



Draft Minutes of the 70th Meeting of the ISOLDE Collaboration Committee

held on June 24th 2014

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

Excused: L. Fraile, S. Harissopulos, M. Henry, N. Marginean, K. Riisager, D. Santonocito,

Absent: U. Datta Pramanik, R. Losito

Invited: A-P. Bernardes (P.T.), H. de Witte (P.T.), V. Fedosseev (P.T.), G. Rainovski, E. Siesling, M. Stachura (P.T.), T. Stora (P.T.),

The meeting starts at 09:30 h

1. Introductory remarks by the chairperson

The chairperson opens the meeting and welcomes the committee as well as the invited speaker from Bulgaria G. Rainovski. The above mentioned members of the committee are excused.

2. Approval of the minutes of the 69th meeting.

The minutes of the 69th ISCC meeting are accepted without any alterations.

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

The committee is informed that the current project baseline envisages the installation of Cryomodule 1 in April-June 2015 allowing physics at 4.3MeV/u as of October 2015. Cryomodule 2 would be installed during the 2015/2016 shutdown with commissioning at 5.5MeV as of May 2016. Y. Kadi summarises the current status of the technical aspects of the HIE-ISOLDE project:

- The first series cavity manufactured at RI (Germany) has been received and the 3 non-conformities have now been solved. When the performance of this cavity has been confirmed the green light will be given for the manufacture of the remaining cavities.
- Two pre-series tuning systems have been fully tested and 15 units are now under production by the CATE consortium.
- Two pre-series couplers have been tested and are available.
- The first prototype low level RF controller has been commissioned in SM18.
- RF Power status: All 6 air cooled amplifiers have been delivered and accepted at CERN while the first pre-series water cooled amplifiers are being qualified at CERN.

- The expected deliver date of the superconducting solenoid is now week 34 which is 16 weeks late. This is due to the fact that the faulty SC coils had to be replaced and qualified tests carried out. (Update 15th July - The replacement SC Solenoid is performing to specification with less than 5 quenches at 100% I_{nom} (delivery confirmed for week 34)).
- Cryomodule sub elements are being procured although there are some delays regarding the thermal shield and the assembly tooling, in production at CERN. These items are on the critical path. (Update 1st July - All items are now under production with only 1 month delay. Start of assembly now shifted to 15th August (instead of 15th July)).
- The lifting frame is now in place in the clean room in SM18 allowing the assembly of one cryomodule at a time. The main issue remaining is the lack of assembly manpower so CERN management has agreed to allow 3 clean room technicians to be hired and paid by the BE department (Update 15th July - Clean room activities are now fully staffed).
- There has been a small delay in the production of the dipole magnet and only one pre-series quadrupole has been delivered; action is being taken to try to solve the problem with ELYTT, the company manufacturing the quadrupole. Installation is now planned for November 2014 to March 2015.
- Regarding beam instrumentation, progress of the short boxes is as planned and the delays encountered for the long boxes, due to the re-design that delayed the call for tender, should not impact on the start of installation.
- There have been delays with the procurement of vacuum parts due to LS1. Additional manpower has been made available.
- Infrastructure progress is as planned
- The cryogenics has encountered a slight delay but this can be caught up.

Y. Kadi shows the committee the detailed progress monitoring system now used by the project and assures the committee that the delays encountered until now can be absorbed to meet the project baseline.

The committee is shown the present EVM (Earned Value Management) budget analysis and told that due to delays there has been less spending to date than predicted but assets are higher than spending due to certain contracts being less than expected. An overview of the funding of the machine part of the HIE-ISOLDE project is presented. Phase 1 funding is secured provided a special CERN contribution is approved in June and the advanced procurement of agreed Phase 2 is also covered. However, Phase 2 and Phase 3 are presently underfunded.

Y. Kadi briefly summarises the risk management assessment carried out in 2014 which relates performance, schedule and cost. The main risk identified was the lack of manpower and this issue has been raised with CERN management.

The committee is assured that in order to maintain tight cryomodule assembly and cryogenic installation, planning and activity monitoring is being reviewed weekly. The resource issues, highlighted by the risk analysis, are being addressed and the expenditure budget is under control.

A discussion takes place about the funding of Phase 2 which is at present missing 2.9MCHF of external funding. If Phase 2 is delayed then the present manpower would no longer be available and contracts with outside companies would have to be renegotiated leading to a

higher total cost. At present the ISOLDE Collaboration is providing 500kCHF per year until 2015 and from 2016 will be paying off the CERN loan of 700kCHF at a rate of 140kCHF per year. The committee agrees that the collaboration will provide funds for Phase 2 at the rate of 400kCHF per year from 2016. However, as the funds will be required earlier, a CERN loan may be required.

4. Status of work at the ISOLDE Hall and building 508(E. Siesling)(see presentation)

The presentation begins with a detailed summary of the work undertaken since the last ISCC meeting both inside and outside the ISOLDE hall. The committee is told that installation has continued according to plan and there has been steady progress. There have been minor delays on several co-activities that are not critical so the project is still on track with regard to the planning. The start of the ISOLDE low energy physics programme foreseen for 2014 will not be hampered by the HIE-ISOLDE installation works. However it will be a challenge having ISOLDE physics running in parallel to the continuing installation activities in the hall and the service buildings. E. Siesling acknowledges the effort made by the installation team and the committee recognizes the tremendous work carried out by E. Siesling, his colleagues and the contractors involved.

The committee is given a summary of the progress made in the construction of building 508 since the ISCC meeting in March. The roof is now finished and tight. All windows, outer doors, stairs and inner walls are installed and the openings and windows towards the ISOLDE hall are in place. The outdoor concrete ramp and stairs have been created while work on the drainage and piping for the sanitarium is ongoing.

E. Siesling presents the layout of building 508 and tells the committee that the electricity for user needs, including heating, has been calculated to be 200kW while 40kW will be required for the redesigned cooling and ventilation system. The original solution for the cooling and ventilation, proposed by the contractor, used two separate systems based on a refrigerant liquid. This was too expensive so the new design consists of:

- General ventilation: fresh air to all rooms
- Heating via electric radiators
- Laboratory air-conditioning:
 - Fan-coils for the SSP laser, COLLAPS and CRIS laboratories (4x7kW using existing ISOLDE chilled water).
 - A separate refrigerant airco system (27kW) for the SSP laboratory.

The committee is told that the choice of cooling and ventilation was made to keep the total cost of building 508 (incl. Services) close to the estimated 2MCHF. The building itself was ready in May and the infrastructure should be completed in September 2014.

5. Nuclear Physics in Bulgaria and plans related to ISOLDE (G. Rainovski) (see presentation)

G. Rainovski presents a brief summary of the history of nuclear physics in Bulgaria, the institutes presently involved in nuclear physics research and the areas of research in which they are involved. The committee is told about the ISOLDE experiments in which Bulgarians are already involved and the HIE-ISOLDE experiments that have already been approved. Future plans for Bulgarian institutes would include nuclear structure studies and an involvement in MEDICIS.

The committee is informed that the Bulgarian authorities have agreed in principle to joining the ISOLDE collaboration for 2015 and 2016, after which Bulgarian involvement at ISOLDE would be reviewed before deciding on continued membership.

A strong endorsement is given by the committee for Bulgaria becoming a member of the ISOLDE Collaboration.

6. The MEDICIS project (T. Stora)(see presentation)

T. Stora's presentation to the committee includes a brief history and the idea behind the CERN-MEDICIS project which plans to be able to produce a relevant share of the isotopes available today at ISOLDE. The planning proposal is shown from commissioning starting at the end of 2015 to isotope production with light targets mid-2016 right up until operation with Uranium targets in 2018.

The visibility that the project has received so far, both locally and internationally, is summarised and the committee is told that the MEDICIS project now comes under the umbrella of the new office for biomedical applications at CERN with Steve Myers at the helm. The present members of the MEDICIS team at CERN are shown and then T. Stora moves on to summarise the status of installation and integration work at the new MEDICIS building. T. Stora then introduces just a few of the biomedical research areas which could make use of the MEDICIS facility and the increasing list of MEDICIS external partners. The committee is informed that discussions are underway about how to officially create the MEDICIS collaboration and that the first yearly John Grace/MEDICIS meeting will be held at CERN, in the Globe, on 15th October. It is suggested by the committee that this should be an open meeting to allow new interested parties to attend.

A discussion is held about how beam/target development manpower is used between ISOLDE and MEDICIS; the committee stresses that the present manpower level at ISOLDE must be maintained. When a detailed proposal about the MEDICIS collaboration and how the facility will operate is available, it is decided that the committee should discuss in detail the relationship between MEDICIS and ISOLDE.

7. Status of the activities for LS1 (R. Catherall)(see presentation)

R. Catherall begins by summarising the work taking place in the target area. This includes the commissioning of the robots and installation of auxiliary equipment and services. A number of modifications have been made for MEDICIS such as the displacement of services for the now ongoing placing of shielding as well as the installation of the Montrac system. The new ISOLDE hot cell and the PAD/MAD access system are both in place and in use.

Target advancements are briefly reviewed. Unexpected developments from Molten salt target tests mean that ^{11}C post accelerated radioactive ion beam could have a possible use for hadrontherapy.

R. Catherall then informs the committee about the status of HRS20. The vacuum problem that occurred after the modification of the laser window was found to be due to a leak between the magnet and the frontend caused by corrosion of non-stainless steel pieces. Almost all similar clamps have now been replaced to prevent further failures but consolidation is required during LS2.

The committee is told that the status of ongoing work still allows for the planned protons on 10th July but the projects critical to this are:

- Final commissioning of the robots

- Stable beam through the RFQ Cooler
- Testing of the repaired tape station

R. Catherall thanks the technical team for its hard work and dedication during LS1.

8. News on TSR and on the planned detection systems (K. Blaum & D. Jenkins)

K. Blaum informs the committee that the latest version of the CERN Mid-Term Plan (MTP) stated that the first funding for the TSR project would be available in 2019. This would be disastrous for the project as it would be virtually impossible to keep the machine as well as the knowledge and experience required for the success of the project in place until this time. It has been requested that the start of funding be moved back to the initial date of 2015 to allow building work to begin and the matter is now with CERN management.

The status of the Large Project Grant application, regarding the planned detection systems at the TSR, submitted to the STFC in the UK is summarised by D. Jenkins. The application, which was presented with the start of the TSR project being in 2015, was well received and has reached the second phase of consideration along with two other projects. A decision is expected in October 2014.

9. New Safety Rules in the ISOLDE Hall (A-P. Bernardes) (see presentation)

A-P. Bernardes tells the committee that the ISOLDE hall will change from a supervised to a controlled area on 10th July 2014 (Change actually took place 1st August 2014). The change in classification is due to contamination hazard and is not related to the irradiation hazard. No temporary dosimeters will be allowed and access and exit from the hall will be made using the dosimeter and no longer using an access card.

While work continues in the hall extension building 170 will be divided into two sections; a worksite where helmets and work shoes are mandatory and an experimental area where they are advised. EDH access for users remains as "ISOHALL" and users should not request access to the worksite. Users will only be able to access the experimental area from the back of building 170 (Jura side).

10. News from the RILIS group and new developments (V. Fedosseev) (see presentation)

V. Fedosseev presents an overview of completed and on-going projects at RILIS during LS1:

- General RILIS Developments:
 - Extension of the RILIS cabin - Completed
 - RILIS machine protection system - Completed
 - Space stabilization of laser beams - Completed
 - GPS laser beam launch - Completed
 - HRS laser window - Completed
 - Laminar flow box containment of all laser tables - Completed
- Laser Developments:
 - A dedicated high power Nd:YVO laser for non-resonant ionization - Completed
 - Improved motorization of Narrow-band TiSa
 - TiSa R&D
- Off-line R&D:
 - Development of RILIS power-meter target - Completed
 - New RILIS/LARIS dye handling/preparation laboratory - Completed
 - R&D at ISOLDE offline separator and Mainz RISIKO

- Spectroscopy and Ionization Schemes:
 - Installation of a reference cell
 - Improved motorization of Narrow-band TiSa
 - Ionization of refractory metals
 - New and improved RILIS schemes for the Dual RILIS system

11. Experiments, Schedule & Access to the hall (M. Kowalska) (see presentation)

M. Kowalska begins by summarizing the activities at existing ISOLDE setups and then presents the physics schedule which provides 20 weeks of physics up until 15th December. Protons will be available to ISOLDE from 10th July but the start of physics is planned for July 28th. The schedule for the first 14 weeks of physics has been made giving some beam to each collaboration and setup with priority given to experiments waiting for a long time or that have failed in the past. A total of 260 shifts have been scheduled during this first period from 29 IS experiments and 5 LOIs.

The presentation then moves on to access to the ISOLDE hall. Due to the change of ISOLDE from supervised to controlled radiation area the procedure for Users to get access to the hall will change from 1st July 2014:

- No temporary dosimeters allowed
- To obtain a dosimeter:
 - Follow online courses on general safety (as before) <https://sir.cern.ch/sir>
 - Follow online RP course on Supervised Areas (as before)
 - Follow new ISOLDE online RP course - **New**
 - Present RP form (replacing old medical certificate) signed by home institute - **New**
- To access ISOLDE (after July 22nd)
 - Follow 2 hour RP ISOLDE practical course (Tuesday and Friday at 14:00) - **New**

Users who already have a valid dosimeter should, after 1st July, follow the new ISOLDE online RP course and follow the new procedure when their present medical certificate expires.

More information, links to courses and necessary forms can be found at the ISOLDE website via www.cern.ch/isolde/get-access-isolde-facility .

12. Status of IDS (H. De Witte) (see presentation)

H. De Witte briefly presents the status of the ISOLDE Decay Station (IDS) project. The committee is shown the long list of collaborating institutes coming from 11 different countries as well as the collaboration meetings that have taken place so far, the url of the project website <http://fys.kuleuven.be/iks/ns/ids> and the five IDS experiments so far approved by the INTC.

H. De Witte informs the committee that the IDS infrastructure work is already finished and the beamline is completed and aligned. The holding structure and HPGe clover detectors are already mounted but work is still ongoing regarding beam transport and the digital DAQ system. Future proposals for the IDS include collaboration with the University of York for electron spectroscopy and possible neutron spectroscopy by coupling IDS with Vandle.

13. Status of the VITO beam lines (M. Stachura) (see presentation)

M. Stachura explains that the goals of the VITO project are to establish a dedicated beamline for experiments using laser-induced nuclear orientation at ISOLDE and allow, using

both ASPIC and β -NMR setups, versatile and multidisciplinary experiments. The VITO upgrade of ASPIC is briefly explained and the timeline of events from the initial idea of lasers in ASPIC in October 2012 up to ISCC approval in October 2013 is shown. In July 2013 the ownership of the ASPIC apparatus and the UHV beamline was officially transferred to the group of Prof. M. Deicher at the University of Saarlandes.

M. Stuchura then turns to progress made since the approval of VITO in October 2013. The committee is shown the members of the collaboration and the VITO steering committee as well as the students presently working on the project. The work already completed and ongoing at the UHV beamline, the ASPIC chamber and the β -NMR spectrometer is summarized. The timeline shows everything on target for the first polarized beam in 2015. The current funding of the project is then presented with over half of the income from a CERN KT grant for the β -NMR spectrometer.

Finally the committee is informed that the VITO project now has its own website at <http://vito.web.cern.ch>. M. Stachura is congratulated on the impressive progress of the VITO project so far.

14. EURISOL Initiatives (Y. Blumenfeld)(see presentation)

Y. Blumenfeld begins by summarizing the EURISOL-NET activity that has taken place within the ENSAR project. He announces the 5th Topical meeting "Innovative instrumentation for EURISOL" that will take place in York from the 15th to 17th July and the Joint Town meeting with ECOS scheduled for 28th to 31st October 2014.

The committee is then presented the proposed EURISOL-JRA within ENSAR² which will consist of four tasks:

- EBIB: Improving charge breeding and designing for future EBIS (F. Wenander)
- BEAMLAB: ISOL targets and ion sources with focus on molecular beams (C. Lau, IPN Orsay)
- CRIBE: Chart of ISOL beam intensities in Europe (M. Fadil, GANIL)
- STUC: Networking and Town meeting organisation (A. Bonaccorso, INFN)

Y. Blumenfeld then explains to the committee the proposal to create the EURISOL - Distributed Facility (DF). The goals of the DF would be to support, optimise and coordinate current ISOL-based projects with EURISOL as a single site facility the long term objective. The legal structure, coordination, responsibilities etc. are still to be defined as well as the member facilities which would need to commit to paying a yearly subscription fee and to being involved in pushing the EURISOL project forward.

A discussion follows about the idea of a distributed facility and the committee stresses that it would need to have a solid governing structure as well as push forward both physics and technical advances.

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

The options for the ISOLDE 50 year anniversary logo are presented and the committee chooses the following logo prepared by F. Wienholtz which is available on the ISOLDE website:



M.J.G. Borge then summarises the present manpower situation in the ISOLDE Physics Group.

- Associates: Alfredo Poves (January to June 2014), Claes Fahlander (July to December 2014). The next application deadline is 13th September 2014.
- Corresponding Associate: Armandina Lima Lopes (July to October 2014). The next application deadline is 13th September 2014.
- Fellows: Susanne Kreim (until December 2014), Elisa Rapisarda (until December 2014), Monika Stachura (until March 2015), Jan Kurcewicz (until August 2014), Miguel Madurga (June 2014 to May 2016), Stephan Ettenbauer (June 2014 to January 2017), Akira Miyazaki (May 2014 to April 2016) and Kara Lynch (January 2015 to December 2017). The next application deadline for fellows is 3rd September 2014.
- Doctoral Students: Razvan Lica, Fixed decay station doctoral student (September 2014), Stavroula Pallada (Doctoral Program with Greece for life sciences) (March 2014 to February 2017), Laura Grob (Doctoral Program with Germany) (June 2014 to May 2017). The next deadline for doctoral students is 31st October 2014.
- Technical Student in 2015 for the ISOLDE Tape Transport System (50%PH/50%EN)
- Technician: Julien Thiboud (until August 2014)
- User Support: Jenny Weterings

The committee is informed that, since the last ISCC meeting, a very successful ISOLDE Nuclear Reactions and Nuclear Structure Course took place at CERN from 22nd to 25th April 2014 with lecturers W. Catford, A. Di Pietro and A. Moro. The following events will be organised during the remainder of 2014:

- CATHI (Cryogenics, Accelerators and Targets for HIE-ISOLDE) Review Meeting, 22nd to 26th September 2014 at the Hotel H10 Marina in Barcelona, Spain. Deadline for registration is June 27th.
- Separator Course, December 2014.
- ISOLDE Workshop and Users Meeting, 15th to 17th December. There will be a special session to celebrate the 50th anniversary of ISOLDE approval.

Maria J. G. Borge then moves on to summarise the status of the ENSAR project which has been extended until December 2014. This means that the remaining CHF32,759.- of TNA subsistence funds is to be distributed to experiments scheduled at ISOLDE until the end of 2014. The status of the ENSAR² application, after the most recent preparatory meeting held in Paris in June, is presented including how the funds would be distributed between the TNA, NA and JRA parts of the project. The distribution of the requested funds between the countries involved in the project is also shown. The committee raises concerns about certain weak points in the proposal.

The committee is told that a number of countries could, in the near future, join the ISOLDE Collaboration. Bulgaria has agreed to the terms of the MoU and it is now with their science ministry for signature. Poland is in the process of applying to become a member while Algeria has expressed serious interest in joining the collaboration.

The present status of collaboration fee payment is summarized: Denmark, Finland, Romania have not yet transferred the funds for 2014 while France, Spain, Ireland, Greece and India have not yet paid for 2013 or 2014.

M. J. G. Borge tells the committee about the very successful celebration of 60 years of the SC at CERN and the inauguration of the Synchrocyclotron Visit Point, an EPS historical building. ISOLDE was very well presented and is mentioned on the plaque that is now installed at the visit point.

The committee is informed that, after the discussion held at the ISCC meeting in March, a letter of intent was submitted to the AGATA collaboration on May 27th 2014 based on bringing the AGATA detector to ISOLDE in the period 2020-2021. The letter of intent will be defended by Peter Reiter on June 26th. A discussion follows about concerns still held by the collaboration and the committee again emphasizes that the necessary manpower for installation and running of AGATA must come from the AGATA collaboration itself. Also, it was stressed that no guarantee of beamtime could be given because, at ISOLDE, the allocation of beamtime depends on the physics case of experiments being approved by the INTC and AGATA would be in competition with other projects such as the TSR.

16. Physics Coordinator position opening, procedure to follow

The position of ISOLDE Physics Coordinator will be available from 1st September 2015; this will give one month of overlap with the present coordinator. A call for applications will be made from August 1st to October 1st 2014. A short list of 3 or 4 candidates will then be put together by a selection committee consisting of the ISOLDE Physics Group Leader, the ISCC Chairman, the INTC Chairman and the ISOLDE Technical Coordinator. The short listed candidates will be invited to give a short presentation at the ISCC meeting on November 4th. (Since the meeting, it has been decided to delay this procedure due to a possible change in CERN contract procedures.)

17. A.O.B

- P. van Duppen informed the committee that he had received an enquiry from J. Kluge asking whether or not ISOLDE would be interested in having a laboratory portrait, connected to the first high energy beams, published as a dedicated issue of Hyperfine Interactions in 2017. The committee expresses its support for the idea.
- M. J. Garcia Borge informs the committee that the bid made to organise the ARIS conference at CERN in 2015 was unsuccessful. The committee is in favour of efforts being made for ISOLDE to bring conferences such as ARIS and EMIS to CERN.

18. Dates of next meeting

The next ISCC meeting will take place at CERN on Tuesday November 4th 2014 starting at 09:30.

The meeting ends at 18:00.

N.B. The overheads mentioned in the above minutes can be found via <https://indico.cern.ch/event/322379/>