



Partitioning And Transmuter Research Initiative in a Collaborative Innovation Action

PATRICIA

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D14.2 Detailed Dissemination, Exploitation and Communication Action Plan

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This document describes the dissemination, exploitation and communication action plan for the PATRICIA H2020 project. It is drafted in the beginning of the project and will be regularly updated.

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1. Introduction and objectives of the project

The Research and Innovation Action PATRICIA (Partitioning And Transmuter Research Initiative in a Collaborative Innovation Action – GA 945077) was launched on September 1st 2020 and is co-funded by the European Commission under the Horizon 2020 programme. The project is performed using a combination of experiments, theoretical studies and numerical simulations for which the expertise of 25 research centres and universities from 11 EU countries, Switzerland, Russia and US is combined.

PATRICIA proposals answers the NRFP7 of the 2018-2019 EURATOM call on Research and Innovation for Partitioning and/or Transmutation. PATRICIA will provide fundamental technical research for fuel recycling on the one hand, including partitioning of spent fuel, fabrication and characterisation of minor actinide bearing fuel, and the development of transmutation systems on the other hand.

PATRICIA focusses on research on advanced partitioning to efficiently separate Am from spent fuel, on experimental and fuel performance code development work studying the behaviour of Am bearing fuel under irradiation and on the safety related research supporting the licensing process of MYRRHA in its role in the development trajectory for a dedicated accelerator driven transmuter. The different communities working on partitioning, transmutation and the development of MYRRHA are joint in this one single project.

Besides the technical work, a dedicated work package (WP14) deals with education focussing on pre- and pots-graduate students, and with dissemination where besides the specific stakeholders also high school pupils and the general public is targeted. A further task on knowledge management includes the both foreground data as well as metadata so to ensure proper QA for V&V is possible.

PATRICIA consists of 15 Works Packages listed here below:

WP1	Basic data acquisition
WP2	Process development
WP3	Conversion
WP4	Gas and fission products behavior under irradiation: thermo-chemical properties of Am-bearing fuel
WP5	Improvement of modelling and fuel performance codes
WP6	Application to simulation in normal conditions and off-normal conditions
WP7	Fuel clad behavior
WP8	Driver fuel safety
WP9	Fuel assembly safety
WP10	Accelerator and beam line safety and reliability
WP11	System thermal hydraulics safety
WP12	Chemistry control experiments and modelling
WP13	Management
WP14	Knowledge management, education and training
WP15	Ethics requirements

2. Objectives of the dissemination, exploitation and communication

a. Dissemination

The objective of the dissemination is to make **available the scientific results** obtained within PATRICA to the **whole scientific community** as soon as possible. The work performed within PATRICIA combines multidisciplinary expertise and the communication will therefore target a large panel of scientific fields, contributing to the progress of science in general.

Results will be retained by the consortium but outline results, showing working methods, potential, concepts and examples of what has been achieved will be used as the basis of scientific and technical publications in reviewed journals and conference papers. There is an obligation to disseminate results (GA. Article 29), but this should be done by **considering protection of results and confidentiality**.

b. Exploitation

The aim is to outline the projects results, minimize exploitation risks and detail the **exploitation and valorization** strategy. The main aspects in the exploitation plan will be the **evaluation of the exploitation options**, both for each partner and considering the coordinator interests and needs, and in relation with market opportunities. Each beneficiary (GA. Article 28) must take measures aiming to ensure “exploitation” of its results by using them in further research activities (outside the action), developing, creating or marketing a product or process, creating and providing a service or using them in standardization activities.

The exploitation plan should verify that the **dissemination activities do not interfere with the exploitation interests** but converge with them.

c. Communication

The aim of the communication activities is to **provide targeted information** to multiple audiences (including the media and the public) in a strategic and effective manner (GA. Article 38).

3. Dissemination and communication strategy

Different tools are used for communication and dissemination within the project and for the outside world, focusing on the different targeted audiences.

a. Consortium involvement

PATRICA partners will communicate the existence of PATRICIA and their involvement through their own website or using their own social network. Internal communication amongst the consortium partners is done through a sharepoint (restricted area on the project website) for sharing documents presentations, meeting minutes, etc... Communication between partners is also done by classical means like project meetings, Emails, videoconference and telephone calls.

b. Internal communication

PATRICIA partners will also communicate within their company/organization the existence and objectives of PATRICIA.

c. Communication with major media impact

Before engaging in a communication activity expected to have a major media impact, the partners must inform the Commission (GA. Article 38).

4. Dissemination and communication tools

PATRICIA communication tools will include a corporate identity, project webpage providing general information on the project progress and access to public deliverables/results, the project presentation, posters, leaflets, press releases and scientific publications. Printed materials will be distributed mainly at conferences and other events where the project results are presented.

A public report will be compiled by SCK CEN and IVKDF after 24 months based on the inputs from the different Work Package leaders. The reports will be published online and distributed through various channels including an electronic mailing list in order to inform the broad public about project developments.

Most of the data created within the project is supposed to be at least partly confidential due to its sensitive nature (nuclear domain). Therefore it is not likely to provide full access to primary data on the project level (although some exceptions may occur).

a. Project website

As coordinator, SCK CEN has setup the project website at the following link:

<https://patricia-h2020.eu>



Figure 1 - homepage of PATRICIA webpage

The website is divided in two sections: a public area and a restricted area:

- The public area is available to the general public and provides general information about the project such as the scope, the objectives. It also provides a News and Events area. Non-restricted deliverables will also be posted in this area.
- The restricted area requires an authorized sign-in. Authorization is granted by SCK CEN for the members of the PATRICIA consortium.

b. Project logo



Figure 2 - PATRICIA logo

The project logo was designed to reflect the nature of the project and its relation to society. The latter is represented in the purple C which stands for “Collective” in the acronym but also for the community. The light blue colour is chosen to represent engineering science contribution to the work while the dark blue represents the pure sciences that provide the fundamentals and basic data. Since the dark

blue in the logo is exactly the colour of the EU flag, its combination with the yellow ring of stars refers to the EU in which the project is embedded.

c. Conferences, workshops and journals

Part of the results from the work in PATRICIA can be presented in different types of conferences, workshops and journals as they represent an important dissemination channel.

With the current COVID situation, participation and presentation at conferences will be able to start hopefully at the end of the projects' first year.

Possible events have been identified at the beginning of the project and are summarized in the table below. This table is of course a non-exhaustive list.

Event	Location	Targeted audience	Date
IEMPT- (16 th Information exchange meeting on Partitioning and Transmutation)	Saint-Petersburg, Russia	Research and scientific community at large	2021
ICAPP2021 (2021 International Congress on Advanced Power Plants)	Abu Dhabi, UAE		2021
NURETH-19 – (19 th International Topical Meeting on Nuclear Reactor Thermal Hydraulics)	Brussels, Belgium		2022
IAEA FR22 (International Conference on Fast Reactors and Related Fuel Cycles: Next Generation Nuclear Systems for Sustainable Development)	Beijing, China		2022, Every 4 years
ISTC NIKIET (International Scientific and Technical Conference “Innovative Designs and Technologies of Nuclear Power”)	Moscow, Russia		2021, Every 2 years
Actinides 2021	Tallahassee, Florida, USA		2021
NRC10 (International Conference on Nuclear and Radiochemistry)	Brighton, United Kingdom		August 2024
NUTHOS-13 – 13 th International Topical Meeting on Nuclear Reactor Thermal Hydraulics, Operation and Safety	Taichung, Taiwan		2022
NUCLEAR (International Conference on Sustainable Development through Nuclear Research and Education)	Pitesti, Romania		2021
ICONE (28 th International conference on nuclear engineering)	Virtual Conference		2021
GOBAL (International nuclear fuel cycle conference)	Reims, France		2022; Every 2 years
PHYSOR (Physics of Reactors)	Pittsburgh, USA		2022; Every 2 years
GIF and/or other OECD meeting			
ANS Winter or Summer meeting			Every year
Training course – heavy liquid metal summer school	SCK CEN	PhD students	2021-2023
Final PATRICIA international workshop	To define	Scientific community	2024

A list of scientific journals as well as popular science media to be addressed is provided here under:

Journal	Impact Factor (2019)
International Journal of Heat & Mass transfer	4.947
Journal of Computers and Fluids	2.399
Nuclear Engineering & Design	2.399
Annals of Nuclear Energy	1.378
Journal of Radio analytical and Nuclear Chemistry	1.137
Inorganic Chemistry	4.825
Journal of Solid State Chemistry	2.726
Journal of Chemical Thermodynamics	2.888
Chemistry of Materials	9.567
Journal of Nuclear Materials	2.485
Physical Chemistry Chemical Physics (PCCP)	3.430
Journals of Fluids and Structures	2.840
Progress in Nuclear Energy	1.508
Chemical Communication	5.996

d. Peer reviewed journals

It is the goal of the project to publish the scientific results of the research of the project in peer reviewed journals as much as possible.

We foresee 2-3 publications in peer journal for each technical work-package. Each partner will be responsible to take up the initiative in writing and submitting manuscripts. Each beneficiary must ensure open access to all peer-reviewed scientific publication relating to its results (GE. Article 29.2). Articles to be published in the most prestigious scientific magazines will be published under “**gold open access**” scheme. This approach will allow all these results to be accessible to the general public as soon as possible after publication.

In every publication, an acknowledgement to the funding program has to be inserted. Dissemination of results must indicate that it reflects only the author’s view and that the Commission is not responsible for any use that may be made of the information it contains (GA. Article 29.5).

Information on the dissemination and communication activities will be provided in the periodic reporting.

e. Dissemination of data

The data created in the frame of scientific experiments or simulations will be treated in accordance with the Guidelines on Data Management in Horizon 2020.

The different partners will adhere to the FAIR principle from the EC, aiming to make the projects research data findable, accessible, interoperable and re-usable (FAIR). As part of making research data **Findable, Accessible, Interoperable and Reusable (FAIR)**, a Data Management Plan will be provided (Deliverable D14.4).

f. Overview booklet on spent fuel transmutation

At the end of the project, SCK CEN and Chalmers will write an overview booklet highlighting the progress made in the project towards a solution for spent fuel. The booklet will be written using a popular science level and made publically available via the channels mentioned previously.

5. Exploitation strategy

The exploitation strategy will show how the results can be used for commercial purposes or in public policymaking. It will include the following actions:

- Elaboration of an exploitation roadmap through the project with the associated business model.
- Elaboration of an exploitation plan for each partner taking into account the area where an impact is expected, the needs that might be solved or met thanks to the PATRICIA project, the outputs that will be created, the outputs that will be made available during and after the project and the potential users of the project.

Advices from members of the advisory board, from end-users and from the network of the different partners will provide recommendation for potential end-users.

Targeted groups for the exploitation of the project results at industry and research communities interested in the development of fast neutron reactors (SNETP, ESNII), international and European project and initiatives (GIF, OECD/NEA, ESNII+, ESFR-SMART, INSPYRE, GEMMA).

Information on the exploitation strategy (roadmap, exploitation plan) and exploitation results will be provided in the periodic reporting.

6. Information exchange between other H2020 projects

A synergy is identified between H2020 PASCAL (GA 945341) and the PATRICIA project.

The PASCAL project is devoted to significantly contribute to the advancement of the safety research on innovative heavy liquid metal cooled reactors, with the ambition to generate evidence that is ready-for-use in the discussions between the ALFRED and MYRRHA designers and the respective safety authorities in the pre-licensing phase.

Both projects have started almost simultaneously, giving the possibility to hold joint technical meetings.

7. Evaluation

Indicators of the success of the communication, exploitation and dissemination strategy will be:

- Quality of the dedicated project website and reference to this website by other organisations

- Participation in training courses organized by the project
- Participation in international conferences
- Publications in scientific journals
- Participation/registration from external scientists/stakeholders (not involved in PATRICIA consortium) to the final international workshop.
- Well defined exploitation roadmap with the associated business model
- Detailed Exploitation plan from each partner for WP1 to WP12.

8. Conclusions

This document presents the dissemination, exploitation and communication action at the start of the PATRICIA project.

The document will be updated during the project.

At every periodic reporting, a summary of the detailed actions for dissemination, exploitation and communication will be provided.