ENERGY SHIELD

Integrated Cybersecurity Solution for the Vulnerability Assessment, Monitoring and Protection of Critical Energy Infrastructures

INNOVATION ACTION

H2020 Grant Agreement Number: 832907

W7 COMMUNICATION, DISSEMINATION & ECOSYSTEM DEVELOPMENT

D7.2 –COMMUNICATION REPORT V1

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Abstract:	This task will plan and execute external communication of the project results through a variety of channels. At the beginning of this task, the project consortium will specify the project's communication strategy and a time-plan, which will be re-assessed and refined periodically, including 1) development of a communication plan, 2) identification of communication activities, 3) organisation, and implementation, per partner or jointly among partners 4) impact assessment analysis, and 5) participation of the consortium in various events related to the theme of the project. This task will also include the development of an external project website hosted at www.energyshield.eu, that will be used both for communication and dissemination purposes. The website will include a description of the project, the consortium and the field trials. A partner-restricted information repository will be hosted at SIMAVI for project internal communication and collaboration. During the course of the project, regular external communications will be made via ongoing media activities, newsletters or presence at industry seminars.
Keywords	Communication plan, strategy, goals, audience, channels, content

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EXECUTIVE SUMARY

This report summarized the activities performed by EnergyShield consortium partners to communicate project during the first year of implementation.

EnergyShield's communication plan aims at communicating the project results and developing an ecosystem of partners along the value chain, in order to guarantee a sustainable impact from the project once it is completed. All consortium partners of the EPES value chain validate the technology and disseminate the project results to their industry.

The direct beneficiaries of the improvements proposed via the EnergyShield project are the European energy generator, transmission (TSO) and distribution (DSO) operators, as well as the final consumers. The results of the research and innovation activities performed as part of the EnergyShield project will be shared with stakeholders via 18 publicly available reports along the project lifetime.

Considering pure R&D dissemination of knowledge, we are aiming to bring together relevant European expertise to build a sustainable community to foster future security research in the energy domain via conventional approaches like publications, conferences, industry forums, workshops, and standardization bodies.

Consortium partners successfully started to communicate along their already established channels and promoted the project along their networks and at domain specific events. The industrial partners participated in fairs and presented the project to stakeholders while the academic partners already started to publish and present their outcomes at scientific venues.

Also, important steps were taken to establish and improve collaboration with H2020 projects: BRIDGE, P2PKOS, cyberwatching.eu.

Due to Covid-19, the project partners have shifted their communication efforts to digital venues that substitute in-person meetings originally planned.

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ACRONYMS

ACRONYM	DESCRIPTION
WP	Work package
CEZ	CEZ Distribution Bulgaria
CITY	City University London
CoTTP	Cogen Zagore Ltd
D	Deliverable
DIL	D I L DIEL Ltd aka Goldline
DSO	Distribution System Operator
EPES	Electrical Power & Energy Systems
ESO	Bulgarian Electricity System Operator EAD
EUW	European Utility Week
FOR	foreseeti AB
IREN	IREN S.p.A.
KPI	Key Performance Indicator
KT	Konnekt-able Technologies
KTH	KTH Royal Institute of Technology
L7D	L7Defense
M	Month
MIG	MIG 23 Ltd
NTUA	National Technical University of Athens
PSI	PSI Software AG
R&D	Research and Development
SC	Software Company Limited
SIGA	Si-Ga Data Security Ltd
SIV	Software Imagination & Vision Romania
T	Task
TEC	Tech Inspire Limited
TSO	Transmission System Operator
VETS	VETS Lenishta OOD
WP	Work package

2. INTRODUCTION

2.1. SCOPE AND OBJECTIVES

The objective of this deliverable is to illustrate the outcomes of the communication plan and execution of both internal and external communication of the project results through a variety of channels during the first twelve months of the project.

2.2. STRUCTURE OF THE REPORT

The report is structured in 3 main parts covering strategy update, activities performed per channels of distribution together with planned activities and planned communication and collaboration activities.

Firstly, the communication strategy is recalled and adjusted based on the results achieved and including the impact of COVID-19 pandemic.

Secondly, the conducted communication activities are briefly introduced together with provisioned activities. The activities performed are presented from two perspectives: per channels of distribution – involving multiple partners - and initiated by single Consortium partners.

Thirdly, EU collaboration strategy (part of T7.4), accession to working groups and hubs together with forthcoming actions are presented. As T7.4 EU Collaboration leaded by NTUA started in M7 and has a single formal delivery in the last month of the project we are including the progress on this task in the communication report.

Lastly, the report concludes with the communication outcomes at the end of the first reporting period.

2.3. TASK DEPENDENCIES

WP7 Communication, Dissemination & Ecosystem Development focuses on the dissemination of project results and the development of an ecosystem of partners along the value chain and includes reports referring to both strategy and progress per communication, dissemination and collaboration activities.

D7.2 takes over and updates the communication strategy proposed in D7.1 Communication Plan [**ESC19**]. The outcomes of T7.1 Communication Plan are used to present the performance per KPIs in D7.5 Dissemination report [**ESD20**].

T7.4 EU collaboration contributes to this report with the progress on the proposed activities to collaborate with other H2020 projects, create synergies and ensure cross-fertilization.

WP8 Exploitation & Scale Up builds upon both the dissemination and communication activities and aims at scaling them up beyond the project horizon.

3. COMMUNICATION APPROACH & STRATEGY UPDATES

As introduced in D7.1 Communication Plan [**ESC19**] the communication plan for EnergyShield project focuses on goal setting, targeted audience, message definition, and channels selection and the actions are distributed and focusing on to creating and building awareness in the first two years of project implementations, while in the last one focusing on raising awareness on the outcomes of the project.

The overall communication strategy is governed by a tri-folded concept alongside a two-step implementation proposal as detailed in Figure 1, below.

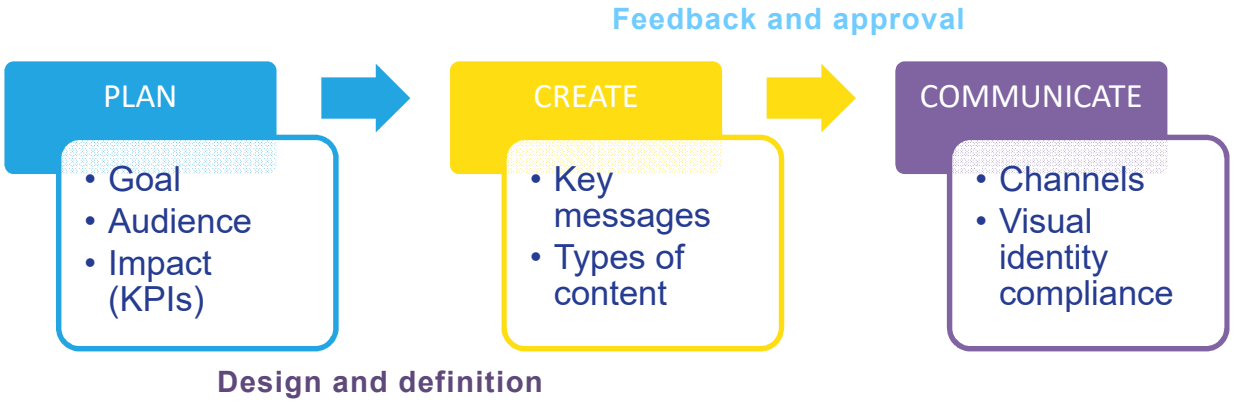

Figure 1. EnergyShield project approach to communication [ESC19**]**

The direct **beneficiaries** of the improvements proposed via the EnergyShield project are the European energy generator, transmission (TSO) and distribution (DSO) operators, as well as prosumers and consumers. EnergyShield consortium covers the entire EPES value chain. This means that the stakeholder backbone is in place since the beginning of the project.

The selected **types of content** to promote the EnergyShield project are press release, scientific papers, brochures, white papers and video projects. These types of content are still relevant for promoting EnergyShield except for the brochures. Following COVID-19 lockdown and work from home recommendations the spreading brochures became almost impossible. The EnergyShield flyer is available on the website and whenever an opportunity it is distributed via e-mail, but its impact and relevance are considerably diminished.

To better reach out the **stakeholders**, the Consortium partners have started introducing EnergyShield project to multi-project online workshops and conferences, adhered to hubs and working groups focusing on energy and cybersecurity, published scientific articles and created a project video.

In terms of **channels**, EnergyShield Consortium focused on the project website, Twitter and LinkedIn groups but also considered partners communication channels and Youtube for disseminating the video project.

The **impact** of the planned communication activities are evaluated via KPIs (Key Performance Indicators) which were planned to be assessed on a quarterly basis,

but actually evaluated every month and consolidated every six months. The progress per KPIs is included D7.5 Dissemination Plan Report [**ESD20**].

The results of the research and innovation activities performed as part of the EnergyShield project will be shared with stakeholders via 18 publicly available reports along the project lifetime. The public reports will be published on the project website following the approval of the European Commission.

Due to Covid-19, the project partners have shifted their communication efforts to digital venues that substitute in-person meetings originally planned. Additionally, the dissemination materials are includes on the project website and share via social media channels.

In the following sections both the performed and provisioned activities are assessed from a qualitative perspective, i.e. the messages shared with general public and relevant stakeholders is summarized. Also, the progress on collaborating with other H2020 projects is presented.

4. CONDUCTED COMMUNICATION ACTIVITIES

In this section, the conducted communication activities are briefly introduced together with provisioned activities. The activities performed are presented from two perspectives: joint activities, like the attendance at the European Utility Week, and activities conducted by single Consortium partners.

This report focuses on a qualitative reporting, while the dissemination report, D7.5 [**ESD20**] focused on a quantitative analysis.

In the first three months of the project the Consortium planned the communication activities and the Consortium partners started spreading the word about the EnergyShield project via press releases published both on the project website and the websites of the organization part of the project – translated and in English and covered via social media channels, mainly twitter and LinkedIn Groups.

Table 1, summarizes the communication activities performed during the first year of the project.

Table 1. Summary of conducted communication activities

Channel	Involved Partners	Scope	Audience	Outcome
Website	All	Central repository and information source for the project	All	~100 unique visitors per month
Twitter	All	Communicate recent activities	Industry, Research, Other	83 followers
LinkedIn	All	Communicate with industrial stakeholders	Industry	38 members
European Utility Week	All (Present: SIMAVI, FOR, KT, PSI, SIGA)	Introduce the project to industrial stakeholders	Industry	7 sessions given on different aspects of the project
Press Release	All	Communicate important milestones of the project	Other	11 press clippings of our press releases
Newsletter	All	Summarize latest outcomes of the project	Industry, Consumer	2 newsletter and 19 subscribers

Bridge Initiative	All	Identify possible synergies with other projects	Research	Ongoing
Cyberwatching EU	All	Make the project visible to the cyber security domain	Industry, Research	Ongoing
P2PKOS	SIMAVI	Identify possible synergies with other projects	Research	Possible contributions identified
ERA-NET	SIMAVI	Make the project visible	Industry	Possible contributions identified
CyberShare	SIMAVI	Make the project visible	Industry, Research	Ongoing
Electric Energy (Smart) Metering	SIMAVI	Make the project visible	Industry	Article in Energetika
ECSCI workshop	SIMAVI	Make the project visible	Industry	Ongoing
e-world	PSI	Make the project visible	Industry	Ongoing
Nextech conference	SIGA	Make the project visible	Industry, Research	Ongoing
ELVIRA workshop	FOR	Evaluate cooperation possibilities	Research	Ongoing
TROOPERS	KT	Make the project visible	Industry	Cancelled
ICCCN	CITY, L7D	Communicate research outcome	Research	Publication, Presentation
EAI SPNC	CITY, L7D	Communicate research outcome	Research	Publication, Presentation
Collaboration meetings	KTH	Evaluate cooperation possibilities	Research	2 discussions
CS3	KTH	Make the project	Industry	1

		visible		presentation
EDOC	KTH	Communicate research outcome	Research	Publication, Presentation
GraMSec	KTH	Communicate research outcome	Research	Presentation
IS 2020	NTUA	Communicate research outcome	Research	Publication, Presentation
Project MC5.01 / 15B	SC	Make the project visible	Industry	1 presentation
ENERGETIKA	ESO	Make the project visible	Industry	1 article
Energy and Urban Cybersecurity Conference	ESO	Make the project visible	Industry	1 presentation

As presented in the table above all EnergyShield partners have contributed to increasing the visibility of the project via using project communication channels and/or organisation channels. These actions have contributed to increasing the visibility of the project and introducing the commitments of EnergyShield project to relevant stakeholders.

4.1. ACTIVITIES PER CHANNELS OF DISTRIBUTION

The activities conducted by multiple EnergyShield partners per channels of distribution are presented in this sub-section.

4.1.1. WEBSITE

EnergyShield **website** (https://energy-shield.eu) serves as a central repository for our key communication artefacts and as the primary information source for EnergyShield's target audience. EnergyShield website was used from the first months of the project to inform about events related to the project.

4.1.2. TWITTER

The EnergyShield **Twitter** channel (@EnergyShield_) has been created when the project started to ensure a continuous flow of information towards stakeholders. Since now all dissemination and communication activates have been notified via Twitter.

It has been proved a powerful tool to communicate and identify relevant events. EnergyShield has now 83 followers on Twitter including consortium partners, organisation, H2020 projects and experts in energy and cybersecurity.

Figure 2. EnergyShield Twitter page

4.1.3. LINKEDIN

An important channel to communicate with industrial stakeholders is **LinkedIn Groups.** A group called “Energy Shield” has been created on LinkedIn. So far, this group has 38 members and is used to exchange recent news on security related issues and events related to the project.

4.1.4. EUROPEAN UTILITY WEEK

Six representatives from SIMAVI, PSI, FOR and KTH of the Energy Shield project travelled to Paris to explain the idea and the solutions provided by our project at the European Utility Week (EUW19). The seven sessions attracted positive feedback for our project from the visitors and fostered fruitful discussions. In these sessions, FOR, KT, SIGA, and SIV presented their contribution to the project.

The presence at EUW19 was a good opportunity to find out more about existing technologies, for approaching energy sector stakeholders, and for sharing experiences with leaders of other H2020 energy sector projects.

EnergyShield Consortium appreciates PSI’s initiative of hosting the project at their booth and managing the timeline of activities.

4.1.5. PRESS RELEASE

Starting with the article about the kick-off meeting that took place in Bucharest in mid-July, Consortium partners sent out a press release, introducing our project to the public via own organisation website and social media channel. The press release created a wide range of feedback resulting in several articles [**IDG19**], [**KTH19**], [**NYT19**], [**SWE19**].

4.1.6. NEWSLETTER

On a regular basis, we send out a newsletter that informs about the latest activities of our project. Additionally, we summarise the latest submitted deliverables and sketch upcoming actions. An exemplary newsletter is illustrated in Figure 3.


ENERGY SHIELD

View this email online

We are happy to deliver the second EnergyShield newsletter to our readers. This time, we inform you about our participation in the BRIDGE project and what has happend since the last newsletter.

Events with EnergyShield participation

First REA project to policy
EnergyShield project attended the first project to policy kick off seminar (P2PKOS) organised by Research Executive Agency (REA) at the end of January 2020.
During a full day of both plenary and groups sessions representatives from 34 H2020 cybersecurity projects shared the objectives of the projects and identified ways they could contribute to the enforcement of European Commission recommendation on cybersecurity in energy sector - SWD(2019)1240.

Introduction at BRIDGE General Assembly
EnergyShield project attended BRIDGE GA in Brussels on the 11th and 12th of February 2020 and introduced the main objectives of the project together with identifying the task forces that could be supported by project team.
Following a two-day dynamic agenda the meeting was a great opportunity for meeting new and old energy sector projects and also networking with projects aiming at achieving similar results. Together with EnergyShield, another 19 new energy sector projects that joined

Figure 3. Excerpt of one of our newsletters.

To reach a greater audience, we encouraged our partners to promote the newsletter along their channels. Additionally, we assume that the upcoming outcomes of the project will attract more interest in the project and, consequently, it will also increase the number of subscribers to the newsletter.

A significant progress was done on each of the selected channels of distribution. However, the

4.2. ACTIVITIES PER PARTNER

4.2.1. SIMAVI

SIMAVI participated in an ERA-NET workshop "ICT solutions for local and regional energy systems" and in the CyberShare Conference 2020 in a session called “Cyber-security a key research topic under Horizon 2020”. Doing so, SIV wanted to make the project visible to stakeholders and evaluate possible contribution possibilities.

On June 5th, 2020, the EnergyShield project was presented by SIMAVI at the international workshop "Electric Energy (Smart) Metering". At this workshop, stakeholders in the EPES domain discussed several European initiatives, and opportunities for further synergies were created. The follow up of this presentation will include a paper in the Romanian technical journal Energetica.

On the 24th-25th of June 2020, SIMAVI attended the European Cluster for Securing Critical Infrastructures (ECSCI) online workshop. Representatives from DG HOME B4 Innovation and Industry for Security, ENISA and EUCSO presented both progress activities and perspectives of the EU critical infrastructures.

Finally, SIMAVI participated in several webinars and workshops to represent EnergyShield: On 18th of SIMAVI attended DERlab WG4 Webinar on "Multi-Energy System"; On the 24th of June 2020 SIMAVI attended the 1st Pan-European

PANTERA Virtual Workshop as part of EUSEW 2020; On the 18th of June 2020, SIMAVI participated at the ETIP SNET virtual Workshop R&I priorities strategy Agendas for a common path toward Energy Transition in 2050.

4.2.2. PSI

PSI presented the EnergyShield project at the E-world in Essen, Germany to make the project visible to industrial stakeholders in the power domain.

4.2.3. SIGA

SIGA uses its established channels to communicate EnergyShield related content. E.g., few articles on its website has been published to present the project and the project progress. This progress is also communicated through LinkedIn and SIGA's own newsletter.

Additionally, SIGA participated in the Nextech Conference to promote the project to stakeholders interested in advanced technologies.

4.2.4. FOR

Additionally, to its daily communication on the EnergyShield project along FOR's channels, FOR participated in the ELVIRA workshop, where the ELVIRA project presented their tool and an exchange between the two projects could be established.

4.2.5. KT

Additionally to KT's presence at the EUW, representatives from KT were to participate in a 4-day security conference which would have taken place in Germany on March 16th. In Troopers, current topics relating to IoT, IPv6 security and general IT security were to be discussed. Unfortunately, due to Coronavirus the event has been canceled.

4.2.6. CITY

City got two papers together with L7D accepted and will presented them at the respective venues in August. First, the paper entitled "*Modelling DoS Attacks & Interoperability in the Smart Grid*" accepted at the 10th Internal Workshop on Security, Privacy, Trust, and Machine Learning for IoT 2020, as part of the 29th International Conference on Computer Communications and Networks (ICCCN).

Second, City has had another paper entitled "*A Characterisation of Smart Grid DoS Attacks*" accepted at the EAI international conference on Security and Privacy in New Computing Environments (EAI SPNCE) 2020.

4.2.7. KTH

KTH performed several actions to communicate its outcomes to EnergyShield's stakeholder. First, the KTH performs on a regular basis an information event to

inform interested stakeholders about the actual activities. During the reporting period, the KTH conducted two of these meetings. Within these meetings, the EnergyShield project was introduced to the stakeholders and the first deliverables, which were related to the KTH, were presented. The attendees were inter alia representing the Swedish Civil Contingencies Agency, the Swedish Energy Agency, the Swedish Defence Research Agency, and Svenska kraftnät (TSO).

Second, scientists of the KTH also conducted meetings with project members of different research projects to discuss synergies and evaluate possible collaborations. The considered projects were mainly based in the energy domain like United Grid or ELVIRA.

Third, the KTH also participated in different conferences, both scientific and practically orientated. For example, on the CS3 the EnergyShield project was introduced to stakeholders that are interested in security on industrial control systems (ICS).

On the EDOC conference, the KTH presented the outcome of the project, where existing architecture models were translated to threat models that could then be simulated. The related article has also been published [**HAC19**].

At the GraMSec workshop, KTH presented their work on a coreLang representing fundamental assets needed for threat modelling of IT environments.

4.2.8. NTUA

NTUA presented the framework of the Cybersecurity Culture tool at the IADIS Information Systems Conference (IS 2020) on 2-4 of April. The initial work and vision for the tool for the assessment of socio-cultural behaviour of organisations was presented under the title “Towards a cybersecurity culture tool through a holistic, multi-dimensional assessment framework” and was published in the IADIS digital library [**BOU20**].

4.2.9. SC

Software Company Ltd. is part of the European Commission funded project PROJECT MC5.01 / 15B SUPPORT TO SOUTHERN AFRICAN STATES IN NUCLEAR SAFETY AND SAFEGUARDS. The main overarching objective of this project is to provide the software and hardware necessary to support the tracking and monitoring of transport of uranium oxide concentrate (UOC) across the territory of multiple African states.

SC developed a fully functional web-based and mobile application system named ITS for the purpose of this project.

In connection with it, on December 11, 12 and 13, a training session was held in Livingstone, Zambia, where Software Company trained representatives of various organizations from Zambia and Zimbabwe. The training was also attended by project coordinators from South Africa.

Especially for this event, SC prepared flyers and a presentation of the EnergyShield project. Nikolay Palov presented the EnergyShield project to all participants attending the training.

4.2.10. ESO

A section for the project on the ESO's website was created as a part of the cybersecurity project's section.

An announcement and a short general publication about the project were published in the online magazine ENERGETIKA [**ENE19**] in the Bulgarian language in the 3rd edition dated 2019, October.

A general presentation of the project was given at the Energy and Urban Cybersecurity Conference in Bulgaria on 4th of October 2019, organized within the European Cyber Security Month.

4.3. PROVISIONED ACTIVITIES

A series of communication activities have been provisioned for the next period of project implementation.

Table 2, below summarized the planned activities per channels and involved partners. This list will be updated as communication and dissemination opportunities are identified by consortium members.

Table 2. EnergyShield provisioned communication activities

Venue	Description	Date	Involved partners
European Utility Week	We plan to be present with a booth.	October 2020	All
Project video	We are producing a project video.	June 2020	All
White paper	After finishing the second milestone, we will publish a white paper with the gathered insights.	February 2021	All
Press release	The white paper will be accompanied by a press release that will stress the main points of the white paper.	February 2021	All
BRIDGE	General Assembly	tbd	SIMAVI
European	The European Utility Week	October 2020	SIMAVI, all

Utility Week 2020	will take place on 3 days from Tuesday, 27. October to Thursday, 29. October 2020 in Milan.		
Workshops and webinars	Cybesecurity and energy policy & IT events	tbd	SIMAVI, all
3rd international Forum 'Smart Grids for Smart Cities'	SIMAVI intends to participate at the SG4SC 2020, posibbly as part of a panel	Sept 2020 (tbd)	SIMAVI
BioBio Energia Congress	SIMAVI will participate at the BioBio Energia Congress (Chile) as part of a panel	Oct ober 2020 (online)	SIMAVI
Workshop "Cybersecurity: Data Sharing"	KT scheduled to participate in that workshop and present the SIEM Tool.	October 2020	KT
European Utility Week 2020	KT plans to participate with KT EnergyShield's representatives.	October 2020	KT
ICCCN2020 Workshop	Will be presenting a paper on smart grid interoperability modelling.	August 2020	CITY
EAI SPNCE 2020	Will be presenting a paper on possible smart grid DoS attack scenarios.	August 2020	CITY
SCADA-Security 2020	We will present the actual status of the project.	September 2020	KTH
EDOC 2020	We handed in a paper on a threat modelling language for core IT assets.	October 2020	KTH
BISE Journal	We are preparing an article on a threat modelling language for EPES related assets.	June 2021	KTH
CS3	We handed in a proposal for a talk on threat	October 2020	KTH

	modelling for ICS assets.		
ICIS 2020	We handed in a paper describing a procedure to create threat models.	December 2020	KTH
ENERGETIKA	A publication about the project in the Bulgarian language is planned, with an emphasis on the Bulgarian use case.	2020	ESO

The provisioned activities mainly aim at improving online visibility of project, sharing technical achievements and engaging relevant stakeholders.

5. EU COLLABORATION ACTIVITIES

This chapter presents briefly the collaboration activities performed and initiated during the first reporting period. As the corresponding task T7.4 EU Collaboration leaded by NTUA started in M7 and has a single formal delivery in the last month of the project we are including the activities performed and planned in the communication reports.

5.1. COLLABORATION PROCESS

As a starting point, a comprehensive and flexible collaboration process has been defined, presented in Figure 4, consisted of 3 distinctive steps:

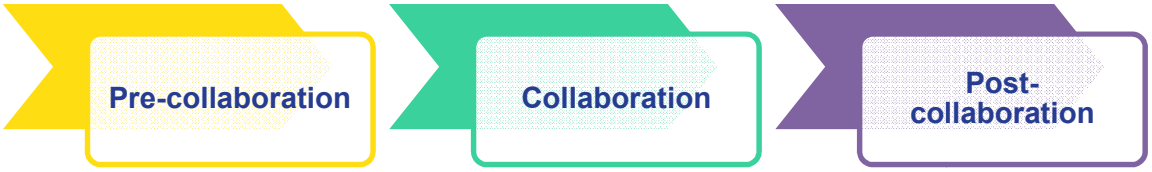

Figure 4. Collaboration process

Pre-collaboration: this step refers to the identification of a new collaboration opportunity and to its reporting via the completion of a collaboration opportunity template. All reports are indexed in a collaboration opportunities repository file, stored in the project file sharing service (Alfresco), and communicated to all consortium partners encouraging creative elaboration, participation and further identification of possible synergies.

Collaboration: this step refers to the actual collaboration activity which could be any of the following:

- co-organize or participate to a workshop / event / webinar / hackathon
- share / join forces on social media communication channels / networking boost
- collaboratively work on a publication
- work together towards a common standardization goal
- exchange know-how / expertise / technical documents
- exchange tools / module developed within each project
- collaboration on the development of a tool
- collaboration on evaluation of the tools
- collaboration on the exploitation / marketing of project's assets
- share a framework or toolkit so as to amplify its features

- share data collections and exchange resultsother…

Post-collaboration: this step refers to a brief collaboration activity reporting by the participating partners possible either via completing a simple collaboration report or by filling the corresponding EU Survey. Reports are again indexed by updating the corresponding collaboration repository file.

5.2. ACTIVITIES PERFORMED

5.2.1. BRIDGE INITIATIVE

The EnergyShield project attended BRIDGE GA in Brussels on the 11th and 12th of February 2020 and introduced the main objectives of the project together with identifying the task forces that could be supported by the project team.

The meeting was a great opportunity for engaging with new and old energy sector projects and for networking with projects aiming to achieve similar results. As a new BRIDGE project, EnergyShield got the opportunity to present its challenges in a poster session.

EnergyShield Consortium has allocated members in all working groups and is contributing to Action 1 of Data Management - Use case repository.

5.2.2. P2PKOS

SIV represented the EnergyShield project at the first project to policy kick off seminar (P2PKOS) organised by Research Executive Agency (REA) at the end of January 2020. During a full day of both plenary and groups sessions, representatives from 34 H2020 cybersecurity projects shared the objectives of the projects and identified ways they could contribute to the enforcement of European Commission recommendations on cybersecurity in the energy sector – SWD(2019)1240. The possibility to support related initiatives by sharing of the recommendations with partners and the EPES value chain via reports and scientific publications was identified.

5.2.3. CYBERWATCHING EU

EnergyShield project was accepted in cyberwatching.eu project hub. In the pre-accession phase, the market and technology readiness were evaluated, and the project was included on the Cybersecurity and Privacy Project Radar.

The Cybersecurity and Privacy Project Radar provides an overview of the complete collection of EU funded projects in the cybersecurity space. Projects have volunteered in a technology and market readiness assessment by Cyberwatching.eu to different degrees.

5.3. COLLABORATION PERSPECTIVES

During the second semester of the project life-cycle, consortium partners were asked to fill in a brief EU survey reporting any collaboration opportunities identified in order to initiate a collaboration repository. A number of EU projects and initiatives were put forward constructing a rich collaboration pool.

Table 3, briefly presents the information gathered.

Table 3. Collaboration Opportunities

Project/Initiative Suggested	Website	Description
SOCCRATES	https://www.soccrates.eu/	SOCCRATES, although it does not focus on the EPES sector, has a similar toolkit setup. The project is bearing a similar life cycle. There are many possibilities of joint activities.
SPHINX	https://sphinx-project.eu/	Exchange know-how and modules of SPHINX Distributed Cyber Situational Awareness Framework & Real Time Risk Assessment.
Infrastructure Resilience - ELVIRA	https://www.his.se/en/research/informatics/distributed-real-time-systems/elvira/	The Elvira project develops time-based infrastructure dependency analysis for the power-grid to model risk assessment and resilience index, which assist decision makers in anticipating failures and their cascading effects.
United Grid	https://united-grid.eu/	The UNITED-GRID project objective is to develop technical solutions to serve needs and opportunities for distribution system operators (DSOs) in their electricity grids.
inteGRIDy	http://integridy.eu/	inteGRIDy aims to integrate cutting-edge technologies, solutions and mechanisms in a Framework of replicable tools to connect existing energy networks with diverse stakeholders, facilitating optimal and dynamic operation of the Distribution Grid (DG), fostering the stability and coordination of distributed energy resources and enabling collaborative storage schemes within an increasing share of renewables.
BRIDGE	https://www.h2020-bridge.eu/	BRIDGE is a European Commission

		initiative which unites Horizon 2020 Smart Grid and Energy Storage Projects to create a structured view of cross-cutting issues which are encountered in the demonstration projects and may constitute an obstacle to innovation. EnergyShield could be part of the proposed working groups and could contribute to the results of the BRIDGE initiative.
FARCROSS	https://farcross.eu/	Present the EnergyShield project targets during the 2020 plenary meeting of FARCROSS which is under the BRIDGE initiative in order to ignite their interest in the project and its results and investigate any possible synergies.
FLEXITRANSTORE	http://www.flexitranstore.eu/	Present the EnergyShield project targets during the 2020 plenary meeting of FLEXITRANSTORE which is under the BRIDGE initiative in order to ignite their interest in the project and its results and investigate any possible synergies.
PHOENIX	https://phoenix-h2020.eu/	Project funded under the SU-DS04-2018-2020 programme and sharing the same goals and vision towards Cybersecurity in the Electrical Power and Energy System (EPES).
SDN-microSENSE	https://www.sdnmicrosense.eu/	Project funded under the SU-DS04-2018-2020 programme and sharing the same goals and vision towards Cybersecurity in the Electrical Power and Energy System (EPES).
E.DSO-ENCS-ENTSO-E Workshop	https://mailchi.mp/774dd826cbab/edsoencsentso-e-invitation-cybersecurity-workshop-brussels-22-october-2019-still-possible-to-register-12439756?e=c3907bfe90	The Association of European Distribution System Operators (E.DSO), the European Network for Cyber Security (ENCS) and the European Network of Transmission System Operators for Electricity (ENTSO-E) co-organise a Conference on Cybersecurity. The event is scheduled in Brussels on 7 October 2020 and EnergyShield

		project shall be represented.
ReachOut	https://www.reachout-project.eu/	ReachOut is a Coordination and Support Action (CSA) helping H2020 projects in the area of software technologies to implement beta-testing campaigns. ReachOut act as an operational intermediary between research projects and the open market. ReachOut helps research projects implement beta testing best practices and recruit beta-testers by running promotion initiatives. ReachOut is planning to collaborate with Energyshield for beta-testing tools from the Energyshield toolkit.

Based on the collaboration repository constructed on during the first project year and having reached at a project and toolkit readiness level suitable for collaborations, we have initiated a number of collaboration activities with different objectives to communicate our project goals and progress and investigate possible synergies.

Figure 5 briefly presents the currently planned and ongoing activities.

CyberWatching

- **Date**: 16th July 2020
- **Type**: Workshop
- **Participants**: CS-AWARE, SCOTT, STOP-IT, POSEIDON, THREAT-ARREST, CyberSec4Europe, ECHO, SecureIoT, SECREDAS, InfraStress, CARAMEL
- **Objective**: identify possible opportunities for lightweight synergies between EU projects similar MRL score.

PHOENIX SDN-microSENSE

- **Date**: TBD (within July)
- **Type**: Workshop
- **Participants**: PHOENIX, SDN-microSENSE
- **Objective**: bridging three H2020 EU projects, funded under the SU-DS04-2018-2020 programme and sharing the same goals and vision towards **Cybersecurity in the Electrical Power and Energy System (EPES)**.

ReachOut

- **Date**: 5th April 2020
- **Type**: Tool evaluation
- **Participants**: ReachOut
- **Objective**: implement beta-testing campaigns targeting each SBAM tool iteration (starting from July 2020).

inteGRIDy

- **Date**: TBD
- **Type**: Workshop
- **Participants**: inteGRIDy
- **Objective**: exchange know-how & expertise and identify possible light-weight synergies

E.DSO-ENCS-ENTSO-E

- **Date**: 7th October 2020
- **Type**: Workshop
- **Participants:** E.DSO, ENCS and ENTSO-E
- **Objective**: bring together experts in the field of Cybersecurity to share the latest industry knowledge and present learnings from past threats with a solutions-based approach.

Figure 5. Collaboration ongoing activities

6. CONCLUSION

In the first year of implementation EnergyShield partners have set the basis for a successful communication of project progress and expected outcomes via effective usage of the communication channels in place and via attending relevant events. Moreover, EnergyShield has positioned itself along other Horizon 2020 projects in initiatives like BRIDGE or Cyberwatching.eu.

Consortium partners leaded communication activities to make the project visible along relevant stakeholders.

Workshops, conferences, fairs, and webinars were attended by technology providers to share insights about the tools and the toolkit proposed in EnergyShield.

The academic partners submitted scientific articles on the artefacts created in the project and presented the contents in different scientific venues.

All proposed communication channels have been used to improve project visibility and they communicated along their channels different material of the project.

The communication flow shifted to the digital channels as pandemics restrictions and recommendations put in place and the planed for the next coming period are oriented to improving the online presence of EnergyShield project.

Moving communication exclusively online threats face-to-face interaction but also creates significant opportunities in terms of coverage and logistics limitation.

As the online rule communication applies to all (audience, facilitator, and promoters) the impact is expected to be mitigated in the forthcoming period. Large events have already started moving online (e.g European Sustainably Week) and project leaders have also initiated cross-project stakeholder engagement workshops.

The forthcoming period is of great importance for increasing the visibility of EnergyShield project and sharing technical achievement. This is why a comprehensive plan of joining working groups and hubs together with organising thematic workshops with projects funded under similar topics are provisioned.

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