minimum, the following documents and artifacts.

- Financial records
- Cost and schedule performance reports and records
- Quality data
- Correspondence
- Meeting Notes
- Status Reports
- Issue and Action Log
- Risk Log
- Contract Files
12.2.3 Lessons Learned

Each team member has been recording lessons learned during the development effort in their engineering log book. The most unique and profound from amongst these lessons will be included in the project closeout report. The closeout report will also include a section for team members to describe how this project will affect their future software development projects.

12.2.4 Plans for Post Implementation Review (PIR)

The post implementation review will be conducted immediately following acceptance testing. This review will generate feedback for the development team to consider going forward into the maintenance phase of the project.

12.2.5 Final Customer Acceptance

The project closeout report will include the results of acceptance testing. These results will include a matrix showing pass/fail for each individual criterion and a list of the stakeholders who were present at the acceptance testing.

12.2.6 Financial Records

All financial records shall be included in the archived materials in accordance with departmental procedures. Additionally a financial expenditure report for the development effort will be an included component of the project closeout report.

12.2.7 Final Project Performance Report

A final project performance report will be included in the closeout report in order to summarize the project’s scope management, schedule performance, cost performance, quality achievements and a review of the risk containment performance. Reasons for cost or schedule variance shall also be discussed in the final project performance report.