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

Overdrive

Auto Performance Analyzer

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<td>25</td>
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<tr>
<td>12.2</td>
<td>Administrative Closure</td>
<td>25</td>
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1 General Organization

1.1 Project Manager

Overdrive’s project manager is Gary Johns, who was chosen because of his years of management experience and desire to take on challenges and bring new ideas to life. The project manager will be responsible for setting up Microsoft Project and keeping it maintained. Along with this, he will schedule and assign tasks to the other team members based on their experience. The project manager will also oversee all individual tasks to make sure that everyone stays on track.

1.2 Project Oversight

Project oversight will be handled in multiple ways. First on a task level, the project manager will stay in contact with team members on individual tasks to make sure they are able to handle the task in the given time or add resources to help get the task done if needed. Next will be a group review once the tasks are complete and assembled together to make sure everything properly flows together and is concise. After this is the team review, where we will get input from another team in the company to provide us with an outside opinion of our work. Finally, will be the meeting with our sponsor to show him our progress and the direction the project is going and make sure we are delivering what is expected and desired.
### 1.3 Roles and Responsibilities

Here are the stakeholders in the Auto Performance Analyzer project and their roles.

<table>
<thead>
<tr>
<th>Role</th>
<th>Responsibilities</th>
<th>Assigned To</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Project Sponsor</strong></td>
<td>Provide team with guidance and expertise.</td>
<td>Dr. Bob Woods</td>
</tr>
<tr>
<td></td>
<td>Act as the customer for whom the project is intended.</td>
<td></td>
</tr>
<tr>
<td><strong>Project Supervisor</strong></td>
<td>Provide team with feedback and review progress</td>
<td>Dr. Michael O'Dell</td>
</tr>
<tr>
<td><strong>Project Manager</strong></td>
<td>Monitor project progress, Create and maintain MS Project, Assign tasks and create schedule for deliverables, Assist team wherever needed.</td>
<td>Gary Johns</td>
</tr>
<tr>
<td><strong>Hardware Development</strong></td>
<td>Lead the design and overall development of the hardware components of the APA project</td>
<td>Zang Pham Raul Hurtado</td>
</tr>
<tr>
<td><strong>Software Development</strong></td>
<td>Develop UMLs, Design GUI, Develop Android Application</td>
<td>Brendon Harris Gary Johns</td>
</tr>
<tr>
<td><strong>Documentation</strong></td>
<td>Revise documents and make sure they are ready to be delivered on due dates, Record meeting notes from group and sponsor meetings</td>
<td>Brendon Harris</td>
</tr>
</tbody>
</table>

Table 1.1

### 1.4 Project Constraints

Overdrive will have to deal with certain constraints during the Auto Performance Analyzer project. The constraints are as follows:

- Project budget of $800
- Most of team has conflicting schedules
- Time constraint of only 6 months to completion
- Team lacks any real experience with this type of project
1.5 Project Assumptions

- Product will make use of existing technologies
- Product will communicate over Bluetooth
- Team will meet at least once a week
- Team will meet with sponsor bi weekly
- Product will be implemented on Android operating system
- Deliverables will be completed and submitted by project supervisor’s due dates
- Team will put forth the effort required to bring the project to desired level expected by both the project supervisor and the project customer

1.6 Preliminary Schedule and Cost Estimates

<table>
<thead>
<tr>
<th>Project Milestones</th>
<th>Due Date</th>
<th>Cost Estimation (Man Hours)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SRS First Draft</td>
<td>7/9/2013</td>
<td>208</td>
</tr>
<tr>
<td>Project Plan First Draft</td>
<td>7/11/2013</td>
<td>8</td>
</tr>
<tr>
<td>Project Charter First Draft</td>
<td>7/11/2013</td>
<td>58</td>
</tr>
<tr>
<td>Requirements Gate Review</td>
<td>7/18/2013</td>
<td>231 (including first draft)</td>
</tr>
</tbody>
</table>
| Draft Architecture Design
  Specification                     | 8/6/2013   | 123                         |
| Baseline Architectural Design    | 8/8/2013   | 138 (including first draft) |
| Baseline Project Charter         | 8/9/2013   | 106 (including first draft) |
| Baseline MS Project file         | 8/9/2013   | 20                          |

Table 1.2
2 Scope Statement

The scope of the Auto Performance Analyzer project is to create a diagnostics module that interfaces with the CAN/BUS system in automobiles to retrieve information about that automobile. The Auto Performance Analyzer will provide a mobile user interface with enhanced tools for data logging, vehicle diagnosis, and real time statistics. The interface will be available for Android devices. The application will be able to display an assortment of gauges, statistics and have a configurable settings panel.

In order to populate the UI with data, the module retrieves this data from the existing CAN/BUS, parse and reformats it. The module will then transmit it over the Bluetooth connection, to the mobile device, in real time.
3 Cost Management Plan

3.1 Introduction
This section will cover the costs, in terms of man-months and man-hours, as well the cost of materials required in US dollars.

3.2 Project Length
There will be approximately 6 months available to complete the project (June through November, plus one week in December). This equates to a maximum of 500 man-hours allowed per team member, or 2000 man-hours total for Team Overdrive with four members. After simple calculations, each member will have approximately 20 hours per week to work on the project.

To determine how long the project will take, Gary has calculated the project’s size estimation in section 11.6 Schedule Analysis of the SRS.

11.6.3 Effort Estimation – Estimation Comparison

<table>
<thead>
<tr>
<th>Technique</th>
<th>Low End Estimation</th>
<th>High End Estimation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jones First Order</td>
<td>7 Months</td>
<td>8 Months</td>
</tr>
<tr>
<td>CoCoMo</td>
<td>7 Months</td>
<td>9 Months</td>
</tr>
<tr>
<td>Lines of Code</td>
<td>5 Months</td>
<td>9 Months</td>
</tr>
<tr>
<td>Average</td>
<td>7 Months</td>
<td>9 Months</td>
</tr>
</tbody>
</table>

3.3 Project Budget
Another cost associated with this project is much (in US dollars) will the project need to be completed. Team Overdrive has been given a budget of $800 to spend on the project.

Section 11.4 Cost Analysis of the SRS covered the materials required and its cost for the project. Based on the initial research, the team will have to purchase the hardware component, an android based tablet, car engine simlulator, as well a fee to register an account with Google Play.
<table>
<thead>
<tr>
<th>Materials/Components</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>STN1170 Bluetooth OBD-II Adapter</td>
<td>$85</td>
</tr>
<tr>
<td>Android based tablet</td>
<td>$200</td>
</tr>
<tr>
<td>Engine car simulator</td>
<td>$300</td>
</tr>
<tr>
<td>Register Account on Google Play</td>
<td>$25</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$610</strong></td>
</tr>
</tbody>
</table>
4 Earned Value Management

4.1 Earned Value

Earned value management helps the project stay on course by monitoring the planned accomplishments to the completed accomplishments. The earned value has a couple of components associated with it. Earned value can also be automatically calculated from the Microsoft Project Plan.

4.2 Components

- **BCWS** – Planned Value
  - How much work (person-hours) is planned to have accomplished at a given point in time (this is from the Work Breakdown Structure)
- **ACWP** – Actual Cost
  - How much work (person-hours) was actually spent at a given point in time
- **BCWP** – Earned Value
  - The value (person-hours) in terms of the base budget of what was accomplished at a given point in time (or, % complete X Planned Value)

4.3 Performance Indices

- **CPI** – Cost Performance Index
  - $CPI = \frac{BCWP}{ACWP} = \frac{Earned\ Value}{Actual\ Cost}$
- **SPI** – Schedule Performance Index
  - $SPI = \frac{BCWP}{BCWS} = \frac{Earned\ Value}{Planned\ Value}$

Analysis:

- If CPI > 1.0, good performance (ahead of schedule at a point in time)
- If CPI < 1.0, bad performance (behind of schedule at a point in time)
- Similarly for SPI

4.4 Report

The team meets every Tuesday, and any other times if needed, to go over our plan of actions and to report how each member is doing on their assigned tasks. During these meetings, the team go over how far along the team is doing at that moment in time and calculate their earned value. The team will also submit Individual and Team Status reports.
5 Scope Management Plan

5.1 Introduction
Due to the project’s nature of a combination of hardware and software components, the project could easily become a victim of feature creep. The purpose of this scope management plan is to ensure that the team adheres to the requirements laid out by our sponsor and defined in the SRS document. This will help to ensure a timely product delivery, minimal time waste, and allow more accurate planning.

5.2 Tracking
For this project and to ensure its successful completion, the overall progress of each working item will consist of a two phase strategy: first, each team member will have the responsibility to track the work items that it was assigned to work on, with the overall supervision of the team leader. Each team member will provide feedback to the other team members of the major roadblocks encountered in the development of the assigned task, and the team will conduct a group review along with the sponsor. This will ensure that the project schedule will be met and that the plan adheres to the scope already established. The second phase will consist on writing reports done after each milestone is completed; this is with the purpose of reviewing which of the requirements have been met and which have not, and to re-evaluate with greater detail the feasibility of the requirements that have not been met.

5.3 Modifications
In order to control the scope of the project, the team will work closely with the sponsor in defining the features and establish them in the beginning in such manner that minimizes further modifications. When any modifications arise to the features already established in the SRS, the team will have to extensively and carefully evaluate and gather the sponsor feedback to analyze the proposed modifications to weight the impact that it will bring to the project’s schedule. Any further modifications must be agreed on by all team members and the sponsor prior to allocate resources to the proposed modifications.
6 Work Breakdown Structure

6.1 Purpose of Closeout Report

The purpose of the closeout report is to ensure that all personnel, contract, administrative, and financial issues are resolved, that documents are archived, and lessons learned are documented.

6.2 Administrative Closure

6.2.1 Were the objectives of the project met?

After the project is completed, the team will review the SRS and evaluate whether the completed project meets the sponsor requirements as specified in the SRS. All fulfilled and unfulfilled requirements will be analyzed and documented.

6.2.2 Archiving Project Artifacts

The following items will be documented and stored in the team’s shared Dropbox File and shared Google Drive:

- System Requirement Specification
- Project Charter
- MS Project File
- Architectural Design Specification
- Detailed Design Specification
- Photos
- Diagrams
- Charts
- Personal Research Documents and Notes
- Financial Records
- MS Excel Template
- Team Status Report Presentations
- User Manual
- Any Change Requests
- Meeting Notes

All documents, with the exception of Personal Research Documents and Notes, Meeting Notes, Change Requests and Team Status Reports, will be burned to a disc upon project completion for the sponsor to refer to when using the product.
6.2.3 Lessons Learned

Upon project completion, Team Overdrive will schedule a meeting to discuss our lessons learned. The meeting will be focused on any lessons learned to help and reduce errors in the future. Individual Status Reports and Engineering Notebooks will be used for reference. Each project team member is documenting their understanding and thoughts in their engineering notebook.

6.2.4 Plans for Post Implementation Review (PIR)

Post Implementation Review (PIR) will be conducted to evaluate the project. The complete and final project will be compared with the proposed project to test the consistency and practicality of the project under standard conditions. The product will then be demonstrated for the project sponsor to ensure that (s)he is satisfied with the final product.

6.2.5 Final Sponsor Acceptance

The team will present and demonstrate the final product to our sponsor, Dr. Bob Woods. At the time of demonstration the team will also conduct a review of the SRS with our sponsor and request feedback as to whether the final product meets with his expectations according to what has been documented in the SRS. Any discrepancies between the final product and the SRS, or any concerns expressed by our sponsor will be documented for future reference. An acceptance document verifying the sponsor’s acceptance of the final product will be signed if the final product is accepted.

6.2.6 Financial Records

All invoices, purchase orders, receipts and other financial documents will be filed and kept by the team lead. Invoices will be kept both electronically in the Dropbox and by hard copy in a file.

6.2.7 Final Project Performance Report

After the project is completed, Team Overdrive will produce a Final Project Performance Report. The Final Project Performance Report will review and summarize the project’s quality achievements, scope management, schedule adherence, cost management and an assessment of how risks were reduced and how it actually reduced the time taken for the completion of the project.
7 Quality Management Plan

7.1 Introduction

The quality management plan will be used to ensure that the Auto Performance Analyzer will meet all of the sponsor requirements, and that it will deliver a high quality product. This plan outlines the different quality management features that will be used during the project development.

7.2 Software

The software for the Auto Performance Analyzer shall be designed, documented, and tested to the highest competence of the Overdrive team. The code shall be written in a modular manner to ensure that it will be bug free and that it will meet all the specifications. This plan includes:

- The source code will be peer reviewed by the members of Overdrive team
- The source code will follow a uniform format
- The source code will be fully commented
- The source code will have a strong exception handling
- The source code will follow the Java standard specification and naming techniques for classes, methods and instances
- The Source code will be refactored as needed
- Source code files will be backed using a Version Control Software
- Changes to the source code will be thoroughly documented

7.3 Hardware

Hardware for the Auto Performance Analyzer shall be purchased based on need, quality, power, and cost. This is to ensure that the hardware subsystem is a highly responsive and durable product. Test cases shall be written and implemented to test the correct output of the system based on the different input scenarios.

7.4 Test Plan

- Each software module will be fully tested in conjunction with the hardware to eliminate hardware/software integration issues
- Tests will be designed to ensure requirements were fulfilled
- Test cases shall be implemented to test the correct output of the system based on different input scenarios
8 Communications Plan

8.1 Summary
Communication is vital to the success of this project. Communication channels must be established not only between team members, but also with the team sponsor and team supervisor.

8.2 Internal Communications

8.2.1 Dropbox
The team has established a shared dropbox folder containing the teams contact information including both phone and email. The dropbox folder will also be used for sharing files and collaborating on documentation.

8.2.2 Text Messaging
Text messaging will be used for quick short communications, when information needs to get out to individuals or the whole team quickly and the information is not to in depth or lengthy.

8.2.3 Email
Email will be used for lengthy messages and also as a form of documentation of team correspondence.

8.2.4 Team Meetings
Will be held on a weekly basis to start and will scheduled otherwise as needed and when all or most of the members are available. Meetings will be used a group work time after discussion topics are covered.

8.3 External Communications

8.3.1 Sponsor Meetings
The team will have bi-weekly meetings with the team sponsor in person. All members are expected to be present, but in the event one is unable the other present members will communicate the information to them.

8.3.2 Email
Email will be the primary means of communicating with Dr. O’Dell. It will also be used to communicate with sponsor between meetings.
8.3.3 Presentations

Presentations will be used to display our progress to Dr. O’Dell and also our peers. Dr. O’Dell along with our peers will be able to give the team constructive feedback and all us to improve our project.
9 Change Management Plan

9.1 Purpose of Integrated Change Management Plan

Changes are without a doubt unavoidable in large-scale projects. A solid plan is essential to take care of these changes when they arise. When such changes are encountered, our plan must be to be prepared, accept them and deal with them in the appropriate manner. These alterations can occur during the requirement stage as well as the implementation stage.

To be able to deal with such changes, a change management plan must be developed beforehand. This plan works as a guide on how to handle the changes that the team will be challenged with throughout each phase of development. The change management plan provides a rough idea of the procedures to deal with changes comprising of duties and roles, evaluation and authorization as well as change documentation. This plan will assist the team in handling changes in a well-organized fashion.

The plan will make sure that Team Overdrive handles the change thoughtfully and intelligently. Sponsor requirements will possibly change over the course of time due to the Auto Performance Analyzer being client-oriented.

9.2 Roles and Responsibilities

**Project Sponsor**
The project sponsor may schedule a meeting with the team to suggest potential changes. Project sponsor will be the principal source for proposed changes to the project. The project sponsor has the right to recommend design changes during any phase of the development. The sponsor will also have the authority to approve or reject any other requirements modifications throughout development of the project.

**Project Manager**
The project manager is responsible for coordinating meetings with sponsors and stakeholders and providing them with project status reports on request. The project manager will discuss the qualities of a change proposed by the sponsor or a stakeholder. Any change suggestions from the stakeholders or sponsors will first go to the project manager. The project manager will update the project plan when a change becomes absolute.

**Project Team**
The project team may suggest changes to the sponsor or even to the other team members during a meeting. The team members of the project will estimate the possible benefits and drawbacks of
making proposed changes into the project. The team members will then review and assess changes for feasibility and will decide if the change is necessary and within the scope of the project.

Other Stakeholders
Other stakeholders can propose modifications to the project description. These modifications may be evaluated by the team but no formal decision will be made unless either of the main stakeholders including the sponsor and the project team approves the changes and continues to follow the steps explained.

9.3 Review and Approval Process
Changes recommended by the sponsor, the team or the stakeholders will be explained in a Change Proposal document that includes the recommended change and its result on the predefined requirements and how such change will affect the project schedule. The document will also include its impact on the feasibility of the project as well as the importance of applying the recommended change.

The change proposed will undergo an evaluation process before any final decision is made. The project manager will organize a meeting for a preliminary analysis. If the team agrees that the suggestion calls for additional review, proper evaluation will then be done. Risks associated with the change and its impact on the project budget will be evaluated. If the proposed change has a negative impact on the project schedule, then there will be explicit documentation notifying as such. The team then decides whether change will be made to the project and tasks are then reassigned appropriately.

9.4 Change Identification, Documentation, Implementation and Reporting
Any approved or rejected changes that are made to the project must be acknowledged, approved and well documented. After the final decision for the change proposal is made with compliance to the stakeholder’s approval, the project manager should apply the suggested changes to the MS Project Plan for project and notify the team of the updated project schedule.
Change Request Form

Proposed By:
________________________________________________________________________

Description of Change:
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________

Reason for Change:
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________

Other:
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
10 Risk Management Plan

10.1 Purpose of Risk Management Plan
In this project, risks will be defined as the probability of certain events that can put our project behind in the schedule and/or over budget. Some of these risks are common factors associated with our team members’ everyday lives, as well as technological risks. Due to the fact that our team has a very limited time schedule and budget, it is absolutely imperative that we take the time up front to determine what these risks could be, and to come up with an effective risk management plan to identify, to analyze and, to minimize the impact these risks will bring if they should occur.

10.2 Roles and Responsibilities

- **Project Sponsor.** The sponsor for our project is Dr. Bob Woods from the formula SAE team. As the formula SAE team advisor, Dr. Woods has extensive experience advising students in various kinds of vehicle competition since 1978. He will provide guidance in establishing the requirements and identifying potential risks and possible resolutions pertaining to our system.

- **Project Manager.** Gary S. Johns will be the team leader for this project. He will be the main point of contact with our sponsor and in charge of supervising the overall development to prioritize potential risks and communicate them to the other team members.

- **Project Team.** Team Overdrive will assess and discuss possible risks during scheduled meetings with the sponsor.

- **Risk Manager.** The risk manager will be Raul Hurtado. He will be responsible for leading the risk assessment plan and maintaining the risk documentation. This involves deciding which risks pose the more serious threats and show the results of the evaluation to the rest of the team and discuss potential plan of action to handle them if they should occur.

10.3 Risk Identification
It will be the entire team members’ responsibility to communicate to the rest of the team any risks that may arise during the development of the project. In addition to group discussion during the team’s meeting with the sponsor, there will be a list maintained by the risk manager with the most prominent risks identified and once identified and recorded, the team will evaluate the impact and establish the action plan to resolve the issue before it poses a threat to the project’s schedule.

10.4 Risk Triggers
Risk triggers are events or performance characteristics that warn of the occurrence of risk events. Some of these include:
- Delay in purchasing the hardware
- Schedule slips become frequent
- Sponsor not pleased with progress
- Missed milestones by team members
- Programming tasks slip schedule
- Software/hardware integration issues

10.5 Risk Analysis

The following table details a list of the present risks that the team has identified:

<table>
<thead>
<tr>
<th>Category</th>
<th>Risk</th>
<th>Priority</th>
<th>Probability (%)</th>
<th>Cost (weeks)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Budget</td>
<td>Insufficient funds to acquire necessary components</td>
<td>3</td>
<td>15</td>
<td>2</td>
</tr>
<tr>
<td>Hardware</td>
<td>Insufficient OBD-II knowledge</td>
<td>5</td>
<td>75</td>
<td>3</td>
</tr>
<tr>
<td>Hardware</td>
<td>Delays in obtaining the hardware</td>
<td>4</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>Schedule</td>
<td>Team member unable to meet deadlines due to emergency</td>
<td>3</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>Sponsor</td>
<td>Requirements change beyond capabilities of team</td>
<td>5</td>
<td>10</td>
<td>3</td>
</tr>
<tr>
<td>Software</td>
<td>Insufficient of knowledge developing Android apps</td>
<td>5</td>
<td>100</td>
<td>4</td>
</tr>
<tr>
<td>Software</td>
<td>Lack of version control software</td>
<td>4</td>
<td>20</td>
<td>2</td>
</tr>
<tr>
<td>Hardware</td>
<td>Limitations of the hardware performance</td>
<td>2</td>
<td>10</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 9-1 Risk Analysis.

10.6 Risk Severity

The following table shows the severity of the risks identified in the previous table. Each risk will have an overall risk exposure. This exposure is calculated by multiplying the probability of risk occurrence times the cost of the risk.
<table>
<thead>
<tr>
<th>Risk</th>
<th>Risk Response Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insufficient funds to acquire necessary components</td>
<td>Risk unlikely. The allocated budget should be sufficient to purchase the hardware</td>
</tr>
<tr>
<td>Insufficient OBD-II knowledge</td>
<td>Risk expected to occur. Team has been researching the topic, and support offered from</td>
</tr>
</tbody>
</table>
### Table 9-3 Risk Response

<table>
<thead>
<tr>
<th>Risk Description</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delays in obtaining the hardware</td>
<td>Risk not expected to occur. Search for alternative distributors</td>
</tr>
<tr>
<td>Team member unable to meet deadlines due to emergency</td>
<td>Risk not expected to occur. Team members will be ready to pick up extra work</td>
</tr>
<tr>
<td>Requirements change beyond capabilities of team</td>
<td>Risk may occur. Improve communication with the sponsor, team will keep to be realistic about schedule</td>
</tr>
<tr>
<td>Insufficient of knowledge developing Android apps</td>
<td>Risk expected to occur. Plan ahead and research documentation online or printed form</td>
</tr>
<tr>
<td>Lack of version control software</td>
<td>Risk unlikely. Ensure that we have good version control software and knowledge</td>
</tr>
<tr>
<td>Limitations of the hardware performance</td>
<td>Risk very unlikely expected. Obtain feedback from sponsor to overcome hardware limitations</td>
</tr>
</tbody>
</table>

### 10.8 Risk Documentation and Reporting

Team Overdrive will keep a risk database in the form of an Excel spreadsheet in a specific folder in our Dropbox repository. The risk manager will be responsible of updating and maintaining such risk database.

### 10.9 Risk Control

Team members are expected to continue monitoring the documented risks, as well as all new potential risk triggers if they arise during the development phase. Each team member is expected to communicate to the risk manager or to the team lead as soon as the potential risk is identified in order to bring the issue during the weekly team meetings. The identified risks will be accepted and documented into the risk database, or rejected by the team consensus.
11 Procurement Management Plan

11.1 Purpose of the Procurement Management Plan
The purpose of this section is to provide a guideline for attaining materials necessary to the project as well as the materials needed and the process on how to attain it. The Procurement Management Plan also describes the roles and responsibilities of party members associated with the project.

11.2 Roles and Responsibilities
Members associated with the project and their roles and responsibilities:

- **Project Sponsor** – Dr. Bob Woods will give suggestions on the materials that might be required to create a working product for the project.
- **Project Manager** – Gary Johns will be the Project Manager. After the team has determined what material is needed, he will put in a purchase request to Prof. Mike O’Dell, who will make review the request and make the final decision.
- **Project Team** – The team should conduct thorough researches on what components the product will need. Based on the researches, and inputs from Dr. Bob Woods and each team members, the team will then put in a purchase request to Prof. O’Dell.
- **Project Stakeholders** – Stakeholders will be notified of any purchases related to the project. Currently there are no stakeholders.

11.3 Required Project Procurements and Timing
Procurement planning is necessary to ensure that the process of obtaining material(s) for the project is accomplished in a timely manner. During the implementation phase of the project, the team must have the required material(s) to work on.

Team Overdrive must decide what material(s) is needed, who the vendor will be, how much it will cost, and lastly, how long it will take to be delivered.

The team must also have alternative routes to take in case a problem arises such as the initial material needed is out of stock or has been backordered. The material required for the project should be obtained ahead of schedule.

11.4 Description of Items/ Services to be acquired
Team Overdrive will require an OBD-II interface, IC, and Bluetooth chip. Fortunately, there is an adapter that combines all three components into one, the STN1170 Bluetooth OBD-II Adapter. The team may also need a tablet, for demonstration, and perhaps an OBD test
simulator. Team Overdrive will also require to open an account on Google Play to publish and use its Android App.
12 Project Closeout Report

12.1 Purpose of Closeout Report

The purpose of the closeout report is to ensure that all personnel, contract, administrative, and financial issues are resolved, that documents are archived, and lessons learned are documented.

12.2 Administrative Closure

12.2.1 Were the objectives of the project met?

After the project is completed, the team will review the SRS and evaluate whether the completed project meets the sponsor requirements as specified in the SRS. All fulfilled and unfulfilled requirements will be analyzed and documented.

12.2.2 Archiving Project Artifacts

The following items will be documented and stored in the team’s shared Dropbox File and shared Google Drive:

- System Requirement Specification
- Project Charter
- MS Project File
- Architectural Design Specification
- Detailed Design Specification
- Photos
- Diagrams
- Charts
- Personal Research Documents and Notes
- Financial Records
- MS Excel Template
- Team Status Report Presentations
- User Manual
- Any Change Requests
- Meeting Notes

All documents, with the exception of Personal Research Documents and Notes, Meeting Notes, Change Requests and Team Status Reports, will be burned to a disc upon project completion for the sponsor to refer to when using the product.
12.2.3 Lessons Learned

Upon project completion, Team Overdrive will schedule a meeting to discuss our lessons learned. The meeting will be focused on any lessons learned to help and reduce errors in the future. Individual Status Reports and Engineering Notebooks will be used for reference. Each project team member is documenting their understanding and thoughts in their engineering notebook.

12.2.4 Plans for Post Implementation Review (PIR)

Post Implementation Review (PIR) will be conducted to evaluate the project. The complete and final project will be compared with the proposed project to test the consistency and practicality of the project under standard conditions. The product will then be demonstrated for the project sponsor to ensure that (s)he is satisfied with the final product.

12.2.5 Final Sponsor Acceptance

The team will present and demonstrate the final product to our sponsor, Dr. Bob Woods. At the time of demonstration the team will also conduct a review of the SRS with our sponsor and request feedback as to whether the final product meets with his expectations according to what has been documented in the SRS. Any discrepancies between the final product and the SRS, or any concerns expressed by our sponsor will be documented for future reference. An acceptance document verifying the sponsor’s acceptance of the final product will be signed if the final product is accepted.

12.2.6 Financial Records

All invoices, purchase orders, receipts and other financial documents will be filed and kept by the team lead. Invoices will be kept both electronically in the Dropbox and by hard copy in a file.

12.2.7 Final Project Performance Report

After the project is completed, Team Overdrive will produce a Final Project Performance Report. The Final Project Performance Report will review and summarize the project’s quality achievements, scope management, schedule adherence, cost management and an assessment of how risks were reduced and how it actually reduced the time taken for the completion of the project.