

Project Plan

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1 Project Title

Upgrade and Update of Computer Systems within Dr. Hohlmann's High Energy Physics (HEP) Research Groups

2 Names and Email Addresses of Team Members

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3 Faculty Sponsor

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4 Client

Dr. Marcus Hohlmann, mhohlmann@fit.edu

5 Meeting(s) with the client for developing this plan

Weekly Monday meetings

6 Goal and Motivation

The computer systems of the group have been in disarray for some time, and these issues have been hindering the progress of the group. The goal of the project is to repair and improve the group's resources to reduce the number of unnecessary obstacles the group must overcome in order to conduct their research.

7 Approach

7.1 Compute Cluster

7.2 Computer Systems

7.3 Muon Tomography Station (MTS)

8 Novel Features/Functionalities

8.1 Compute Cluster

8.2 Computer Systems

The computer systems in the HEP lab store important data locally on their systems that are crucial to their

8.3 MTS

8.3.1 Current MTS

8.3.2 Development MTS

9 Technical Challenges

9.1 Compute Cluster

9.2 Computer Systems

The computer systems in the lab hold major data that is only stored locally on very specific computers. The issue here is that a lot of these computers do not have a backup of their data somewhere else which means that if there is a major hard drive failure lots of data will be lost. The ideal solution to this is to run all machines in RAID 1 with two hard drives in each machine, which will striped all data on one hard drive to another creating a backup.

9.3 MTS

9.3.1 Current MTS

The current MTS currently has a major issue where one of the FEC's is unusable due to bad firmware. Having one bad FEC renders the entire MTS useless due to how the software on the MTS computer currently works.

Another technical challenge with the current MTS is hardware wiring. The wiring of the MTS is disastorous, and makes it very difficult to unplug and plug in other ports without losing track of cables, or putting cables in the wrong spot. This is because many cables are not labelled, and some cables are as long as 30 feet even when they are only connecting things roughly three to six feet away.

9.3.2 Development MTS

10 Design

11 Progress Summary

12 Milestone 4 (Feb 11)

12.1 Compute Cluster

12.2 Computer Systems

12.3 MTS

12.3.1 Current MTS

12.3.2 Development MTS

13 Milestone 5 (Mar 18)

13.1 Compute Cluster

13.2 Computer Systems

13.3 MTS

13.3.1 Current MTS

13.3.2 Development MTS

14 Milestone 6 (April 15)

14.1 Compute Cluster

14.2 Computer Systems

14.3 MTS

14.3.1 Current MTS

14.3.2 Development MTS

15 Task Matrix for Milestone 4

16 Description of each planned task for Milestone 4

16.1 Compute Cluster

milestones”

Signature

Date