ISOLDE

Coming back to life after LS1

OUTLINE

1-Main activities and upgrades during LS1

2-Isolde calendar for coming back online

3-Most important issues faced during the restart and the first months of operation

4-Lessons learnt and possible approaches for future restarts

1-Main activities and upgrades during LS1

-Frontends (GPS/HRS) maintenance and upgrade

-New HRS separators magnets FESA class

-New FESA class and hardware for moving parts (deflectors GLM/GHM ,extraction electrodes, target clamps and shutters)

-HRS RFQ realignment and new inside parts installation

-New RFQ RF amplifiers and frontend computer

-New target water cooling panel location

-New access system for the target area (PATMAD) and new robots for target manipulations

-New and automatic system for connecting target power supplies

2-Isolde calendar for coming back online

LS1	-Machine kept under vacuum during most of LS1
04/14	-11/04/14 Cooling water back to ISOLDE. -16/04/14 Target power supplies unlocked. -23/04/14 RFQ back in place and ready for pumping
05/14	-22/05/14 High voltage power supplies for the targets tested and ready. -22/05/2014 First stable beam coming out of the target (GPS).
07/08	-29/07/2104 SEMGRID target tests. First protons to ISOLDE. -01/08/2014 **First radioactive beam for users**.

3-Most important issues faced during the restart and the first months of operation

-Various and important vacuum leaks that took quite some time to be found and repaired .

-Target water cooling system quite problematic. Not starting properly and water leaks.

-Multiple beam diagnostics issues. FCs not moving, scanners not working and multiple controls problems.

-HRS separator magnets cycling (FESA class) very long debugging and still not completely clear.

-Lots of vacuum turbopumps needed to be replaced together with turbocontrollers. Old equipment ,only few spares and old hardware not compatible with new one so quite a lot of bricolage needed.

3-Most important issues faced during the restart and the first months of operation

-New FESA class , controls and hardware for the moving devices getting stuck quite frequently. Experts needed to be contacted to unblock the situation by using low level software. Temporally solution in place for long time.

-Tape station misbehaving quite often. Hardware and software problems.

-Target area works extended in time more than expected making the commissioning of the machine quite difficult as for most of the interventions targets has to be switched off.

4-Lessons learnt and possible approaches for future restarts

-During the shutdown period machine also needs some attentions.

-It would help to have a detailed plan of what is going to be done in the machine by each group and when they plan to have it ready.

-The different machine systems are connected so some can not be tested if others are not working and stable.

-The assumption that something is going to work well just because it was working well before has proven not to be very accurate. A more systematic testing would help quite a lot to find problems and solve them faster.

-When designing new controls and applications knowing how the machine works and is normally operated can make everything easier. Operators are always delighted of helping and explaining when asked.

4-Lessons learnt and possible approaches for future restarts

- When some low level software is updated or changed these changes should be propagated through the different software layers simultaneously and tested intensively .

- In some cases knowing who to contact to solve a problem is part of the problem.

- Some interventions can be incompatible at the same time so they should be planned and communicated in advance in order to organize the different works.

MANY THANKS FOR YOUR ATTENTION

QUESTIONS ?