ISAC Facilities Meeting – 2009/09/30

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Proposed changes to the low-energy area of ISAC:

This meeting was focused on proposed changes to the low energy area of ISAC to accommodate: 1) an upgrade to the yield station, 2) relocation of GPS 1 to provide a space for the Francium program, 3) providing a suitable space for GRIFFIN, a CFI funded Compton suppressed HPGe clover detector array to replace the 8pi spectrometer, 4) possible upgrades to OLIS and 5) modifications required to accommodate the LEBT lines from the new target stations detailed in the TRIUMF 5YP. This first meeting was a general discussion of the requirements of each group with limited discussion on possible solutions.

GRIFFIN:

- GRIFFIN is an array of Compton suppressed HPGe clover (i.e. unsegmented TIGRESS) detectors that was funded recently by CFI to replace the 8pi gamma-ray spectrometer. A conceptual design of the mechanical structure based on the existing design for TIGRESS is in progress. Initial attempts to integrate GRIFFIN into the low energy area of ISAC have shown that if we want to take full advantage of the TIGRESS design and also use the existing detector mounting machines, then GRIFFIN cannot be located on the existing 8pi beamline and will have to be located in the area presently occupied by the EDM facility. A drawing of the proposed layout is shown in the attached (141-rev32 stua sept09.pdf). A conceptual design of the optics of the proposed beamline to GRIFFIN has shown that an excellent (i.e. optimum) solution exists that uses most of the existing 8pi beamline components. The electronics shack for GRIFFIN, which will also be used for Radon EDM, can be located near the location of the existing 8pi electronics shack or on a mezzanine if required. (see 141-rev32 stua sept09.pdf)

Upgraded Yield Station:

- Peter Kunz presented plans for upgrading the existing yield station. Full details of this upgrade are given in the accompanying pdf file (yield Kunz sept09). As part of this upgrade the group has designed and fabricated a new vacuum box. A proper mount for this box will be designed to replace the existing pillar support. The group is also proposing to construct a platform (~5 ft high) to mount the rails for the HPGe and provide safe access to service the yield station hardware. Comments were expressed concerning both the size and the height of the proposed platform. The group was asked to explore the option of using the existing HPGe mounting system and to construct a portable platform or consider using moveable steps similar to those procured for TIGRESS.

Relocation of GPS Tape System:

- The GPS 1 tape system used for high-precision lifetime measurements needs to be relocated in order to construct a clean room under the TITAN platform for fundamental symmetry studies using Francium isotopes. This GPS 1 facility will be located on the LEBT line between the existing 8pi and Radon EDM beamlines (see fig. 141-rev32 stua sept09.pdf for details).

Relocation of EDM facility:

- A proposed relocation of the EDM facility using the existing LEBT line for EDM is shown in (141-rev32 stua sept09.pdf). It is clear that this location will probably conflict with the upgraded yield station. The EDM group is asked to explore the possibility of locating the facility closer to the existing 8pi location.

RIMS:

- The laser ion source group is proposing to install a Resonant Ionization Measurement Station (RIMS) at the GPS3 location (see 141-rev32 stua sept09.pdf). This facility will use the existing stand located at GPS3. The details are given in pdf file (rims lassen sept09).

Proposed LEBT Switchyard from New Target Stations:

- Bob Laxdal presented the plans for delivering radioactive beams from the new target stations planned for construction during the next 5YP to the low energy area of ISAC. (see isac iii switchyard laxdal sept09.pdf for details). Since all of these new beamlines will feed the existing facilities and/or accelerators from the west, they should not impact the low energy area presently under discussion. One issue that did arise during the meeting was the need to identify where the RIB yields from these new target stations would be measured.

Other business:

TRILIS Development Lab:

- Jens Lassen presented a plan to increase the size of the existing off-line laser lab (see rims lassen sept09 for details). There was general acceptance of this proposal. The group was asked to prepare a conceptual design and budget for this project.