

Summary of Diagnostics and Controls

ERC proposal preparation

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Diagnostics and Controls Section Outline

- Diagnostics
 - Accelerator
 - Beam diagnostics: CT + BPM at 4 locations.
 - End station
 - Dose measurements and calibration.
 - Beam diagnostics: CT, BPM, Faraday cup, scintillator profile monitor.
 - Environment and services
 - Temperature, radiation, CCTV, oxygen levels.
 - Electricity, water and air.

Diagnostics and Controls Section Outline

- Controls
 - Global controls
 - Includes system integration – hardware and software.
 - Operator interface.
 - Monitoring and alarms.
 - Logging – hardware and software.
 - Slow controls
 - Device specific interfaces.
 - Software for special runs, e.g. calibration and expert debugging.
 - Fast controls
 - Redundant hardware and software for monitoring to protect equipment.
 - Interface to PPS

Costing

Task	Staff (FTE)	Equipment Cost (£K)
Diagnostics		
Dosimetry and calibration (details of NPL request below)	£70k/year	£13k/year
Dose and energy measurement		
Calibration of dose and energy measurements		
Environment and services	1	50
Environment		
Purchase, install and commission temperature probes		
Purchase, install and commission radiation monitors		
Purchase, install and commission CCTV cameras		
Purchase, install and commission ODH monitor		
Services		
Interface to site services monitoring for water, air and electricity		
Accelerator and end station	1	127
Design, build and commission BPMs.		105
Purchase, install and commission CTs.		5
Design, build and commission profile monitor.		15
Design, build and commission Faraday cup.		2
Controls	2	50
Slow control system		
Hardware		
Software		
Fast control system		
Hardware		
Software		
Global control system		
Hardware for system integration		
Software		
Hardware and software for data archiving		

Costing

Budget requested by NPL:

- Staff time: ~£70k/year

Giuseppe Schettino (Principal Research Scientist) – 1 day/month

Francesco Romano (Senior Research Scientist) – 2 day/month

Research Assistant – 5 day/month

- Consumables: £8000/year (CR39, FNTD, Gaffchromic films custom made, chemicals)

- Travel and subsistence: £5000/year (to access conventional proton beam facilities)