

Title	<i>Upgrades to Accelerator Control System</i>		
Project Requestor	Kenneth Sidorowicz		
Date	March 21, 2008		
Group Leader(s)	Kenneth Sidorowicz		
Machine or Sector Manager			
Category	Facilities and Infrastructure		
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*This row is filled in automatically on check in to ICMS. See Note ¹

Description:

Start Year (FY)	2008	Duration (Yr)	5 Years
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Objectives:

Upgrade the APS Accelerator Control System computer servers, distributed workstations, and networking switches to improve performance, reliability and to replace aging systems. Lifetime of the servers, workstations, and network is 5-6 years due to reliability and performance issues. Upgrade networking to 10 GigE backbone and line cards to support new server Ethernet interfaces.

IT tries to replace all servers and network equipment every five years in order to avoid catastrophic failures and to keep up with demands for greater performance and storage capacity. 20% of equipment is replaced if the budget is available. This does not include any new initiatives.

Benefit:

Allows continued reliable performance of the accelerator control system by replacing aging servers, workstations, and networking gear. Provides for increased throughput by improving access to networked file systems and improved reliability for workstations. Minimizes downtime on beamlines due to beam loss from computer and network failures.

Risks of Project: See Note ²

None.

Consequences of Not Doing Project: See Note ³

Not providing upgrades will expose the APS accelerator to downtime due to problems with aging equipment and workstation performance issues. Replacement parts from the vendors are new equipment during the first few years of a maintenance contract. At the end-of-life for servers and workstations the replacement parts are refurbished and reliability tends to decrease based on past experience.

Cost/Benefit Analysis: See Note ⁴

Continued maintenance of existing computers becomes expensive as the systems age.

Description:

Upgrade servers, workstations, and networking equipment to the latest available from the vendor in order to minimize downtime during an accelerator run. Upgrade servers and workstations to improve response time and reliability. Upgrade networking to 10 GigE in the core.

Funding Details

Cost: (\$K)

Use FY08 dollars.

Year	AIP	Contingency
1	400	
2	400	
3	400	
4	400	
5	400	
6		
7		
8		
9		
Total	2000	

Contingency may be in dollars or percent. Enter figure for total project contingency.

Effort: (FTE)

The effort portion need not be filled out in detail by March 28

Year	Mechanical Engineer	Electrical Engineer	Physicist	Software Engineer	Tech	Designer	Post Doc	Total
1								0
2								0
3								0
4								0
5								0
6								0
7								0
8								0
9								0

Notes:

¹ **ICMS.** Check in first revision to ICMS as a *New Check In*. Subsequent revisions should be checked in as revisions to that document i.e. *Check Out* the previous version and *Check In* the new version. Be sure to complete the *Document Date* field on the check in screen.

² **Risk Assessment.** Advise of the potential impact to the facility or operations that may result as a consequence of performing the proposed activity. Example: If the proposed project is undertaken then other systems impacted by the work include ... (If no assessment is appropriate then enter NA.)

³ **Consequence Assessment.** Advise of the potential consequences to the facility or to operations if the proposal is not executed. Example: If the proposed project is not undertaken then ____ may happen to the facility. (If no assessment is appropriate then enter NA.)

⁴ **Cost Benefit Analysis.** Describe cost efficiencies or value of the risk mitigated by the expenditure. Example: Failure to complete this maintenance project will result in increased total costs to the APS for emergency repairs and this investment of ____ will also result in improved reliability of _____. (If no assessment is appropriate then enter NA.)