



# Collaboration Matters

Sean J Freeman

7th Nov 2022



- Discussion of ABT request and Swiss membership.
  - Collaboration Contributions.
  - EUROLABS Update.
  - Electricity.
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- NuPECC LRP Input.
  - MOU Annex Updates.
  - FRC Update.
  - Equipment Items for Purchase.
  - Physics Coordinator Succession Planning.
  - Spanish RRF funding.
  - H&S.

# ABT Fellow and Swiss Membership

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ABT Fellow Request:

- Formally approve?

Swiss Membership:

- Formally approve?

# ISOLDE User Support Summary

Subsistence at 138 CHF/day

Same level of support as last year (same subsistence available per day of physics).

Recipients in general those without access to travel funds, generally (although not exclusively) early career researchers and students.

## **1<sup>st</sup> Period: March-June**

72 days of physics

212 days of support available

180 days allocated

## **2<sup>nd</sup> Period: June-July**

52 days of physics

153 days of support available

116 days allocated

## **3<sup>rd</sup> Period: August**

32 days of physics

94 days of support available

77 days allocated

# ISOLDE User Support Summary

INSTITUTION	TOTAL 2021	2021 %	TOTAL 2022	2022 %
Belgium	64	15%	49	13%
Bulgaria				
IEAP-Czech	10	2%		
Denmark				
Finland	55	13%	35	9%
France	56	13%	13	3%
Germany	83	20%	62	17%
Greece				
Italy			24	6%
Norway				
Poland	14	3%	44	12%
Portugal	18	4%		
Romania			6	2%
Spain	17	4%	49	13%
Slovakia	6	1%	6	2%
South Africa				
Sweden			12	3%
UK	102	24%	73	20%
TOTAL	425	58.6k CHF	373	54.3k CHF

Stopped ISOLDE User funding on 31st August 2022 with start of EUROLABS.

Budget allocations:  
 2021 60 kCHF  
 2022 85 kCHF (in principle longer period).

# EURO-LABS Update

**Number of beam hours (2022-2024)** assuming LS3 starts 2025

\* real number: 9400 hours, around 12600 if LS3 starts 2026

\* EURO-LABS request: 4500 hours

Access unit cost = 70 Euro (= 5.33% of real unit access cost)

**Access cost request = 70 x 4500 = 315.000 Euro**

**Number of users** to use access funds: 500

**Number of experiments** (projects): 100

**Travel and subsistence costs for users: 330.000 Euro**

140 CHF/day x 2350 user-days (< 20% of real) no travel costs

- ISOLDE started supporting users from 1st September – thanks to Jenny!
- Kick-off meeting in Bologna, 3rd to 5th October 2022.
- Local procedures are very similar to ISOLDE funding and ENSAR-2 – but may be some changes in formats to come as EURO-LABS Consortium try to make a common application form.
- But the grant agreement throws up some obligations...

## PUBLICATIONS/OUTPUTS:

- Open access.
- Acknowledgment:

**“This project has received funding from the European Union’s Horizon Europe Research and Innovation programme under Grant Agreement No 101057511.”**

# EURO-LABS Obligations and Open Data

The beneficiaries must manage the digital research data generated in the action ('data') responsibly, in line with the FAIR principles and by taking all of the following actions:

- establish a **data management plan** ('DMP') (and regularly update it)
- as soon as possible and within the deadlines set out in the DMP, **deposit the data in a trusted repository**; if required in the call conditions, this repository must be federated in the EOSC in compliance with EOSC requirements
- - as soon as possible and within the deadlines set out in the DMP, ensure **open access** — via the repository — to the deposited data, under the latest available version of the Creative Commons Attribution International Public License (CC BY) or Creative Commons Public Domain Dedication (CC 0) or a licence with equivalent rights, following the principle 'as open as possible as closed as necessary', unless providing open access would in particular:
  - - be against the beneficiary's legitimate interests, including regarding commercial exploitation, or
  - - be contrary to any other constraints, in particular the EU competitive interests or the beneficiary's obligations under this Agreement; **if open access is not provided (to some or all data), this must be justified in the DMP**
- - **provide information** via the repository about any research output or any other tools and instruments needed **to re-use or validate the data**.

Metadata of deposited data must be open under a Creative Commons Public Domain Dedication (CC 0) or equivalent (to the extent legitimate interests or constraints are safeguarded), in line with the FAIR principles (in particular machine-actionable) and provide information at least about the following: datasets (description, date of deposit, author(s), venue and embargo); Horizon Europe or Euratom funding; grant project name, acronym and number; licensing terms; **persistent identifiers for the dataset**, the authors involved in the action, and, if possible, for their organisations and the grant. Where applicable, the metadata must include persistent identifiers for related publications and other research outputs.

*You'll have noticed that we mentioned the DMP requirement in the EURO-LABS emails to spokespeople!*

# Proposal to fulfil EURO-LABS Obligations and Open Data

It's not just EURO-LABS:

- CERN has signed off an Open Science Policy on 1st October 2022: <https://openscience.cern>
- All Horizon Europe awards have this obligation.
- Many national funders have this obligation.

A proposal:

- We create an ISOLDE Policy on Open Science, which will be a local implementation of the CERN policy?
- We draw up some guidance for users?

*It looks like an hour's work for the student/PDRA who has worked with the data to upload onto Zenodo (next slide). Making data open is done on our agenda – e.g. “when we have finished publishing” or “after five years” or whatever suits the users and is justifiable. Whether to put spectra or event-by-event data up to us.*

- Capture short DMP's for each experiment with a short proforma on data management for INTC submission? Likely to need this to evidence compliance for EURO-LABS.

SJF to draft and bring (if possible) to February ISCC.



# Proposal to fulfil EURO-LABS Obligations and Open Data

<https://zenodo.org>

“Why use Zenodo?”

- **Safe** — your research is stored safely for the future in CERN’s Data Centre for as long as CERN exists.
- **Trusted** — built and operated by CERN and OpenAIRE to ensure that everyone can join in Open Science.
- **Citeable** — every upload is assigned a Digital Object Identifier (DOI), to make them citable and trackable.
- **No waiting time** — Uploads are made available online as soon as you hit publish, and your DOI is registered within seconds.
- **Open or closed** — Share e.g. anonymized clinical trial data with only medical professionals via our restricted access mode.
- **Versioning** — Easily update your dataset with our versioning feature.
- **GitHub integration** — Easily preserve your GitHub repository in Zenodo.
- **Usage statistics** — All uploads display standards compliant usage statistics

*SJF Experience – data from  $(d,p)$ ,  $(p,d)$ ,  $(3\text{He},\alpha)$ , and  $(3\text{He},d)$  reactions on  $98,100\text{Mo}$  and  $100,102\text{Ru}$  targets at 4 or 5 lab angles from experiments at Munich.*

*Took me an hour and half – most of the time was spent on Linux script to change the filenames rather than Zenodo.*

*Still need to put the conversion from yield to cross section on there – but otherwise relatively easy.*

*No one from the collaboration expressed issues with it – adds to the supplementary data published by the journal.*

# Electricity

## Short-term:

- Stop this year two weeks early – end of protons 28th November.
- Extended YETS next year – 4 weeks of running lost in 2023.
- Maybe asked by EDF to reduce load – less of an issue than it originally sounded: Achieved by putting accelerators into standby modes (i.e. some reductions in beam availability); 2 days' advance notice; Maximum load shedding periods likely limited to 3 per week, either morning or afternoon with duration of 3-6 hours. Once the YETS begins, CERN consumption will already be below the load shedding thresholds.
- Have asked local team to think carefully about unexpected blackouts.

LINAC4 = 0.4 MW

PSB = 3 MW.

ISOLDE = 1.2 MW

PS Complex = 22 MW

SPS + Prevešin = 60 MW

LHC = 100 MW

## Longer-term:

Scenario planning happening – tariff agreement with EDF ends 2026.

But some optimism: (i) French nuclear plants should be back on (ii) society won't function!

# MOU Annex Updates

“Final” document sent around – assume that approved unless issues raised here.

Since emailing:

- Added Swedish and UK participants.
- Small correction to the funding table for HIE-ISOLDE – we are paying back 379 kCHF next (final) year and not 391 kCHF.

Outstanding:

- GR participants?
- Three members of FRC (DE, NO and SE).

To add soon:

- Recent Miniball investments.
- Spanish RRF funds when confirmed.

# Call for community input to NuPECC LRP

- Input submitted on behalf of the ISOLDE Collaboration – circulated to ISCC members who made a few comments – a useful exercise beyond NuPECC LRP.
- Encouraged sub-collaborations to submit their own to give more detail:
  - radioactive molecules. ✓
  - ISS collaboration including SPECMAT. ✓
  - Miniball?
  - weak interactions including WISArD?
  - others?

# FRC/Spanish Funding/Equipment

## **FRC Status:**

- waiting for last three names.
- formal organisation done by office of Director of Research and Computing – but in form discussed previously.
- expected Feb/March – ISCC meeting should be before.

## **Spanish RRF Funding:**

- first tranche of cash in a high level CERN account since Dec.
- no precedent in terms of funding so procedures have not been clear – issue is ensuring compliance with funding regulations, both EU and Spanish.
- looks like solution is in the works.

## **Equipment Purchases:**

- dry cabinet for silicon detector storage.
- “double-sided” mixed alpha calibration source.
- any new ideas?

## **Recent incident:**

- Electrical shock, luckily with low current.
- Investigation uncovered a separate issue with three-phase wiring that could have led to a potentially fatal consequence.
- Significant period of downtime associated with inspections, reviews and actions.

## **Reminded the local group:**

- Update safety files regularly.
- Action recommendations from safety inspections quickly.
- Reminder concerning PPE required for the ISOLDE Hall.

## **Positives:**

- Team involved engaged well with the difficult process and significant issues have been resolved.
- Developed very good collaboration with EP-DSO.
- Laura Rowlands and James Devine available for any discussions or advice.

# EPIC Proceedings

- Contributions have been very useful input in preparing other documents, but significant work in bringing to a uniform style and content.
- Different aspects have very different timescales – e.g. dumps and 2 GeV medium term, new hall long term. Moving on the medium-term aspects (next item). Longer term aspects need considering carefully with CERN strategy around FCC/muon collider/?.
- SJF offered to help Kieran and Gerda with the preparation.
- Discussions pointed to writing a forward looking physics document – technical details of longer-term upgrades could form a technical design report at an appropriate point as the longer-term strategy develops.



# Update on ISOLDE Improvements

Sean J Freeman

7th November 2022





# From June: Improvements: Beam Dumps and 2 GeV

## **Beam Dump Study:** Management Board in May

- A cost driver is shielding volume – 100m<sup>3</sup> iron, but expect 80% from recycling.
- Developing Flexi with more detailed study as better overall cost/benefit: allows HRS access and further FE development.
- Dismantling study to be done by external company (Jacobs) by end of Sept.

**2 GeV:** Joachim leading a group to define project and costs – updating work done previously.

Both aspects will have project and cost definition by end of 2022, for CERN to decide on inclusion in the MTP for implementation during LS3. Maybe asked for collaboration contributions late in 2022?

## **Yield Tests at 1.7 GeV**

- PSB can deliver 1.7-GeV protons and there are no RP concerns over short tests.
- Work on-going to refine beam optics for delivery.
- Proposal submitted to the INTC for yield comparison between 1.4 and 1.7 GeV – validate expectations of higher yield and benchmark simulations at higher proton energy.
- Could start in the summer, if approved.

**Linac Consolidation/Improvement:** HIE-ISOLDE issues have raised profile of the need for planning with CERN management.

# Since June

**LINAC ISSUES:** Problems with HIE-ISOLDE had been discussed at IEFC and with the Directorate, highlighting a need to scope out potential solutions.

Process for decision making around beam dumps and 2 GeV also needed defining.

**After discussion with SY and BE management, a technical workshop was held 19 Oct to:** *identify critical aspects of the system or equipment that could jeopardize the facility availability and reliability and to review the planned and required consolidation plans. In addition, the users, operation and technical teams are asked to review any improvements to the facility that could further increase the physics outputs.*

**Presentations on:**

- Operations.
- EBIS and REX-Trap
- RF
- Cryogenics
- ISOLDE infrastructure
- Targets and ion sources (inc. IS-COOL)
- Beam transport (beam optics, 2 GeV etc.)
- Power converters (2 GeV)
- Magnets (2 GeV)

Extremely useful discussions highlighting a series of consolidation and improvement items.

Minutes are being written and there needs to be a period of review so that initiatives beyond dumps and 2 GeV can be solidified– but prioritised report will be needed for IEFC during November, perhaps followed by a discussion at RB.

# For the ISCC

The timescales for progress on MTP are aggressive – but there has not been time a summative conclusion to emerge from all the detail – except for the headline items of 2 GeV and dumps.

We had discussed previously possible scenarios concerning beam dumps and 2 GeV and also using allocated current savings and resource released by end of HIE-ISOLDE.

*In the next couple of months:*

- (i) SJF, on behalf of the collaboration, and ATS colleagues will need to make some decisions on what priorities to present to management.*
- (ii) SJF may need to commit collaboration funds – possibly we might be able to discuss in Feb.*

For now – request that ISCC to note the on-going developments with ISOLDE improvement and add any **high-level** comments or advice to guide me over the next few months.

*Suggest we try to use collaboration funds to enhance physics opportunities (e.g. investment into 2 GeV) rather than in areas to maintain or consolidate infrastructure (e.g. dumps). Also important to try to improve the operational aspects of HIE-ISOLDE running – we have already invested and need to make the best of it.*

# Group for Upgrade of ISOLDE (GUI)

The GUI has been in hiatus since April 2020.

Had a short meeting to restart the group and to discuss what it should do.

*Decided:*

- (i) There is a need for discussion of priority of short-term developments motivated by INTC-LOIs.*
- (ii) There might be a need to consider some of the priorities associated with medium term developments.*
- (iii) External input felt to be important – but also need to review and update the membership.*



# News from ISOLDE Physics Section

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7th November 2022



# Workshop 2022

Wednesday 30th November to Friday 2nd December

Hybrid meeting – on 3rd Nov around 90 in person and 20 online.

Fondue at Hotel Edelweiss (5-10 minutes from Cornavin).

Programme on INDICO: <https://indico.cern.ch/event/1183259/>



# Fellows

## **Research Fellows = “Senior Research Fellows Experimental and Theoretical Physics (Category 1)”**

Liss Vasquez Rodriquez (Oct 2020 – Nov 2022)	COLLAPS
Erich Leistenschneider (April 2021 – March 2023)	MR-TOF/MIRACLS
Agi Koszorus (October 2021 – Sept 2023)	CRIS
Zoé Favier (March 2022 – Feb 2024)	IDS/Miniball
Simon Lechner (Nov 2022 – Oct 2024)	VITO/PUMA

## **Applied Fellows = “Research Fellowship In Science And Engineering (Category 2)”**

Bruno Olaizola (Sept 2020 – Dec 2022, EP-SME-IS)	ISS, HIE-ISOLDE
Frank Brown (Sept 2021 – August 2023, EP-SME-IS)	MINIBALL, HIE-ISOLDE
Patrick Macgregor (Nov. 2022 – Oct 2024, EP-SME-IS)	ISS, HIE-ISOLDE

**Marie-Curie Individual Fellow:** Monika Piersa-Silkowska Feb 2022 – Jan 2024

*Next deadline in March 23 – please encourage applications!*

*New “graduate programme”: renaming and slight change in “applied” fellows’ eligibility.*

*Some changes to salaries and benefits – but maintains constant volume.*

# Associates and Corresponding Associates

## Scientific Associates:

Georgi Georgiev, 6 months (August 2022 – Jan 2022)

Andrei Andreyev, 12 months (Oct 2022 – Sept 2023)

**Corresponding Associate:** None currently!

*Next deadline in March 2023 – let me know of applications.*



# CERN Doctoral Students

**Mateusz Chojnacki** (July 2021 – June 2024)

**Lukas Nies** (Nov 2019 – Oct 2022) ISOLTRAP

*special extension to April 23*

**Franziska Maier** (Feb. 2020 – Jan 2023) MIRACLS

*special extension to March 23 under consideration*

**Michail Atanasakis** (Sept 2020 – Aug 2023) CRIS

**Marcus Jankowski** (Jan. 2021 – Dec. 2023) VITO

**Tim Lellinger** (March 2021 – Feb 2024) COLLAPS

gammaMRI-EU-FET-open (Geneva)

Genter (Univ. Greifswald)

Gentner (Univ. Greifswald)

EP-SME (2y) (KU Leuven +2y)

Gentner (TU Darmstadt)

Gentner (TU Darmstadt)

*Special extension due to COVID up to six months - but funding needs finding.*

# Staff Members at ISOLDE

## User Support:

Jenny Weterings (2002 - ) ISOLDE Collaboration and Oslo University

## CERN Staff:

SJF, Section Leader and Collaboration Spokesperson (August 2021 - July 2024)

Magdalena Kowalska (permanent from Jan 2020) EP-SME-IS

Karl Johnston, Physics Coordinator (**Sept. 2023**)

## Visiting Scientist:

Stephan Malbrunot –TRIUMF Staff with CERN affiliation (1st Feb - )