



## Report on TransNational Activities at JYFL

### Description of the publicity concerning the new opportunities for access

The measures taken to publicise the opportunities for access are:

A dedicated **website**:

<https://www.jyu.fi/accelerator/ensar.html>

In web site it is described:

- Who can apply
- How to apply
- Call for proposals
- Financial support
- Structure and services of the research infrastructure

Advertisement of calls for proposals (15 March and 15 September) and new developments at JYU-JYFL are published in **JYFL Accelerator News** biannually, which is posted to nuclear physicists all over the world and published at <http://www.jyu.fi/accelerator/anews>.

### Description of the selection procedure

Access is based on approved proposals for the experiments (= projects) to be carried out at the JYU-JYFL Accelerator Laboratory by the user groups. They are evaluated by the Programme Advisory Committee (PAC) (= the Users Selection Panel), which meets in Jyväskylä around 2 weeks after the deadline for submitting proposals (March 15 and September 15).

Before the PAC meeting, every proposal is looked at in great detail by one PAC member, if possible by someone with particular experience in the relevant research topic. During the PAC meeting, each proposal is discussed in detail. The criteria used in judging a proposal are: the importance of the physics topic, the feasibility and the suitability for the JYFL facility. The PAC can propose to reduce the amount of beam time from that requested. After the discussion of all proposals, they are ranked according to the average mark they received. Since there are 2 calls for proposals per year, it makes no sense to award more than about 6 months worth of experiments during each PAC meeting. Going from the highest to lowest ranked proposals, the beam time is added until a total time of 120 to 150 days is reached, thus setting a cut-off mark. The PAC then recommends to approve the proposals with a mark higher than this cut-off value. All spokespersons of the proposals are notified of the result of the PAC discussion and of how much beam time (if any) was awarded.

The decision to award financial support under the ENSAR-TNA contract is taken by the board of the Accelerator Laboratory. During the PAC selection process, no priority is given to new and young users of the facility. However, this criterion is taken into account in awarding the financial support.



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

Three Panel members of P2 were replaced by new members.

Three selection meetings: on 11 October 2013, 14 April 2014 and 24 October 2014.

A total of 23 proposals (projects) out of 26 proposals eligible for ENSAR support were approved for experiments at JYU-JYFL-ACCLAB.

### **Transnational Access activity**

A total of 64 out of 88 approved eligible proposals have been selected for execution within the 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> ENSAR reporting periods (1 September 2010 – 31 December 2014).

A total of 17 projects have been executed during the 3<sup>rd</sup> reporting period. All of the projects belong to the field of nuclear physics and related applications, and are based on experiments performed at the JYU-JYFL Accelerator Laboratory by employing beams from the JYFL cyclotron and available instrumentation. The ENSAR supported experiments were performed by the visiting users in collaboration with the local expert research groups and technical staff.

During the third reporting period, a total of 1646 beam-time hours (share of the supported access) were delivered, 135 users (travel+sub. reimbursed) have visited the facility and spent 1486 person-days at JYFL.

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.

The supported projects in chronological order are:

48. S12: 2-9/09/2013 (continuation of s12 from 5-12/8/2013)  
Probing the E0 transitions in <sup>186</sup>Pb using the SAGE spectrometer

49. S13: 16-30/09/2013  
Study of the structure of high-K states in <sup>254</sup>No using the SAGE spectrometer

50. S17: 21/10- 4/11/2013  
Shape coexistence in odd-Au Isotopes: In-beam gamma-ray and conversion electron coincidence spectroscopy of the <sup>179</sup>Au

51. S15: 4-11/11/2013  
Spectroscopy of the odd-proton nucleus <sup>249</sup>Md and feasibility study for <sup>243</sup>Es

52. I159 29/11.-9/12/2013  
Branching ratio of <sup>26</sup>Si

53. I169 10-17/12/2013  
Laser spectroscopy of Mo and Y using optical pumping in an ion-beam cooler-buncher

54. JR126 20/1-3/2/2014  
Spectroscopic studies of excited states above and below 6<sup>+</sup> Isomer in <sup>102</sup>Sn



55. J19 11-17/2/2014

Defining the nature of the ultrahigh-spin region of  $^{162}\text{Hf}$

56. I154 17-22/2/2014

Total absorption measurement of the beta decay of  $^{100}\text{Tc}$

57. I153 23/2-3/3/2014

Study of nuclei relevant for precise predictions of reactor neutrino spectra

58. JR103 10-17/3/2014

Magnetic rotation and shape coexistence in  $^{144}\text{Dy}$

59. JR130 11-17/6/2014

Shape coexistence and quadrupole transition strengths in  $^{174}\text{Pt}$

60. JR122 26/6-8/7/2014

Shape coexistence in neutron deficient  $^{178}\text{Hg}$ : First measurement of E2 transition strengths in the yrast band

61. JR129 4-19/8/2014

Lifetimes of Proton-Unbound States in deformed  $^{113}\text{Cs}$

62. JR132 19-30/9/2014

Identification of excited states in  $^{70}\text{Kr}$

63. JR135 30/9-7/10/2014

Search for breakdown of  $T=1/2$  mirror symmetry: Recoil- $\beta^+$  tagging and decay spectroscopy of  $^{71}\text{Kr}$

64. I187 27-31/10/2014

Measurement of nuclear charge radii of plutonium isotopes by collinear laser spectroscopy

### **Scientific output of the users at the facilities**

Please find in Annex 5 the list of peer-reviewed articles published in the period 1/9/2013-31/12/2014 (ENSAR P3) based on EU-supported experiments (supported by the previous TNA-FP6-EURONS and the present TNA-FP7-ENSAR). The number of publications acknowledging EURONS and ENSAR within P3 is 19 and 11, respectively.

(Note that Annex 4 of the data base only allows to insert publications related to the projects executed within the same period).

A highlight (Project JR124, P2) was the first observation of yrast states in  $^{74}\text{Sr}$ , a nucleus beyond the  $N=Z$  line, enabling extraction of triple-energy differences for the analysis of Coulomb-energy differences in  $A=74$  nuclei at the  $N=Z$  line:



Deliverable D17.4

WP17 – TNA04 – JYFL

J. Henderson, D. G. Jenkins, K. Kaneko, P. Ruotsalainen, P. Sarriguren, K. Auranen, M. A. Bentley, P. J. Davies, A. Görger, T. Grahn, P. T. Greenlees, A. Hay, T. W. Henry, A. Herzáň, U. Jakobsson, R. Julin, S. Juutinen, J. Konki, M. Leino, C. McPeake, S. Milne, A. J. Nichols, J. Pakarinen, P. Papadakis, J. Partanen, P. Peura, P. Rahkila, E. Sahin, M. Sandzelius, J. Sarén, C. Scholey, M. Siciliano, L. Sinclair, J. Sorri, S. Stolze, J. Uusitalo, R. Wadsworth, M. Zielińska  
*Spectroscopy on the proton drip-line: Probing the structure dependence of isospin non-conserving interactions*

[Phys. Rev. C 90, 050303\(R\) \(2014\)](#)

**Annexes:** to be found in the MS database, except Annex 5

***Annex 1 – Composition of the Users Selection Panel***

***Annex 2 – List of User-Projects***

***Annex 3 – List of Users***

***Annex 4 – List of Publications*** (incomplete as only publications from P3-projects is allowed).

***Annex 5 – List of Publications*** (during P3 from earlier EURONS and ENSAR supported) in attachment of the periodic report