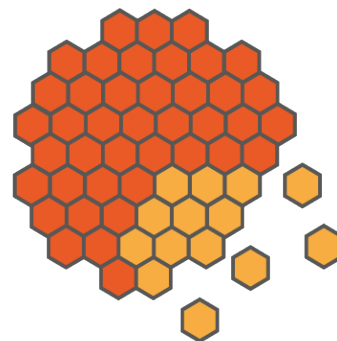




GRE@T- PIONEER



Coordination and Support Action

NFRP-2019-2020

D8.1 - Website

WP8 - Task 8.1

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@GREATPIONEER_EU



www.great-pioneer.eu



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History

Date	Version	Submitted by	Reviewed by	Comments
09/04/2021	N°1	Emma Buchet	Suzi Maurice Flora Errecart Christophe Demazière	



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Abbreviations and Acronyms

Acronym	Description
WP	Work Package
CMS	Content Management System
LMS	Learning Management System
SEO	Search Engine Optimisation

Executive Summary

The GRE@T-PIONEER project website will serve as a main point of contact for the project and will be a crucial tool in hosting and directing stakeholders towards the materials developed for the courses. It acts as the main channel for news and updates and will inform the site visitors on:

- what the project is about;
- what the project will deliver, and why;
- who the partners of the project are;
- where to find the latest news and events of the project;
- where to find more information on education in nuclear reactor physics and safety.

The website was officially launched in February 2021. It will be continuously updated and will evolve with the lifecycle of the project.

Keywords

Nuclear, education, reactor physics, reactor safety, website, communication, dissemination, SEO.





I. Introduction

The GRE@T-PIONEER public website (<https://great-pioneer.eu/>) was launched online in M4 (February 2021). The creation of the site was a joint collaboration between the communication task leader and coordinator and was shared with the partners for review. It was promoted on the GRE@T-PIONEER social media accounts and the partners were encouraged to share it with their networks.

The website will be the main point of information for the project for all audiences and will share and update interested stakeholders on the courses that will be developed during the project. Therefore, it was designed, formatted, and written with the aim of being as accessible as possible. Moreover, it provides access to the private partner area for the GRE@T-PIONEER partners, allowing them to share documents and collaborate online. Through this website, users can find the description of the project, its objectives and impacts, and information meant to educate a wider audience on the teaching methods that are the innovative aspect of the project. When the design of the course materials have sufficiently progressed, the website will also include information about the courses and their exact contents. A link to the Learning Management System (LMS) used by the consortium for course delivery and management will also be added to the website when the LMS has been launched.





2. Website

2.1. Homepage

The homepage is usually the first page seen by users, so it is important to have the logo and description of the project easily visible. A version of the project's tagline is present immediately, so visitors quickly have an idea of what the project is about. The layout was designed with students and teachers in mind, so it is light and accessible.

The Homepage features text describing the:

- project in general;
- what the project will offer;
- objectives;
- the partner logos and
- latest news and events.

In the footer, users can find the funding acknowledgement, latest news and upcoming events, as well as links to the project's LinkedIn and Twitter profiles, newsletter, email, and partner area.



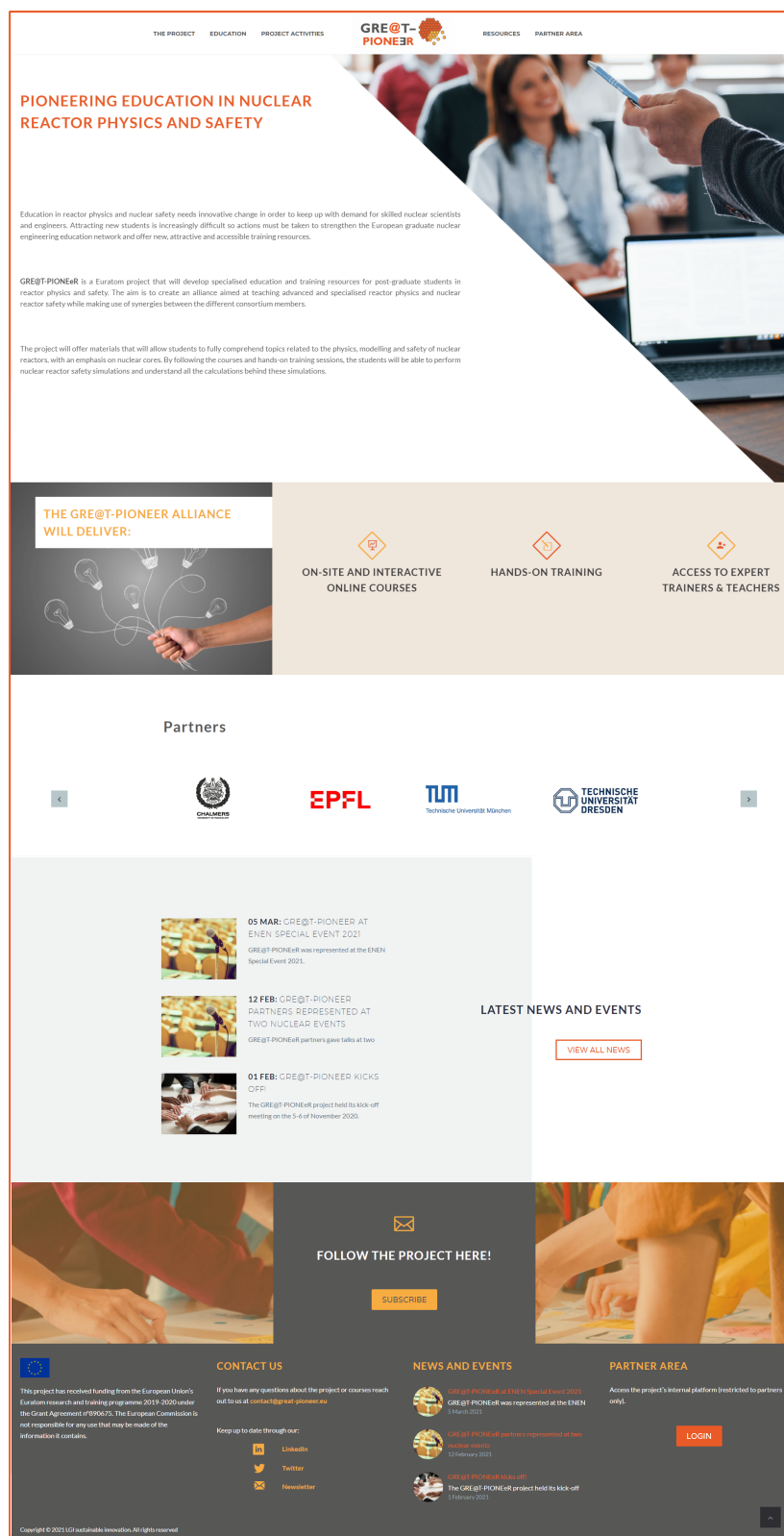


Figure 1: GRE@T-PIONEER Homepage



2.2. The Project

2.2.1. About

Here the user can find out about the project, its objectives and some context on the availability of skills in Europe, demonstrating the need for projects such as GRE@T-PIONEer.

THE GRE@T-PIONEER PROJECT

GRE@T-PIONEER is a Euratom project that launched in November 2020. Over 3 years, this project will bring together partners from all over Europe to form an alliance in nuclear education, coordinated by [Chalmers University of Technology](#) (Sweden).

The consortium will develop specialised education and training resources for post-graduate students in reactor physics and safety.

The education will encompass both theory and hands-on training exercises, the latter heavily relying on the use of research/training reactors and of computer-based modelling environments. One fundamental novelty of the proposed alliance is to use new educational methods relying on active learning and personalised student support, which have been shown to lead to much better learning outcomes. GRE@T-PIONEER will create sets of educational materials that interact and build on each other, using the complementary expertise of the consortium partners.

The courses will be a mix of online and hands-on learning. In addition to teaching of the courses, students will have access to research/training reactors from three partners: CROCUS from EPFL, AKR-2 from TUD, and the training reactor from BME.

Find out more about the educational materials and methods [here](#).

THIS PROJECT REPRESENTS A FANTASTIC OPPORTUNITY TO BUILD A LONG-LASTING EDUCATIONAL PACKAGE IN ADVANCED COMPUTATIONAL REACTOR PHYSICS AND NUCLEAR SAFETY TO BE OFFERED NOT ONLY DURING THE PROJECT, BUT ALSO AFTER ITS COMPLETION. MOREOVER, USING INNOVATIVE PEDAGOGICAL METHODS STUDENT LEARNING WILL BE AT THE HEART OF ALL COURSE MATERIALS BEING DEVELOPED.

PROJECT COORDINATOR, CHRISTOPHE DEMAZIÈRE FROM CHALMERS UNIVERSITY OF TECHNOLOGY

Availability of skills in Europe

European countries face a challenging situation regarding educating and training personnel required for the safe operation of nuclear plants. Each country's situation and view of nuclear power is different, from countries focusing on decommissioning old plants to those exploring the possibility of further investing in nuclear energy. Countries need **additional resources in all levels of education and training to guarantee the safe operation of new and existing nuclear units.**

Low recruitment and high retirement levels in the nuclear sector mean that operating the existing plants and constructing new ones require **many graduates with nuclear engineering training on a very short term.** Attracting new students is increasingly difficult so actions must be taken to strengthen the European graduate nuclear engineering education network and offer new, attractive and accessible training resources.

PROJECT OBJECTIVES:

Fully integrate hands-on training exercises in the educational resources, using the research and training infrastructures of the partners

Figure 2: About Page



2.2.2. Project Impacts

This page details the expected impacts that GRE@T-PIONEeR will have, including the potential benefits for both students and teachers.



Figure 3: Project Impacts



2.2.3. Partners

This page hosts a short description of the partners of the GRE@T-PIONEER consortium with links that take the user back to the partner's site.

PARTNERS

THE GRE@T-PIONEER CONSORTIUM INCLUDES TEN PARTNERS FROM EIGHT EUROPEAN COUNTRIES THAT COVER A WIDE RANGE OF EXPERTISE.



CHALMERS UNIVERSITY OF TECHNOLOGY
Coordinator of the GRE@T-PIONEER project

Chalmers University of Technology has developed leading research in the areas of life sciences, materials science, information technology, micro- and nanotechnology, environmental sciences and energy.



EPFL

**ECOLE POLYTECHNIQUE
FEDERALE DE LAUSANNE**

The primary responsibilities of the Laboratory of Reactor safety and System behaviour at Ecole Polytechnique Federale De Lausanne (EPFL) are teaching and research related to nuclear energy at the masters and doctoral levels.



**UNIVERSITAT
POLITÈCNICA
DE VALÈNCIA**

UNIVERSITAT POLITÈCNICA DE VALÈNCIA

Universitat Politècnica de València (UPV) contains the Research Institute for Industrial, Radiophysical and Environmental Safety (SIRYM) and the SENUBIO research group that perform research in areas such as nuclear safety.



**UNIVERSIDAD POLITÉCNICA
DE MADRID**

Universidad Politécnica de Madrid is the largest Spanish technological university specialised in all engineering fields and architecture. The intense collaboration with governmental bodies and industry guarantees that research at UPM offers real solutions to real-world problems.



**POLITECNICO
DI TORINO**

POLITECNICO DI TORINO

The Nuclear Engineering Division at Politecnico di Torino (POLITO) covers various aspects of the nuclear engineering discipline: nuclear reactor physics, thermal-hydraulics of fission and fusion plants, safety and risk analysis, environmental analysis and energy scenario planning.



**EUROPEAN NUCLEAR
EDUCATION NETWORK**

European Nuclear Education Network (ENEN) is an international non-profit organisation consisting of 77 Members among which we can find Universities, Research Centers, International Organisations and TSOs.



**TECHNISCHE UNIVERSITÄT
MÜNCHEN**

Technische Universität München (TUM) is a leading German university located in Bavaria, Germany consisting of 12 faculties specialised in higher education and research and development in many areas including (but not limited to) architecture, engineering, physical and chemical sciences, mathematics and information technology.



**TECHNISCHE
UNIVERSITÄT
DRESDEN**

**TECHNISCHE UNIVERSITÄT
DRESDEN**

TU Dresden is strong in research, offering first-rate programmes with an overwhelming diversity, with close ties to culture, industry and society. As a modern full-status university with 14 departments, it offers a wide academic range.



**BUDAPESTI MŰSZAKI ÉS
GAZDASÁGTUDOMÁNYI
EGYETEM**

Budapest University of Technology and Economics (BME) is the largest engineering education center in Hungary. The Institute of Nuclear Techniques (NT) educates the undergraduate, graduate and PhD students of BME and other universities and higher education institutions in the field of nuclear techniques.



**LGE SUSTAINABLE
INNOVATION**

LGE Consulting is a European Innovation-driven business consultancy which has coordinated a number of European projects and regularly leads work packages dealing with the company's areas of expertise such as innovation management, market, exploitation, economic analyses, technology assessment, and public engagement.

Figure 4: Partners Page



2.3. Education

This section aims to inform site visitors about the pedagogical aspects of the project and the research that the partners will use when creating their courses. Other relevant content, including the course materials, will be hosted under this section as the project develops. A link to the LMS will be added in due time. Teaser videos of each course module will also be added when available.

2.3.1. Teaching Methods

The Teaching Methods page introduces visitors to certain pedagogical concepts and the different methods of teaching that will be used in the GRE@T-PIONEER courses.

TEACHING METHODS

THE NEXT GENERATION OF NUCLEAR SCIENTISTS...

In order to provide accessible and interesting training, especially in a field as technical and specific as reactor physics and nuclear reactor safety, the courses, modules and materials should be designed using principles based on robust and demonstrated pedagogical (educational) concepts and principles. These principles can apply to many different areas, such as how courses are taught and the design of the materials. In the traditional format, engineering students are exposed to new concepts for the first time in class. As a result, the students cannot dive deeper into the topics and must take the time to do this later with limited support from the teachers.

According to Bloom's revised taxonomy for the cognitive domain (seen in the pyramid below), students go through various thinking skills while learning. This process starts from low-order thinking skills, such as remembering and understanding the course concepts, to high-order thinking skills, such as applying, analysing, evaluating the course concepts and then being able to create work themselves. Courses and modules should be designed to enable the students to reach the top of this pyramid and give them the skills needed for the challenges they will face working in the nuclear sector.

Bloom's Taxonomy

Create
Produce new or original work
Design, assemble, construct, conjecture, develop, formulate, author, investigate

Evaluate
Justify a stand or decision
Appraise, argue, defend, judge, select, support, value, critique, weigh

Analyze
Draw connections among ideas
Differentiate, organize, relate, compare, contrast, distinguish, examine, experiment, question, test

Apply
Use information in new situations
Execute, implement, solve, use, demonstrate, interpret, operate, schedule, sketch

Understand
Explain ideas or concepts
Classify, describe, discuss, explain, identify, locate, recognize, report, select, translate

Remember
Recall facts and basic concepts
Define, duplicate, list, memorize, repeat, state

From the Center for Teaching Vanderbilt University

SOME OF THE INNOVATIVE TEACHING METHODS OFFERED BY GRE@T-PIONEER:

— A COHERENT SET OF COURSES

Modules will be designed so as to tell a cohesive story. This holistic approach is essential for providing critical-thinking skills to the students, while each module will go in-depth into the covered topics. This is in clear contrast with all previous teaching initiatives, where sets of isolated courses were compiled together with no clear through line.

- + BLENDED LEARNING
- + FLIPPED CLASSROOM
- + ACTIVE LEARNING
- + FEEDBACK LOOPS

Figure 5: Teaching Methods Page



2.4. Project Activities

Here the News and Events Calendar pages will keep visitors up to date on the latest news, outcomes of the project, GRE@T-PIONEER or related events, and other, relevant developments.

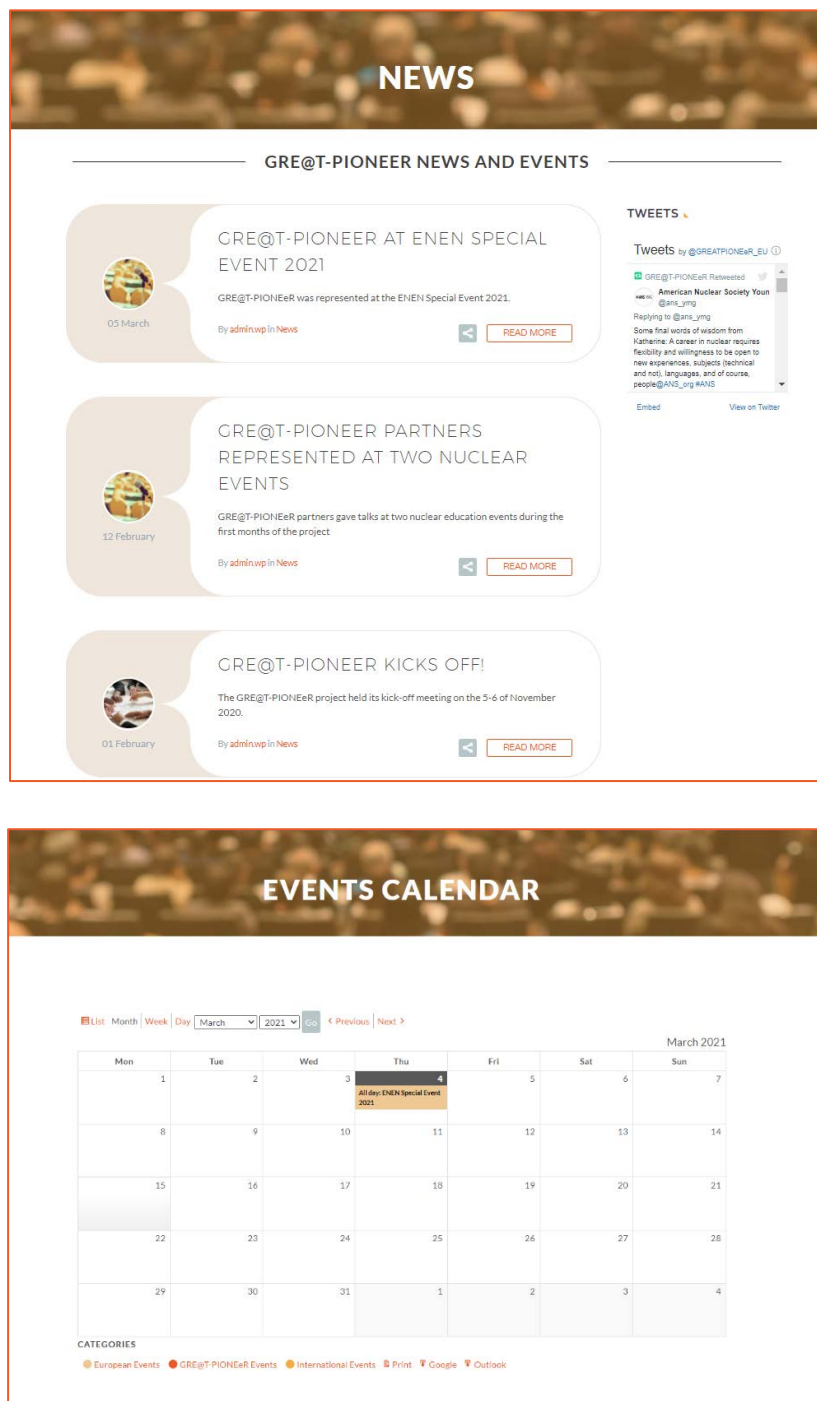


Figure 6: News and Events Pages



2.5. Resources

The Resources page will host:

- Media (such as brochures and roll-ups created for the project);
- Publications (such as reports and scientific publications) and
- Project materials (such as the Information sheet).

It will be updated on a regular basis so the visitors can access the resources created by the project.

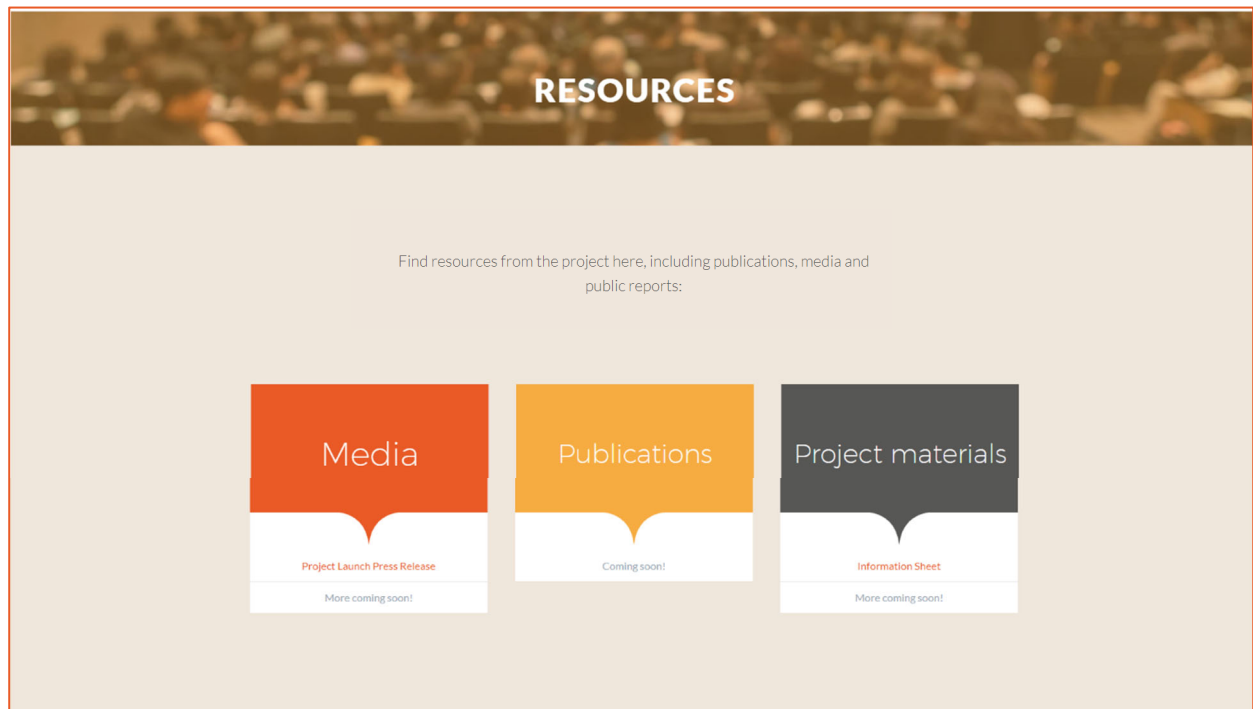


Figure 7: Resources Page



3. Technical specifications

3.1. Responsiveness

A lot of website traffic (around 20-50% depending on the sources consulted¹) comes from mobile devices. In order to make the site accessible to all devices, certain sections of pages were formatted to have a vertical layout for small screens, allowing the user to more easily read the sections on devices such as smartphones.



Figure 8: Project Objectives view on computer screen (left) and mobile (right)

3.2. Compatibility

The GRE@T-PIONEER website is running on Wordpress CMS and is compatible with common web browsers on all common operating systems. These include various versions of Internet Explorer, Firefox, Safari, and Chrome. Updates will be made on a regular basis so that it continues to adapt to the important milestones and activities of the project, especially relating to the release of course materials. This is to ensure that the website remains a dynamic and useful tool to promote and disseminate the knowledge acquired and updates relating to the courses during the project.

3.3. SEO

Plugins are used to ensure that the website makes use of good SEO practices including using keywords, outbound links and metadata descriptions for each page.

3.4. Analytics

WebStat by IONOS is currently being used to analyse website statistics which will help monitor the traffic on the website. A banner informing the user that the website is collecting this information and with a button to accept is present when they visit the website.

¹ <https://gs.statcounter.com/platform-market-share/desktop-mobile-tablet/europe>



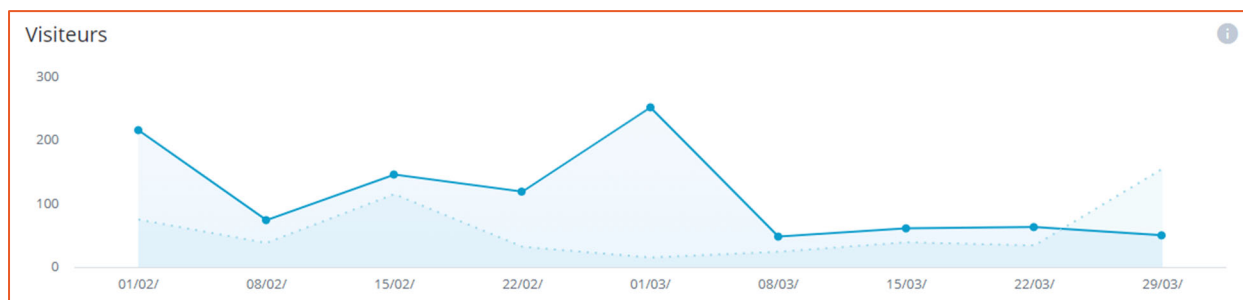


Figure 9: Number of visitors in February and March 2021

4. Conclusions

The GRE@T-PIONEER website was created during the first stage of the project and was launched in February 2021. It will be a tool that evolves with the project, according to specific needs and aims to maximise the impact of GRE@T-PIONEER. It also aims to boost awareness of the results and milestones to be accomplished during the project's lifetime.

The GRE@T-PIONEER website will be continuously updated and act as a flexible tool to be used by the partners during and after the project.

