



Draft Minutes of the 69th Meeting of the ISOLDE Collaboration Committee

held on March 31st 2014

Present: B. Blank, Y. Blumenfeld, R. Catherall, J. Cederkall, L. Fraile, M.J. Garcia-Borge, P. Greenlees, M. Henry, D. Jenkins, Y. Kadi, M. Kowalska, N. Marginean, K. Riisager, D. Santonocito, L. Schweikhard, S. Siem, P. Van Duppen

Excused: K. Blaum

Absent: U. Datta Pramanik, S. Harissopulos, R. Losito

Invited: J. Kurcewicz (P.T.), E. Siesling, T. Stora (P.T.), F. Wenander (P.T.)

The meeting starts at 11:00 h

1. Introductory remarks by the chairperson

The chairperson opens the meeting and welcomes the committee. The above mentioned member of the committee is excused.

2. Approval of the minutes of the 68th meeting.

The minutes of the 68th ISCC meeting are accepted without any alterations.

3. Status of the HIE-ISOLDE Project (Y. Kadi)(see presentation)

Y. Kadi begins by informing the committee that meetings of the HIE-ISOLDE Physics Coordination Group and the Steering Committee will both take place on April 1st and the HIE-ISOLDE International Advisory Panel will meet on April 8th-9th.

The budget of the project is then addressed. A full analysis of the financial situation of the machine part of the project, carried out in October 2013, highlighted a 4.5MCHF extra cost for the machine and 5.2MCHF missing funds for the completion of Phase 1. The ISOLDE Collaboration has contributed a total of 12MCHF to ISOLDE infrastructure since 2006. Of these funds, 3.4MCHF has been invested in infrastructure of ISOLDE such as the RF-Cooler, the RILIS upgrade and the TWIN EBIS project. After much discussion with CERN management an increase in the CERN contribution of 4.5MCHF was approved by the CERN Director General in November 2013 and the CERN Council should approve it in June 2014. The ISOLDE Collaboration has not been approached for extra funds. In March 2014 a new update of the financial situation of the project shows a cost to completion of 22MCHF for the machine and 21.2MCHF for the infrastructure and design study, giving a total cost of the 3 phases of the project of 43.2MCHF. The spending profile of the separate phases of the project is presented and it is explained that, due to certain savings realised, the cost to

completion now includes a contingency fund for the machine of 520kCHF. The committee is then shown the cash balance of the machine part of the HIE-ISOLDE project and told that funding of phase 1 and the advanced procurement of agreed phase 2 components should be secure. However, as the only outside funding currently secured for phase 2 is 0.5MCHF from the Belgian large science grant, 8.3MCHF of phase 2 and phase 3 are presently unfunded. After showing the present cash flow situation of the machine part of the project, the committee is told that there should be sufficient funds in CERN accounts to pay all invoices foreseen in 2014.

Y. Kadi moves on to summarise the recent technical advances of the HIE-ISOLDE project and the technical issues being addressed:

- Cavity Performance: three cavities have been successfully sputtered out of the four attempts.
- Copper Cavity Production: after a four month delay, the expected delivery of the pre-series cavities is the end of April 2014.
- Superconducting Solenoid: Danfysik have solenoid 1 ready for cryostating and solenoid 2 coil wound. The expected delivery dates are 30th April and 30th May respectively.
- SM18 clean room: all required infrastructure is now in place and the clean room is better than specifications but can only hold one cryomodule at once. The clean room is totally funded by the CERN part of the HIE-ISOLDE project.
- Cryomodule sub elements procurement: some elements have had to be insourced to the main CERN workshop due to the unfavourable response received from outside companies that were contacted. The EN department is thanked for its cooperation in this matter.
- Cryomodule: procedures and assembly tooling need to be further elaborated and the manpower/training for assembly in the clean room as well as SM18 logistics still have to be addressed.
- HEBT: the Long Diagnostic Boxes could be delivered just in time but this would leave no margin for hardware tests. Most cabling difficulties have been resolved but a long cabling campaign is foreseen. Regarding field regulation of dipoles some difficulties have been encountered in identifying a suitable hall probe.

The presentation then moves on to the HIE-ISOLDE project planning and, as there have been many updates (delivery schedules, etc.) since the "master plan" shown in November 2013, a new baseline proposal, already endorsed by CERN management, is presented. Due to certain delays which have already become reality (procurement of cavities, etc.) and points raised at a recent Cryomodule review meeting the previous planning is no longer viable. It has been decided that more margin is required for:

- Processing of cavities
- Training of cryomodule assembly teams
- Adaptation to temporary non-availability of facilities such as SM18
- Adaptation to competition from other priority work
- As yet unforeseen problems

Y. Kadi explains to the committee that, in order to keep to October 2015 as the physics start date, the project must fall back to just one cryomodule with the second being fitted after the initial 2 month run, during the 2015/2016 shutdown. The commissioning plan is presented to the committee which shows 24th August 2015 as the date for the start of beam commissioning and 12th October 2015 as the start of HIE-ISOLDE physics.

Y. Kadi concludes his presentation by informing the committee of the extra manpower recently assigned to the project:

- V. Mertens(TE) project monitoring and F. Formenti (TE) technical coordination
- P. Santos Silva (DG-HSE) risk management plan
- B. Leiba (EN/MEF) planning and installation coordination
- 2 additional draughtsmen (Acrotecna) + 1 safety engineer (TE/MSC)
- 1 mechanical engineer (EU7-TIARA now EN/HDO)

The fact that the end of the CATHI fellow programme this year will impact on some crucial HIE-ISOLDE activities, such as the cavity work, has been raised with the CERN management. A discussion follows about the feasibility of meeting the October 2015 deadline for first physics at HIE-ISOLDE.

4a. Status of work at the ISOLDE Hall (E. Siesling)(see presentation)

E. Siesling summarises the work, both completed and ongoing, at the ISOLDE hall. The committee is told that installation work has continued according to plan since the last ISCC meeting in October 2013 and that steady progress has been made in the construction of HIE-ISOLDE. The high level of activity in the hall and service buildings will continue and will be made even more challenging when taking place in parallel with ISOLDE low energy physics. The committee is shown the installation planning and a summary of delays identified so far which have been dealt with and incorporated in the schedule.

E. Siesling assures the committee that work is on track and that the start of the ISOLDE low energy physics programme, foreseen for 2014, will not be hampered by the HIE-ISOLDE installation works. The integration team is thanked for its work so far.

4b. Status of building 508 (E. Siesling)(see presentation)

E. Siesling begins by summarising the progress of the building 508 made during the winter months; at present the windows, doors and inner walls are being installed. The layout of the building is presented and the committee told that the infrastructure requirements of users have been collected by M. Garcia Borge and M. Kowalska. The implementation by different CERN groups and contractors is ongoing so the finalized infrastructure plans need to be ready as soon as possible.

The committee is informed that the cooling and ventilation solution proposed by the contractor contains two HVAC (heating, ventilation and air conditioning) systems; a general system for the whole building and technical cooling for the ground floor laboratories. However, this is too expensive and requires new electrical design so it is now suggested to keep the general system for the building as proposed but, for the technical cooling, to re-use available chilled water and install 4x7kW fan-coils (1 SSP, 2 COLLAPS and 1 CRIS).

E. Siesling tells the committee that the estimated cost of building 508 is now 2MCHF. The building will be ready in April 2014 while the infrastructure along with the controlled access should be completed in June. It is hoped to keep the basement of building 275 for use as storage for experiments.

The ISCC agrees that disabled access to the first floor of building 508 must be integrated into the construction plans.

5. Beam Developments during LS1 (T. Stora) (see presentation)

T. Stora reviews the work carried out by the target development team since the ISCC meeting held in October 2013. This includes the ongoing 8B beam development in conjunction with SARAF in Israel, the Liquid Lead Bismuth Eutectic Loop target for EURISOL and nanoTiC targets.

The committee is told that the target development team was joined at the beginning of March by J. Guillot from IPNO for five months and the arrival of a fellow from Korea is pending the signing of the MoU between CERN and South Korea.

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

R. Catherall begins by summarising the ongoing LS1 activities starting with RILIS. The new SAS for the RILIS laser room was finished in February 2014 and installation of the HRS laser window, the new features of which add safety and usability, is planned for April. RILIS has very recently achieved the very first laser ionisation inside an arc discharge ion source. Work going on at REX includes the repair of the REXEBIS magnet cryostat, which is nearing completion, and the HEC² prototype tests being carried out at BNL. R. Catherall then informs the committee that the old tape station, having had its solenoid brake and electronics repaired, will be used for the ISOLDE start-up this year and the construction of the new tape station will take place throughout 2014. He also tells the committee that the RFQ cooler is now back in place and aligned.

The presentation moves on to the work undertaken in the target area. The target dismantling hot cell has successfully completed factory acceptance tests, so delivery and start of assembly took place on 18th March. The installation of the target handling robots is almost completed and the PAD/MAD access system is installed and operational.

R. Catherall moves on to summarise the large amount of work going on at MEDICIS. This includes the Montrac prototype developed for MEDICIS, Faraday cage modifications, extra shielding and the building status. The committee is informed that a new office for biomedical applications, with Steve Myers at its head, has been set up at CERN.

The committee is shown the present startup schedule which plans the GPS and HRS startup during the 4 weeks of May and protons for physics being available from 21st July 2014.

The presentation then turns to the HIE-ISOLDE Design study. The committee is told that the "HIE-ISOLDE Workshop - The Technical Aspects" held at CERN in November 2013 was very successful and that a second workshop will be organised in Barcelona on 22-26 September 2014. The Design Study report has to be submitted to the publisher on 31st October 2014 and will be published as a CERN Yellow Report. It will be a detailed account of the approaches to address the issues associated with an upgrade of primary beam intensity and energy as well as the necessary upgrades required for an improvement in secondary beam quality. A description of the most appropriate solution and an approximate cost estimate and eventual timeline for its implementation will be included. The report will incorporate the following main sections:

- Infrastructure
- Beam Quality Upgrade
- Target Issues
- Operations
- Radioprotection and Safety
- Cost and planning

The CERN Yellow Report will be used as the road map for decisions made by CERN regarding any future ISOLDE upgrades.

R. Catherall informs that, because of the loss of manpower due to the end of the CATHI Fellow program, only some of the projects detailed in the Design Study will progress. The committee is told that collaborations with other facilities or institutes for joint developments would therefore be welcomed.

R. Catherall concludes by informing the committee that Front End #8 is now operational so, for the first time ever, ISOLDE has a spare operational Front End.

7. New Safety Rules at the ISOLDE Hall (M. Kowalska) (see presentation)

With regards to general safety at ISOLDE, M. Kowalska informs the committee that the ISOLDE hall is to be divided into two parts until the end of 2014 due to HIE-ISOLDE work and access for physicists will only be from the Jura side. Separate access rights will be required to enter the hall extension and the moving of equipment, including LN₂ dewars, through the extension should be coordinated with E. Siesling and will require safety shoes and helmets. Discussions are ongoing about the possibility of waiving the requirement for safety shoes and helmets in the low-energy area of ISOLDE. The new building 508 will host several DAQ rooms located outside the RP area.

M. Kowalska presents the new dosimeter rules that will come into effect on July 1st 2014. ISOLDE will change from a RP supervised to a RP simple controlled area which means that:

- Access will be registered via the dosimeter and not the CERN card
- No temporary dosimeters will be accepted to enter the facility
- All permanent dosimeters should be given back to the dosimetry service when leaving CERN and there will be some flexibility in getting them back on following visits.

The procedure to obtain a permanent dosimeter will be as follows:

- Present to the dosimetry service a RP form (under preparation) signed by the home institute which replaces the present medical certificate
- Follow an ISOLDE on-line RP course (to be ready in May 2014)
- Follow a 2-hour practical RP training session (under preparation) which will be held on Tuesdays and Fridays. Registration for this course will be required in advance.

A first draft of the new RP form, prepared by the RP department, is presented to the committee and a discussion follows. Several concerns are raised by members of the committee and it is agreed that it would be preferable for the form just to mention "Category B workers or equivalent" as this is thought to be standard throughout Europe.

8. News on the TSR implementation and EBIS upgrade (F. Wenander) (see presentation)

F. Wenander begins by giving a detailed summary of the TSR machine performance characteristics. The proposed building and beamline layout is presented as well as a tentative layout for two experimental stations. Feedback from the physics community is requested regarding the extraction lines and experimental setups.

The status of the charge breeder upgrade is then summarised and the committee is informed that the new concept is looking promising but the project has a long way to go. In order to continue this project a solution is required for the bridging of A. Shornikov's contract from the end of his fellowship (31st December 2014) to the start of ENSAR2 (1st March 2015?) and his affiliation during ENSAR2. **The help of the members of the ISCC is requested regarding this matter.**

F. Wenander then briefly presents the conclusions of the technical integration study and shows a tentative implementation schedule that was given to the CERN BE department leader on 28th March 2014. The committee is informed that, while the cost, manpower and technical aspects of the integration of the TSR have been studied and do not seem to present any major hurdles, the operational and experimental difficulties that will be encountered should not be underestimated or ignored at this stage.

9. Discussion on the name of the post-accelerated beam facility: HIE-ISOLDE, HIE-REX.?

The committee decides that the name of the post-accelerated beam facility at ISOLDE will be "HIE-ISOLDE".

10. INTC Matters (M. Kowalska)

M. Kowalska tells the committee that 600 shifts were requested, for both high and low energy experiments, at the INTC meeting held in October 2013 of which almost 300 were approved. The INTC meeting held in February 2014 only considered status reports and addenda from low energy experiments and out of a total of 550 shifts requested 500 were approved; this was made up of mostly low energy shifts that were already accepted and some from addenda. The INTC meeting in June 2014, for which May 28th is the deadline, will accept all proposals.

The physics schedule for 2014 is under preparation and priority will be given to experiments that did not run, or had problems, in 2012. An effort will be made to try to give all experimental groups some beam this year.

The committee is informed that there are at present 770 shifts open for low energy experiments and 580 shifts have been approved for HIE-ISOLDE experiments. Hence it is under consideration to make a call for status reports from the HIE-ISOLDE experiments for the INTC meeting in February 2015.

M. Kowalska concludes by telling the committee that the presentation about ISOLDE and nTOF made to the CERN Council was very well received.

11. Status of the DAQ (J. Kurcewicz) (see presentation)

J. Kurcewicz summarises the DAQ systems presently used at ISOLDE and presents a number of other systems that could be useful at ISOLDE in the future.

12. ISOLDE Physics Group Leader and Physics Coordinator Positions

The ISCC approves a contract extension of the ISOLDE Physics group Leader, M.J. Garcia Borge, for 1 year until the end of June 2016.

It also approves a contract extension of 6 months until the end of September 2015 for M. Kowalska, the ISOLDE Physics Coordinator.

13. Space for NICOLE (M.J.G. Borge)(see presentation)

The committee is informed that, at the INTC meeting held in October 2013, a new NICOLE proposal was accepted with a request for a clarification letter about neutron background. Hence the two possible locations for NICOLE, the previous position under the mezzanine and next to CRIS where the HV platform used to be, were communicated to the new NICOLE collaboration. From discussions with M. Veskovic and the fact that CRIS have not been

contacted by the NICOLE collaboration, it is understood that only the previous position of the NICOLE experiment is being considered.

M.J.G. Borge tells the committee that the NICOLE fridge was repaired in the UK and returned to ISOLDE in November 2013. In March 2014 T. Ohtsubo came to CERN to prepare the fridge for reinstallation and the NICOLE team plans to test it in May.

A short discussion follows and it is concluded that the installation of the NICOLE fridge should be coordinated with E. Siesling with regard to the scheduling of work taking place on and around the mezzanine.

14. 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). There are presently four applications for associate positions and one for corresponding associate. The next application deadline is 13th September 2014.
- Fellows: Susanne Kreim (until December 2014), Elisa Rapisarda (until August 2014), Monika Stachura (until March 2015), Jan Kurcewicz (until June 2014), Miguel Madurga (June 2014 to May 2016) and Stephan Ettenbauer (June 2014 to January 2017). Presently three applications are under evaluation. The next application deadline for fellows is 3rd September 2014.
- Doctoral Students: Fixed decay station doctoral student (February 2014), Stavroula Pallada (Doctoral Program with Greece for life sciences) (March 2014 to February 2017), Laura Grob (Doctoral Program with Germany) (June 2014). The next deadline for doctoral students is 6th May 2014.
- Technician: Julien Thiboud (until August 2014)
- User Support: Jenny Weterings

The committee is informed that, since the last ISCC meeting, a successful ISOLDE Workshop took place in the Globe from 25th to 27th November 2013 and the TSR@ISOLDE Workshop was held on 14th February 2014. The following courses will be organized at ISOLDE during 2014:

- ISOLDE Nuclear Reactions and Nuclear Structure Course, 22th-25th April: Lecturers W. Catford, A. Di Pietro and A. Moro
- Separator Course, December 2014.

M.J.G. Borge then moves on to mention ENSAR which will end in August 2014. ISOLDE has 33kCHF remaining of its TNA funds to be used before the end of the project; an application has been made for the prolongation of ENSAR until the end of 2014 (approved 30th April 2014). The next ENSAR2 SSC meeting will take place at GSI on 10th April 2014 and the call for H2020 will close in September this year.

The committee is informed that Bulgaria has agreed to the terms of the ISOLDE MoU so will be joining the ISOLDE Collaboration as soon as the document, already signed by S. Bertolucci, is signed by the Bulgarian authorities. The Bulgarian representative to the ISCC will be G. Rainovski.

M.J.G. Borge then briefly summarises the financial situation of the collaboration. The expenditure for 2013 is presented and shown to have been kept below the expected 250kCHF. The committee is told that France, Greece, India, Ireland and Spain have not yet

paid the collaboration fee for 2013. However, payment of the fees for 2010 and 2011 has now been received from Greece.

A discussion is held about how to commemorate the 50th anniversary of the approval of the ISOLDE on-line separator. The committee agrees that, while ISOLDE should definitely be present in some way at the opening to the public of the SC as an EPS historical building on 19th June, the 50th anniversary of ISOLDE should be celebrated at this year's workshop and possibly with another dedicated event.

M.J.G. Borge explains to the committee that the AGATA Collaboration will soon decide where to locate their device from 1st January 2017 for its next science campaign which is typically 18 to 36 months in length. Laboratories interested in hosting AGATA for this period and able to bear the costs of local infrastructure should submit a letter of intent by the end of May 2014. A discussion takes place and concerns are raised about the level of technical support that would be required and the limited period available between the beginning of 2017 and the start of LS2. It is agreed that if IKP Cologne would support the idea then a letter of intent could be submitted conveying the special conditions that would be required at ISOLDE.

15. A.O.B

- P. Van Duppen informs the committee that the King of Belgium will be making a visit to ISOLDE. After discussion it is decided that some kind of interactive display should be developed for future visits of ISOLDE. D. Jenkins suggests that the UK Nuclear Physics Outreach Officer is contacted to see if they can help with this matter.
- Y. Kadi requests the transfer of the collaborations contribution to the HIE-ISOLDE project for 2013 and 2014, as well as the CERN loan, as soon as possible.
- The next ISCC meeting will be held on **Tuesday June 24th at 09:30** and the last meeting in 2014 will be held on **Tuesday November 4th**.

The meeting ends at 18:15.

N.B. The overheads mentioned in the above minutes can be found via <https://indico.cern.ch/event/302887/> .