Reliability, Resilience and Defense technology for the griD

D8.2 - R²D² knowledge arena

Date: 31/03/2024

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Version	Date	Person	Action	Status*	Dissemination**
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V0.3	11/03/2024	Ugo Stecchi	Draft available for peer review	Draft	CO
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*Status: Draft, Final, Approved, Submitted (to European Commission).

Dissemination Level: **PU: Public; **CO**: Confidential, only for members of the consortium (including the Commission Services).

Executive Summary

This document represents the *Deliverable 8.2 R²D² knowledge arena* of *Work Package 8 - Shared Knowledge, Impact Assessment and Exploitations*. This report gathers all the actions on dissemination and communications carried out until M18 by the R²D² consortium.

This document serves as an update of the deliverables D8.1 Dissemination, Exploitation and Communication Plan.

All those dissemination materials are being created to make the most of its communication and dissemination activities. They have been created to ensure that the project's outcomes (concepts, scientific results, tools, solutions, methodologies, best practices, lessons learned, etc.) are widely disseminated/communicated to the appropriate target audiences and that those who can contribute to the development, evaluation, uptake, and exploitation of the R^2D^2 outcomes can be identified and encouraged to participate.

The project has carried out different actions:

- Creation and design of promotional materials (visual identity, brochure, roll up, videos, overview presentation, graphics, newsletters, press releases, press kits, etc).

- Creation and update of a website as a main external communication channel.

- Creation of social media accounts (X/Twitter, LinkedIn, and YouTube) as part of the external communication channels.

-Open-access scientific publications and non-scientific publications have been released.

- Submission of public deliverables, which are available on the website as soon as they are accepted by the European Commission.

- Active participation and organisation of events.

- Establishment of cooperation activities with related projects or initiatives such as the BRIDGE initiative, ETIP-SNET and the EU Cluster for Securing Critical Infrastructures.

The document also evaluates the results and impact reached on communicating and disseminating R^2D^2 through analytics from the website, social networks, and media presence. After the second period, the analytics showed that almost all Key Performance Indicators (KPIs) defined in D8.1 will be achieved.

The R^2D^2 project and its partners have been highly active in numerous facets of engagement and dissemination:

- Event Participation: R^2D^2 partners have actively participated in a total of 11 events, showcasing their developments, findings, products, etc. Among these, 10 resulted from collaborative efforts with other EU projects. Additionally, partners participated in 3 BRIDGE meetings and events and 1 more event in ETIP-SNET.

- Website Reach: The project's website has satisfactory traffic, gathering more than 4000 visits. This online platform has been pivotal in sharing project updates and resources.

- Content Creation: A robust digital presence is evident through the publication of several informative posts on the project's website.

- Social Media Impact: R^2D^2's social media networks, including X (Twitter), LinkedIn, and YouTube, have collectively gathered a following of 296 dedicated individuals. X (Twitter) alone has achieved 2788 impressions, while the LinkedIn page has garnered 1622 impressions.

- Media Recognition: The project has been featured in 9 online news in Serbia, Greece, UK, Spain, and Slovenia, indicating its growing presence and influence.

- Research Contributions: Partners have made meaningful contributions to the project's research efforts, resulting in the publication of 9 scientific publications, all of which are readily accessible through open access. Additionally, 10 public deliverables have been

diligently submitted to the European Commission, reflecting the project's commitment to its objectives.

- Engagement in Collaborative Initiatives: R²D² partners have played a pivotal role within the BRIDGE initiative by actively participating in its various Working Groups (WGs) and Task Forces (TFs). Their contributions in the form of reports, meetings, and events have been instrumental in fostering collaboration with other Horizon Europe and Horizon 2020 projects.

- Broader H2020 Collaborations: In addition to their involvement with BRIDGE, R²D² partners have cultivated synergies actions with other projects, including European Cluster for Securing Critical Infrastructures (ECSCI).

- Engagement with Related Initiatives: Beyond the scope of Horizon Europe, R²D² partners have extended their collaboration efforts to encompass a range of related initiatives. They have actively engaged with ENTSO-E, E-DSO and ENISA.

- ENTSO-E Collaboration: Specifically, SCC, RTE-I, and UCY, acting as representatives of R²D², have been proactive participants in various ENTSO-E activities. Their presence has been instrumental in presenting project outcomes and sharing invaluable insights with the broader energy community.

Keywords

Dissemination, communication, exploitation, results, target audience, awareness, media, publications, scientific publications, social media, news, events, promotional materials, website, press releases, webinars, workshops, and storytelling.

Copyright Statement

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1 INTRODUCTION

1.1 PURPOSE AND SCOPE OF THE DOCUMENT

The exploitation, dissemination and communication of results is one of the compulsory activities that Horizon Europe projects are required to submit, thus R²D² includes within its deliverables the Dissemination, Exploitation and Communication Plan (DECP). The DECP summarises the consortium's strategy and concrete actions to disseminate, communicate, exploit, and protect the foreground generated by the project and should serve as a guideline to the consortium for the Communication and Dissemination activities to be carried out in the context of the R²D² project.

The presented report on "R²D² knowledge arena" includes all dissemination and communication actions carried out by all partners until the first period of the project (M1-M18). This deliverable evaluates the dissemination outcomes and outlines the main successful actions and detected shortcomings, in order to improve the plan described in the *D8.1. Plan for Exploitation and dissemination of results* (PEDR).

ETRA, who is leading Task 8.2 and this deliverable, together with the rest of the consortium partners, has contributed to achieving the dissemination and communication actions shown in this document. The Deliverable 8.2 is the second document produced within *WP8 Shared Knowledge, Impact Assessment and Exploitation* and shows the results from the proposed actions in *D8.1 Dissemination, Exploitation and Communication Plan*.

The document compiles all actions made from Partners under the R²D² dissemination and communication premises. ETRA, as T8.2 leader and D8.2 responsible, collected all inputs from Partners to produce this report. Besides, this document absorbs suggestions and needs from the targeted audience to improve the defined dissemination and communication strategies.

1.2 STRUCTURE OF THE DOCUMENT

The document gathers all actions carried out by M18 (from chapters 2 to 8): promotional materials, communication channels, scientific publications, news, publications, public deliverables, media presence, events, exchange activities with related projects, interactions with relevant bodies, and concrete BRIDGE actions. The report highlights the Key Performance Indicators (KPIs) and the conclusions and next steps sections in chapters 9 and 10.

2 PROMOTIONAL MATERIALS

Promotional materials help to create awareness of the project goals and results and maximize its impact on stakeholders. They had been displayed in meetings, workshops and related events that took place during the project life cycle. But they are also available online and gradually updated and help to communicate R²D² through a wider audience. Table 1 presented below, resumes, all the main promotional materials prepared and described in the following subsections:

Table 1 - R²D² promotional materials

Promotional materials	Description
Brochure	A brochure summarizes the project goals and scheme in an easy way. This document is distributed not just in conferences, workshops, or other events where consortium members present and promote the project but also in open days or citizens events. Partners could print it out or even translate it, as needed.
Roll-up	The roll-up contents just key aspects of the project and it is designed to be used in events and exhibitions. Partners could print it out or even translate it, as needed.
Poster	The poster contents just key aspects of the project and it is designed to be used in events and exhibitions. Partners could print it out or even translate it, as needed.
Videos	An introduction video is produced during the first period of the project which is giving a general view of goals and benefits to a general audience. Also, several videos explaining general concepts of R²D² products will be created in the coming months. In these overview videos minimising the technical language will be a must to reach an extensive audience. Besides, during the lifetime of R²D², partners will explain with videos some complex technical aspects of the project to make them understandable among the public. From the second period until the end of the project, it is expected to produce videos showcasing demonstrations of the products, interviews to partners explaining new developments and results, testimonials, pilot site visits, etc.
Newsletter	The newsletter aims to keep everybody informed about the news and events that occurred during the few last months.
Factsheet	A factsheet is a short, printed document with information about a particular aspect of the R²D² products.
Infographics	Infographics represent graphical information and data and even complex information in a clearly and concise way. Additionally, the use of visual and illustrative forms of communication may open the information to larger and more diverse audiences. Infographics are a form of visual communication that falls within the encompassing field of information design, often focusing upon discrete and contained amounts of information.

2.1 CORPORATIVE IDENTITY

Defining the visual identity of R²D² was the first step to start designing and developing the dissemination materials. This visual identity is part of the R²D²'s branding that communicates the overall message, and values of R²D², as explained in the D8.1.

The Brand Book created defines in detail the corporate image and guide on how to use R²D²'s brand properly (see ANNEX I – Brand Book).

Figure 1 - Main Logo of R²D²

Figure 2 - Secondary Logo of R²D²

Figure 3 - R²D² isotype.

For each product, an icon has been designed as shown in Figure 4.

Figure 4 - Corporate iconography of products.

2.2 BROCHURE

A brochure was designed to resume the project goals and scheme easily. The brochure is available in both digital and physical formats. It is available on the website but also it can be distributed by partners in conferences, meetings, exhibitions, or other events where consortium members will present and promote the project such as open days or citizens events. Partners could print it out or even translate it, as needed.

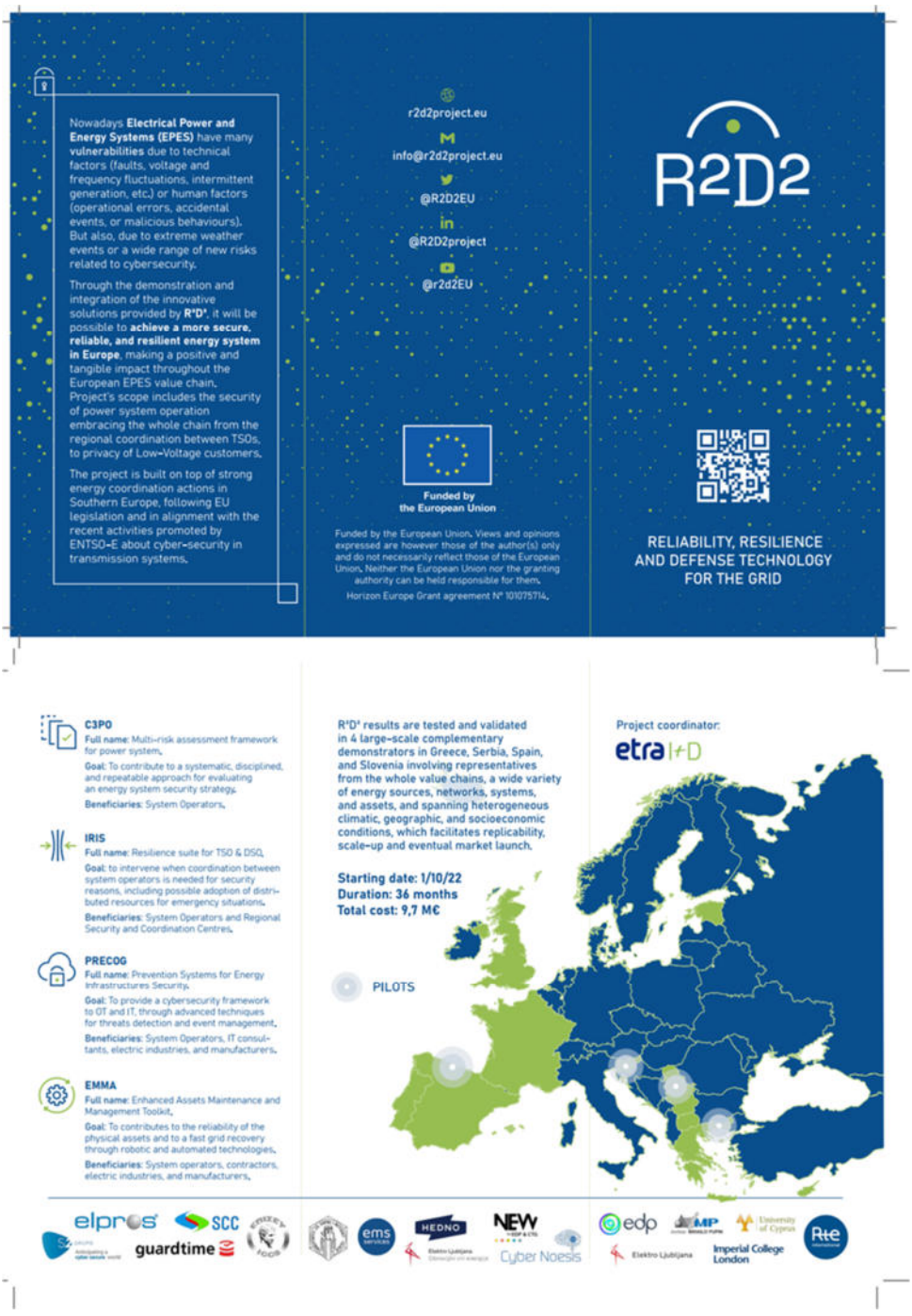

Figure 5 – R²D² Brochure

2.3 ROLL- UP

R²D² has designed a roll-up banner following the visual identity. This element is a very important resource for any exhibitor looking to stand out at an exhibition or trade show. Since its goal is to generate impact, the content gets straight to the point. This element is available on the website.

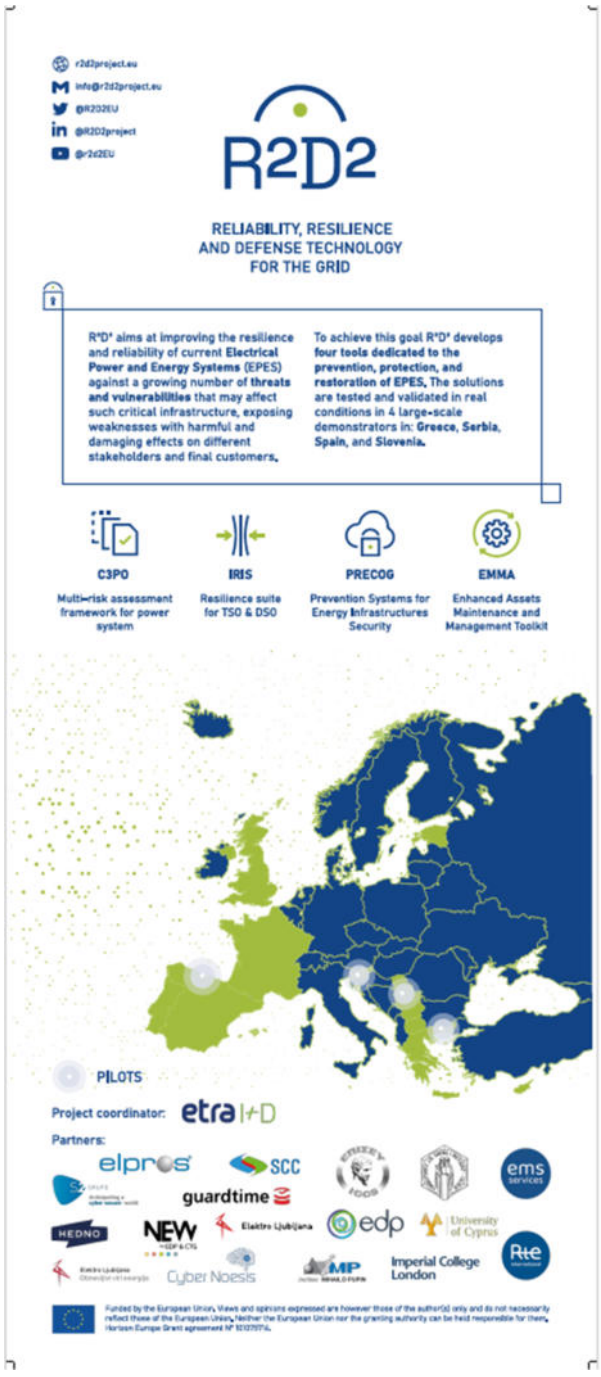

Figure 6 R²D² Roll-up

2.4 POSTER

R²D² has designed a poster following the visual identity. This element is a very important resource for any exhibitor looking to stand out at an exhibition or trade show. Since its goal is to generate impact, the content gets straight to the point.

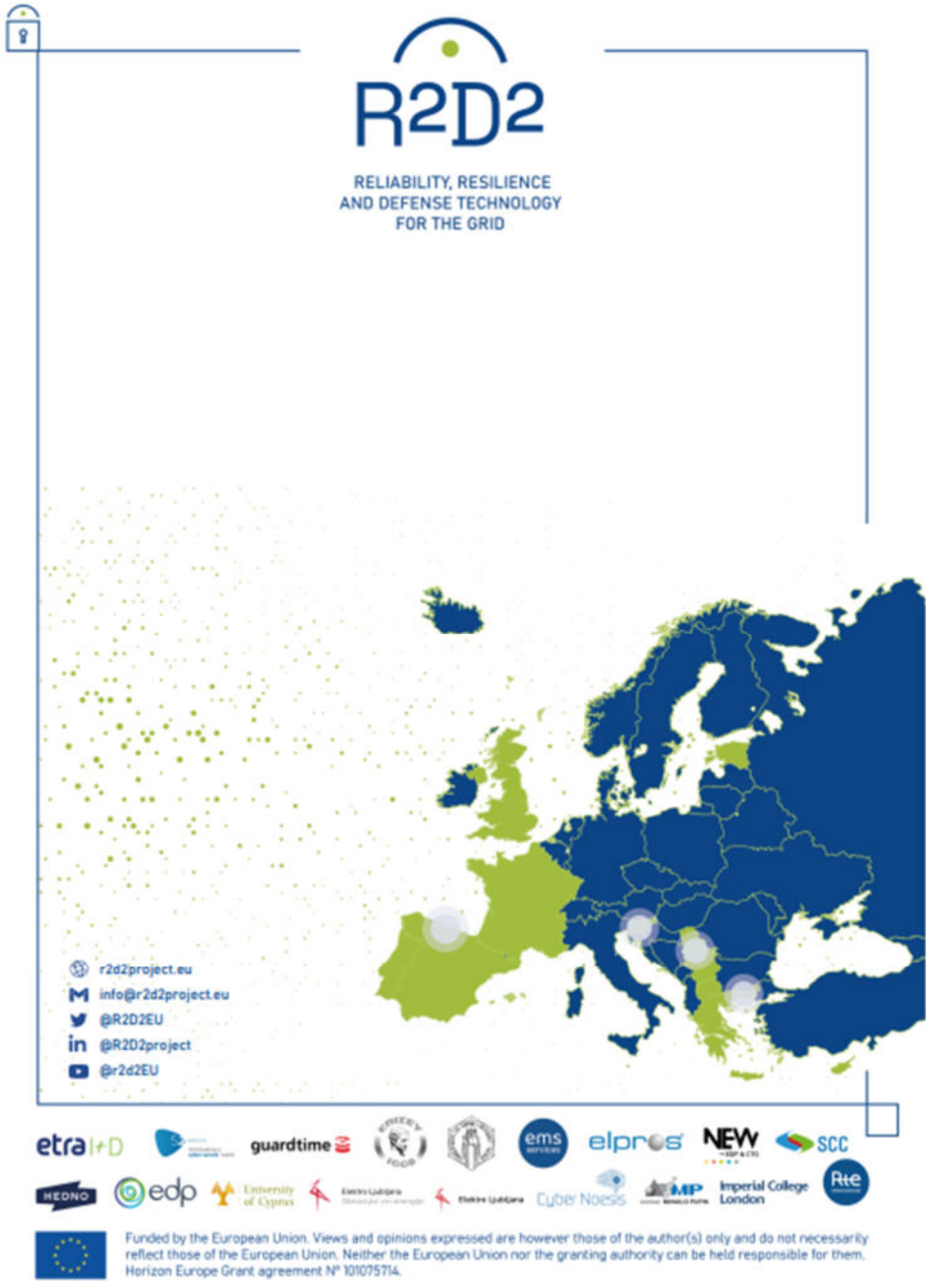

Figure 7 Poster for the R²D² project

OVERVIEW PRESENTATION

The R²D² overview presentation has a goal to show all key aspects of the R²D² project in one document that could be easily used by the consortium partners to present and disseminate R²D² ideas among their stakeholders, business partners and other interested companies.

Through the demonstration and integration of the innovative solutions provided by R²D², it will be possible to achieve a more secure, reliable, and resilient energy system in Europe, making a positive and tangible impact throughout the European EPES value chain. The expected results that are highlighted in the overview presentation are:

1).Assessing vulnerabilities and threats of the system collaboratively.

2).Design of resiliency-oriented principles with a set of common requirements to inherently secure EPES.

3).Defining measures to ensure a cyber-resilient system to guarantee the level of security and resilience vital for EPES.

4).Implementing both organisational procedures and operational strategies to test the resilience of the system with different types of attacks/severity.

5).Developing security information and event management systems for analysis and information sharing across operators.

6).Improving the reliability and security of physical assets through the combination of image processing and data analytics.

7).Demonstrating the effectiveness of the measures with a cost-benefit analysis.

8).Speed up the restoration and reparation of the grid affected by severe weather events, through the provision of support tools.

9).Formulate recommendations for standardisation and policy in (cyber)resiliency at component, system and process levels.

2.5 NEWSLETTER

R²D² keeps partners and interested associates engaged in the project with a newsletter where they can find relevant information regarding R²D². By M18, 2 newsletters have been published so far and shared across the R²D² community through different communication channels (web, social media, email, etc.). The newsletter can be recovered at the following links:

- Newsletter 1 (January 2024): (https://zenodo.org/records/10781267)
- Newsletter 2 (February 2024) (https://zenodo.org/records/10781278)

2.6 VIDEOS

R²D² has a YouTube channel that explains R²D² ideas and concepts using video format. The channel will help to communicate and disseminate the experiences and achievements of R²D². At the moment, the project's channel has 1 video already uploaded and more videos are expected to be edited and uploaded in the second half of the project. The R²D² YouTube channel is available at the following link: https://www.youtube.com/@r2d2EU

2.7 PRESS RELEASES

R²D² had been working on a total of two press releases. These documents will increase people´s awareness about the project. The following Figure 8 and Figure 9 are screenshots of the press releases issued.

Press Release

Valencia (Spain), 5 October 2022

Launched R2D2 project to improve the security and resilience of the EU grid

On 1st October 2022, the new project R2D2 on Reliability, Resilience and Defense technology for the grid, funded by the Horizon Europe Programme with €9.7 million and set for 3 years, was launched. As part of a consortium of 17 partners in 9 countries throughout Europe working on the project, ETRA I+D will coordinate the consortium.

R2D2 aims at improving the resilience and reliability of current Electrical Power and Energy Systems (EPES) against a growing number of threats and vulnerabilities that may affect such critical infrastructure, exposing weaknesses with harmful and damaging effects on different stakeholders and final customers.

This will be done through the deployment of four tools dedicated to the prevention, protection and restoration of EPES in two different independent but complementary scenarios in the energy value chain -- from regional coordination between TSOs, to privacy of LV customers. The project will build on top of strong energy coordination actions in South East Europe (SEE), following EU legislation and in alignment with the recent activities promoted by ENTSO-E about cyber security in transmission systems.

Through the demonstration and integration of the innovative solutions proposed by R2D2, it will be possible to achieve a more secure, reliable and resilient energy system in Europe, making a positive and tangible impact throughout the European EPES value chain. In this context, R2D2 will deliver a palette of complementary solutions synthesised into four Products: "Multi risk assessment framework for power system", "Resilience suite for TSO & DSO", "Prevention Systems For Energy Infrastructures Security" and "Enhanced Assets Maintenance And Management Toolkit".

R2D2 results will be tested and validated in 4 large scale complementary demonstrators in Greece, Serbia, Spain, and Slovenia involving representative and complete value chains, a wide variety of energy sources, networks, systems and assets, and spanning heterogeneous climatic, geographic and socioeconomic conditions which will facilitate replicability, scale up and eventual market launch.

Thanks to a smart, efficient end to end monitoring and control of power networks as the R2D2 tools do, EPES benefit from an overall system costs reduction coming from reduced system power losses (technical and nontechnical), lower number and duration of outages or lower investment in disaster recovery.

About ETRA I+D

ETRA Investigation y Desarrollo, S.A. (ETRA I+D) is the hi tech unit within ETRA Group, one of the leading industrial groups in Spain. ETRA's mission is putting technology to work for serving society in the fields of energy efficiency, mobility, security and communications. ETRA leads the 17 partners' consortium developing R2D2 project.

ETRA will contribute to improving the **resilience** and reliability of the power grid electricity grid, as well as reducing the number of failures and extending the useful life of the components. To do this, thanks to autonomous drones and artificial intelligence, it will develop new solutions that integrate automation and robotics in predictive maintenance and the optimal management of assets in electricity transmission and distribution networks.

Further information:

Ugo Stecchi (Project coordinator)

ustecchi.etraid@grupoetra.com

Twitter: https://twitter.com/R2D2EU

Figure 8 Press release by ETRA

Press Release
Athens (Greece), 5 October 2022

Launched R2D2 project to improve the security and resilience of the EU grid

On 1st October 2022, the new project R2D2 on Reliability, Resilience and Defense technology for the grid, funded by the Horizon Europe Programme with €9.7 million and set for 3 years, was launched. As part of a consortium of 17 partners in 9 countries throughout Europe working on the project, HEDNO S.A. will be the Greek demo site leader.

R2D2 aims at improving the resilience and reliability of current Electrical Power and Energy Systems (EPES) against a growing number of threats and vulnerabilities that may affect such critical infrastructure, exposing weaknesses with harmful and damaging effects on different stakeholders and final customers.

This will be done through the deployment of four tools dedicated to the prevention, protection and restoration of EPES in two different independent but complementary scenarios in the energy value-chain – from regional coordination between TSOs, to privacy of LV customers. The project will build on top of strong energy coordination actions in South-East Europe (SEE), following EU legislation and in alignment with the recent activities promoted by ENTSO-E about cyber-security in transmission systems.

Through the demonstration and integration of the innovative solutions proposed by R2D2, it will be possible to achieve a more secure, reliable and resilient energy system in Europe, making a positive and tangible impact throughout the European EPES value chain. In this context, R2D2 will deliver a palette of complementary solutions synthesised into four Products: "Multi-risk assessment framework for power system", "Resilience suite for TSO & DSO", "Prevention Systems For Energy Infrastructures Security" and "Enhanced Assets Maintenance And Management Toolkit".

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Thanks to a smart, efficient end-to-end monitoring and control of power networks as the R2D2 tools do, EPES benefit from an overall system costs reduction coming from reduced system power losses (technical and nontechnical), lower number and duration of outages or lower investment in disaster recovery.

About HEDNO

HEDNO S.A. (Hellenic Electricity Distribution Network Operator S.A.) is the DSO in Greece, responsible for the operation, maintenance and development of the interconnected power distribution network in Greece and the electricity systems of the non-interconnected islands, as well as the assurance of a transparent and impartial access of consumers and of all network users in general. HEDNO aims at providing reliable power supply to its Customers, quality of electricity voltage and constant improvement of quality in services. HEDNO's mission and vision is the response to Customers' expectations and the contribution to the development and welfare of fellow citizens with respect to people and to the environment.

In R2D2 Project, HEDNO is the Greek demo site leader and end-user of the 4 developed products. Through R2D2, HEDNO will address its needs for enhanced substations' physical security, new efficient and predictive approaches on asset management for the decrease of costs, interruptions or technical losses, while the reliability of the local distribution network will be enforced. Mainly, HEDNO will focus on exploiting the Project's Products for the mitigation of the impact of extreme weather events, as well as the improvement of cyber security measures.

Figure 9 Press release by HEDNO

3 SCIENTIFIC PUBLICATIONS

R²D² has several partners with members from different scientific backgrounds who published papers in scientific publications, journals, etc. These documents will increase people´s awareness about the project and help them to go deeper into the particular challenges faced by the project and provide insights into how to overcome them. During the first period of the project, 9 scientific publications were published; most of them are open access and they all are resumed in the following table:

Table 2 - Summary of total scientific publications

Papers from R²D² partners
Title: European Union policy and regulatory prospects on the way to sustainable and clean energy future Authors: Vesna Borozan, Aleksandra Krkoleva Mateska, Petar Krstevski, Stefan Borozan, Rubin Taleski Journal/Publisher: MAKO CIGRE Partner: UKIM DOI: **https://zenodo.org/doi/10.5281/zenodo.10462456** Open Access: YES Link: https://mako-cigre.mk/sovetuvanja/y/2023/pdf/C5.087.txt.pdf
Title: Power system resilience during 2001–2022: A bibliometric and correlation analysis Authors: Balaji V. Venkatasubramanian, Mathaios Panteli Journal/Publisher: Renewable and Sustainable Energy Reviews, Volume 188, December 2023/ ELSEVIER Partner: UCY DOI: **https://doi.org/10.1016/j.rser.2023.113862** Open Access: YES Link: https://www.sciencedirect.com/science/article/abs/pii/S1364032123007207
Title: Multi-agent reinforcement learning for electric vehicle decarbonized routing and scheduling Authors: Yi Wang, Dawei Qiu, Yinglong He, Quan Zhou, Goran Strbac Journal/Publisher: ENERGY/ ELSEVIER Partner: ICL DOI: https://doi.org/10.1016/j.energy.2023.129335 Open Access: YES Link: https://www.sciencedirect.com/science/article/pii/S0360544223027299
Title: A stochastic distributed control approach for load restoration of networked microgrids with mobile energy storage systems Authors: Y. Wang, A. Oulis Rousis, D. Qiu, G. Strbac Journal/Publisher: International Journal of Electrical Power and Energy Systems / ELSEVIER Partner: ICL DOI: https://doi.org/10.1016/j.ijepes.2023.108999 Open Access: YES Link: https://www.sciencedirect.com/science/article/pii/S014206152300056X
Title: Coordinating multi-energy microgrids for integrated energy system resilience: a multi-task learning approach Authors: Yi Wang, Dawei Qiu, Yinglong He, Quan Zhou, Goran Strbac Journal/Publisher: IEEE Transactions on Sustainable Energy Partner: ICL DOI: Open Access: NO Link: https://ieeexplore.ieee.org/document/10125014
Title: Resilience-Oriented coordination of networked microgrids: a shapley Q-Value learning approach Authors: Dawei Qiu, Yi Wang, Jianhong Wang, Ning Zhang, Goran Strbac Journal/Publisher: IEEE Transactions on Sustainable Energy

Partner: ICL
DOI:
Open Access: NO
Link: https://ieeexplore.ieee.org/document/10125014

Title: Hierarchical multi-agent reinforcement learning for repair crews dispatch control towards multi-energy microgrid resilience
Authors: Dawei Qiu, Yi Wang, Tingqi Zhang, Mingyang Sun, Goran Strbac
Journal/Publisher: Applied Energy
Partner: ICL
DOI: https://doi.org/10.1016/j.apenergy.2023.120826
Open Access: YES
Link: **https://www.sciencedirect.com/science/article/pii/S0306261923001903**

Title: Secure energy management of multi-energy microgrid: A physical-informed safe reinforcement learning approach
Authors: Yi Wang, Dawei Qiu, Mingyang Sun, Goran Strbac, Zhiwei Gao
Journal/Publisher: Applied Energy
Partner: ICL
DOI: https://doi.org/10.1016/j.apenergy.2023.120759
Open Access: YES
Link: https://www.sciencedirect.com/science/article/pii/S030626192300123X

Title: Towards microgrid resilience enhancement via mobile power sources and repair crews: A multi-agent reinforcement learning approach
Authors: Yi Wang, Dawei Qiu, Fei Teng, Goran Strbac
Journal/Publisher: IEEE Transactions on Sustainable Energy
Partner: ICL
DOI:
Open Access: No
Link: https://ieeexplore.ieee.org/document/1002988
https://drive.google.com/file/d/1IxsYdtpBUXCTawFCBbS_TuVqR2577Ihe/view?usp=sharing (preprint)

4 PUBLIC DELIVERABLES

Deliverables are developed by R²D² project team members in alignment with the overall project objectives of the project. They are the building blocks of R²D², and the public ones must be shared to properly disseminate developments and results. Therefore, the website serves as a dissemination tool for sharing those public deliverables with a broad network of relevant stakeholders.

The table below shows the public deliverables submitted pending be reviewed and approved after M18 in the review meeting. Besides, the Table shows the public deliverables to be published on the website.

In total, 10 public deliverables have been submitted to the European Commission. (https://r2d2project.eu/deliverables/)

Table 3 - R²D² public deliverables

Deliverable	Deliverable name	WP	Leader	Type*	Due date
D1.1	Project Management Plan	1	ETRA	R	3
D1.2	Data Management Plan	1	ETRA	DMP	6
D2.1	1st version of Requirements and Detailed Architecture Design	2	EMSS	R	10
D2.3	Final version of the R²D² Requirements and Detailed Architecture Design	2	EMSS	R	16
D3.1	Design of the Multi-risk assessment framework for power system	3	ICCS	R	12
D4.1	Design of the Resilience suite for TSO and DSO	4	RTE-i	R	12
D5.1	Design of the Prevention Systems for Energy Infrastructures Security	5	GUARDTIME OU	R	12
D6.1	Design of the Enhanced maintenance and asset management toolkit	6	ETRA	R	12
D8.1	Dissemination, Exploitation and Communication Plan	8	ETRA	R	6
D8.2	R²D² knowledge arena WP8	8	ETRA	DEC	18

* DMP — Data Management Plan / R — Document, report / DEM — Demonstrator, pilot, prototype / DEC —Websites, patent filings, videos, etc.

5 NEWS CLIPPING

R²D² promoted the project through a total of 7 press clippings, where the partners explained how R²D² will benefit citizens across Europe and the importance of security in the energy field. Below is the main information about the seven press clippings issued by the R²D² project:

Date: 29/11/2022
Source: Smart Grids Info
Location: Spain
Language: Spanish
Title: Fiabilidad, resiliencia y defensa de la red eléctrica europea, ejes del proyecto R²D²
Link:https://www.smartgridsinfo.es/2022/11/29/fiabilidad-resiliencia-defensa-red-electrica-europea-ejes-proyecto-r2d2

SMARTGRIDSINFO
Todo sobre Redes Eléctricas Inteligentes

INICIO SMART GRIDS GENERACIÓN TRANSPORTE / DISTRIBUCIÓN CONSUMO ALMACENAMIENTO +SERVICIOS GUÍA EMPRESAS

Inicio » Smart Grid » Fiabilidad, resiliencia y defensa de la red eléctrica europea, ejes del proyecto R2D2

BUSCADOR

PATROCINIO BRONCE

CIC Consulting Informático

LACROIX

Schneider Electric

Fiabilidad, resiliencia y defensa de la red eléctrica europea, ejes del proyecto R2D2

Publicado: 29/11/2022

El proyecto R2D2 (Reliability, Resilience and Defense technology for the grid), cofinanciado con fondos de la UE, se puso en marcha el pasado mes de octubre con el objetivo de mejorar la fiabilidad, la resiliencia y la defensa de la red eléctrica europea ante el creciente número de amenazas y vulnerabilidades.

El proyecto R2D2 validará sus resultados en demostradores complementarios a gran escala en España, Grecia, Serbia y Eslovenia.

Coordinado por la empresa ETRA y con un presupuesto total de 9.747.375 euros cofinanciado con 7.335.337,50 euros del programa Horizonte Europa, el proyecto R2D2 se desarrollará durante tres años.

El consorcio a cargo del proyecto está compuesto por 17 socios de 9 países europeos, entre los que se encuentra RTE International, que ha anunciado que R2D2 proporcionará una gama de soluciones complementarias sintetizadas en cuatro productos dedicados a la prevención, protección y restauración de los sistemas de energía.

Se trata de un marco de evaluación de riesgos múltiples para el sistema eléctrico, un paquete de resiliencia para TSO (Transmission System Operator) y DSO (Distribution System Operators), prevención de sistemas para la seguridad de las infraestructuras energéticas y herramientas mejoradas de mantenimiento y gestión de activos.

Pruebas y validación de resultados

Los resultados del proyecto se probarán y validarán en cuatro demostradores complementarios a gran escala en España, Grecia, Serbia y Eslovenia. Involucrarán cadenas de valor completas y representativas, lo que abarca una amplia variedad de fuentes de energía, redes, sistemas y activos, así como condiciones climatológicas, geográficas y socioeconómicas heterogéneas que facilitarán la replicabilidad y el eventual lanzamiento al mercado de las herramientas.

Con la monitorización y el control inteligente y eficiente de la red eléctrica de extremo a extremo a través de las herramientas de R2D2, se espera un impacto positivo y tangible en toda la cadena de valor europea. Los sistemas de energía eléctrica se beneficiarán de un ahorro de costes generales mediante la reducción de las pérdidas de energía (técnicas y no

Figure 10 – Press Clipping #1 on Smart Grids publication

Date: 22/11/2022
Source: Smart Energy
Location: International
Language: English
Title: R²D² project to improve the reliability, resilience, and defence of Europe's grid
Link:https://www.smart-energy.com/industry-sectors/energy-grid-management/r2d2-project-to-improve-the-reliability-resilience-and-defence-of-europes-grid/

R2D2 project to improve the reliability, resilience and defence of Europe's grid

By Jonathan Spencer Jones - Nov 22, 2022

Image: HEDNO

The R2D2 (Reliability, Resilience and Defence technology for the griD) project has been launched to address the growing number of threats and vulnerabilities that affect power systems.

The three-year project, which is funded by the Horizon Europe programme, aims to deploy four tools dedicated to the prevention, protection and restoration of electrical power and energy systems in two different independent but complementary scenarios in the energy value-chain – from regional coordination between TSOs to privacy of LV customers.

The project will build on top of strong energy coordination actions in southeast Europe, following EU legislation and in alignment with the recent activities promoted by ENTSO-E on cybersecurity in transmission systems.

The strategic goal of the R2D2 project is to improve the security, reliability and resilience of Europe's energy system in Europe, with four product outputs.

Have you read?
Analytics platform to involve UK energy stakeholders in grid resilience efforts
Webinar Recording: Using analytics to proactively manage the grid & work smarter

These are:
- Multi-risk assessment framework for power systems
- Resilience suite for TSOs and DSOs
- Prevention systems for energy infrastructure security
- Enhanced asset maintenance and management toolkit.

The project results will be tested and validated in four large-scale demonstrators in Greece, Serbia, Slovenia and Spain. These will cover a wide variety of energy sources, networks, systems and assets and span heterogeneous climatic, geographic and socioeconomic conditions in order to facilitate replicability, scale-up and eventual market launch.

The €9.7 million (US$9.9 million) project, which runs through September 2025, is coordinated by Valencia-based Etra Investigacion y Desarrollo SA and is being implemented by a consortium of 17 partners from nine countries.

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Other participants include Hellenic Electricity Distribution Network Operator from Greece, Elektro Ljubljana from Slovenia, EDP Spain and RTE International from France.

The project envisages making a positive and tangible impact throughout the European electrical power and energy systems value chain, with overall system costs reduction coming from reduced technical and non-technical power losses, a lower number and duration of outages and lower investment in disaster recovery.

Figure 11 – – Press Clipping #2 on Smart Energy publication

Date: 22/11/2022
Source: industrial news
Location: UK
Language: English
Title: R²D² project to improve the reliability, resilience and defence of Europe's grid
Link:https://industrialnews.co.uk/r2d2-project-to-improve-the-reliability-resilience-and-defence-of-europes-grid/

November 22, 2022 Editor

Image: HEDNO

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Figure 12 - - Press Clipping #3 on Industrial news publication

Date: 23/11/2022
Source: world-energy
Location: International
Language: English
Title: R²D² project to improve the reliability, resilience and defence of Europe's grid
Link: https://www.world-energy.org/article/27861.html

R2D2 Project to Improve the Reliability, Resilience and Defence of Europe's Grid

23 Nov 2022 by smart-energy.com

The R2D2 (Reliability, Resilience and Defence technology for the griD) project has been launched to address the growing number of threats and vulnerabilities that affect power systems.

Image: HEDNO

The three-year project, which is funded by the Horizon Europe programme, aims to deploy four tools dedicated to the prevention, protection and restoration of electrical power and energy systems in two different independent but complementary scenarios in the energy value-chain – from regional coordination between TSOs to privacy of LV customers.

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Figure 13 - Press Clipping #4 on World energy publication

Date: 25/10/2023
Source: IT Security Professional Magazine
Location: Greece
Language: Greek
Title: R²D² ...safeguards the grid
Link: https://www.itsecuritypro.gr/r2d2-safeguards-the-grid/

Figure 14 – – Press Clipping #5 on IT Security Professional Magazine publication

Date: 2023
Source: Smart Rue
Location: Greece
Language: English
Title: Annual report 2022
Link: https://www.smartrue.gr/en/annual-reports/

Figure 15 – Press Clipping #6 on ICCS annual report with R²D² mention

Date: 2023
Source: Annual report AEH 2022
Location: Greece
Language: English
Title: Annual report 2022
Link:https://www.dei.gr/media/1jmfzgxc/oikonomikos-apologismos-2022-eng-20230629.pdf

for further financing and implementation of the studies.

ENFLATE: The project aims to develop a collaborative platform of tools enabling the creation of consumer-driven business models for energy services, exploiting their flexibility potential, integrating them into other non-energy services (multi-sector services) such as those concerning health and transportations.

EV4EU: The aim of the project is to develop innovative technologies for the smoother integration of large number of Electric Vehicles (EVs), using smart and/or bi-directional charging, into the existing energy system infrastructure. The tools to be developed under the project will promote coordination between electric vehicles and renewable energy sources, reduction of greenhouse gas emissions and the decarbonization of the road transport.

ONENET: The aim of the project is to determine the design of a common electricity market for Europe. The project is targeted at issues such as the standardisation of products and services designed for system operators and coordination of all market actors from network operators to customers.

R2D2: R2D2 aims to improve the resilience and reliability of the current Energy Systems against an increasing number of threats that may affect critical infrastructure, with detrimental and damaging effects on different stakeholders and end customers. This will be achieved through the development of four tools dedicated to the prevention, protection and recovery of the Energy System in two different independent but complementary scenarios. The project will be based on the strong energy coordination activities in South-Eastern Europe, in line with the EU legislation and will also be harmonized with the recent activities boosted by ENTSO-E on cyber security in transmission systems.

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Figure 16 – - Press Clipping #7 on Annual report of HEDNO with R²D² mention

6 DISSEMINATION CHANNELS

6.1 WEBSITE

The website is aimed to reach all the audiences of the R²D² project, although a greater number of visits is expected from those groups that are more technical and related to the subject matter of the project. It includes a description of the project according to the public information of the DoA. The URL address is: https://r2d2project.eu/

The website has the following objectives:

1. To provide relevant and current information to a wide audience.
2. To ensure information is provided in an accessible and usable manner.
3. To be a common documentation base for all the partners, containing the main project documentation, news, publications, scientific publications, promotional materials, reports, public deliverables, media impact, etc.
4. To be an information database of all the activities carried out by the project and partners.

Table 4 shows the navigation scheme of the website.

Table 4- Navigation scheme of the R²D² website

Main menu	Submenu	Description
Home	NA	This section contains a brief general description of the project, products, pilots, partners, and the latest news and coming events. Also, information about BRIDGE initiative.
The Project	Products Pilots Partners	This menu introduces in detail the project by explaining the background, goal, products, sites, expected impact, results and consortium.
News and events	Events	This section will allow the publication of existing news directly related to R²D² objectives and technologies, as well as, other add-value news. Also, it will contain all the internal events and external to the project that will keep a tight relation with the project, including the project workshops.
Library	Dissemination materials Videos Newsletters Deliverables Workshops Scientific publications Publications Media presence	This section will make available all the public documents.
Contact us		Coordinator brief profile and contact details.

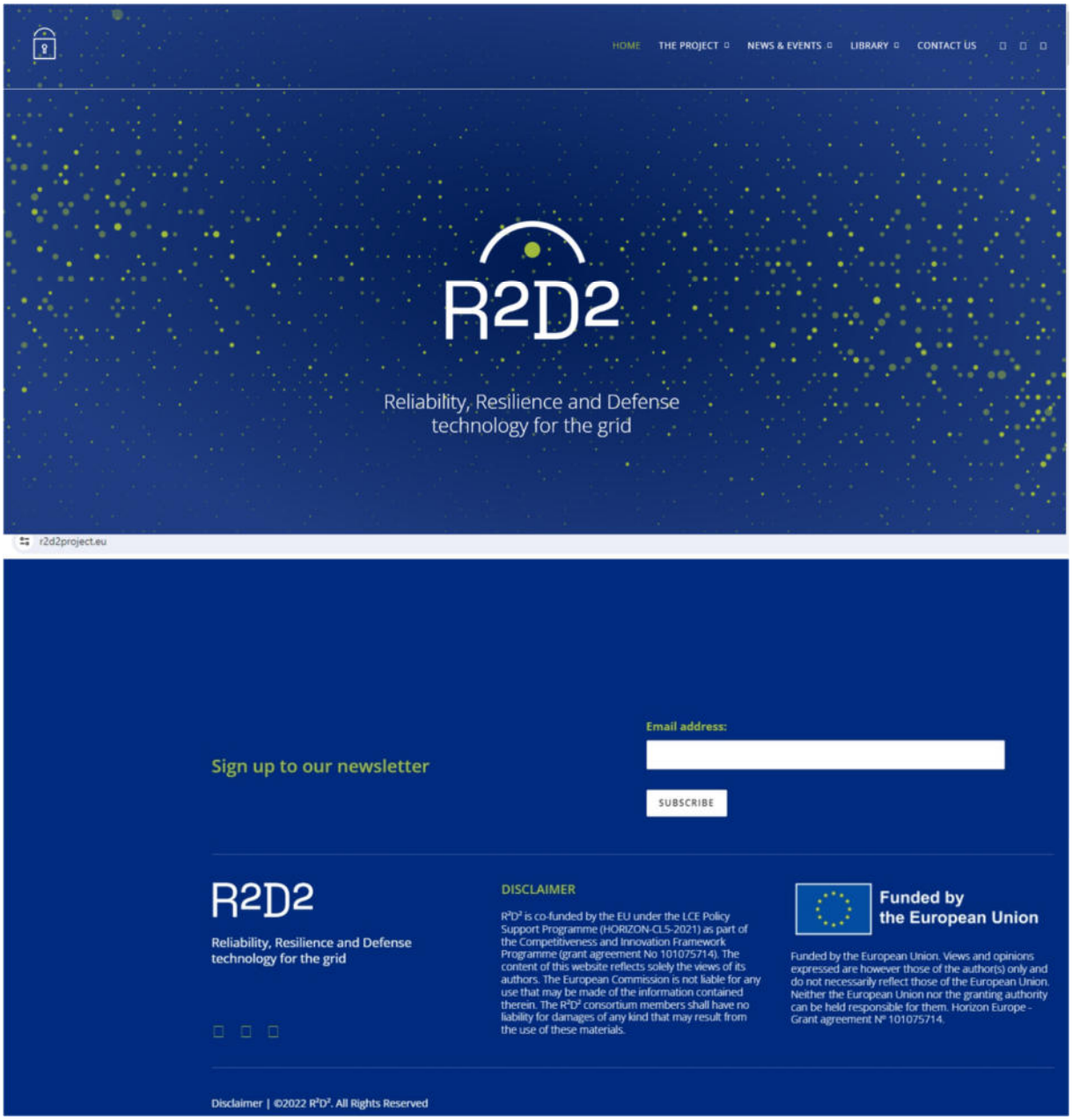

Figure 17 – Overview of the R²D² website

During the first period. the number of visits on the website has reached more than 4000 visits. The most visited web sections are “Products” and “The Project”. Besides, the downloadable documents have reached 55 downloads as detailed in Table 5.

Table 5 – N° of downloads per downloadable document

Downloadable Document	N° of downloads
Brochure	27
Roll-up	28

6.2 PARTNERS WEBSITES

Besides the official project website, several Partners contributed to communicating R²D² through their website, by dedicating a page or a section to the project.

- **ETRA**

GRUPOETRA is a global technology player, Centre of Excellence for Smart Cities thanks to its intense activity in R&D and innovation in Smart technologies. Its mission is to provide society with the most advanced solutions in mobility, lighting, energy, security and communications.

GRUPO ETRA: https://www.grupoetra.com/portfolio-item/8789/

- **University of Cyprus**

The KIOS Research and Innovation Center of Excellence (KIOS CoE) operates within the University of Cyprus. The Center was established in 2008 and was subsequently selected by the EU to advance into a Research and Innovation Center of Excellence in 2017. With collaboration with Imperial College London, KIOS has succeeded in securing funding in excess of 40 million euros for the period of 2017-2024.

UCY: https://www.kios.ucy.ac.cy/projects_kios/r%C2%B2d%C2%B2-reliability-resilience-and-defense-technology-for-the-eu-grid/

- **S2 Grupo**

S2 Grupo is the benchmark company in Europe and Latin America, Cyber Intelligence and mission critical systems operations. We have our own technology and offer threat detection and management services, advanced security audits, cybersecurity incident management including forensic analysis, advanced cyber intelligence, training and awareness for companies, design of strategies to ensure regulatory compliance in security matters and systems operation for companies and public administrations. IBEX-35 companies, ministries and organizations such as CCN-CERT trust us to protect their systems.

S2 GRUPO: https://s2grupo.es/proyectos/r2d2/

- **SCC**

Security Coordination Centre SCC Ltd. Belgrade is a modernly organized, efficient company, with applied advanced technologies and qualified professional staff, and as such represents the key actor in enabling Transmission System Operator's (TSOs) coordination in Southeast Europe to tackle the new challenges in operational planning processes. SCC is Regional Security Coordinator (RSC) - a regional company that is owned by their service users, the TSOs.

SCC: https://www.scc-rsci.com/projects/r2d2

- **ELEK**

Elektro Ljubljana performs several (i.e. statutory) network activities and provides a wide range of commercial services related to the electricity infrastructure in central and south-east Slovenia. Our qualified workers take care of the biggest distribution network in

Slovenia while Elektro Ljubljana owns the infrastructure that provides electric power to a large part of the country.

ELEK: https://www.elektro-ljubljana.si/projekti/ArtMID/1374/ArticleID/2020/R2D2

- **IMP**

The Institute Mihailo Pupin is a leading Serbian R&D institution in information and communication technologies, the largest and the oldest in the whole Southeastern Europe. At IMP projects of critical national importance have been conducted, combining systems engineering and information technology to develop innovative solutions in the areas of automation and control, telecommunications and computer networks, knowledge and content technologies and applications, e-government, e-business, e-learning, etc. IMP's ISO 9001, 14001, and 18001, Quality Assurance Certificates guarantee that customer's value and quality expectations are met. Leading world companies such as Raytheon, Texas Instruments, BASF, Motorola, NCR, and Philips have benefited from IMP's solutions and services. The IMP is also the most successful Serbian institute when it comes to internationally funded research.

PUPIN:https://www.pupin.rs/en/research-and-development-projects/european-rd-projects/r2d2/

- **RTE-i**

RTE international is a consultancy and engineering company whose activities cover all areas of electricity transmission. RTE international is at the service of its clients worldwide, helping them to develop reliable and competitive power systems which rise to the challenges of the energy transition.

As a subsidiary of RTE, Europe's largest transmission system operator, RTE international offers tailored solutions to participants in the electricity sector, relating to the development, operation, and maintenance of their networks.

Since its creation in 2006, RTE international's experts have carried out more than 300 projects in over 50 countries across all continents, building on the know-how and skills developed through RTE's 70 years of successful operation. RTE international employs more than 70 members of staff and more than 100 experts each year.

RTE INTERNATIONAL: https://www.rte-international.com/rte-international-is-mobilised-within-the-r2d2-project-to-secure-the-european-electricity-grid/?lang=en

6.3 SOCIAL NETWORKS

To reach a specific target audience while establishing two-way communication, the presence of the R²D² project in different social networks is one of the key actions for dissemination activities. The website has direct access to these social networks by clicking over the icons situated on the footer part of the website, as well as all news and events.

Table 6 presents an overview of the R²D² social networks.

Main aspects:

- The messages are targeted and use the right hashtags according to the subject.
- All the dissemination materials, website content, events, etc. are shared on X (Twitter) and LinkedIn thus their impact and visibility are maximized, as well as the project itself.
- Using graphics and images is essential to attract and engage visitors.
- Share news related to the project and share the added value ones.
- Tagging followers and influencers on clean energy in the tweets.
- A list of hashtags was created with R²D²-specific hashtags and generic ones.

Table 6- R²D² social networks

Social Network	Description	Link	Status
X (Twitter)	This is the main social network where all public information concerning the project is shared in an audio-visual and attractive way.	https://twitter.com/R2D2EU	The X (Twitter) account was created and has 76 Followers.
LinkedIn	A LinkedIn page is a channel for reaching stakeholders and industry professionals.	https://www.linkedin.com/company/r2d2-eu	The LinkedIn page account was launched and has 218 Followers.
YouTube	This channel aims at publishing all videos produced within the course of the project, such as videos of related pilot sites, events, conferences, or workshops, etc. Further videos will be put online by the partners as new results and demonstrators are being presented.	https://www.youtube.com/@r2d2EU	The YouTube channel was launched already and has 2 subscribers.
Zenodo	This research data repository will gather all publications of R²D² to share and preserve its research outputs.	https://zenodo.org/communities/r2d2project/records?q=&l=list&p=1&s=10&sort=newest	This repository gathers papers published by partners and newsletters.

HASHTAGS: A total of 11 # hashtags had been selected to promote the R²D² project on social media, reinforcing the attributes of the project and guaranteeing a strong presence in any event related to energy and security.

Table 7 - List of hashtags

List of hashtags
#HorizonEU
#R2D2project
#R2D2partners
#EnergySecurity
#energysystems
#energyvulnerabilities
#AIenergy
#EnergyInnovation
#SecurityTech
#Cybersecurity
#AI

7.1.1 X (Twitter)

To measure the success of R²D² X (Twitter) activity is essential to assess results. Then, X (Twitter) analytics can help support our messages or refine our approach, as well as help in the planning process, providing valuable insight into our account, our followers, and the X (Twitter) community as a whole.

Analytics reached until M18 show 2788 total impressions, 46 total tweets, 77 followers, 23 total re-tweets and 48 total likes.

Table 8 - – X (Twitter) figures by M18. Source: X(Twitter) Analytics

X (Twitter) Figures	Period M18
Total Tweets	46
Followers	76
Following	146
Impressions	2788
Engagement average rate	10.2% approx.
Total retweets	23
Total likes	48
Total link clicks	9

The X (Twitter) account for the R²D² project is: https://twitter.com/R2D2EU

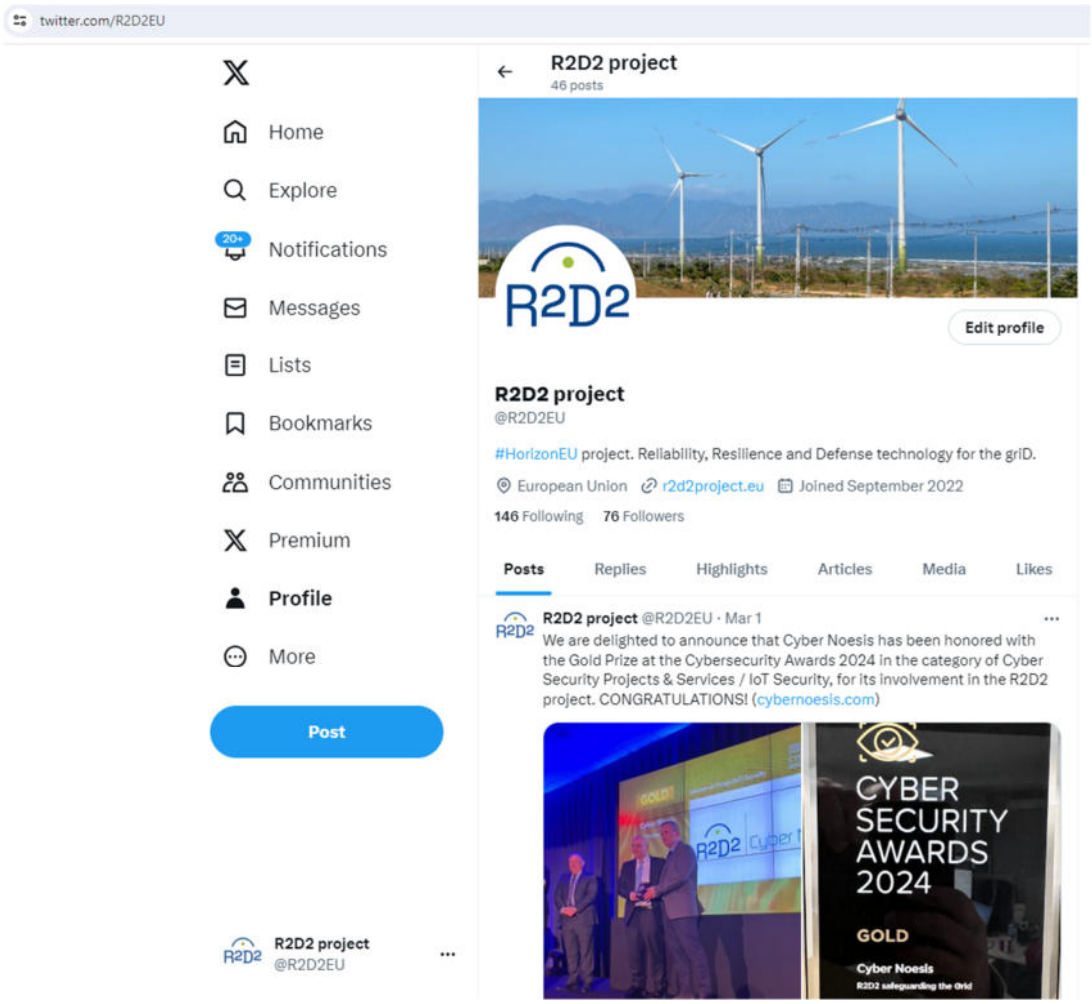

Figure 18 - Screenshot of R²D² X (Twitter) account

7.1.2 LinkedIn

Also, LinkedIn is the second social network where the project is disseminated and communicated. The goals of handling a user page on the LinkedIn network are to make meaningful connections, publish content and promote R²D².

Table 9 – LinkedIn figures by M18. Source: LinkedIn Analytics

LinkedIn Figures	Period M18
Followers	218
N° of posts	22
Impressions	1622
Total likes	1364

The LinkedIn account for the R²D² project is: R²D² LinkedIn

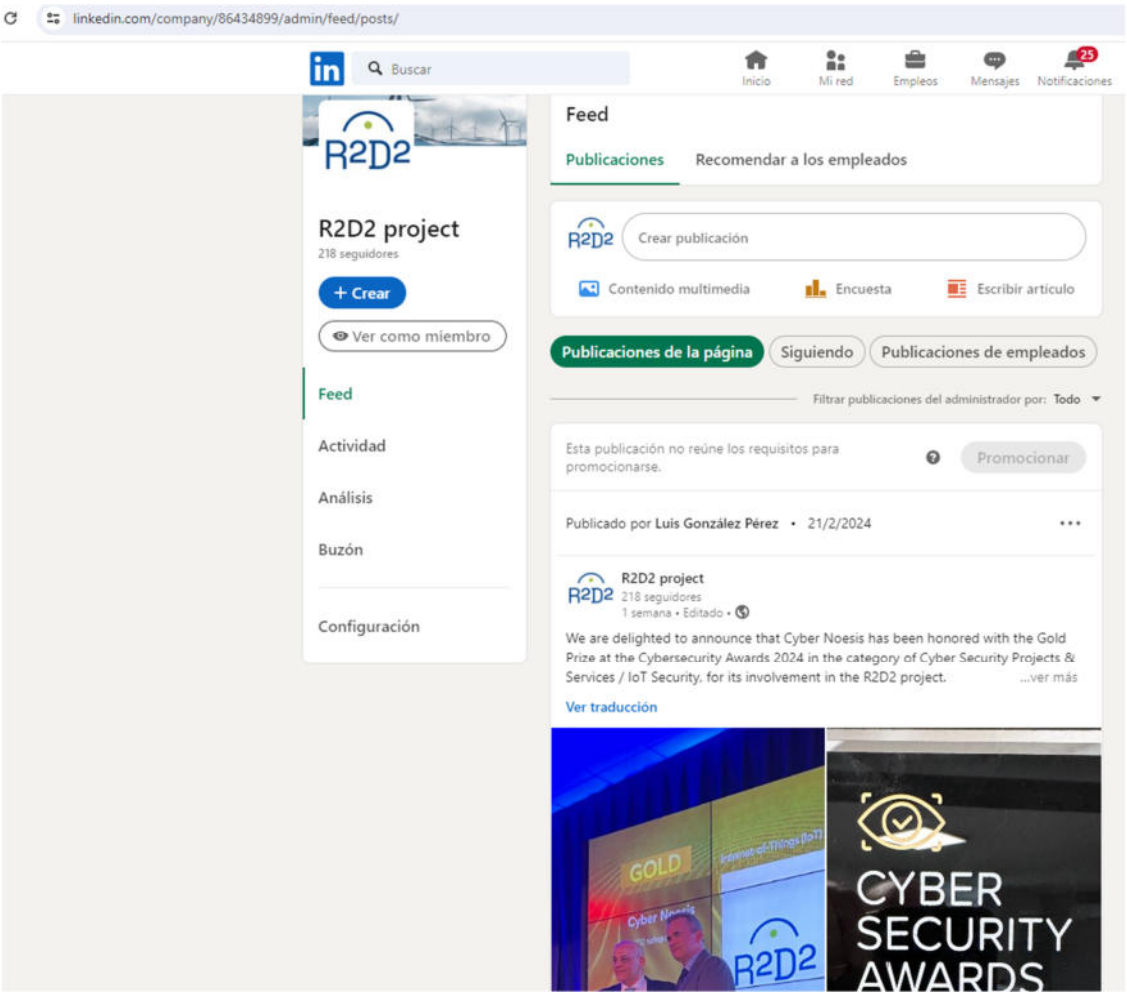

Figure 19 - Screenshot of R²D² LinkedIn account

7.1.3 YouTube

The YouTube R²D² channel was created to gather all audiovisual content. At the moment, 1 video is available on the channel and a few more are expected to be edited and uploaded in the second half of the project.

Table 10 – YouTube figures by M18. Source: YouTube Analytics (20/03/2024)

YouTube Figures	Period M18
Followers	2
N° of views	40

The YouTube account for the R²D² project https://www.youtube.com/@r2d2EU

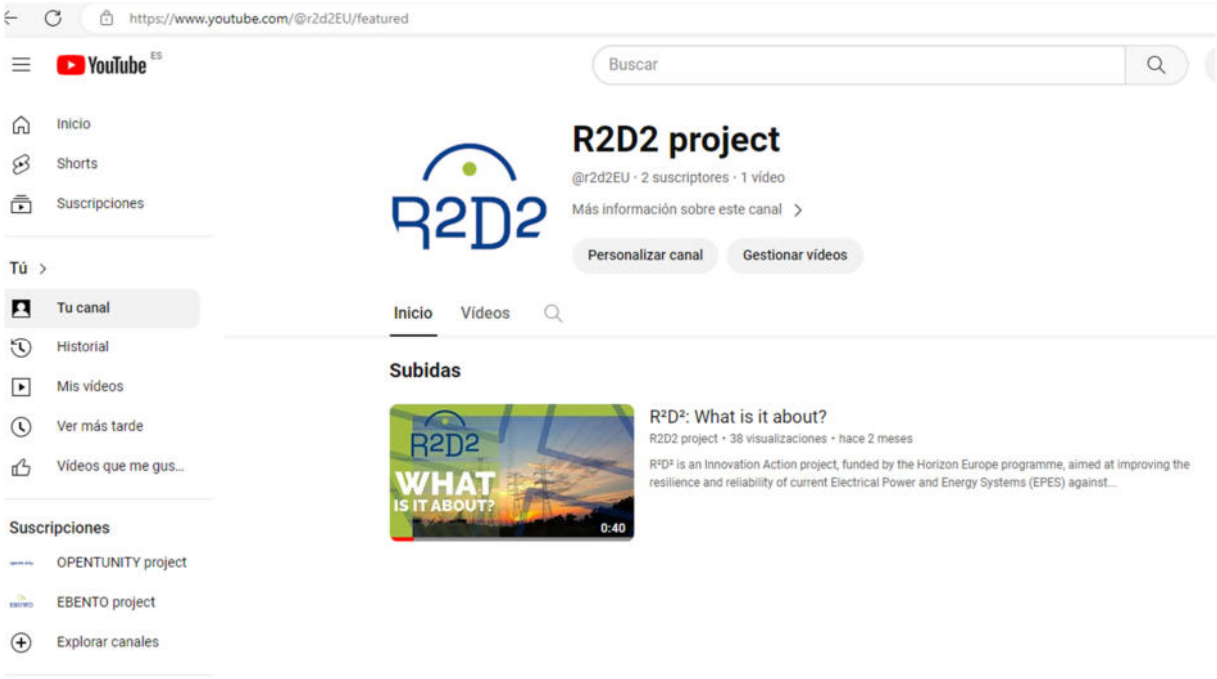

Figure 20 - Screenshot of R²D² YouTube account

7 EVENTS

This document provides a comprehensive overview of R²D² 's appearances and participation in various events throughout the course of the project. Since the inception of the project, R²D² partners have actively engaged in 12 events, with 1 organized independently by our partners, and additionally participated in 3 BRIDGE meetings.
Table 11 summarizes the total number of events in which R²D² has been involved, as well as the total events orchestrated by our R²D² partners.
The Annex II includes the event reports of all events summarized in the table below.

Table 11 – List of events

Name of the event	Date	Venue	Role
KO	04/10/2022	Valencia (Spain)	Organiser
SEC Smart Energy Congress	16-17/11/2022	Madrid (Spain)	Participant
I Jornada de Ciberseguridad Industrial de la Comunitat Valenciana	15/02/2023	Bilbao (Spain)	Participant
ETIP SNET Regional Workshop #16th	28/02/2023	Valencia (Spain)	Participant
InfoCom Security 2023	26-27/04/2023	Athens (Greece)	Participant
RoboMac 2023	09/05/2023	Skopje (North Macedonia)	Participant
IENE 14th Southeast European Energy Dialogue	25-26/05/2023	Thessaloniki (Greece)	Participant
EU Sustainable Energy Week 2023 - Energy Fair	20-22/06/2023	Brussels (Belgium)	Participant
Conference of the National Committee of North Macedonia in CIGRE – MAKO CIGRE	17-19/09/2023	Ohrid (North Macedonia)	Participant
Joint Research Center – ENTSOE "Simulation Tools for Regional Crisis Scenario Modelling"	19/10/2023	Online	Participant
ISACA ATHENS CONFERENCE 2023	25/10/2023	Athens (Greece)	Participant
BD4NRG Workshop- H2020 project	14/12/2023	Ljubljana (Slovenia)	Participant

8 COLLABORATION ACTIVITIES WITH RELATED PROJECTS AND RELEVANT ENTITIES

This section presents the exchange activities carried out to exchange knowledge, best practices, experiences etc. with other related projects under the BRIDGE initiative and beyond.

8.1 BRIDGE ACTIVITIES

BRIDGE is a European Commission initiative which unites Horizon 2020 and Horizon Europe energy-related projects [1] to create a structured view of cross-cutting issues which are encountered in the demonstration projects and may constitute an obstacle to innovation. The BRIDGE process fosters continuous knowledge sharing amongst projects thus allowing them to deliver conclusions and recommendations about the future exploitation of the project results, with a single voice, through four different Working Groups (WGs) representing the main areas of interest:

- Data management.
- Business Models
- Regulations.
- Customer and citizen engagement

Special effort will be made to coordinate activities with BRIDGE initiative of H2020/Horizon EU Smart Grids and Storage projects, where sharing knowledge generated and created synergies with other projects. Partners of the consortium will be assigned to actively participate in the different Working Groups.

R²D² was already confirmed as a member of this European initiative. Most of the partners involved in the consortium are already involved in BRIDGE under key roles. ETRA chaired Action 1 in the Data Management Working Group, while ETRA, ICCS, HEDNO, EDP, UKIM and SCC are deeply involved in the activities of the aforementioned WGs, which further demonstrates the commitment of the consortium to promote these activities. The objective will be to find and exploit synergies with other projects to maximize the impact of the project results. The participation of R²D² in BRIDGE is witnessed also in the brochure BRIDGE issued in July 2023 [2].


BRIDGE BROCHURE 2023

HORIZON-CL5-2021-D3-02-07: Reliability and resilience of the grid: Measures for vulnerabilities, failures, risks and privacy

Back to projects' list

R²D²

Reliability, Resilience and Defense technology for the griD

R²D² aims at improving the resilience and reliability of current Electrical Power and Energy Systems (EPES) against a growing number of threats and vulnerabilities.

From 1/10/2022 To 30/09/2025	Project total cost	EU contribution	Website
	9.7 M€	7.3 M€	https://r2d2project.eu/

Technologies and services deployed

Technologies for consumers

Grid technologies

Dynamic Risk assissent
Contingencies analysis
TSO-DSO interaction
Cyber-security prevention tool
Predictive maintenance

Large-scale storage technologies

Distributed storage technologies

Generation technologies

Predictive maintenance for PV

Project partners' countries

Coordinator: ETRA I+D (Spain)

Figure 21 – Screenshot of a portion of the BRIDGE brochure

R²D² will participate in the Business Models, Regulations and Data management working groups, offering to the initiative its findings regarding assessing vulnerabilities and threats of the energy system. The participation in the Customers and Citizens Engagement WG is not planned as it is out if the scope of the project. In Table 12 the participation of R²D² project representatives in the different BRIDGE WG is presented.

Table 12 – R²D² representatives in BRIDGE

Partner	Name	BRIDGE WG	Task/Activity
ETRA	Ugo Stecchi	Data Management WG	Action 1 – Use Case Repository
UKIM	Aleksandra Krkoleva Mateska	Regulation WG	Action 5 - Support the system operators to prepare the grid for 2030

EDP NEW	Joao Mateus	Business Models WG	Task 2 – Quantification of Business Model Benefits

9.1.1 Data Management WG

The Data Management Working Group (DMWG) deals with current issues and cutting-edge innovation to bring on the digital side of EPES. More specifically, it covers cybersecurity and data privacy, and data handling, including the framework for data exchange and related roles and responsibilities. The DMWG is organised into 5 Actions which run in parallel, each one of them focused on a specific aspect:

Action #1: BRIDGE Use-Case Repository

Action #2: Data Exchange Reference Architecture

Action #3: Reference Framework

Action #4: BRIDGE user group

Action #5: Interoperability of home appliances

R²D² participates in Action #1 and it is represented by Ugo Stecchi from ETRA I+D. This Action is mainly focused on creating a repository where all projects involved in BRIDGE can upload their best use cases, if relevant, to create a unique corpus which can be useful as a reference for all EU projects.

In the first part of its participation in Action#1, ETRA has participated as a volunteer in the beta version of this repository. A couple of use cases have been uploaded in the beta version of the repository to evaluate its status and give feedback to the developers. After some tests, at the end of May 2023, feedback on repository utilization has been shared with developers.

During the early summer of 2023, after the GA of DMWG, ETRA participated in a survey promoted by DMWG confirming its availability in the role of "volunteer" partner to be part of the evaluation team. In this case, the evaluation is not oriented to the performance of the repository, but to the review of the use cases to be uploaded by other BRIDGE participants before their publication. Since the repository migrated under the EIRIE platform [3], it was intended to open publicly after a final fine-tuning and implementation of some rules. Considering the change of BRIDGE consulting in the second half of 2023, the technical activities were blocked since that time.

In late October 2023, Ugo Stecchi (ETRA) took the leadership of Action #1, as the previous coordinator left. After this takeover in the coordination, monthly calls among the five Action leaders have been organised and attended. In particular, ETRA participated in the DMWG GA held on November 2023 and January 2024, presenting the status of Action 1 and a plan for the upcoming months.

Since the change of BRIDGE consultant changed in the second half of 2023, technical support of the Use Case repository remained uncovered. After several calls with the DMWG coordinator, the new consultant and the EC representatives, the Joint Research Centres (JRC) has been appointed for such a role in the second half of February 2024. Under the request of JRC a flowchart representing the process behind UC repository operation, has been prepared by ETRA and shared with JRC. At the time of editing this paragraph (March

2024) it is not possible to provide more updates as JRC stated they are too busy at the moment. The issue will be forwarded to EC representatives again.

9.1.2 Regulation WG

The Regulations Working Group (RWG) was established as one of the WGs under the BRIDGE initiative, to connect projects funded within the Horizon programme and initiate common topics for work, discussion, and knowledge sharing. The RWG addresses energy-related regulatory aspects and aims to initiate cooperation on regulatory issues and constraints observed while developing, demonstrating, and validating project research results.

The work of the RWG is organized on an annual basis and the group has addressed various topics in the past years. Namely, the RWG members discuss the possible topics and regulatory challenges that could be relevant. Thus, by bringing forward common topics, the RWG engages more projects in the process and allows them to coordinate their work under common actions. The findings of the actions are described within annual reports and in reports dedicated to certain topics. The reports published in recent years are available for the wider public.

R²D² has joined the RWG since the beginning of the project.

- R²D² project representatives have participated (online) in the 2023 BRIDGE General Assembly, organized from 28 to 30 March 2023. The RWG representative from R²D², Aleksandra Krkoleva Mateska, has followed the plenary sessions on the first day of the Assembly, including the presentation of 2022 actions by Working Groups, the Policy Update – Digitalisation of Energy Action Plan, the presentation on the EU competitiveness of clean energy technologies, as well as the sessions dedicated to the Smart Grid task force and ETIP Smart Networks for Energy Transition. During the second day, the project representative followed the session of the RWG and the presentation of results from 2022. During the session, the topics for future work were also discussed, where the R²D² project representative proposed that topics which are interdisciplinary but have a strong regulatory impact, such as cyber security and critical infrastructure, should be considered.
- In accordance with the proposal of the RWG, the R²D² project has participated in the survey dedicated to verifying the interests and possible contributions of the projects for different actions and project preparedness to participate in the knowledge-sharing sessions. R²D² project has opted to participate in A*ction 5 - Support the system operators to prepare the grid for 2030*, which is the action that has some common aspects with the project. Also, we have opted to participate in future knowledge-sharing sessions.
- On 11th of January 2024, RWG representative of R²D² project participated in a common workshop organized by ISGAN WG6 and BRIDGE RWG. The workshop topic was *Flexibility mechanisms for DSOs and their trade-off with investments* and it was organized as part of the activities for Action 5. The workshop had 47 participants from both ISGAN and BRIDGE RWG, who discussed the options for distribution system operators to use flexibility and the trade-offs with grid investments. The conclusions will be available in a future report.

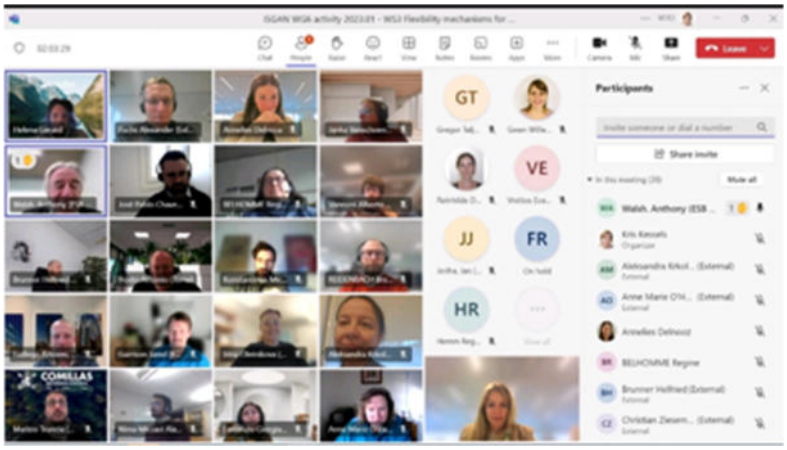

Figure 22 - Snapshot from the online workshop - Flexibility mechanisms for DSOs and their trade-off with investments, organized within Action 5

9.1.2 Business Models WG

The Working Group on Business Models (WG BM) focuses on establishing a unified language and framework for describing and evaluating business models. Its primary objectives include the identification and evaluation of both existing and innovative business models within project demonstrations or use cases. Additionally, the group strives to create standardized processes and effective mapping for comparing different approaches to business model development in the context of smart grids.

The Working Group's efforts are concentrated on two key areas:

- Tools for Evaluating Services and Solutions: the group is actively engaged in designing tools to assess the benefits and values of services and solutions emerging from project activities. This includes a thorough exploration of tools for capturing business ideas and constructing business models, as well as developing quantification methods for assessing the benefits under various use case scenarios.
- Integration of Data Value Chain and Monetisation: a significant focus is placed on crafting a business model that better integrates the data value chain and facilitates the monetization of data. The investigation delves into enhancing observability to generate additional social value. This includes a comprehensive exploration of the types and characteristics of data value chains within BRIDGE projects.

To efficiently address these goals, the Working Group has established three distinct task forces:

1. Capture of Business Ideas and Business Model Construction: this task force is dedicated to investigating tools for capturing business ideas and constructing business models.
2. Quantification of Business Model Benefits: focused on developing quantification methods for assessing the benefits of services and solutions within various use case scenarios.
3. Exploration of Data Value Chains: this task force is tasked with investigating the types and characteristics of data value chains in the business models of BRIDGE projects.

R²D² has been actively engaged in monitoring the WG BM activities since October 2023, participating in a total of four meetings (comprising plenary meetings and task meetings) and one webinar. Notably, during the months of November and December, the WG BM initiated a survey through the EU Survey[4] to solicit input from each project regarding their preferred positioning, particularly within specific tasks. In response to this initiative, R²D² has elected to align its involvement with *Task 2 – Quantification of Business Model Benefits*.

Additionally, R²D² has expressed its interest in participating virtually in the upcoming BRIDGE General Assembly scheduled for April 2024.

8.2 ETIP SNET

European Technology & Innovation Platforms (ETIPs) is another initiative from the European Commission in the framework of the new Integrated Roadmap Strategic Energy Technology Plan (SET Plan) aimed at "bringing together a multitude of stakeholders and experts from the energy sector"[5]. Many players from the energy research and industries are allowed to participate and bring their contributions to support Europe's energy transition. Imperial College London (ICL) and the Institute of Communication and Computer Systems (ICCS) of the National Technical University of Athens (NTUA) have participated respectively in the Working Group 1 and the CORE Team.

ETIP-SNET *Working Group 1 Reliable economic and efficient energy system* is dedicated to addressing business and technology trends that play a role in optimizing the entire energy system while ensuring affordability in both investment and operational costs. In particular, the R²D² project, through ICL participation, has been actively engaged in the discussion of the key question "How can flexibility support resilience?", considering the increased social need for a secure electricity supply. Flexibility concerns the power system's ability to adapt to changes, with flexibility options enhancing the resilience of the entire power system. This can be achieved through their integration into both grid planning and operation, facilitating the restoration process by leveraging distributed black start capabilities as well as the sector-coupling effect between TSOs and DSOs. Specifically, the working group focuses on the following two major topics:

- Demand-side flexibility for grid resilience: Demand-side flexibility refers to enabling end customers to become active in the market, while also enabling system operators to maximize its utilization for efficient system operation. Specifically, the concept of "smart load shedding" is introduced to demonstrate how load shedding can evolve and merge with demand side response (DSR). Directly curtailing loads is a very tough way of user-based load-shedding activities since some critical loads (e.g., hospitals, police stations, data centres, etc.) must be fully supplied. As a result, many custom-tailored DSR programs can be designed to enhance resilience. For example, EVs can be charged in advance and discharged to provide resilience when an extreme event occurs.
- Flexibility coordination for grid service operations: When considering TSO and DSO coordination in terms of grid service from a flexibility perspective, both provided and utilized services can be discussed as follows. 1. The TSOs could be providing services to collect and share metering data and may utilize services regarding frequency control and reserves, balancing, capacity reserves, and voltage control. 2. The DSOs could be providing services regarding metering data, load control, and voltage control

while utilizing services regarding voltage control, congestion management, and backup power. Furthermore, some new use cases where DSOs anticipate the utilization of flexibility will include controlled islanding, operation during extreme events, restoration control, and local grid balancing.

The R^2D^2 project has contributed to the investigation and discussion of both "Flexibility" and "Resilience" which have been quite well addressed so far. Power system resilience reflects the impact of severe events, while flexibility concerns the power system's ability to manage and enhance resilience. R^2D^2 project will continue working on this area and finding optimal solutions to answer the question "How can flexibility support resilience?"

On the other hand, ICCS/NTUA was the technical manager of the core team of ETIP SNET until August 2023. One of the tasks of the core team was to organize the ETIP SNET regional workshops. The work of R^2D^2 was presented in the 16th ETIP SNET Regional Workshop which took place in Bilbao on 28 February 2023. "The overall purpose of this event was to learn more about national and regional research, development and innovation (RDI) and how and if they are aligned to the RDI activities on the EU level and, specifically, to the ones identified in the ETIP SNET Implementation Plan 2022-2025 and that will be the base of the High-Level Use Cases in the updated ETIP SNET Roadmap.[6]" Prof. Nikos Hatziargyriou and prof. Aris Dimeas participated on behalf of ICCS and the agenda of the event is shown in Figure 23.

16th ETIP SNET Regional Workshop
28th of February 2023

9.00 – 17.30

Iberdrola Global Smart Grids Innovation Hub - Avenida San Adrian, 48 Larraskitu, 48003
Bilbao, Spain

Agenda

TIME	TOPIC	SPEAKERS
09.00	**Opening Remarks**	**IBERDROLA Representative**
09.10	**Keynote Speeches** • ***DG ENER*** • ***CINEA* – Director,** Paloma Aba-Garrote (recorded video message) • ***Basque Government*** – *TBC* / ***Ente Vasco de la Energía (EVE)*** - (TBC) • ***Spanish Ministry of Ecological Transition and Demographic Challenge*** - Miriam Bueno (online)	**European Commission** – TBC
09.40	**Introduction to ETIP SNET & BRIDGE**	**Maria Laura Trifiletti** ETIP SNET Coordinator
09.50	**Introduction to ETIP SNET Roadmap 2022-2031 and HLUCs**	**Nikos Hatziargyriou** ETIP SNET CORE Team
10.00	**Panel Session: National/regional representatives** • Key Ideas from Funding Programmes	**Ludwig Karg** - Moderator National/regional reps; **Lucy Corcoran (SEAI) - EI** **Paulo Partidário (DGEG) - PT** **ADEME – FR - TBC**
11.00	**COFFEE BREAK**	
11.30	**Projects Panel Session 1: Integrated Energy Networks** • Cross Sector Coupling • Transport & Storage • Energy Markets *(based on ETIP SNET IP* ***HLUC 1,3,8****)*	ETIP SNET CORE Team **GreenH2Atlantic (PT)** **REgions (JPP SES)** National/regional reps
12.15	**Projects Panel Session 2: Renewable Energy Systems** • Massive RES Penetration • System Operators' Collaboration • Power Electronics Challenges *(based on ETIP SNET IP* ***HLUC 2,4,6****)*	ETIP SNET CORE Team **FST (CIRCE)** **EPC4SES (Wellness Tech Group)** **RESET (CIRCE)** National/regional reps
13.00	**Projects Panel Session 3: Digitalisation & Citizen's Involvement** • Empowering Consumers & Smart Communities	ETIP SNET CORE Team **EDDIE (EU/Horizon)** **FLEXENER (IBERDROLA)**
	• System Control • Cybersecurity *(based on ETIP SNET IP* ***HLUC 5,7,9****)*	**GoiENER (Basque Country)** **BEYOND (NUST)** National/regional reps
13.45	**Wrap Up**	**Rainer Bacher**
14.00	**Closing Remarks**	
14.15	**CLOSING - INVITATION TO LUNCH**	
16.00	**VISIT to Iberdrola Global Smart Grids Innovation Hub**	

Figure 23 – Agenda of the 16th Regional Workshop

8.3 EUROPEAN CLUSTER FOR SECURING CRITICAL INFRASTRUCTURES (ECSCI)

R²D² project has joined the European Cluster for Securing Critical Infrastructures (ECSCI) [7]. The aim of the cluster is to create synergies between projects working on topics

related to critical infrastructures. At present, the cluster connects 39 EU funded projects and provides opportunities for dissemination of project results and cooperation with other projects. R²D² project participants have provided inputs for the ECSCI analysis of the state-of-the-art technologies in critical infrastructures protection and resilience via the adequate questionnaire developed by the ECSCI. Furthermore, R²D² project representatives have participated in several online workshops organized by ECSCI.

8.4 OTHER HORIZON EU PROJECTS

Besides the collaboration with the European initiatives and associations mentioned before, the R²D² project is establishing relationships with other similar Horizon 2020 and Horizon Europe projects with the aim of exchanging knowledge in the same research fields and foster collaborations across the energy scientific and industrial community. In this sense R²D² project has been in touch with:

- **TwinEU**. "Digital Twin for Europe" (short name: TwinEU) Horizon.EU project is aimed at enabling new technologies to foster an advanced concept of digital twin while determining the conditions for interoperability, data and model exchanges through standard interfaces and open APIs to external actors. The envisioned digital twin will build the kernel of European data exchange supported by interfaces to the energy data space under development [8]. The collaboration with this project is based on a contribution in the field of cybersecurity. In the TwinEU project there is a task aimed at understanding the state of the art from other EU projects in several digital aspects of the EPES, including cyber-security. R²D² confirmed its availability to contribute to this project and the contribution will be oriented on sharing information from cyber-threat intelligence and shared-knowledge activities by answering a questionnaire. At the time of preparation of this deliverable, the questionnaire has not been shared by TwinEU.
- **CyberSEAS**. "Advanced solutions to protect energy sector from cyberattacks" (short name: CyberSEAS) H2020 project improves the resilience of energy supply chains by protecting them from disruptions generated by complex attack scenarios. CyberSEAS delivers an open and extendable ecosystem of 30 customizable security solutions providing effective support for key activities, such as risk assessment; interaction with end devices; secure development and deployment; real-time security monitoring; skills improvement and awareness; and certification, governance, and cooperation [9]. There are still no tangible results from the collaboration between CyberSEAS and R²D², but the two projects have been in touch (through a common Partner) discussing the possibility of having a workshop on similar tools they developed. Another discussed possibility is to showcase R²D² products to CyberSEAS stakeholders, as they can complement some functionalities developed in their project. Discussions are still running.
- **eFORT**. "Establishment of a FramewORk for Transforming current EPES into a more resilient, reliable and secure system all over its value chain" (short name: effort) Horizon.EU project will work towards upgrading the energy grid without affecting the security of supply. Moreover, it will increase reliability and resiliency against extreme weather events, man-made hazards, and equipment

failures [10]. eFORT and R²D² have been in touch during the first period of the R²D² project with the aim of organizing a common workshop between the two projects, considering the fact they have been funded under the same call. Since the two projects have different scheduling (36 months R²D² vs 48 months eFORT) it has been discussed the possibility of having a common event in the second period of the R²D² project where eFORT should be also ready to present some preliminary results. One of the discussed possibilities is that R²D² can present one of its use cases to receive feedback from its "sister" project and enhance the validation originally planned.

9 DISSEMINATION AND COMMUNICATION KEY PERFORMANCE INDICATORS

Key Performance Indicators (KPIs), also known as Key Success Indicators (KSIs) are helping the R²D² project to define and measure progress towards fixed goals for dissemination and communication activities. In this sense, KPI's are the measurements to determine the dissemination plan's success and achievement of the main objective.

A preliminary list of KPIs has been established in D8.1, and this deliverable shows the results achieved after Period 1. Column "M18" of Table 13 presents the status of each KPI at the end of M18, while column "Target (M36)" from the same table presents targets for the end of the project.

Table 13 - List of KPIs for R²D² to be reached by M18

Dissemination action	KPIs	Target (M36)	Analysis methodology	M18
Website	Design and Development of the project's web portal	Fully developed web portal	Registration of dissemination activities	Fully developed web portal
	Regular updates of the website content	Continuous update (once per month)	Registration of dissemination activities	Every 2 months
	Total page views	≥8,000	Website analytics	≥4,000
	Visitor's countries	minimum 8 countries	Website analytics	Visitors from 8 different countries
	N° of post	≥50	Registration of dissemination activities	4
Social networks	N° of followers on X (Twitter)	≥500	X (Twitter) Analytics	76
	Tweets	900	X (Twitter) Analytics	46
	N° of followers on LinkedIn	≥500	LinkedIn Analytics	218
	LinkedIn posts	100	LinkedIn Analytics	22
	Content shared the Zenodo	≥20	Research Gate Analytics	≥8
	YouTube subscribers	100	YouTube Analytics	2
	YouTube views	800	YouTube Analytics	38
Scientific publications	N° of scientific papers	6	N° of paper approved	9
Promotional materials	N° of brochures designed	1	Registry of dissemination activities	1

Dissemination action	KPIs	Target (M36)	Analysis methodology	M18
	N° of roll-up designed	1	Registry of dissemination activities	1
	N° of poster designed	1	Registry of dissemination activities	1
	N° of videos produced	8	Registry of dissemination activities	1
	Downloads of promotional materials at the webpage	≥200	Registry of downloads form on the website	55
Newsletter	N° of newsletter forwarded	6	Registry of dissemination activities	2
	N° of subscribers	≥150	Internal subscriber registry	≥43
Deliverables	N° of public deliverables published	16	Website analytics	N/A
	N° of public deliverables downloaded	150	Registry of downloads form on the website	N/A
Press releases	N° of press releases	4	Registry of dissemination activities	2
	Media presence	≥30	Registry of dissemination activities	7
	Countries reached	≥6	Registry of dissemination activities	8
Events	Nª of events attended	≥10	Registry of dissemination activities	12
	N° of Trade fairs	≥3	Registry of dissemination activities	1
	Visitors/attendants reached	≥700	Registry of dissemination activities	≥200
Workshops	N° of all the workshops	4	Registry of dissemination activities	5
	N° of joint workshops with other related projects and/or initiatives	1	Registry of dissemination activities	4

Dissemination action	KPIs	Target (M36)	Analysis methodology	M18
	Total participants	≥ 100	Registry of dissemination activities	≥ 100
Webinars	N° of all webinars	4		0
	Total participants/views	≥100	Registry of dissemination activities	0
BRIDGE activities	N° of events/meetings attended	≥10	Registry of dissemination activities	3
	Reports contributions	≥2	Registry of dissemination activities	0
Handbook lessons learned	N° of downloads	≥100	Registry of dissemination activities	N/A

10 CONCLUSIONS AND NEXT STEPS

Based on the information provided in previous chapters, the following main conclusions could be extracted:

- Messages were being conveyed properly through the different target audiences and channels.
- R²D² partners have designed different promotional materials such as brochures, roll-up banners, presentations, and an introduction video in English and Spanish.
- Metrics from the website and social media platforms show an increase in the number of visits and a high number of impressions earned regarding dissemination materials:
    - The website reached more than 4000 visits.
    - A total of 5 posts have been published on the website.
    - R²D²'s social networks have more than 294 followers.
    - X (Twitter) has reached 2788 impressions during the first period. The efforts to disseminate news, results, developments, etc. are having a high impact and generating engagement on X (Twitter).
- R²D² has been presented in 12 events from the start date, 9 of them as networking actions.
- R²D² has published 9 open-access scientific publications already available in the project repository and 3 more in the process of being openly published.
- In total there are 10 public deliverables have been submitted to the European Commission. Since the interim review period is not finished yet, none of them have been published yet.
- Partners have participated in 3 BRIDGE meetings.
- After solving constraints from the COVID-19 crisis online exchange activities gained more emphasis, and partners also used to virtually engage. It has been detected this new online strategy can be more effective for partners in some cases.
- The R²D² project has appeared in 4 online news.
- R²D² video uploaded on YouTube has generated 38 views.

Following all explanations and conclusions, lessons learned are presented in the following next steps:

- Partner will participate more actively within other related bodies and Horizon EU projects to promote and disseminate the project.
- Partners will increase the number of new scientific publications and presence in scientific events in order to reach more experts and find out their opinions on R²D² solutions.
- More audio-visual materials will be produced due to an increase in the digitization of communication actions to be more visible to the public.
    - Partners will boost media relations to increase the media presence in their countries.

11 REFERENCES AND ACRONYMS

11.1 REFERENCES

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[3] https://ses.jrc.ec.europa.eu/eirie/en/

[4] https://ec.europa.eu/eusurvey/runner/BRIDGE_BMwg_PROJECTS

[5] https://smart-networks-energy-transition.ec.europa.eu/about/etip-snet

[6] https://smart-networks-energy-transition.ec.europa.eu/news-and-articles/news/register-16th-etip-snet-regional-workshop

[7] ECSCI Cluster, https://www.finsec-project.eu/ecsci

[8] https://cordis.europa.eu/project/id/101136119

[9] https://cordis.europa.eu/project/id/101020560

[10]https://cordis.europa.eu/project/id/101075665

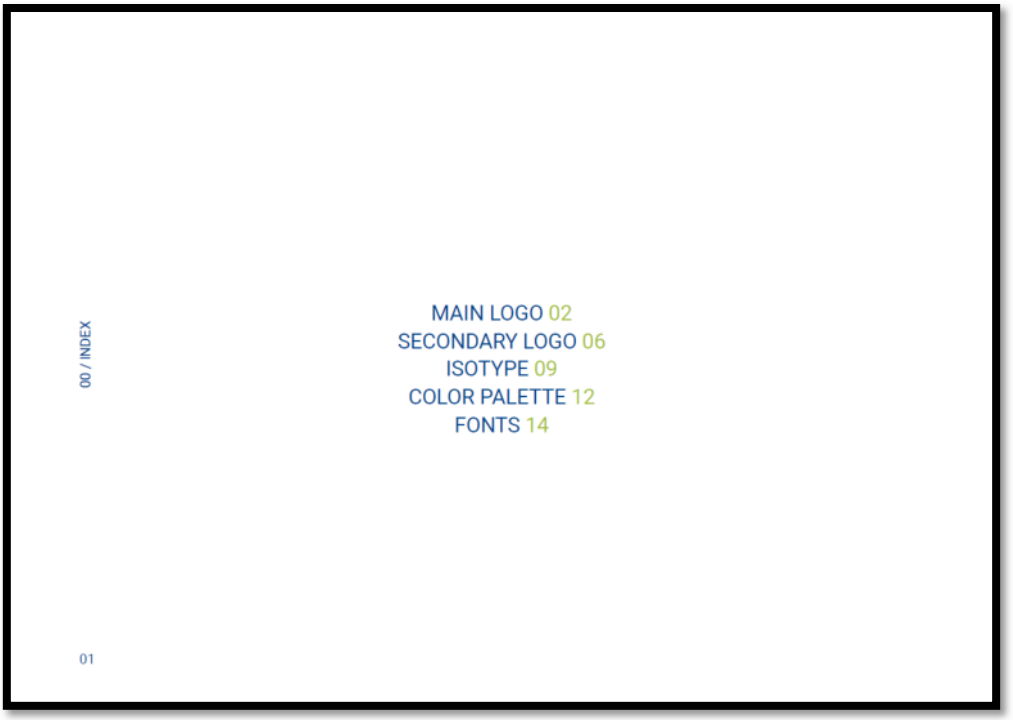
11.2 ACRONYMS

Table 14 – List of acronyms

AI	Artificial Intelligence
BMWG	Business Model Working Group
C3PO	Multi-risk assessment framework for power system
CINEA	European Climate, Infrastructure and Environment Executive Agency
CYBER	CYBER NOESIS PROIGMENES TECHNOLOGIKES LYSEIS IDIOTIKI KEFALAIOUCHIKI ETAIREIA
D&E	Dissemination and Exploitation
DA	Description of Action
DCOM	Dissemination and Communication Manager
DECP	Dissemination, Exploitation and Communication Plan
DMWG	Data Management Working Group
DSOs	Distribution System Operators

EDP NEW	CNET CENTRE FOR NEW ENERGY TECHNOLOGIES SA
EL OVE	ELEKTRO LJUBLJANA OVE, INZENIRING SPODROCJA OBNOVLJIVIH VIROV ENERGIJE, D.O.O.
ELEK	ELEKTRO LJUBLJANA PODJETJE ZADISTRIBUCIJO ELEKTRICNE ENERGIJE D.D.
ELPROS	ELPROS ELEKTRONSKI IN PROGRAMSKI SISTEMI DOO (),
EMMA	Enhanced Assets Maintenance and Management Toolkit
EMSS	EMS SERVICES DOO BEOGRAD-VOZDOVAC (
EPES	Electrical Power and Energy Systems
ETRA	ETRA INVESTIGACION Y DESARROLLO SA
GUARDTIME OU	GUARDTIME OU
HEDNO	DIACHEIRISTIS ELLINIKOU DIKTYOU DIANOMIS ELEKTRIKIS ENERGEIAS AE
HRB	Horizon Results Booster
ICCS	INSTITUTE OF COMMUNICATION AND COMPUTER SYSTEMS (),
ICL	IMPERIAL COLLEGE OF SCIENCE TECHNOLOGY AND MEDICINE
IMP	INSTITUT MIHAJLO PUPIN
IP	Intellectual Property
IPR	Intellectual Property Rights
IRIS	Resilience suite for TSO & DSO
KER	Key Exploitable Result
KPIs	Key Performance Indicators
MoU	Memorandum of Understanding
PC	Project Coordinator
PRECOG	Prevention Systems for Energy Infrastructures Security
R&I	Research and Innovation
RCC	Regional Security Centre
RES	Renewable Energy Sources
RTE-i	RTE INTERNATIONAL
RWG	Regulation Working Group
S2	GRUPO DE INNOVACION EN PROCESOS ORGANIZATIVOS SL
SCC	CENTAR ZA KOORDINACIJU SIGURNOSTI SCC DOO BEOGRAD-VOZDOVAC
SEE	South-East Europe
SG	Stakeholder Group
TSOs	Transmission System Operators
UCY	UNIVERSITY OF CYPRUS
UKIM	Ss. CYRIL AND METHODIUS UNIVERSITY IN SKOPJE
WGs	Working Groups

ANNEX I – Brand Book




Negative version
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R2D2
02


Positive version
01 / MAIN LOGO
R2D2
03


Proportions and reducibility
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x/2
Minimum size: 20 mm
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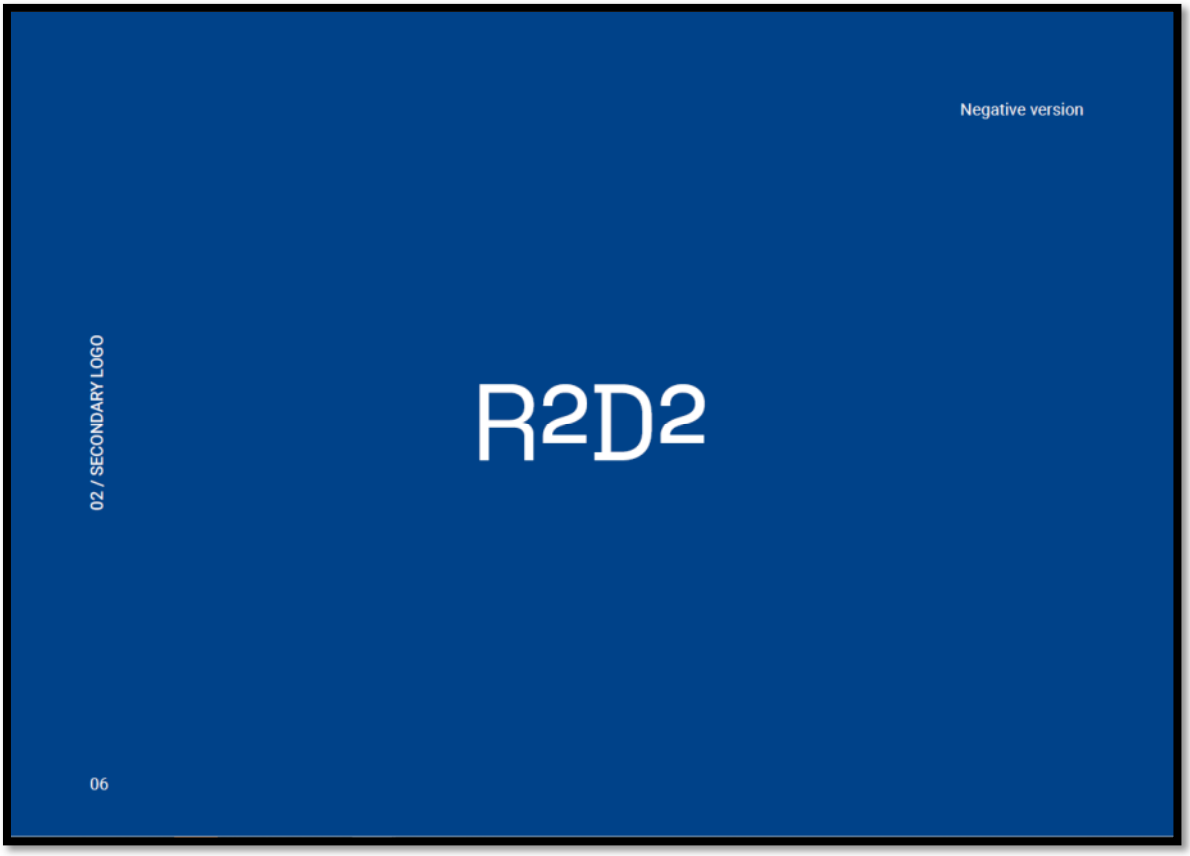
Usos incorrectos
01 / MAIN LOGO
*Do not use non-corporate colors or chromatic versions that do not correspond to those specified in this brand book.
*Do not deform.
*Do not distort or alter the proportions of the logo.
*Do not use the written word as a logo (even with the corporate typography).
05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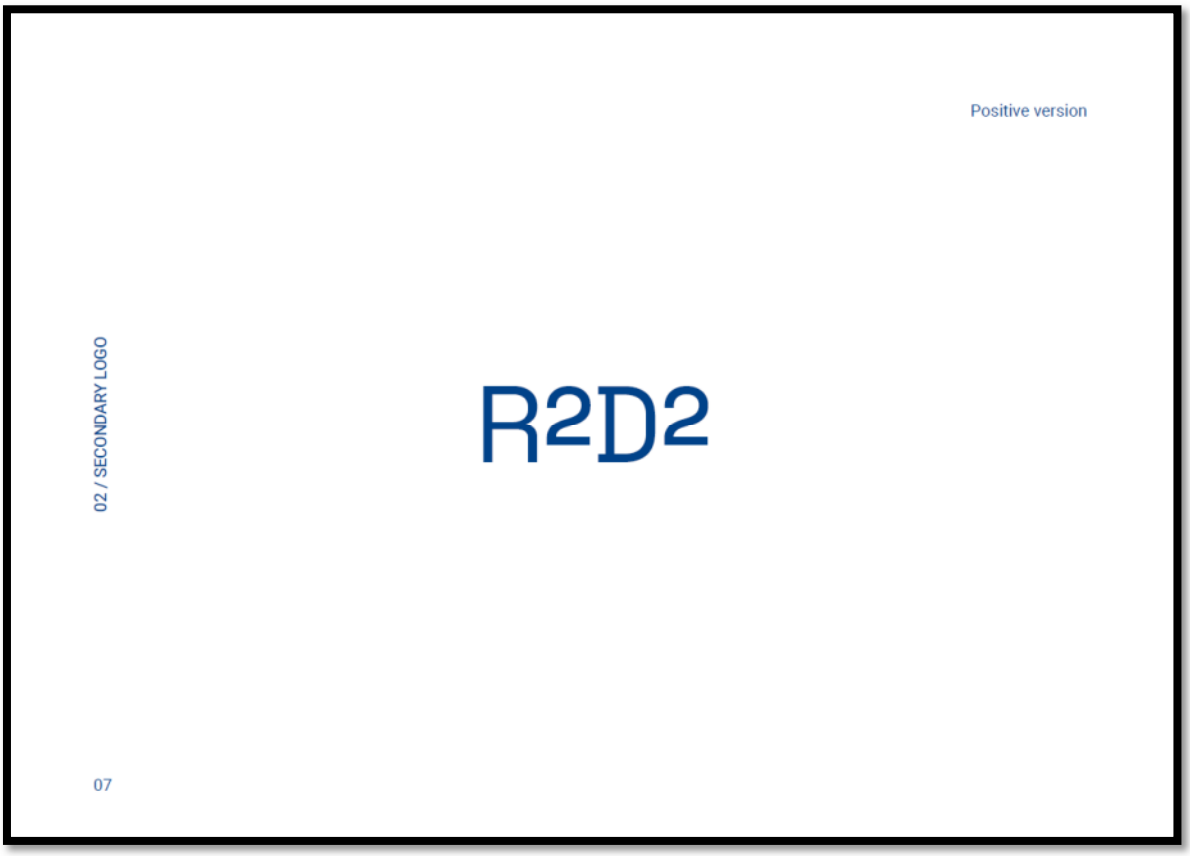
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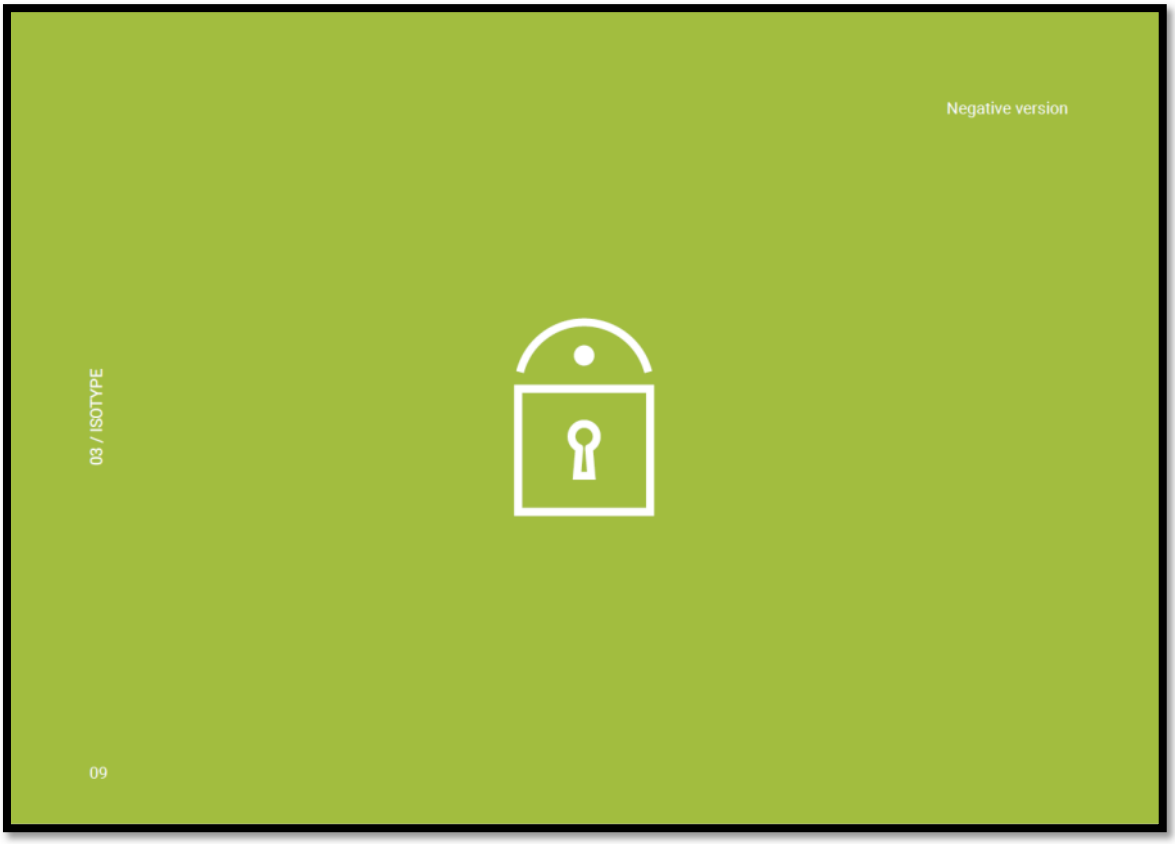
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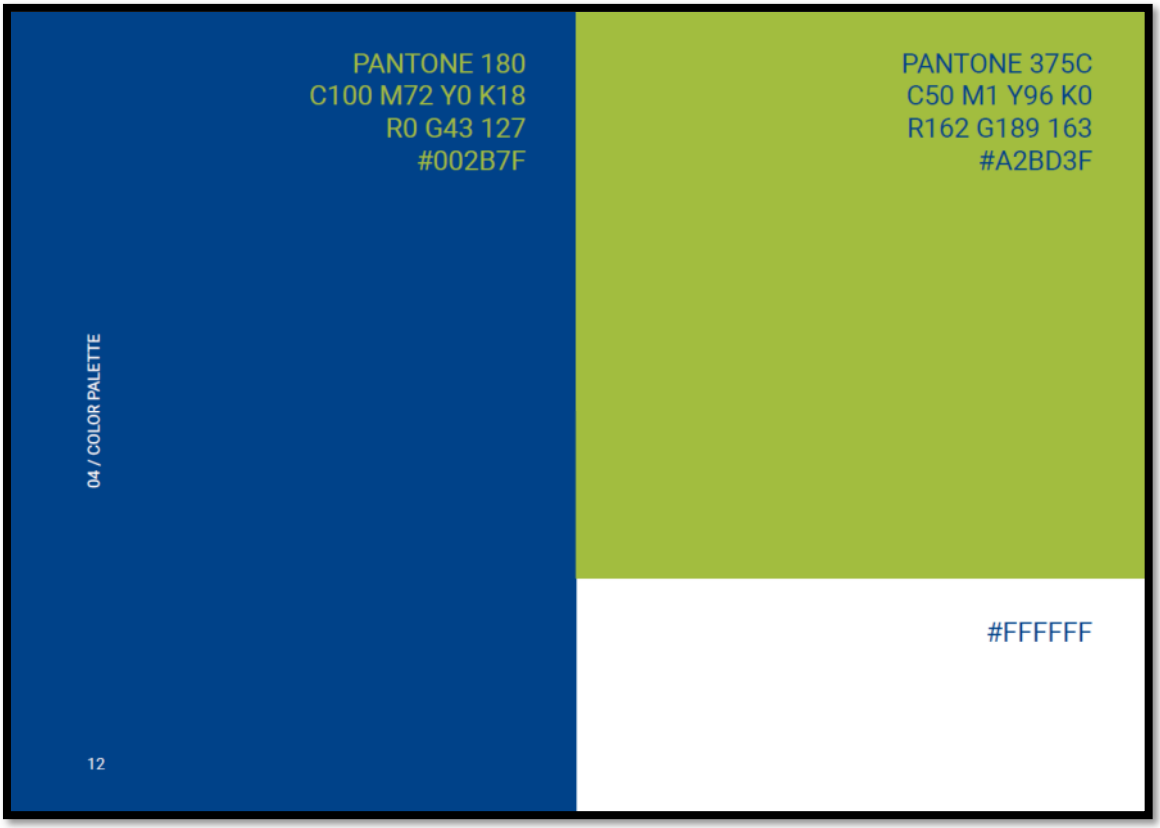
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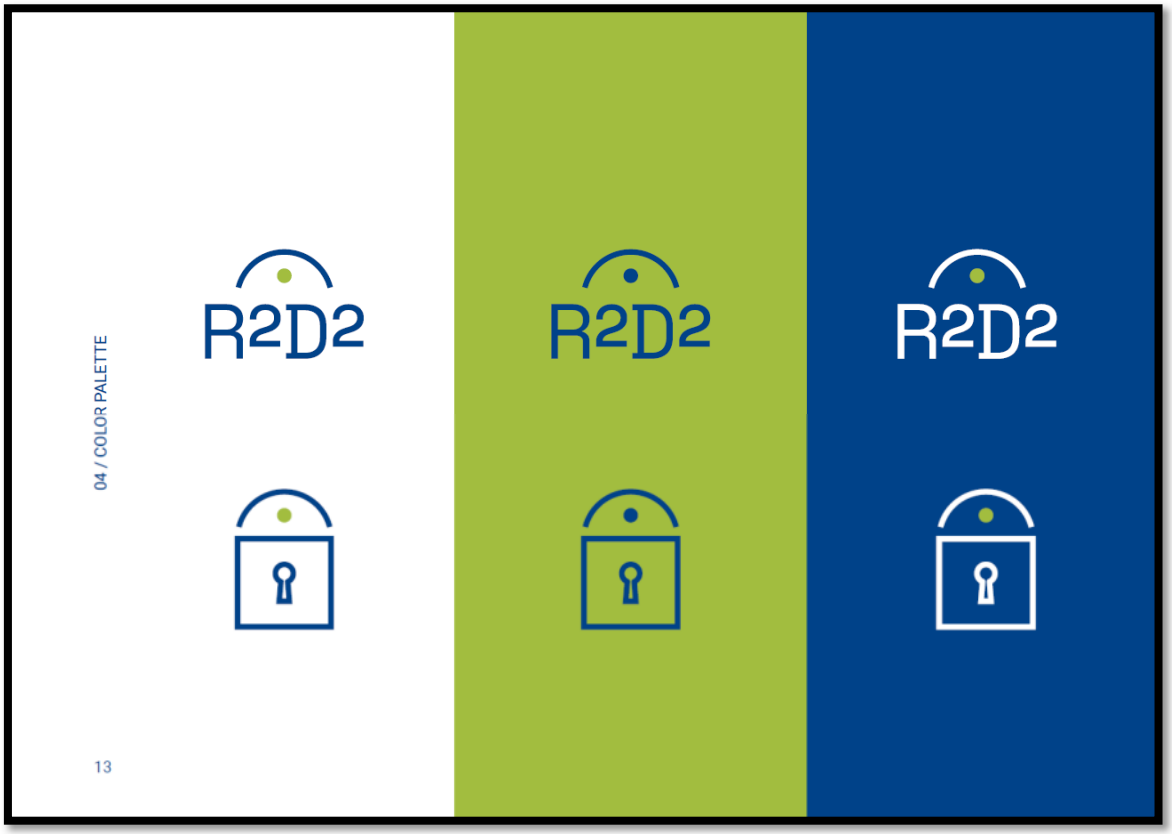
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12 ANNEX II – List of events

Find here the event reports to be included from M1-M18:

1. **NAME OF THE EVENT: ENLIT: ETIP SNET Regional Workshop #16th**

a) Place (City and Country): Bilbao, Spain

b) Dates: 28th February 2023

c) Type of event chose one (multiple choices are able):

☐ Organisation of a Conference

☐ Organisation of a Workshop

☐ Exhibition

☐ Training

☐ Participation to a Conference

☒ Participation to a Workshop

☐ Participation to an Event other than a Conference or a Workshop

☐ Brokerage Event

☐ Trade Fair

☐ Participation in activities organised jointly with other EU project(s)

☐ Other

d) Objective of the event: The overall purpose of this event is to learn more about national and regional research, development and innovation (RDI) and how and if they are aligned to the RDI activities on the EU level and, specifically, to the ones identified in the ETIP SNET Implementation Plan 2022-2025 and that will be the base of the High Levell Use Cases in the updated ETIP SNET Roadmap, expected by mid-February 2023.

e) Organisers: ETIP SNET

f) Language: English

g) Webpage of the event: https://smart-networks-energy-transition.ec.europa.eu/news-and-articles/news/register-16th-etip-snet-regional-workshop

h) Number of participants: Around 100 people

i) Type of Audience (multiple choices are able):

☒ Scientific Community (Higher Education, Research)

☒ Industry

☐ Civil Society

☐ General Public

☐ Policy Makers

☐ Media

☐ Investors

☐ Customers

☐ Other

j) Partner who participates: EDP Spain

k) Type of participation from R²D² side (Presentation, exhibition area, training, etc.): Presentation

l) Main conclusions (after the event): Successful presentation. Dissemination of the project achieved.

m) Photos:

2. NAME OF THE EVENT: I Jornada de Ciberseguridad Industrial de la Comunitat Valenciana

a) Place (City and Country): Valencia, SPAIN
b) Dates: 15/02/2023
c) Type of event chose one (multiple choices are able):

☐ Organisation of a Conference

☐ Organisation of a Workshop

☐ Exhibition

☐ Training

☒ Participation to a Conference

☐ Participation to a Workshop

☐ Participation to an Event other than a Conference or a Workshop

☐ Brokerage Event

☐ Trade Fair

☐ Participation in activities organised jointly with other EU project(s)

☐ Other

d) Objective of the event: to report the 'State of Industrial Cybersecurity of Companies in the Valencian Community', which includes trends, challenges and opportunities for Valencian companies in this field
e) Organisers: **Centro Seguridad TIC de la Comunidad Valenciana**
f) Language: Spanish
g) Webpage of the event: https://home.s2grupo.es/1-jornada-ciberseguridad-industrial
h) Number of participants: n/a
i) Type of Audience (multiple choices are able):

☒ Scientific Community (Higher Education, Research)

☒ Industry

☐ Civil Society

☐ General Public

☒ Policy Makers

☐ Media

☐ Investors

☐ Customers

☐ Other

j) Partner who participates: ETRA, S2
k) Type of participation from R²D² side (Presentation, exhibition area, training, etc.): presentation
l) Main conclusions (after the event):
m) Press release (link): https://www.lavanguardia.com/vida/20230215/8759636/industria-teme-ataques-ciberseguridad-planes-respuesta.amp.html
n) Social media posts (link):
o) Photos :
p) Attached documents: programa del evento

3. NAME OF THE EVENT: InfoCom Security 2023

a) Place (City and Country): **Athens, Greece**
b) Dates: 26 + 27 / 04 / 2023
c) Type of event chose one (multiple choices are able):

- ☐ Organisation of a Conference
- ☐ Organisation of a Workshop
- ☐ Exhibition
- ☐ Training
- ☒ **Participation to a Conference**
- ☐ Participation to a Workshop
- ☐ Participation to an Event other than a Conference or a Workshop
- ☐ Brokerage Event
- ☐ Trade Fair
- ☐ Participation in activities organised jointly with other EU project(s)
- ☐ Other

d) Objective of the event:

InfoCom Security has become a meeting and networking place for IT department executives (CTOs, CIOs, CISOs, IT Managers, IT Auditors – Engineers – Administrators, Risk & Compliance Managers, DPOs, etc.) from companies and organizations of all vertical markets in the Private and Public sectors, as well as professionals from the IT channel, companies active in the implementation of projects and the provision of IT solutions and services, as well as for many academics, scientists and researchers.

e) Organisers: **Smart Press S.A. -** https://smartpress.gr/
f) Language: **Mainly Greek, infused with some English material and very few presentations in English as well.**
g) Webpage of the event: https://www.infocomsecurity.gr/en/
h) Number of participants: **1.000+**
i) Type of Audience (multiple choices are able):

- ☐ Scientific Community (Higher Education, Research)
- ☒ Industry
- ☐ Civil Society
- ☐ General Public
- ☐ Policy Makers
- ☒ Media
- ☐ Investors
- ☒ Customers
- ☐ Other

j) Partner who participates: **Cyber Noesis (Greece)**
k) Type of participation from R²D² side (Presentation, exhibition area, training, etc.): **Presentation**
l) Main conclusions (after the event): **N/A**
m) Press release (link): **N/A**
n) Social media posts (link): https://www.linkedin.com/feed/update/urn:li:activity:7056979701398945792
o) Photos: **Already sent via email**
p) Attached documents: **N/A**

4. NAME OF THE EVENT: IENE 14th Southeast European Energy Dialogue

a) Place (City and Country): Thessaloniki, Greece
b) Dates: 25-26 May 2023
c) Type of event chose one (multiple choices are able):

☐ Organisation of a Conference
☐ Organisation of a Workshop
☐ Exhibition
☐ Training
☒ Participation to a Conference
☐ Participation to a Workshop
☐ Participation to an Event other than a Conference or a Workshop
☐ Brokerage Event

☐ Trade Fair

☐ Participation in activities organised jointly with other EU project(s)

☐ Other

d) Objective of the event: "SEE Energy Dialogue" has been established by IENE as an important regional event spanning the entire energy spectrum. The purpose of this regional forum, which is being organized, with the support of leading and regional organisations and major energy companies, is to bring together high-ranking government officials, senior business executives and energy experts from all countries of S.E. Europe and beyond. The objective being the exchange of information and ideas, networking and the furthering of cooperation between all countries in SE Europe.
e) Organisers: IENE- Institute for energy for Southeast Europe
f) Language: English
g) Webpage of the event: https://www.iene.eu/
h) Number of participants: 63 speakers and moderators from all countries in SE Europe and beyond (great number of them attending in person) and about 125 delegates with most of them attending online
i) Type of Audience (multiple choices are able):

☒ Scientific Community (Higher Education, Research)

☒ Industry

☐ Civil Society

☐ General Public

☒ Policy Makers

☒ Media

☐ Investors

☐ Customers

☐ Other

j) Partner who participates: UKIM
k) Type of participation from R^2D^2 side (Presentation, exhibition area, training, etc.): Participation at the panel session & discussion - Session VIII: Electricity & Gas Market Dynamics, Presentation title: Resilience as a new paradigm for power systems and electricity markets
l) Main conclusions (after the event): The presentation of the project was in a session where seven panelists discussed the developments of electricity markets with emphasis on technological developments, concepts related to battery usage & demand response in Southeast Europe. The fruitful discussion ended with the question of resilience of power systems and electricity markets, which was provoked by R^2D^2 side. It was emphasized that technology development is very important aspect in increasing the resilience of power systems and electricity markets
m) Press release (link): https://www.iene.eu/special-features-and-distinquished-keynote-speakers-featured-in-this-years-see-energy-dialogue-p7063.html
n) Social media posts (link):
o) Photos:

p) Attached documents: Presentation (IENE_Session Presentation_AKM)

5. NAME OF THE EVENT: RoboMac 2023

a) Place (City and Country): Skopje
b) Dates: 09/05/2023
c) Type of event chose one (multiple choices are able):

- ☐ Organisation of a Conference
- ☐ Organisation of a Workshop
- ☐ Exhibition
- ☐ Training
- ☐ Participation to a Conference
- ☐ Participation to a Workshop
- ☒ Participation to an Event other than a Conference or a Workshop
- ☐ Brokerage Event
- ☐ Trade Fair
- ☐ Participation in activities organised jointly with other EU project(s)
- ☐ Other

d) Objective of the event: It is a competition for students in the areas of robotics and artificial intelligence and it will be held from 8th to 13th of May this year. Apart from the competitions, there is a programme with lectures for the students aiming to showcase various applications of robot/drone technologies.
e) Organisers: Faculty of Electrical Engineering and Information Technologies at UKIM
f) Language: Macedonian and English
g) Webpage of the event: https://feit.ukim.edu.mk/novosti/robomac-2023-natprevar-po-robotika-i-veshtachka-inteligencija-vo-makedonija/
h) Number of participants: +60
i) Type of Audience (multiple choices are able):

- ☒ Scientific Community (Higher Education, Research)

☐ Industry

☐ Civil Society

☐ General Public

☐ Policy Makers

☐ Media

☐ Investors

☐ Customers

☐ Other

j) Partner who participates: ETRA and UKIM
k) Type of participation from R^2D^2 side (Presentation, exhibition area, training, etc.): Presentation
l) Main conclusions (after the event): The R2D2 presentation created great expectation among the PhDs students, in which the project showcase how its drone technologies will help to reduce the number and the magnitude of the outages, and ensure a faster recovery after extreme events
m) Press release (link):
n) Social media posts (link):

https://twitter.com/R2D2EU/status/1654436350282674180

https://www.linkedin.com/feed/update/urn:li:activity:7060203364160090112

o) Photos :

p) Attached documents:

6. NAME OF THE EVENT: EU Sustainable Energy Week 2023

a) Place (City and Country): Brussels (Belgium)
b) Dates: 20-22/06/2023

c) Type of event (multiple choices are able):

- ☐ Organisation of a Conference
- ☐ Organisation of a Workshop
- ☐ Exhibition
- ☐ Training
- ☒ Participation to a Conference
- ☐ Participation to a Workshop
- ☐ Participation to an Event other than a Conference or a Workshop
- ☐ Brokerage Event
- ☒ Trade Fair
- ☐ Participation in activities organised jointly with other EU project(s)
- ☐ Other

d) Objective of the event: The theme of this edition will be "Accelerating the clean energy transition – towards lower bills and greater skills". Under the theme "Accelerating the clean energy transition – towards lower bills and greater skills", the European Sustainable Energy Week (EUSEW) 2023 will take place in Brussels and online on 20-22 June 2023.

e) Organisers: EU Commission

f) Language: English

g) Webpage of the event: https://sustainable-energy-week.ec.europa.eu/eusew-2023-highlights_en

h) Number of participants: +1,000

i) Type of Audience (multiple choices are able):

- ☒ Scientific Community (Higher Education, Research)
- ☒ Industry
- ☒ Civil Society
- ☐ General Public
- ☒ Policy Makers
- ☒ Media
- ☒ Investors
- ☒ Customers
- ☒ Other

j) Partner who participates: ETRA

k) Type of participation from R^2D^2 side (Presentation, exhibition area, training, etc.): Exhibition area

l) Main conclusions (after the event): ETRA I+D's expert team was on hand to provide visitors with first-hand knowledge of the R²D² project, in addition to physical and digital promotional materials, explanatory videos, and live demonstrations of their ground-breaking innovations. The exhibition also featured a series of "Coffee talks" scheduled over the three-day event, where project experts, invited guests, and visitors could discuss their work on energy transition and the latest developments in the field.

m) Press release (link): https://r2d2project.eu/2023/05/03/r%c2%b2d%c2%b2-showcases-its-coming-innovations-at-eusew-2023/
n) Social media posts (link): https://twitter.com/R2D2EU/status/1671442737487396866
o) Photos:

7. NAME OF THE EVENT: 12. Conference of the National Committee of North Macedonia in CIGRE – MAKO CIGRE, Ohrid, 17-19 September 2023

a) Place (City and Country): Ohrid, North Macedonia
b) Dates: 17-19 September 2023
c) Type of event chose one (multiple choices are able):

- ☐ Organisation of a Conference
- ☐ Organisation of a Workshop
- ☐ Exhibition
- ☐ Training
- ☒ Participation to a Conference
- ☐ Participation to a Workshop
- ☐ Participation to an Event other than a Conference or a Workshop
- ☐ Brokerage Event
- ☐ Trade Fair
- ☐ Participation in activities organised jointly with other EU project(s)
- ☐ Other

d) Objective of the event: Biannual conferences of MAKO CIGRE are organised with an aim to contribute to the basic CIGRE idea for cooperation and exchange of knowledge and experiences between engineers and professionals working in power systems. Traditionally, the program includes a panel plenary session, sessions of the Study Committees, technical presentations, and exhibition of leading

companies. The topic of the plenary session usually emerges from current challenges the electricity sector is faced with. MAKO CIGRE partners from the industry use the technical presentations to introduce their latest achievements. Study Committee sessions are dedicated to presentation of accepted papers and discussion among authors and Conference participants. Finally, a number of social events that accompany the conference are an excellent opportunity for networking.

e) Organisers: CIGRE North Macedonia (MAKO CIGRE)
f) Language: Macedonian and English
g) Webpage of the event: https://mako-cigre.mk/sovetuvanja/y/2023/en/index.html
h) Number of participants: Total number of registered conference participants was over 300. 30 – 40 of them were present at the Session of the Committee C5 during the presentation of the published paper.
i) Type of Audience (multiple choices are able):

☒ Scientific Community (Higher Education, Research)

☒ Industry

☐ Civil Society

☐ General Public

☒ Policy Makers

☒ Media

☒ Investors

☐ Customers

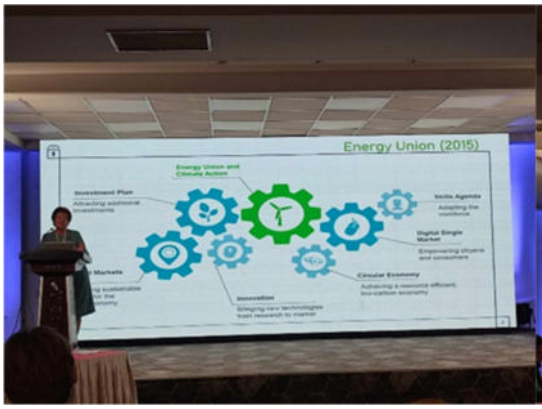
☐ Other

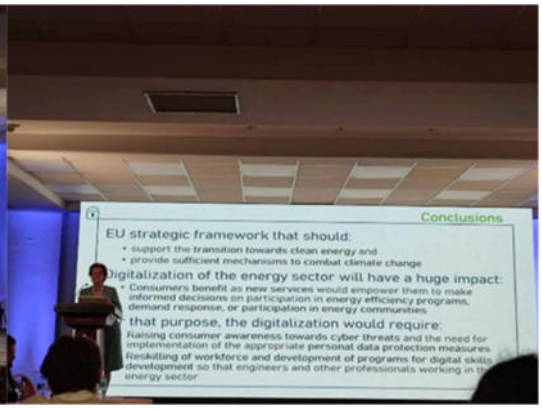
j) Partner who participates: UKIM
k) Type of participation from R²D² side (Presentation, exhibition area, training, etc.): Publication of a technical paper in the Conference Proceedings (open access) and its presentation & discussion in the C5 Session – Electricity Markets and Regulation. Reference of the paper is: **Vesna Borozan, Aleksandra Krkoleva Mateska, Petar Krstevski, Stefan Borozan, Rubin Taleski, "European Union Policy and Regulatory Prospects on the Way to Sustainable and Clean Energy Future", 12. Conference of the National Committee of North Macedonia in CIGRE – MAKO CIGRE, Ohrid, 17-19 September 2023,** C5-087R-EN, https://mako-cigre.mk/sovetuvanja/y/2023/en/index.html
l) Main conclusions (after the event): The Conference was attended by many high-ranking persons from the Government of North Macedonia and the most important companies being present in the electricity sector of the country (for example, the first photo bellow present Prof. Vesna Borozan, UKIM, participating in the welcome board organised for Mr. Kreshnik Bekteshi, Minister of Economy of North Macedonia (in the middle)).

Presentation of the conference paper, prepared by the UKIM team, was in one of the biggest sessions at the Conference (C5, https://mako-cigre.mk/sovetuvanja/y/2023/en/index.html), where ten papers were presented by their authors. In addition, the Session was opened by a presentation of the General Manager of the North Macedonian Electricity Market Operator (MEMO), Mr. Simon Shutinoski, on the start of operation of the newly gone life MEMO Power Exchange, in May 2023.

The discussion after the Session was provoked by R²D² side. It was emphasized that, within the environment of distribution and democratisation of electricity production and supply, a technology development is very important aspect for increasing the resilience of power systems including cyber security and electricity markets.

m) Press release (link):
n) Social media posts (link):
o) Photos :





p) Attached documents: Presentation and paper (C5_Paper_087.1, MAKO CIGRE 2023_ConfPaperPresent_VB_UKIM)

8. NAME OF THE EVENT: Joint Research Center – ENTSOE "Simulation Tools for Regional Crisis Scenario Modelling"

a) Place (City and Country): Online - Webex
b) Dates: 19/10/2023
c) Type of event (multiple choices are able):

☐ Organisation of a Conference

☐ Organisation of a Workshop

☐ Exhibition

☐ Training

☐ Participation to a Conference

☒ Participation to a Workshop

☐ Participation to an Event other than a Conference or a Workshop

☐ Brokerage Event

☐ Trade Fair

☐ Participation in activities organised jointly with other EU project(s)

☐ Other

d) Objective of the event: The workshop was hosted by JRC in order to present the latest state-of-the-art simulation tools for modelling and quantifying the impact of extreme risks and high-impact low-probability events on the resilience of the European electricity systems. The meeting was attended by JRC and representatives of EU TSOs and regulators.
e) Organisers: Joint Research Center – ENTSOE
f) Language: English
g) Webpage of the event: N/A
h) Number of participants: >100
i) Type of Audience (multiple choices are able):

☐ Scientific Community (Higher Education, Research)

☒ Industry

☐ Civil Society

☐ General Public

☒ Policy Makers

☐ Media

☐ Investors

☐ Customers

☐ Other

j) Partner who participates: UCY
k) Type of participation from R^2D^2 side (Presentation, exhibition area, training, etc.): Presentation
l) Main conclusions (after the event): JRC and ENTSOE will conclude on the simulation tools presented and contact the presenters, including Mathaios, on potentially forming an ad-hoc committee as advisors to ENTSOE for modelling the identified regional crises scenarios.
m) Press release (link): N/A – the meeting was held in confidence and no dissemination was released
n) Social media posts (link): N/A – the meeting was held in confidence and no dissemination was released
o) Photos : N/A – the meeting was held in confidence and no dissemination was released
p) Attached documents:

9. NAME OF THE EVENT: ISACA ATHENS CONFERENCE 2023

a) Place (City and Country): **Athens, Greece**
a. Venue: **Lighthouse, Stavros Niarchos Foundation Cultural Center (SNFCC)** - https://www.snfcc.org/en/venue-hire-lighthouse
b) Dates: **25/10/2023**
c) Type of event (multiple choices are able):

☐ Organisation of a Conference

☐ Organisation of a Workshop

☐ Exhibition

☐ Training

☒ **Participation to a Conference**

☐ Participation to a Workshop

☐ Participation to an Event other than a Conference or a Workshop

☐ Brokerage Event

☐ Trade Fair

☐ Participation in activities organised jointly with other EU project(s)

☐ Other

d) Objective of the event: T**he ISACA Athens Chapter's 2023 Conference is a world class cybersecurity event with distinguished international speakers and a highly interesting agenda.**

e) Organisers:

a. ISACA Athens Chapter

b. https://engage.isaca.org/athenschapter/home

f) Language: **English**

g) Webpage of the event: https://isacaathensconference.gr/

h) Number of participants:

a. More than 300 physical

b. More than 500 Online

i) Type of Audience (multiple choices are able):

☐ Scientific Community (Higher Education, Research)

☒ **Industry**

☐ Civil Society

☐ General Public

☒ **Policy Makers**

☒ **Media**

☐ Investors

☒ **Customers**

☐ Other

j) Partner who participates: Cyber Noesis (Greece)

k) Type of participation from R^2D^2 side (Presentation, exhibition area, training, etc.):

a. live presentation to all audience,

b. R2D2 roll-up,

c. R2D2 logo included in all promotional activities (web site, conference brochures, video wall etc.)

l) Main conclusions (after the event):

a. Great opportunity to challenge knowledge and viewpoints, verify perceptions and seek for new routes towards how things can work better.

m) Press release (link):

n) Social media posts (link):

a. Pre-event

https://www.linkedin.com/feed/update/urn%3Ali%3Aactivity%3A7121909770730504192/
https://www.linkedin.com/posts/r2d2eu_isacaathensconference2023-horizoneu-energysystems-activity-7122498316457680896-0MXi/?utm_source=share&utm_medium=member_desktop
https://www.linkedin.com/feed/update/urn:li:activity:7122430900222500864/?updateEntityUrn=urn%3Ali%3Afs_feedUpdate%3A%28V2%2Curn%3Ali%3Aactivity%3A7122430900222500864%29

b. During/ After Event
https://www.linkedin.com/posts/isaca-athens-chapter-greece_isacaathensconference2023-activity-7122537874742259713-mJS3/?utm_source=share&utm_medium=member_desktop
https://www.linkedin.com/posts/argyro-iro-chatzopoulou-1151057_cybersecurity-isacaathensconference2023-thank-ugcPost-7122922836951744514-lXVY/?utm_source=share&utm_medium=member_desktop
https://www.linkedin.com/posts/raikosgeorge_snf-isacaathens-isacaathensconference2023-activity-7122841486596960256-uH3-/?utm_source=share&utm_medium=member_desktop
https://www.linkedin.com/feed/update/urn%3Ali%3Aactivity%3A7124913602204950528/
https://www.linkedin.com/posts/nikosdrakos_congrats-isaca-athens-chapter-activity-7124630110967611392-M-lm?utm_source=share&utm_medium=member_desktop
https://www.linkedin.com/posts/it-security-professional_live-%CE%B1%CF%80%CF%8C-%CF%84%CE%BF-%CE%B5%CF%84%CE%AE%CF%83%CE%B9%CE%BF-event-%CF%84%CE%BF%CF%85-isaca-athens-ugcPost-7122881076665946113-cpPi/?utm_source=share&utm_medium=member_desktop
https://www.linkedin.com/feed/hashtag/?keywords=isacaathensconference2023

o) Photos:

Kostas Papadatos

Founder / Managing Director Cyber Noesis

Bio

Kostas is the Founder and Managing Director of Cyber Noesis, a firm providing cybersecurity advisory services to achieve compliance against demanding legal & regulatory frameworks and also a Task Leader in R2D2 Project.

Read More

Presentation Abstract

May the Force of R2D2 Alliance protect the griD

Cybersecurity in electrical infrastructure is essential to protect public safety, national security, and economic stability, as well as to ensure the reliability and resilience of critical services and data transmission systems.

During this presentation we will introduce R²D², a project funded by the Horizon Europe program, which focuses on enhancing the resilience and reliability of existing Electrical Power and Energy Systems (EPES).

The primary goal of R²D² is to proactively address and lessen technical, cyber, and physical risks that have the potential to unveil vulnerabilities within the electrical infrastructure. These vulnerabilities could lead to detrimental and damaging outcomes for a wide range of stakeholders, with the utmost concern being the well-being of citizens.

10. NAME OF THE EVENT: Physical Workshop BD4NRG Big Data for Next Generation Energy

a) Place (City and Country): Ljubljana, Slovenia

Location: Kongresni center - Eurostars uHotel

b) Dates:13.12.2023

c) Type of event (multiple choices are able):

- ☐ Organisation of a Conference
- ☐ Organisation of a Workshop
- ☐ Exhibition
- ☐ Training
- ☐ Participation to a Conference
- ☒ Participation to a Workshop
- ☐ Participation to an Event other than a Conference or a Workshop
- ☐ Brokerage Event
- ☐ Trade Fair
- ☐ Participation in activities organised jointly with other EU project(s)
- ☐ Other

d) Objective of the event: large scale Pilot application

e) Organisers: Elektro Ljubljana

f) Language: English

g) Webpage of the event: https://www.bd4nrg.eu/pilots-applications

h) Number of participants: 35

i) Type of Audience (multiple choices are able):

- ☐ Scientific Community (Higher Education, Research)
- ☒ Industry
- ☐ Civil Society
- ☒ General Public
- ☐ Policy Makers
- ☒ Media
- ☐ Investors
- ☒ Customers
- ☐ Other

j) Partner who participates: Elektro Ljubljana (ELEK)- Anja Korošec

k) Type of participation from R^2D^2 side (Presentation, exhibition area, training, etc.): Presentation- We delivered an overview of the R2D2 project including currently ongoing and upcoming activities on ELEK part. Also, we presenter our pilot, which solutions will be integrated, demonstrated and its aim.

l) Main conclusions (after the event): challenges in energy domain and analytics solutions:
m) research and industry outcomes
n) Press release (link): /
o) Social media posts (link): Elektro Ljubljana d.d. | Facebook
p) Photos: