



Draft Minutes of the 68th Meeting of the ISOLDE Collaboration Committee

held on October 22nd 2013

Present: Y. Blumenfeld, R. Catherall, J. Cederkall, L. Fraile, M.J. Garcia-Borge, P. Greenlees, D. Jenkins, Y. Kadi, M. Kowalska, R. Losito, A. Negret (replacing N. Marginean), K. Riisager, D. Santonocito, L. Schweikhard, S. Siem, P. Van Duppen

Excused: B. Blank, K. Blaum, M. Henry

Absent: U. Datta Pramanik, S. Harissopulos

Invited: E. Siesling, M. Stachura (P.T.), T. Stora (P.T.), O. Tengblad

The meeting starts at 13:30 h

1. Introductory remarks by the chairperson

The chairperson opens the meeting and welcomes the committee. The above mentioned members of the committee are excused and A. Negret is welcomed as a replacement for N. Marginean.

2. Approval of the minutes of the 67th meeting.

The minutes of the 67th ISCC meeting are accepted without any alterations.

3a. Status of works at the ISOLDE Hall (E. Siesling)(see presentation)

E. Siesling summarises the progress made at the ISOLDE hall and the work planned for the rest of the year. A cleaning campaign was completed in September to allow physicists to work in the hall and so a tent was used to prevent further dust during the excavation of the cable trench. The digging of the trench is now completed but took twice as long as planned due to the thickness of the floor being 80cm rather than the 50cm stated in the building specifications. The new shielding tunnel walls have been installed and modification of the existing metal platform has begun. The installation of the cooling and ventilation systems is in progress but a 4 month delay has been introduced by the contractor. New planning has been put in place and the contractor will be finished by 14th March 2014 ready for the ISOLDE Low Energy startup.

A summary of the delays encountered so far is presented and the committee is assured that the delays considered to be critical have been addressed and that work is still on track with the original planning.

3b. Status of building 508 (E. Siesling)(see presentation)

E. Siesling begins by summarising the progress of the building 508 project during the summer of 2013. This had included the treatment of asbestos in buildings 115 and 601, the declassification of 115 and 507 and the demolishing of all three buildings to make way for the new 508 building.

The committee is informed that it has now been decided to add extra space on the first floor of building 508 for a new ISOLDE Control Room which will be outside the classified area. The new control room will enhance contact between users (DAQ rooms) and the machine supervisors and will be next to the possible future TSR storage ring. The gradual transfer to the new control room is planned to start in June 2014 and the old control room will be used as storage.

E.Siesling explains the decision to use a light structure for building 508 instead of modular cabins due to the high price of non-standard modules. The building will have two concrete floors and a total surface of 864m². The ground floor, which will only be accessible from within the classified area, will contain the solid state, laser and detector laboratories as well as the workshop. The first floor, accessible from outside the classified area, will house the data acquisition rooms, a meeting room/visitor centre, the kitchen and the new control room. The committee is told that M. Kowalska is gathering the details of users' requirements for the infrastructure of building 508 because the plans have to be finalized as soon as possible. Finally the timeline for the project is summarized and the committee is told that users have been informed to plan for installation of their equipment from April 2014.

4. News from HIE-ISOLDE (Y. Kadi)(see presentation)

Y. Kadi begins by addressing the financial situation of the HIE-ISOLDE project. The cost of the "machine part" of HIE-ISOLDE as presented at the 2012 Cost & Schedule Review is shown to the committee. At this time the shortfall in funding for Phase 1 of the project was thought to be 0.7MCHF which was later covered by a loan from CERN negotiated by M.J. Garcia Borge. However certain elements should also have been incorporated in these figures in 2012:

- R&D expenditures on HIE-ISOLDE Team Account
- Correcting the machine costs to match the CERN Mid-Term Plan 2010
- Adjustment of income

Hence the shortfall in Phase 1 funding that should have been presented to the Cost & Schedule Review in 2012 should have been 3.8MCHF. Since then the following elements have to be considered:

- Additional R&D costs
- Additional Machine costs
- Adjustment of the income: unused CATE funds
- Advance procurement of Phase 2 components

Taking all these elements into consideration, the committee is informed that the actual shortfall in funding for Phase 1 of the HIE-ISOLDE project is, at present, 5.8MCHF. Y. Kadi shows the committee how the cost of the machine part of the project is distributed between R&D, Machine, HEFT, increased component cost and advanced Phase 2 procurement. The evolution of the total cost of the machine part of the project from the time of project approval to the present day is presented.

An overview of expenses already charged to team accounts is presented to the committee followed by the present status of expenditure for the machine part of the project.

Y. Kadi moves on to summarise the recent technical advances of the HIE-ISOLDE project.

- The remaining issues of RF cavity performance have been solved with three cavities working more than 30% above specifications so series cavity production can begin.
- High beta cavity procurement: Two series of cavities are at CERN ready to start coating.
- Low level RF status: Prototype commissioned and tested.
- Superconducting solenoid: Final design approved and first solenoid delivery expected in February 2014.
- Cryomodule assembly: Tendering processes for both the vacuum and helium vessels are complete.
- Clean room in SM18: Should be operational by the end of 2013, however, staffing of the clean room assembly is an issue. Three teams of two persons are necessary for the assembly of the cryomodules which takes place inside the clean room. So far only 2 people have been identified, 1 from TE/MS and 1 from BE/RF.
- Beam Instrumentation: The completely redesigned prototype short Diagnostic Boxes have been successfully tested at CERN.

Y. Kadi then presents a simplified planning for the HIE-ISOLDE project and tells the committee that work is still on track for physics at 5.5MeV/n in October 2015 although the progress of the HEBT, cryogenics and cryomodules are considered critical.

A discussion follows about the financial situation of the HIE-ISOLDE project. Y. Kadi informs the committee that, in the present situation, problems will occur in June/July 2014 when invoices are sent out to team accounts to reimburse costs spent on CERN accounts and there are not enough funds left in the team accounts. The committee is told that a meeting took place with S. Bertolucci on 16th September 2013 during which he requested a spending profile of the HIE-ISOLDE project. A meeting of CERN directors and department heads, at which they will discuss the project, takes place on 22nd October. The ISCC members are warmly encouraged to follow up any opportunities for funding applications in their home countries that could be put towards the project.

5. Beam Developments (T. Stora) (see presentation)

T. Stora explains that the Group for the Upgrade of ISOLDE (GUI) <http://isolde-upgrade.web.cern.ch/isolde-upgrade/> meets twice a year and the priorities for target and ion source R&D are discussed at the second of the two meetings. Beam development is constantly ongoing with some beam time scheduled for online testing hence the concentration has been on offline activities during LS1 with some online tests foreseen at other facilities such as ALTO, SARAF and TRIUMF.

T. Stora then reviews in detail the experimental work that has taken place so far during LS1 and the many publications that this has produced.

The target development team is presently made up of:

- Production/Infrastructure: E. Barbero, B. Crepieux, M. Owen, S. Marzari
- Molecule evaporation: C. Seiffert
- Neutronics: R. Luis (ITN, Lisbon)
- Target materials: A. Gottberg (ENSAR-FP7, ActILab)

- Target nanomaterials: J.P. Ramos (University of Aveiro)
- Material Analysis Support: M. Czapski (CATHI ITN Marie Curie program)
- High Power targetry: T. Mendonca
- Thermal management: S. Cimmino

T. Stora concludes by informing the committee that the target development team will gradually decrease in size until it reaches a reduced level in 2015 which will be maintained using funds assigned by CERN.

6. Status of the activities for LS1 and HIE Design Study (R. Catherall)(see presentation)

R. Catherall begins by summarizing the ongoing LS1 activities starting with the target area. During the CERN open days the new robots performed over 260 cycles, equivalent to approximately seven years of use, without any faults. The services modifications for Robot Installation Phase 3 of the Work & Dose Planning are expected to produce higher than expected collective and individual radiation doses so the additional control measures put in place in order to limit these doses are explained. The PAD/MAD entrance system for the target area will be installed in January 2014 giving more time for the installation of the robots and allows for the modification of the corridor for the future hot cell. The groundbreaking ceremony for the MEDICIS facility took place on 4th September 2013 and earth removal for the new building has begun. The new hot cell factory acceptance tests are planned for December 2013.

The committee is then informed of the work taking place in the ISOLDE hall including that at the REXEBIS and REXTRAP setups. The recent significant advances made at the TWINEBIS test setup are summarized as well as the long term goals. This progress is due to A. Shornikov, whose CATHI fellowship ends in June 2014 (now prolonged to end 2014), and M. Breitenfeldt, funding for whom finishes in February 2014. Unless new funding sources can be found for manpower at the TWINEBIS further development will be extremely limited. R. Catherall then discusses the TSR@ISOLDE project and informs the committee that the final integration study was submitted to the CERN Director of Accelerators and department leaders on 28th August. The TSR elements have been evaluated by CERN specialists and, in general, a positive and supportive response was received from the CERN groups involved. Two approaches for the integration of the TSR at CERN have been put forward:

- Full CERN homologation which involves "standardising" all equipment and has an estimated cost of 15.2MCHF and 27.5FTE.
- "Keep-system-as-is" option which is the low budget option with minimal changes. The estimated cost is 11.8MCHF and 17.1FTE.

Feedback from the CERN management is awaited and the TSR@ISOLDE workshop will be held at CERN on 14th February 2014.

R. Catherall then moves on the HIE-ISOLDE Design Study and summarises the different technical advances made regarding the targets, front end, beam quality and infrastructure. The committee is told that the final Design Study Report has to be submitted in Autumn 2014 and a timeline is presented showing the projected implementation of the report. The Committee is reminded that the HIE ISOLDE Workshop: Technical Aspects will take place at CERN from 28th to 29th November 2013.

The committee is informed that the beam alignment survey has shown a 10mm vertical step in the centre of the beamline (CBO) while there is an overall vertical difference of 17mm between the target ion source and ISOLTRAP (CDO) in level but it has been decided not to

realign the beamline during LS1 for several reasons including the current heavy workload at ISOLDE, the clash with HIE-ISOLDE work in the hall and the uncertainty in improvement of beam transport. The committee states that the realignment must be addressed and requests that a project be undertaken, possibly by a summer student, to produce a simulation of the beam improvement if the beamline is realigned.

Finally the VITO proposal, for which the physics case was endorsed by the INTC committee on 26th June 2013, is discussed. The Technical and Safety Review of the RBO Upgrade (VITO line) was held on 3rd September 2013 and the upgrade was approved by the technical committee after it congratulated the VITO Collaboration on its excellent preparation for the review and its thorough investigation both of the installation and integration of the modified beamline.

7. HIE-beam lines: decision

M. Garcia Borge summarises the status of physics at HIE-ISOLDE with regard to proposals and letters of intent approved so far by the INTC and the number of shifts allocated. The committee is shown how these proposals are spread between the different types of instrumentation and told that a large number of different experiments will have to be allocated to only two beam lines. A brief update from the HELIOS project is presented which shows that, if it goes ahead, the plan is to install their magnet at the exit of the TSR during the second long shutdown at CERN.

The committee is told that a study into the possible extension of the second beamline, undertaken by M. Fraser, has shown that, due to the modular design, there would be no negative impact on the beam optics or performance. The extra cost of the beamline extension is roughly evaluated at 274kCHF.

M. Garcia Borge explains that a request has been received from the MINIBALL collaboration for their setup to be installed on the first beamline in order to give more space for their instrumentation. After a short discussion the ISCC agrees to this request, however, a measurement of x-ray background coming from the LINAC should be carried out before a final decision is taken.

8. First discussion on the possibility of bringing TRImuP to ISOLDE (O. Tengblad) (see presentation)

The "Trapped Radioactive Isotopes: micro-laboratories for fundamental Physics", TRImuP for short, is a dual magnetic spectrometer installed at KVI in the Netherlands. While the future of KVI is uncertain, it has definitely been decided that the spectrometer will no longer be used at KVI and the ISOLDE collaboration has been asked if it is interested in moving TRImuP to ISOLDE.

A strong interest in having a zero-degree spectrometer at HIE-ISOLDE was already expressed at the "HIE-ISOLDE Spectrometer Workshop" held in Lund, Sweden in March 2011 but the initiative was postponed due to the rapid advance of the TSR project and the need to focus on a single project.

It is explained why a zero-degree spectrometer can be useful and the TRImuP setup, along with its characteristics is presented. Finally the committee is shown how the spectrometer could fit behind the HIE-ISOLDE beamline.

The ISCC decides that it is interested in this proposition but that information about the infrastructure that would come with the setup is required and that the spectrometer would

probably be run as an experiment. O. Tengblad is asked to follow up this proposal and look into the physics case.

9. News from the ISOLDE Group (M.J.G. Borge)(see presentation)

M.J.G. Borge begins by summarising the present manpower situation in the ISOLDE Physics Group.

- Associate: Alfredo Poves (January to June 2014). The application deadlines for associates in 2014 are 13th March and 13th September.
- CAS: Olof Tengblad (July to December 2013)
- Fellows: Susanne Kreim (until December 2014), Elisa Rapisarda (until August 2014), Monika Stachura (until March 2015), Jan Kurcewicz (until November 2013 + ENSAR-5 months prolongation). The application deadlines for fellows in 2014 are 3rd March and 3rd September.
- Doctoral Student: ISOLDE has been assigned a new doctoral student position for the fixed decay station starting in February 2014. The next deadline for doctoral students is 19th November 2013.
- Technician: Julien Thiboud (until August 2014)
- User Support: Jenny Weterings

The committee is informed that the deadlines for technical student applications for the selection committees in 2014 are 19th November 2013 and 6th May 2014 while the deadline to apply to be a summer student is 31st January 2014.

The following courses and workshops took place or will take place at ISOLDE in 2013:

- Statistical Methods for Nuclear Physics: 18-21 March (K. Riisager)
- Physics Courses for CERN Summer Students: 3 lectures 17-19 July (M. Kowalska)
- ISOLDE Nuclear Physics Summer Lecture Series: 3 lectures 23-25 July (R. Casten)
- VITO Workshop: 6th September
- Shell Model for non-Practitioners: 14-18 October (F. Nowacki et al.)
- ISOLDE Decay Station Workshop: 21 October
- MINIBALL Workshop: 24-25 October
- ISOLDE Workshop and Users meeting: 25-27 November
- HIE-ISOLDE Technical Workshop: 28-29 November

M.J.G. Borge summarises the ENSAR General Assembly (GA) meeting that was held in Padova from the 16th to 18th October 2013 and attended by M. Kowalska. At the GA it was decided to request a 6 month extension of the project in January 2014 to bridge the gap until ENSAR2. If the EU approves the prolongation the FCC and ENSAR Steering Committee will prepare a proposal for fund redistribution. The committee is shown the list of TNA facilities and JRAs and NAs that the members of the ENSAR SSC, who met in Paris on September 10th, have decided to include in the ENSAR2 proposal. The members of the ISCC are asked to lobby their national representative in Brussels to keep ENSAR2 among the targeted projects. The committee is informed that Belgium, CERN, Denmark, Germany, Italy, Norway, Romania, Sweden and the United Kingdom have paid their contribution to the ISOLDE Collaboration for 2013. The budget situation for 2013 is briefly summarized and the committee is told that yearly expenditure of less than 250kCHF, other than the HIE-ISOLDE contribution, is not possible.

The findings of the Technical Review of the proposed VITO setup that was held at CERN on the 3rd of September 2013 were summarized. On the basis of these findings the ISCC committee decides to give approval to the initiative by the VITO Collaboration. The new NICOLE collaboration, lead by T. Ohtsubo and M. Veskovic, has submitted a proposal to the INTC and have requested space at the ISOLDE hall. The committee decides to discuss this matter at the next ISCC if the proposal is approved by the INTC. Finally the committee is informed that the collaboration behind the HELIOS type spectrometer has submitted a substantial grant request to the STFC in the UK to develop advanced detection systems for the TSR.

10. INTC Matters (M. Kowalska)

The committee is informed that 35 documents were submitted to the INTC meeting in October 2013 of which 31 concerned ISOLDE. This included 19 proposals, 8 Letters of Intent, 3 clarification letters and 1 addendum. A total of 600 shifts were requested of which 460 were for low energy experiments. Several proposals were submitted for the VITO setup and the fixed decay station (IDS).

11. Coordinator Physics Position

The ISCC approves the request from M. Kowalska for a contract extension of 6 months until the end of March 2015.

12. A.O.B

- The first ISCC meeting in 2014 will be held on **Monday March 31st at 11:00** and the second meeting will be held on **Tuesday June 24th at 11:00**.

The meeting ends at 18:15.

N.B. The overheads mentioned in the above minutes can be found via <https://indico.cern.ch/conferenceDisplay.py?confId=274176> .