REX ½ DAY

BDI Plans for the consolidation of the instrumentation of REX-ISOLDE

E. Bravin

11 March 2005

Status of the project

- An expertise of the status of the instrumentation of REX-ISOLDE was carried out on the 9th of December 2003 by E. Bravin.
- That expertise was triggered by the intention of assigning the responsibility for the equipments to BDI.
- Until mid 2004 no official commitment had been taken by BDI
- From mid 2004 BDI is “officially” in charge of it, but without resources. As a consequence no action could be taken.
- A Russian collaborator will join CERN shortly with the task of working on the consolidation of these devices.

Description of the equipments

There are three types of instrumentation boxes in REX

- 6 LINAC type: Aluminium tanks, medium vacuum;
  - Faraday Cup (standard ISOLDE)
  - Apertures wheel with in vacuum stepping motor
  - SEM foil + E + MCP + CCD
- 3 UHV type: Stainless steel tanks, bidirectional;
  - 2 Faraday Cups (standard ISOLDE)
  - 2 MCP + 1 CCD (beam hits MCP directly)
- 1 Special UHV type in front of EBIS
  - 2 MCP + 1 CCD (beam hits MCP directly)

Control of the devices

- The control is achieved by 3÷4? “standard” ISOLDE Windows NT FEC's. (XP now?)
- These PC's are connected to control boxes, made by the LEUVEN institute in Belgium, using serial links (RS485?)
- There are 3 types of control boxes; LINAC, UHV and special UHV
- There is also a special box used to acquire the current on the MCP (beam pulse current)

Status of the Instrumentation

(as seen by the actual experts)

- The devices themselves are OK
- The control boxes are “almost OK”, most of the problem come from the remote control (FEC's)
- The FEC's urgently need to be replaced by something else
- Responsible for these equipments are (were?);
  - HW Fridhelm Ames
  - Control Joakim Cederkall
  - LEUVEN Jacques Pier-Amory

Plans for the future

First step

- The Russian collaborator (at CERN for 18 months) will work essentially on the transfer from PC FEC's to VME FEC's (DSC's) of the control modules.
- The Keithley's readout needs to be replaced due to the non standard VME crate currently in use.

Second step

- The control boxes will be gradually replaced by BDI standard control modules according to specifications and budget.

What BDI needs from REX

- Long term maintenance of “special” equipment is too costly.
- A clear description (functional specifications) of the needs for each device is essential for the replacement of the existing control electronics (there will be no one to one match!). This is especially important and urgent for the frame grabber system.
- Support from the actual experts to collect documentation and spare parts of the existing devices in order to ensure the maintenability of the existing equipments.
- Adequate budget (to be estimated after specification are prepared) to cover the renovation project.

Conclusions

- In order to ensure a “professional” support to the instrumentation of REX it is essential that the proposed plan is carried out as soon as possible.
- This means that clear specifications and adequate resources are provided in due time.
- Due to the shortage of manpower (LHC drains it all!) it will be impossible to ensure a reliable support of the existing devices. The problem is the special knowledge required.