



PAC2 MEETING MINUTES

Deliverable 6.3

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Summary

The Project Advisory Committee (PAC) of the APRENDE project held its second in-person on April 23-24, 2026 at IFIC, Valencia to evaluate proposals for Transnational Access (TAA) and Education and Training visits. The PAC evaluated ten proposals for Transnational Access (TAA) and eleven proposals for Education and Training visits.

For TAA, the PAC endorsed five proposals:

- “Fast fission yield studies at IGISOL : a feasibility test” with up to 50 hours of beam time at a cost of 9844 EUR and user support of 2300 EUR
- “Characterisation of Neutron Detectors for High-Precision (alpha,n) Time-of-Flight measurements” with up to 50 hours of beam time at a cost of 17300 EUR and user support of 2900 EUR
- “Proton inelastic scattering cross sections on ^{92}Zr ” with up to 50 hours of beam time at a cost of 5834 EUR and user support of 2300 EUR
- “Measurement of the $^{35}\text{Cl}(n,p)^{35}\text{S}$ cross section relevant for fast chloride molten salt reactor design” with up to 50 hours of beam time at JRC and user support of 2000 EUR
- “Neutron transmission measurement of ^{20}Ne ” with up to 50 hours of beam time at a cost of 20400 EUR and user support of 2900 EUR

The five other TAA proposals were not endorsed.

For Education and Training visits, the PAC endorsed eight proposals:

- “Development of a SINBAD broomstick experiment benchmark at the reactor using methods developed by LR-0 group” with a support of 5650 EUR for an 5-week stay at CVREZ.
- “Training in nuclear data analysis and evaluation for neutron-induced reactions on Cu: from the RAMEN experimental campaign at n_TOF to nuclear data evaluation” with a support of 6700 EUR for a 6-week stay at n_TOF(CERN)
- “Training in nuclear data analysis for the ^{92}Mo and $^{100}\text{Mo}(n,\gamma)$ measurements at n_TOF: astrophysical and technological applications “ with a support of 4600 EUR for an 4-week stay at n_TOF(CERN)
- “Data analysis of $^{206,208}\text{Pb}(n,n)$, $^{206,208}\text{Pb}(n,n'\gamma)$ cross section measurements with ELISA” with a support of 5000 EUR for a 2 time 2-week stay at n_TOF(CERN).
- “Improved accuracy and reliability at HiSPANoS through training on neutron detection, spectroscopy and metrology at PTB” with a support of 8.800 EUR for an 8-week stay at PTB
- “Study of the possibility to reveal the origin of a ternary particle in fission by $\gamma\gamma$ -coincidence” with a support of 8.800 EUR for a 4-week stay at JRC, Geel
- “Cross-section measurements of short-lived reaction products with enriched targets” with a support of 2500 EUR for a 2-week stay at n_TOF(CERN)
- “ $^{243}\text{Am}(n,f)$: Off-beam activities at n_TOF” with a support of 1450 EUR for a 1-week stay at n_TOF(CERN)

The three other Education and Training proposals were not endorsed.

Abbreviations and acronyms

Acronym	Description
WP	Work Package

PAC members

A. Algora (CSIC, Valencia)
D. Cano-Ott (CIEMAT, Madrid)
R. Capote (ex IAEA, Vienna)
R. Jacqmin (CEA, Cadarache)
M. Kerveno (IPHC, Strasbourg)
A. Plompen (EC-JRC, Geel)

The meeting was held at IFIC, Valencia on April 23, 13:00-18:00 and April 24, 09:00-13:00. Daniel Cano-Ott was excused.

1 WP6 Transnational Access and Education and Training visits

The objectives of Task 6.2 are the call for proposals and proposal evaluation of:

- Transnational access to neutron beam facilities (TAA) and training activities of early-stage researchers and scientific visitors to develop multidisciplinary nuclear competences.
- Exploit synergies between APRENDE and OFFERR, ENEN2Plus, and other projects supporting access to experimental facilities.
- Organize **three calls for proposals** of experiments and training activities with a peer-review by the Project Advisory Committee. The Terms of Reference for the PAC (MS 17) guarantee good scientific output, a transparent, impartial, and effective selection process and efficient use of resources.
- Provide **750 additional beam-time hours** for external users at the participating consortium facilities. In **15 experiments with a typical support of 50 beam-time hours per experiment**. Two users will receive mobility support for the length of the stay, typically 5 days.
- Organize **10 education and training visits** of early-stage researchers or senior nuclear data experts for scientific stays of up to 8 weeks at the APRENDE beneficiaries

The closing dates for the three calls for proposals are 04. July 2025, 15. March 2026 and 15 March 2027. The typical user support for experiments is a per diem of 150 EUR and travel cost of 400 EUR. Only the really occurred travel cost can be reimbursed.

The terms of reference of the PAC are described in MS17 of the APRENDE project. The tasks of the PAC are:

- assess the overall scientific progress of TAA and Education and Training visits
- evaluate the Implementation Plan and provide recommendations for improvements
- evaluate applications for Transnational Access

- evaluate applications for training of early-stage researchers and scientific visits
- advise on possible collaborations and survey duplication of research efforts
- monitor publication policy and transfer of data to the nuclear data bank
- act as a first adviser in case of potential conflicts

A major task of the Project Advisory Committee (PAC) is to evaluate the proposals for Transnational Access and Early-stage researchers training/ scientific visits. Within its evaluation process, the PAC must ensure:

- (1) the best scientific quality combined with
- (2) the most efficient expenditure of the limited resources
- (3) and a guarantee for equal treatment of all proposers and facilities or inviting institutes

The PAC assesses the proposals on the basis of the following criteria:

- scientific importance and quality,
- preference will be given to experiments that involve actively early-stage researchers not more than 6 years after the PhD and their supervisors. Up to 2 early-stage researchers or senior researchers can be supported for each experiment
- relevance to the neutron data community needs (e.g. HPRL),
- originality and innovative aspect, both from the scientific and technological point of view,
- feasibility and quality of nuclear data that can be obtained,
- importance for the strategic goals of the Euratom Work Programme (e.g. APRENDE research tasks)

1.1 Transnational access facilities

The APRENDE WP6 support transnational access to the following facilities, see Figure 1



Figure 1 Logos of the APRENDE beneficiaries participating in the Transnational Access of WP6

The facilities can be grouped into

- **Neutron time-of-flight facilities** NFS(GANIL) n_TOF(CERN), GELINA(JRC), nELBE (HZDR)
- **Research reactors:** CVREZ
- **Charged particle beams and quasimonoenergetic neutrons:** ALTO, GENESIS (CNRS) MONNET (JRC) IFIN-HH, UPPSALA, JYVÄSKYLÄ
- **Reference neutron fields:** PIAF(PTB)

The nELBE neutron time of flight facility is no longer operational.

2 Budget for TAA and Education and Training

The total available budget for the Tasks 6.3 and 6.4. is

- TAA facility support 176500 EUR (106500 EUR + 70000 EUR)
- User support for experiments: 52900 EUR
- Education and training visits: 88000 EUR

The TAA facility support for CERN, GANIL, IFINI-HH, PTB, JYU, USE and UU is realized through beam time cost in the cost category “internally invoiced goods and services” see Figure 2.

‘Other costs categories’ items (e.g. internally invoiced goods and services)

Internally invoiced goods and services		
	Cost (€)	Justification
CERN	28 000	Delivery of 90 hours of beam time for experiments at n_TOF.
GANIL	12 250	Delivery of 30 hours of beam time at GANIL.
IFIN-HH	7 000	Delivery of 60 hours of beam time for experiments at IFIN-HH.
PTB	22 500	Delivery of 65 hours of beam time for experiments at n_TOF.
JYI	15 750	Delivery of 80 hours of beam time for experiments at IGISOL.
USE	8 750	Delivery of 100 hours of beam time for experiments at HiSPANoS.
UU	12 250	Delivery of 40 hours of beam time for experiments at NESSA.

Figure 2 TAA support from APRENDE GA part B, page 31. The total budget is 106500 EUR for 465 hours of beam time.

Because three APRENDE partners (CNRS, CVREZ, HZDR) do not have this accounting practice, they can claim personal cost instead for support of the experiments. The PM cost per beam time hour has been set to a common average value of 245 EUR /beam time hours. This average value is obtained by dividing the total PM cost of 70000 EUR by 285 hours (750 – 465) of beam time.

The user support for experiments is separated into support for users employed by APRENDE beneficiaries 38600 EUR and for users not employed by APRENDE beneficiaries (Financial support for third parties FSTP) 16100 EUR.

The support for education and training visits is separated into support for researchers employed by APRENDE beneficiaries 70400 EUR, which corresponds to 8 visits of 8 week duration and for researchers not employed by APRENDE beneficiaries (Financial support for third parties FSTP) 17600 EUR which corresponds to 2 visits of 8 weeks.

As three closing dates are foreseen in the projects in each PAC meeting up to 5 typical experiments can be supported with combined 250 beam time hours and 3-4 education and training visits of up to 8 weeks each. For each PAC meeting the fraction of the available budget is therefore:

- Facilities (beam time): 58800 EUR (PAC1: 69538 EUR)
- Experiment users: 17600 EUR (PAC1: 12300 EUR)
- Education and Training visits: 29300 EUR (PAC1: 17600 EUR)

Depending on the PAC decisions and number of endorsed proposals some deviations from these guidelines are allowed. The amounts in parentheses were committed in the first PAC1 meeting, see APRENDE deliverable D6.2 for the evaluation and financial commits.

3 Evaluation of Proposals

The following proposals were received up to the extended deadline of March 16, 2026, and are listed in Table 1.

Table 2. The second call for proposals resulted in ten proposals for transnational access to neutron beam facilities. A total of 883 beam time hours has been requested at the facilities and a support of 22750 EUR for nineteen users. The APRENDE project can only provide partial beam time support for the facilities typically 50 hours due to budgetary limitation. For each experiment typically 2 users can be supported for 5 days.

Table 1 List of Transnational Access Proposals for the second call of APRENDE

PAC	Spokesperson	Home-Institute /FSTP	Facility	Contact	Requested hours	Requested user support
TAA_2_1	Aleš Horna	Masaryk University (MUNI)	PTB	Elisa Pirovano	53	2300
TAA_2_2	Andreas Solders	Uppsala University	IGISOL Jyväskylä	Heikki Penttilä	72	2300
TAA_2_3	Carlos Guerrero	USE / CNA	PTB	Elisa Pirovano	62	2900
TAA_2_4	Michael Bunce	NPL	CNA	Begoña Fernández Martínez	36	2300
TAA_2_5	Filip Révai	Slovak University of Technology in Bratislava	PTB	Elisa Pirovano	50	2300
TAA_2_6	Greg Henning	IPHC/CNRS	IFIN-HH	Marian Boromiza	170	2300
TAA_2_7	Arnd Junghans	HZDR	CNA	Begoña Fernández Martínez	60	0
TAA_2_8	Giuseppe Lorusso	NPL	NFS	Xavier Ledoux	156	3450
TAA_2_9	Francisco Garcia Infantes	Edinburgh	MONNET	Cristiano Lino Fontana	120	2000
TAA_2_10	Roland Beyer	HZDR	NFS	Xavier Ledoux	104	2900

Table 2 List of Education and Training proposals for the first call of APRENDE

PAC	Visitor	Home-Institute /FSTP	Facility	Contact	Requested weeks
SV_2_1	Juan José Gómez Rodríguez	TU Dresden /FSTP	CVREZ	Michal Košťál	5
SV_2_2	Filip Révai	Bratislava	HZDR	Andreas Wagner	8
SV_2_3	Nicholas Pieretti	University of Bologna, INFN Bologna	CERN	Alberto Mengoni	8
SV_2_4	Matilde Dondi	University of Bologna, INFN Bologna	CERN	Alberto Mengoni	8
SV_2_5	Matilde Dondi	University of Bologna, INFN Bologna	CERN	Alberto Mengoni	8
SV_2_6	Kalliopi Kaperoni	National Technical University of Athens	CERN	Alberto Mengoni	2
SV_2_7	Jisk Klaas KNIJPSTRA	University of Groningen	JRC	Georgios GKATIS	4
SV_2_8	Gabriel Auñón Fernández	Centro Nacional de Aceleradores (CNA) Universidad de Sevilla	PTB	Elisa Pirovano	8
SV_2_9	Carole CHATEL	ELI-NP	JRC	Stephan Oberstedt	8
SV_2_10	Zoi Bari	National Technical University of Athens	JRC	Cristiano Lino Fontana	2
SV_2_11	Nikolaos Kyritsis	National Technical University of Athens	CERN	Alberto Mengoni	2
Total					63

The number of proposals for Education and Training visits was 11 with a total duration of 63 weeks and a total cost of 70950 EUR. With the submitted proposals in PAC2 the pooling limit has been reached for the facilities CERN, GANIL, IFIN-HH, JYU, and PTB. These facilities have now received requests for more beam time than was originally estimated. As foreseen in section 5.2 of the APRENDE Grant Agreement, the evaluation of the submitted proposals can continue and supported beam time will be redistributed from facilities, which did not attract proposals up to now. The final PAC 3 call will again be open to all participating facilities.

For experiment TAA_1_5 a written status report and request by V. Alcayne, CIEMAT, was received. The original experiment using a ^{238}Pu target could not be performed due to problems in target production. As a substitute the neutron capture of ^{239}Pu shall be investigated up to higher neutron incident energies with the new S-TED setup at CERN nTOF. The PAC viewed very favorably this request and endorsed the proposed experiment.

Two written reports served as the basis for the PAC evaluation. The decisions are the collective responsibility of all members of the PAC. The PAC evaluated all submitted proposals. The evaluation results are given in the next sections.

3.1 Proposals for Transnational Access

TAA_2_1: Characterisation of detectors for fast neutron spectrometry

Spokesperson: Aleš Horna

Facility PTB

Requested beam time: 53 hours

This proposal concerns irradiation of neutron spectroscopy detectors (scintillators and proportional counters) for response function characterization. The detectors are foreseen to be used at different reactors (Germany and Czech Rep.) and with a Cf source for neutron cross section measurements. A detailed irradiation plan for the PTB facility over the 24 keV to 8 MeV energy range is made and the results shall lead to 3 publications and 2 PhD theses. The proposal is very technical and has no references. It remains unclear, what detectors were chosen to enable which type of measurements at AKR-2. The scientific and technical merits (scientific quality, feasibility, objectives, quality of nuclear data) of the proposals cannot be evaluated due to lacking background information. It is recommended to resubmit the proposal with better scientific justification and description of the state of the art.

Conclusion: The PAC does not endorse the current proposal and asks for resubmission of an improved proposal.

TAA_2_2: Fast fission yield studies at IGISOL: a feasibility test

Spokesperson: Andreas Solders

Facility IGISOL; Jyväskylä

Requested beam time: 72 hours

Accurate fast-fission yield data are essential for reactor technology, particularly for applications such as the transmutation of long-lived fission products, decay-heat assessment, and nuclear-waste management. Recent technical advances—most notably the MR-TOF setup—have significantly enhanced the ion-handling capabilities of the IGISOL facility for measurements of this type. The proposed work directly supports a key APRENDE task by providing a crucial feasibility study for obtaining fast-fission yields at IGISOL. It is strongly connected to WP 1 and subtask 1.1.4 of APRENDE, and the planned measurements form an integral part of the NONIII project on the fission-yield characterization of ^{232}Th and ^{238}U .

The application will support two PhD students, two articles are expected (NIM, EPJA). This is an excellent proposal, highly challenging, but very likely to be successful. The PAC endorses the proposal.

Conclusion: The PAC endorsed this proposal with up to 50 hours of beam time (9844 EUR). The facility report must clearly state the number of beam time hours provided for the experiment. The support for the users was set to 2300 EUR support for Hendrik Hauk (Oslo,FSTP) and Peter Karlsson, (UU).

TAA_2_3: Characterisation of Neutron Detectors for High-Precision (α,n) Time-of-Flight measurements

Spokesperson: Carlos Guerrero

Facility: PTB

Requested beam time: 62 hours

The proposed measurements serve to transfer knowledge from PTB to CNA HiSPANoS and better characterized detectors that can be used for a wide variety of measurements at HiSPANoS in particular for measurements of (α,n) reactions of relevance for underground experiments, safeguards, fission and fusion data and astrophysics. The detector calibrations are very important, but the proposal could have more clearly stated the design of the detectors and whether these are new detectors that will be calibrated for the first time at PTB. The stay of two PhD students will be supported. There is a clear relation to APRENDE WP2, task 2.5 (ch. p.,X) reactions. The methodology of the measurements is well described. A technical report and a publication are expected from the proposed work and a presentation in a Spanish

meeting (CPAN Days 2027). The results of the work will contribute to the PhD thesis of Gabriel Auñón.

Conclusion: The PAC endorsed this proposal with up to 50 hours of beam time (17300 EUR) at PTB. The facility report must clearly state the number of beam time hours provided for the experiment. The support to the users was set to 1450 EUR (for Jesús Bartolomé). (The support for Gabriel Auñón is already included in proposal SV_2_8.)

TAA_2_4: Commissioning the miniBELEN-10A detector for study of (α ,n) reactions at CNA HiSPANoS – part 2

Spokesperson: Michael Bunce

Facility USE/CNA

Requested beam time: 36 hours

This proposal is linked to task 2.5.2 of the APRENDE project (MANY). It aims to measure the neutron production yields and the corresponding neutron energy distributions of the $^{27}\text{Al}(\alpha, n)^{30}\text{P}$ and $^9\text{Be}(\alpha, n)^{12}\text{C}$ reactions from 3 to 9 MeV by using the complementary techniques of direct neutron counting by a 4π moderated detector and neutron Time-Of-Flight (TOF) with angular resolution in the Spanish MANY consortium. The current proposal is focused on the neutron production yield measured with the miniBELEN detector and aims to understand or resolve a discrepancy observed between the same $^{27}\text{Al}(\alpha, n)$ measurement performed at CMAM and HISPANOS. Focus is on the validation of the neutron background (which is suspected to contribute to the observed discrepancies). The proposal does not explain clearly how the background measurement will be performed. It is thus difficult to assess the chance of success of this experiment. Due to the lack of details, it is also difficult to assess the feasibility and quality of the data that will be produced. The PAC therefore recommends resubmission of the proposal with a clearer and more detailed description of the planned measurement strategy, particularly regarding the improved background characterization and the specific elements that will enhance the quality and reliability of the new data.

Conclusion: The PAC does not endorse the proposal and asks for resubmission of an improved proposal.

TAA_2_5: Fast neutron imaging for defect detection in a heat exchanger mockup

Spokesperson: Filip Révai

Facility PTB

Requested beam time: 50 hours

It is proposed to perform fast neutron imaging of a heat-exchanger mock-up with fast neutrons from PTB to determine detector response, imaging contrast, and penetration capability under different irradiation conditions. The proposal lacks technical detail, beam time justifications, and contains no references or state-of-the-art description. Also, the topic is not aligned with the APRENDE goals.

Conclusion: The PAC rejects this proposal.

TAA_2_6: Proton inelastic scattering cross sections on ^{92}Zr

Spokesperson: Greg Henning

Facility IFIN-HH

Requested beam time: 170 hours

Neutron inelastic scattering reactions are important for the energy spectrum and spatial extension of the neutron flux distribution. They are very difficult to measure and hence there

are many long-standing high-priority requests that are hard to fulfil. There is merit in studying the proton inelastic scattering process as a surrogate and try to reconcile the data so-obtained with neutron inelastic scattering, for instance by Lane-consistent potentials and mirror symmetry. The present proposal will explore the analogy between the two processes away from $N=Z$ nuclei. It will give valuable information on the two processes in the energy domain where pre-equilibrium processes dominate. Hence it will cast further light on the issue of the compound nuclear spin distribution induced by that process. Such model critical information is important as models will need to fill in the aspects of inelastic scattering and (n,xn) processes that are difficult to control experimentally. The PAC notes that a test will be made with a telescope. That part of the proposal could have been worked out better. As it is only a small component which is a feasibility test, this is not considered a cause for rejection. The PAC recommends the support of this proposal.

Conclusion: The PAC endorsed this proposal with up to 50 hours of beam time (5830 EUR) at IFIN-HH. The facility report must clearly state the number of beam time hours provided for the experiment. The support to the users was set to 2300 EUR.

TAA_2_7: HiSPANoS School on the production, detection and use of neutron beams

Spokesperson: Arnd Junghans

Facility HiSPANoS

Requested beam time: 60 hours

This proposal requests to support the beam time cost for the APRENDE HiSPANoS school. The beam time will be used purely for education and training. The PAC evaluation criteria e.g. based on scientific value and quality of nuclear data cannot be applied here. The PAC considers that this proposal is not eligible for funding as part of the TAA mechanism. The usefulness for education and training of early-stage researchers is recognized, however. Not committed user support from WP6 task 6.3 could be reallocated to task 6.5, so as to fund this beam time.

Conclusion: The PAC does not endorse this proposal.

TAA_2_8: Precision measurement of the $^9\text{Be}(n,2n)2\alpha$ cross sections, relevant for tritium breeding in fusion reactors.

Spokesperson: Guiseppe Lorusso

Facility: NFS (GANIL)

Requested beam time: 156 hours

The PAC recognizes the key interest of this proposal for fusion research, which is not a primary objective of APRENDE. There is, however, considerable merit in establishing whether an advanced measurement instrument such as ACTAR can be used successfully for nuclear data measurements. Unfortunately, the proposal does not offer a feasibility study. This is needed as there are several unanswered questions that challenge feasibility and suitability:

The PAC recommends resubmission of an improved proposal based on a feasibility study. It should first be evaluated by the ACTAR collaboration and approved by the GANIL PAC before being proposed to APRENDE.

Conclusion: The PAC does not endorse this proposal and asks for resubmission of a GANIL approved proposal based on a feasibility study.

TAA_2_9: Measurement of the $^{35}\text{Cl}(n,p)^{35}\text{S}$ cross section relevant for fast chloride molten salt reactor design

Spokesperson: Francisco Garcia Infantes

Facility: MONNET (JRC)

Requested beam time: 120 hours

The proposal aims to measure the $^{35}\text{Cl}(n,p)^{35}\text{S}$ cross section at neutron energies between 1.4 and 3.0 MeV, achieving final uncertainties below 10%. A dedicated set-up using Si-strip detectors has already been used to measure at 2.25 and 3.0 MeV. The reaction is relevant for advanced reactor concepts of the molten salt type. It is also an entry in the High Priority Request List of OECD/NEA. The study is part of APRENDE Subtask: 2.5.1 ^{35}Cl .

The experiment has a high priority for APRENDE WP2 (task 2.5.1 More project) and low risk, as previous measurements have worked. The experiment is part of the PhD work of S. Birincioglu. The PAC recommends the proposal to be supported in full.

Conclusion: The PAC endorsed the proposal. The beam time is provided by JRC. The user support has been set to 2000 EUR.

3.2 Education and Training

SV_2_1: Juan José Gómez Rodríguez (Dresden) to visit CVREZ: **Development of a SINBAD broomstick experiment benchmark at the reactor using methods developed by LR-0 group**

Good quality transmission experiments through thick targets are of high value as shielding benchmarks. The team at LR0 working on this topic and involved in the proposal has an excellent track record for performing such measurements at LR-0, VR1 and AKR-2. It is an important development that allows enlarging the effort, to have similar competence at AKR-2 and develop AKR-2 measurements systematically into SINBAD benchmarks.

For these, new skills need to be developed, and this proposal is geared to this goal by the training and education of a 2nd year PhD student of AKR-2 through participation in a transmission experiment at LR-0 under the guidance of the lead investigator there. The materials that are targeted are of a high priority (Zr, Ti, C₂Cl₄). There is a detailed work plan justifying the 5 weeks that looks solid and to the point. The five weeks should be granted.

Conclusion. The PAC accepted the proposal for a stay of 5 weeks at CVREZ with a support of 5650 EUR as FSTP.

SV_2_2: Filip Révai (Bratislava) to visit HZDR: **Investigation of Fast Neutron Energy Ranges for Industrial Neutron Imaging Applications**

The proposal aims to perform fast neutron imaging at the ELBE Center for High-Power Radiation Sources operated by Helmholtz-Zentrum Dresden Rossendorf. Unfortunately, the nELBE fast neutron facility at HZDR has been shut down. Therefore, the planned activities cannot be realized at HZDR. Neutron imaging is not a key objective of the APRENDE project. The proposal lacks specific information about imaging systems. Nevertheless, the authors could try to submit a fast-track proposal to OFFERR to obtain neutron beam time at PTB.

Conclusion: The PAC cannot endorse this proposal.

SV_2_3: Nicholas Pieretti (Bologna) to visit n_TOF(CERN): Training in nuclear data analysis and evaluation for neutron-induced reactions on Cu: from the RAMEN experimental campaign at n_TOF to nuclear data evaluation

This proposal concerns a long stay at CERN for a PhD student from Bologna to improve his knowledge and skills in data and resonance analysis of capture and total cross section measurements on copper isotopes, which are part of the APRENDE WP2 task 2.3.1 (RAMEN). It aims to obtain new, accurate ^{63}Cu and ^{65}Cu capture and total cross section data to try to solve the important discrepancies between nuclear data base. The goals of the proposal seem exceedingly ambitious with several major outcomes: (i) Finalize the resonance analysis of the $^{63,65}\text{Cu}(n,\gamma)$ radiative capture, (ii) Finalize the resonance analysis of the $^{\text{nat}}\text{Cu}(n,\text{tot})$ total cross section, (iii) Perform a combined R-matrix fit (SAMMY) using both capture and transmission datasets simultaneously transmission data from the 2025 n_TOF EAR1 transmission campaign data from the 2024 n_TOF campaign, compile and submit EXFOR entries for the validated $^{63,65}\text{Cu}(n,\gamma)$ and $^{\text{nat}}\text{Cu}(n,\text{tot})$ datasets, acquire structured knowledge of the nuclear data evaluation methodology and (iv) Learn to use the TALYS nuclear reaction code under the guidance of experienced users at n_TOF. The proposal is a very good initiative for a young experimentalist to go into nuclear data science. The experts who will supervise the different work items are not named in the proposal. The PAC recommends contacting Gilles Noguere, at CEA, for a possible future collaboration on the copper nuclear data evaluation. It seems that some of the planned work can also be carried out in Bologna. A publication plan is not mentioned in the proposal, but is a prerequisite for the submission to EXFOR. The PAC feels that it will be difficult to achieve all objectives, and suggest dropping the task related to the TALYS reaction code. The PAC recommends a reduced stay of 6 weeks at n_TOF.

Conclusion: The PAC accepted the proposal for a reduced stay of 6 weeks at n_TOF(CERN) with support of 6700 EUR.

SV_2_4: Matilde Dondi (Bologna) to visit n_TOF(CERN): Training in nuclear data analysis for the ^{92}Mo and $^{100}\text{Mo}(n,\gamma)$ measurements at n_TOF: astrophysical and technological applications

New data were obtained for $^{100}\text{Mo}(n,\gamma)$ and will shortly be obtained for $^{92}\text{Mo}(n,\gamma)$ by the n_TOF collaboration. ^{100}Mo in contrast to ^{92}Mo is a common stable fission product. Molybdenum features in a number of proposals for low-activation materials, primarily in the domain of fusion plant design, a topic which is not a priority for APRENDE. Both ^{92}Mo and ^{100}Mo have a low thermal cross section and a low resonance integral. Therefore, a very careful optimization of the knowledge of the neutron capture cross sections is of limited merit. The PAC sees some merit for the education of the student involved. It remains unclear, however, how the proposed work will fit in the PhD's graduation topic. Data analysis in one field is not relevant for experiment design in a completely different field (FOOT). There is no publication plan in the proposal. The PAC grants a stay of 4 weeks for the opportunity offered to an external student to gain experience and possibly further interest in nuclear data related work.

Conclusion: The PAC accepted the proposal for a stay of 4 weeks at n_TOF(CERN) with support of 4600 EUR.

SV_2_5: Matilde Dondi (Bologna) to visit n_TOF(CERN): Training in nuclear data analysis for the $^{25}\text{Mg}(n,\gamma)$ measurement at n_TOF: constraining the $^{22}\text{Ne}(\alpha,n)^{25}\text{Mg}$ neutron source reaction rate

The PAC considers this proposal to fall outside of the scope of the APRENDE project. It is purely astrophysics motivated. Even with that goal the PAC fails to see how a study of the (n,γ) process on ^{25}Mg clarifies any aspect of the $^{22}\text{Ne}(\alpha,n)^{25}\text{Mg}$ reaction at low alpha energies. In particular, no information relevant to the weak alpha-width can be obtained. No publication plan is given. The PAC therefore does not support this proposal. The PAC recommends to prioritize research and avoid doubling of the same early-stage researcher in multiple education and training activities.

Conclusion: The PAC does not endorse the proposal.

SV_2_6: Kalliopi Kaperoni (NTUA) to visit n_TOF(CERN): **Study of Radiation Damage of Diamond Samples at NEAR**

The proposal can provide an opportunity to finish this work of relevance for the understanding the properties of diamond detectors (it will provide comprehensive study of neutron-induced degradation in diamond) and at the same time contribute to the thesis work. The development could be relevant for fission, fusion and space applications in the future. A publication is expected from the work. The relation to APRENDE objectives is limited: It contributes to the development of new detectors (for example the characterization of the NEAR station area of nTOF, task 1.2.3), but the present proposal is a material science study. There is no direct impact in nuclear data from the proposed measurements. In comparison with other proposals in this call the PAC suggests to the authors submitting it to OFFERR as a fast-track proposal.

Conclusion: The PAC does not endorse this proposal.

SV_2_7: Jisk Klaas KNIJPSTRA (Groningen) to visit JRC: **Data analysis of $^{206,208}\text{Pb}(n,n)$, $^{206,208}\text{Pb}(n,\gamma)$ cross section measurements with ELISA**

This proposal concerns the data analysis of new measurements performed with the ELISA setup at GELINA on lead isotopes. The visitor is a PhD student (third year) in charge of the data analysis of the new $^{206,208}\text{Pb}$ elastic and inelastic scattering cross section measurement, who wants to benefit from the assistance of experienced colleagues at GELINA to fine tune the correction part of the data related to multiple scattering. The aim is to use the GEANT4 software instead of MCNP which has shown some limitations (missed the single scattered neutrons) in previous data analysis. This visit will benefit the development of the Monte Carlo simulation package with the experts of the ELISA setup, and improve the knowledge on neutron-induced reactions to finally finalize the lead data analysis. This work is part of task 2.4.2 of APRENDE (NNXNXS project). The new Pb data will be useful to improve the evaluation of neutron elastic and inelastic scattering cross sections for Pb isotopes for which experimental data are still scarce. The PAC recommends supporting this proposal.

Conclusion: The PAC endorses this proposal for a stay of 2 * 2 weeks (5000 EUR)

SV_2_8: Gabriel Auñón Fernández (USE) to visit JRC: **Improved accuracy and reliability at HiSPANoS through training on neutron detection, spectroscopy and metrology at PTB**

The PAC sees great value in a planned new series of measurements on alpha-induced neutron production at CNA HiSPANoS. For these two measurement methods will be deployed, one based on neutron time-of-flight with liquid scintillators and Li-glass detectors, the other one involving the Mini-BELEN detector based on a 4π moderator and He-3 counters. This visit

concerns the support to a PhD student engaged in the first approach, which requires well-characterized liquid scintillators and Li-glass detectors. The proposal concerns the metrological approach to this characterization and the corresponding training needed for the student. This will be done at the lead metrology institute in this field: PTB. The stay can provide a unique opportunity to gain experience on some relevant topics for the thesis work. It can provide a knowledge transfer of best practices also for future applications at CAN HiSPANoS. The 8 weeks are granted, but the PAC notes that although the description of work makes good sense, there is no detailed plan justifying the length of the stay and making clear what the PhD will be involved in exactly. Also, the PAC assumes that the experimental week will coincide with the stay and therefore avoids double support with the corresponding TAA_2_3 proposal.

Conclusion: The PAC does endorse this proposal for a stay of 8 weeks (8800 EUR)

SV_2_9: Carole Chatel (ELI-NP) to visit JRC Geel: **Study of the possibility to reveal the origin of a ternary particle in fission by $\gamma\gamma$ -coincidence**

This proposal is a resubmission and concerns the exploitation of the data accumulated during the ν -ball2 campaign (2022) at IJCLab/ALTO facility with the LICORNE neutron source and a ^{238}U sample. Events corresponding to ternary fission will be searched in the $\gamma\gamma$ coincidence matrices. Indeed, this process, rarer (1/500) than binary fission, has not been deeply studied. It can lead to less energy excitation in the fission fragments and consequently, to a reduction of neutron multiplicity. The work will consist of searches for couples of fission partners via their $2^+ \rightarrow 0^+$ transition and $4^+ \rightarrow 2^+$ transition if possible. This work is relevant for fission reaction studies (fundamental nuclear physics) but has only limited direct relevance for APRENDE and applications. Because the candidate has already substantial experience with the data analysis tools, the length of the stay at JRC can be reduced to 4 weeks.

Conclusion: The PAC endorses this proposal with a reduced stay of 4 weeks (4600 EUR).

SV_2_10: Zoe Bari (NTUA) to visit JRC Geel: **Cross-section measurements of short-lived reaction products with enriched targets**

This resubmitted proposal is well written. A two week request is presented for a stay at JRC-Geel (MONNET facility) to use the fast target transport system. The goal of the thesis work is to perform cross section measurements employing activation. It focuses in the study of short-lived isotopes using enriched Mo and Cu targets. In principle the main goal of the work is to resolve major discrepancies in the EXFOR library. One of the reactions proposed appears in the HPRL ($^{63}\text{Cu}(n,2n)$ general and dosimetry lists). Several of the other reactions would also benefit significantly from new measurements, and for some—such as $^{99}\text{Mo}(n,p)$ —experimental data are scarce or absent. The PAC recommends considering the current IRDFF-II library for use of monitors and for comparisons as it is the specialized library of reference. MONNET is an adequate place to perform these measurements. The stay will provide an opportunity for knowledge transfer to a young researcher and will cover an important part of the thesis work. Initial measurements have been carried out in February 2026.

Conclusion: The PAC endorses this proposal for a stay of 2 weeks (2500 EUR) at JRC.

SV_2_11: Nikolaos Kyritsis (NTUA) to visit CERN (n_TOF): **$^{243}\text{Am}(n,f)$: Off-beam activities at n_TOF**

The application requests support for a two-week stay of a fourth year PhD student at CERN. The support can allow finishing some work (off-line measurements and corrections) in relation to the measurement of the $^{243}\text{Am}(n,f)$ reaction study (APRENDE WP2 task 2.2.3 SOFIA project), which has already received support earlier in the ARIEL project. The main goal is to perform alpha counting tests to study the deposition of energy in the Micromegas detectors for corrections in the main measurement and a MC validation. The topic related to handling and shipping targets, even though is necessary, has no scientific relevance and is not supported. At least one publication is expected and presentations in nTOF collaboration meetings. Data will be submitted to EXFOR.

Conclusion: The PAC endorses this proposal for a stay of 1 week (1450 EUR) at n_TOF(CERN).

3.3 Conclusion

The total PAC2 allocated budget for transnational access to cover the cost of neutron facilities is 53402 (cumulated PAC1 + PAC2 122940) €, and the total amount for user support is 10950 (23250) €. Six experiments are supported for a total amount of 320 supplementary beam time hours. All relevant data are summarized in Table 3.

A total amount of 39300 (56900) € is committed for education and training of visiting scientists; all relevant data are summarized in Table 4. Values in parentheses are the sum of PAC 1 and PAC 2 of the APRENDE project up to now.

The third and final APRENDE PAC meeting is scheduled for Monday, April 26, 2027, hosted by CEA during the Nuclear Data Week in Aix-en-Provence.

Table 3 Summary of TAA evaluations

PAC	Spokesperson	Home-Institute /FSTP	Facility	Contact	Requested hours	Unit cost	Facility Cost	Requested user support	Approved user support	Approved hours	Approved Facility support
TAA_2_1	Aleš Horna	Masaryk University (MUNI)	PTB	Elisa Pirovano	53	346.15	18345.95	2300	0	0	0
TAA_2_2	Andreas Solders	Uppsala University	IGISOL Jyväskylä	Heikki Penttilä	72	196.88	14175.36	2300	2300	50	9844
TAA_2_3	Carlos Guerrero	USE / CNA	PTB	Elisa Pirovano	62	346.15	21461.3	2900	1450	50	17307.5
TAA_2_4	Michael Bunce	NPL	CNA	Begoña Fernández Martínez	36	87.5	3150	2300	0	0	0
TAA_2_5	Filip Révai	Slovak University of Technology	PTB	Elisa Pirovano	50	346.15	17307.5	2300	0	0	0
TAA_2_6	Greg Henning	IPHC/CNRS	IFIN-HH	Marian Boromiza	170	116.67	19833.9	2300	2300	50	5833.5
TAA_2_7	Arnd Junghans	HZDR	CNA	Begoña Fernández Martínez	60	87.5	5250	0	0	0	0
TAA_2_8	Giuseppe Lorusso	NPL	NFS	Xavier Ledoux	156	408.33	63699.48	3450	0	0	0
TAA_2_9	Francisco Garcia Infantes	Edinburgh	MONNET	Cristiano Lino Fontana	120	0	0	2000	2000	120	0
TAA_2_10	Roland Beyer	HZDR	NFS	Xavier Ledoux	104	408.33		2900	2900	50	20416.5
TOTAL					883.00		163223.49	22750.00	10950	320	53401.5

Table 4 Summary of Training of early-stage researchers and scientific visits

PAC	Visitor	Home-Institute /FSTP	Facility	Contact	Requested weeks	Approved weeks	Total cost
SV_2_1	Juan José Gómez Rodríguez	TU Dresden /FSTP	CVREZ	Michal Košťál	5	5	5650
SV_2_2	Filip Révai	Bratislava	HZDR	Andreas Wagner	8	0	0
SV_2_3	Nicholas Pieretti	University of Bologna, INFN Bologna	CERN	Alberto Mengoni	8	6	6700
SV_2_4	Matilde Dondi	University of Bologna, INFN Bologna	CERN	Alberto Mengoni	8	4	4600
SV_2_5	Matilde Dondi	University of Bologna, INFN Bologna	CERN	Alberto Mengoni	8	0	0
SV_2_6	Kalliopi Kaperoni	National Technical University of Athens	CERN	Alberto Mengoni	2	0	0
SV_2_7	Jisk Klaas KNIJPSTRA	University of Groningen	JRC	Georgios GKATIS	4	4	5000
SV_2_8	Gabriel Fernández Auñón	Centro Nacional de Aceleradores (CNA) Universidad de Sevilla	PTB	Elisa Pirovano	8	8	8800
SV_2_9	Carole CHATEL	ELI-NP	JRC	Stephan Oberstedt	8	4	4600
SV_2_10	Zoi Bari	National Technical University of Athens	JRC	Cristiano Lino Fontana	2	2	2500
SV_2_11	Nikolaos Kyritsis	National Technical University of Athens	CERN	Alberto Mengoni	2	1	1450
Total					63	34	39300