



*Minutes of the 91st Meeting of the ISOLDE Collaboration Committee
held on June 16th 2021*

Present: J. Cederkall, F. Farget (replacing G. Georgiev for this meeting), K. Flanagan, L.M. Fraile, H. Fynbo, L. Gaffney, S. Gilardoni, K. Johnston, A. Lagoyannis, C. Mihai, D. Naidoo, A. Nannini, G. Neyens, J. Pakarinen, M. Pfützner, G. Rainovski, J.A. Rodriguez, L. Schweikhard, N. Severijns, S. Siem, E. Siesling, M. Venhart, J. Vollaire

Absent:

The meeting is held via Zoom due to Covid-19 travel restrictions. It starts at 09:00 h

1. Introductory remarks

The ISCC chairperson, K. Flanagan, opens the meeting. S. Freeman, the next ISOLDE Group leader, is welcomed to the meeting as an observer and the committee is informed that F. Farget will replace G. Georgiev at this meeting. K. Flanagan welcomes Georgi Rainovski who is the representative from Bulgaria which is a new member state of the collaboration. The new Romanian representative, Constantin Mihai, replacing Nicu Marginean who took up other responsibilities, is also welcomed to the meeting.

2. Approval of the Minutes of the last meeting of February 1st, 2021

The minutes from the previous meeting are approved.

3. New chair ISCC election – report – M. Pfützner

The selection committee, set up by the ISCC at the February 2021 meeting, consisting of the INTC Chair, M. Pfützner, and two ISCC members, L.M. Fraile and H. Fynbo contacted all ISCC members asking for suggestions for candidates for the position of ISCC Chair. Only one candidate was identified by the selection committee and the motivation letter received from the candidate, G. Neyens, was distributed to the committee members.

Using the online secret voting platform “Balotilo”, G. Neyens was selected by the committee to be the next chair of the ISOLDE Collaboration Committee.

4. Readiness for start-up of HIE-ISOLDE and 21-22 YETS – E. Siesling

The committee is informed that, for both the low energy side of the facility and HIE-ISOLDE, all planning milestones have been met and there has, so far, been no delay in the start-up of the facility. Low energy physics will run from 21st June to 15th November. Stable beam will be available at HIE-ISOLDE from 7th July with REX/HIE Physics taking place from the end of July until 15th November. The end of the 2021 run with protons might be subject to change dictated by the LHC ion run. Long-lived and stable beams should be available after protons have finished until possibly mid-December.

E. Siesling tells the committee that, due to the LHC program being delayed at the beginning of 2022, protons will now only be available at ISOLDE from mid-March next year. At the February 2021 ISCC meeting the idea of a 2022 early start-up of REX/HIE ISOLDE physics to take advantage of the shorter than usual YETS 21-22 was presented. This would require the continuation of both the cooling water and the cryo-plant over the 21-22 annual closure as the HIE ISOLDE SC Linac would have to be kept cold during this period. The main advantages of this would be to gain physics, protect equipment and save manpower so a study was carried out by the CERN cryogenics team as well as SRF, CV and EL. The results of this study are briefly presented. Keeping the HIE ISOLDE SC Linac cold during the 21-22 annual closure and running it until December 2022 is unfortunately not possible due to obligatory yearly maintenance; only having a second cryo-plant as backup would solve this issue. The study has identified other areas in which improvements could possibly be made in order to improve the cryo-plant reliability, reduce recovery time in the case of an accidental or programmed stop and optimise the warm-up/cool-down cycle.

REX/HIE ISOLDE hardware commissioning and activities are then summarised. All existing and new systems have been recommissioned successfully. The cryo system is very stable this year but the reason for this is not yet known. Despite the cryo system being very stable there have been some unforeseen interruptions, two of which were unexpected and could have set back the commissioning by several weeks had the SRF cavities reached higher temperatures; debriefing of the interruptions will follow to decide on actions to be taken for higher reliability.

E. Siesling briefly presents the status of beam commissioning and informs the committee that everything is on track and in good shape for the 2021 HIE-ISOLDE run to start with stable beam on 7th July.

5. Status of ISOLDE at the start-up - running period 2021– *S. Rothe*

The committee is updated on the status of the new nano-lab. Completion of the civil engineering stage is expected at the end of June and then commissioning of the fume cupboard will start in July. Five custom gloveboxes (four in air and one inert) are currently being manufactured, with installation and commissioning planned for autumn 2021. The initial procedure for production of nano-La(OH)₃ is being finalised and the process for obtaining authorisation to start development of non-radioactive nano-materials is underway.

S. Rothe informs the committee that commissioning of the two new target stations, FE10 at GPS and FE11 at HRS, is now complete. The slotted extraction electrode, required for high resolution laser spectroscopy using the PI-LIST ion source and installed at the GPS, has been shown to be transparent for standard operation and the installation of a new hard RF guide and automatic coupling have reduced reflections by a factor of five.

The upgrades of the Offline 2 facility are summarised and S. Rothe explains that the Frontend 8+, which is now installed at the facility, is compatible with current and future target designs. As well as being a potential spare target station, Frontend 8+ will allow comparison of offline and online results as well as visual and operational training. The committee is told that the first laser ionised beam milestone has been achieved at Offline 2.

S. Rothe presents the new gas systems at HRS and GPS, the hardware of which has been successfully installed and tested. A copy, that will serve as a development platform, is under construction for the Offline 2 facility.

The committee is informed that the commissioning of the new ISOLDE Fast Tape Station was completed in June 2021 and the results of the first measurements taken after LS2 are presented. All those involved, especially R. Lica, are thanked for their contribution.

6. Status of ISOLDE facility improvement program: consolidation and EPIC – *S. Gilardoni*

S. Gilardoni states that during the two EPIC workshops the physics community has expressed a clear need for the continuing improvement of the capabilities of the ISOLDE facility in the production of a large variety of isotopes, but also for the increase of integrated time to users. A staged approach to improvements has been proposed with clear enhancement in facility and physics potential, which will allow many different funding lines to be involved.

The draft of the future CERN accelerator plan with the proposed dates for LS3 and LS4 is shown. With these dates in mind, ideas for ISOLDE upgrades and expansion are presented. The medium term goal, up to and including LS3, are the upgrades and consolidation of the ISOLDE facility in order to take full advantage of the potential offered by Linac4 and PSB@2GeV. These improvements include the nano-lab (see section 5), which will be in operation this year and the funding for which was provided by CERN as this is driven by improving safety while handling nano-materials. Other upgrades include the alternating operation of ISOLDE beamlines, which requires proof of concept as well as a prototyping. A final design could be installed possibly during a winter shutdown, before LS3, as soon as funding is found. The highest priority items for the consolidation of the ISOLDE target areas up to LS3 will be the renovation of the beam dumps that are at the end of their lifetime, the replacement of Front-ends (the lifetime of which is a safety issue because of manpower exposure risk in case of failure and determined by the integrated cumulative dose) and the regular replacement of the RILIS lasers. Front-end and laser replacement is being funded by the CERN-CONS project for interventions in LS3. Funding has also been found for the beam dump replacement study which is now ongoing. This study will provide the necessary technical input to realize the dump replacement, and to seek CERN approval by 2023 at the latest. Possible beam dump concepts are shown and the committee is assured it will be kept updated with regard to options and eventual impact on the physics start-up after LS3; options adding more flexibility to the facility and/or physics could need longer than the current planned duration of LS3 for its installation. Another part of the medium-term goal would be the upgrade of the PSB-ISOLDE transfer line to allow for 2-GeV beams. This upgrade is physics driven (as it leads to higher RIB intensities) and funding will have to be identified from budget lines other than those used for the beam dumps as it is not part of the consolidation project. No technical show stoppers have been identified regarding the transfer line upgrade, but funds and manpower are still to be found; the upgrade has a very preliminary estimated cost of 5-6 million Swiss Francs. In-kind contributions and co-funding from partner countries could be considered. K. Flanagan explains that such a contribution from the United Kingdom would be contingent on wider community involvement, outside nuclear structure physics, at ISOLDE.

The next stage of upgrades at ISOLDE that make up the long term plan, i.e. envisaged for after 2026, will be covered by the EPIC proposal for which funding lines different to those used for medium term upgrades will need to be identified. S. Gilardoni summarises the goals of EPIC, which are to increase integrated intensity to final users and increase number of beam lines for experiments, thus creating new physics opportunities. A possible future version of the ISOLDE area, including a new experimental hall for low energy physics, is shown which would enable synergies with AD and n_TOF to be explored. However, there are a number of considerations regarding the EPIC proposal. These include the need to be realistic with regard to the current CERN financial situation and to take into account the possible implementation timeline post LS3. EPIC would be a large-scale project for both funding and workforce, but the upgrades could mostly be realised in parallel with machine operation. Cost estimates are underway for the proposed new experimental hall but the cost impact of increased facility operation has never been analysed; it is important that these extra costs be taken into account when calculating the cost of the future project.

7. Producing an intense gamma beam at the proposed Gamma Factory–V. Fedosseev

The Gamma Factory (GF) is an ambitious proposal led by Witek Krasny, which is currently being explored within the CERN Physics Beyond Colliders program. It aims to produce a source of photons with energies up to ≈ 400 MeV and photon fluxes (up to $\approx 10^{17}$ photons per second) exceeding those of the currently available gamma sources by orders of magnitude. V. Fedosseev briefly explains the basic scientific principle of the proposed GF and summarises the properties of the photon beam that could be produced. The GF proposal would use the LHC as an accelerator of heavy ion beams to generate gamma beams through the interaction of the relativistic ion beam with a laser beam. Thus, the high-energy (partially) stripped ion beams play the role of high-stability light-frequency converters. The gamma beam could be used for a wide range of experimental programmes beyond 2035 that might also include opportunities for nuclear physics, as outlined in a paper recently submitted to arXiv:2106.06584v1 (added to the agenda on indico).

The status of the GF milestones is presented. The physics cases for LHC-based GF research are presently being collected and the next stage would be the execution of the GF Proof-of-Principle experiment in the SPS tunnel. V. Fedosseev summarises the challenges the GF project faces with regard to the primary photon source and beam dynamics. The SPS proof of Principle experiment is then presented, including the project planning which assumes funding is available from January 2022. It is clarified that having ions in the SPS for the proof of principle experiment would not interfere at any time with the delivery of protons to ISOLDE.

8. RIB production at the Gamma Factory–P. Constantin

It is described how the Gamma Factory could act as a driver for the production of RIB's through the use of photofission on a stack of U foils in an ion catcher gas cell. The results of simulations carried out so far are presented (as outlined in the paper arXiv:2105.13058v1, also on indico) and the expected isotope yield of some typical isotopes is compared to that of planned and existing RIB facilities, such as FRIB and ISOLDE. A significant enhancement is predicted for isotopes that are not released well from a thick ISOLDE target and which are also rarely produced in fragmentation reactions, such as n-rich Co and Ni isotopes.

9. Discussion: ISCC view on Gamma Factory and the proposed RIB production–K. Flanagan

At present the proposal to produce radioactive isotope beams using Gamma beams from the Gamma Factory is purely academic. The committee expresses the belief that using the Gamma Factory for producing RIB's would require a strong physics case, in order to become relevant to the ISOLDE physics community as it might only replicate beams that are, or will be, available at other facilities such as SPIRAL2, FAIR, and maybe even at ISOLDE (e.g. some refractory elements are now already available as molecular beams). The committee decides that contacts with those involved in the GF project should be maintained, but that ISOLDE should not be involved in any GF proposals at present. S. Gilardoni clarifies that V. Fedosseev is involved in the GF project because the SPS test facility would require a laser (and Valentin is head of the CERN laser section, responsible for CERN lasers used for ionization/spectrometry or secondary particle production). However, no ISOLDE resources are involved in the project.

10. News from Horizon Europe: EURO-LABS call / requests from users –G. Neyens

The committee is told that the Horizon Europe call for research infrastructures will be launched in June with a deadline in mid-September 2021. ISOLDE will come under Destination 3, Research Infrastructure Services to Advance Frontier Knowledge. There are many specific calls open in this destination but the one relevant to ISOLDE is HORIZON-INFRA-2021-SERV-01-07. The aim of this particular call is to provide trans-national access to integrated and customised RI services for curiosity-driven research in wide scientific domains. G. Neyens summarises the eligible costs under

this call and explains that, in 2021, one of the three scientific domains in this call is for “Particle and Nuclear Physics” with between 10 and 14.5 million Euros available. Funding will be awarded to the highest ranked proposals within each scientific domain, provided that the applications attain all thresholds. The expected outcomes of a proposal are presented.

G. Neyens presents the timeline of the on-going preparation of the EURO-LABS proposal to be submitted to the Horizon Europe call. In December 2020, the current ENSAR2 TNA representatives elected N. Alahari (GANIL) and M. Colonna (INFN) as the coordinators of the proposal and since then ISOLDE has submitted all the requested input using the data put together for the previous ERINS proposal. A possible organisation of the proposal is presented with six work packages and the TNA enveloping all six. In February, other facilities and groups at CERN expressed an interest, through the EU office, in joining the call so they were put in contact with the proposal coordinators. At the end of April 2021, the coordinators informed the facilities that had replied to their December 2020 call for input that the EURO-LABS proposal would be prepared together with the detector and accelerator particle physics communities in Europe. Hence, there are now three deputy coordinators: M. Colonna (Nuclear Physics), Ilias Efthymiopoulos (Accelerators, CERN) and Marko Mikus (Detectors, CERN). It is not yet clear how the projects will be merged, however an agreement was already made to share the funds between the nuclear and accelerator/detector communities as 7.5 and 7 MEuro for both, and with 5 MEuro for transnational access to nuclear facilities. Some collaboration members point out that there could be advantages of coordinating a project with other areas of research at CERN.

The committee is informed that ISOLDE, GSI, ALTO and Jyväskylä have expressed concerns about the lack of clarification and definite decisions regarding the EURO-LABS proposal. F. Farget states that this situation is alarming and that she will look into how she can be of assistance. The committee agrees with F. Farget that the call is open to both nuclear and particle physics communities so it is important that they do not compete against each other. Collaboration members state that collaboration with particle-physics related communities can be beneficial and could lead to new collaborations.

G. Neyens informs the committee that, in January 2022, there will be a Horizon Europe R&D call with the aim to deliver innovative scientific instrumentation, tools and methods, which advance the state-of-art of European RIs and support new areas of research and/or a wider community of users. The deadline for proposals will be in April 2022.

11. Physics Beyond Colliders and link with ISOLDE– M. Kowalska

It is explained that the Physics Beyond Colliders (PBC) Study Group was originally set up to look at future particle-physics and BSM (Beyond Standard Model) related physics directions at CERN that do not involve the FCC (Future Circular Collider). The PBC was encouraging exchanges between theorists and experimentalists in this matter, and ideas for ‘Fixed Target Experiments’ were discussed and studied. However, the recent European Particle Physics Strategy Update indicated that medium and low energy physics (precision) experiments should also be included in this process. Hence, the second edition of the study group has a modified structure and has been given a new mandate with a widened scope. The new PBC mandate is presented, as well as the organisation of the study group; the content and mandate of each working group is still being finalised. A budget of 3 MCHF per year has been secured in the CERN Medium term plan for PBC support with the focus on preparing for new, not yet mature ideas for research in fundamental physics (thus related to BSM research). Hence, small amounts of funding, for e.g. PhDs or fellows, could be available for projects accepted by the PBC committee.

The widened scope of the study group means that ISOLDE can now be included in the physics working groups, which should help to make ISOLDE physics that is related to CERN particle physics more visible. Several of the PBC physics related working groups are relevant to ISOLDE, in particular the Beyond Standard Model (BSM) group and the Feebly Interactive Particles (FIP) Physics

Center. The committee is told that both G. Neyens and M. Kowalska have recently been contacted by the PBC coordinators and G. Neyens has been invited to present ISOLDE at their next FIP meeting at the end of June; it is important that the PBC learns what more ISOLDE could offer, apart from nuclear and applied physics. The PBC has agreed that two representatives of ISOLDE will be included in the PCB physic-related study groups, one in the BSM working group that will discuss the feasibility of projects and make decisions on financial support and another in the FIP Physics centre that will be more theory oriented. This could help to make and strengthen physics cases for EPIC.

The committee is informed that J.A. Rodriguez has also been contacted by the PBC Accelerator working group leader, and was asked to be part of that working group, that could provide help for EPIC in the future. This working group has had its kick-off meeting and will meet once a month. The physics and technical sides of ISOLDE have agreed to coordinate their interactions with the PBC study group.

12. Discussion on ISOLDE representation in PBC / link with EPIC– *K. Flanagan*

The committee identifies the need for clarification regarding how the ISOLDE community will interact, directly or indirectly, with the PBC, and the relationship of the study group with both the ISCC and INTC as well as where the PBC sits within CERN hierarchy. It is agreed that it is important for ISOLDE to be pro-active with regard to this type of committee and opportunity, and to make sure that ISOLDE related activities within PBC would be coordinated with the Standing Group for the Upgrade of ISOLDE.

The committee supports the proposal for G. Neyens and M. Kowalska to represent ISOLDE in the PBC physics related study groups and suggests that they report regularly back to the ISCC.

13. News from the coordinator– *K. Johnston*

K. Johnston informs the committee that 676 shifts were requested at ISOLDE for 2021 and presents the distribution between the different set-ups. Due to the lack of ventilation in the Class A labs, the UC target units required this year had to be predicted in 2020 and will be used along with some used targets from 2018. It is clarified that a used target does not necessarily mean a bad target and one of their advantages is that they can be pushed further to the limit in terms of operation. The ISOLDE physics schedule for weeks 25 to 35 is presented and it is explained that, due to the Covid pandemic making travel difficult from many countries, there is an inevitable bias towards local groups or those able to run remotely. The schedule for September to November is being prepared and the likely experimental runs are shown. It is clarified that experiments presented under "Medical" are not run by the MEDICIS Collaboration although the institutes that proposed the experiment may, in some cases, be part of said collaboration. It will be a difficult year for experiments without local support and some groups are preferring to wait until Spring 2022 when a marathon physics run should begin in mid-March. The beam requests for 2022 will be sent out at the end of September with low energy physics due to have an earlier than usual start in March while HIE ISOLDE experiments will start as usual in the summer. There is expected to be a very high demand for HIE-ISOLDE in 2022.

The current backlog of shifts at ISOLDE is presented along with the distribution among set-ups; there are approximately 1170 shifts still to be scheduled. The INTC meeting on 23rd/24th June will consider 15 proposals, 6 letters of intent and 3 letters of clarification which together represent the request of 340 shifts. The committee is told that there were again submissions to the INTC from non-collaboration countries and without contact being made with experiment collaborations. In these cases, the persons responsible for the proposals are contacted and informed that the documents cannot be considered by the INTC until the appropriate actions are taken <https://isolde.cern/submitting-proposals>.

K. Johnston explains that CERN is still officially closed to Users except for essential reasons such as running experiments but the process to come on site is far from smooth. Approval to come on site is required from the ISOLDE Physics Coordinator or the ISOLDE Physics group Leader in agreement with the Users home institute, please see <https://isolde.cern/user-access-cern-2021> for details. This approval can then be used to make bookings at the CERN hostel. For new users, once their visit is approved, the teamleader from their institute has to launch the online PRT document and inform J. Weterings of the document number as well as the exact arrival date of the User so that a request can be made to the Users office to process the PRT. The Users office will only process the document 2/3 days before the arrival date, please see <https://isolde.cern/user-access-cern-2021>. Users are also requested to read the “News for Users 2021” article in the recent ISOLDE newsletter <https://isolde.cern/sites/isolde.web.cern.ch/files/ISOLDE%20Newsletter%202021.pdf> and the Users office website, in particular <https://usersoffice.web.cern.ch/newcomers-measures-and-requirements-covid-19>. Users who will be at CERN for more than 3 days have to make an appointment to pick up a proximeter from building 55.

CERN’s quarantine regulations require anyone coming from a country that is on the French or Swiss list of “at risk” countries to quarantine. If the user is coming from a region classed as high-risk by either France or Switzerland they must declare their planned arrival date to the CERN medical service, via covid19.help@cern.ch, who will then decide what quarantine measures are required and can help with arranging any required tests. It is possible to request quarantine exemptions but these are currently difficult to secure and not guaranteed.

Due to BREXIT, Users from the United Kingdom now require extra documents before they can come to CERN, please see <https://isolde.cern/brexit-implications-cern-users-uk> for details. Processing of these documents can take several weeks. For Users coming to Switzerland from the UK by plane, for a short or long period a "laissez-passer" may be required due to Covid travel restrictions; they should check the UK government website for travel to Switzerland <https://www.gov.uk/foreign-travel-advice/switzerland/entry-requirements>. If there are any doubts or queries the User should contact their local Swiss consulate.

The committee is informed that CERN is now using a Covid-19 scale with 4 levels to clarify what measures are currently in place, for details please see the webpage https://edms.cern.ch/ui/file/2379299/LAST_RELEASED/CERN_Scale_and_measures_poster_EN.pdf. The level reflects the prevailing epidemiological situation and CERN is currently at level 3.

K. Johnston explains that the restrictions on the number of people allowed in offices and laboratories at CERN due to the pandemic are unchanged from those presented at the last ISCC meeting. Hence, PCs have been installed in the old DAQ room to allow certain actions to be taken without going into the control room and, along with installations installed at certain set-ups, make remote access possible. The visitors’ space has been optimised to allow for social distancing and zoom conferencing.

The status of certain experimental set-ups is briefly presented. ISS is now closed up and ready for stable beam from 7th July while the VITO beamline is almost ready with the new SC magnet in place since March. The new HV cage at ISOLTRAP has obtained safety approval and a first successful run with the MR-ToF has taken place for LISA tests. NICOLE has now been removed so that MIRACLS can start installation in parallel with the on-going work of the compact MIRACLS set up at LA2.

Regarding training required to enter the ISOLDE hall, K. Johnston explains that, as well as the increasing number of online courses, there is a new EP-wide hands-on electrical course for all Users/Staff who need to work in the experimental area. As part of the registration for this course, a new approval form has to be completed by the User’s teamleader indicating the electrical tasks which can be followed by the user upon completion of the course. From the last week of June, dedicated weekly sessions of the hands-on RP course will take place with a local trainer which should allow

easier scheduling. The hands-on courses will take place at the Preveessin site on Tuesdays, the EP electrical course from 08:30 to 12:30 and the RP course from 14:00 to 16:30. Information about the courses required to access the ISOLDE hall can be found via <https://isolde.cern/get-access-isolde-facility>. It should be noted that user who have already followed the previous ISOLDE electrical hands-on training are not yet required to follow the new course, although this may eventually be the case.

K. Johnston informs the committee that CERN has signed many new agreements with publishers giving open access rights for papers with a CERN author, even if not affiliated with CERN, as long as the paper arises from an experiment that has taken place at ISOLDE and the ISOLDE Collaboration is included in the submission of the paper. If the paper arises from a specific ISOLDE experiment, the IS number of the experiment should also be mentioned. Information can be found at <https://scientific-info.cern/submit-and-publish/publish-open-access> and if there are any doubts please contact open-access-questions@cern.ch.

The committee is informed that it is not currently possible to hold the usual ISOLDE separator courses at CERN so M. Lozano Benito has prepared a suite of videos which will be available for users to become acquainted with the machine.

L.M. Fraille states that the Covid related information sent out by CERN is difficult for Users to decipher and that a request for clearer information to external CERN users has been made to the ACCU.

14. News from the ISOLDE group and collaboration matters– *G. Neyens*

The present manpower situation in the ISOLDE Physics Group is summarised by G. Neyens.

- Scientific Associates: Robert Berger (5 months, May 2021 – September 2021), Sorin Pascu (6 months, February 2021 – September 2021), Janne Pakarinen (8 months, December 2021 – July 2022), Alexandre Obertelli (1 year, September 2021 – August 2022 – partly at AD). Deadline for new applications: 10th September 2021.
- Corresponding Associate: Mikolaj Baranowski (3 months, July 2021 – Sept. 2021). Deadline for new applications: 10th September 2021.
- Staff Members: Stephan Malbrunot-Ettenbauer (ERC MIRACLS, TRIUMF-funded from March 2022) (February 2017 to August 2022), Karl Johnston (Physics Coordinator) (October 2015 to September 2022), Gerda Neyens (Physics Group Leader) (June 2017 to August 2021), Magdalena Kowalska (CERN staff member) (January 2020 -).
- User: Jenny Weterings (User Support) (2002-)
- Research Fellows: Maxime Mougeot – ISOLTRAP (Sept 19 – August 2021), Razvan Lica – IDS (June 2020 – May 2022), Liss Vasquez Rodriquez - COLLAPS (Oct. 2020 – Sept. 2022), Erich Leichensteiner (April 2021 – March 2023), Agi Koszorus – CRIS (November 2021 – October 2023). Deadline for new applications: 1st September 2021.
- Applied Fellows: Dinko Atanasov – WISArD & Low Energy Experiments (April 2019 – June 2021), Markus Vilen – MR-ToF for ISOLDE and MIRACLS (October 2019 to September 2022), Bruno Olaizola – HIE-ISOLDE (September 2020 – August 2022), Frank Brown – MINIBALL (Sept. 2021 – August 2023), Jared Croese -VITO (Aug. 2021 – June 2023). Deadline for new applications is the same as for Research Fellows, 1st September 2021.
- Doctoral Students: Simon Lechner (CERN-MIRACLS) (September 2017 to August 2021), Jared Croese (CERN- EP-SME) (February 2018 to July 2021), Peter Plattner (CERN via Austrian Doctoral Program) (August 2018 to July 2021), Katarzyna Maria Dziubinska-Kuhn (CERN-ERC

Betadrop) (October 2018 to February 2022), Karolina Kulesz (CERN-ERC Betadrop) (October 2018 to March 2022), Lukas Nies (CERN via Gentner Doctoral Program) (November 2019 to October 2022), Franziska Maier (CERN-MIRACLS via Gentner Doctoral Program) (February 2020 – January 2023), Michail Atanasakis (CERN EP-SME) (Sept. 2020 – Aug. 2023), Marcus Jankowski (CERN via Gentner Doctoral Program) (January 2021 to December 2023), Tim Lellinger (CERN via Gentner Doctoral Program) (March 2021 – February 2024).

Committee members are urged to encourage good PhD candidates to apply through the successful German Gentner program, providing CERN doctoral fellowships, with a German University providing the conditions for obtaining a doctoral degree.

G. Neyens informs the committee that this year's ISOLDE Workshop will be held from Tuesday 14th to Thursday 16th December. No EPIC Workshop will be organised in 2021 but a dedicated session at the ISOLDE Workshop is being considered.

The status of the EPIC Topical paper is briefly summarised. The European Physical Journal Special Topics has accepted the contents to be submitted by December 2021 (130-150 pages) and different writing groups are working towards having the first draft ready by August after which it is planned to circulate it to the wider community.

G. Neyens presents the present membership fee situation. Fees for 2021 have already been received from Norway, Germany, CERN, Slovakia and Finland while Bulgaria has paid half of its fee for this year. Poland still has fees outstanding for 2019 and 2020. M. Pfützner explains that the ministerial fund used to pay the ISOLDE collaboration fee has not been available for the last two years and it is not known when the funds will again become available; an attempt is being made to collect funds from various Polish sources and it is hoped that approximately half of the Polish fee will be paid this year. F. Farget comments that IN2P3 will pay its contribution for 2021, and also A. Nannini and D. Naido confirm their payments are being processed.

At the ISCC meeting in February 2017, in order to ensure that an experiment is covered by the ISOLDE MoU with CERN, it was decided that at least one spokesperson on a proposal must be from an institute in a country that is a member of the ISOLDE collaboration. However, proposals are still sometimes submitted without a spokesperson from an ISOLDE member institution/country so, in order to better publicise the requirement, the information was added to the ISOLDE website in March 2021 <https://isolde.cern/submitting-proposals> and will also appear on the INTC website.

G. Neyens informs the committee that the Institute for Research in Fundamental Science in Tehran has approached the collaboration to discuss possible future involvement at ISOLDE. The institute already has one solid state physics expert based at ISOLDE and is already a member of the CMS collaboration. The CERN director of research, J. Mnich, has expressed his support for future collaboration with the institute.

Three updates to the annexes of the ISOLDE MoU are presented and approved by the committee. They concern new representatives of funding bodies (CERN) and Country representatives (Romania) and an update on the Management positions in the ISOLDE Collaboration.

G. Neyens informs the committee that a letter from F. Farget, Deputy Director of IN2P3, was received on 27th May 2021 stating that IN2P3, thus France, expressed its wish to resign from the (automatically renewable) collaboration MoU. A similar letter was received by F. Gianotti, CERN Director General at the same time. According to the ISOLDE MoU a member state has to give at least 12 months' notice if it decides to leave the collaboration. As no date for terminating the partnership was stated in the letter by F. Farget, a reply letter was sent to her signed by GN and FG, answering to the concerns raised and expressing the hope of CERN that France will not leave the collaboration, as well as reminding that based on this received letter, the collaboration ends earliest on May 24, 2022. The

committee will, of course, discuss what can be done to try to keep France as a member of the ISOLDE collaboration. However, the ISCC insists that if France reconsiders its decision to leave, it finds a solution to have all French physicists (not only IN2P3 members) as collaboration members, as it was in the original version of the MoU which was signed by all partners (including IN2P3).

15. France leaving the ISOLDE collaboration– *F. Farget*

F. Farget presents her concerns regarding the ISOLDE Collaboration's MoU and the use of collaboration funds, which she claims is not according to what is stated in the MoU. She states that it is not her intention for France to leave the collaboration but to initiate a discussion about the member state contributions and about how decisions are made about how the funds are being used by the Collaboration.

A discussion takes place and attempts are made to clarify what actions might be acceptable to F. Farget (thus IN2P3) to allay their concerns and to allow IN2P3 to remain a member of the collaboration. Committee members stress that the present MoU balances simplicity and efficiency, taking into account the complexity and variation in procedures for obtaining funds within each member state, and it is important that this remains the case. It is the responsibility of the representative of each member state to keep their funding agency (which can be a University or a Governmental agency) appropriately informed.

The committee reiterates that the collaboration would be very sad to see France leave and hopes that a solution can be found to continue what has been many years of fruitful collaboration. It also expresses the wish that France is able to find an internal solution that allows all French physicists who have interest in the ISOLDE physics program to sign up as a member of the ISOLDE Collaboration.

Specific points raised by FF were covered in the discussion, as presented in her slides. These are summarized below, along with a summary of the comments made by the collaboration members (some specific pieces of information concerning details from the MOU were added here for clarity and completeness after the meeting):

* FF: Some institutes are not represented by their funding agency.

Comments: this is indeed the case. Each country decides for themselves how they organize the financial contribution and the representation at the ISCC. This can be through a university (representing all other institutes in the country) or directly via a funding agency (representing all institutes in the country). In many countries it is a single university that pays the fee and represents all other universities in the ISCC (e.g. Germany, Belgium, Sweden, Spain, Poland, ...). This allows many countries to raise the necessary funding, often by applying for it on a regular basis from their funding agencies. A direct contribution from each funding agency would indeed give more security. However, to not exclude countries where such approach is impossible, the Collaboration has adopted this flexible scheme, which allows individual institutes to sign and represent their country. This scheme is fully endorsed and approved by the CERN legal services. Several country representatives stress that they would not support a change of this way of operation, as it would make it impossible for them to join the collaboration. The Collaboration hopes that the French groups can find a solution to cover all French physicists interested in participating in the ISOLDE Collaboration, irrespective of their affiliation.

* FF: based on Point (e) of the MoU, persons not being a member of the Collaboration can propose experiments.

Comments: this is correct. However, as stated in the minutes of the Feb. 2017 ISCC, and also on the ISOLDE webpage (and again repeated at this meeting in the presentation by GN), due to the large over demand for beam time, persons from non-member countries cannot act alone as a spokesperson.

They need to have a co-spokesperson who is a member of the Collaboration. Access for a specific experiment is therefore guaranteed under the MoU of ISOLDE, which covers the common funds needed to perform the experiment.

* FF: the physics addressed at ISOLDE is enlarged beyond the scope of IN2P3.

Comments: the broad range of physics performed at ISOLDE is what makes the facility attractive for countries to join our collaboration. It enlarges their user group by involving physicists from different disciplines, thus having a higher return from their contribution fee. Other returns include technical know-how and technology transfer to national laboratories (such as SPES, ALTO, GANIL, ...). Many signatories and funders find this a significant benefit of ISOLDE, and the scientific diversity of the user base is thought to be an asset. Collaboration across traditional discipline boundaries is encouraged for this reason.

* FF: Financial matters presented in February 2021 suggest that common funds are not only used for M&O, but also to prepare for future upgrades beyond the scope of the MoU.

Comments: As noted by several members of the collaboration, the MoU in several places expresses a commitment for the Collaboration to participate in the upgrade of the facility. (Note added: The MOU itself is entitled: "Memorandum of Understanding for Collaboration in the Exploitation and Upgrade of the ISOLDE Facility at the PS-Booster".) One example is Point (f) which states: "The ISOLDE Collaboration shall provide and maintain equipment of common use to the experiments and in some cases give individual support to them, ... It will also participate in the upgrade of the facility ...". Similar statements can be found at other places in the MoU.

Furthermore, Point (f) also states "CERN shall operate the facility, including the experimental area (Building 170), and provide the isotope beam to each experiment. It may also upgrade the facility."

Many collaboration members stressed the importance of having the flexibility to use the Collaboration funds to support small upgrades and for preparatory studies towards more major upgrades of the capabilities of the ISOLDE facility. Those are necessary before project approval and major investment costs can be sought, both from CERN via its Medium-Term Plan and from collaborating countries. That is only possible after a project has been properly defined, prepared and its technical feasibility is demonstrated. The Collaboration funds can be partly used to support such activities, as stated in the MoU.

* FF: Automatic 3-yearly renewal of the MoU should come together with a Financial Review Board, where the funding agencies are informed about the planned investments for the next 3-year period, and where the planned investments are to be reviewed.

Comments: several collaboration members again stress the importance of using the contributions not only for M&O, but also to finance small improvements to the facility as the need arises, and to perform preparatory studies or developments for possible major upgrades. Such flexibility has to remain and decisions for such should not be made by an FRB. As stipulated in Point (g) of the MoU, it is the role of the ISCC to govern the ISOLDE Collaboration in financial and legal matters, and to approve any substantial modification or addition to the ISOLDE facility. Each member country has one vote (in case no consensus can be reached). The relatively modest contributions from the countries are not sufficient to finance a major upgrade of the facility. Thus, before searching for major funding sources, preparatory studies are necessary, and it is the ISCC that decides which of such studies it wants to support. With that, a major upgrade can be formally presented to CERN higher management for approval as part of the Medium-Term planning process (including all its relevant boards where member countries are represented).

* FF: the collaboration fee is the same for each country, irrespective of the number of persons involved in the physics at ISOLDE.

Comments: the reasons for the flat fee were not clear to all members. Two countries (Norway, Poland) wanted to understand better the reasoning behind the current arrangement and did question if a fee based on number of involved persons should be considered. However, many other members expressed their support for the current flat-fee-per-country approach, which has been established at the initiation of the collaboration in 1993, and was reconfirmed when a new MoU was signed in 2016.

At the end of her presentation FF stated that much of the above mentioned items would naturally disappear if a formal connection between the collaboration and its funding agencies would be made. She summarizes the conditions for IN2P3 to remain a member of the Collaboration and she states to be willing to look for a solution to involve all French physicists in the Collaboration, by sharing the 60 kCHF within France. The conditions of IN2P3 are:

- IN2P3 insists that a new MoU be negotiated and prepared at the time when the main upgrade of the facility reaches an end. This is a good moment to reconsider the collaboration operation.
- IN2P3 insist on establishing a form for FRB, which makes a formal validation of the choices done by the collaboration and of the required commitments for the operation. A proposition was made to have the budgetary session of the February ISCC open to Funding Agency representatives in order to form a Financial Resources Board within the collaboration. F. Farget stated that this solution would be a very positive outcome of the present discussion and a good step forward having a collaboration operation with a better supervision from the funding agencies. Considering the small individual contribution amount per year, having this funding board each three years, at the moment of the renewal of the MoU when the definition of the operation costs for the next 3 years is presented, could be a possibility.

Conclusion of this topic: The committee is happy with the constructive discussion and will now take some time to see if a solution can be found, which is acceptable for all members of the collaboration.

16. A.O.B.

- S. Freeman, who will take over as the ISOLDE Group leader at the next ISCC meeting, thanks G. Neyens on behalf of the collaboration for all her efforts as Group Leader and wishes her well in her future endeavours including as ISCC Chair.

17. Dates of the next meeting

The date of the next ISCC meeting is not yet fixed.

Meeting ends at 17:15.

N.B. The above presentations can be found via <https://indico.cern.ch/event/1044832/>.