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Scalable, trustEd, and interoperAble pLatform for sEcureD smart GRID

Sealed GRID

WP1 Project Management and Coordination

Deliverable D1.2 “First year management and technical activity report”

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SealedGRID Project Profile

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Partners

UNIVERSITY OF PIRAEUS	University of Piraeus research center	Greece
UNIVERSIDAD DE MÁLAGA	Universidad de Malaga	Spain
Beia CONSULT INTERNATIONAL	BEIA consult International SRL	Romania
NEUROSOFT	NEUROSOSFT Software Productions SA	Greece

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Executive Summary

This document is part of the WP1 – Project Management and Coordination. The purpose of this report is to summarize all the administrative and technical activities performed during the first year of the project. The main administrative activities include setting up and coordinating the management bodies of the project, organizing the kick off and three more meetings, receiving and distributing the pre-financing, guiding the coordinating the consortium towards management requirements. The main technical activities include the definition of the architecture and the corresponding use cases, the assignment of tasks and responsibilities to the beneficiaries, the effective communication of the architecture to the consortium via the preparation of documents, conference calls, emails, and the specification of tasks in the project management tool, the specification of software engineering practices for the development of the modules and their integration, the monitoring of the implementation efforts, and the editing supervision of the technical deliverables.

This document is organized as follows. Section 1 provides an overview of the project and the management structure. Section 2 describes the main achievements in terms of administrative management, while section 3 provides the same information for technical management. Section 4 includes information on the secondments implemented in the first year, section 5 describes the communication tools used for the purposes of the project coordination, while section 6 concludes the report and set main targets for the second year.

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1 Introduction

The SealedGRID is an innovative platform, builds on a realistic architectural image of industrial installations considering the special characteristics of energy infrastructures, their cyber and physical requirements. The SealedGRID is expected to contribute to the fulfilment of the objective of efficient operation of critical infrastructure, while preserving quality of service, for the ultimate benefit of customers. The SealedGRID platform along with its security methodology and mitigation techniques for cyber, physical and potential cyber-physical threats will provide an integrated solution that will be applicable to existing systems as well. It will also provide advanced security features in legacy equipment upgrading their capabilities for operation in modern computing environment.

The SealedGRID concept is expected to limit the security risks for the expansion of remote energy distribution network management, towards the evolution of Smart Grids. SealedGRID will provide a platform that will abide by the existing standardization work and will be directly utilized by the shareholders to provide new tools towards a scalable, highly trusted, and interoperable Smart Grid security platform.

Currently, much effort is being made at European and global level, to push towards realizing a sustainable development of the Smart Grid, with the minimum vulnerability to external attacks or to malicious Smart Grid nodes. Utility companies globally invest on an efficient, controlled and flexible distribution of the energy to optimize the services that they provide to the end customers. On the other hand, individual clients call for more efficient Smart Grid solutions with guaranteed highly secure Demand Response services that could reduce their electricity bill without sacrificing their privacy or their energy-consuming habits. To this end, SealedGRID will provide an innovative platform that will abide by the existing standardization work and will be directly utilized by the shareholders to provide new tools towards a scalable, highly trusted, and interoperable Smart Grid security platform. The proposed platform will contribute to the ambitious goal posed by European regulations that requires member nations to ensure that 80% of residential households are fitted with a smart meter by 2020. Seconded researchers will create a highly experienced group in this field, to continue working in this highly important research area. In this concept, vital contribution will be provided by the SealedGRID in the current efforts for crewing a European research and development community with expertise in the security systems for the Smart Grid that may combine cross-sectorial (industry and academia) backgrounds.

The Project Management will be composed of Steering and Technical Management. The Steering Management will handle the organisation and administration of the project. The Technical Management will handle the technical evolution and development of the work. The following entities will be involved:

1.1 Project Coordinator (PC)

The Project Coordinator is Prof. Christos Xenakis. The PC will be responsible for the efficient execution of all project activities. The PC will continuously monitor the progress of the project, by ensuring that it is adherent to the objectives and workplan agreed in the contract. In particular, the main duties of the PC will include: i) to promptly react if disagreements or inconsistencies show up with respect to

the contract obligations with the EC, ii) the overall organisation of the activities to produce the annual review reports and the final report, and iii) the management of all non-technical relations with the EC and other external liaisons. Moreover, the PC will be responsible for all administrative tasks, preparation of control reports, cost statements, and contracts.

1.2 Steering Committee (SC)

The SC will be composed of one ER from each beneficiary of the consortium. It will be the superior governing body, and will have an adequate gender balance. It will be chaired by the PC.

1.3 Exploitation Committee (ExC)

The ExC will be responsible for ensuring the efficient dissemination/exploitation of the results. It will be composed of representatives of each beneficiary. The tasks of the ExC will be coordinated by the PC and reviewed by the SC. Main tasks of the ExC will include the preparation of exploitation and knowledge sharing plans.

1.4 Scientists in Charge (SiC)

They will be identified by the beneficiaries, and will serve as liaisons with the PC. In most of the cases, they will be the members of the SC.

1.5 Work Package Leaders (WPL)

They will coordinate all WP activities. They will report quarterly to the PC, arrange regular technical meetings, ensure program timeliness, and the right management of people and resources. Any discrepancy with the signed contract will be immediately reported to the PC. WPLs will lead the preparation of the deliverables, and ensure that the objectives and milestones will be achieved in due time.

2 Administrative Management

2.1 Consortium Agreement

Discussions for the Consortium Agreement (CA) started right after the successful evaluation results and concluded with the final signed version of **February** 2018, that has been signed by all project partners. The aim of this CA is to determine the responsibilities of the consortium towards the European Commission. Various aspects will be covered by the CA including: confidentiality, ownership of results, commercial exploitation, obligation for use, and dissemination of knowledge.

2.2 Pre-Financing

Partner	Total Funding	Pre-financing
UNIVERSITY OF PIRAEUS RESEARCH CENTER	333,000.00 €	199,800.00 €
UNIVERSIDAD DE MALAGA	249,000.00 €	149,400.00 €
BEIA CONSULT INTERNATIONAL SRL	249,000.00 €	149,400.00 €
NEUROSOFT SOFTWARE PRODUCTIONS SA	249,000.00 €	149,400.00 €
TOTAL	**1,080,000.00 €**	**648,000.00 €**

2.3 Project Meetings

The project has organized three meeting during the first year of the project, including both technical and administrative discussions:

Meeting	Date	Place	Organizer
Kickoff	14/2/2018 – 15/2/2018	Brussels, Belgium	UPRC
1st meeting	6/7/2018	Piraeus, Greece	UPRC
2nd meeting	8/8/2018	Athens, Greece	NEURO
3rd meeting	19/12/2018	Bucharest, Romania	BEIA

The agendas of the three meetings of the first year of the project are included below:

Kickoff meeting – UPRC, Brussels, Belgium

Item	Time	Topic	Leader
14 February 2018			
	13:30-14:00	**Arrival of meeting participants**	
1	14:00-14:30	**Welcome, agenda approval and project overview**	UPRC
	14:30-15:30	**Project management** (RISE framework, secondments, reporting, financial issues)	UPRC
2	15:30-16:00	**Coffee break**	
3	16:00-17:30	**Discussion on project implementation** (The project approach, WPs, phases etc.)	ALL
15 February 2018			
	8:30-9:00	**Arrival of meeting participants**	
4	9:00-9:15	**Welcome, introductions, project overview**	UPRC
5	9:15-10:30	**PO Presentation and discussion**	PO

Item	Time	Topic	Leader
	10:30-10:45	**Coffee break**	
6	10:45-11:00	**Partner presentation** (profile, role, experience, tools, technical approach)	UPRC
7	11:00-11:15	**Partner presentation** (profile, role, experience, tools, technical approach)	UMA
	11:15-11:30	**Partner presentation** (profile, role, experience, tools, technical approach)	NEURO
	11:30-11:45	**Partner presentation** (profile, role, experience, tools, technical approach)	BEIA
8	11:45-12:15	**Project implementation / Action points / Discussion**	ALL

1st Meeting – UPRC, Piraeus, Greece

Item	Time	Topic	Leader (contributors)
Day 1, 04.07.2018			
	08:30-09:00	Arrival of meeting participants, coffee	
1	09:00-09:15	Welcome, agenda approval	UPRC

Item	Time	Topic	Leader (contributors)
2	09:15-10:15	W1: Project management issues	UPRC
3	10:15-11:15	WP2: Proposed requirements, use cases and architecture	BEIA / All
4	11:15-12:15	WP7: • Dissemination activities, • Standardisation	UMA / All

2nd Meeting – NEURO, Athens, Greece

Item	Time	Topic	Leader (contributors)
Day 1, 8.8.2018			
	08:30-09:00	Arrival of meeting participants, coffee	
1	09:00-09:15	Welcome, agenda approval	UPRC
2	09:15-10:15	WP1: Project management issues	UPRC
3	10:15-11:15	WP2: Approval of • SealedGRID requirements, • SealedGRID use cases and • SealedGRID architecture	BEIA / All
4	11:15-12:15	WP7: Demonstration of Dissemination Material Progress of: • Dissemination activities, • Standardisation	UMA / All

3rd Meeting – BEIA, Bucharest, Romania

Item	Time	Topic	Leader (contributors)
Day 1, 19.12.2018			

Item	Time	Topic	Leader (contributors)
	08:30-09:00	Arrival of meeting participants, coffee	
1	09:00-09:15	Welcome, agenda approval	UPRC
2	09:15-10:30	WP1: Project management issues • Secondments planning • Reporting • WP1 deliverables	UPRC
3	10:30-11:30	WP2: Finalization of D2.1 • SealedGRID requirements, • SealedGRID use cases and • SealedGRID architecture	BEIA / All
4	11:30-12:30	WP3: Key management and authentication • Task 3.1: Key management for the SG	UPRC
5	12:30-13:30	WP7: Demonstration of Dissemination Material Progress of: • Dissemination activities, • Standardisation	UMA / All

3 Technical and Innovation Management

In this section, we describe an overview of the technical progress of the project. Also, we give a brief overview of the technical standards/protocols/frameworks that are used.

3.1 Technical progress Report

During the months of February to December 2018, the components of the architecture and the corresponding use cases were clearly described in various documents including the deliverable D2.1 “Technical requirements and reference architecture”. These documents were used to effectively communicate the architectural vision to all partners. Importantly, they were also used to assign responsibilities to the partners with a fine granularity focusing on the first year's description of work and according to the assigned funded effort.

The business cases, the requirements and the architectural vision were also communicated through conference calls between the partners. Below we describe an overview of the technical progress and how it is documented in the delivered deliverables.

3.1.1 Business Cases

The design process of SealedGRID was initiated by eliciting requirements via an analysis of complementary use cases. These use cases are described in SealedGRID proposal and demonstrate

the core functionalities of the SealedGRID. Three use cases were considered which are the following; i) single domain SealedGRID scenario; ii) multi domain SealedGRID scenario and iii) mixed scenario. The aforementioned use cases consider almost all the functionalities that will be provided by the SealedGRID platform. More details regarding the business cases can be found in D2.1.

3.1.2 Technical Requirements

The Technical Requirements aims at translating the operational needs of the Smart Grid stakeholders in technological requirements. The list of the business requirements defined in D2.1 are analyzed, in order to define whether the declared requirements are unclear, incomplete, ambiguous, or contradictory to the business scenarios. The outcomes of technical requirements are described in detail in D2.1.

3.1.3 SealedGRID reference platform architecture

The work that has been previously done on use cases led to the more fine-grained definition of SealedGRID reference platform architecture. The reference platform architecture defines and describes the various components of the SealedGRID architecture, the interaction between them and the technologies that will be used for each component. The SealedGRID reference architecture consists of the following three components: i) Smart Meter; ii) Aggregator and iii) Utility. The reference architecture and the components are described in detail in D2.1.

3.2 Dissemination and standardization

SealedGRID’s target is to disseminate the results of the project in several fields such as utility companies, energy distribution operators and security companies. To this end, several dissemination channels are employed, including, website, social media, conferences and journal, public talks, etc. A full list of the dissemination activities for the first year can be found in deliberable D7.1.

The standardisation work aims at ensuring the visibility of the project in the existing standardisation work and to propose solutions in future standards for the Smart Grid. The project will contribute to European and worldwide standardization bodies in order to ensure and increase Europe’s participation in and contribution to international standardization processes. The outcomes of standardization plan are described in detail in D7.1.

4 Secondments

The original plan of secondments was as follows:

Staff ID / Ref. to A form	[ER/ ESR]	Hosting Institution	Active in WP	Start month	Total PM	First Year (Y1) 1 2 3 4 5 6 7 8 9 10 11 12	Second Year (Y2) 13 14 15 16 17 18 19 20 21 22 23 24	Third Year (Y3) 25 26 27 28 29 30 31 32 33 34 35 36	Fourth Year (Y4) 37 38 39 40 41 42 43 44 45 46 47 48
						START			END
UPRC RESEARCHERS									
1	UPRC-ER1	BEIA	WP2/6	7	12	2 2 2 2 2 2		6 6 6 6 6 6	
2	UPRC-ER2	BEIA	WP3	7	12	3 3 3 3 3 3 3	3 3 3 3 3		
3	UPRC-ER3	BEIA	WP3/4	15	12		3 3 3 3 3 3 3 3 4 4 4	4 4	
4	UPRC-ER4	BEIA	WP4	25	12			4 4 4 4 4 4 4 4 4 4 4 4	
5	UPRC-ESR	BEIA	WP5	21	12		5 5 5 5	5 5 5 5 5 5 5 5 5	
UMA RESEARCHERS									
6	UMA-ER1	NEURO	WP2/6	7	12	2 2 2 2 2 2		6 6 6 6 6 6	
7	UMA-ER2	NEURO	WP5	10	12	5 5 5 5 5 5 5 5 5 5 5 5			
8	UMA-ER3	NEURO	WP5	15	12		5 5 5 5 5 5 5 5 5 5 5 5	5 5	
9	UMA-ER4	BEIA	WP4	25	12			4 4 4 4 4 4 4 4 4 4 4 4	
10	UMA-ESR	BEIA	WP3	15	12		3 3 3 3 3 3 3 3 3 3 3 3	3 3	
BEIA RESEARCHERS									
11	BEIA-ER1	UPRC	WP4/6	21	12		4 4 4 4 4 4		6 6 6 6 6 6
12	BEIA-ER2	UPRC	WP5	21	12		5 5 5 5 5 5 5 5 5 5 5 5		
13	BEIA-ER3	UPRC	WP4	25	12			4 4 4 4 4 4 4 4 4 4 4 4	
14	BEIA-ER4	UMA	WP6	37	12				6 6 6 6 6 6 6 6 6 6 6 6
15	BEIA-ESR	UMA	WP3	15	12		3 3 3 3 3 3 3 3 3 3 3 3	3 3	
NEURO RESEARCHERS									
16	NEURO-ER1	UMA	WP5/6	25	12			5 5 5 5	6 6 6 6 6 6 6 6
17	NEURO-ER2	UMA	WP4/5	25	12			5 5 5 5 5 5 5 5 4 4 4 4	
18	NEURO-ER3	UMA	WP3/6	9	12		3 3 3 3 3 3		6 6 6 6 6 6
19	NEURO-ER4	UMA	WP2/6	7	12	2 2 2 2 2 2			6 6 6 6 6 6
20	NEURO-ESR	UMA	WP6	37	12				6 6 6 6 6 6 6 6 6 6 6 6

* Numbers inside the duration of secondments indicate the involvement in specific workpackages

During the first year three secondments started.

Name	Home partner	Hosting partner	Start date	End date
Dr. Ruben Rios del Pozo	UMA	NEURO	1/7/2018	30/8/2018
Prof. Christos Xenakis	UPRC	BEIA	12/1/2018	Open
Mrs Alexandra Dritsa	UPRC	BEIA	18/1/2018	Open

The consortium is committed to increase the number of secondments to reach the planned months in the first half of 2019.

4.1 Christos Xenakis

Christos Xenakis is the Project Coordinator of the SealedGRID Project and is a seconded researcher from UPRC to BEIA. His secondment period started on 12/1/2018 and will be finished on 12/1/2019. He is involved in the definition of the business cases and in the design of the SealedGRID reference platform architecture. Furthermore, he leads the WP3: “Key Management and Authentication” which will deliver a state-of-the-art key management and authentication scheme for smart grid. Moreover, he supports the dissemination process since he participates in many events in order to promote the SealedGRID project by projecting its goals, its impact and how SealedGRID will achieve its goals utilizing state of the art technologies. Furthermore, he will publish scientific documents is journal with high impact and in well known conferences. These scientific documents will describe the current SealedGRID results and will contain the SealedGRID acknowledgement.

4.2 Alexandra Dritsa

Alexandra Dritsa is a seconded researcher from UPRC to BEIA. Her secondment period launched on 19/12/2019 and will be terminated 18/1/2019. She is involved in the definition of the business cases,

in the design of the SealedGRID reference platform architecture and in the design of the SealedGRID key management for the smart grid. Also, she provides the business plan, the market analysis and an Exploitation plan. Being more specific she will analyze the results of the project from a business point of view to identify an effective exploitation plan of the upcoming research and scientific results of the SealedGRID project. She also supports the dissemination activities since she participates in many events in order to promote SealedGRID’s impact and goals.

4.3 Ruben Rios del Pozo

Ruben del Pozo is a seconded researcher from UMA to NEURO in Athens. His secondment period initiated on 01/07/2018 and terminated on 30/08/2018. He is involved in the definition of the business cases, in the design of the SealedGRID reference platform architecture and in the design of the SealedGRID key management for the smart grid. Being more specific he provided information about the Policy Enforcement Point (PEP), the Policy Decision Point (PDP) and the context-awareness. He also contributed to the theoretical integration of the SealedGRID Key management component with the SealedGRID Authorization component. Furthermore, he will publish scientific documents is journal with high impact and in famous conferences.

4.4 Future Secondment Plan

The SealedGRID consortium aims to increase the secondments on the next months. The following figure demonstrates the future secondments plan. SealedGRID aims to cover more than the 30% of the secondments until the end of the second year (2019).

Staff ID / Ref. to A	[ER/ESR]	Las Name	Fellow ID	Hosting Institution	Active in WP	Start month	Total PM until now	First Year (Y1)	Second Year (Y2)	Third Year (Y3)	Fourth Year (Y4)
								1 2 3 4 5 6 7 8 9 10 11 12	13 14 15 16 17 18 19 20 21 22 23 24	25 26 27 28 29 30 31 32 33 34 35 36	37 38 39 40 41 42 43 44 45 46 47 48
UPRC RESEARCHERS											
1	UPRC-ER#	Xenakis	2	BEIA	WP2/3	12	0.83	2	3		
2	UPRC-ER#	Dritsa	3	BEIA	WP2/3	12	1	2		4 4 4 4 4	
3	UPRC-ER#	New Secondee			WP3/4				3 3 4	4 4 4 4	
4	UPRC-ER#	New Secondee			WP3/4				3 3 3 3 3 3 3 3 3 3 3 4		
5	UPRC-ER#	New Secondee			WP3/4				3 3 3	3 3 3 5 5 5 5 5 5	
6	UPRC-ER#	New Secondee			WP4				4 4		
7	UPRC-ER#	New Secondee			WP3					3 3 3	
8	UPRC-ER#	New Secondee			WP3/5/6					3	5 5 5 6 6
9	UPRC-ER#	New Secondee			WP5/6						5 5 6 6 6 6 6 6 6 6 6 6
10	UPRC-ER#	New Secondee			WP6						5 5 5 6 6 6 6 6 6 6 6 6
UMA RESEARCHERS											
11	UMA-ER#	Rios del Pozo	1	NEURO	WP2/4/6	7	2	2 2		4 4 4 4 6 6 6 6 6 6	
12	UMA-ER#	New Secondee			WP5/4				5 5 5 5 5 5 5 5 4 4 4 4		
13	UMA-ER#	New Secondee			WP5/4				5 5 5 5 5 5 5 5 4 4 4 4		
14	UMA-ER#	New Secondee			WP4/5				5 5 4 5 5 5 5 4 4 4 4 4 4		
15	UMA-ER#	New Secondee			WP4					4 4 4 4 4 4 4 4 4 4 4 4	
BEIA RESEARCHERS											
16	BEIA-ER#	New Secondee		UPRC	WP4/5/6				3 5 4		
17	BEIA-ER#	New Secondee		UPRC	WP3/4/5				3 3 3 3 5 5 5 4		
18	BEIA-ER#	New Secondee		UPRC/UMA	WP3/5/4				3 3 3 3 5 5 5 4		
19	BEIA-ER#	New Secondee		UPRC	WP3/5/4				3 5 4		
20	BEIA-ER#	New Secondee		UPRC/UMA	WP3/6				3 3 3 3	6 6 6	6 6 6
21	BEIA-ER#	New Secondee		UMA	WP3/4/5/6	15			3 5 4 4 4		6 6 6 6 6 6 6
22	BEIA-ER#	New Secondee		UMA	WP3/4/5/6				3 5 4 4 4		6 6 6 6 6 6 6
NEURO RESEARCHERS											
23	NEURO-ER#	New Secondee		UMA	WP3/5				3 3 3 3 3 3 5 5 5 5 5 5		
24	NEURO-ER#	New Secondee		UMA	WP3/5				3 3 3 3 3 3 5 5 5 5 5 5		
25	NEURO-ER#	New Secondee		UMA	WP3/5				3 3 3 3 3 3 5 5 5 5 5 5		
26	NEURO-ER#	New Secondee		UMA	WP5/4/6					5 5 5 5 5 4 4 4 4 4 6 6	
27	NEURO-ER#	New Secondee		UMA	WP6						6 6 6 6 6 6 6 6 6 6 6 6

* Numbers inside the duration of secondments indicate the involvement in specific workpackages

5 Project Communications

5.1 Mailing lists

The main communication channel used in the SealedGRID project is build through the following mailing list managed and hosted by UPRC:

sealedgrid-list@ssl-unipi.gr (14 subscribers)

This is the main general mailing list used by all people involved in the project to send communications about technical and non-technical aspects of the SealedGRID project

5.2 Conference Calls

Skype **Error! Reference source not found.** is a tool that is used widely by the consortium in order to s chedule and carry out conference calls. It offers several useful features such as screen sharing, and it is available for free on all platforms.

5.3 File Repository

In order to make easier to share documents between partners, SealedGRID project is hosting a GitLab server [2]. It provides a safe, secure, and compliant file synchronization and sharing solution. It allows to share one or more files and folders and synchronize them. There are clients for different devices and platforms: Windows, Android app and iOS.

When the user wishes to share its work with the other project member it has to push the modified/added files on the server. One of the main advantages of GitLab is the ease of use when talking about the branch system. Users can locally create branches, which are lines of work forked from another lines of work, in order to handle a specific issue without affecting the main line of work. After the users are finished with the branched issue, the work can be merged on the main branch and then pushed on the server in order to make it available to the other project members. When the local branch is no longer needed, it can be deleted, this being transparent to the other project members.

In GitLab server there is only one project. Specific folder for each deliverable will be created. Also, there is different folder for the available dissemination material and photographs from events where partners of SealedGRID participated.

6 Risk Management

6.1 Critical Risks

The following table demonstrates the critical risks being subjected by the SealedGRID consortium.

No.	Description	Risk Mitigation Measures	WP No.
1	Secondments of researchers may affect dynamics in SMEs	Mitigation: Both SMEs have scientists and engineers who guarantee the secondments of staff. Contingency Plan: The companies will hire new researchers/engineers.	1
2	Intellectual Property issues	Mitigation: Define detailed IP rights in the consortium agreement (CA). Contingency Plan: Escalate critical issues to GA and CA.	1
3	Too loose system requirements and architecture in accordance to the technical challenges individuated by the project proposal	Mitigation: Industrial beneficiaries will be actively involved in the system-designing phase. Their expertise will assist in avoiding such problems. In our plan, we foresee review of requirements from the partners involved in the implementation WPs (mainly WP5 and WP6).	2

		Contingency Plan: Seek feedbacks from advisory board and stakeholders to broaden and adapt requirements.	
4	Selected business use cases do not cover the complete spectrum of solutions	Mitigation: Working in an iterative way, the use cases and the technical solutions supporting it will be identified early in the project Contingency Plan: Potential gaps in use cases vs. offered solutions will be found and covered with new or updated business use cases.	2
5	Proposed components pose too high overhead to SG devices	Mitigation: Select a representative sample of devices with similar limitations, in order to test the feasibility of the implementation and identify the limits of the implementations; Explore feasibility on non-compliant devices. Contingency Plan: Implement protocols on non-conformant devices using alternative technological choices.	4,5
6	Hard to achieve technical solutions in terms of security interoperability	Mitigation - Build prototypes of the technical solutions very early in WP4. Abide by standardised procedures and regulations. Contingency Plan - Re-evaluate project goals in order to bypass the technical issue identified.	5
7	Gender Imbalance.	Mitigation: Both SMEs and academic partners have scientists and engineers who guarantee the gender balance. Contingency Plan: The SMEs will hire new researchers/engineers and add new partners to the consortium.	1
8	Update and adopt new emerging technologies of smart grid in the SealedGRID platform.	Mitigation: Both SMEs and academic partners have scientists and engineers who guarantee the integration of state-of-the-art technologies. Contingency Plan: Add new partners to the consortium who have expertise on specific emerging technologies.	3,4,5,6
9	The proposed SealedGRID reference platform architecture poses too high overhead to the consortium.	Mitigation: Both SMEs and academic partners have scientists and engineers who guarantee the implementation and the integration of the SealedGRID platform on time. Contingency Plan: The SMEs will hire new researchers/engineers or add new partners to the consortium.	3,4,5,6
10	Secondment Delay	Mitigation: Delay of secondments execution because researchers from academic partners have lessons with their appearance being obligatory. Contingency: Add new partners in order to change the secondment plane for faster execution of it.	1

6.2 Active Risks

The following risks activated during the first year of the SealedGRID:

i) **Update and adopt new emerging technologies of smart grid in the SealedGRID platform**: Smart Grid ecosystem is always under evolution since more and more technologies are integrated to provide more amenities to the end-users. The final target is achieved utilizing state-of-the-art technologies, i.e. 5G. SealedGRID is a state-of-the-art art project that aims to provide a scalable, highly trusted and interoperable Smart Grid security platform. However, SealedGRID consortium targets to be

constantly update the architecture with state-of-the-art technologies. SealedGRID consortium needs to be expand in order to approach specialists in specific state-of-the-art fields like 5G.

ii) **Secondment Delay:** SealedGRID must comply with its proposal. One the most important issues is the execution of the secondment. However, the academic partners have a strict schedule that has to be followed without changes. The participated researcher who are PhD candidates or professors are responsible with lessons and laboratories that demand their presence. Also, the number of research team is restricted in Greece. These lead to a fact that the execution of the secondment plan is delayed enough. SealedGRID consortium has to be inline with the proposal so the SealedGRID consortium has to be extended with new partners.

7 Conclusions

During its first year, the project progressed without any major deviations. The administrative and technical management procedures have been set up according to the SealedGRID proposal, and the collaboration among partners is flawless and efficient.

8 References

[1] Skype Overview: https://www.skype.com/en/get-skype/

[2] SealedGRID GitLab link: https://sealedgridgit.ds.unipi.gr/users/sign_in