



Report on TransNational Activities at ISOLDE

Publicity concerning the opportunities for access under the grant agreement

The measures taken to publicise the opportunities for access are:

- a dedicated website: <https://isolde.web.cern.ch/>
On the website it is described:
 - Who can apply
 - How to apply
 - Call for proposals
 - Financial support
 - Application form
 - Structure and services of the research infrastructure
- group leaders of scheduled projects are informed via email
- the user community is informed at the annual user meeting
- international workshops/conferences are used to inform a wider scientific community

Selection procedure

Users Selection Panel

ISOLDE is open to international user groups. A written proposal has to be submitted to apply for access to the experimental facilities. Proposals are reviewed by an international Programme Advisory Committee (PAC): the ISOLDE Neutron Time-of-Flight Committee (INTC). After open-session oral presentations by the proponents the INTC evaluates the proposal and presents recommendations to the CERN Research Board which decides whether to approve or reject the proposal.

The INTC presently has 11 members from external institutes or universities. These members are experts in topics related to the physics activities of the facilities (nuclear structure physics, weak interactions, nuclear astrophysics, solid state physics, and life sciences). There are also 12 ex-officio members from CERN in the INTC. The CERN research board has 18 members.

After the approval of an experiment the user group can apply for funding from the transnational access programme. A specific users selection panel reviews the applications and decides on the subsistence person-days that can be allocated to the experiment in question. The decision is based on the beam-time allocated as well as the number of young researchers and new users planning to join the experiment.

All users have access to the decisions of the INTC via the CERN website. In case a proposal is rejected the proponents are informed about the scientific/technical or other reasons for not accepting the proposal (e.g. eligibility). Proponents may after considering the comments by the committee submit revised proposals.



Please find in Annex 1 (Database) the list of the Selection Panel members for the reporting period.

Selection Panel meetings

In 2014, there were two meetings held at CERN: 25/07/2014 and 29/10/2014

Selection criteria

The Users Selection Panel bases its selection on scientific merit, following the prescriptions of Annex III of the contract, Article III.3.6.

Transnational access activity during the reporting period

During the 3rd reporting period from September 2013 to December 2014 a total of 26 projects were supported. A total of 1532 beam hours were delivered; 66 individual users were paid a total of 237 subsistence days while at ISOLDE. While the majority of users come from the field of physics, the fields of chemistry and biology are also represented.

Three projects either did not receive the scheduled beam or the beam received was considered as test beam and will be rescheduled at a later date.

Please find in Annex 2 (Database) the list of user-projects for which costs has been incurred in the reporting period.

Please find in Annex 3 (Database) the list of users in the reporting period.

Scientific output of the users at the facility

Please find in Annex 4 the list of publications that have appeared in peer-reviewed journals during the reporting period (or peer-reviewed conference proceedings) and resulting from work carried out under the TNA activity. The current programme started in September 2010. Publications from experiments taking place during this reporting period are thus under preparation. Keeping in mind the time scale of experiments of the kind performed at the facility one may expect that data analysis and publication of the results require typically one to two years.

Below are highlights of important results from the user projects supported under the grant agreement. These results were obtained in the second part of 2014 during the running time of the facility corresponding to the 3rd reporting period.

In 2014, many successful experiments could be performed at ISOLDE, including rare-earth collections of medical isotopes for PSI, Denmark, and Lausanne; masses of neutron-rich Cd isotopes for r-process nucleosynthesis; solid-state studies with beams produced by molten lead and tin targets; hyperfine structure studies on astatine isotopes; and many target and ion source tests. There were also several new setups and even new groups that performed successful studies: the new ISOLDE Decay Station (IDS) was used for the study of three-proton emission in ^{31}Ar , high efficiency gamma spectroscopy of $^{207,208}\text{Hg}$ and the unknown decay scheme of $^{149-150}\text{Cs}$. Lifetimes of excited states in the beta-decay daughters were measured using the fast-beta-gamma-gamma-time method. With the same technique the half-life of the first-excited state in ^{129}Sn was measured and it was found that the half-life was a factor of 100 faster than expected from theory with important impact on the nuclear structure in the region. A new group from Bratislava used their TATRA setup for decay studies of neutron-deficient Hg isotopes; and finally



the LPC Caen and Madrid groups led two-neutron-correlation studies of ^{11}Li , using their large liquid-detector array. In addition, the Versatile Ion-polarised Techniques On-line (VITO) beam-line for solid-state and biological studies successfully completed its first experiment in December.

Users meetings

During the 3rd reporting period from September 2013 to December 2014 two users meetings took place at CERN. The first was held 25-27 November 2013 and was attended by 125 people of whom 96 were users (<http://indico.cern.ch/event/263071/>). The second took place 15-17 December 2014 and was attended by 146 people of whom 111 were users (<https://indico.cern.ch/event/334117/>). The users meeting in 2014 included a special session to celebrate the 50th anniversary of the facility which summarised the technical developments and physics achievements since 1964.

Young researchers were gathered at different training courses held at ISOLDE during the period from September 2013 to the end of 2014.

One dedicated to “Shell Model for non-Practitioners” was given by F. Nowacki, E. Caurier, G. Martinez-Pinedo, A. Poves and K. Sieja from 14-18 October 2013

(<http://indico.cern.ch/event/248704/>).

Another course on “Nuclear Reaction and Nuclear Structure” given by W. Catford, A. Di Pietro and A. Moro took place from 22-25 April 2014 (<http://indico.cern.ch/event/298890/>).

Annexes

Annex 1 Composition of the Users Selection Panel

See “Selection Panel” in MS Access Database

Annex 2 List of User-Projects

See “List of User Projects” in MS Access Database

Annex 3 List of Users

See “List of Users” in MS Access Database

Annex 4 List of Publications (from work carried out under the Transnational Access activity)

See “List of Users’ Publications” in MS Access Database

See list of other ENSAR publications in attachment of the periodic report