NEA
NUCLEAR ENERGY AGENCY

Current Initiatives in the Working Party on International Nuclear Data Evaluation Co-operation & Activities

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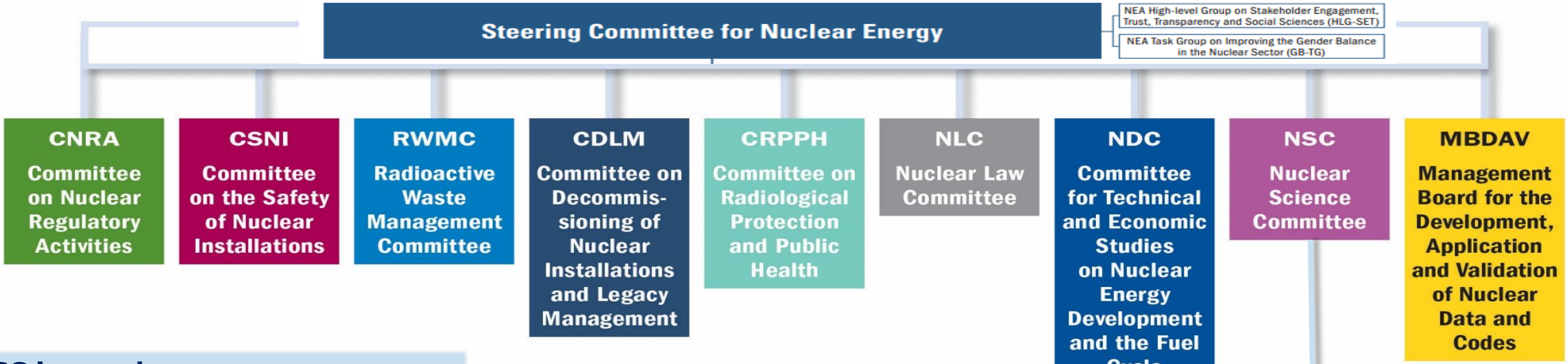
NEA member countries

The NEA's current membership consists of 34 countries in Europe, the Americas and the Asia-Pacific region. Together they account for over three-quarters of the world's installed nuclear capacity.

Introduction to NEA SCI and NEA Data Bank



NSC in numbers

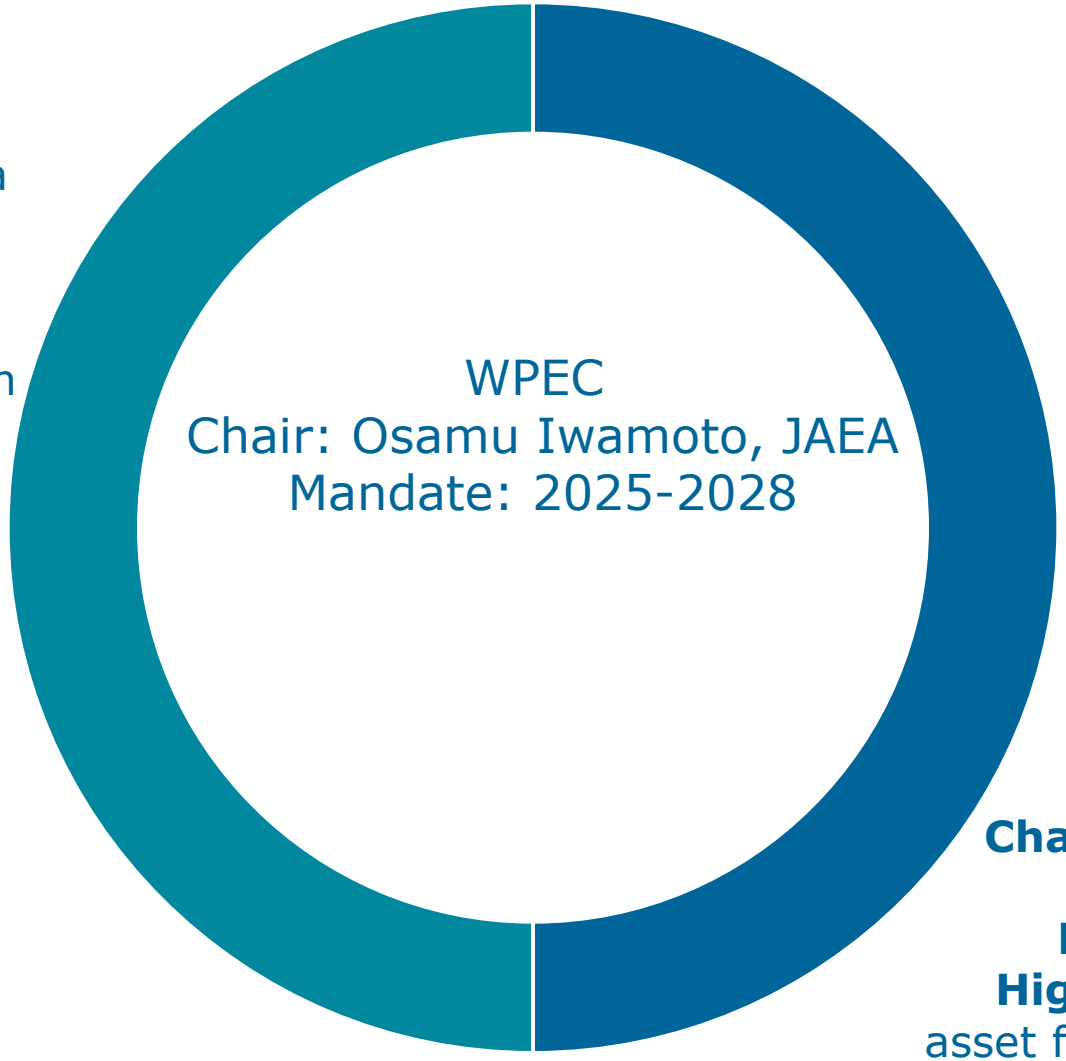
- 1500+ experts
- 5 Working Parties/ 22+ Groups
- 7 databases
- 6 joint projects
- The Global Forum
- 20+ ongoing benchmark studies
- 10+ publications/year
- 10+ workshops/year, 1000+ participants

- Reactor physics and transient studies
- Radiation shielding
- Fuel cycle physics and chemistry
- Fuel and material science
- Nuclear criticality safety
- Nuclear data
- Nuclear knowledge management education and training

Division of Nuclear Science and Education

WPEC-Expert Groups

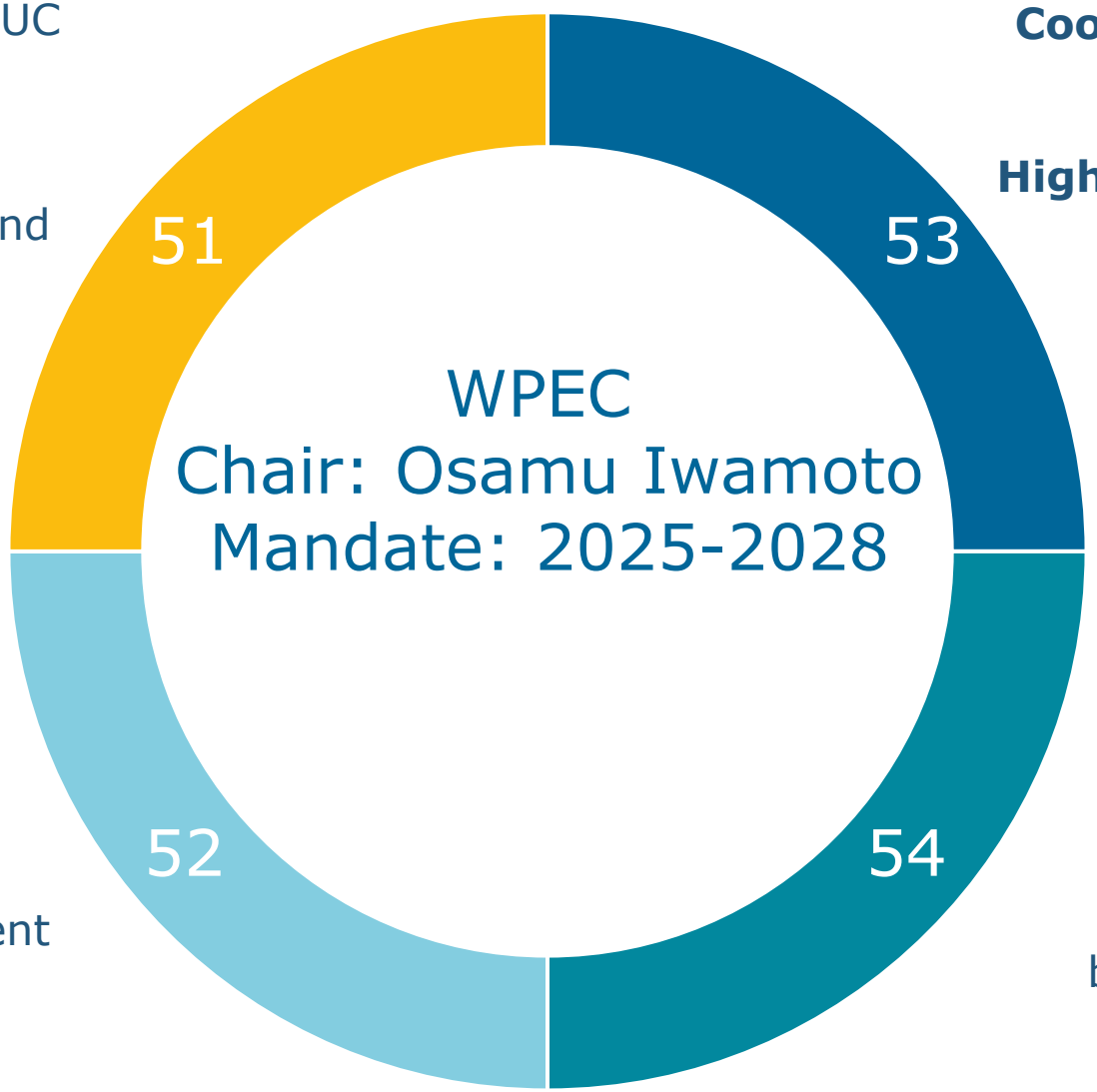
EG GNDS
Chair: Caleb Mattoon, LLNL, US
Mandate:2025-2027
Focus: Generalised Nuclear Data Structures (Format)
Highlights: Working paper Specifications 2.1 published Processing codes intercomparison



EG HPRL
Chair: David Bernard, CEA, FRANCE
Mandate:2025-2027
Focus: High Priority Request List
Highlights: GitLab repository great asset for input and expert collaboration

WPEC-Subgroups

Coordinators: Vladimir Sobes, UC Tenesse
Jesse Brown, ORNL
Monitors: Kenichi Tada, JAEA
Focus: Evaluation, Processing and Validation URR
Highlights: Collaborative NEA report



Coordinator: Gustavo Nobre, BNL
Monitor: Yaron Danon, RPI
Focus: Zr evaluation
Highlights: New evaluations based on recent experiments

Coordinators:
Mathieu Hursin, EPFL
Denise Neudecker, LANL
Jesson Hutchinson, LANL
Monitors: Oscar Cabellos, UPM
Focus: ND Adjustment exercise
Highlights: Hands-On adjustment exercise by all members

Coordinator: Boris Pritychenko, BNL
Monitor: Georg Schnabel, IAEA
Focus: Curated EXFOR
Highlights: By 2027 provide the basis of a curated library possibly hosted by the NEA DB

SG 51: Evaluation, Processing and Validation in the Unresolved Resonance Region *Active SGs*

Coordinators:
Vladimir Sobes, UC Tenesse
Jesse Brown, ORNL

Monitors:
Roberto Capote, IAEA
Kenichi Tada, JAEA

Outcome: NEA Report

Goals

- Quantification of application response differences for various definitions of beginning and end of the URR for fissile and non-fissile materials.
- Coordinated work planned across formats, processing codes, and transport applications based on SG32 recommendations.
- Include defining sensitive benchmarks and establishing URR probability table validation exercises along with URR uncertainty quantification.

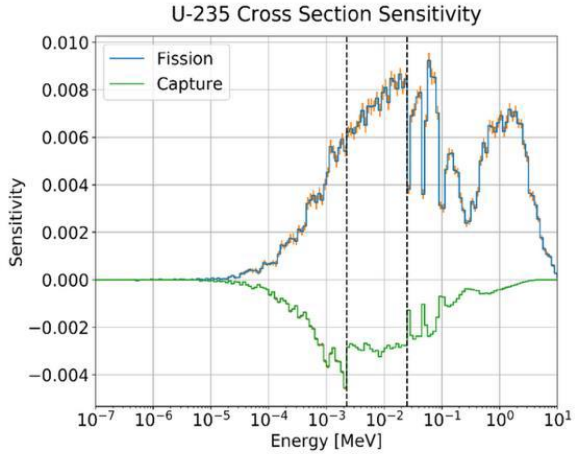


Figure 5: Optimized Teflon Sensitivity Profile, 2.276 cm Teflon Plates.

HEU-MET-INTER-011

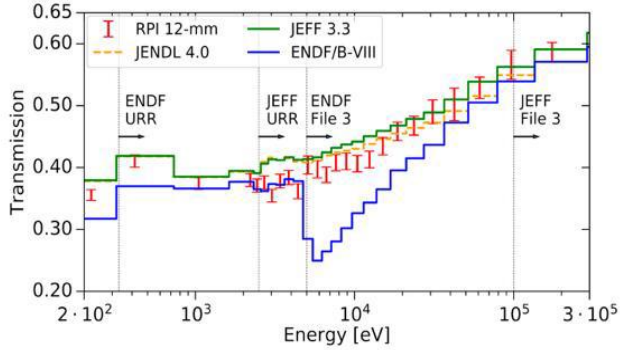


Figure 5.13: The grouped thick-sample transmission measurement in red, along with the MCNP calculated transmission using various evaluated cross section libraries.

Plots by J. Brown SG51 review WPEC meeting 03/06/2025

Secretariat: Antonio JIMENEZ-CARRASCOSA

SG 52: Development and Application of Advanced Methodologies to Produce Application Specific Nuclear Data *Active SGs*

Coordinators:
Mathieu Hursin, EPFL
Denise Neudecker, LANL
Jesson Hutchinson, LANL

Monitors:
Roberto Capote, IAEA
Oscar Cabellos, UPM

Outcome: Intercomparison of new and consolidated adjustment tools, application-oriented evaluation, NEA report

Goal

Reconstruct a Pu-239 modern evaluation (ENDF/B-VIII.1) starting from its previous version through the assimilation of integral and differential data.

The adjustment exercise specifications were released in May 2026.

Procedure

Multi-step adjustment exercise with increasing complexity incorporating the same experimental data used by the evaluators and exploring the impact of new experimental data.

Input to adjust	•MF1/MT452 •MF3/MT2, 4, 16, 18, 102 •MF5/MT18 •MF6/MT91
Nuclear data	•ENDF/B-VIII.0 as prior information •51-group energy structure
Integral data	•JEZEBEL k-eff, spectra indices and leakage spectra •EUCLID 3x2 k-eff, spectra indices and leakage spectra •EUCLID 1x8 k-eff, spectra indices and leakage spectra
Differential data	•Marini neutron multiplicity and PFNS (CEA, LANL) • TPC, LLNL (Snyder) •^{239}Pu(n,f)/^{235}U(n,f), NIFFTE (Dongwi) •SACS-Cf (spectrum averaged)
Target application	•SNEAK 7A/B k-eff and spectra indices

Secretariat: Antonio JIMENEZ-CARRASCOSA

SG 53: Stable Zr evaluation and validation *Active SGs*

Coordinator:
Gustavo Nobre, BNL

Monitor:
Yaron Danon, RPI

Outcome: New evaluations, Scientific Journal publications, NEA Report

Goals

Re-evaluate the neutron-induced reaction data for all stable zirconium isotopes

New reaction data evaluations for Zr isotopes

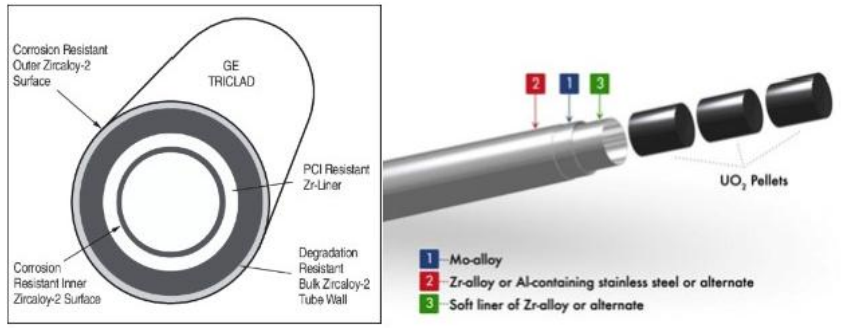
Available for adoption by nuclear data libraries

New measurements

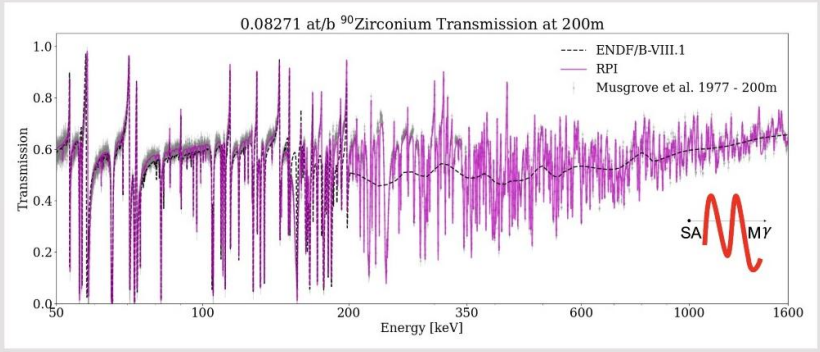
- R-Matrix fits of resonances
- Model calculations
- Adjustments to data, and
- Validation of evaluated files against integral benchmarks

Validation

The evaluations will be validated by ICSBEP and other available benchmarks



Resonance parameters fit to ^{90}Zr transmission data up to first excited state, 1764 keV. Limit of current ENDF/B-VIII.1 RRR is 200 keV.



Plots by G. Siemers,G. Nobre presentation SG53 meeting 14/10/2025

Secretariat: Anastasia GEORGIADOU

SG 54: Curated EXFOR: developing an automatically readable, comprehensive, and curated experimental reaction database

Coordinator:
Boris Pritychenko, BNL

Monitor:
Georg Schnabel, IAEA

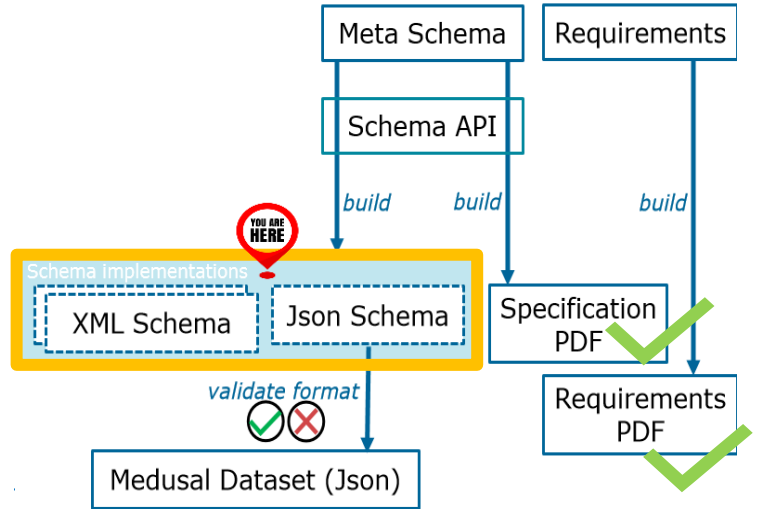
Outcome: Curated library, NEA report

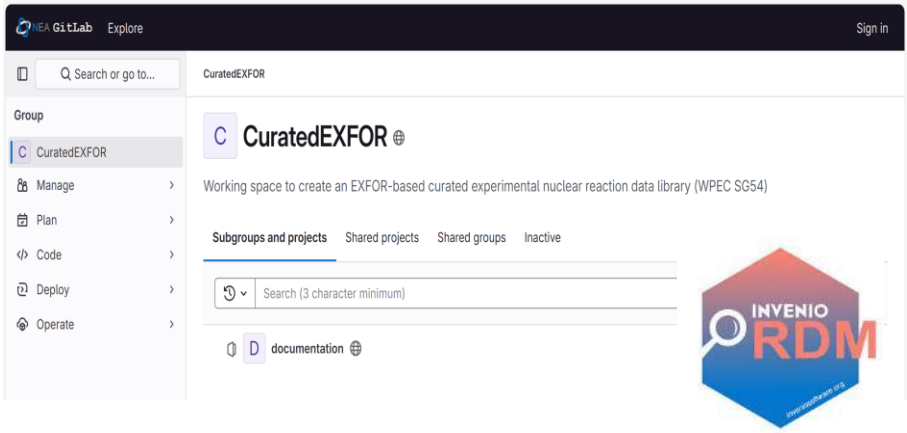
Based on the work of SG50 MEDUSAL COLLABORATION

Specified new database structures and requirements so that valuable experimental data can be retained for future use

UPDATES

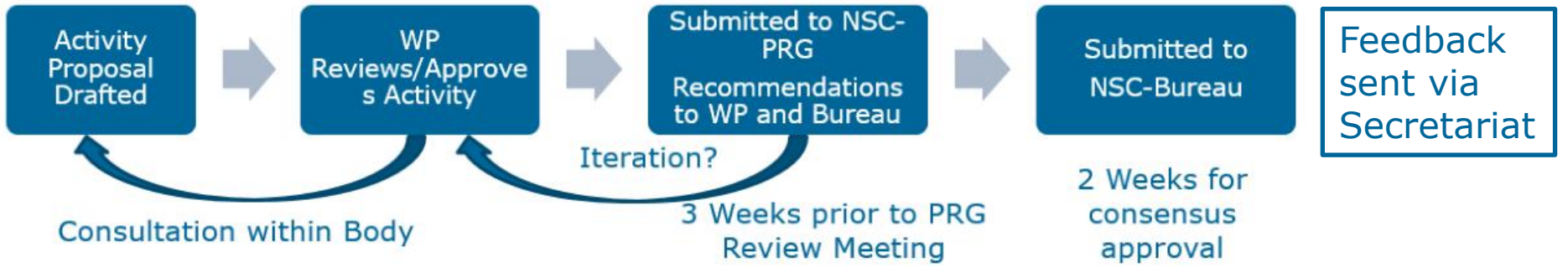
- First examples built: curated subentries 14237502 and 14278502 from Karlsruhe, Cf-252 and AIACHNE datasets.
- Infrastructure underway: GitLab repository and Invenio community being set up to store curated entries and metadata.
- Open questions: how to store and disseminate curated data; several EXFOR JSON implementations still need testing.





Secretariat: Anastasia GEORGIADOU

Proposals for WPEC

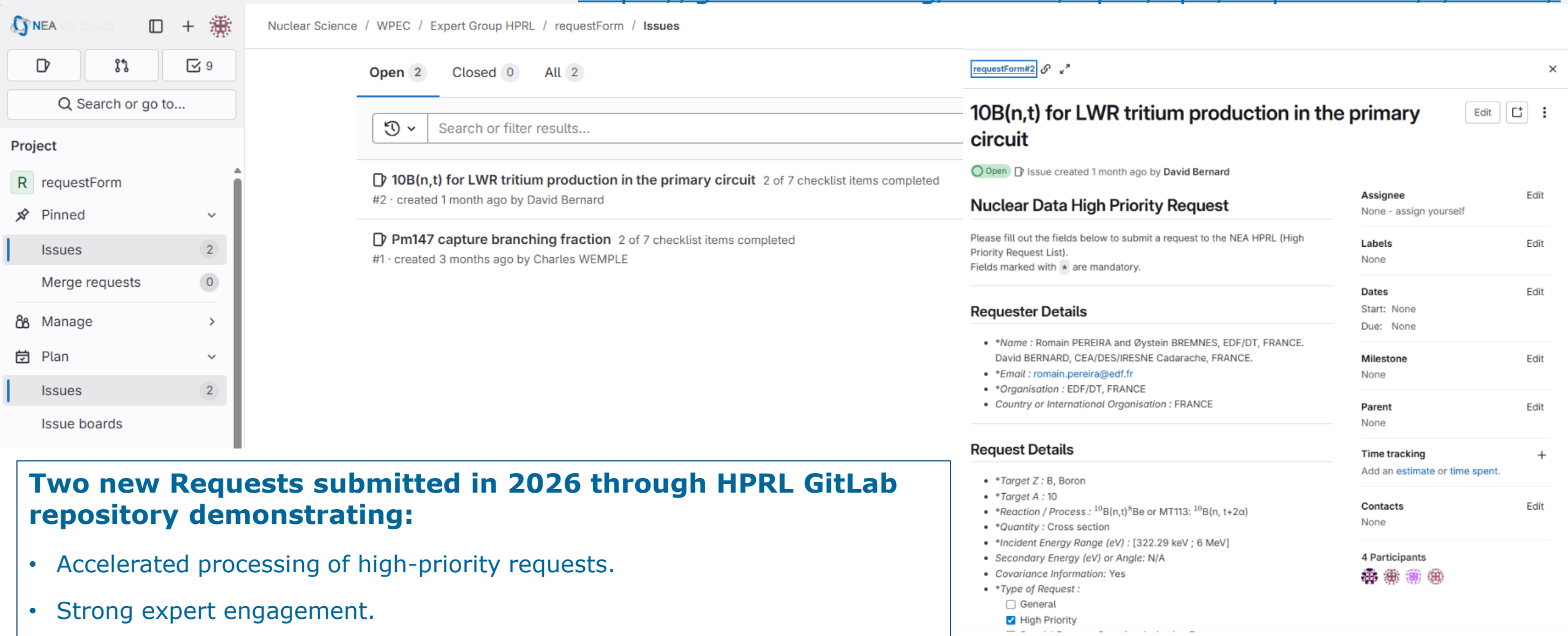


- PRG provides comments within 1 month, with recent efforts **lowering the time to 1 week,** PRG is working to minimize delays.
- Activity **proposal sheet updated in 2024** to improve clarity and PRG appreciates feedback to improve the template.
- Various steps in the review process can be followed in a '**StatusTracking' sheet**, accessible to the NEA Secretariat
- In cases PRG suggests a revised version**, a PRG single point of contact** is nominated

Typical requests from PRG: Clarify objective and how it fits WP priorities, Interactions between bodies, contributions of participants; meeting frequency ; suggestions to integrate outputs into education initiatives or Data Bank products to facilitate knowledge management.

WPEC Activities – EGHPRL Highlights

https://git.oecd-nea.org/science/wpec/hprl/requestForm/-/issues/



Two new Requests submitted in 2026 through HPRL GitLab repository demonstrating:

- Accelerated processing of high-priority requests.
- Strong expert engagement.
- Enhanced quality and accessibility of nuclear data contributions.

WPEC Activities - 2025-2027 Publications:

GNDS-2.1 Specifications, NEA Working paper, Dec 2025
DOI: https://doi.org/10.82155/vx7d-az61

*SG50 Specifications, NEA Publication
*SG50 Requirements, NEA Working Paper

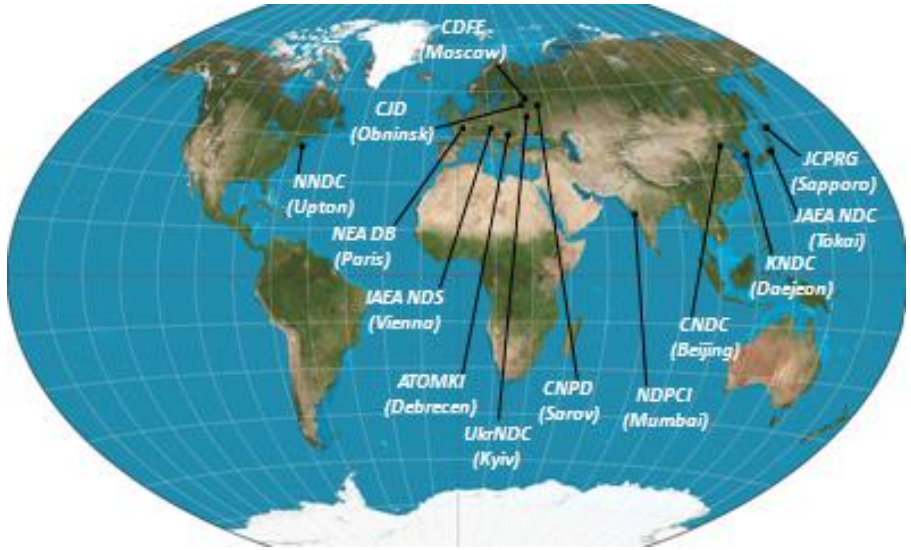
NEADB/ Experimental Nuclear Reaction Data (EXFOR)

- Developed under the Nuclear Reaction Data Centers umbrella : 13 Centers (including NEA DB)
- Hosted at IAEA (Monitoring role)
- >60 years history
- Central data project within nuclear community
- Collection of experimental nuclear reaction data
- Contains data extracted from 25k+ publication

The NEA DB:

- Update and maintain the EXFOR database for data coming from DB countries - Neutron-induced data (Area 2) - Gamma- and charged-particle induced data (Area O)

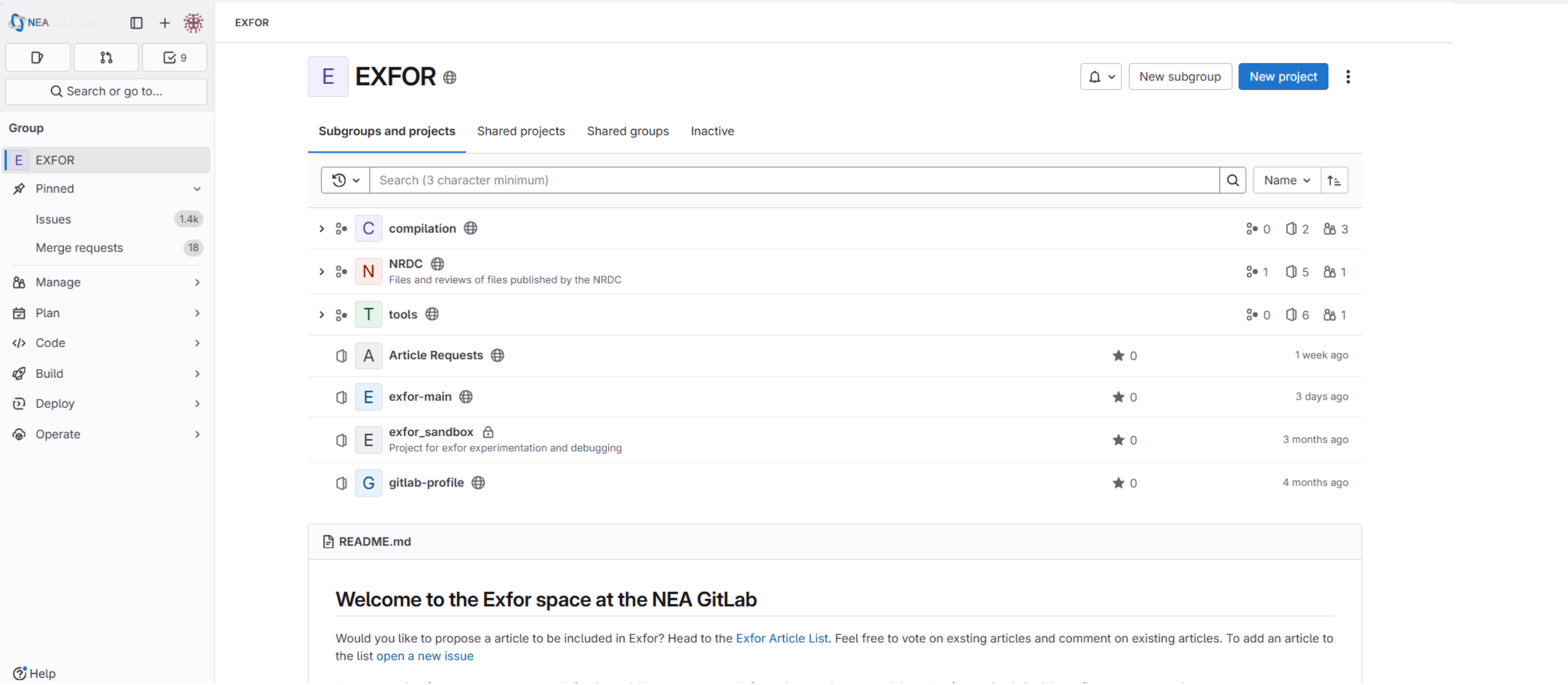
- RO: A. Georgiadou and Julia Sprenger



Source: International Network of Nuclear Reaction Data Centres

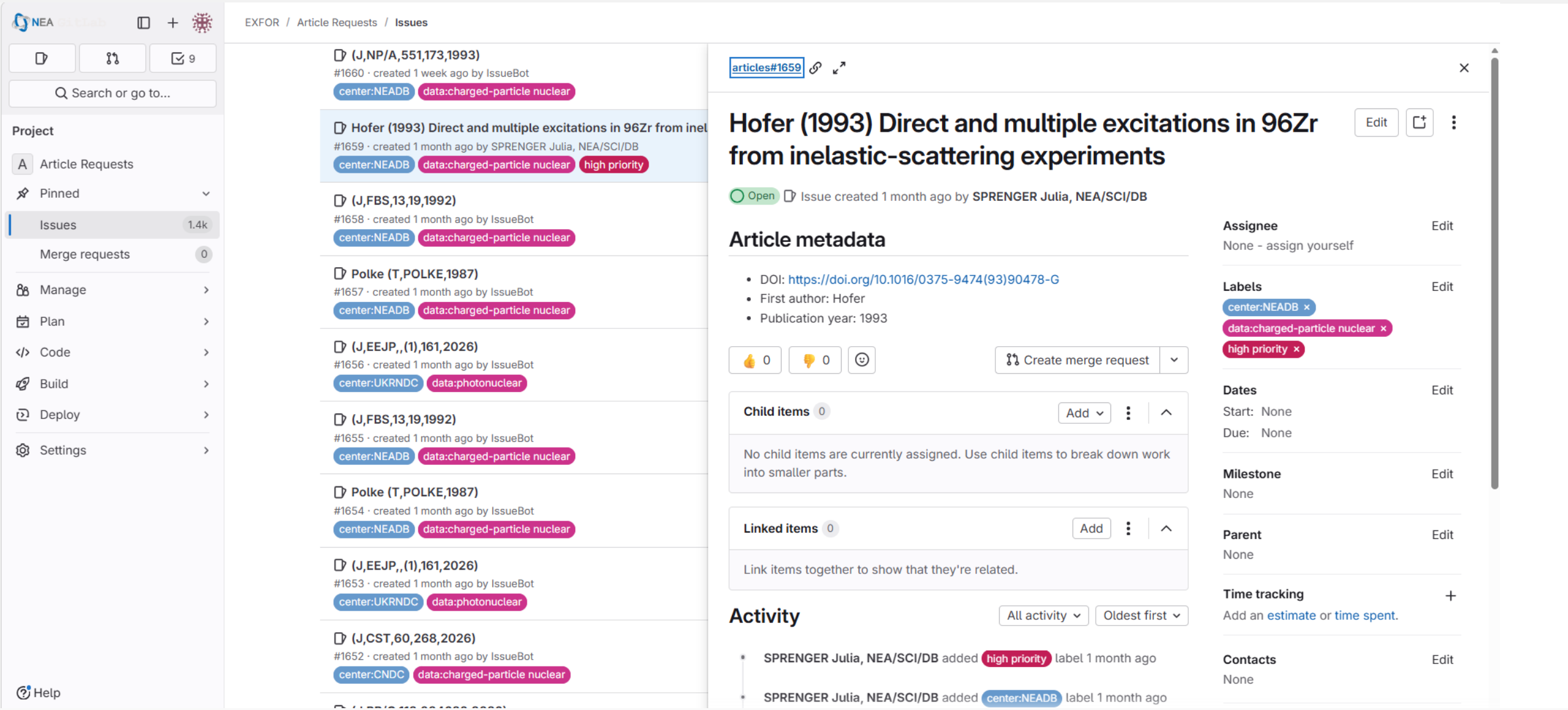
NEA DB GitLab EXFOR Repositories

https://git.oecd-nea.org/exfor



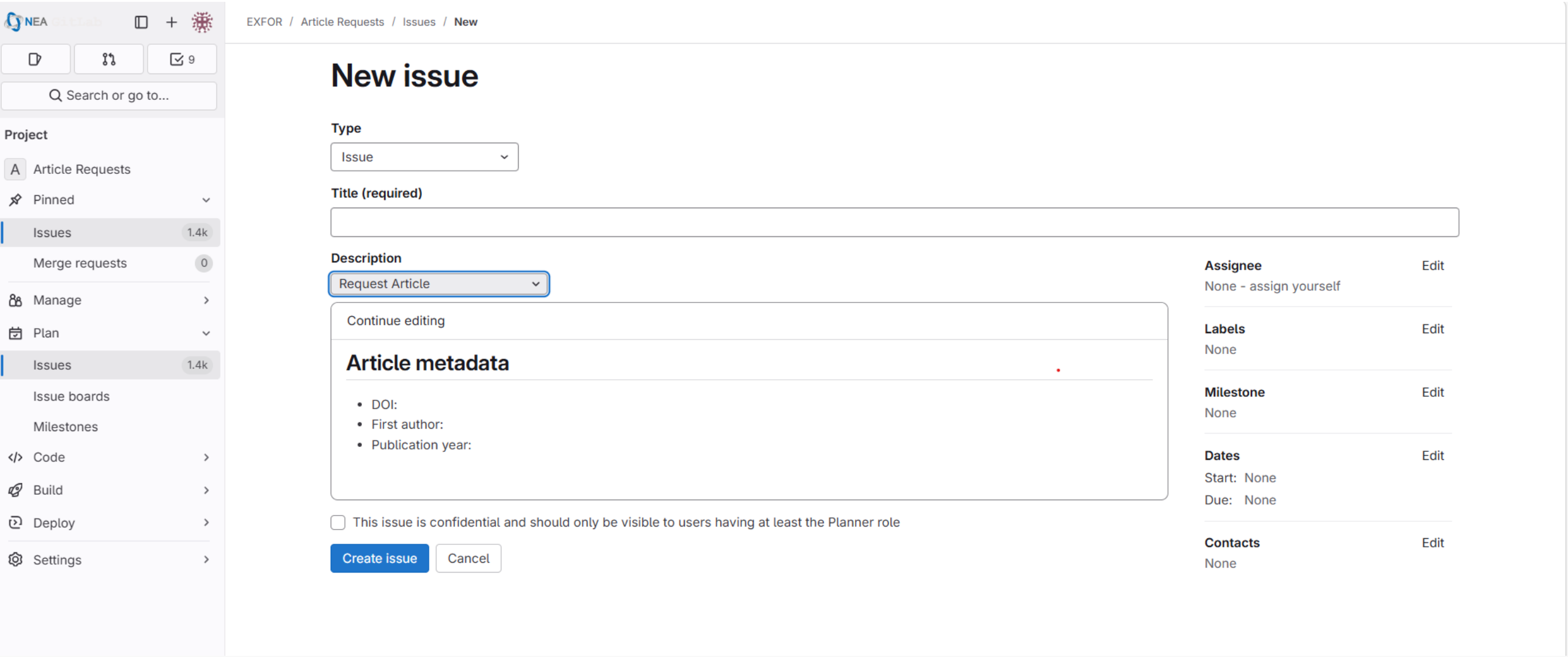
NEA DB GitLab EXFOR Repositories– Article Request List (Allocation List)

https://git.oecd-nea.org/exfor/articles



NEA DB GitLab EXFOR Repositories – Article Submission

https://git.oecd-nea.org/exfor/articles/-/issues/new



NEA DB GitLab EXFOR Repositories –Streamlined Reaction Data Submission

- **Standardized Submission Templates**

Unified templates ensure consistent, reproducible reaction data aligned with international standards like IAEA guidance.

- **Domain-Specific Template Support**

The same templates tailored for specific experimental methods improve data accuracy and enable automated validation workflows.

- **Inclusive Access and Collaboration**

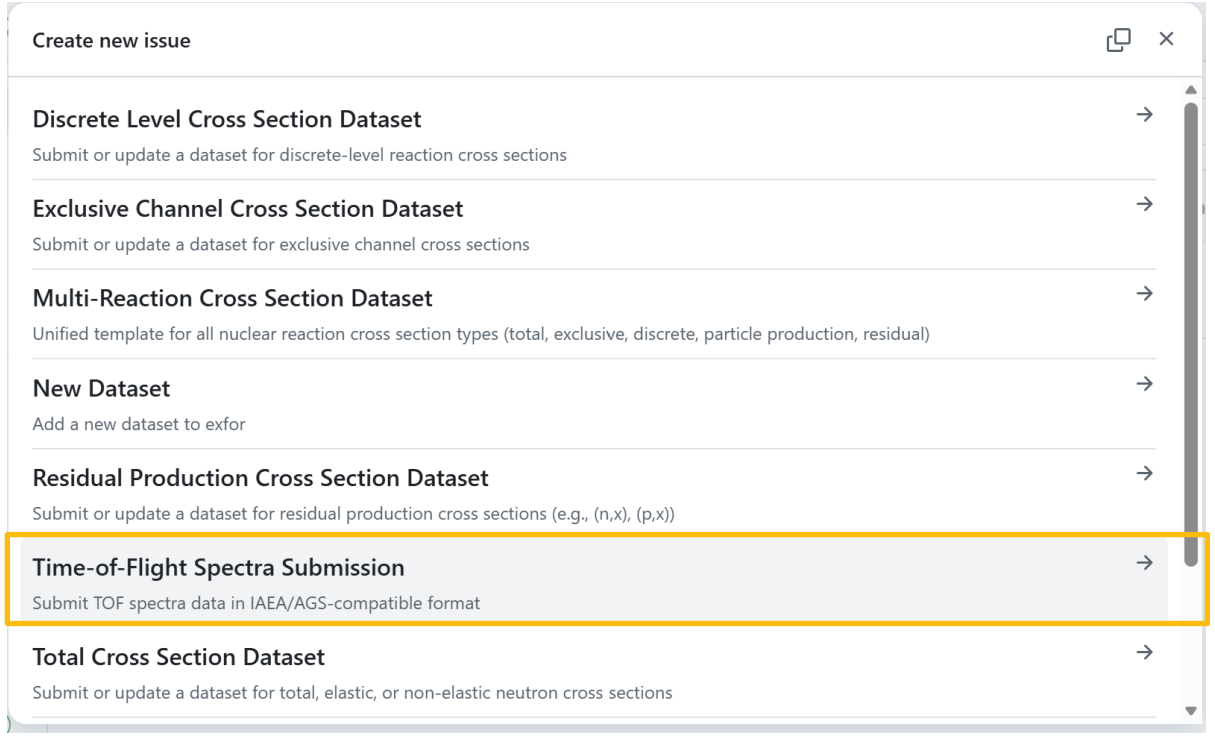
The system supports both GitLab users and external contributors, promoting broad community participation and teamwork.

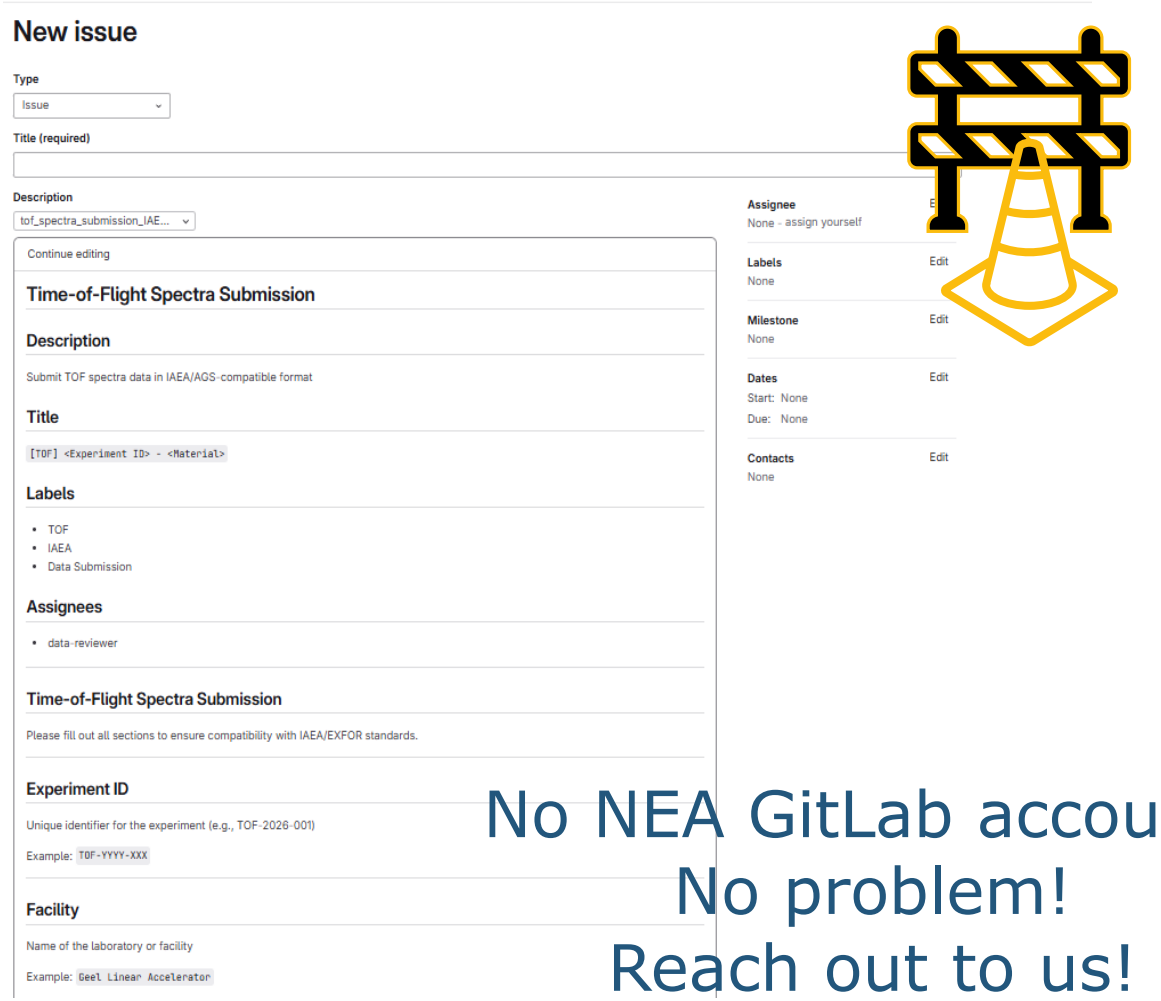
- **Future Development and Integration**

Ongoing efforts focus on refining templates, expanding data types, and integrating validation pipelines into GitLab.

NEA DB GitLab EXFOR Repositories –Streamlined Reaction Data Submission

Reaction Data Template: e.g. template developed for time-of-flight measurements in IAEA meeting in 2013, INDC(NDS)-0647

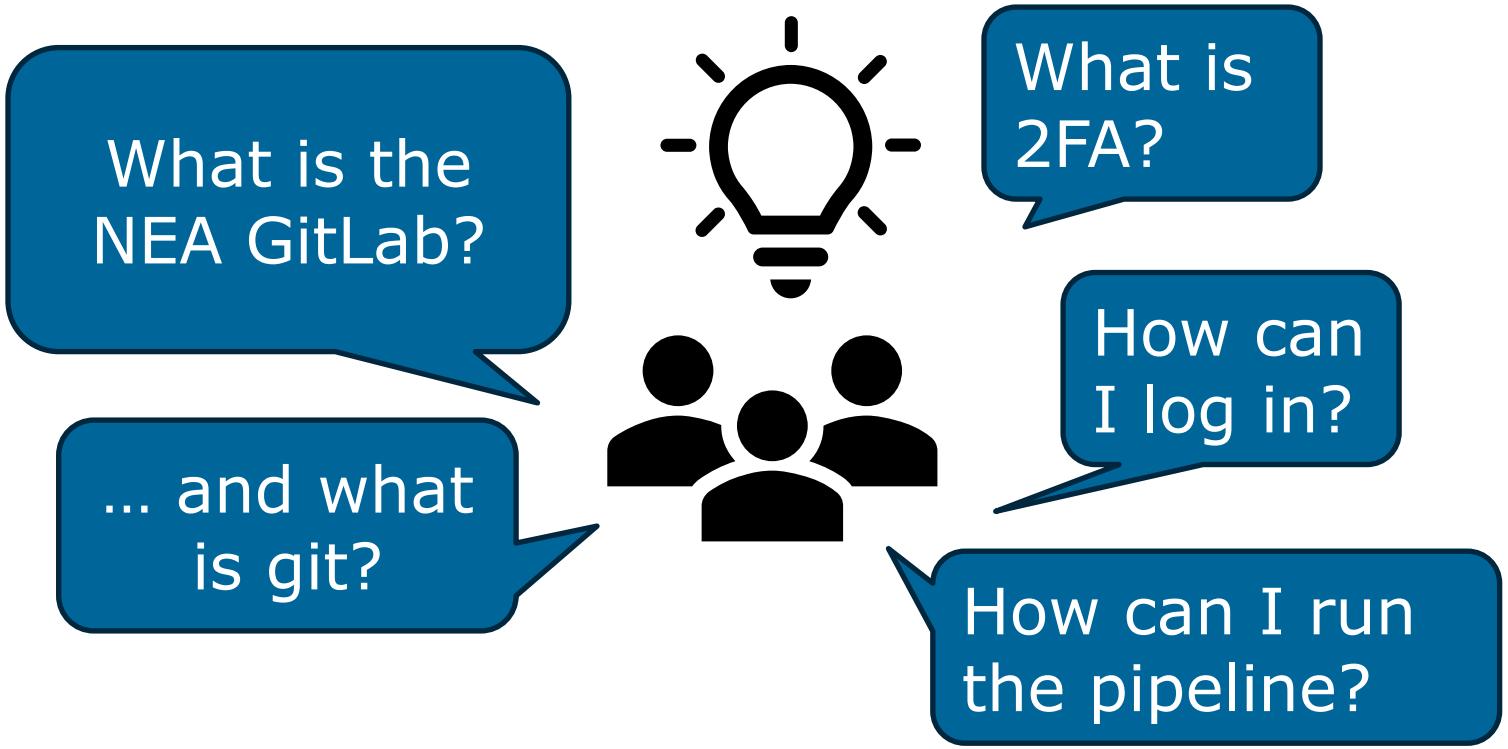




No NEA GitLab account?
No problem!
Reach out to us!

2026 NEA GitLab Question & Answers Series

Open Drop-In Sessions around any question you ever had regarding the NEA GitLab



GitLab

git

When and where?

- Every **3rd Tuesday** of the month
- **10am** and **5pm CET**
- Latest news & connection

https://annuel.framapad.org/p/nea-gitlab-faq-session-akvn

Julia.Sprenger@oecd-nea.org

WPEC Activities – Summary

- **Continued strong engagement with the international nuclear data community**
- **Goals**
  - Recommend nuclear data improvements (including covariance data) based on stakeholder input, new data, and advances in theory and modeling.
  - Suggest updates in codes, formats, methods, and practices for better evaluation processes.
  - Monitor and update the HPRL to stimulate measurement and evaluation activities through modern pathways.
- **2026 WPEC meeting**
  - WPEC: 26 to 29 May 2026; BB10 OECD, Boulogne-Billancourt
- **Open Call for WPEC Subgroup Proposals**
- **EXFOR**: Input templates trial phase

Thank you for your attention

Anastasia.Georgiadou@oecd-nea.org

Title page photo: Dry storage facilities (Creative Commons, NRCgov)