



Towards Optimized Use of Research Reactors in Europe Project Number: 945 269

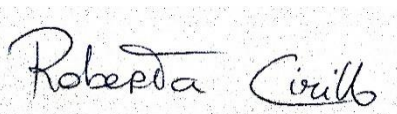
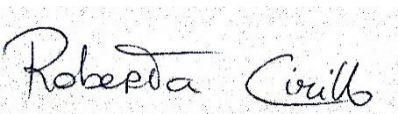
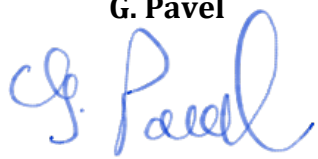
DELIVERABLE D3.3

Online platform for optimized use of research reactors in Europe

Lead Beneficiary: ENEN

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Project Coordinator:

Gabriel Pavel

Project

Coordinator ENEN

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Dissemination Level

PU	Public	X
RE	Restricted to a group specified by the Beneficiaries of the TOURR	
CO	Confidential, only for Beneficiaries of the TOURR project	

Version control table

Version number	Date of issue	Author(s)	Brief description of changes made
0.1	24/05/2023	Roberta CIRILLO	First Draft
0.2	16/06/2023	Jakub Heller	Formal check

Project information

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EXECUTIVE SUMMARY

This report describes briefly the structure of the website “TOURR-platform”, one of the outcomes of the TOURR (Towards Optimized Use of Research Reactors) project .

The online will serve as a tool to improve the communication among Research Reactors (RR) in Europe.

The platform can be found at the address: <https://tourr-platform.eu/> and is available for any user free of charge.

In order to be able to access the whole content on the platform, the users have to register.

In case they prefer not to, still a few pages are visible, providing general information about the TOURR project objectives.

Online references for the TOURR Project are the following:

Main project website: <https://www.tourr.eu/>

Webpage under the ENEN website: <https://enen.eu/index.php/portfolio/tourr-project/>

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1 INTRODUCTION

The TOURR project is coordinated by ENEN - European Nuclear Education Network.

The ENEN Association is an international non-profit organization, the mission of which is the preservation and further development of expertise in the nuclear fields by higher education and training.

Today, ENEN has **more than 90 Members and Partners** from 27 countries, consisting of different types of entities: Research Centers, Industrial Companies, Universities, TSO (Technical Support Organisation) and International Institutions.

ENEN will host the TOURR dedicated platform assuring that it will be accessible and maintained, also after the project ends, i.e. after 30 September 2023.

The TOURR platform will be linked to the main ENEN website www.enen.eu which is currently reached on average by about 20.000 visitors per year.

2 PLATFORM PURPOSE

The TOURR platform aims to provide information about the use of RR in terms of

- science and technology
- medical applications (including production of radionuclides)
- education and training activities.

The goal is to coordinate the ‘offer’ (from RR capabilities) with the ‘demand’ (arising from RR end-users) on all these aspects, with all information gathered on the same online tool.

The platform includes the identification of available infrastructures, characterization of these infrastructures as well as a continuously updated overview of the available capacities and corresponding abilities of the participating RR operators.

An easy-to-use form allowing direct contact between potential users and reactor operators is also provided. Research reactors operators can interact with their potential users to match resources with needs.

The ultimate goals of this platform are

- to allow for enhanced and potential new utilization of the RR
- to create a pool of resources resulting in cost reduction in case of similar needs
- to avoid duplications of efforts to enhance scientific excellence

3 WEBSITE STRUCTURE



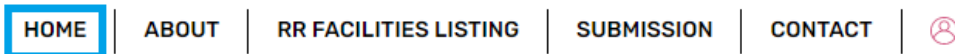
HOME | ABOUT | RR FACILITIES LISTING | SUBMISSION | CONTACT | 

Towards Optimized Use of Research Reactors in Europe

Figure 1: TOURR platform – homepage header

When landing on the platform, a user will be directed to the ‘home’ page.
The whole website inherits the graphics and the color palette of the main TOURR website.

3.1 Home Page



The Home page provides some general information about the TOURR project and the reason behind building the platform.
Also, an overview of all RR in the network is provided at a glance with a Europe map.

In the footer, EU acknowledgment of fundings and reference to the Euratom program is provided.

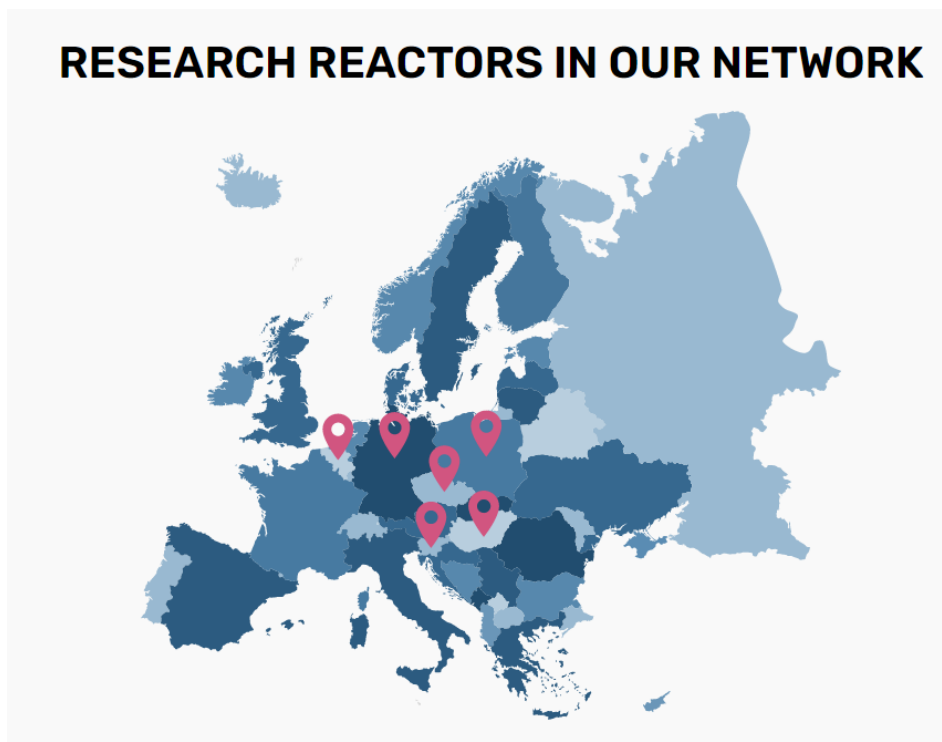



Figure 2: Map of RRs in TOURR network

By hovering with the mouse over one of the pins, the name of the RR facility will appear and the user will be taken to the dedicated page about that specific reactor.

This latter has the same structure for any of the RR in the network and contains:

- Some general information about the RR
- Photos
- Contact information to enable the user to send a direct email
- A list of capabilities in each of the three sectors:
 - science and technology
 - medical applications (including production of radionuclides)
 - education and training activities.

3.2 About Page

HOME | **ABOUT** | RR FACILITIES LISTING | SUBMISSION | CONTACT | 

Here, the objective of the TOURR project are briefly presented and all partners logos are shown. The About page and the Home page are the only pages which are visible for non-registered users.

A few partial screenshots of the About Page are presented here under:

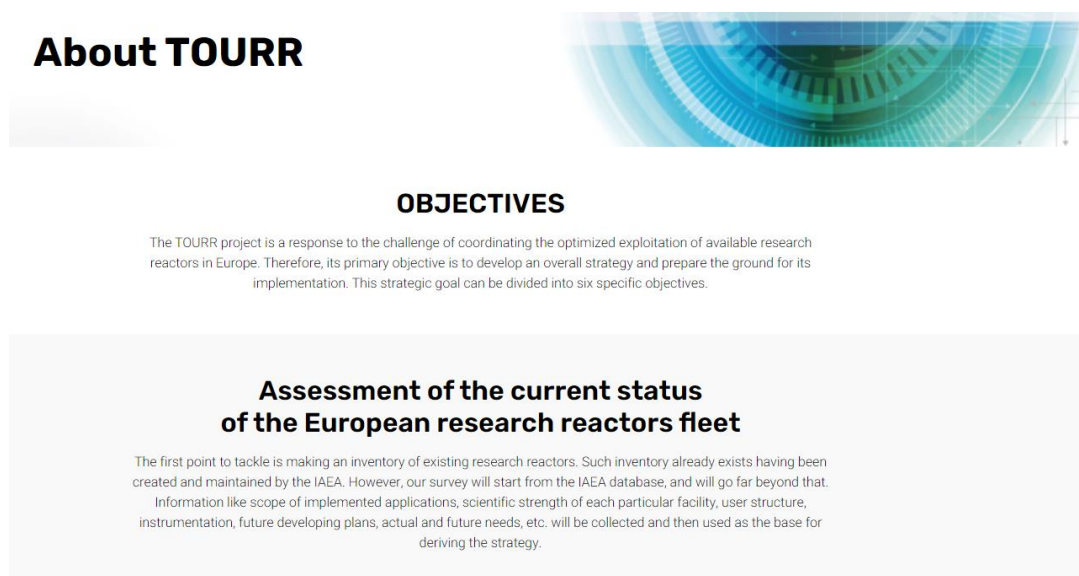


Figure 3 - About page - upper part

Estimation of future needs

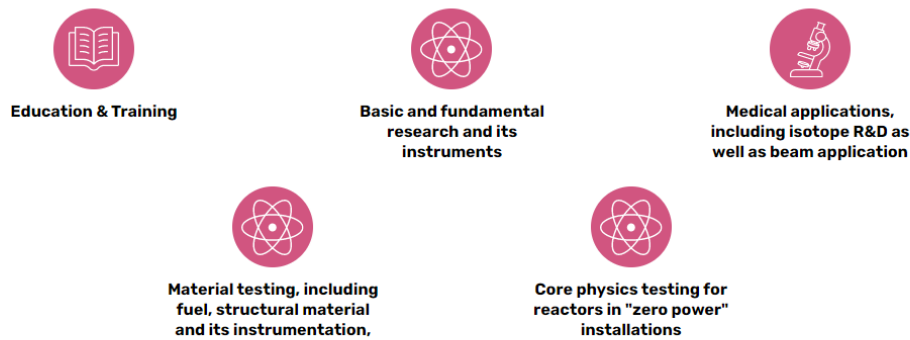


Figure 4 - About page

All the above presented objectives, tackle multiple challenges and underline the urgent need of a European strategy for research reactors which represents the main objective of this project. We expect that the implementation of the TOURR project will help to contribute, among other outcomes, to strengthen Europe's competitive advantage over other countries.

TOURR CONSORTIUM PARTNERS



Figure 5 - About page - bottom part with partners logos

3.3 RR Facilities Listing page

HOME | ABOUT | **RR FACILITIES LISTING** | SUBMISSION | CONTACT |

In this page, a carousel of all RR present in platform is provided.

By clicking on any of them, the user will be taken to the RR specific page (same as described above)

RR Facilities Listing

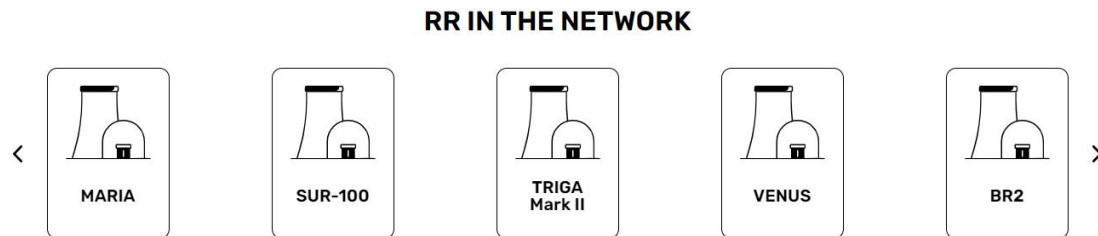


Figure 6 - RR facilities carousel - Top of the RR facilities page

In this page it is also possible to filter RR according to the user needs, by Fields

- science and technology
- medical applications
- education and training

and by Applications

- **Science and Technology applications**
 - 1) Neutron Activation Analysis
 - 2) Prompt Gamma Neutron Activation Analysis
 - 3) Radiation Hardness Testing
 - 4) Nuclear Data Measurements
 - 5) Radiochemistry
 - 6) Geochronology
 - 7) Silicon transmutation doping
 - 8) Gamma irradiation
 - 9) Gemstone coloration
 - 10) Actinide Transmutation Studies
 - 11) Neutron Scattering
 - 12) Neutron Radiography/Tomography
 - 13) Material irradiation and testing
 - 14) Positron sources
 - 15) Boron Neutron Capture Therapy
 - 16) Instrument Developing, Testing and Calibration
 - 17) Nuclear Fuels Irradiation and Testing
 - 18) Supporting Nuclear Power Reactor Programs
- **medical applications**
 - 1) Radioisotopes production in small quantities for research applications
 - 2) Medical radioisotopes production in large quantities for common and established nuclear medicine applications
 - 3) Boron neutron capture therapy
 - 4) Industrial radioisotopes production in large quantities for common and established industries

- 5) Production of sources
- **education and training**
 - 1) Public tours and visits
 - 2) Teaching physical and biological science
 - 3) Teaching radiation protection and radiological engineering
 - 4) Teaching nuclear engineering
 - 5) Training (or re-training) Nuclear Power Plant Operators
 - 6) Training (or re-training) nuclear professionals (other than nuclear plant operators)

The list of applications is the same list presented in the questionnaire, which was the foundation to draft D1.1 – Database of European RR fleet, publicly available for download, here: [https://www.tourr.eu/fileadmin/user_upload/TOURR D1.1 Data Base of European RR fleet .pdf](https://www.tourr.eu/fileadmin/user_upload/TOURR_D1.1_Data_Base_of_European_RR_fleet.pdf)

When filtering both by filters and by applications, multiple selection is possible. The filter output will be a list of RR offering those capabilities.

In this way, the user will know which RR in Europe may answer their needs, and by visiting the RR pages, will be able to get in contact with them.

SEARCH FOR RR SPECIFIC APPLICATION

FIELDS ▼

APPLICATIONS ▼

Filter output


MARIA

SUR-100

TRIGA Mark II

Figure 7 Searching criteria and filter output in the RR listing page

3.4 Submission page

HOME | ABOUT | RR FACILITIES LISTING | **SUBMISSION** | CONTACT | 

This is contact form intended to be sent to all RR in the network or to a (few) specific one(s).


First Name *	Last Name *
Country *	Affiliation *
Phone *	Email *
Interest to * ▼	
Message *	

I consent that i have read and accepted the [GDPR Privacy Policy](#) and agree to the comprised information

SEND

Figure 8 Submission form - to send the same message to all RR in the network

3.5 Contact page

HOME | ABOUT | RR FACILITIES LISTING | SUBMISSION | **CONTACT** | 

This is another form, this time to get in touch with ENEN, in case some users or RR want to contact the coordinator of the TOURR project. The graphics are the same as those presented in Figure 7.

4 CONCLUSIONS

The TOURR platform has been created to provide a tool to implement the communication among RRs in Europe and mostly to match the demand of RR end users with RR offer in terms of capability.

It provides an overview of all RR present in the platform listing their capabilities under the three main categories:

- science and technology
- medical applications (including production of radionuclides)
- education and training activities.

It allows users to get in touch with the RR operator(s) that match their research criteria, facilitating the communication and optimizing the use of RR themselves.

It is possible for any RR to join the platform and for users to register to it.

The platform is hosted at the following address: <https://tourr-platform.eu/> and will be linked to the ENEN website under the dedicated TOURR webpage: <https://enen.eu/index.php/portfolio/tourr-project/>