**To**: Dr. Whittenberg

**From**: Group 14

**Date**: 10/05/2016

**Subject**: Interim Delivery 2

**MEMORANDUM**

The three deliverables, Network Diagram, Gantt Chart and the Schedule Table constructed helped in making the following observations

1. The project is estimated to complete on February 2, 2012 and it takes 530 days.
2. Critical path for the project is **Architectural Design -> Hardware Specifications -> Hardware Design -> Hardware Documentation -> Integration First Phase -> Serial I/O Devices -> System Hard/Software Test -> Network Interface -> Integration Acceptance Testing**
3. Utilities Documentation has the greatest amount of slack of 115 days.
4. Sensitivity of the network: since there is only one critical path in this project, it is insensitive.
5. Two sensible milestones of the project are ‘Integration First Phase’ and ‘System Hardware/Software Test’ because

* Integration first phase is a merge activity, in which six tasks need to be completed before this task could start
* System Hard/Software Test is a burst activity because it leads to 4 other activities that could only start after this one has completed
* Both activities belong to the critical path.

6. Advantages/Disadvantages of Network Diagrams and Gantt Chart:

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| --- | --- |
| Network Diagram | Gantt Chart |
| Advantages:   * Network diagrams are easier to represent than Gantt charts * Displays sequence of activities and their dependencies * Network diagrams are used to identify the activities that run parallel to each other.   Disadvantages:   * Creating a network diagram is cost and time expensive. * When complexity of the network diagram increases, there is a higher chance that the diagram will be misread/misinterpreted | Advantages:   * Provides details such as start and end date for activities (duration) * Integrate multi tasks and timeline into a single document * Easy visualization of timelines and caters to effective allocation of resources   Disadvantages:   * Gantt chart will not be accurate if there are major milestones/tasks missing in the WBS. It relies heavily on the WBS. * Difficult to view a Gantt chart on a single sheet * Works best for smaller projects. When the chart extends over one page, it becomes difficult to read and loses its functionality. * Complete scope and cost of a project is not depicted in a Gantt chart. |

APPENDIX 1

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Task Name | Duration | Early Start | Early Finish | Late Start | Late Finish | Free Slack | Total Slack |
| **Conveyor Belt Project** | **530 days** | **Mon 1/4/10** | **Thu 2/2/12** | **Mon 1/4/10** | **Thu 2/2/12** | **0 days** | **0 days** |
| **Hardware** | **440 days** | **Mon 2/8/10** | **Fri 10/28/11** | **Mon 2/8/10** | **Fri 11/4/11** | **0 days** | **0 days** |
| Hardware Specifications | 50 days | Mon 2/8/10 | Fri 4/16/10 | Mon 2/8/10 | Fri 4/16/10 | 0 days | 0 days |
| Hardware Design | 70 days | Mon 4/19/10 | Tue 7/27/10 | Mon 4/19/10 | Tue 7/27/10 | 0 days | 0 days |
| Hardware Documentation | 30 days | Wed 7/28/10 | Wed 9/8/10 | Wed 7/28/10 | Wed 9/8/10 | 0 days | 0 days |
| Prototypes | 80 days | Thu 11/18/10 | Tue 3/15/11 | Wed 2/2/11 | Tue 5/24/11 | 50 days | 50 days |
| Order Circuit Boards | 5 days | Thu 6/30/11 | Thu 7/7/11 | Fri 7/8/11 | Thu 7/14/11 | 0 days | 5 days |
| Assemble Preproduction Models | 30 days | Mon 9/19/11 | Fri 10/28/11 | Mon 9/26/11 | Fri 11/4/11 | 5 days | 5 days |
| **Operating Systems** | **445 days** | **Mon 2/8/10** | **Fri 11/4/11** | **Mon 3/22/10** | **Fri 11/4/11** | **0 days** | **0 days** |
| Kernel Specifications | 20 days | Mon 2/8/10 | Fri 3/5/10 | Mon 3/22/10 | Fri 4/16/10 | 0 days | 30 days |
| **Drivers** | **310 days** | **Mon 3/8/10** | **Tue 5/24/11** | **Mon 4/19/10** | **Tue 5/24/11** | **0 days** | **0 days** |
| Disk drivers | 100 days | Mon 3/8/10 | Tue 7/27/10 | Mon 4/19/10 | Wed 9/8/10 | 30 days | 30 days |
| Serial I/O Drivers | 130 days | Thu 11/18/10 | Tue 5/24/11 | Thu 11/18/10 | Tue 5/24/11 | 0 days | 0 days |
| Memory Management | 90 days | Mon 3/8/10 | Tue 7/13/10 | Mon 5/3/10 | Wed 9/8/10 | 40 days | 40 days |
| Operating System Documentation | 25 days | Mon 3/8/10 | Fri 4/9/10 | Wed 8/4/10 | Wed 9/8/10 | 105 days | 105 days |
| Network Interface | 90 days | Thu 6/30/11 | Fri 11/4/11 | Thu 6/30/11 | Fri 11/4/11 | 0 days | 0 days |
| **Utilities** | **415 days** | **Mon 2/8/10** | **Fri 9/23/11** | **Mon 4/26/10** | **Fri 11/4/11** | **30 days** | **30 days** |
| Utilities Specifications | 15 days | Mon 2/8/10 | Fri 2/26/10 | Mon 4/26/10 | Fri 5/14/10 | 0 days | 55 days |
| Routine Utilities | 60 days | Mon 3/1/10 | Fri 5/21/10 | Tue 6/15/10 | Wed 9/8/10 | 75 days | 75 days |
| Complex Utilities | 80 days | Mon 3/1/10 | Mon 6/21/10 | Mon 5/17/10 | Wed 9/8/10 | 55 days | 55 days |
| Utilities Documentation | 20 days | Mon 3/1/10 | Fri 3/26/10 | Wed 8/11/10 | Wed 9/8/10 | 115 days | 115 days |
| Shell | 60 days | Thu 6/30/11 | Fri 9/23/11 | Fri 8/12/11 | Fri 11/4/11 | 30 days | 30 days |
| **System Integration** | **530 days** | **Mon 1/4/10** | **Thu 2/2/12** | **Mon 1/4/10** | **Thu 2/2/12** | **0 days** | **0 days** |
| Architectural Decisions | 25 days | Mon 1/4/10 | Fri 2/5/10 | Mon 1/4/10 | Fri 2/5/10 | 0 days | 0 days |
| Integration First Phase | 50 days | Thu 9/9/10 | Wed 11/17/10 | Thu 9/9/10 | Wed 11/17/10 | 0 days | 0 days |
| System Hard/Software Test | 25 days | Wed 5/25/11 | Wed 6/29/11 | Wed 5/25/11 | Wed 6/29/11 | 0 days | 0 days |
| Project Documentation | 50 days | Thu 6/30/11 | Fri 9/9/11 | Fri 8/26/11 | Fri 11/4/11 | 40 days | 40 days |
| Integration Acceptance Testing | 60 days | Mon 11/7/11 | Thu 2/2/12 | Mon 11/7/11 | Thu 2/2/12 | 0 days | 0 days |

APPENDIX 2

