Proposal for TRIUMF Commitment (5YP 2015-2020)

Date:
28 Sep 2012

PROJECT/COMMITMENT TITLE: EMMA

PROPONENT:

Barry Davids

TRIUMF CONTACT:

same

PRINCIPAL COLLABORATORS:

C. Andreoiu (SFU), R.A.E. Austin (St. Mary's), G.C.Ball (TRIUMF), P.E. Garrett (Guelph), A. Garnsworthy (TRIUMF), G. Hackman (TRIUMF), R. Krücken(TRIUMF/UBC), K. Starosta (SFU), C.E. Svensson (Guelph)

PROJECT DESCRIPTION:

The EMMA recoil spectrometer is expected to be operational during the entire 2015-2020 period. It will therefore have operational requirements as well as small upgrade needs.

SCIENTIFIC JUSTIFICATION:

The project involves operating and carrying out incremental upgrades to the EMMA recoil mass spectrometer for the study of nuclear structure and astrophysics.

RELATIONSHIP TO BROADER CANADIAN RESEARCH COMMUNITY:

EMMA will be a workhorse of the ISAC-II experimental program, anticipated to be used in ~1/2 of TIGRESS experiments as well as in a standalone mode. At least half of the nuclear physicists across Canada involved in accelerated radioactive beam physics are expected to be users. Naturally, international users will also be expected.

BROADER IMPACTS:

The spectrometer will enhance our basic scientific knowledge of nuclei and their role in astrophysics as well as contribute to the training highly qualified personnel.

MAJOR MILESTONES:

Description	Date
As the spectrometer is expected to be operational throughout the period and no major upgrades are contemplated in this commitment, no major milestones are specified	

RESOURCE REQUIRMENTS:

CASH FLOW REQUIREMENTS						
\YEAR SOURCE \	ONE	TWO	THREE	FOUR	FIVE	TOTAL
TRIUMF	15k	15k	16k	16k	17k	79k
EXTERNAL	130k	133k	135k	138k	141k	677k
TOTAL	145k	148k	151k	154k	158k	756k
TRIUMF NON-CASH RESOURCES						
\YEAR RESOURCE\	ONE	TWO	THREE	FOUR	FIVE	TOTAL
Design Office	2	2	2	2	2	10
Technical (Electronics)	2	2	2	2	2	10
Technical (Machinist)	2	2	2	2	2	10
IT (DAQ Professional)	2	2	2	2	2	10
Technical (Mechanical)	3	3	3	3	3	15
Physics (Detectors)	1	1	1	1	1	5
Physics (Nuclear)	33	33	33	33	33	165

EXTERNAL FUNDING INFORMATION:

The NSERC EMMA Project Grant is funded through 2015, peaking at ~$120k per annum.

ONGOING OPERATIONAL REQUIREMENTS:

Maintenance and minor upgrades of DAQ, power supplies, electronics, controls, vacuum pumps and detectors

DECOMMISSIONING REQUIREMENT:

N/A

Accepted:	Date: