Draft Minutes of the 75th Meeting of the ISOLDE Collaboration Committee

held on February 2nd 2016

Present: A. Algora, B. Blank, Y. Blumenfeld, J. Cederkall, M.J. Garcia-Borge, P. Greenlees, D. Jenkins, M. Henry (via Vidyo), Y. Kadi, K. Johnston, N. Marginean, K. Riisager, D. Santonocito, S. Siem, L. Schweikhard,

Excused: K. Bharuth-Ram, K. Blaum, N. Severijns (replaced by L. Pereira), M. Venhart (replaced by M. Veselsky)

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

Invited: T. Giles (P.T.), P. Reiter (P.T.), J.A. Rodriguez (P.T.), T. Stora (P.T.), W. Venturini (P.T.),

(P.T. = Part Time attendance)

The meeting starts at 09:00 h

1. Introductory remarks

The chairperson opens the meeting and welcomes L. Pereira and M. Veselky who are replacing N. Severijns (Belgium) and M. Venhart (Slovakia) respectively at this meeting.

2. Approval of the Minutes of the last meeting of November 10th, 2015

The minutes from the previous meeting are approved with one correction to the participants list.

3. Status of SC-Linac, handling the couplers behaviour

Walter Venturini Delsolaro

The status of the SC-Linac is presented. CM1 has been uninstalled and is waiting to be fixed in SM18 while CM2 has been fully assembled with the new couplers.
W. Venturini explains that anomalies in coupler behaviour were observed during commissioning in 2015 so mitigation measures were introduced for the physics run limiting field and runtime. A Coupler Task force worked to solve the problem from August to December 2015. Stress test results showed that the problem was caused by an RF short circuit preventing further cavity loading. The Task force concluded that the triggering phenomenon is pure RF heating and that any glow discharge present is due to consequent outgassing. Hence the key to solving the problem is the cooling of the coupler antenna. The committee is told that the necessary modifications of the couplers include new thermalization of the copper and cable as well as a change of antenna material. The promising results of the heat runs with the modified couplers carried out in December and January are presented.

The committee is shown the present planning and informed of the remaining actions to be completed in order to achieve the start of physics at 5.5 MeV/u (HIE-ISOLDE Phase 1) during the summer of 2016.
W. Venturini summarises the status of the industry produced cryomodule cavities for CM3 in which cracks appeared in the copper substrate causing production to be stopped in the summer of 2015. Tests have been carried out at CERN and a number of theories have been excluded but, as yet, it has not been concluded why the cracks occur. In parallel two cavities have been welded at CERN but a similar problem occurred. Hence, it has not yet been possible to provide the manufacturer with a procedure which would allow production to recommence. However a strategy is in place to have enough cavities in the near future to allow the completion of further cryomodules. The cracking problem should not affect the physics performance of the cryomodules but will mean that more power will be required.

4. Commissioning of REX: status of the 9-gap amplifier

Jose Alberto Rodriguez Rodriguez

The committee is informed of the goals for 2016 at the REX Linac where the beam, injected from the EBIS, is accelerated to 2.85 MeV/u before being sent to the superconducting linac:

- New/rebuilt 9gap RF amplifier
- Longer RF pulses
- Higher repetition rate (x3 higher RF average power)
- Higher A/Q (x1.5 higher RF peak power)
- Higher A/Q (more heat dissipation in quads)

J. Rodriguez summarises the ongoing hardware commissioning which should lead to the REX linac being ready for commissioning with beam after week 19. Work is focusing on the installation and commissioning of the new 9gap amplifier and the much higher operational requirements of the RF systems than in 2015.
The main tasks to be completed during the commissioning with beam are presented and the committee informed that the tunnel needs to be closed while this work is undertaken so it is scheduled during HIE-ISOLDE commissioning after the installation work is completed. The Beam needs to be ready for beam commissioning of HIE ISOLDE at the end of week 28.
The committee stresses that J. Broere should be involved in all stages of the REX linac commissioning with the upgrade of the 9-gap RF amplifier being his design and the need for knowledge transfer as he will retire at some point in 2016.
J. Rodriguez informs the committee that, while ISOLDE users can still isolate their experiments, for machine protection the common vacuum can no longer be started up by users. The committee states that a strategy must be put in place for this type of situation to ensure that physics can run 24 hours a day. Users are reminded that all equipment for experiments should have the required level of vacuum (minimum 10^{-6}mbar).

5. Planning for HIE-ISOLDE phase II

Yacine Kadi

The main HIE-ISOLDE installation and start-up tasks in preparation for running with CM1 and CM2 in mid-August 2016 are presented.
Y. Kadi continues by discussing the HIE-ISOLDE Phase 2 schedule for 2016-2018 and highlights, as already done so by W. Venturini, the critical issue with the quality and availability of industry

produced copper substrates for CM3. Results are shown of performance tests of series cavities. The cavities produced in industry all have RF performance below specifications and those cavities made at CERN but they do, however, achieve the required field. The committee is shown the worst case scenario for the heat load for four cryomodules if the cavities consumption is 600W at 4.5K. It is hoped to regain RF performance with the cavities of CM4.
The status of CM3 and CM4 is then summarised. More than 95% of components for these two cryomodules have been received and it is foreseen to test CM3 and CM4 in the M9 bunker while HIE-ISOLDE is in operation.
Y. Kadi proposes that the first Phase 2 run could be split into Phase 2a in 2017 and Phase 2b in 2018. There will be a high level of installation work during the shutdown 2016/2017 to be able to run with three cryomodules in 2017 while installation of CM4 in the 2017/2018 shutdown should be more simple. The committee is told that a detailed planning is in place.
Finally, Y. Kadi informs the committee that procurement for the third beamline and extension of XT02 for HELIOS has been launched.

6. Technical news, plans for the shutdown

Richard Catherall

The status of ongoing projects is presented. Preparations in the target area for accepting the LIEBE target will be finished before April 2016. Promising progress is being made with the carbonyl beams of refractory elements and the Europium (EU) scheme development at RILIS with the Integrated PhotoIonization Spectroscopy Apparatus (PISA).
R. Catherall goes on to outline the shutdown work being undertaken. The committee is shown the schedule for work on the MEDICIS interface and assured that any points critical for the running at ISOLDE will be completed on time. Work in the target area is summarised including the LIEBE target test preparations, frontend modifications and revision, and ventilation system monitoring and evaluation. On-going tasks in the ISOLDE hall are mentioned and the committee is told about a new 60kV modulator that has been developed for ISOLDE which will provide a robust and accurate charging device capable of re-establishing 60KV with improved recovery time.
It is explained that, as the most efficient way of testing machine operation is to run with stable beam, the goal is to make stable beam 1 month prior to taking protons (1st March). All separator systems should be operational or in test phase at this point and, in parallel, RILIS will investigate laser ionisation schemes in specific stable beams. Also, during this time, ^{7}Be samples will be prepared for nToF and the SARAF facility.
The committee is informed that, due to an accumulation of varied incidents, ISOLDE is now in the spotlight regarding safety. A draft memorandum dedicated to safety at ISOLDE is being drawn up and a few obligatory changes in work practises at ISOLDE can be expected. Users are reminded that they must check their hands and feet when leaving the ISOLDE hall using the dedicated equipment located close to the exits. Also, all items that are removed from ISOLDE should be checked by RP.
The committee is informed that the following items, pending arbitration, have been retained for the consolidation of ISOLDE over the next 5 years:

- 2 Frontends plus 1 reserve
- Tape station
- Vacuum
- Cameras for target area
- Second off line separator
- Beam diagnostics electronic and mechanic

- RILIS laser power supplies
- 60kV modulator
- Magnets coils (separators and REX triplet spares)

7. Realignment of the beam lines

Richard Catherall

The committee is reminded about the beam alignment survey that was carried out at ISOLDE in 2012 and that a 10mm vertical jump was detected which affects beam transport. E. Rapisarda completed a theoretical beam transport study in 2015 and found that the steerers could cope with the 10mm step but that they were working at their limit. The committee is told that the 10mm vertical step should be removed but that it still had to be decided if the height of the beam line should have a gradual increase or if it should be made flat.
L. Schweikhard comments that any changes to the beamline could cause a problem for ISOLTRAP. The issue would be discussed at the upcoming ISOLTRAP collaboration meeting.
R. Catherall will look into the possibility of using two steerers in order to overcome beam transport losses where the jump occurs.

8. First test of MEDICIS, and interplay with ISOLDE

Thierry Stora

The status of work that is being carried out at MEDICIS is summarised. The interface between ISOLDE and MEDICIS will be ready for the restart in April 2016. The temporary shielding has already been removed and the access requirements are under discussion to allow the remaining work in the robot area to be completed.
The committee is told that the design of the mass separator is still ongoing, the LISOL dipole is ready for shipment from Louvain La Neuve and the irradiation station has been successfully commissioned with beam.
T. Stora informs the committee that the medical applications at CERN have been slightly restructured and that a review, chaired by R. Saban, is under preparation to access the readiness to start the staged operation of CERN_MEDICIS as follows:

- Phase I: Commissioning with Beam - 2016
- Phase II: Commissioning with beam and light targets to gain operational experience - 2017
- Phase II B: Isotope production with light targets – Mid 2017
- Phase III: Extending to heavy targets up to Tantalum – End 2017
- Phase IV: Collection of short lived alpha emitters (e.g. 149Tb) – 2018
- Phase IV B: Operation with lasers – 2018
- Phase V: Operation with pre-irradiated uranium targets and external sources/ preparation for possible proton beam upgrade – 2019

The committee is told that the recent LUTHATERA® radiopharmaceutical approval has given a boost to nuclear medicine and shows the scientific case of CERN-MEDICIS to be relevant. The MEDICIS collaboration has been very active, and will be holding a number of events including the 2nd yearly Grace-MEDICIS lecture at CERN and the MEDICIS-PROMED ESR kick-off week from the 8th to 12th February. C. Ferrari has recently started part-time as administrative support for the MEDICIS-PROMED project.

9. Status of Miniball/T-REX and plans for the experimental program in 2016 in light of the workshop of Feb. 1st

Peter Reiter (University of Cologne)

The committee is told that the majority of experiments that presented their updated physics case at the HIE-ISOLDE Experiments Workshop, which took place at CERN on 1st February, will use MINIBALL. P. Reiter then summarises the beams that have been requested for both the shell model physics and the shapes and collectivity experiments at HIE-ISOLDE during 2016.
A brief overview of the recent growth of the MINIBALL collaboration is presented. The number of MINIBALL publications is increasing and the number of affiliations on MINIBALL publications has risen from 35 institutes in 10 different countries in the period 2001-2005 to 90 institutes in 24 countries from 2011 to 2015.
P. Reiter summarises the work that was undertaken to install MINIBALL in its Coulomb excitation configuration at the new HIE-ISOLDE beam line XT01 ready to take radioactive beam in October 2015. The preliminary results of the first experiment to run at HIE ISOLDE are then presented. The experiment entitled "Coulomb excitation of $^{74-80}$Zn probing the validity of shell-model descriptions around 78Ni" took beam for a total of 23 days from 22nd October to 13th November. Different targets and different energies were used and the excitation of the 4^+ state, which was not visible at 2.85MeV/u, could be observed at 4MeV/u. This enhanced probability for multiple step Coulomb excitation was one of the motivations for HIE-ISOLDE.
The committee is told of a new MINIBALL configuration that is being developed by J. Pakarinen using SPEDE (Spectrometer for Electron Detection) that will allow conversion electron spectroscopy.
P. Reiter explains that the HIE-ISOLDE Experiments Workshop was organised to help develop a strategy to make the most of the beam time available in 2016. As of January 2015, MINIBALL had 43 HIE-ISOLDE experiments approved with a total of 731 shifts, only about a third of which will be able to be scheduled during 2016. At the workshop, 24 of these approved experiments were defended and request beam for 2016. The first conclusions of the workshop were:

- Full energy range of the accelerator should be available up to 6.0MeV/u
- Mass range available should be from ^{18}N up to ^{228}Ra
- MINIBALL configurations for both Coulomb excitation and transfer reactions will be installed for the 2016 campaign
- Combination with SPEDE should be available after successful stable beam commissioning in the summer of 2016
- A high number of users experiments should receive beam rather than a few highly visible experiments
- Everyone is eagerly awaiting beams at HIE-ISOLDE

The committee is told by J. Rodriguez that, in 2016 commissioning time for HIE-ISOLDE has been increased relative to 2015 so hopefully the beams requested by experiments will be available. At present, tailor-made post-accelerated beams take 4 days to tune but it is hoped to reduce this as experience is gained.
The committee agrees that the HIE-ISOLDE programme should start with less challenging beams in order to give experiments the best chance of being successful.

10. News on RFCOOLER and New tape station

Tim Giles

T. Giles explains that transmission of the RFQ in “normal operation” (including HRS and with continuous beam at 30kV) is between 60 and 80%. This is better than without the RFQ. However investigations have shown that losses occur at injection. These losses could be reduced by:

- Reducing beam emittance (Operate beam at 60kV)
- Recalculating HRS tune (Balance resolving power with injection acceptance)
- Upgrading RF power and improving readout

Tests have also shown that beam transmission in bunching mode is less than in continuous mode. The reason for this is under investigation.
The committee is told that as well as reduced beam emittance the advantages of operation at 60kV would include improved HRS performance, RFQ injection, transport and experiment injection. However, the RFQ operation is unstable at 60kV and an investigation of this problem is underway. The intention to develop new techniques such as laser-induced molecular break-up is then mentioned briefly.
T. Giles then summarises the construction status of the new tape station and a short discussion takes place about the calibration sources to be used for the dectectors. At present, the installation plan after the assembly of the tape station is complete is as follows:

- Endurance tests completed by March 2016
- Installation at ISOLDE in March 2016
- Commissioning with calibration sources
- Commissioning with beam and comparison with the old tape station during 2016
- Removal of old tape station and installation in CA0 during 2016/17 shutdown

Finally T. Giles presents the future plans for the tape station:

- Merging of data-taking with automatic yield analysis
- Automation of release curve measurement
- Automatic proton-target scans
- Decay curves
- Integrated yields over target lifetime

11. New ISCC Chair

Bertram Blank is chosen as the next ISCC Chairperson.

12. INTC matters. Summary of Experiments in 2015

Karl Johnston

The committee is told that in 2015 protons were delivered to ISOLDE from 9th April and physics ran for 30 weeks from 15th April. A total of 471 low energy shifts were requested and out of the 373 scheduled 265 were delivered. A brief overview of the low energy experiments that ran during 2015 is given followed by the distribution of beam time between the different areas of physics.
K. Johnston then mentions the ongoing installation work at experimental setups at ISOLDE. This includes a new collection chamber, ion phase imaging at ISOLTRAP and a 35 degree deflector at ASPIC which is being recommissioned. CRIS plan to ask for the removal of the LCO beam line at the ISCC meeting in June which would allow tests of anti-collinear spectroscopy.

After showing the committee the accelerator schedule for 2016, which would mean physics will start at ISOLDE on 11th April, K. Johnston presents the outline of this year's ISOLDE schedule. It is planned to have 20 weeks for dedicated low energy experiments, including a negative ion run, and then 12 weeks will be dedicated to HIE-ISOLDE physics. The low energy beam requests have already been sent out with a deadline at the end of week 5 and the requests for beam at HIE-ISOLDE will soon follow. The beam requests will be used to collect ISOLDE publications.
The committee is then updated on issues relating to access to ISOLDE. The ISOWORK area has now been suppressed so only EDH access to ISOHALL is required for Users. Access to the HIE-ISOLDE part of the hall is recommended only for local physicists who have to move equipment or dewars and users should access the ISOLDE hall from the Jura side. The tourniquet at building 508 and the access door in building 508 are both operated by dosimeter. Cameras have been installed to ensure that the gate next to the tourniquet remains closed at all times and that users access the hall via the tourniquet.
K. Johnston then moves on to safety matters at ISOLDE. All setups, both fixed and travelling, require safety clearance **before** running. A safety file template will be sent to the travelling setups after the schedule is published and a brief safety visit/check will be conducted before beam is taken. Any questions should be directed to the experiment's local contact.
The committee is informed that for 2016 the safety courses required for users to access the ISOLDE hall are unchanged from 2015. As well as the online courses, there are two hands on courses; a two hour ISOLDE Radiation Protection course and a one and a half hour ISOLDE electrical safety course. The hands on courses, which take place every Tuesday afternoon, now have to have been taken by all users and not only new users and those making new dosimeter requests. These courses now need to be validated in EDH to allow access to the experimental hall. Refreshing and renewal of these courses is presently under review although the first renewal will probably be electronic. Discussions are ongoing about the need for wearing of safety helmets and shoes in the ISOLDE hall as well as the adoption of better practise regarding radiation control on leaving the hall. The committee is not convinced that safety shoes are necessary for physicists performing experiments in the ISOLDE hall.
The status of the new control room in building 508, which should be ready by 1st March, is briefly presented as well as that of the new visitor's room, kitchen and workshop area. The kitchen should be ready for the start of physics and the workshop area is already available to users but only those who obtain permission to use the machines from their institute. The committee is told that the de-classification of building 275 is underway and that the offline laboratory is almost ready. Requests for use of space in what was the SSP laboratory in building 275 and the time required are now being accepted. A search is underway for space at CERN to test the Helios magnet which is ready to be shipped; one possibility is building 180.
The committee is informed that CERN RP is now monitoring visits to ISOLDE more closely. As ISOLDE is now a controlled RP area only university students, university and school teachers and VIP visits are allowed. Non-professional visits (high school students over 16 years old, private public visits such as family and friends) can be given access on a case by case basis. The committee is reminded that no visits are allowed during the opening of beamlines or making of high intensity collections and that all visits should be:

- Announced to K. Johnston, R. Catherall or K. Lynch
- Included in the weekly schedule
- Discussed and approved at the Tuesday ISOLDE Technical meeting

A dedicated calendar of visits is available at https://espace.cern.ch/isolde-visits-info/_layouts/15/start.aspx#/Lists/Calendar/calendar.aspx . CERN RP will make a survey of the hall prior to each visit and all visitors must wear helmets and closed shoes. The committee is shown the nationality distribution for visitors to ISOLDE during 2015. There were nearly one thousand visitors from over 16 countries.

K. Johnston then presents briefly the three proposals that were accepted and awarded a total of 56 shifts at the INTC meeting in November 2015. The committee is told that technical aspects such as beam preparation and calculation of proposed shifts could be improved for preparing proposals. The INTC meeting that will be held on 3rd/4th February 2016 will consider 16 proposals for ISOLDE with a total of 305 requested shifts. There are presently 1377 shifts waiting to be scheduled, 547 for low energy experiments and 829 for HIE-ISOLDE/REX.

13. News from the ISOLDE Group, ENSAR2, EURISOL DF, Long Range Plan

Maria Jose Garcia Borge

The new CERN organisational structure, put in place by the new Director General, F. Gianotti, is presented to the committee. The ISOLDE Physics section is now part of the Experimental Physics Department in the Research and Computing Sector.
M.J.G. Borge summarises the present manpower situation in the ISOLDE Physics Group.

- **Associate**: Giacomo de Angelis (October 2015 to April 2016), Oliver Sorlin (February 2016 to June 2016). Deadline for new applications 11th March 2016.
- **Corresponding Associate**: Ismael Martel (September 2015 to February 2016), Georgi Rainovski (August 2016 to November 2016). Deadline for new applications 11th March 2016.
- **Fellows:** Miguel Madurga (June 2014 to July 2016), Stephan Ettenbauer (June 2014 to January 2017), Akira Miyazaki (June 2014 to May 2016), Kara Lynch (January 2015 to December 2017), Torben Molholt (February 2015 to January 2017), Vladimir Manea (January 2016 to December 2017), Frank Wienholtz (January 2016 to December 2018). Deadline for new applications 1st March 2016.
- **Doctoral Students**: Razvan Lica, Fixed decay station doctoral student (September 2014 to August 2017); Stavroula Pallada (Doctoral Program with Greece for life sciences) (March 2014 to February 2017), Andre Welker (Doctoral Program with Germany) (February 2015 to January 2018).

The committee is informed that separator courses were held at ISOLDE in the week from 23rd to 27th November 2015 and that a very successful Coulex School took place at CERN from 27th to 29th January 2016. A HIE-ISOLDE Experiments Workshop was organised at CERN on 1st February 2016 to discuss and facilitate the scheduling in 2016 (see section 9). The next ISOLDE Workshop will take place **7th to 9th December 2016**.
M.J.G. Borge tells the committee that the call for contributions for the ISOLDE newsletter will soon be distributed and that the new fellow, V. Manea, has been working on a new layout with a more user friendly format.
The committee is informed that the latest possible start date for ENSAR2 is 1st April 2016 with the kick-off meeting in mid-April (since the meeting the start date has been brought forward to March 1st with the kick-off meeting 16th-17th March).
M.J.G. Borge summarises the status of EURISOL-DF (www.eurisol.org/eurisol_df/) which is a necessary intermediate and ambitious step towards EURISOL. The members of the project are GANIL, ISOLDE, ISOL@MYRRHA, Jyväskylä, SPES, COPIN and possibly ALTO. The goals of EURISOL-DF are to:

- Prepare a strong physics case for RIB science and applications towards EURISOL
- Support, upgrade, optimize and coordinate European ISOL-Facilities towards EURISOL
- Get EURISOL-DF on the ESFRI list as a candidate project

The following five working groups have been created:

- WG1 Science and Application (Coordinator R. Raabe)
- WG2 Acceleration (Coordinator A. Facco)

- WG3 Beam Handling (Coordinator M.J.G. Borge)
- WG4 Spectrometers and Detectors (Coordinator H. Savajols)
- WG5 EURISOL-DF Relationships and Legal Structure (Coordinator A. Bracco)

A first working group meeting was held in September 2015 and a skeleton working group document is to be reported to the EURISOL Steering Committee on 10th March with the full text to be ready in June 2016.
The committee is informed that, during 2016, the Nuclear Physics European Collaboration Committee (NuPECC) will prepare a new Long Range Plan for Nuclear Science in Europe which will be an important reference for a period of 5 to 7 years. The final public discussion of the document will take place at a town meeting hosted by GSI-FAIR the 11th-13th January 2017.
M.J.G. Borge presents the proposal to prepare an ISOLDE Laboratory Portrait which will be published in J. Phys. G. in 2017. The document will contain two sections. The first will be on experimental devices and methods with invited contributions of 15-20 pages each. The second section will contain submitted articles containing unpublished material on the following topics:

- Decay Spectroscopy
- Exotic decay modes
- Nuclear ground state properties
- Post-accelerated beams
- Weak interaction studies
- Applications

The committee agrees that the title of the portrait should reflect the fact that it is not a review of the last 50 years but rather since the last laboratory portrait published in 2000.
M.J.G. Borge informs the committee that the NICOLE fridge was repaired in 2013 but has not yet been tested. After a request in November 2015 from the NICOLE collaboration for the cost of necessary repairs due to damage to elements of NICOLE caused by installations at HIE-ISOLDE, the list of damage that was received on 29th January 2016 is presented. The committee agrees to cover the cost of the repairs already communicated (approx. 3000 Pounds Sterling) but expect the NICOLE collaboration to dedicate enough time and human resources to make the device fully operational before the end of 2016.
The HIE-ISOLDE Phase 1 Celebration that will take place at CERN on Wednesday 28th September 2016 is then announced. ISCC members are asked to send a list of the people from the funding agencies of the country they represent to whom an invitation for this event should be sent.

14. Collaboration matters and economic situation

Maria Jose Garcia Borge

The present status of member countries of the collaboration is summarised. South Africa became a full member of the collaboration in 2015 and Slovakia followed in 2016. Bulgaria agreed to the ISOLDE MoU but, after CERN signed the document on 21st March 2014, its signature is still pending. Poland has succeeded in obtaining financial support to become a member of the collaboration for a period of 3 years from 2016 to 2019. Both India and Greece have not paid their collaboration contributions for a number of years and are non-responsive to attempts to solve this matter (Since the meeting M.J.G. Borge has been contacted by the Greek CERN delegate and informed that there are discussions at ministry level regarding the payment of the outstanding fees of CERN experiments). Irelands continued membership of the collaboration depends on the global Irish decision on whether

or not to become an Associate Member of CERN.
M.J.G. Borge informs the committee of the collaboration fees that are still outstanding and then presents the relatively comfortable financial situation of the collaboration after the commitments for 2016 have been fulfilled. Finally the ISOLDE collaboration expenditure distribution for 2015 is presented.

15. Discussion on the MoU and the update of the annexes

Maria Jose Garcia Borge

The committee is informed that the CERN legal service has proposed two different methods in order to change the ISOLDE MoU to having an automatic renewal without the need for signatures every five years:

- Using the MoU from 2011 and an amendment plus updating the annexes of the present MoU. This method would not require any new signatures because articles 3.1 and 3.2 of the present MoU stipulate the duration of the document up to December 2016 and that the MoU can be extended at any time by agreement of the parties. Furthermore article 8.2 states that the MoU can be amended. This method would require the consensus of every ISCC representative.
- Rewrite articles 3.1 and 3.2 making a new MoU which would have to be signed by each country. Article 3.1 would state "This MoU shall be valid for five years, from 1 January 2017 to 31 December 2021, and shall thereafter be renewed automatically, each time for a period of five years". Article 3.2 would state "Notwithstanding the foregoing, this MoU shall automatically cease to be valid when the ISOLDE programme is declared closed by the CERN Council".

The ISCC representatives from the following counties have received confirmation from their funding agencies that the method above using the amendment would be acceptable: Belgium, Denmark, France, Romania, Slovakia, South Africa, Sweden and the United Kingdom. However, the representatives from Finland, Germany, Ireland, Italy, Norway and Spain have not yet received an official response from their funding agencies while those from India and Greece did not communicate their country's position on the matter.
Finally the on-going revision of the annexes of the ISOLDE MoU is presented and discussed.

16. Dates of the next meeting and ISOLDE Workshop

The dates of the two remaining ISCC meetings in 2016 are **Tuesday 28th June** and Wednesday 2nd November.

The next **ISOLDE Workshop** will be held at CERN **7-9th December 2016**.

A.O.B.

- The committee is informed that the CERN BE department has launched a new review of the infrastructure and building cost for the TSR.

N.B. The overheads of the above presentations can be found via http://indico.cern.ch/event/482996/