VPP4ISLANDS

Virtual Power Plant for Interoperable and Smart isLANDS

VPP4Islands

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GA 957852

Deliverable Report

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REVISION AND HISTORY CHART

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0.1	24/03/21	BUL, All partners	Draft report V0.1 by BUL with inputs from all partners (questionnaires)
0.2	28/09/21	RDIUP, CIVI	Feedback on draft report V0.1
0.3	29/09/21	BUL	Implementation of feedback from RDIUP and CIVI: Referencing, layout, grammar, consistency, clarification of exploitation routes, update of conclusion and executive summary
0.4	29/04/2022	BUL	Excluded the foreground IP section and the foreground survey questionnaires.

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LIST OF ABBREVIATIONS AND ACRONYMS

PROJECT PARTNERS

Abbreviation	Meaning
ALWA	AlgoWatt
AMU	Aix-Marseille Université
BC2050	Blockchain2050
BornholmsVarme	Bornholms Varme A/S
BoZI	Bozcaada Belediye Baskanligi
BUL	Brunel University
CIVI	CIVIESCO srl
CSIC	Consejo Superior de Investigaciones Científicas
CU	Cardiff University
FORM	Consell Insular de Formentera
FTK	FTK Forschungsinstitut fur Telekommunikation und Kooperation EV
GRADO	Comune di Grado
IDEA	Ingenieria Y Diseno Estructural Avanzado
INAVITAS	INAVITAS Enerji AS
RDIUP	RDI'UP
REGENERA	REGENERA LEVANTE
SCHN	Schneider Electric
TROYA	TROYA CEVRE DERNEGI
UEDAS	Uludag electric dagitim

TERMS IN ALPHABETICAL ORDER

Abbreviation	Meaning
DER	Distributed Energy Resource
DER-ES	Distributed Energy Resource Energy Storage
EPC	European Patent Council
EPO	European Patent Office
ESS	Energy Storage System
EU	European Union
EUIPO	European Union Intellectual Property Office
EUTM	European Union Trade-Mark
EV	Electric Vehicle
IJV	International Joint Venture
IP	Intellectual Property
IPR	Intellectual Property Rights
KA	Knowledge Asset
P2P	Peer-to-Peer (energy trading)
R&D	Research and Development
SME	Small Medium Enterprise
TTO	Technology Transfer Office
VPP	Virtual Power Plant

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EXECUTIVE SUMMARY

IP PROTECTION METHODS

With growing international competition, the protection of intellectual properties (IP) becomes ever more important. Different Knowledge Assets in the forms of IP (including software, data, technological expertise, organisational know-how, and other intellectual resources) are of large and growing importance to national and EU economies. Despite considerable investment in research, software, data, and expertise, knowledge assets are both often undervalued and underexploited. The methods of protecting these IPs are:

Patent - Legal title that allows the patent holder to prevent any third party from exploitation of its invention, even if it is developed independently.

Copyright (including software protection) - Provides protection for authors in their "literary and artistic works. Along these lines, copyright protects the form of expression of ideas, but does not protect mere facts, data, ideas or principles.

Trademark – recognition of a sign (e.g., logo, name, etc.) belonging to the trademark owner, giving exclusive right to the owner to use this sign.

Utility model - The utility model was introduced as a "petty patent" in some countries (including Germany) to provide a cheaper but simpler alternative to patent protection.

Confidentiality - Confidentiality issues and measures should be seriously taken into consideration by the consortium to safely exchange information, facilitating the project development and ensuring the non-disclosure of sensitive technology, business or commercial confidential information.

IP PROTECTION IN UNIVERSITIES, SMES AND INTERNATIONAL JOINT VENTURES

Based on the type of intellectual property, as well as the type of company filing (e.g., university, SME, joint venture, etc.), the most appropriate protection route can be selected. For universities, this primarily depends on their particular goals and objectives for exploitation of research, while for SMEs and international companies other barriers can influence the decision on how to protect their IP, e.g., infrastructure to manage the IP or investment to maximise the value of the IP.

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PATENTED CLAIMS RELATED TO VIRTUAL POWER PLANTS

A literature review has been performed on the existing patents in the field of Virtual Power Plants (VPP). Several patents have been granted in the field of VPPs and P2P energy communities. Among them are several claims for the methods of operating the VPP with respect to the technical layout and characteristics of the VPP claimed. Thereby, several different VPP designs are claimed to fulfil the methods of operation, including energy generation, storage, and consumption devices as well as functionalities and specific components to make the claimed VPP operate efficiently. In the field of P2P energy communities, only two patents were found to have been granted, which also include the methods of operation and topologies for the energy communities. However, in both areas of patents, there is scope for further patents arising from the VPP4ISLANDs project, taking into account the claims discussed and the specific technical design and operational methods of the VPPs and P2P energy communities, including the energy generation and storage mix and location of these (aggregated) devices, as well as the communication and control of these.

EXPLOITATION APPROACH

To successfully exploit the value and derive profitability from the IPs that are developed during the VPP4ISLANDS project, methods such as IP transfer, licensing, and royalties would have to later be decided between parties. A VPP4ISLANDS IP database could be used to track active IPs and any current exploitation activities being pursued. These decisions would have to be made in parallel with the development and application of any IPs within the project.

IPR DEVELOPMENT WITHIN THE CONSORTIUM

An IPR survey is conducted to test and gain an insight into the activities and knowledge of IP categories of the project partners, how IP is administered within their organisation and give information of the state of background/foreground IP ownership of the consortium partners. To get the most useful information possible at this stage, the survey is answered with as much technical details about the IP as possible, including the originality, novelties of the innovations, specific claims of inventions & exploitation, shared inventions & licensing, patent cumulative value, post-grant patents review, challenged claims, risk of IP infringements and litigated patents. The background IPs identified are presented in Figure 1.

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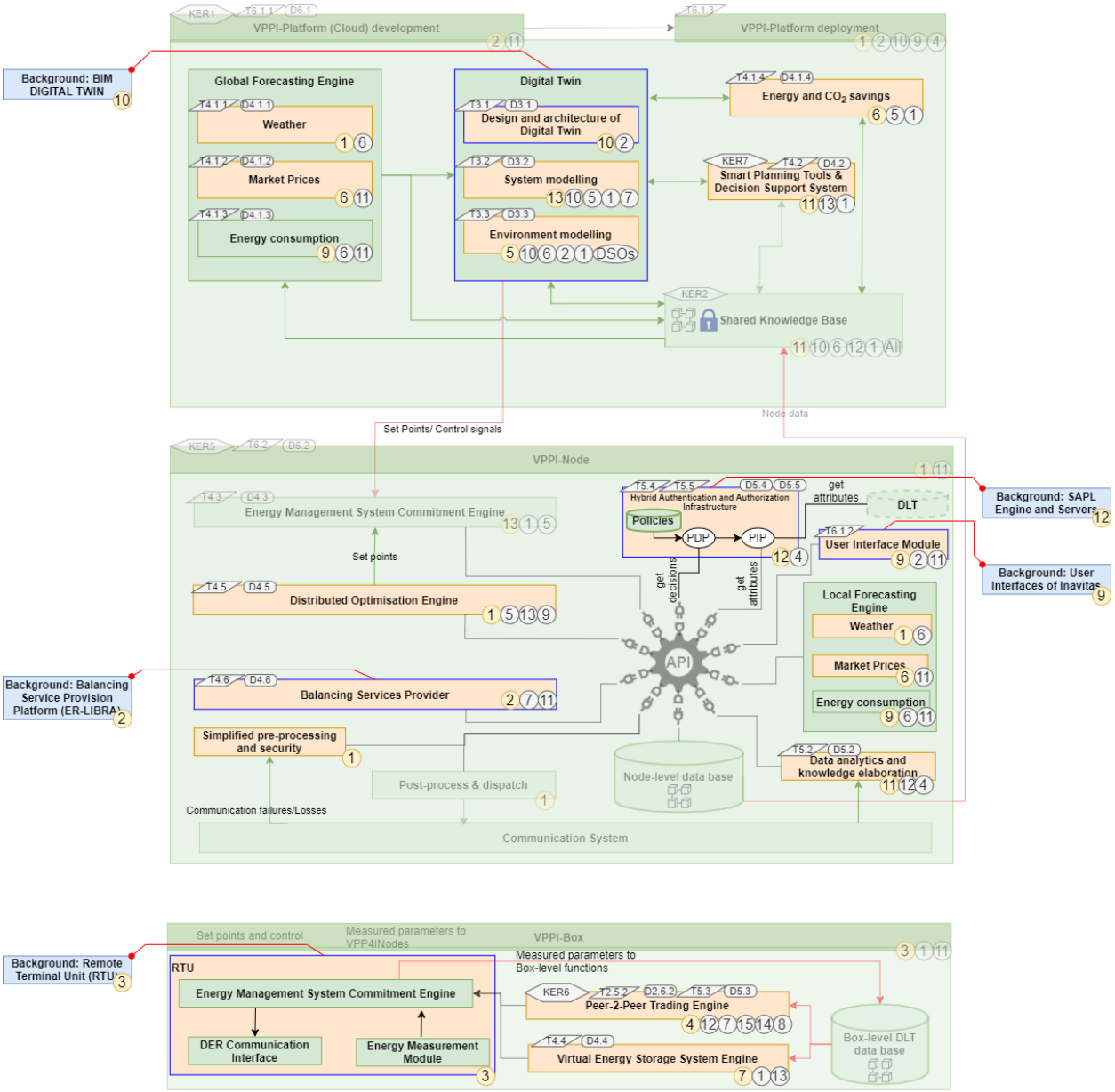

Figure 1: VPP4ISLANDS consortium partners' identified Background (blue) Intellectual Properties.

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PROTECTION OF RESULTS

Regulation of the IP rights consists of many coexisting and complementing layers, hence forms of result protections are manifold. In the case of VPP4ISLANDS, possible avenues for IPR protection are summarized in Table 1.

Table 1: Routes for IPR protection in the VPP4ISLANDS project

	Patent	Copyright	Trademark	Confidentiality
Invention	X			
Software		X		
Scientific article		X		
Design of a product			X	
Name of a product or service			X	
Know-how				X

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2. INTRODUCTION

With growing international competition, the protection of intellectual properties (IP) becomes ever more important. IP can include tangible (e.g., software, data, etc.) and intangible (Knowledge Assets (KA) such as technological expertise, organisational know-how, and other intellectual resources) assets. The correct identification and exploitation are required to maximize the value of IP.

In the H2020 VPP4ISLANDS project, several tangible and intangible IPs are expected to be developed. This report aims to identify IP brought into the project by the project partners (background IP), as well as to identify appropriate exploitation and protection routes for expected foreground IP. The findings in this report are aimed at accelerating the post-project uptake of expected findings. Moreover, this task will ensure a proper management of innovation during the project and, at the same time, advise partners about implementing successful innovation strategies beyond the project's framework.

The reports first shows the overall setting, including the glossary and underlying rationale as well as the alignment with the legal framework. Thereafter, the report presents a literature review on intellectual property protection methods and strategies and highlights existing patents in the VPP field. A questionnaire filled in by all partners identified the background and foreground intellectual properties as expected to be brought in and developed during the project, respectively. Finally, the most appropriate exploitation routes and IP protection methods are identified.

1. OVERALL SETTING

2.1 GLOSSARY

Consortium - A group of institutions or companies acting together in the same project under common interest; in Horizon 2020, it refers to all the participants in the same project.
IPR (Intellectual Property Rights) - Legal rights granted with the aim to protect the original creations of the intellect.
Project result - Any tangible or intangible project results which are generated in the project as well as any attached rights, including Intellectual Property Rights.
Access rights - Rights to use results or background IP under the terms and conditions laid down in accordance with the Horizon 2020 Rules for Participation.
Exploitation - Utilisation of results in further research activities other than those covered by the action concerned, or in developing, creating and marketing a product or process, or in creating and providing a service, or in standardisation activities.

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Dissemination - Public disclosure of project results (other than resulting from protecting or exploiting the results), including by scientific publications in any medium or presentations.

2.2 ALIGNMENT WITH THE LEGAL FRAMEWORK

VPP4ISLANDS Grant Agreement - which is the legal implementation of the project as agreed – through a standard contract - between the European Commission and the Consortium partners.
VPP4ISLANDS Consortium Agreement - which is a private agreement between the beneficiaries meant to set out rights and obligations amongst themselves within the scope of the funded project.
D1.2 Data Management Plan - which extensively describes VPP4ISLANDS management procedures that are followed when dealing with VPP4ISLANDS data, including generated datasets, gathered datasets, and research data.

2. IP IN CONSORTIUMS LITERATURE REVIEW

With growing international competition, the protection of intellectual properties (IP) becomes ever more important. IP can include tangible (e.g., software, data, etc.) and intangible (Knowledge Assets (KA) such as technological expertise, organisational know-how, and other intellectual resources) assets. A series of deliberate actions are required to realise the full value of an IP, which includes the generation, protection, development, deployment and scaling of the IP, as is illustrated in Figure 2 and briefly described thereafter. In reality, not all steps apply to all IP, and these steps are usually iterative [1].

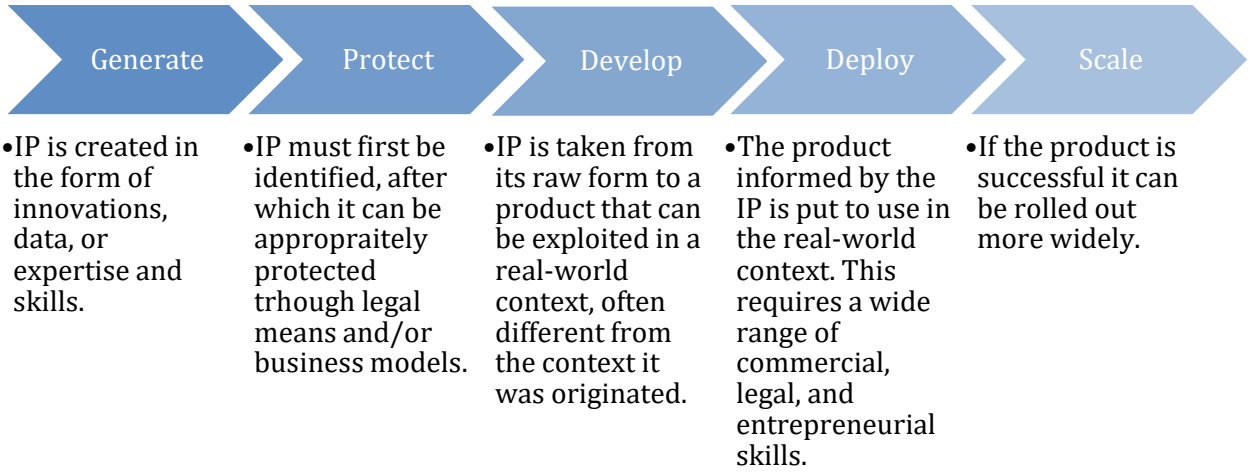

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Figure 2: Steps to managing knowledge assets (adapted from: [1]).

Generation of IP occurs in many at private companies, public institutions, academic institutions in the form of products, knowledge, publications, etc. Some IP is automatically legally protected, (e.g., copyrights), or legal protections can be obtained by applying for a patent or registering a design or trademark. It is also possible to keep the IP confidential by controlling access. The generation and protection of IP is typically followed by further development, especially for tangible IPs. The raw concept is further developed into a product that is exploitable, which can often require substantial additional investments which should be taken into account in selecting the appropriate IP strategy. Thereafter, the owner/developer of the IP needs to decide the correct exploitation route for the IP to maximise its value, which can focus on financial returns and/or wider social and economic impact. This exploitation requires a broad range of skills, e.g., commercial, product development, marketing, licensing, and legal expertise. Finally, once the after successful deployment and the exploitation routes are defined, the product that has been developed needs to be scaled up, allowing it to be rolled out more widely and maximise its impact and return [1].

3.1 IP PROTECTION METHODS

This section explains the IP protection methods, including patents, copyright, trademark, utility model, and confidentiality.

3.1.1 PATENT

A patent is a legal title that can be granted to any invention having a technical character [2]. Article 52(1) of the EPC outlines four basic requirements for patentability [3]:

1. there must be an "invention", belonging to any field of technology.
2. the invention must be "susceptible of industrial application".
3. the invention must be "new".
4. the invention must involve an "inventive step".

Thereby, the EPC excludes certain subjects from being patentable, including discoveries, scientific theories, and mathematical methods as well as programs for computers [4].
In the EU separate titles must usually be obtained for each member state granted by national IP authorities in EU countries, often resulting in high cost of protection [5] or centrally granted by the European Patent Office (EPO) [2]. It is not always possible and rarely sufficient to protect IP with a legal right such as a patent. In the case of data, for example, protection is about recognising its value [1].

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3.1.2 COPYRIGHT

Copyright is the rights granted to authors, creators, performers, producers, or broadcasters of original works [6]. Copyright law in the EU remains essentially a national law, however, national rules are gradually converging through international treaties and Union legislation and thereby harmonising copyright laws across the EU [7]. Software copyright protection is regulated by the Computer Programs Directive (Directive 2009/24/EC), including those which are incorporated into hardware.

The protection by copyright lasts for the lifetime of the author and 70 years after his/her death [8]. During this time, European copyright law provides the right to authorize or prohibit reproduction and any communication to the public (including online distribution of works), with Licensing being the main mechanism for the exercise of copyright and related rights [6].

3.1.3 TRADEMARK

Protection with a trademark provides the owner with the exclusive rights to commercially use a sign, design, or expression that identifies or describes a product and helps differentiate it from competitors [5]. Trademarks allow the owner to appropriate the financial returns of new or existing products hence they play an important role in the marketing of innovations [5].

In the EU, trademarks can either be registered at a national level at the national IP offices, or at a EU level as a 'European Union Trade Mark (EUTM) at the European Union Intellectual Property Office (EUIPO) [9, 10].

3.1.4 UTILITY MODEL

The utility model was introduced as a "petty patent" in some countries to provide a cheaper but simpler alternative to patent protection, are usually granted without substantive examination [11]. Due to the simplified process, utility models are specifically attractive to industries with short product life cycles [12]. Utility models are available for less inventive steps (incremental improvements and adaptations of existing products), can be registered more quickly and are less expensive to acquire and maintain than patents. Compared with patents, however, they have a shorter protection term and provide less legal protection [13]

3.1.5 CONFIDENTIALITY

Confidentiality, or trade secrets, are valuable pieces of information that gives company or institution a competitive advantage. Companies develop new information that helps them perform better, faster, or at lower cost, such as new manufacturing processes, updated recipes, etc. [14].

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These types of information or knowledge assets, that typically cannot be protected by patents or other IPRs are usually protected by secrecy. The Directive (EU) 2016/943 aims to standardise the national laws in EU countries against the unlawful acquisition, disclosure and use of trade secrets [15].

3.2 IP PROTECTION IN UNIVERSITIES, SMEs, AND INTERNATIONAL JOINT VENTURES

3.2.1 UNIVERSITIES

Focusing on public universities, Hewitt-Dundas considered if differences between universities in their research performance is reflected in their knowledge transfer activity [16]. Specifically, as universities develop a commercialisation agenda there can be a difference in strategic priorities for knowledge transfer, the organisational supports in place to facilitate knowledge transfer, and the scale and scope of knowledge transfer activity different for high research intensive (HRI) and low research intensive (LRI) universities. The findings indicate that a universities' approach to knowledge transfer is influenced in particular by their ethos and research quality, rather than the capability to undertake knowledge transfer through a Technology Transfer Office (TTO) [16].

Kenney and Patton examined whether university ownership of inventions made by its personnel best serves the widely held social goals of encouraging technology commercialization and entrepreneurship. Using a hand-collected census of technology-based university spin-offs from six universities, they compared the number and type of spin-offs produced by these universities. They found suggestive evidence that inventor ownership universities can be more efficient in generating spin-offs on both per faculty and per R&D dollar expended perspective. Their results demonstrate that inventor ownership can be extremely productive of spin-offs, and they suggest that governments seeking to encourage university invention commercialization and entrepreneurship should experiment with an inventor ownership system. [17].

3.2.2 SMALL MEDIUM ENTERPRISES (SMEs)

Thomä and Bizer performed a cluster analysis of data from the German Community Innovation Survey to identify modes of appropriability in the SME sector [18]. Their empirical analysis revealed that innovative small firms can be divided into four distinct groups according to the kind of appropriation strategy they adopt:

1. Secrecy, complexity of design, lead time
2. Patent, utility model, trademark, secrecy lead time
3. Trademark, copyright, secrecy, complexity of design, lead time
4. No usage of innovation protection mechanisms

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The results show that for many innovative SMEs the key question is not whether to use IPRs or not, but whether to protect their innovations at all. Thereby, results show that formal and informal protection mechanisms should not be seen as mutually exclusive, since SME innovators combine several methods to form their appropriation strategies. Patents and other IPRs are of low importance to SMEs for IP protection purposes in. Informal protection methods and especially the non-protection mode play a much more dominant role. With the exception of the non-protection group, informal protection (secrecy and lead time advantage) mechanisms play a significant role in all appropriation modes, since these two methods are either complemented by technical and other IPRs or are used in combination with complexity of design as a technology based informal protection method [18].

The handling of IPR by SMEs is typically underdeveloped, leading to improper protection, risk of patent infringements, and overall ignorance to the vast pool of available technical information. Therefore, the approach of a funded project together with SMEs as intended users has been undertaken in Austria. Based on a mutually defined standardised innovation process according to the stage gate model, seven valuable and easy-to-handle IP right tools have been developed [19]:

3. Guideline for patent searches
4. Tool for interpretation of patent search results
5. Decision guidance: “Patent or Secret Know-how?”
6. Lean and proper administration of own IPR
7. Calculation tool for IPR cost prediction
8. Guideline for design patents
9. Guideline for measures against product piracy

With regards to the decision guidance on Patent or Secret Know-how, the aim was to provide a quantitative decision guidance. A check list with 13 specific and relevant questions is used as a support for the decision, whether a patent should be applied for or whether it is more advisable to keep the know-how secret. The answers may be given as one out of five gradations (0%, 25%, 50%, 75%, 100%) resembling the sureness, with which the question can be answered, with 100% being an unambiguous “yes” and 0% resembling a clear “no”. The following 13 questions are used in this approach [19]:

1 Are the legal requirements for a patent met?
2 re infringements by others easily and certainly verifiable
3 Is it possible to keep invention a secret in case of commercialisation/application in sold products?
4 Is the own organisation able to keep it a secret over a longer term?
5 Is there a danger of being copied with an economically significant extent in case there is no patent?

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6 Do you intend to exploit the idea/invention in your own enterprise?
7 How would you assess chances for economically feasible exploitation of the idea in own business?
8 Do you have adequate protection against counterfeiting based on your development lead?
9 Do you intend to offer licences or to sell the invention as a whole?
10 Do you intend to get venture capital, or a credit based on the invention?
11 Is the sought intellectual property right useful as a public relations tool?
12 A patent or utility model is estimated to cost approx. 7,000 €/country in the course of the first 10 years. Do you think that you will make more profit than these costs through added value of property right?
13 Are these costs of the intellectual property right for you in principle affordable?

3.2.3 INTERNATIONAL ENTITIES, CONSORTIA, AND JOINT VENTURES

With regards to international consortia and joint ventures, risk analysis by Scmiele aimed to identify the risk of intellectual property (IP) infringements by competitors from abroad and in particular to consider whether this risk is higher for international innovating firms. The analysis rests on the German data from the Europe-wide Community Innovation Survey and uses a unique data set of about 900 observations, which are retrieved from two survey rounds. While the first round contains information about international and domestic innovation activities, the second-round reports IP infringements. Three different types of IP infringements from abroad were identified

1. The usage of firms' technical inventions
2. Product piracy,
3. Copying of corporate names and designs.

The results show that firms with international R&D activities increase the chances of losing IP to their local competitors abroad. R&D activities in countries with weak IPR laws increase the risk for all three types of IP infringements, compared to national R&D activities. However, firms that innovate only in their home country experience significantly more product piracy cases than international innovating firm. The results show that IP infringements of technological IP cannot be avoided completely by carefully choosing the host innovation countries. Weak intellectual property regimes significantly clear the way to all kinds of IP infringements, while strong IPR countries are territories for technological infringements [20].

Additionally, even firms which have only national innovation activities are significantly more at risk of experiencing foreign product piracy. China, Russia and India are the worldwide main sources of counterfeit and pirated products [21]. In addition, empirical analysis from Schmiele shows that the foreign-owned R&D activities in China lead to firm name infringements, while innovation activities in China but also in North America lead to infringements from these host countries [22].

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Finally, Ott et al. analysed termination in international joint ventures with a set theoretic approach and fuzzy set Qualitative Comparative Analysis. They showed that a parent's firm contribution, ownership, managerial configuration, and experience can lead to a successful end of a joint venture. Based on the analysis, the causal conditions (ownership, configuration, contribution local and foreign, managerial experience) are necessary to terminate the IJV by achieving the initial objectives [23]

3.3 PATENTED CLAIMS RELATED TO VIRTUAL POWER PLANTS AND

Before discussing how to produce the best outcomes from any exploitable results, we can first identify the value that IP in the Virtual Power Plant industry is having.

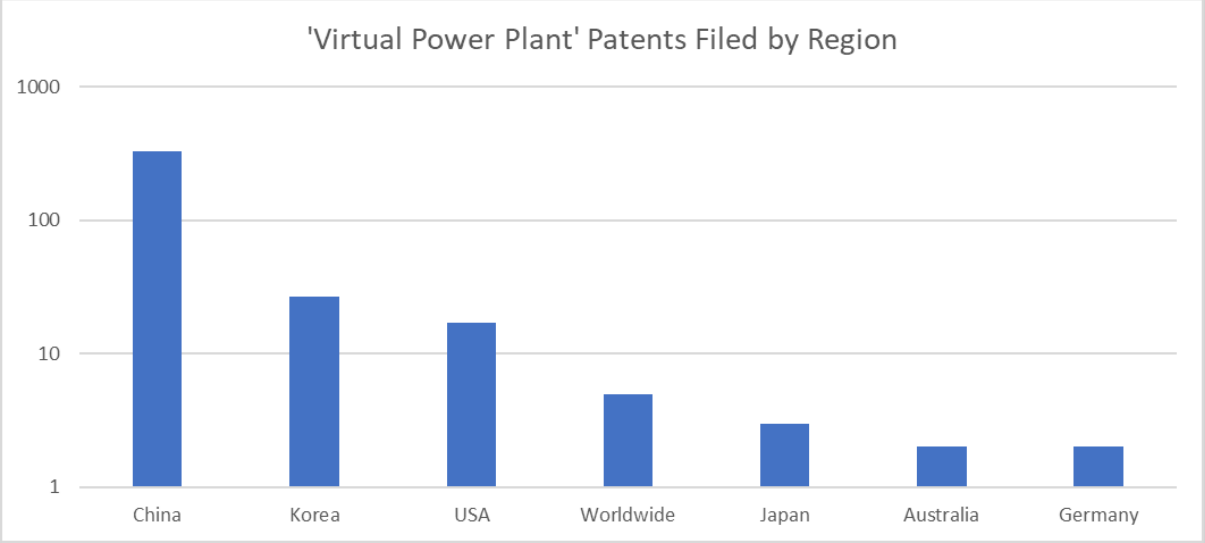

Figure 3: Virtual Power Plant patents filed by region, adapted from [24].

The graph in Figure 3 shows the number of patents filed under or containing the phase 'Virtual Power Plant' as found in Espacenet patent search engine. A total of 388 patents were found since 2005. Figure 4 shows the growth in number of patents filed over the last several years due to the expansion in research and commercialization of VPP systems.

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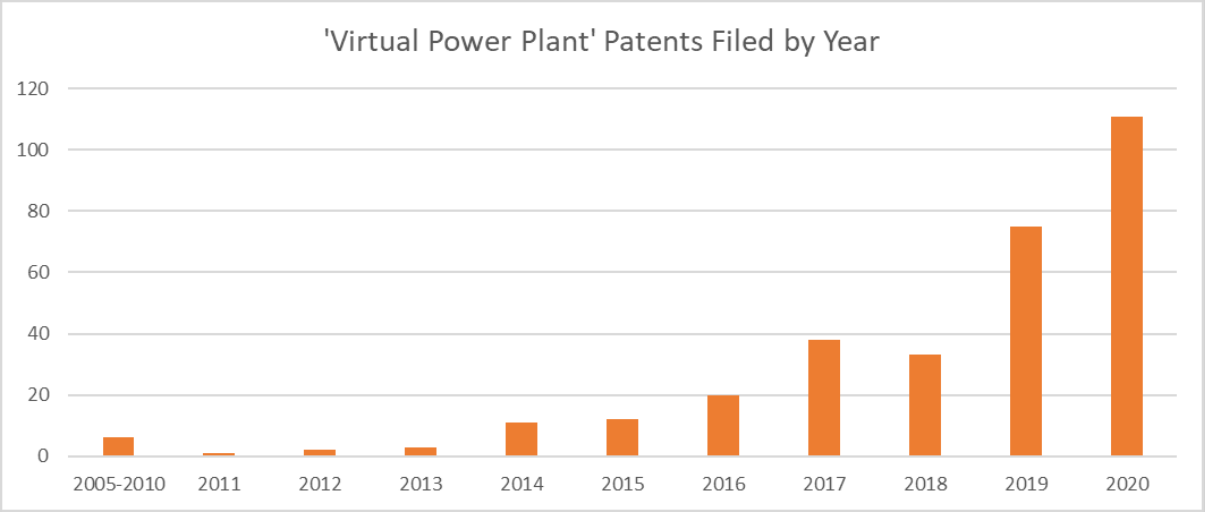

Figure 4: Virtual Power Plant patents filed by year, adapted from [24].

It can be seen that there has been an exponential increase in the number of patents being filed but is not balanced with the increase in number of commercial applications for the product. This leads to many potential areas for innovation to push VPP technology into the market. As will be seen in the following sections the standard IP exploitation routes can be applied to the scenario of the VPP4ISLANDS concept in several ways. Firstly, however, a short review of currently available IPR information for commercialised VPP systems is reviewed to gain and understanding of current pathways to innovation of this technology.

3.3.1 IP OF ESTABLISHED VPP PRODUCTS AND SERVICES

There are a number of pilot studies and small-scale commercial examples of VPP systems around the world. Successful systems are active in Australia, as well as localised and regional systems in Europe and US. The products and services available vary depending on the resources and business objectives of the VPP, from software and data analytics to the physical installation and remote control of energy systems and components. The graphic in Figure 5 shows the spectrum of business offerings from the researched systems, arranged from passive services such as data collection to active controls and system installation.

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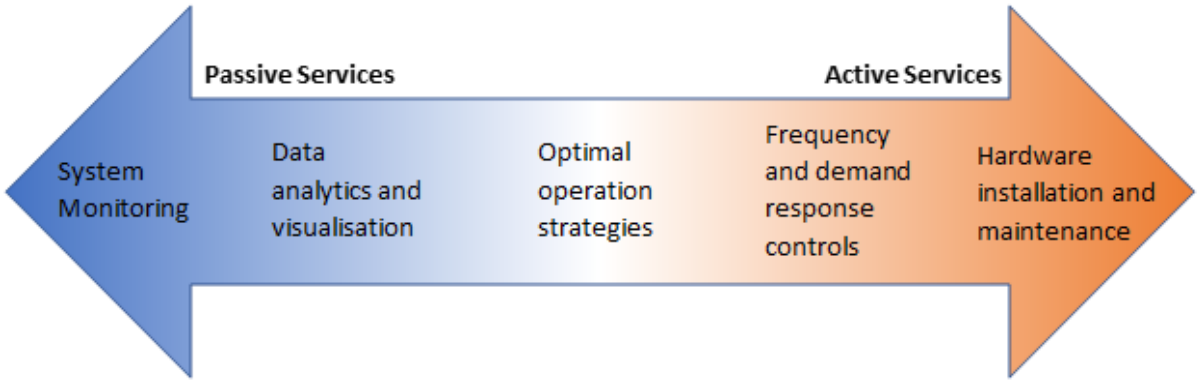

Figure 5: Arrangement of VPP services found within established companies

3.3.1.1 Sunverge Energy

Sunverge is a US-based energy management services that aggregates the system outputs of DERs into a single VPP. The company provides three key services as part of their cloud based VPP portfolio: (1) Grid services, (2) energy management, and (3) energy storage systems [24].
The company has led a few pilot schemes, including a VPP of 165 homes and business in Glasgow, KY, and another PV solar self-consumption and energy storage system for 34 homes in Sacramento, CA. Sunverge is also understood to be starting a new VPP pilot study in Maryland expected in Q1 2022 after approval from the regulatory body, and will be the first to participate in energy market trading.

Sunverge therefore offers a wide variety of services from passive data collection, monitoring and management, to the physical design, installation, and maintenance of complete 'behind the meter' energy generation and storage systems for use in their VPP. As the latter service involves the application of a non-trivial technology and inventive step, Sunverge has filed a patent for their developed system, under IPN WO20170077692A1 [25]. The smart control system, known as an 'edge unit' is installed behind the meter at the end user, and performs the processing of characterisation parameters, operating parameters, and current unit states.

Sanders & Statman of Sunverge Energy are granted the patent for their Virtual Power Plant (WO20170077692A1) [25]. In this patent, a virtual power plant couples to one or more virtual power plant units that provide power and/or storage of power to a power grid. In some embodiments, a method of operating a virtual power plant includes receiving a request from a requester; determining whether the request can be performed by a set of units; reporting the result to the requester, and if a subsequent execution request is received from the requester, then executing the request.

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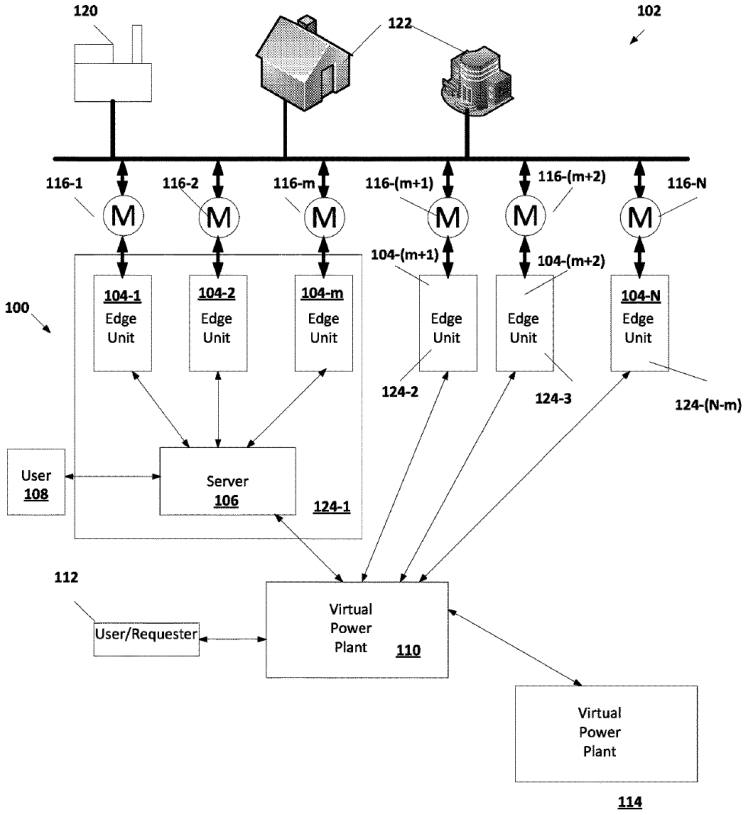

Figure 6: Distributed energy system edge unit [25].

The authors of this patent claim a method of operating as a virtual power plant, comprising of receiving a request associated with transfer of power with a power grid, determining whether the request can be performed by a set of units each including one or more edge units, a power distribution section that includes a power grid interface, and at least one power generation interface, power storage interface and a load power interface, as well as processing unit that controls and monitors the operations and reports and/or instructs whether and how the request can be executed.

Also claimed is when the request in the claim includes an instruction set that includes a sequence of rules to be performed at certain times., as well as determining whether the request can be performed by a set of units, creating a worksheet of instructions to individual units and determining whether performance of one or more of a set of rules that are permissive allows performance that are mandatory in case the request cannot be performed by the set of units. If the requested mandatory set of rules cannot be performed, a best-fit approximation is determined and whether this best-fit approximation can be performed.

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Thereby, a VPP is claimed, comprising of a processor, a communication interface, a power distribution section that includes a power grid interface and at least one of a power generation interface, a power storage interface, and a load power interface, and a processing unit that controls and monitors the power distribution section. Herein, the VPP receives and compiles unit characterization parameters and current state parameters. Thereby, a second communications interface coupled to the processor and a memory coupled to the processor, and the methods of operating this VPP as claimed before.

Sunverge Energy, Inc. also filed a patent for a Renewable Energy Integrated Storage and Generation Systems, Apparatus, and Methods with Cloud Distributed Energy Management Services under patent number US9960637B2 [26]. Their invention is a software platform which is in communication with networked Distributed Energy Resource Energy Storage (DER-ES) apparatus, configured to deliver various specific applications related to:

4 demand monitoring, load shaping methods and services, load shaping API, and forward event schedule using machine learning predictive algorithms
5 methods of reducing demand at aggregated level
6 methods of virtual power plant composition
7 prioritizing computer programs related to virtual energy pool, and energy cloud controller methods
8 charge discharge orchestration plans of electric vehicles,
9 value optimizing algorithms, capacity reservation monitoring, energy management system for governing resources and methods, marginal cost cycle - life degradation

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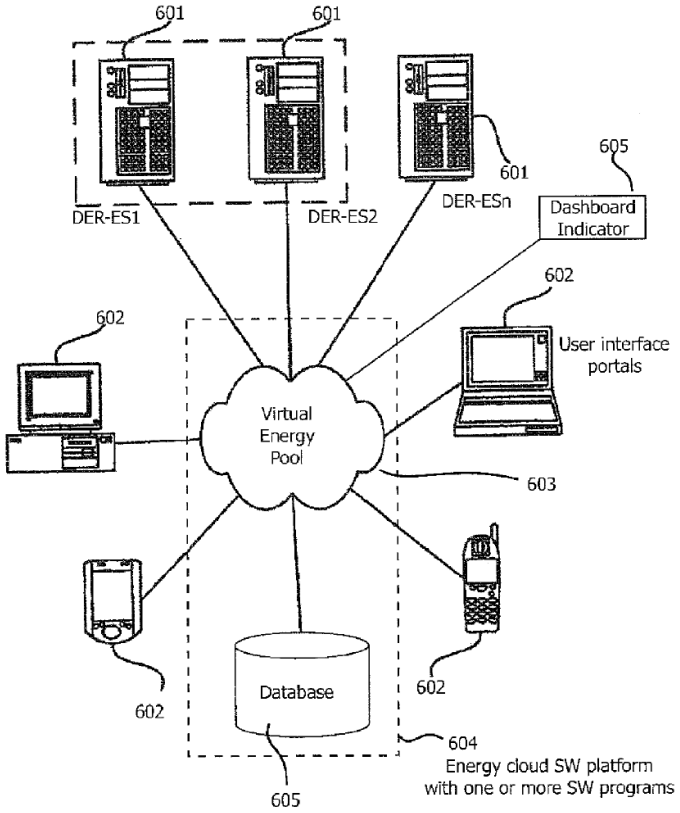

Figure 7: Schematic representation for method of offset demand monitoring in Distributed Energy Resources-Energy Storage apparatus [26].

Sunverge Energy claims a method of offset demand monitoring in DER-ES apparatus comprising steps for, providing one or more communication protocols to allow DER-ES apparatus to communicate with each other without a host computer, implementing steps for one or more mode selection management methods via a gateway controller computer system associated with one or more DER-ES apparatus at a user site, measuring user site demand, selecting an active mode corresponding to the requested mode of the highest priority program, implementing the active mode, housing an inverter in a common enclosure within the DER-ES apparatus, reacting to demand conditions, controlling the inverter to dispatch the matching power output, calculating, selecting and managing one or more offset demand amounts, charging and discharging one or more DER-ES.

Thereby, this method of offset demand monitoring in DER-ES is claimed further include controlling AC power output by a minimum change amount and dispatching the renewable energy power in excess of site demand, calculating an offset demand amount value by selecting a step function

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above the measured load value, calculating an offset demand amount value by monitoring the measured load values in real time and selecting the offset demand output wattage for DER-ES apparatus, and a combination of these. Further, the claims include the way of communication via a CANBUS protocol or via one or more host computers selected from a group of PLC and Modbus. Furthermore, the claims cover establishing a critical load panel at the site and measuring energy demand, starting offset monitoring, measuring demand for a wating period, determining DER-ES mode of operation and measurement of loads at the site for true 0 AC situations, as well as situation with plurality of renewable energy sources, the system located in a distributed energy network,

3.3.1.2 Siemens/VIBECO

VIBECO (Virtual Building Ecosystem Oy) is a Finnish VPP company owned by Siemens and responsible for operating the VPP technologies in the market. Siemens provides the technical system specifications including energy storage, with VIBECO operating the digital and cloud-based services. VIBECO therefore operates two key services: (1) smart energy platform and (2) Virtual Power Plant [27].

The smart energy platform is a software system that allows for knowledge-based management of properties and energy assets. The systems can then be controlled to improved environmental and economic performances through use of optimal conditions. The platform also includes vehicle charging infrastructure management to avoid grid congestion and predict upgrade requirements.

The VPP itself contains the market participation element derived from DERs, ESS and EV management. The TSO in Finland (Fingrid) vies compensation for increased flexibility that benefits buildings within the VPP, expanding the market for decentralised flexibility in the energy grid.

Like the previous Sunverge system, the Siemens/VIBECO VPP contains both a passive software and energy management services, as well as distribution of complete ‘behind the meter’ systems to be installed and controlled by the VPP. The software component is challenging to protect under IP laws, but the physical system has been filed under EP2015079099 [28]. The patent contains a method for monitoring and actively controlling the State-Of-Charge (SOC) of the distributed energy systems for the realisation of flexible services – for which the measurement and control of the SOC is vital.

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3.3.1.3 Parsonnet & Narayanamurthy

Parsonnet & Narayanamurthy filed a patent for a Utility Managed Virtual Power Plant utilising aggregated Thermal Energy Storage, which was granted in 2012 under patent number WO2010077914A2 [29]. The system allows a utility manager to decide and direct how energy is delivered to a customer on both sides of the power meter, while the customer directs and controls when and how much energy is needed. In the disclosed representation, the utility controls the supply (either transmitted or stored) and makes power decisions on a system that acts as a VPP, while the end-user retains control of the on-site aggregated power consumption assets. The disclosed systems act to broker the needs of the utility and end-user by creating, managing, and controlling the interface between these two entities.

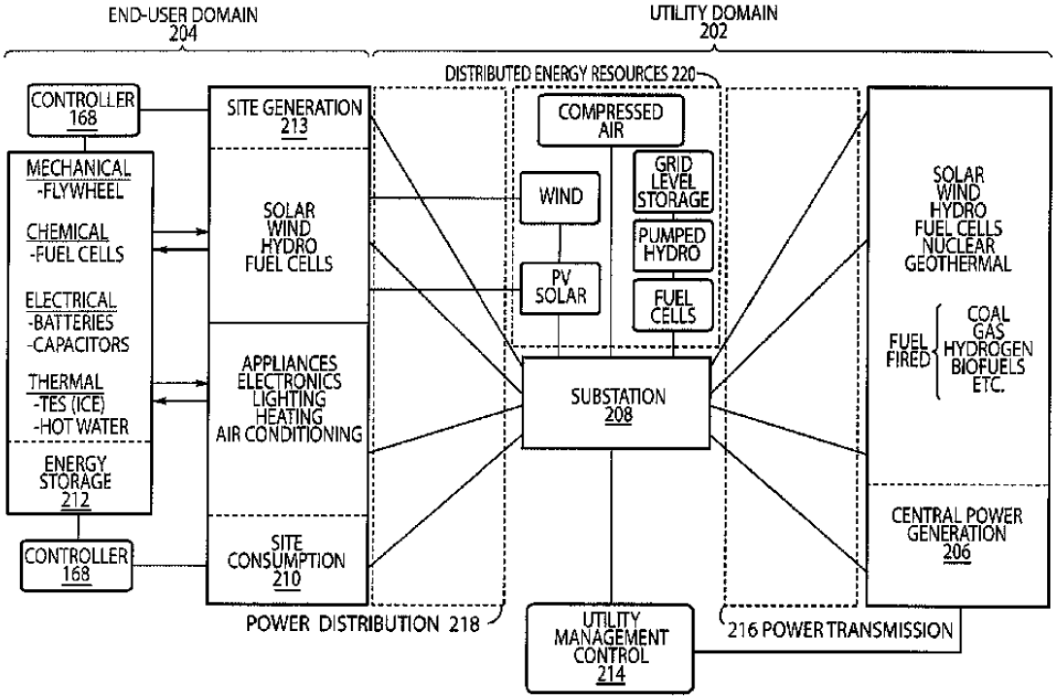

Figure 8: Utility Managed Virtual Power Plant utilising aggregated Thermal Energy Storage [29].

Synopsis of patent specific claims

The system utilises an energy storage unit located in proximity of an end-user, combined with controls and communication link, to temporarily shift the demand for electrical power. Thereby, the patent claims an environmental sensor that senses environmental variables and relays environmental data to the utility managers via the mentioned communication link. Energy storage can comprise of thermal, mechanical, chemical and DC electrical energy, and the performance of the energy storage is communicated to the utility managers. The energy storage, communication

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link and controls can either be for a single end-user or a plurality of end users. The utility manager can be a utility company, energy service company, demand response aggregator, third party energy manager, or a programmable logic circuit.

The environmental sensor comprises at least one of the following real-time variables: time, temperature, relative humidity, dewpoint, UV index, air quality index, carbon emissions, climate Zone, power consumption, energy demand, energy consumption, cooling degree days, utility load profiles, energy grid status, current electric power price, current oil price, current propane price, current natural gas price, day ahead price, day-of price, electric utility revenue, electricity generation price, electricity transmission price, electricity distribution price and energy service company revenue. Thereby, the system can include the forecasted values of the mentioned environmental variables, can be located at the location of the energy storage or remotely, and can communicate with a single or plurality of the energy storage units. The controller for this system can determine shifting of demand based upon at least one of the following:

a) time dependent value of energy,
b) electricity generation price,
c) electricity transmission price,
d) electricity distribution price,
e) in response to a price event,
f) a reliability event, or
g) a load balancing event.

The communication link between utility manager and the controller is performed with at least one of the following: a wide area communications interface, an external physical network interface and a wireless network interface.

The same system is claimed for shifting the demand for electrical power supplied to an end-user by an electrical utility, comprising of a central electrical power generation plant, an electrical power transmission and distribution network, a utility manager that control and manages the electrical power generation and distribution, an electric meter, an energy storage unit on the end-user side of the electric meter, a controller that controls the energy storage unit, and a communication link between the utility manager and end-user. Thereby, the same system is claimed where the energy storage converts electrical energy to thermal energy.

3.3.1.4 John J. Marhoefer

John J. Marhoefer was granted a patent for his invention of a Virtual Power Plant System and Method Incorporating Renewal Energy, Storage and Scalable Value - Based Optimization (WO2012068388A1) [30]. Methods and systems provided for creating a scalable building block

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for a virtual power plant, where individual buildings can incorporate on-site renewable energy assets and energy storage and optimize the acquisition, storage and consumption of energy in accordance with a value hierarchy. Each building block can be aggregated into a virtual power plant, in which centralized control of load shifting in selected buildings, based on predictive factors or price signals, can provide bulk power for ancillary services or peak demand situations. Aggregation can occur at multiple levels, including developments consisting of both individual and common renewable energy and storage assets. The methods used to optimize the system can also be applied to "right size" the amount of renewable energy and storage capacity at each site to maximize return on the capital investment.

Synopsis of patent specific claims

The claims in this patent include a computer-implemented method for distributing electrical energy to a location having an energy storage device and an electrical load, comprising:

(i) identifying a value hierarchy for the location
(ii) calculating an objective function based on values
(iii) identifying an optimized solution for charging or discharging the energy storage device
(iv) controlling the distribution of electrical energy to the energy storage device for charging and discharging according to the optimised solution

Wherein the objective function is optimized using periodic and aggregate constraints determined based on a lowest priority objective in the value hierarchy and then optimized using revised periodic and aggregate constraints determined based on at least one objective prioritized above the lowest priority objective in the value hierarchy, and wherein the optimized solution is performed to minimize a total energy cost at the location. The value hierarchy are selected from the group consisting of:

1. storing a static or dynamic quantity of backup power
2. providing voltage regulation
3. providing frequency regulation
4. providing spinning reserve
5. providing frequency response
6. capacity charge reduction
7. maximizing peak power supply
8. limiting grid power demand
9. arbitrage in energy prices
10. capacity charge reduction for the location
11. wholesale capacity market revenue generation for the location

Wherein the electrical storage device includes a plurality of energy storage devices, wherein each of the plurality of storage devices is independently linked to features of the value hierarchy.

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Thereby, the system can include renewable energy source connected to the energy storage device at the location, which also is capable of calculating optimal capacities for the renewable energy source and the energy storage device based on periodic model data and real-time results for renewable energy production, electrical load, electricity rates, power market revenues, and weather data. Hereby, the periodic constraints are identified for each hour in a 24-hour period, wherein at least one periodic constraint comprises the lesser of:

- a charge rate of the energy storage device minus a predicted amount of excess electricity provided by a renewable energy source at the location, or
- an available unused capacity of the energy storage device for an identified period.

Besides the hourly periodic constraints, the patent also claims the periodic constraints for all 24-hours in the 24-hour time period, including a cumulative load, total daily consumption of the location, or current available capacity of the energy storage device in us the cumulative amount of predicted excess capacity from RES during the 24-hour period.

The above mentioned claims for the computer-implemented method for distributing electrical energy are also claimed for distributing electrical energy, comprising a renewable energy generator; an energy storage device configured to selectively store electricity from an electrical power grid and the renewable energy generator, the energy storage device being configured to supply electricity to a location; a transfer system configured to direct the flow of electricity between the grid, the energy storage device, and the renewable energy generator; and a controller operably coupled to the transfer system.

3.3.1.5 Phoel & Stalling

Related to P2P energy communities, Phoel & Stalling were granted the patent “A method and a system for efficient distribution of electrical energy in a peer-to-peer distributed energy network” (WO2019105991A1) [31]. In this patent, they claim a method for efficient distribution of electrical energy in a peer-to-peer distributed energy network, which is adapted for the distribution of electrical energy and comprising a plurality of nodes, and wherein each node containing one or more devices including electrical energy loads, the method covering:

1. measuring, by one or more energy sensors located in a first node of the plurality of nodes, a series of electrical energy characteristics of the first node, including voltages levels and/or currents levels of electrical connections to the electrical energy loads and physical features including losses and/or congestion of additional physical connections connecting the first node with other nodes of the plurality of nodes; and
2. controlling, by an energy efficiency controller operatively connected with the one or more energy sensors, a transfer of a specific amount of electrical energy from the first node to at least one second node of the plurality of nodes in order the transfer of electrical energy

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being comprised in a determined voltage range, wherein the determined voltage range being below a low voltage threshold.

Further claims include the method of operation, where the transfer of electrical energy further being contained in a determined current range between 0.1 and 2 Amperes, and the connection of the energy efficiency controller with the one or more energy sensors being performed via the additional physical connections connecting the first node with the other nodes or via a separate communication system including a wireless communication network or a telephone network.

The same method is claimed, where the one or more devices further includes electrical energy generation elements including solar panels, wind turbines, diesel generation engines and/or electrical energy storage elements including batteries and/or capacitors. Wherein the energy efficiency controller being further operatively connected with one or more energy sensors located in at least one second node, and the method further covering controlling (by the energy efficiency controller) the transfer of electrical energy considering a series of additional measured characteristics indicative of a resistance of the additional physical connections as well as power lost.
In this method, controlling the transfer of electrical energy is done considering at least one of:

1. a charge level of the electrical energy storage elements of the first node,
2. an efficiency value of charging the electrical energy storage elements, and/or
3. a contracted electrical energy transfer including required electrical energy and period of time over which the electrical energy is needed, and predictions for availability of generated electrical energy at the first node and also at the second node and predictions of storage capacity at the first node for the period of time being considered.

wherein the transfer of the specific amount of electrical energy being for two or more second nodes of the plurality nodes, (receiving node A and receiving node B), and wherein the energy efficiency controller being further operatively connected with one or more energy sensors located in each one of the receiving node A and node B, the method further comprising controlling the transfer of the specific amount of electrical energy to both the receiving node A and node B by considering a timeline for needed electrical energy of the receiving node A and receiving node B. Thereby, the transfer of electrical energy is automatically controlled if a charge level and/or storage level of the electrical energy storage elements of the second node differs from a charge level and/or storage level of the electrical energy storage elements of the first node.

Phoel & Stalling also claim a system for efficient distribution of electrical energy in a peer-to-peer distributed energy network, the system comprising:

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1. a plurality of nodes of an energy network, wherein the energy network being configured and adapted for the distribution of electrical energy and wherein each of the plurality of nodes comprising and one or more devices including electrical energy loads,
2. a plurality of energy sensors, wherein each node of the plurality of nodes comprising one or more energy sensors and wherein the one or more energy sensors located in a node being adapted and configured to measure a series of electrical energy characteristics of the node (including voltages and/or currents levels of electrical connections to the electrical energy loads) and physical features (including losses and/or congestion of additional physical connections connecting the node with other nodes of the plurality of nodes), and,
3. an energy efficiency controller operatively connected with at least one or more energy sensors located in a first node of the plurality of nodes and adapted and configured to control a transfer of a specific amount of electrical energy from the first node to at least one second node of the plurality of nodes in order said transfer of electrical energy being comprised in a determined voltage range, wherein the determined voltage range being below a low voltage threshold.

This system is further claimed where the low voltage threshold is 50 Volts, preferably comprised in a range between 12 to 48 Volts, as well as wherein the transfer of electrical energy further being comprised in a determined current range between 0.1 and 2 Amperes. The energy efficiency controller can be located in the first node or in a remote site. Finally, the system can include one or more electrical energy generation elements including solar panels, wind turbines and/or diesel generation engines and/or electrical energy storage elements including batteries and/or capacitors.

Phoel & Stalling were also granted a patent for the system architecture for energy distribution in a node of a peer-to-peer energy network (WO2019105993A1) [31]. This system architecture comprises a multitude of devices and is connected to one or more other nodes of an energy network in order to provide and/or receive electrical energy of the energy network, and wherein the node includes an energy plane and a control plane, characterized in that the system comprises:

- a plurality of energy interfaces, wherein each one of the plurality of energy interfaces is adapted and configured to receive and/or provide electrical energy from/to a device of said plurality of devices
- one or more first electrical components adapted and configured to direct electrical energy from at least one voltage converter to the plurality of energy interfaces, the one or more first electrical components including a control interface adapted and configured to allow said control plane to open and/or close electrical energy connections

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- one or more second electrical components adapted and configured to provide electrical energy connection between a series of electrical ports and the at least one of voltage converter
- the series of electrical ports adapted and configured to provide electrical energy connection to the one or more other nodes through the energy plane, wherein the series of electrical ports include connections to transfer electrical energy and connections to exchange control information
- at least one instrument adapted and configured to measure the electrical energy flowing over the electrical ports
- means from which an external configuration control module is connectable; and
- a processing unit operatively connected to the set of components and adapted and configured to control operation thereof.

The devices may include electrical energy generation elements, electrical energy storage elements and/or electrical energy loads. The loads may include lighting systems and/or appliances including televisions, radios, kitchen appliances and refrigerators and/or heating equipment, among others. The generation elements may include solar panels, wind turbines, diesel generation systems, geothermal systems, a human-powered crank generator, etc. and the electrical energy storage elements may include batteries and/or capacitors.
The claimed system where the set of components being arranged at different layers is claimed, as well as the system wherein

- the plurality of energy interfaces and the means to enable connection of the external configuration control module being located in a first layer, at the top, of the stack model.
- the one or more first electrical components being located in a second layer of the stack model, under the first layer.
- the series of voltage converters and the one or more second electrical components being located in a third layer of the stack model, under the second layer; and
- the series of electrical ports being located in a fourth layer of the stack model, at the bottom under the third layer.

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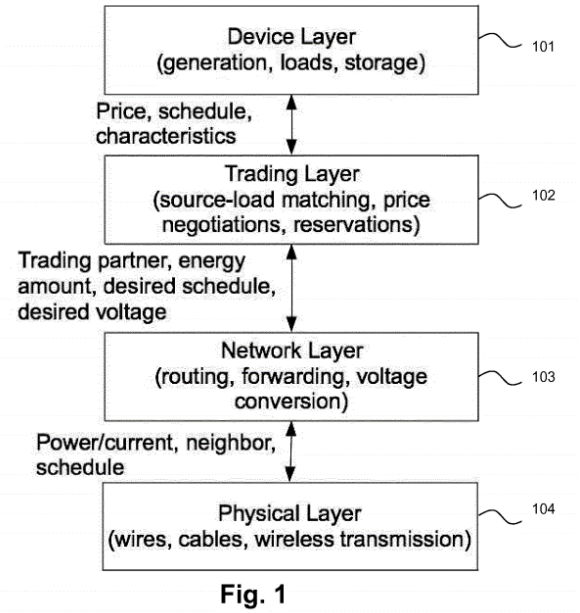

Figure 9: System architecture for energy distribution in a node of a peer-to-peer energy network [31].

The series of electrical ports can have a number of ports comprised in a range between 2 and 5 ports, preferably 3 ports, wherein each one of the electrical ports is adapted and configured to provide connection to a different neighbour node. Each one of the series of electrical ports comprises of a casing having a four-sided shape, the casings being attached between them providing a hardware arrangement. The hardware arrangement comprises a locking mechanism and a sensor configured to notify the processing unit whether the hardware component is locked.

The claimed system can further include a display unit, and each of the plurality of energy interfaces being configured to provide said energy connection at a certain voltage level (5 Volts, 12 Volts, 24 Volts, 48 Volts, 120 Volts and/or 240 Volts) and at a certain type of current (alternating current or direct current).

The claimed system further includes electrical switches on the one or more first and second electrical components, and the at least one instrument comprising a device to measure voltage and current or the at least one instrument comprising two different instruments, a device to measure voltage and a device to measure current.

The external configuration control module can be adapted and configured to provide configuration parameters of the node including schedule functions for power usage and/or priorities for meeting

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load demands if electrical energy is scarce, and optionally price preferences for providing/supplying electrical energy, and to provide status information of the node. The external configuration control module can be physically connected or wirelessly connected, in the latter the system architecture further comprising a wireless communication module.

3.3.1.6 Additional VPP systems

Other VPP systems that have reached pilot studies or commercial realisation include AGL's VPP system in South Australia, in partnership with LG and Tesla [32], and the Germany-based Next Kraftwerke VPP [33].
Both systems operate similarly to the previously defined VPPs, but related IPR was unavailable at the time of writing. It is assumed that any physical systems design and logic are protected for exploitation and innovation, whereas cloud-based services, business models and methods, and execution logic are not protected under IP law.

3.4 EXPLOITATION STRATEGY

The exploitation approach for each project partner has been partially or fully defined within the Description of Actions. Through combination within the questionnaires send to partners and common IP approaches, a generalised exploitation routes can be defined for the project.

3.4.1 VPP INNOVATION SUMMARY

From the available IP information surrounding VPPs, it can be noted that physical assets relating to the control and management of installed renewable systems are patented products as they provide a novel function. Examples are Sunverge's 'Edge Unit' and Siemens/VIBECO's SOC management network.

Within the VPP4ISLANDS architecture, the VPPIBox will perform the function of data collection and sharing within the system, in addition to providing a control authority and managing energy costs to the end user. The RTU component in the VPPIBox, capable of collecting and sending data and commands, will be produced by SCHN without joint IP or licensing, so will be managed internally by the partner.

3.4.2 EXPLOITATION APPROACH

According to the European Patent Office, there are fundamentally four methods of exploiting an invention once patented: (1) Licensing agreement between companies, (2) a business start-up, (3) joint ventures, (4) sale of the idea.

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Successful exploitation of a design concept relies on a number of key aspects that make it attractive to potential licensees and companies. The persuasiveness of the potential profitability or, in the case of the VPP, real reductions in the environmental impact, would need to be recognised in any IP produced. Knowledge-based data collection and the ability the leverage certain data sets to provide a premise for action-based solutions for many industry problems fetches a high value in many industries. Partnering with third-parties and offering data assets for them to continuously improve there own processes would be a valuable asset within the VPP4ISLANDS portfolio of services. The information for handling IPR within a large project such as VPP4ISLANDS were found in [31].

As with the previously researched VPP systems, there is no one end product but a series of products and services that evolve over the length of the project. Each product needs to be categorised within the business model for economic delivery, social and regulatory contexts. From early development through to the exploitation plan, the process can be approximately defined by three phases, as shown in Figure 10.

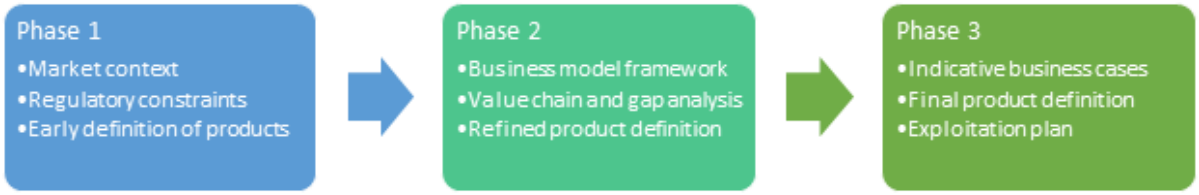

Figure 10: Project plan highlighting requirements to define the exploitation plan (modified from [31]).

It can be noted from this flow diagram that the final exploitation plan relies heavily on an understanding of the product and service that is to be delivered, gaps in the value chain and a market for the product or services, and a business model framework with example cases. A summary of the different products and services are shown in Figure 11.

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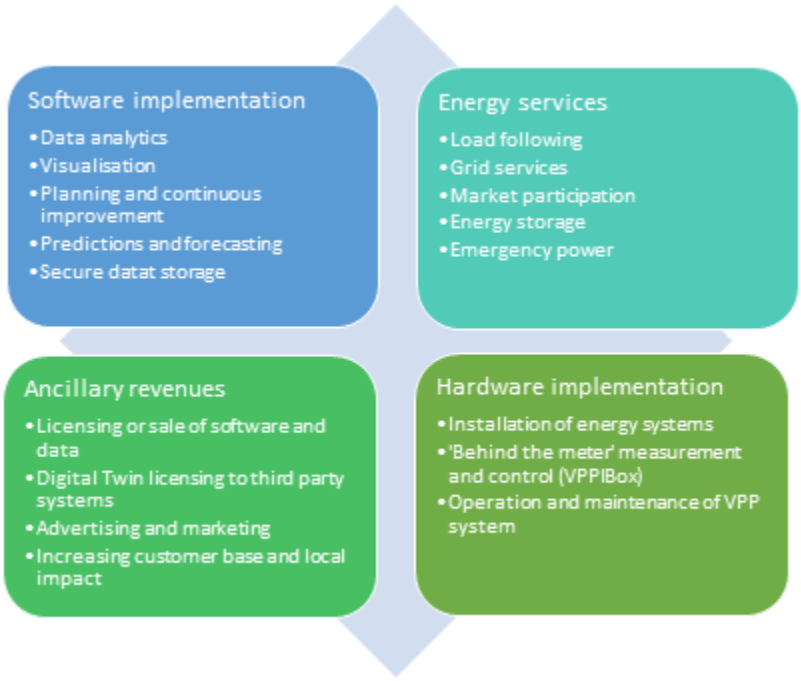

Figure 11: Exploitation routes as defined within the VPP4ISLANDS project.

For the defined business concepts and value chain gaps to be realised as part of the IPR exploitation strategy, there needs to be definition in the methods for management of these specific routes to the market. Differing business models, including methods for deriving value from the innovative concepts being developed as part of this project will rely heavily on pairing with the correct type of IP. The main categories of IP have been described in the previous section, with, for example, physical product development linked to patenting of the invention, and software protection under a copyright. To then derive profitability from the IP, methods such as IP transfer, licensing, and royalties would have to later be decided between parties. A VPP4ISLANDS IP database could be used to track active IPs and any current exploitation activities being pursued. These decisions would have to be made in parallel with the development and application of any IPs within the project.

On top of the standard VPP services delivery as defined in the research, there are a number of other potential products and services that simply utilise the collected data and developed software (Digital Twin and predictive tools) for licensing or sale to other parties for them to improve their own systems.

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3.4.3 THREATS AND CHALLENGES TO THE EXPLOITATION ROUTE

While there is concrete evidence to suggest that the planned exploitable results from the project could provide innovation in many areas, there are some challenges and industry threats to consider for the proposed products and services. The current energy market structure and policies in the EU and around the world have long prohibited VPP products from entering the market, not least that entering such a market as a small player is challenging. Limitations to the size of system to participate in the spot market are also limiting for VPPs. The sharing and licensing of collected data from generation systems and building loads have the potential to be very profitable in the right make as they would allow companies to make more informed decisions about grid operation and predictive maintenance. The access and leveraging of customer usage data is protected under GDPR law, which limits the exploitability of this service. In addition, competitor technologies such as microgrids have seen large growth over the past years, further eroding the visibility of VPPs in emerging energy markets.

4 IPR DEVELOPMENT WITHIN THE CONSORTIUM

4.1 QUESTIONNAIRE

An IPR survey is conducted to test and gain an insight into the activities and knowledge of IP categories of the project partners, how IP is administered within their organisation and give information of the state of background/foreground IP ownership of the consortium partners, including:

- Background IPs that consortium partners are using in VPP4Islands project.
- Foreground IPs that are expected to be developed during the project through joined owned results.
- Any other IP that is generated during the term of the research project but outside of the project (either with or without third parties), which knowledge is critical for use in the VPP project.

To get the most useful information possible at this stage, the survey is answered with as much technical details about the IP as possible, including the originality, novelties of the innovations, specific claims of inventions & exploitation, shared inventions & licensing, patent cumulative value, post-grant patents review, challenged claims, risk of IP infringements and litigated patents [20]. This will be beneficial not only for the exploitation agreement, but more importantly will inform the tasks of T2.3 – Concept definition and Subtask 2.5.1 Specification of the VPP4Islands solutions.

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An example of the IPR questionnaire, as well as the completed questionnaires of all partners are presented in Appendix A. The identified background IPs are presented in Table 2. While the foreground IP has been identified internally, it is not disclosed within this report due to the current IPR constraints.

Table 2: VPP4ISLAND partner's background intellectual property brought into the project.

Partner	Component	Name/title of IP.	IPR number (e.g patent number, trademark number, etc.)	Product (Hardware/ Software/Algorithm/Process, etc).	Type of IP	Ownership (please indicate all parties)
ALWA	Balancing Service Provider	Balancing Service Provision Platform (ER-LIBRA)	N.A.	Software application	Trademark / Copyright	algoWatt SpA
FTK	Hybrid authentication and authorization	SAPL Engine and Servers		Software and Algorithms	Copyright and secrecy	Dominic Heutelbeck
IDEA	Digital Twin	BIM DIGITAL TWIN	Not registered	Software	Trademark: BIM Digital Twin	IDEA
INAVITA	User Interface Module	User Interfaces of Inavitas	2019 113777	Inavitas Software and Trademark	Trademark	Inavitas Energy
SCHN	VPP4I-Box	Remote Terminal Unit (RTU)		Hardware/Software/Algorithms	Trademark	Schneider Electric

The results of the questionnaire show that 29% of partners bring existing IPs into the VPP4ISLANDS project that are directly related to envisioned developments of components in the VPP. These include AlgoWatt's ER-LIBRA Balancing Service Provision Platform, FTK's Streaming Attribute Policy Language (SAPL) Engine and Servers, IDEA's BIM Digital Twin

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platform, Inavitas' User Interfaces, and Schneider's Remote Terminal Unit (RTU). Thereby, 53% of the partners expect to develop IPs during the VPP4ISLANDS project, which are required for a successful development and deployment of the system. An overview of the current and envisioned protection methods for these IPs are presented in Figure 12.

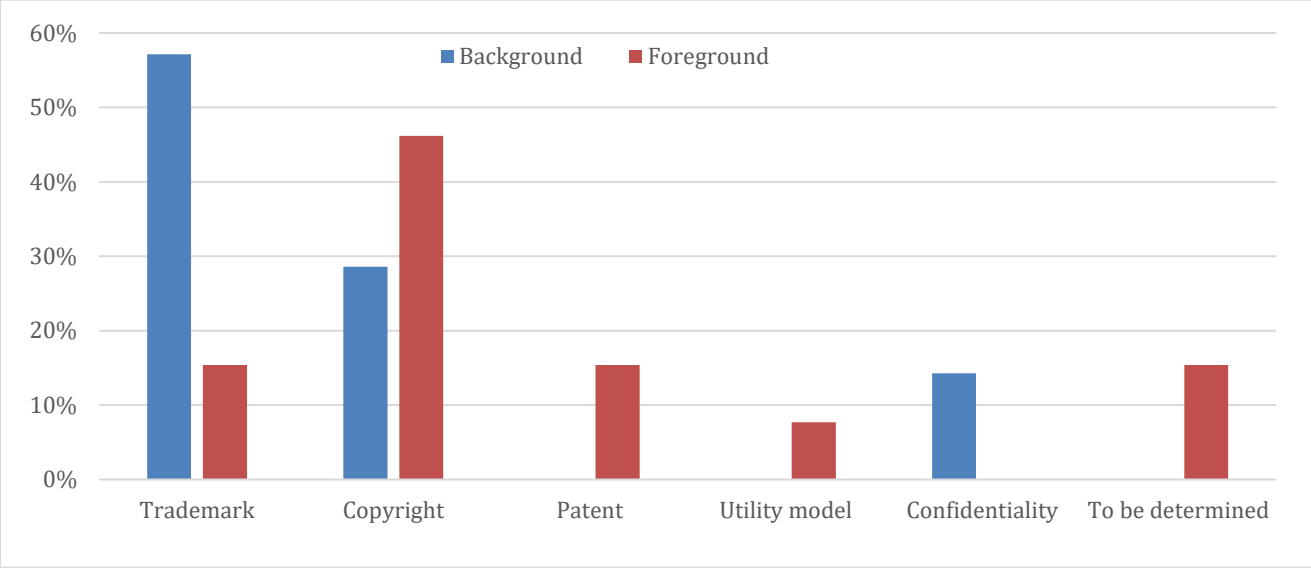

Figure 12: Background and Foreground Intellectual Property protection methods identified through the questionnaires.

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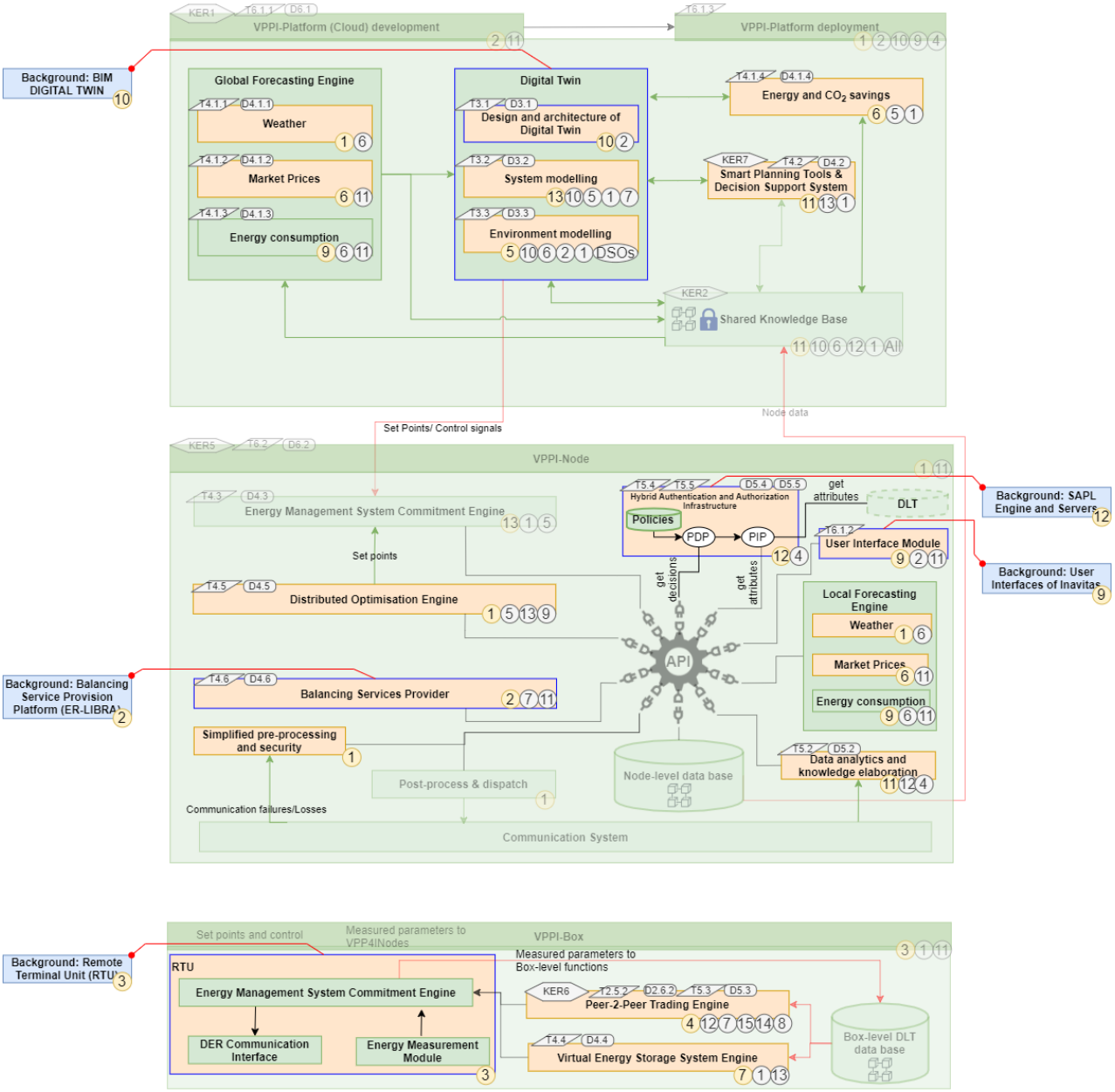

Figure 133: VPP4ISLANDS consortium partners' identified Background (blue) Intellectual Properties.

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5 INTERNAL PROCEDURES FOR IPR MANAGEMENT

5.1 DEFINITION OF RESULT OWNERSHIP

As per the consortium agreement, the results are owned by the party that generates them. Joint ownership is governed by Grant Agreement Article 26.2 with the addition that unless otherwise agreed, each of the joint owners shall be entitled to use their jointly owned Results for non-commercial research activities on a royalty-free basis, and without requiring the prior consent of the other joint owner(s), and each of the joint owners shall be entitled to otherwise Exploit the jointly owned Results and to grant non-exclusive licenses to third parties (without any right to sub-license), if the other joint owners are given that there are at least 45 calendar days advance notice, and a Fair and Reasonable compensation [32].

5.2 PROTECTION OF RESULTS

Should project results be reasonably expected to be commercially or industrially exploitable and their protection possible, reasonable and justified, then participants must provide for adequate protection of the results during an appropriate period and in a suitable territory.

Although IP protection is vital for a prospective commercial or industrial exploitation, on the other hand it is not always mandatory. In fact, it goes without saying that the choice of the most suitable form of IP protection, as well as the duration and geographical coverage depends on the results at stake, but also the business plans for their exploitation and legitimate interests of Consortium partners. The overall strategy of the VPP4ISLANDS Consortium is to seek IP protection in cases where:

1. The project results are clearly capable of commercial application.
2. The rationale for protection is sound.
3. The potential economic benefits clearly outweigh the financial cost of seeking such a protection.

Regulation of the IP rights consists of many coexisting and complementing layers, hence forms of result protections are manifold. In the case of VPP4ISLANDS, possible avenues for IPR protection are summarized in Table 3.

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Table 3: Possible avenues for IPR protection in the VPP4ISLANDS project

	Patent	Copyright	Trademark	Confidentiality
Invention	X			
Software		X		
Scientific article		X		
Design of a product			X	
Name of a product or service			X	
Know-how				X

5.3 DISSEMINATION OF OWN RESULTS

During the Project and for a period of one (1) year after the end of the Project, the dissemination of own Results by one or several Parties, including but not restricted to publications and presentations, shall be governed by the procedure of Article 29.1 of the Grant Agreement subject to the following provisions.

- Prior notice of any planned publication shall be given to the other Parties at least 45 calendar days before planned date of publication.
- Any objection to the planned publication shall be made in accordance with the Grant Agreement in writing to the coordinator and to the Party or Parties proposing the dissemination within 30 calendar days after receipt of the notice. If no objection is made within the time limit stated above, the publication shall be considered permitted.

An objection is justified if:

a) the protection of the objecting Party's Results or Background would be adversely affected
b) the objecting Party's legitimate interests in relation to the Results or Background would be significantly harmed.

The objection has to include a precise request for necessary modifications. If an objection has been raised the involved Parties shall discuss how to overcome the justified grounds for the objection on a timely basis (for example by amendment to the planned publication and/or by protecting information before publication) and the objecting Party shall not unreasonably continue the opposition if appropriate measures are taken following the discussion. The objecting Party can request a publication delay of not more than 90 calendar days from the time it raises such an objection. After 90 calendar days the publication is permitted, provided that all objection(s) of the objecting Party has(have) been properly addressed.

5.4 OTHERS

A Party shall not include in any dissemination activity another Party's Results, Background or Confidential Information without obtaining the owning Party's prior written approval, unless they

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are already published by or with the consent of said owning Party. For the avoidance of doubt, the mere absence of an objection according to Section 8.4.2.1-3 shall not be considered as an approval from a Party to have its Results, Background or Confidential Information published. Any such publication without such Party's written agreement justifies, in addition to any other available remedies, objection to the publication by the concerned Party.

The Parties undertake to cooperate to allow the timely submission, examination, publication and defence of any dissertation or thesis for a degree that includes their Results or Background subject to the confidentiality and publication provisions agreed in this Consortium Agreement.
Nothing in this Consortium Agreement shall be construed as conferring rights to use in advertising, publicity or otherwise the name of the Parties or any of their logos or trademarks without their prior written approval.

5.5 ACCESS RIGHTS TO RESULTS

The background IPRs defined in section 4.1 and the questionnaires in Attachment A are identified and agreed on the background IPRs required for successful completion of the project and have also, where relevant, informed each other that Access to specific Background is subject to legal restrictions or limits. Anything not identified in section 4.1 shall not be the object of Access Right obligations regarding Background.

Any Party may add further own Background to Attachment 1 during the Project by written notice to the Management Support Team which will notify to the other Parties. However, approval of the General Assembly is needed should a Party wish to remove all or part of its Background in Attachment 1.
The Parties have agreed on the following general principles in relation to the access rights of results:

- Each Party shall implement its tasks in accordance with the Consortium Plan and shall bear sole responsibility for ensuring that its acts within the Project do not knowingly infringe third party property rights.
- Any Access Rights granted expressly exclude any rights to sublicense unless expressly stated otherwise in this CA or agreed in writing between the Parties concerned.
- Access Rights shall be free of any administrative transfer costs.
- Access Rights are granted on a non-exclusive basis.
- Results and/or Background shall be used by the other Parties only for the purposes for which Access Rights to such Results and/or such Background have been granted and are subject to the conditions set forth in this CA.
- All requests for Access Rights shall be made in writing. The granting of Access Rights may be made conditional on the acceptance of specific conditions aimed at ensuring that

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these rights will be used only for the intended purpose and that appropriate confidentiality obligations are in place.
- The requesting Party must demonstrate that the Access Rights are Needed.

Access Rights to Results and/or Background Needed for the performance of the own work of a Party under the Project shall be granted on a royalty-free basis, unless otherwise agreed for Background in section 4.1. Access Rights to Results if Needed for commercial Exploitation of a Party's own Results shall be granted on Fair and Reasonable conditions and upon written agreement to be signed by the concerned Parties. Access rights to Results for internal non-commercial research activities shall be granted on a royalty-free basis. Access Rights to Background if Needed for Exploitation of a Party's own Results, including for research on behalf of a third party, shall be granted on Fair and Reasonable conditions and upon written agreement to be signed by the concerned Parties.

A request for Access Rights may be made up to twelve months after the end of the Project or, in the case of Section 9.7.2.1.2, after the termination of the requesting Party's participation in the Project.
Affiliated Entities have Access Rights under the conditions of the Grant Agreement Articles 25.4 and 31.4, if they are identified in Attachment 4 to this Consortium Agreement. Such Access Rights must be requested by the Affiliated Entity from the Party that holds the Background or Results. Alternatively, the Party granting the Access Rights may individually agree with the Party requesting the Access Rights to have the Access Rights include the right to sublicense to the latter's Affiliated Entities listed in Attachment 4. Access Rights to Affiliated Entities shall be granted on Fair and Reasonable conditions and upon written bilateral agreement.

Affiliated Entities which obtain Access Rights in return fulfil all confidentiality and other obligations accepted by the Parties under the Grant Agreement or this Consortium Agreement as if such Affiliated Entities were Parties. Access Rights may be refused to Affiliated Entities if such granting is contrary to the legitimate interests of the Party which owns the Background or the Results. Access Rights granted to any Affiliated Entity are subject to the continuation of the Access Rights of the Party to which it is affiliated and shall automatically terminate upon termination of the Access Rights granted to such Party. Upon cessation of the status as an Affiliated Entity, any Access Rights granted to such former Affiliated Entity shall lapse. Further arrangements with Affiliated Entities may be negotiated in separate agreements.

For the avoidance of doubt any grant of Access Rights not covered by the Grant Agreement or the Consortium Agreement shall be at the absolute discretion of the owning Party and subject to such terms and conditions as may be agreed between the owning and receiving Parties.

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5.6 New Parties entering the consortium

As regards Results developed before the accession of the new Party, such new Party will be granted Access Rights on the same conditions applying for Access Rights to Background as set forth under this CA.

5.7 Parties leaving the consortium

Access Rights granted to a Defaulting Party and such Party's right to request Access Rights shall cease immediately upon receipt by the Defaulting Party of the formal notice of the decision of the General Assembly to terminate its participation in the consortium. A non-defaulting Party leaving voluntarily and with the other Parties' consent shall have Access Rights to the Results developed until the date of the termination of its participation. It may request Access Rights within the period of time specified in Section 9.4.3. Any Party leaving the Project shall continue to grant Access Rights pursuant to the Grant Agreement and this Consortium Agreement as if it had remained a Party for the whole duration of the Project.

6 Conclusion

It is important to correctly generate, identify, protect, and exploit IP within an international consortium, as well as for the individual SMEs, multinationals, and academic partners involved. There are several IPR protection methods that can maximize the impact of the IP, which are patents, copyrights, trademark, utility model, and confidentiality.

Eight different patents have been granted in the field of VPPs and P2P energy communities that are applicable in Europe, granted in the period between 2012 and 2021. Among them are several claims for the methods of operating the VPP with respect to the technical layout and characteristics of the VPP claimed. Thereby, several different VPP designs are claimed to fulfil the methods of operation, including energy generation, storage, and consumption devices as well as functionalities and specific components to make the claimed VPP operate efficiently. In the field of P2P energy communities, only two patents were found to have been granted, which also include the methods of operation and topologies for the energy communities. However, in both areas of patents, there is scope for further patents arising from the VPP4ISLANDs project, taking into account the claims discussed and the specific technical design and operational methods of the VPPs and P2P energy communities, including the energy generation and storage mix and location of these (aggregated) devices, as well as the communication and control of these.

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The final exploitation plan relies heavily on an understanding of the product and service that is to be delivered, gaps in the value chain and a market for the product or services, and a business model framework with example cases. Different products and services are identified to exploitation.

An IPR survey is conducted to test and gain an insight into the activities and knowledge of IP categories of the project partners, how IP is administered within their organisation and give information of the state of background/foreground IP ownership of the consortium partners. All project partners' responses to the questionnaire resulted in an overview of background and foreground IPs. Of all partners, 29% brings useful background IP into the project linked to component of the VPP4ISLANDS system, while 53% of partners expects to develop foreground IP through the activities in the VPP4ISLANDS project and showing high knowledge in the protection of their IPs. All these identified IPs have application in the envisioned VPP to be developed during the project. The relationship between these background and foreground IPs is defined, and their dependencies for development are identified.

Based on the type of companies and expected foreground IP in the VPP4ISLANDS consortium, possible avenues for IPR protection are defined. It is expected that inventions will be patented, while the developed software algorithms and results published in scientific articles will be protected by copyright. The physical design and architecture of the VPP, as well as the commercial name are to be protected by trademark. Further know-how of the system's functionalities and design, as well as experiences gained throughout the project are protected by confidentiality.

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APPENDIX A: EXAMPLE QUESTIONNAIRE FOR THE PROTECTION AND ALLOCATION OF INTELLECTUAL PROPERTY RIGHTS

Survey Questions for all consortium partners

Deliverable link	D8.6 Protection and allocation of Intellectual Property Rights
IPR Questionnaire version	1
Deliverable Date	M12
Questionnaire main editor	BUL
Participants	All partners
Final response date	26 May 2021

Introduction

The deliverable 8.6, following from Task 8.6 - Protection and allocation of Intellectual Property (IP), will focus on a thorough IPR clinic of all exploitable results in the project, with the aim to assess partners' IP background and foreground, find the necessary balance between collaboration and IP protection, reach consensus among contributors for each potential piece of IP, agree upon ownership early in the project and define the most effective innovation protection mechanisms, IPR and non-IPR (Open Innovation) oriented appropriation strategies [18] and market exploitation routes. The analysis is necessary in view of timely addressing all the potential issues that may hamper consortium interaction and project deliverables, ownership, partners hierarchy of needs and IP exploitations. IPR evolution will be discussed in the two planned internal workshops (with particular focus on IPR of joint results) and through dedicated interviews with the partners.

This questionnaire is designed to identify all Intellectual Property Rights (IPR) (the formal protection methods [12], granted as exclusive rights for a certain period of time, are: patent, utility model[1], trademark, copyright, secrecy, design registration)[2] of the VPP4ISLANDS project, including:

[1] *The utility model was introduced as a "petty patent" in some countries (including Germany) to provide a cheaper but simpler alternative to patent protection. It is deemed particularly suited to the specific needs of SMEs. Utility models are available for less inventive steps (incremental improvements and adaptations of existing products), can be registered more quickly and are less expensive to acquire and maintain than patents. Compared with patents, however, they have a shorter protection term and provide less legal protection* (Alfred Radauer, 2007)

[2] *For more information about the different types of IP, please refer to: https://intellectual-property-helpdesk.ec.europa.eu/regional-helpdesks/european-ip-helpdesk/europe-frequently-asked-questions_en*

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- Background IPs that consortium partners are using in VPP4Islands project.
- Foreground IPs that are expected to be developed during the project through joined owned results.
- Any other IP that is generated during the term of the research project but outside of the project (either with or without third parties), which knowledge is critical for use in the VPP project.

To get the most useful information possible at this stage, please fill the survey with as much technical details about the IP as possible, including the originality, novelties of the innovations, specific claims of inventions & exploitation, shared inventions & licensing, patent cumulative value, post-grant patents review, challenged claims, risk of IP infringements and litigated patents [22]. This will be beneficial not only for the exploitation agreement, but more importantly will inform the tasks of T2.3 – Concept definition and Subtask 2.5.1 Specification of the VPP4Islands solutions.
Thank you in advance for providing your feedback and for the time spent in filling this questionnaire.

Questions

1. Who is your company's point of contact for Intellectual Property Rights?

Table 4: Contact details

Full name:	
Title:	
Function:	
Email:	

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Background Intellectual Property

1. Does your organisation own any existing background Intellectual Properties potentially to be used in the project? (Yes/No) If yes, please complete Table 6 on page 51 for each IP. **If there is more than one IP, please copy the complete table and paste in on a new page and fill the table for each identified IP.**

Table 5: Background IP identification

Virtual Power Plant concepts	Yes / No
User Interface Module	Yes / No
Balancing Service Provider	Yes / No
Digital Twin System	Yes / No
Shared Knowledge Base	Yes / No
Smart APIs	Yes / No
Any other relevant IPs:	Yes / No
…	

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Table 6: Background IPR identification sheet

General	Answers
Name/title of IP.	
Description of IP and number of updates (latest version number)	
IPR number (e.g patent number, trademark number, etc.)	
Product (Hardware/ Software/Algorithm/Process, etc).	
Type of IP (e.g., patent, trademark, copyright, secrecy, utility model, design registration).	
IP condition (submitted, granted, etc.) and application date, date granted, and expiry date.	
Affiliation of IP granting organization.	
Geographic area where IP applies (e.g. Spain, EU, Worldwide, etc.)	
What is the relevance of your organisations IPs to the VPP4Islands project? E.g., what challenges are expected if the IP is not accessible/useable in the VPP4Islands project?	
TRL at start of project / expected TRL at end of project.	/
Ownership of IP	
Ownership (please indicate all parties)	
If the IP is co-owned, which other organisations are currently using the IP and how is ownership shared?	
Specific limitations for implementation and exploitation (e.g. exclusive license).	
Is the IP previously transferred from a third party to your organization? If yes, please indicate the original owner of the IP and the year the ownership is transferred.	
Access rights and usage of IP	
Are any other access rights, e.g. third party licenses, needed for the utilisation of existing IPs in the VPP4Islands project?	
Are there any financial and/or technical constraints to access and/or use the existing IP in the VPP4Islands project?	
Are any of the IPs prevented to be exploited in the industry, and for what reason (e.g., because of implications to human health, ethical issues, or potential ecological damage)?	
Additional information	
Please provide any additional links, descriptions and/or other publicly available information of your background IPs:	
Is there any additional information regarding your background IPR that VPP4Island exploitation leaders should be aware of?	
Additional comments (i.e. challenged claims, risk of IP infringements and litigated patents)	

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Foreground Intellectual Property

1. Does your organisation expect to develop any Intellectual Properties that will be generated within the VPP4Island project by (foreground IP)? (Yes/No) If yes, please complete Table 4 on page 53 for each IP.
   If there is more than one IP, please copy the complete table and paste in on a new page, and fill the table for each identified IP.

Table 7: Foreground IP identification

Virtual Power Plant concepts	Yes / No
User Interface Module	Yes / No
Balancing Service Provider	Yes / No
Digital Twin System	Yes / No
Shared Knowledge Base	Yes / No
Smart APIs	Yes / No
Any other relevant IPs:	Yes / No
…	

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Table 8: Foreground IPR identification sheet

General	Answer
Description of expected IP.	
Product (Hardware/ Software/ Process, etc).	
Expected type of IP (e.g., patent, trademark, copyright, secrecy, utility model, design registration).	
Development of IP	
What are your R&D needs and expectations for the development of the IPs?	
Background Intellectual Property required for the development of this IP?	
Any third-party licenses required to develop the IP?	
How important are your organisation's foreground IPs for the VPP4Islands project? E.g., what challenges are expected if the IP is not accessible/useable in the VPP4Islands project, or when development is unsuccessful?	
Do you plan or need additional governmental funds for the R&D and/or IP development? If so, what is the organization(s) and the status of obtaining the funds?	
What is your organisation's expected timeline and general sense of milestones for bringing these IPs to the market?	
Ownership of IP	
Will the IP be developed alone, or with other consortium partners?	
Will the IP be exclusively owned, or include other consortium partners?	
What is your organisation's commercialization decision process for the development of this IP?	
Additional information	
Is there any additional information regarding your foreground IPR that VPP4Island exploitation leaders (BUL) should be aware of:	

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Additional Intellectual Property

1. Are there any other Intellectual Properties (e.g., IP that is generated during the term of the research project but outside of the project) that you expect to use in the project?

Table 9: Additional Intellectual Property under development expected to be used during the VPP4ISLANDS project.

General	**Answer**
Name/title and description of IP.	
Product (Hardware/ Software/ Process, etc).	
Expected type of IP (e.g., patent, trademark, copyright, secrecy, utility model, design registration).	
What are your R&D needs and expectations for the development of the IPs?	
Background Intellectual Property required for the development of this IP?	
Any third-party licenses required to develop the IP?	
Development of IP	
How important are your organisation's foreground IPs for the VPP4Islands project? E.g., what challenges are expected if the IP is not accessible/useable in the VPP4Islands project, or when development is unsuccessful?	
Do you plan or need additional governmental funds for the R&D and/or IP development? If so, what is the organization(s) and the status of obtaining the funds?	
What is your organisation's expected timeline and general sense of milestones for bringing these IPs to the market?	
Ownership of IP	
Will the IP be exclusively owned, or include other consortium partners?	
Ownership (please indicate all parties)	
What is your organisation's commercialization decision process for the development of this IP?	
Additional information	
Is there any additional information regarding this IPR that VPP4Islands exploitation leaders (BUL) should be aware of:	

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2. Are the IPs you plan to use in the VPP4ISLAND project used in any other research projects? If yes, please indicate the funding organization for the applicable research project.

3. Are any of the IPs you plan to use during the VPP4ISLAND project licensed from a third party? If yes, please attach the IPR declaration license form.

Please complete the below checklist below

Table 10: Checklist for completion of the IPR Questionnaire

Indicated all applicable background IPs	
Identified all applicable co-owners of background IPs	
Supplied all applicable documentation/links to background IPs	
Identified all applicable third-party licenses required to use IPs	
Indicated all applicable foreground IPs	
Identified all applicable licenses required for development of foreground IPs	
Identified all applicable partners required for development of foreground IPs	
Identified all applicable financial and technical constraints for development of foreground IPs	
Indicated all applicable additional IPs	
Identified all applicable licenses required for development of additional IPs	
Identified all applicable partners required for development of additional IPs	
Identified all applicable financial and technical constraints for development of additional IPs	

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Ownership of results

Results are owned by the Party that generates them. In the DESCA consortium agreement, 2 options are provided for the joint ownership of results, access rights for exploitation, and additional access rights. Please read the following section carefully and fill in below your initial preference. This is in no case binding but is used for an early evaluation of the strategies of each consortium partner, and to identify potential clashes as early as possible.

Joint ownership

Joint ownership is governed by Grant Agreement Article 26.2 with the following additions:

[Option 1:]	[Option 2:]
Unless otherwise agreed: – each of the joint owners shall be entitled to use their jointly owned Results for non-commercial research activities on a royalty-free basis, and without requiring the prior consent of the other joint owner(s), and – each of the joint owners shall be entitled to otherwise Exploit the jointly owned Results and to grant non-exclusive licenses to third parties (without any right to sub-license), if the other joint owners are given: (a) at least 45 calendar days advance notice; and (b) Fair and Reasonable compensation.	In case of joint ownership, each of the joint owners shall be entitled to Exploit the joint Results as it sees fit, and to grant non-exclusive licences, without obtaining any consent from, paying compensation to, or otherwise accounting to any other joint owner, unless otherwise agreed between the joint owners. The joint owners shall agree on all protection measures and the division of related cost in advance.
Preferred option:	

Access Rights to Results

[Option 1:]	[Option 2:]
Access Rights to Results if Needed for Exploitation of a Party's own Results shall be granted on Fair and Reasonable conditions. Access rights to Results for internal research activities shall be granted on a royalty-free basis.	Access Rights to Results if Needed for Exploitation of a Party's own Results shall be granted on a royalty-free basis.
Preferred option:	

Additional Access Rights

[Option 1:]	[Option 2:]
For the avoidance of doubt any grant of Access Rights not covered by the Grant Agreement or this Consortium Agreement shall be at the absolute discretion of the owning Party and subject to such terms and conditions as may be agreed between the owning and receiving Parties.	The Parties agree to negotiate in good faith any additional Access Rights to Results as might be asked for by any Party, upon adequate financial conditions to be agreed.
Preferred option:	

End of questionnaire

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APPENDIX B: COMPLETED QUESTIONNAIRE FOR THE PROTECTION AND ALLOCATION OF INTELLECTUAL PROPERTY RIGHTS

ALWA

Survey Questions for all consortium partners

Deliverable link	D8.6 Protection and allocation of Intellectual Property Rights
IPR Questionnaire version	1
Deliverable Date	M12
Questionnaire main editor	BUL
Participants	All partners
Final response date	26 May 2021

Introduction

The deliverable 8.6, following from Task 8.6 - Protection and allocation of Intellectual Property (IP), will focus on a thorough IPR clinic of all exploitable results in the project, with the aim to assess partners' IP background and foreground, find the necessary balance between collaboration and IP protection, reach consensus among contributors for each potential piece of IP, agree upon ownership early in the project and define the most effective innovation protection mechanisms, IPR and non-IPR (Open Innovation) oriented appropriation strategies [18] and market exploitation routes. The analysis is necessary in view of timely addressing all the potential issues that may hamper consortium interaction and project deliverables, ownership, partners hierarchy of needs and IP exploitations. IPR evolution will be discussed in the two planned internal workshops (with particular focus on IPR of joint results) and through dedicated interviews with the partners.

This questionnaire is designed to identify all Intellectual Property Rights (IPR) (the formal protection methods [12], granted as exclusive rights for a certain period of time, are: patent, utility model[3], trademark, copyright, secrecy, design registration)[4] of the VPP4ISLANDS project, including:

[3] *The utility model was introduced as a "petty patent" in some countries (including Germany) to provide a cheaper but simpler alternative to patent protection. It is deemed particularly suited to the specific needs of SMEs. Utility models are available for less inventive steps (incremental improvements and adaptations of existing products), can be registered more quickly and are less expensive to acquire and maintain than patents. Compared with patents, however, they have a shorter protection term and provide less legal protection* (Alfred Radauer, 2007)

[4] *For more information about the different types of IP, please refer to: https://intellectual-property-helpdesk.ec.europa.eu/regional-helpdesks/european-ip-helpdesk/europe-frequently-asked-questions_en*

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- Background IPs that consortium partners are using in VPP4Islands project.
- Foreground IPs that are expected to be developed during the project through joined owned results.
- Any other IP that is generated during the term of the research project but outside of the project (either with or without third parties), which knowledge is critical for use in the VPP project.

To get the most useful information possible at this stage, please fill the survey with as much technical details about the IP as possible, including the originality, novelties of the innovations, specific claims of inventions & exploitation, shared inventions & licensing, patent cumulative value, post-grant patents review, challenged claims, risk of IP infringements and litigated patents [22]. This will be beneficial not only for the exploitation agreement, but more importantly will inform the tasks of T2.3 – Concept definition and Subtask 2.5.1 Specification of the VPP4Islands solutions.
Thank you in advance for providing your feedback and for the time spent in filling this questionnaire.

Questions

2. Who is your company's point of contact for Intellectual Property Rights?

Table 11: Contact details

Full name:	Stefano BIANCHI
Title:	Mr. / Eng.
Function:	Research & Innovation Manager
Email:	stefano.bianchi@algowatt.com

Background Intellectual Property

2. Does your organisation own any existing background Intellectual Properties potentially to be used in the project? (Yes/No) If yes, please complete Table 6 on page 51 for each IP. **If there is more than one IP, please copy the complete table and paste in on a new page and fill the table for each identified IP.**

Table 12: Background IP identification

Virtual Power Plant concepts	Yes / No

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User Interface Module	Yes / No
Balancing Service Provider	**Yes** / No
Digital Twin System	Yes / No
Shared Knowledge Base	Yes / No
Smart APIs	Yes / No
Any other relevant IPs:	Yes / No
…	

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Table 13: Background IPR identification sheet

General	Answers
Name/title of IP.	**Balancing Service Provision Platform (ER-LIBRA)**
Description of IP and number of updates (latest version number)	**N.A.**
IPR number (e.g patent number, trademark number, etc.)	**N.A.**
Product (Hardware/ Software/Algorithm/Process, etc).	**Software application**
Type of IP (e.g., patent, trademark, copyright, secrecy, utility model, design registration).	**Trademark / Copyright**
IP condition (submitted, granted, etc.) and application date, date granted, and expiry date.	**N.A.**
Affiliation of IP granting organization.	**N.A.**
Geographic area where IP applies (e.g. Spain, EU, Worldwide, etc.)	**EU**
What is the relevance of your organisations IPs to the VPP4Islands project? E.g., what challenges are expected if the IP is not accessible/useable in the VPP4Islands project?	**The IP supports activities in task T4.6 "Balancing service provision and prosumer aggregation"**
TRL at start of project / expected TRL at end of project.	**5 / 7**
Ownership of IP	
Ownership (please indicate all parties)	**algoWatt SpA**
If the IP is co-owned, which other organisations are currently using the IP and how is ownership shared?	**N.A.**
Specific limitations for implementation and exploitation (e.g. exclusive license).	**Exclusie license covering the duration of the VPP4ISLANDS project**
Is the IP previously transferred from a third party to your organization? If yes, please indicate the original owner of the IP and the year the ownership is transferred.	**N.A.**
Access rights and usage of IP	
Are any other access rights, e.g. third party licenses, needed for the utilisation of existing IPs in the VPP4Islands project?	**NO**
Are there any financial and/or technical constraints to access and/or use the existing IP in the VPP4Islands project?	**ER-LIBRA can be used for demonstration/validation purpose. Any joint exploitation should be further defined in proper agreements.**
Are any of the IPs prevented to be exploited in the industry, and for what reason (e.g., because of	**NO**

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implications to human health, ethical issues, or potential ecological damage)?	
Additional information	
Please provide any additional links, descriptions and/or other publicly available information of your background IPs:	**ER-LIBRA: https://algowatt.com/en/portfolio-items/libra/**
Is there any additional information regarding your background IPR that VPP4Island exploitation leaders should be aware of?	**NO**
Additional comments (i.e. challenged claims, risk of IP infringements and litigated patents)	**NO**

Please complete the below checklist below

Table 14: Checklist for completion of the IPR Questionnaire

Indicated all applicable background IPs	X
Identified all applicable co-owners of background IPs	X
Supplied all applicable documentation/links to background IPs	X
Identified all applicable third-party licenses required to use IPs	X
Indicated all applicable foreground IPs	X
Identified all applicable licenses required for development of foreground IPs	X
Identified all applicable partners required for development of foreground IPs	X
Identified all applicable financial and technical constraints for development of foreground IPs	X
Indicated all applicable additional IPs	X
Identified all applicable licenses required for development of additional IPs	X
Identified all applicable partners required for development of additional IPs	X

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Identified all applicable financial and technical constraints for development of additional IPs	X

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Ownership of results

Results are owned by the Party that generates them. In the DESCA consortium agreement, 2 options are provided for the joint ownership of results, access rights for exploitation, and additional access rights. Please read the following section carefully and fill in below your initial preference. This is in no case binding but is used for an early evaluation of the strategies of each consortium partner, and to identify potential clashes as early as possible.

Joint ownership

Joint ownership is governed by Grant Agreement Article 26.2 with the following additions:

[Option 1:]	[Option 2:]
Unless otherwise agreed: – each of the joint owners shall be entitled to use their jointly owned Results for non-commercial research activities on a royalty-free basis, and without requiring the prior consent of the other joint owner(s), and – each of the joint owners shall be entitled to otherwise Exploit the jointly owned Results and to grant non-exclusive licenses to third parties (without any right to sub-license), if the other joint owners are given: (a) at least 45 calendar days advance notice; and (b) Fair and Reasonable compensation.	In case of joint ownership, each of the joint owners shall be entitled to Exploit the joint Results as it sees fit, and to grant non-exclusive licences, without obtaining any consent from, paying compensation to, or otherwise accounting to any other joint owner, unless otherwise agreed between the joint owners. The joint owners shall agree on all protection measures and the division of related cost in advance.
Preferred option: OPTION 2	

Access Rights to Results

[Option 1:]	[Option 2:]
Access Rights to Results if Needed for Exploitation of a Party's own Results shall be granted on Fair and Reasonable conditions. Access rights to Results for internal research activities shall be granted on a royalty-free basis.	Access Rights to Results if Needed for Exploitation of a Party's own Results shall be granted on a royalty-free basis.
Preferred option: OPTION 1	

Additional Access Rights

[Option 1:]	[Option 2:]
For the avoidance of doubt any grant of Access Rights not covered by the Grant Agreement or this Consortium Agreement shall be at the absolute discretion of the owning Party and subject to such terms and conditions as may be agreed between the owning and receiving Parties.	The Parties agree to negotiate in good faith any additional Access Rights to Results as might be asked for by any Party, upon adequate financial conditions to be agreed.
Preferred option: OPTION 2	

End of questionnaire

This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement n°957852

AMU

Survey Questions for all consortium partners

Deliverable link	D8.6 Protection and allocation of Intellectual Property Rights
IPR Questionnaire version	1
Deliverable Date	M12
Questionnaire main editor	BUL
Participants	All partners
Final response date	26 May 2021

Introduction

The deliverable 8.6, following from Task 8.6 - Protection and allocation of Intellectual Property (IP), will focus on a thorough IPR clinic of all exploitable results in the project, with the aim to assess partners' IP background and foreground, find the necessary balance between collaboration and IP protection, reach consensus among contributors for each potential piece of IP, agree upon ownership early in the project and define the most effective innovation protection mechanisms, IPR and non-IPR (Open Innovation) oriented appropriation strategies [18] and market exploitation routes. The analysis is necessary in view of timely addressing all the potential issues that may hamper consortium interaction and project deliverables, ownership, partners hierarchy of needs and IP exploitations. IPR evolution will be discussed in the two planned internal workshops (with particular focus on IPR of joint results) and through dedicated interviews with the partners.

This questionnaire is designed to identify all Intellectual Property Rights (IPR) (the formal protection methods [12], granted as exclusive rights for a certain period of time, are: patent, utility model[5], trademark, copyright, secrecy, design registration)[6] of the VPP4ISLANDS project, including:

- Background IPs that consortium partners are using in VPP4Islands project.

[5] *The utility model was introduced as a "petty patent" in some countries (including Germany) to provide a cheaper but simpler alternative to patent protection. It is deemed particularly suited to the specific needs of SMEs. Utility models are available for less inventive steps (incremental improvements and adaptations of existing products), can be registered more quickly and are less expensive to acquire and maintain than patents. Compared with patents, however, they have a shorter protection term and provide less legal protection* (Alfred Radauer, 2007)

[6] *For more information about the different types of IP, please refer to: https://intellectual-property-helpdesk.ec.europa.eu/regional-helpdesks/european-ip-helpdesk/europe-frequently-asked-questions_en*

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- Foreground IPs that are expected to be developed during the project through joined owned results.
- Any other IP that is generated during the term of the research project but outside of the project (either with or without third parties), which knowledge is critical for use in the VPP project.

To get the most useful information possible at this stage, please fill the survey with as much technical details about the IP as possible, including the originality, novelties of the innovations, specific claims of inventions & exploitation, shared inventions & licensing, patent cumulative value, post-grant patents review, challenged claims, risk of IP infringements and litigated patents [22]. This will be beneficial not only for the exploitation agreement, but more importantly will inform the tasks of T2.3 – Concept definition and Subtask 2.5.1 Specification of the VPP4Islands solutions.
Thank you in advance for providing your feedback and for the time spent in filling this questionnaire.

Questions

3. Who is your company's point of contact for Intellectual Property Rights?

Table 15: Contact details

Full name:	RICCIO Julia
Title:	Ms.
Function:	European Project Manager
Email:	julia.riccio@univ-amu.fr

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Background Intellectual Property

3. Does your organisation own any existing background Intellectual Properties potentially to be used in the project? (Yes/No) If yes, please complete Table 6 on page 51 for each IP. **If there is more than one IP, please copy the complete table and paste in on a new page and fill the table for each identified IP.**

Table 16: Background IP identification

Virtual Power Plant concepts	No
VPPI-Box	No
Forecasting engine (weather, market prices, energy consumption)	No
Virtual Energy Storage System	No
Digital Twin System	No
Shared Knowledge Base	No
Smart Planning Tools & decision support system	No
Energy & CO2 savings	No
Smart APIs	No
Pseudo-anonymization tool	No
…	

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Table 17: Background IPR identification sheet

General	Answers
Name/title of IP.	
Description of IP and number of updates (latest version number)	
IPR number (e.g patent number, trademark number, etc.)	
Product (Hardware/ Software/Algorithm/Process, etc).	
Type of IP (e.g., patent, trademark, copyright, secrecy, utility model, design registration).	
IP condition (submitted, granted, etc.) and application date, date granted, and expiry date.	
Affiliation of IP granting organization.	
Geographic area where IP applies (e.g. Spain, EU, Worldwide, etc.)	
What is the relevance of your organisations IPs to the VPP4Islands project? E.g., what challenges are expected if the IP is not accessible/useable in the VPP4Islands project?	
TRL at start of project / expected TRL at end of project.	/
Ownership of IP	
Ownership (please indicate all parties)	
If the IP is co-owned, which other organisations are currently using the IP and how is ownership shared?	
Specific limitations for implementation and exploitation (e.g. exclusive license).	
Is the IP previously transferred from a third party to your organization? If yes, please indicate the original owner of the IP and the year the ownership is transferred.	
Access rights and usage of IP	
Are any other access rights, e.g. third party licenses, needed for the utilisation of existing IPs in the VPP4Islands project?	
Are there any financial and/or technical constraints to access and/or use the existing IP in the VPP4Islands project?	
Are any of the IPs prevented to be exploited in the industry, and for what reason (e.g., because of implications to human health, ethical issues, or potential ecological damage)?	
Additional information	
Please provide any additional links, descriptions and/or other publicly available information of your background IPs:	
Is there any additional information regarding your background IPR that VPP4Island exploitation leaders should be aware of?	
Additional comments (i.e. challenged claims, risk of IP infringements and litigated patents)	

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Please complete the below checklist below

Table 18: Checklist for completion of the IPR Questionnaire

Indicated all applicable background IPs	
Identified all applicable co-owners of background IPs	
Supplied all applicable documentation/links to background IPs	
Identified all applicable third-party licenses required to use IPs	
Indicated all applicable foreground IPs	
Identified all applicable licenses required for development of foreground IPs	
Identified all applicable partners required for development of foreground IPs	
Identified all applicable financial and technical constraints for development of foreground IPs	
Indicated all applicable additional IPs	
Identified all applicable licenses required for development of additional IPs	
Identified all applicable partners required for development of additional IPs	
Identified all applicable financial and technical constraints for development of additional IPs	

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Ownership of results

Results are owned by the Party that generates them. In the DESCA consortium agreement, 2 options are provided for the joint ownership of results, access rights for exploitation, and additional access rights. Please read the following section carefully and fill in below your initial preference. This is in no case binding but is used for an early evaluation of the strategies of each consortium partner, and to identify potential clashes as early as possible.

Joint ownership

Joint ownership is governed by Grant Agreement Article 26.2 with the following additions:

[Option 1:]	[Option 2:]
Unless otherwise agreed: – each of the joint owners shall be entitled to use their jointly owned Results for non-commercial research activities on a royalty-free basis, and without requiring the prior consent of the other joint owner(s), and – each of the joint owners shall be entitled to otherwise Exploit the jointly owned Results and to grant non-exclusive licenses to third parties (without any right to sub-license), if the other joint owners are given: (a) at least 45 calendar days advance notice; and (b) Fair and Reasonable compensation.	In case of joint ownership, each of the joint owners shall be entitled to Exploit the joint Results as it sees fit, and to grant non-exclusive licenses, without obtaining any consent from, paying compensation to, or otherwise accounting to any other joint owner, unless otherwise agreed between the joint owners. The joint owners shall agree on all protection measures and the division of related cost in advance.
Preferred option:	

Access Rights to Results

[Option 1:]	[Option 2:]
Access Rights to Results if Needed for Exploitation of a Party's own Results shall be granted on Fair and Reasonable conditions. Access rights to Results for internal research activities shall be granted on a royalty-free basis.	Access Rights to Results if Needed for Exploitation of a Party's own Results shall be granted on a royalty-free basis.
Preferred option:	

Additional Access Rights

[Option 1:]	[Option 2:]
For the avoidance of doubt any grant of Access Rights not covered by the Grant Agreement or this Consortium Agreement shall be at the absolute discretion of the owning Party and subject to such terms and conditions as may be agreed between the owning and receiving Parties.	The Parties agree to negotiate in good faith any additional Access Rights to Results as might be asked for by any Party, upon adequate financial conditions to be agreed.
Preferred option:	

End of questionnaire

This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement n°957852

BC2050

Survey Questions for all consortium partners

Deliverable link	D8.6 Protection and allocation of Intellectual Property Rights
IPR Questionnaire version	1
Deliverable Date	M12
Questionnaire main editor	BUL
Participants	All partners
Final response date	26 May 2021

Introduction

The deliverable 8.6, following from Task 8.6 - Protection and allocation of Intellectual Property (IP), will focus on a thorough IPR clinic of all exploitable results in the project, with the aim to assess partners' IP background and foreground, find the necessary balance between collaboration and IP protection, reach consensus among contributors for each potential piece of IP, agree upon ownership early in the project and define the most effective innovation protection mechanisms, IPR and non-IPR (Open Innovation) oriented appropriation strategies [18] and market exploitation routes. The analysis is necessary in view of timely addressing all the potential issues that may hamper consortium interaction and project deliverables, ownership, partners hierarchy of needs and IP exploitations. IPR evolution will be discussed in the two planned internal workshops (with particular focus on IPR of joint results) and through dedicated interviews with the partners.

This questionnaire is designed to identify all Intellectual Property Rights (IPR) (the formal protection methods [12], granted as exclusive rights for a certain period of time, are: patent, utility model[7], trademark, copyright, secrecy, design registration)[8] of the VPP4ISLANDS project, including:

- Background IPs that consortium partners are using in VPP4Islands project.

[7] *The utility model was introduced as a "petty patent" in some countries (including Germany) to provide a cheaper but simpler alternative to patent protection. It is deemed particularly suited to the specific needs of SMEs. Utility models are available for less inventive steps (incremental improvements and adaptations of existing products), can be registered more quickly and are less expensive to acquire and maintain than patents. Compared with patents, however, they have a shorter protection term and provide less legal protection* (Alfred Radauer, 2007)

[8] *For more information about the different types of IP, please refer to: https://intellectual-property-helpdesk.ec.europa.eu/regional-helpdesks/european-ip-helpdesk/europe-frequently-asked-questions_en*

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- Foreground IPs that are expected to be developed during the project through joined owned results.
- Any other IP that is generated during the term of the research project but outside of the project (either with or without third parties), which knowledge is critical for use in the VPP project.

To get the most useful information possible at this stage, please fill the survey with as much technical details about the IP as possible, including the originality, novelties of the innovations, specific claims of inventions & exploitation, shared inventions & licensing, patent cumulative value, post-grant patents review, challenged claims, risk of IP infringements and litigated patents [22]. This will be beneficial not only for the exploitation agreement, but more importantly will inform the tasks of T2.3 – Concept definition and Subtask 2.5.1 Specification of the VPP4Islands solutions.
Thank you in advance for providing your feedback and for the time spent in filling this questionnaire.

Questions

4. Who is your company's point of contact for Intellectual Property Rights?

Table 19: Contact details

Full name:	
Title:	
Function:	
Email:	

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Background Intellectual Property

4. Does your organisation own any existing background Intellectual Properties potentially to be used in the project? (Yes/No) If yes, please complete Table 6 on page 51 for each IP. **If there is more than one IP, please copy the complete table and paste in on a new page and fill the table for each identified IP.**

Table 20: Background IP identification

Virtual Power Plant concepts	Yes / No
Peer-2-Peer trading engine	Yes / No
Smart Contracts	Yes / No
Pre-process (data analytics and knowledge elaboration)	Yes / No
Shared Knowledge Base	Yes / No
Smart APIs	Yes / No
Any other relevant IPs:	Yes / No
…	

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Table 21: Background IPR identification sheet

General	Answers
Name/title of IP.	-
Description of IP and number of updates (latest version number)	-
IPR number (e.g patent number, trademark number, etc.)	-
Product (Hardware/ Software/Algorithm/Process, etc).	-
Type of IP (e.g., patent, trademark, copyright, secrecy, utility model, design registration).	-
IP condition (submitted, granted, etc.) and application date, date granted, and expiry date.	-
Affiliation of IP granting organization.	-
Geographic area where IP applies (e.g. Spain, EU, Worldwide, etc.)	-
What is the relevance of your organisations IPs to the VPP4Islands project? E.g., what challenges are expected if the IP is not accessible/useable in the VPP4Islands project?	-
TRL at start of project / expected TRL at end of project.	- /
Ownership of IP	
Ownership (please indicate all parties)	-
If the IP is co-owned, which other organisations are currently using the IP and how is ownership shared?	-
Specific limitations for implementation and exploitation (e.g. exclusive license).	-
Is the IP previously transferred from a third party to your organization? If yes, please indicate the original owner of the IP and the year the ownership is transferred.	-
Access rights and usage of IP	
Are any other access rights, e.g. third party licenses, needed for the utilisation of existing IPs in the VPP4Islands project?	-
Are there any financial and/or technical constraints to access and/or use the existing IP in the VPP4Islands project?	-
Are any of the IPs prevented to be exploited in the industry, and for what reason (e.g., because of implications to human health, ethical issues, or potential ecological damage)?	-
Additional information	
Please provide any additional links, descriptions and/or other publicly available information of your background IPs:	-
Is there any additional information regarding your background IPR that VPP4Island exploitation leaders should be aware of?	-
Additional comments (i.e. challenged claims, risk of IP infringements and litigated patents)	-

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Please complete the below checklist below

Table 22: Checklist for completion of the IPR Questionnaire

Indicated all applicable background IPs	Not available
Identified all applicable co-owners of background IPs	Not available
Supplied all applicable documentation/links to background IPs	Not available
Identified all applicable third-party licenses required to use IPs	Not available
Indicated all applicable foreground IPs	yes
Identified all applicable licenses required for development of foreground IPs	no
Identified all applicable partners required for development of foreground IPs	no
Identified all applicable financial and technical constraints for development of foreground IPs	No
Indicated all applicable additional IPs	Not available
Identified all applicable licenses required for development of additional IPs	Not available
Identified all applicable partners required for development of additional IPs	yes
Identified all applicable financial and technical constraints for development of additional IPs	no

Ownership of results

Results are owned by the Party that generates them. In the DESCA consortium agreement, 2 options are provided for the joint ownership of results, access rights for exploitation, and additional access rights. Please read the following section carefully and fill in below your initial preference. This is in no case binding but is used for an early evaluation of the strategies of each consortium partner, and to identify potential clashes as early as possible.

Joint ownership

Joint ownership is governed by Grant Agreement Article 26.2 with the following additions:

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[Option 1:] Unless otherwise agreed: – each of the joint owners shall be entitled to use their jointly owned Results for non-commercial research activities on a royalty-free basis, and without requiring the prior consent of the other joint owner(s), and – each of the joint owners shall be entitled to otherwise Exploit the jointly owned Results and to grant non-exclusive licenses to third parties (without any right to sub-license), if the other joint owners are given: (a) at least 45 calendar days advance notice; and (b) Fair and Reasonable compensation.	[Option 2:] In case of joint ownership, each of the joint owners shall be entitled to Exploit the joint Results as it sees fit, and to grant non-exclusive licences, without obtaining any consent from, paying compensation to, or otherwise accounting to any other joint owner, unless otherwise agreed between the joint owners. The joint owners shall agree on all protection measures and the division of related cost in advance.
Preferred option: Option 1	

Access Rights to Results

[Option 1:] Access Rights to Results if Needed for Exploitation of a Party's own Results shall be granted on Fair and Reasonable conditions. Access rights to Results for internal research activities shall be granted on a royalty-free basis.	[Option 2:] Access Rights to Results if Needed for Exploitation of a Party's own Results shall be granted on a royalty-free basis.
Preferred option: Option 1	

Additional Access Rights

[Option 1:] For the avoidance of doubt any grant of Access Rights not covered by the Grant Agreement or this Consortium Agreement shall be at the absolute discretion of the owning Party and subject to such terms and conditions as may be agreed between the owning and receiving Parties.	[Option 2:] The Parties agree to negotiate in good faith any additional Access Rights to Results as might be asked for by any Party, upon adequate financial conditions to be agreed.
Preferred option: Option 1	

BOZI

Survey Questions for all consortium partners

Deliverable link	D8.6 Protection and allocation of Intellectual Property Rights
IPR Questionnaire version	1
Deliverable Date	M12
Questionnaire main editor	BUL

This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement n°957852

Participants	All partners
Final response date	26 May 2021

Introduction

The deliverable 8.6, following from Task 8.6 - Protection and allocation of Intellectual Property (IP), will focus on a thorough IPR clinic of all exploitable results in the project, with the aim to assess partners' IP background and foreground, find the necessary balance between collaboration and IP protection, reach consensus among contributors for each potential piece of IP, agree upon ownership early in the project and define the most effective innovation protection mechanisms, IPR and non-IPR (Open Innovation) oriented appropriation strategies [18] and market exploitation routes. The analysis is necessary in view of timely addressing all the potential issues that may hamper consortium interaction and project deliverables, ownership, partners hierarchy of needs and IP exploitations. IPR evolution will be discussed in the two planned internal workshops (with particular focus on IPR of joint results) and through dedicated interviews with the partners.

This questionnaire is designed to identify all Intellectual Property Rights (IPR) (the formal protection methods [12], granted as exclusive rights for a certain period of time, are: patent, utility model[9], trademark, copyright, secrecy, design registration)[10] of the VPP4ISLANDS project, including:

- Background IPs that consortium partners are using in VPP4Islands project.
- Foreground IPs that are expected to be developed during the project through joined owned results.
- Any other IP that is generated during the term of the research project but outside of the project (either with or without third parties), which knowledge is critical for use in the VPP project.

To get the most useful information possible at this stage, please fill the survey with as much technical details about the IP as possible, including the originality, novelties of the innovations, specific claims of inventions & exploitation, shared inventions & licensing, patent cumulative

[9] *The utility model was introduced as a "petty patent" in some countries (including Germany) to provide a cheaper but simpler alternative to patent protection. It is deemed particularly suited to the specific needs of SMEs. Utility models are available for less inventive steps (incremental improvements and adaptations of existing products), can be registered more quickly and are less expensive to acquire and maintain than patents. Compared with patents, however, they have a shorter protection term and provide less legal protection* (Alfred Radauer, 2007)

[10] *For more information about the different types of IP, please refer to: https://intellectual-property-helpdesk.ec.europa.eu/regional-helpdesks/european-ip-helpdesk/europe-frequently-asked-questions_en*

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value, post-grant patents review, challenged claims, risk of IP infringements and litigated patents [22]. This will be beneficial not only for the exploitation agreement, but more importantly will inform the tasks of T2.3 – Concept definition and Subtask 2.5.1 Specification of the VPP4Islands solutions.
Thank you in advance for providing your feedback and for the time spent in filling this questionnaire.

Questions

5. Who is your company's point of contact for Intellectual Property Rights?

Table 23: Contact details

Full name:	Levent Demir
Title:	Env Engineer
Function:	Project Officer
Email:	Levent.demir@bozcaada.bel.tr

This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement n°957852

Background Intellectual Property

5. Does your organisation own any existing background Intellectual Properties potentially to be used in the project? (Yes/No) If yes, please complete Table 6 on page 51 for each IP. **If there is more than one IP, please copy the complete table and paste in on a new page and fill the table for each identified IP.**

Table 24: Background IP identification

Virtual Power Plant concepts	No
User Interface Module	No
Balancing Service Provider	No
Digital Twin System	No
Shared Knowledge Base	No
Smart APIs	No
Any other relevant IPs:	No
…	

This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement n°957852

Table 25: Background IPR identification sheet

General	Answers
Name/title of IP.	
Description of IP and number of updates (latest version number)	
IPR number (e.g patent number, trademark number, etc.)	
Product (Hardware/ Software/Algorithm/Process, etc).	
Type of IP (e.g., patent, trademark, copyright, secrecy, utility model, design registration).	
IP condition (submitted, granted, etc.) and application date, date granted, and expiry date.	
Affiliation of IP granting organization.	
Geographic area where IP applies (e.g. Spain, EU, Worldwide, etc.)	
What is the relevance of your organisations IPs to the VPP4Islands project? E.g., what challenges are expected if the IP is not accessible/useable in the VPP4Islands project?	
TRL at start of project / expected TRL at end of project.	/
Ownership of IP	
Ownership (please indicate all parties)	
If the IP is co-owned, which other organisations are currently using the IP and how is ownership shared?	
Specific limitations for implementation and exploitation (e.g. exclusive license).	
Is the IP previously transferred from a third party to your organization? If yes, please indicate the original owner of the IP and the year the ownership is transferred.	
Access rights and usage of IP	
Are any other access rights, e.g. third party licenses, needed for the utilisation of existing IPs in the VPP4Islands project?	
Are there any financial and/or technical constraints to access and/or use the existing IP in the VPP4Islands project?	
Are any of the IPs prevented to be exploited in the industry, and for what reason (e.g., because of implications to human health, ethical issues, or potential ecological damage)?	
Additional information	
Please provide any additional links, descriptions and/or other publicly available information of your background IPs:	
Is there any additional information regarding your background IPR that VPP4Island exploitation leaders should be aware of?	
Additional comments (i.e. challenged claims, risk of IP infringements and litigated patents)	

This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement n°957852

Please complete the below checklist below

Table 26: Checklist for completion of the IPR Questionnaire

Indicated all applicable background IPs	y
Identified all applicable co-owners of background IPs	y
Supplied all applicable documentation/links to background IPs	y
Identified all applicable third-party licenses required to use IPs	y
Indicated all applicable foreground IPs	y
Identified all applicable licenses required for development of foreground IPs	y
Identified all applicable partners required for development of foreground IPs	y
Identified all applicable financial and technical constraints for development of foreground IPs	y
Indicated all applicable additional IPs	y
Identified all applicable licenses required for development of additional IPs	y
Identified all applicable partners required for development of additional IPs	y
Identified all applicable financial and technical constraints for development of additional IPs	y

This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement n°957852

Ownership of results

Results are owned by the Party that generates them. In the DESCA consortium agreement, 2 options are provided for the joint ownership of results, access rights for exploitation, and additional access rights. Please read the following section carefully and fill in below your initial preference. This is in no case binding but is used for an early evaluation of the strategies of each consortium partner, and to identify potential clashes as early as possible.

Joint ownership

Joint ownership is governed by Grant Agreement Article 26.2 with the following additions:

[Option 1:]	[Option 2:]
Unless otherwise agreed: – each of the joint owners shall be entitled to use their jointly owned Results for non-commercial research activities on a royalty-free basis, and without requiring the prior consent of the other joint owner(s), and – each of the joint owners shall be entitled to otherwise Exploit the jointly owned Results and to grant non-exclusive licenses to third parties (without any right to sub-license), if the other joint owners are given: (a) at least 45 calendar days advance notice; and (b) Fair and Reasonable compensation.	In case of joint ownership, each of the joint owners shall be entitled to Exploit the joint Results as it sees fit, and to grant non-exclusive licences, without obtaining any consent from, paying compensation to, or otherwise accounting to any other joint owner, unless otherwise agreed between the joint owners. The joint owners shall agree on all protection measures and the division of related cost in advance.
Preferred option:	

Access Rights to Results

[Option 1:]	[Option 2:]
Access Rights to Results if Needed for Exploitation of a Party's own Results shall be granted on Fair and Reasonable conditions. Access rights to Results for internal research activities shall be granted on a royalty-free basis.	Access Rights to Results if Needed for Exploitation of a Party's own Results shall be granted on a royalty-free basis.
Preferred option:	

Additional Access Rights

[Option 1:]	[Option 2:]
For the avoidance of doubt any grant of Access Rights not covered by the Grant Agreement or this Consortium Agreement shall be at the absolute discretion of the owning Party and subject to such terms and conditions as may be agreed between the owning and receiving Parties.	The Parties agree to negotiate in good faith any additional Access Rights to Results as might be asked for by any Party, upon adequate financial conditions to be agreed.
Preferred option:	

End of questionnaire

This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement n°957852

CIVI

Survey Questions for all consortium partners

Deliverable link	D8.6 Protection and allocation of Intellectual Property Rights
IPR Questionnaire version	1
Deliverable Date	M12
Questionnaire main editor	BUL
Participants	All partners
Final response date	26 May 2021

Introduction

The deliverable 8.6, following from Task 8.6 - Protection and allocation of Intellectual Property (IP), will focus on a thorough IPR clinic of all exploitable results in the project, with the aim to assess partners' IP background and foreground, find the necessary balance between collaboration and IP protection, reach consensus among contributors for each potential piece of IP, agree upon ownership early in the project and define the most effective innovation protection mechanisms, IPR and non-IPR (Open Innovation) oriented appropriation strategies [18] and market exploitation routes. The analysis is necessary in view of timely addressing all the potential issues that may hamper consortium interaction and project deliverables, ownership, partners hierarchy of needs and IP exploitations. IPR evolution will be discussed in the two planned internal workshops (with particular focus on IPR of joint results) and through dedicated interviews with the partners.

This questionnaire is designed to identify all Intellectual Property Rights (IPR) (the formal protection methods [12], granted as exclusive rights for a certain period of time, are: patent, utility model[11], trademark, copyright, secrecy, design registration)[12] of the VPP4ISLANDS project, including:

- Background IPs that consortium partners are using in VPP4Islands project.

[11] *The utility model was introduced as a "petty patent" in some countries (including Germany) to provide a cheaper but simpler alternative to patent protection. It is deemed particularly suited to the specific needs of SMEs. Utility models are available for less inventive steps (incremental improvements and adaptations of existing products), can be registered more quickly and are less expensive to acquire and maintain than patents. Compared with patents, however, they have a shorter protection term and provide less legal protection* (Alfred Radauer, 2007)

[12] *For more information about the different types of IP, please refer to: https://intellectual-property-helpdesk.ec.europa.eu/regional-helpdesks/european-ip-helpdesk/europe-frequently-asked-questions_en*

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- Foreground IPs that are expected to be developed during the project through joined owned results.
- Any other IP that is generated during the term of the research project but outside of the project (either with or without third parties), which knowledge is critical for use in the VPP project.

To get the most useful information possible at this stage, please fill the survey with as much technical details about the IP as possible, including the originality, novelties of the innovations, specific claims of inventions & exploitation, shared inventions & licensing, patent cumulative value, post-grant patents review, challenged claims, risk of IP infringements and litigated patents [22]. This will be beneficial not only for the exploitation agreement, but more importantly will inform the tasks of T2.3 – Concept definition and Subtask 2.5.1 Specification of the VPP4Islands solutions.
Thank you in advance for providing your feedback and for the time spent in filling this questionnaire.

Questions

6. Who is your company's point of contact for Intellectual Property Rights?

Table 27: Contact details

Full name:	Alessandra Cassisi
Title:	
Function:	Project Manager
Email:	Alessandra.cassisi@civiesco.it

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Background Intellectual Property

6. Does your organisation own any existing background Intellectual Properties potentially to be used in the project? (Yes/No) If yes, please complete Table 6 on page 51 for each IP. **If there is more than one IP, please copy the complete table and paste in on a new page and fill the table for each identified IP.**

Table 28: Background IP identification

Virtual Power Plant concepts	No
Peer-2-Peer trading engine	No
Energy Services	No
Shared Knowledge Base	No
Smart APIs	No
Any other relevant IPs:	No
…	

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Table 29: Background IPR identification sheet

General	Answers
Name/title of IP.	
Description of IP and number of updates (latest version number)	
IPR number (e.g patent number, trademark number, etc.)	
Product (Hardware/ Software/Algorithm/Process, etc).	
Type of IP (e.g., patent, trademark, copyright, secrecy, utility model, design registration).	
IP condition (submitted, granted, etc.) and application date, date granted, and expiry date.	
Affiliation of IP granting organization.	
Geographic area where IP applies (e.g. Spain, EU, Worldwide, etc.)	
What is the relevance of your organisations IPs to the VPP4Islands project? E.g., what challenges are expected if the IP is not accessible/useable in the VPP4Islands project?	
TRL at start of project / expected TRL at end of project.	/
Ownership of IP	
Ownership (please indicate all parties)	
If the IP is co-owned, which other organisations are currently using the IP and how is ownership shared?	
Specific limitations for implementation and exploitation (e.g. exclusive license).	
Is the IP previously transferred from a third party to your organization? If yes, please indicate the original owner of the IP and the year the ownership is transferred.	
Access rights and usage of IP	
Are any other access rights, e.g. third party licenses, needed for the utilisation of existing IPs in the VPP4Islands project?	
Are there any financial and/or technical constraints to access and/or use the existing IP in the VPP4Islands project?	
Are any of the IPs prevented to be exploited in the industry, and for what reason (e.g., because of implications to human health, ethical issues, or potential ecological damage)?	
Additional information	
Please provide any additional links, descriptions and/or other publicly available information of your background IPs:	
Is there any additional information regarding your background IPR that VPP4Island exploitation leaders should be aware of?	
Additional comments (i.e. challenged claims, risk of IP infringements and litigated patents)	

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Please complete the below checklist below

Table 30: Checklist for completion of the IPR Questionnaire

Indicated all applicable background IPs	
Identified all applicable co-owners of background IPs	
Supplied all applicable documentation/links to background IPs	
Identified all applicable third-party licenses required to use IPs	
Indicated all applicable foreground IPs	
Identified all applicable licenses required for development of foreground IPs	
Identified all applicable partners required for development of foreground IPs	
Identified all applicable financial and technical constraints for development of foreground IPs	
Indicated all applicable additional IPs	
Identified all applicable licenses required for development of additional IPs	
Identified all applicable partners required for development of additional IPs	
Identified all applicable financial and technical constraints for development of additional IPs	

This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement n°957852

Ownership of results

Results are owned by the Party that generates them. In the DESCA consortium agreement, 2 options are provided for the joint ownership of results, access rights for exploitation, and additional access rights. Please read the following section carefully and fill in below your initial preference. This is in no case binding but is used for an early evaluation of the strategies of each consortium partner, and to identify potential clashes as early as possible.

Joint ownership

Joint ownership is governed by Grant Agreement Article 26.2 with the following additions:

[Option 1:]	[Option 2:]
Unless otherwise agreed: – each of the joint owners shall be entitled to use their jointly owned Results for non-commercial research activities on a royalty-free basis, and without requiring the prior consent of the other joint owner(s), and – each of the joint owners shall be entitled to otherwise Exploit the jointly owned Results and to grant non-exclusive licenses to third parties (without any right to sub-license), if the other joint owners are given: (a) at least 45 calendar days advance notice; and (b) Fair and Reasonable compensation.	In case of joint ownership, each of the joint owners shall be entitled to Exploit the joint Results as it sees fit, and to grant non-exclusive licences, without obtaining any consent from, paying compensation to, or otherwise accounting to any other joint owner, unless otherwise agreed between the joint owners. The joint owners shall agree on all protection measures and the division of related cost in advance.
Preferred option:	

Access Rights to Results

[Option 1:]	[Option 2:]
Access Rights to Results if Needed for Exploitation of a Party's own Results shall be granted on Fair and Reasonable conditions. Access rights to Results for internal research activities shall be granted on a royalty-free basis.	Access Rights to Results if Needed for Exploitation of a Party's own Results shall be granted on a royalty-free basis.
Preferred option:	

Additional Access Rights

[Option 1:]	[Option 2:]
For the avoidance of doubt any grant of Access Rights not covered by the Grant Agreement or this Consortium Agreement shall be at the absolute discretion of the owning Party and subject to such terms and conditions as may be agreed between the owning and receiving Parties.	The Parties agree to negotiate in good faith any additional Access Rights to Results as might be asked for by any Party, upon adequate financial conditions to be agreed.
Preferred option:	

End of questionnaire

This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement n°957852

CSIC

Survey Questions for all consortium partners

Deliverable link	D8.6 Protection and allocation of Intellectual Property Rights
IPR Questionnaire version	1
Deliverable Date	M12
Questionnaire main editor	BUL
Participants	All partners
Final response date	26 May 2021

Introduction

The deliverable 8.6, following from Task 8.6 - Protection and allocation of Intellectual Property (IP), will focus on a thorough IPR clinic of all exploitable results in the project, with the aim to assess partners' IP background and foreground, find the necessary balance between collaboration and IP protection, reach consensus among contributors for each potential piece of IP, agree upon ownership early in the project and define the most effective innovation protection mechanisms, IPR and non-IPR (Open Innovation) oriented appropriation strategies [18] and market exploitation routes. The analysis is necessary in view of timely addressing all the potential issues that may hamper consortium interaction and project deliverables, ownership, partners hierarchy of needs and IP exploitations. IPR evolution will be discussed in the two planned internal workshops (with particular focus on IPR of joint results) and through dedicated interviews with the partners.

This questionnaire is designed to identify all Intellectual Property Rights (IPR) (the formal protection methods [12], granted as exclusive rights for a certain period of time, are: patent, utility model[13], trademark, copyright, secrecy, design registration)[14] of the VPP4ISLANDS project, including:

- Background IPs that consortium partners are using in VPP4Islands project.

[13] *The utility model was introduced as a "petty patent" in some countries (including Germany) to provide a cheaper but simpler alternative to patent protection. It is deemed particularly suited to the specific needs of SMEs. Utility models are available for less inventive steps (incremental improvements and adaptations of existing products), can be registered more quickly and are less expensive to acquire and maintain than patents. Compared with patents, however, they have a shorter protection term and provide less legal protection* (Alfred Radauer, 2007)

[14] *For more information about the different types of IP, please refer to: https://intellectual-property-helpdesk.ec.europa.eu/regional-helpdesks/european-ip-helpdesk/europe-frequently-asked-questions_en*

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- Foreground IPs that are expected to be developed during the project through joined owned results.
- Any other IP that is generated during the term of the research project but outside of the project (either with or without third parties), which knowledge is critical for use in the VPP project.

To get the most useful information possible at this stage, please fill the survey with as much technical details about the IP as possible, including the originality, novelties of the innovations, specific claims of inventions & exploitation, shared inventions & licensing, patent cumulative value, post-grant patents review, challenged claims, risk of IP infringements and litigated patents [22]. This will be beneficial not only for the exploitation agreement, but more importantly will inform the tasks of T2.3 – Concept definition and Subtask 2.5.1 Specification of the VPP4Islands solutions.
Thank you in advance for providing your feedback and for the time spent in filling this questionnaire.

Questions

7. Who is your company's point of contact for Intellectual Property Rights?

Table 31: Contact details

Full name:	Javier Etxabe Oria, PhD
Title:	Head of the Area of Intellectual Property and Spin-off Support Deputy Vice-Presidency for Knowledge Transfer
Function:	Identification, evaluation and protection of research results
Email:	patentes@csic.es

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Background Intellectual Property

7. Does your organisation own any existing background Intellectual Properties potentially to be used in the project? (Yes/No) If yes, please complete Table 6 on page 51 for each IP. **If there is more than one IP, please copy the complete table and paste in on a new page and fill the table for each identified IP.**

Table 32: Background IP identification

Virtual Power Plant concepts	No
Distributed Optimisation Engine	No
Virtual Energy Storage System	No
Digital Twin System	No
Smart Planning Tools & decision support system	No
Energy Management Commitment Engine	No
Shared Knowledge Base	No
Smart APIs	No
Any other relevant IPs:	No
…	

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Table 33: Background IPR identification sheet

General	Answers
Name/title of IP.	
Description of IP and number of updates (latest version number)	
IPR number (e.g patent number, trademark number, etc.)	
Product (Hardware/ Software/Algorithm/Process, etc).	
Type of IP (e.g., patent, trademark, copyright, secrecy, utility model, design registration).	
IP condition (submitted, granted, etc.) and application date, date granted, and expiry date.	
Affiliation of IP granting organization.	
Geographic area where IP applies (e.g. Spain, EU, Worldwide, etc.)	
What is the relevance of your organisations IPs to the VPP4Islands project? E.g., what challenges are expected if the IP is not accessible/useable in the VPP4Islands project?	
TRL at start of project / expected TRL at end of project.	/
Ownership of IP	
Ownership (please indicate all parties)	
If the IP is co-owned, which other organisations are currently using the IP and how is ownership shared?	
Specific limitations for implementation and exploitation (e.g. exclusive license).	
Is the IP previously transferred from a third party to your organization? If yes, please indicate the original owner of the IP and the year the ownership is transferred.	
Access rights and usage of IP	
Are any other access rights, e.g. third party licenses, needed for the utilisation of existing IPs in the VPP4Islands project?	
Are there any financial and/or technical constraints to access and/or use the existing IP in the VPP4Islands project?	
Are any of the IPs prevented to be exploited in the industry, and for what reason (e.g., because of implications to human health, ethical issues, or potential ecological damage)?	
Additional information	
Please provide any additional links, descriptions and/or other publicly available information of your background IPs:	
Is there any additional information regarding your background IPR that VPP4Island exploitation leaders should be aware of?	
Additional comments (i.e. challenged claims, risk of IP infringements and litigated patents)	

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Please complete the below checklist below

Table 34: Checklist for completion of the IPR Questionnaire

Indicated all applicable background IPs	
Identified all applicable co-owners of background IPs	
Supplied all applicable documentation/links to background IPs	
Identified all applicable third-party licenses required to use IPs	
Indicated all applicable foreground IPs	
Identified all applicable licenses required for development of foreground IPs	
Identified all applicable partners required for development of foreground IPs	
Identified all applicable financial and technical constraints for development of foreground IPs	
Indicated all applicable additional IPs	
Identified all applicable licenses required for development of additional IPs	
Identified all applicable partners required for development of additional IPs	
Identified all applicable financial and technical constraints for development of additional IPs	

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Ownership of results

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Joint ownership

Joint ownership is governed by Grant Agreement Article 26.2 with the following additions:

[Option 1:]	[Option 2:]
Unless otherwise agreed: – each of the joint owners shall be entitled to use their jointly owned Results for non-commercial research activities on a royalty-free basis, and without requiring the prior consent of the other joint owner(s), and – each of the joint owners shall be entitled to otherwise Exploit the jointly owned Results and to grant non-exclusive licenses to third parties (without any right to sub-license), if the other joint owners are given: (a) at least 45 calendar days advance notice; and (b) Fair and Reasonable compensation.	In case of joint ownership, each of the joint owners shall be entitled to Exploit the joint Results as it sees fit, and to grant non-exclusive licences, without obtaining any consent from, paying compensation to, or otherwise accounting to any other joint owner, unless otherwise agreed between the joint owners. The joint owners shall agree on all protection measures and the division of related cost in advance.

Preferred option: Preferred option: 1, only this first paragraph whereas the second one should be qualified depending on the nature of the potential co-owners of the Results.

In these jointly owned Results generated at least with a private entity (company) that has the will and industrial capacity, this previous 2nd point supposes an asymmetric and unrealistic situation for the academic co-owners, given that:
- The academic entities, the CSIC for example, will not directly exploit the Results that are co-generated, since they do not have that objective or the industrial capacity.
- In addition, in general the possibility of granting by the CSIC a non-exclusive license to a third party (private company) is not a possible alternative since no third party will only want a non-exclusive license (and much less without any right to sub-license), there is a main jointly-owned company that exploits it with a competitive advantage and that receives royalties from this third party.
- Finally, the CSIC, and any academic entity co-owner, has the right to receive financial compensation for any other joint owner who commercially exploits the Results given that the CSIC, and any other academic entity, is not going to exploit it, and given that the CSIC has made contributions in economic and intellectual resources in its generation.

Therefore, different scenarios arise:

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1.- All the joint owners are academic entities and none will commercially exploit the Results, so they will agree to the commercial exploitation of the Results through the license of rights to an existing company or to a Spin-off created *ad hoc* to develop and market them. In this case the co-owners shall sign a contract of co-ownership where the IPR management conditions, technological promotion activities, contact and negotiation strategies with potential licensee or investors will be established.

2.- One of the co-owners is a private entity that owns and wants the ability to exclusively exploit the Results, while the remaining co-owners renounce the direct exploitation and the license to third parties of said Results, by signing a contract of co-ownership and transfer of exploitation rights. Thus, the private entity has, in practice, an exclusive right to exploit the Results. In this case, the co-owners who do not exploit the results will be entitled to financial compensation from the private operating entity, which will assume all industrial or intellectual property costs related to the Results.

3.- Alternatively other situations between co-owners, private and public, with different roles and interests exist and therefore different formulas for the distribution of commercial exploitation rights, for example, through cross licenses or specific exploitation rights in different industrial areas or the mentioned option 2, may be negotiated.

Access Rights to Results

[Option 1:]	[Option 2:]
Access Rights to Results if Needed for Exploitation of a Party's own Results shall be granted on Fair and Reasonable conditions. Access rights to Results for internal research activities shall be granted on a royalty-free basis.	Access Rights to Results if Needed for Exploitation of a Party's own Results shall be granted on a royalty-free basis.
Preferred option:1	

Additional Access Rights

[Option 1:]	[Option 2:]
For the avoidance of doubt any grant of Access Rights not covered by the Grant Agreement or this Consortium Agreement shall be at the absolute discretion of the owning Party and subject to such terms and conditions as may be agreed between the owning and receiving Parties.	The Parties agree to negotiate in good faith any additional Access Rights to Results as might be asked for by any Party, upon adequate financial conditions to be agreed.
Preferred option:1	

End of questionnaire

This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement n°957852

CU

Survey Questions for all consortium partners

Deliverable link	D8.6 Protection and allocation of Intellectual Property Rights
IPR Questionnaire version	1
Deliverable Date	M12
Questionnaire main editor	BUL
Participants	All partners
Final response date	26 May 2021

Introduction

The deliverable 8.6, following from Task 8.6 - Protection and allocation of Intellectual Property (IP), will focus on a thorough IPR clinic of all exploitable results in the project, with the aim to assess partners' IP background and foreground, find the necessary balance between collaboration and IP protection, reach consensus among contributors for each potential piece of IP, agree upon ownership early in the project and define the most effective innovation protection mechanisms, IPR and non-IPR (Open Innovation) oriented appropriation strategies [18] and market exploitation routes. The analysis is necessary in view of timely addressing all the potential issues that may hamper consortium interaction and project deliverables, ownership, partners hierarchy of needs and IP exploitations. IPR evolution will be discussed in the two planned internal workshops (with particular focus on IPR of joint results) and through dedicated interviews with the partners.

This questionnaire is designed to identify all Intellectual Property Rights (IPR) (the formal protection methods [12], granted as exclusive rights for a certain period of time, are: patent, utility model[15], trademark, copyright, secrecy, design registration)[16] of the VPP4ISLANDS project, including:

- Background IPs that consortium partners are using in VPP4Islands project.

[15] *The utility model was introduced as a "petty patent" in some countries (including Germany) to provide a cheaper but simpler alternative to patent protection. It is deemed particularly suited to the specific needs of SMEs. Utility models are available for less inventive steps (incremental improvements and adaptations of existing products), can be registered more quickly and are less expensive to acquire and maintain than patents. Compared with patents, however, they have a shorter protection term and provide less legal protection* (Alfred Radauer, 2007)

[16] *For more information about the different types of IP, please refer to: https://intellectual-property-helpdesk.ec.europa.eu/regional-helpdesks/european-ip-helpdesk/europe-frequently-asked-questions_en*

This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement n°957852

- Foreground IPs that are expected to be developed during the project through joined owned results.
- Any other IP that is generated during the term of the research project but outside of the project (either with or without third parties), which knowledge is critical for use in the VPP project.

To get the most useful information possible at this stage, please fill the survey with as much technical details about the IP as possible, including the originality, novelties of the innovations, specific claims of inventions & exploitation, shared inventions & licensing, patent cumulative value, post-grant patents review, challenged claims, risk of IP infringements and litigated patents [22]. This will be beneficial not only for the exploitation agreement, but more importantly will inform the tasks of T2.3 – Concept definition and Subtask 2.5.1 Specification of the VPP4Islands solutions.
Thank you in advance for providing your feedback and for the time spent in filling this questionnaire.

Questions

8. Who is your company's point of contact for Intellectual Property Rights?

Table 35: Contact details

Full name:	Ewa Nowicka-Ratajczak
Title:	Dr
Function:	Technology Transfer Officer
Email:	nowickae@cf.ac.uk ; technologytransfer@cf.ac.uk

This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement n°957852

Background Intellectual Property

8. Does your organisation own any existing background Intellectual Properties potentially to be used in the project? (Yes/No) If yes, please complete Table 6 on page 51 for each IP. **If there is more than one IP, please copy the complete table and paste in on a new page and fill the table for each identified IP.**

Table 36: Background IP identification

Virtual Power Plant concepts	Yes / No
Peer-2-Peer energy trading	Yes / No
Virtual Energy Storage System	Yes / No
Balancing Service Provider	Yes / No
Digital Twin System Modelling	Yes / No
Smart APIs	Yes / No
Any other relevant IPs:	Yes / No
…	

This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement n°957852

Table 37: Background IPR identification sheet

General	Answers
Name/title of IP.	
Description of IP and number of updates (latest version number)	
IPR number (e.g patent number, trademark number, etc.)	
Product (Hardware/ Software/Algorithm/Process, etc).	
Type of IP (e.g., patent, trademark, copyright, secrecy, utility model, design registration).	
IP condition (submitted, granted, etc.) and application date, date granted, and expiry date.	
Affiliation of IP granting organization.	
Geographic area where IP applies (e.g. Spain, EU, Worldwide, etc.)	
What is the relevance of your organisations IPs to the VPP4Islands project? E.g., what challenges are expected if the IP is not accessible/useable in the VPP4Islands project?	
TRL at start of project / expected TRL at end of project.	/
Ownership of IP	
Ownership (please indicate all parties)	
If the IP is co-owned, which other organisations are currently using the IP and how is ownership shared?	
Specific limitations for implementation and exploitation (e.g. exclusive license).	
Is the IP previously transferred from a third party to your organization? If yes, please indicate the original owner of the IP and the year the ownership is transferred.	
Access rights and usage of IP	
Are any other access rights, e.g. third party licenses, needed for the utilisation of existing IPs in the VPP4Islands project?	
Are there any financial and/or technical constraints to access and/or use the existing IP in the VPP4Islands project?	
Are any of the IPs prevented to be exploited in the industry, and for what reason (e.g., because of implications to human health, ethical issues, or potential ecological damage)?	
Additional information	
Please provide any additional links, descriptions and/or other publicly available information of your background IPs:	
Is there any additional information regarding your background IPR that VPP4Island exploitation leaders should be aware of?	
Additional comments (i.e. challenged claims, risk of IP infringements and litigated patents)	

This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement n°957852

Please complete the below checklist below

Table 38: Checklist for completion of the IPR Questionnaire

Indicated all applicable background IPs	
Identified all applicable co-owners of background IPs	
Supplied all applicable documentation/links to background IPs	
Identified all applicable third-party licenses required to use IPs	
Indicated all applicable foreground IPs	
Identified all applicable licenses required for development of foreground IPs	
Identified all applicable partners required for development of foreground IPs	
Identified all applicable financial and technical constraints for development of foreground IPs	
Indicated all applicable additional IPs	
Identified all applicable licenses required for development of additional IPs	
Identified all applicable partners required for development of additional IPs	
Identified all applicable financial and technical constraints for development of additional IPs	

This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement n°957852

Ownership of results

Results are owned by the Party that generates them. In the DESCA consortium agreement, 2 options are provided for the joint ownership of results, access rights for exploitation, and additional access rights. Please read the following section carefully and fill in below your initial preference. This is in no case binding but is used for an early evaluation of the strategies of each consortium partner, and to identify potential clashes as early as possible.

Joint ownership

Joint ownership is governed by Grant Agreement Article 26.2 with the following additions:

[Option 1:]	[Option 2:]
Unless otherwise agreed: – each of the joint owners shall be entitled to use their jointly owned Results for non-commercial research activities on a royalty-free basis, and without requiring the prior consent of the other joint owner(s), and – each of the joint owners shall be entitled to otherwise Exploit the jointly owned Results and to grant non-exclusive licenses to third parties (without any right to sub-license), if the other joint owners are given: (a) at least 45 calendar days advance notice; and (b) Fair and Reasonable compensation.	In case of joint ownership, each of the joint owners shall be entitled to Exploit the joint Results as it sees fit, and to grant non-exclusive licences, without obtaining any consent from, paying compensation to, or otherwise accounting to any other joint owner, unless otherwise agreed between the joint owners. The joint owners shall agree on all protection measures and the division of related cost in advance.
Preferred option:	

Access Rights to Results

[Option 1:]	[Option 2:]
Access Rights to Results if Needed for Exploitation of a Party's own Results shall be granted on Fair and Reasonable conditions. Access rights to Results for internal research activities shall be granted on a royalty-free basis.	Access Rights to Results if Needed for Exploitation of a Party's own Results shall be granted on a royalty-free basis.
Preferred option:	

Additional Access Rights

[Option 1:]	[Option 2:]
For the avoidance of doubt any grant of Access Rights not covered by the Grant Agreement or this Consortium Agreement shall be at the absolute discretion of the owning Party and subject to such terms and conditions as may be agreed between the owning and receiving Parties.	The Parties agree to negotiate in good faith any additional Access Rights to Results as might be asked for by any Party, upon adequate financial conditions to be agreed.
Preferred option:	

End of questionnaire

This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement n°957852

FTK

Survey Questions for all consortium partners

Deliverable link	D8.6 Protection and allocation of Intellectual Property Rights
IPR Questionnaire version	1
Deliverable Date	M12
Questionnaire main editor	BUL
Participants	All partners
Final response date	26 May 2021

Introduction

The deliverable 8.6, following from Task 8.6 - Protection and allocation of Intellectual Property (IP), will focus on a thorough IPR clinic of all exploitable results in the project, with the aim to assess partners' IP background and foreground, find the necessary balance between collaboration and IP protection, reach consensus among contributors for each potential piece of IP, agree upon ownership early in the project and define the most effective innovation protection mechanisms, IPR and non-IPR (Open Innovation) oriented appropriation strategies [18] and market exploitation routes. The analysis is necessary in view of timely addressing all the potential issues that may hamper consortium interaction and project deliverables, ownership, partners hierarchy of needs and IP exploitations. IPR evolution will be discussed in the two planned internal workshops (with particular focus on IPR of joint results) and through dedicated interviews with the partners.

This questionnaire is designed to identify all Intellectual Property Rights (IPR) (the formal protection methods [12], granted as exclusive rights for a certain period of time, are: patent, utility model[17], trademark, copyright, secrecy, design registration)[18] of the VPP4ISLANDS project, including:

- Background IPs that consortium partners are using in VPP4Islands project.

[17] *The utility model was introduced as a "petty patent" in some countries (including Germany) to provide a cheaper but simpler alternative to patent protection. It is deemed particularly suited to the specific needs of SMEs. Utility models are available for less inventive steps (incremental improvements and adaptations of existing products), can be registered more quickly and are less expensive to acquire and maintain than patents. Compared with patents, however, they have a shorter protection term and provide less legal protection* (Alfred Radauer, 2007)

[18] *For more information about the different types of IP, please refer to: https://intellectual-property-helpdesk.ec.europa.eu/regional-helpdesks/european-ip-helpdesk/europe-frequently-asked-questions_en*

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- Foreground IPs that are expected to be developed during the project through joined owned results.
- Any other IP that is generated during the term of the research project but outside of the project (either with or without third parties), which knowledge is critical for use in the VPP project.

To get the most useful information possible at this stage, please fill the survey with as much technical details about the IP as possible, including the originality, novelties of the innovations, specific claims of inventions & exploitation, shared inventions & licensing, patent cumulative value, post-grant patents review, challenged claims, risk of IP infringements and litigated patents [22]. This will be beneficial not only for the exploitation agreement, but more importantly will inform the tasks of T2.3 – Concept definition and Subtask 2.5.1 Specification of the VPP4Islands solutions.
Thank you in advance for providing your feedback and for the time spent in filling this questionnaire.

Questions

9. Who is your company's point of contact for Intellectual Property Rights?

Table 39: Contact details

Full name:	Dominic Heutelbeck
Title:	Prof. Dr. rer. nat.
Function:	Geschäftsführender Vorstand
Email:	dheutelbeck@ftk.de

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Background Intellectual Property

9. Does your organisation own any existing background Intellectual Properties potentially to be used in the project? (Yes/No) If yes, please complete Table 6 on page 51 for each IP. **If there is more than one IP, please copy the complete table and paste in on a new page and fill the table for each identified IP.**

Table 40: Background IP identification

Virtual Power Plant concepts	No
Hybrid Authentication & Authorisation Infrastructure	**Yes**
Pre-process (data analytics and knowledge elaboration)	No
Peer-2-Peer trading engine	No
Shared Knowledge Base	No
Smart APIs	No
Any other relevant IPs:	No
…	

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Table 41: Background IPR identification sheet

General	Answers
Name/title of IP.	**SAPL Engine and Servers**
Description of IP and number of updates (latest version number)	**2.0.0-SNAPSHOT**
IPR number (e.g patent number, trademark number, etc.)	
Product (Hardware/ Software/Algorithm/Process, etc).	**Software and Algorithms**
Type of IP (e.g., patent, trademark, copyright, secrecy, utility model, design registration).	Copyright and secrecy
IP condition (submitted, granted, etc.) and application date, date granted, and expiry date.	Core engine and servers (LT and CE) are licensed under the Apache 2.0 License https://www.apache.org/licenses/LICENSE-2.0 as Open Source. The SAPL Server EE is currently unpublished and will be released under a commercial license.
Affiliation of IP granting organization.	
Geographic area where IP applies (e.g. Spain, EU, Worldwide, etc.)	Worldwide
What is the relevance of your organisations IPs to the VPP4Islands project? E.g., what challenges are expected if the IP is not accessible/useable in the VPP4Islands project?	Core engine and servers (LT and CE) as well as upcoming project specific integrations are important for the overall software integration. As the key components are made available as Open-Source there are no expected challenges related to accessibility.
TRL at start of project / expected TRL at end of project.	5 / 6-8
Ownership of IP	
Ownership (please indicate all parties)	Dominic Heutelbeck
If the IP is co-owned, which other organisations are currently using the IP and how is ownership shared?	FTK e.V. is using the IP in different research Projects
Specific limitations for implementation and exploitation (e.g. exclusive license).	License for SAPL Server EE not yet defined.
Is the IP previously transferred from a third party to your organization? If yes, please indicate the original owner of the IP and the year the ownership is transferred.	no
Access rights and usage of IP	
Are any other access rights, e.g. third party licenses, needed for the utilisation of existing IPs in the VPP4Islands project?	No, all dependencies are Open Source with compatible licenses.

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Are there any financial and/or technical constraints to access and/or use the existing IP in the VPP4Islands project?	The software is made available free of charge for use within the project.
Are any of the IPs prevented to be exploited in the industry, and for what reason (e.g., because of implications to human health, ethical issues, or potential ecological damage)?	no
Additional information	
Please provide any additional links, descriptions and/or other publicly available information of your background IPs:	https://sapl.io/
Is there any additional information regarding your background IPR that VPP4Island exploitation leaders should be aware of?	no
Additional comments (i.e. challenged claims, risk of IP infringements and litigated patents)	no

Please complete the below checklist below

Table 42: Checklist for completion of the IPR Questionnaire

Indicated all applicable background IPs	
Identified all applicable co-owners of background IPs	
Supplied all applicable documentation/links to background IPs	
Identified all applicable third-party licenses required to use IPs	
Indicated all applicable foreground IPs	
Identified all applicable licenses required for development of foreground IPs	
Identified all applicable partners required for development of foreground IPs	
Identified all applicable financial and technical constraints for development of foreground IPs	
Indicated all applicable additional IPs	
Identified all applicable licenses required for development of additional IPs	

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Identified all applicable partners required for development of additional IPs	
Identified all applicable financial and technical constraints for development of additional IPs	

This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement n°957852

Ownership of results

Results are owned by the Party that generates them. In the DESCA consortium agreement, 2 options are provided for the joint ownership of results, access rights for exploitation, and additional access rights. Please read the following section carefully and fill in below your initial preference. This is in no case binding but is used for an early evaluation of the strategies of each consortium partner, and to identify potential clashes as early as possible.

Joint ownership

Joint ownership is governed by Grant Agreement Article 26.2 with the following additions:

[Option 1:]	[Option 2:]
Unless otherwise agreed: – each of the joint owners shall be entitled to use their jointly owned Results for non-commercial research activities on a royalty-free basis, and without requiring the prior consent of the other joint owner(s), and – each of the joint owners shall be entitled to otherwise Exploit the jointly owned Results and to grant non-exclusive licenses to third parties (without any right to sub-license), if the other joint owners are given: (a) at least 45 calendar days advance notice; and (b) Fair and Reasonable compensation.	In case of joint ownership, each of the joint owners shall be entitled to Exploit the joint Results as it sees fit, and to grant non-exclusive licences, without obtaining any consent from, paying compensation to, or otherwise accounting to any other joint owner, unless otherwise agreed between the joint owners. The joint owners shall agree on all protection measures and the division of related cost in advance.
Preferred option: 1	

Access Rights to Results

[Option 1:]	[Option 2:]
Access Rights to Results if Needed for Exploitation of a Party's own Results shall be granted on Fair and Reasonable conditions. Access rights to Results for internal research activities shall be granted on a royalty-free basis.	Access Rights to Results if Needed for Exploitation of a Party's own Results shall be granted on a royalty-free basis.
Preferred option: 1	

Additional Access Rights

[Option 1:]	[Option 2:]
For the avoidance of doubt any grant of Access Rights not covered by the Grant Agreement or this Consortium Agreement shall be at the absolute discretion of the owning Party and subject to such terms and conditions as may be agreed between the owning and receiving Parties.	The Parties agree to negotiate in good faith any additional Access Rights to Results as might be asked for by any Party, upon adequate financial conditions to be agreed.
Preferred option: 2	

End of questionnaire

This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement n°957852

GRADO

Survey Questions for all consortium partners

Deliverable link	D8.6 Protection and allocation of Intellectual Property Rights
IPR Questionnaire version	1
Deliverable Date	M12
Questionnaire main editor	BUL
Participants	All partners
Final response date	26 May 2021

Introduction

The deliverable 8.6, following from Task 8.6 - Protection and allocation of Intellectual Property (IP), will focus on a thorough IPR clinic of all exploitable results in the project, with the aim to assess partners' IP background and foreground, find the necessary balance between collaboration and IP protection, reach consensus among contributors for each potential piece of IP, agree upon ownership early in the project and define the most effective innovation protection mechanisms, IPR and non-IPR (Open Innovation) oriented appropriation strategies [18] and market exploitation routes. The analysis is necessary in view of timely addressing all the potential issues that may hamper consortium interaction and project deliverables, ownership, partners hierarchy of needs and IP exploitations. IPR evolution will be discussed in the two planned internal workshops (with particular focus on IPR of joint results) and through dedicated interviews with the partners.

This questionnaire is designed to identify all Intellectual Property Rights (IPR) (the formal protection methods [12], granted as exclusive rights for a certain period of time, are: patent, utility model[19], trademark, copyright, secrecy, design registration)[20] of the VPP4ISLANDS project, including:

- Background IPs that consortium partners are using in VPP4Islands project.

[19] *The utility model was introduced as a "petty patent" in some countries (including Germany) to provide a cheaper but simpler alternative to patent protection. It is deemed particularly suited to the specific needs of SMEs. Utility models are available for less inventive steps (incremental improvements and adaptations of existing products), can be registered more quickly and are less expensive to acquire and maintain than patents. Compared with patents, however, they have a shorter protection term and provide less legal protection* (Alfred Radauer, 2007)

[20] *For more information about the different types of IP, please refer to: https://intellectual-property-helpdesk.ec.europa.eu/regional-helpdesks/european-ip-helpdesk/europe-frequently-asked-questions_en*

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- Foreground IPs that are expected to be developed during the project through joined owned results.
- Any other IP that is generated during the term of the research project but outside of the project (either with or without third parties), which knowledge is critical for use in the VPP project.

To get the most useful information possible at this stage, please fill the survey with as much technical details about the IP as possible, including the originality, novelties of the innovations, specific claims of inventions & exploitation, shared inventions & licensing, patent cumulative value, post-grant patents review, challenged claims, risk of IP infringements and litigated patents [22]. This will be beneficial not only for the exploitation agreement, but more importantly will inform the tasks of T2.3 – Concept definition and Subtask 2.5.1 Specification of the VPP4Islands solutions.
Thank you in advance for providing your feedback and for the time spent in filling this questionnaire.

Questions

10. Who is your company's point of contact for Intellectual Property Rights?

Table 43: Contact details

Full name:	Maria Genovese
Title:	Dr.
Function:	Environment service manager
Email:	maria.genovese@comunegrado.it

This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement n°957852

Background Intellectual Property

10. Does your organisation own any existing background Intellectual Properties potentially to be used in the project? (Yes/No) If yes, please complete Table 6 on page 51 for each IP. **If there is more than one IP, please copy the complete table and paste in on a new page and fill the table for each identified IP.**

Table 44: Background IP identification

Virtual Power Plant concepts	No
Peer-2-Peer trading engine	No
Energy Management	No
Energy Services	No
Shared Knowledge Base	No
Smart APIs	No
Any other relevant IPs:	No
…	

This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement n°957852

Table 45: Background IPR identification sheet

General	Answers
Name/title of IP.	*n.a.*
Description of IP and number of updates (latest version number)	*n.a.*
IPR number (e.g patent number, trademark number, etc.)	*n.a.*
Product (Hardware/ Software/Algorithm/Process, etc).	*n.a.*
Type of IP (e.g., patent, trademark, copyright, secrecy, utility model, design registration).	*n.a.*
IP condition (submitted, granted, etc.) and application date, date granted, and expiry date.	*n.a.*
Affiliation of IP granting organization.	*n.a.*
Geographic area where IP applies (e.g. Spain, EU, Worldwide, etc.)	*n.a.*
What is the relevance of your organisations IPs to the VPP4Islands project? E.g., what challenges are expected if the IP is not accessible/useable in the VPP4Islands project?	*n.a.*
TRL at start of project / expected TRL at end of project.	*n.a.*
Ownership of IP	
Ownership (please indicate all parties)	*n.a.*
If the IP is co-owned, which other organisations are currently using the IP and how is ownership shared?	*n.a.*
Specific limitations for implementation and exploitation (e.g. exclusive license).	*n.a.*
Is the IP previously transferred from a third party to your organization? If yes, please indicate the original owner of the IP and the year the ownership is transferred.	*n.a.*
Access rights and usage of IP	
Are any other access rights, e.g. third party licenses, needed for the utilisation of existing IPs in the VPP4Islands project?	*n.a.*
Are there any financial and/or technical constraints to access and/or use the existing IP in the VPP4Islands project?	*n.a.*
Are any of the IPs prevented to be exploited in the industry, and for what reason (e.g., because of implications to human health, ethical issues, or potential ecological damage)?	*n.a.*
Additional information	
Please provide any additional links, descriptions and/or other publicly available information of your background IPs:	*n.a.*
Is there any additional information regarding your background IPR that VPP4Island exploitation leaders should be aware of?	*n.a.*
Additional comments (i.e. challenged claims, risk of IP infringements and litigated patents)	*n.a.*

This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement n°957852

Please complete the below checklist below

Table 46: Checklist for completion of the IPR Questionnaire

Indicated all applicable background IPs	n.a.
Identified all applicable co-owners of background IPs	n.a.
Supplied all applicable documentation/links to background IPs	n.a.
Identified all applicable third-party licenses required to use IPs	n.a.
Indicated all applicable foreground IPs	n.a.
Identified all applicable licenses required for development of foreground IPs	n.a.
Identified all applicable partners required for development of foreground IPs	n.a.
Identified all applicable financial and technical constraints for development of foreground IPs	n.a.
Indicated all applicable additional IPs	n.a.
Identified all applicable licenses required for development of additional IPs	n.a.
Identified all applicable partners required for development of additional IPs	n.a.
Identified all applicable financial and technical constraints for development of additional IPs	n.a.

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Ownership of results

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Joint ownership

Joint ownership is governed by Grant Agreement Article 26.2 with the following additions:

[Option 1:]	[Option 2:]
Unless otherwise agreed: – each of the joint owners shall be entitled to use their jointly owned Results for non-commercial research activities on a royalty-free basis, and without requiring the prior consent of the other joint owner(s), and – each of the joint owners shall be entitled to otherwise Exploit the jointly owned Results and to grant non-exclusive licenses to third parties (without any right to sub-license), if the other joint owners are given: (a) at least 45 calendar days advance notice; and (b) Fair and Reasonable compensation.	In case of joint ownership, each of the joint owners shall be entitled to Exploit the joint Results as it sees fit, and to grant non-exclusive licences, without obtaining any consent from, paying compensation to, or otherwise accounting to any other joint owner, unless otherwise agreed between the joint owners. The joint owners shall agree on all protection measures and the division of related cost in advance.
Preferred option: Option 2	

Access Rights to Results

[Option 1:]	[Option 2:]
Access Rights to Results if Needed for Exploitation of a Party's own Results shall be granted on Fair and Reasonable conditions. Access rights to Results for internal research activities shall be granted on a royalty-free basis.	Access Rights to Results if Needed for Exploitation of a Party's own Results shall be granted on a royalty-free basis.
Preferred option: Option 1	

Additional Access Rights

[Option 1:]	[Option 2:]
For the avoidance of doubt any grant of Access Rights not covered by the Grant Agreement or this Consortium Agreement shall be at the absolute discretion of the owning Party and subject to such terms and conditions as may be agreed between the owning and receiving Parties.	The Parties agree to negotiate in good faith any additional Access Rights to Results as might be asked for by any Party, upon adequate financial conditions to be agreed.
Preferred option: Option 2	

This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement n°957852

End of questionnaire

IDEA

Survey Questions for all consortium partners

Deliverable link	D8.6 Protection and allocation of Intellectual Property Rights
IPR Questionnaire version	1
Deliverable Date	M12
Questionnaire main editor	BUL
Participants	All partners
Final response date	26 May 2021

Introduction

The deliverable 8.6, following from Task 8.6 - Protection and allocation of Intellectual Property (IP), will focus on a thorough IPR clinic of all exploitable results in the project, with the aim to assess partners' IP background and foreground, find the necessary balance between collaboration and IP protection, reach consensus among contributors for each potential piece of IP, agree upon ownership early in the project and define the most effective innovation protection mechanisms, IPR and non-IPR (Open Innovation) oriented appropriation strategies [18] and market exploitation routes. The analysis is necessary in view of timely addressing all the potential issues that may hamper consortium interaction and project deliverables, ownership, partners hierarchy of needs and IP exploitations. IPR evolution will be discussed in the two planned internal workshops (with particular focus on IPR of joint results) and through dedicated interviews with the partners.

This questionnaire is designed to identify all Intellectual Property Rights (IPR) (the formal protection methods [12], granted as exclusive rights for a certain period of time, are: patent, utility model[21], trademark, copyright, secrecy, design registration)[22] of the VPP4ISLANDS project, including:

- Background IPs that consortium partners are using in VPP4Islands project.

[21] *The utility model was introduced as a "petty patent" in some countries (including Germany) to provide a cheaper but simpler alternative to patent protection. It is deemed particularly suited to the specific needs of SMEs. Utility models are available for less inventive steps (incremental improvements and adaptations of existing products), can be registered more quickly and are less expensive to acquire and maintain than patents. Compared with patents, however, they have a shorter protection term and provide less legal protection* (Alfred Radauer, 2007)

[22] *For more information about the different types of IP, please refer to: https://intellectual-property-helpdesk.ec.europa.eu/regional-helpdesks/european-ip-helpdesk/europe-frequently-asked-questions_en*

This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement n°957852

- Foreground IPs that are expected to be developed during the project through joined owned results.
- Any other IP that is generated during the term of the research project but outside of the project (either with or without third parties), which knowledge is critical for use in the VPP project.

To get the most useful information possible at this stage, please fill the survey with as much technical details about the IP as possible, including the originality, novelties of the innovations, specific claims of inventions & exploitation, shared inventions & licensing, patent cumulative value, post-grant patents review, challenged claims, risk of IP infringements and litigated patents [22]. This will be beneficial not only for the exploitation agreement, but more importantly will inform the tasks of T2.3 – Concept definition and Subtask 2.5.1 Specification of the VPP4Islands solutions.
Thank you in advance for providing your feedback and for the time spent in filling this questionnaire.

Questions

11. Who is your company's point of contact for Intellectual Property Rights?

Table 47: Contact details

Full name:	CLARA OSUNA-YEVENES
Title:	MS
Function:	R&D ENGINEER
Email:	cosuna@ideaingenieria.es

This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement n°957852

Background Intellectual Property

11. Does your organisation own any existing background Intellectual Properties potentially to be used in the project? (Yes/No) If yes, please complete Table 6 on page 51 for each IP. **If there is more than one IP, please copy the complete table and paste in on a new page and fill the table for each identified IP.**

Table 48: Background IP identification

Virtual Power Plant concepts	Yes / **No**
Digital Twin System	**Yes** / No
Shared Knowledge Base	Yes / **No**
Smart APIs	Yes / **No**
Any other relevant IPs:	Yes / **No**
Data Platform	Yes / **No**
…	

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Table 49: Background IPR identification sheet

General	Answers
Name/title of IP.	**BIM DIGITAL TWIN**
Description of IP and number of updates (latest version number)	**V02**
IPR number (e.g patent number, trademark number, etc.)	**Not registered**
Product (Hardware/ Software/Algorithm/Process, etc).	**Software**
Type of IP (e.g., patent, trademark, copyright, secrecy, utility model, design registration).	Trademark: BIM Digital Twin
IP condition (submitted, granted, etc.) and application date, date granted, and expiry date.	-
Affiliation of IP granting organization.	-
Geographic area where IP applies (e.g. Spain, EU, Worldwide, etc.)	Spain
What is the relevance of your organisations IPs to the VPP4Islands project? E.g., what challenges are expected if the IP is not accessible/useable in the VPP4Islands project?	BIM digital Twin is focused on the integration between data sources and the BIM model. As VPP4 Island project is not related to the BIM model but the data architecture of the platform, the core of BIM Digital Twin will not be useable in the VPP4 one
TRL at start of project / expected TRL at end of project.	2 / 8
Ownership of IP	
Ownership (please indicate all parties)	IDEA
If the IP is co-owned, which other organisations are currently using the IP and how is ownership shared?	IDEA
Specific limitations for implementation and exploitation (e.g. exclusive license).	Exclusive license
Is the IP previously transferred from a third party to your organization? If yes, please indicate the original owner of the IP and the year the ownership is transferred.	No
Access rights and usage of IP	
Are any other access rights, e.g. third party licenses, needed for the utilisation of existing IPs in the VPP4Islands project?	No
Are there any financial and/or technical constraints to access and/or use the existing IP in the VPP4Islands project?	BIM Digital Twin is an independent platform to VPP4 Project so it is not expected to be used for this development

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Are any of the IPs prevented to be exploited in the industry, and for what reason (e.g., because of implications to human health, ethical issues, or potential ecological damage)?	No
Additional information	
Please provide any additional links, descriptions and/or other publicly available information of your background IPs:	https://bimdigitaltwin.es/
Is there any additional information regarding your background IPR that VPP4Island exploitation leaders should be aware of?	No
Additional comments (i.e. challenged claims, risk of IP infringements and litigated patents)	

Please complete the below checklist below

Table 50: Checklist for completion of the IPR Questionnaire

Indicated all applicable background IPs	x
Identified all applicable co-owners of background IPs	x
Supplied all applicable documentation/links to background IPs	x
Identified all applicable third-party licenses required to use IPs	x
Indicated all applicable foreground IPs	x
Identified all applicable licenses required for development of foreground IPs	x
Identified all applicable partners required for development of foreground IPs	x
Identified all applicable financial and technical constraints for development of foreground IPs	X
Indicated all applicable additional IPs	X
Identified all applicable licenses required for development of additional IPs	X
Identified all applicable partners required for development of additional IPs	X
Identified all applicable financial and technical constraints for development of additional IPs	X

This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement n°957852

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Joint ownership

Joint ownership is governed by Grant Agreement Article 26.2 with the following additions:

[Option 1:]	[Option 2:]
Unless otherwise agreed: – each of the joint owners shall be entitled to use their jointly owned Results for non-commercial research activities on a royalty-free basis, and without requiring the prior consent of the other joint owner(s), and – each of the joint owners shall be entitled to otherwise Exploit the jointly owned Results and to grant non-exclusive licenses to third parties (without any right to sub-license), if the other joint owners are given: (a) at least 45 calendar days advance notice; and (b) Fair and Reasonable compensation.	In case of joint ownership, each of the joint owners shall be entitled to Exploit the joint Results as it sees fit, and to grant non-exclusive licences, without obtaining any consent from, paying compensation to, or otherwise accounting to any other joint owner, unless otherwise agreed between the joint owners. The joint owners shall agree on all protection measures and the division of related cost in advance.
Preferred option: Option 1	

Access Rights to Results

[Option 1:]	[Option 2:]
Access Rights to Results if Needed for Exploitation of a Party's own Results shall be granted on Fair and Reasonable conditions. Access rights to Results for internal research activities shall be granted on a royalty-free basis.	Access Rights to Results if Needed for Exploitation of a Party's own Results shall be granted on a royalty-free basis.
Preferred option: Option 1	

Additional Access Rights

[Option 1:]	[Option 2:]
For the avoidance of doubt any grant of Access Rights not covered by the Grant Agreement or this Consortium Agreement shall be at the absolute discretion of the owning Party and subject to such terms and conditions as may be agreed between the owning and receiving Parties.	The Parties agree to negotiate in good faith any additional Access Rights to Results as might be asked for by any Party, upon adequate financial conditions to be agreed.
Preferred option: Option 1	

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End of questionnaire

INAVITA

Survey Questions for all consortium partners

Deliverable link	D8.6 Protection and allocation of Intellectual Property Rights
IPR Questionnaire version	1
Deliverable Date	M12
Questionnaire main editor	BUL
Participants	All partners
Final response date	26 May 2021

Introduction

The deliverable 8.6, following from Task 8.6 - Protection and allocation of Intellectual Property (IP), will focus on a thorough IPR clinic of all exploitable results in the project, with the aim to assess partners' IP background and foreground, find the necessary balance between collaboration and IP protection, reach consensus among contributors for each potential piece of IP, agree upon ownership early in the project and define the most effective innovation protection mechanisms, IPR and non-IPR (Open Innovation) oriented appropriation strategies [18] and market exploitation routes. The analysis is necessary in view of timely addressing all the potential issues that may hamper consortium interaction and project deliverables, ownership, partners hierarchy of needs and IP exploitations. IPR evolution will be discussed in the two planned internal workshops (with particular focus on IPR of joint results) and through dedicated interviews with the partners.

This questionnaire is designed to identify all Intellectual Property Rights (IPR) (the formal protection methods [12], granted as exclusive rights for a certain period of time, are: patent, utility model[23], trademark, copyright, secrecy, design registration)[24] of the VPP4ISLANDS project, including:

- Background IPs that consortium partners are using in VPP4Islands project.

[23] *The utility model was introduced as a "petty patent" in some countries (including Germany) to provide a cheaper but simpler alternative to patent protection. It is deemed particularly suited to the specific needs of SMEs. Utility models are available for less inventive steps (incremental improvements and adaptations of existing products), can be registered more quickly and are less expensive to acquire and maintain than patents. Compared with patents, however, they have a shorter protection term and provide less legal protection* (Alfred Radauer, 2007)

[24] *For more information about the different types of IP, please refer to: https://intellectual-property-helpdesk.ec.europa.eu/regional-helpdesks/european-ip-helpdesk/europe-frequently-asked-questions_en*

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- Foreground IPs that are expected to be developed during the project through joined owned results.
- Any other IP that is generated during the term of the research project but outside of the project (either with or without third parties), which knowledge is critical for use in the VPP project.

To get the most useful information possible at this stage, please fill the survey with as much technical details about the IP as possible, including the originality, novelties of the innovations, specific claims of inventions & exploitation, shared inventions & licensing, patent cumulative value, post-grant patents review, challenged claims, risk of IP infringements and litigated patents [22]. This will be beneficial not only for the exploitation agreement, but more importantly will inform the tasks of T2.3 – Concept definition and Subtask 2.5.1 Specification of the VPP4Islands solutions.
Thank you in advance for providing your feedback and for the time spent in filling this questionnaire.

Questions

12. Who is your company's point of contact for Intellectual Property Rights?

Table 51: Contact details

Full name:	Tuba Benek Arslan
Title:	Senior R&D Project Engineer
Function:	R&D Department
Email:	tuba.benek@inavitas.com

This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement n°957852

Background Intellectual Property

12. Does your organisation own any existing background Intellectual Properties potentially to be used in the project? (Yes/No) If yes, please complete Table 6 on page 51 for each IP. **If there is more than one IP, please copy the complete table and paste in on a new page and fill the table for each identified IP.**

Table 52: Background IP identification

Virtual Power Plant concepts	No
Forecasting engine (weather, market prices, energy consumption)	Yes
User Interface Module	Yes
Distributed Optimisation Engine	No
Shared Knowledge Base	No
Smart APIs	No
Any other relevant IPs:	No
…	

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Table 53: Background IPR identification sheet

General	Answers
Name/title of IP.	**User Interfaces of Inavitas**
Description of IP and number of updates (latest version number)	**Trademark of Inavitas**
IPR number (e.g patent number, trademark number, etc.)	**2019 113777**
Product (Hardware/ Software/Algorithm/Process, etc).	**Inavitas Software and Trademark**
Type of IP (e.g., patent, trademark, copyright, secrecy, utility model, design registration).	Trademark
IP condition (submitted, granted, etc.) and application date, date granted, and expiry date.	Granted
Affiliation of IP granting organization.	Turkish Trademark Office
Geographic area where IP applies (e.g. Spain, EU, Worldwide, etc.)	Turkey
What is the relevance of your organisations IPs to the VPP4Islands project? E.g., what challenges are expected if the IP is not accessible/useable in the VPP4Islands project?	Inavitas will develop user interfaces for VPP4Islands
TRL at start of project / expected TRL at end of project.	10 / 10
Ownership of IP	
Ownership (please indicate all parties)	Inavitas Energy
If the IP is co-owned, which other organisations are currently using the IP and how is ownership shared?	-
Specific limitations for implementation and exploitation (e.g. exclusive license).	Need Inavitas license for usage of the Inavitas system
Is the IP previously transferred from a third party to your organization? If yes, please indicate the original owner of the IP and the year the ownership is transferred.	-
Access rights and usage of IP	
Are any other access rights, e.g. third party licenses, needed for the utilisation of existing IPs in the VPP4Islands project?	-
Are there any financial and/or technical constraints to access and/or use the existing IP in the VPP4Islands project?	-
Are any of the IPs prevented to be exploited in the industry, and for what reason (e.g., because of implications to human health, ethical issues, or potential ecological damage)?	-
Additional information	

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Please provide any additional links, descriptions and/or other publicly available information of your background IPs:	-
Is there any additional information regarding your background IPR that VPP4Island exploitation leaders should be aware of?	-
Additional comments (i.e. challenged claims, risk of IP infringements and litigated patents)	-

Please complete the below checklist below

Table 54: Checklist for completion of the IPR Questionnaire

Indicated all applicable background IPs	
Identified all applicable co-owners of background IPs	
Supplied all applicable documentation/links to background IPs	
Identified all applicable third-party licenses required to use IPs	
Indicated all applicable foreground IPs	
Identified all applicable licenses required for development of foreground IPs	
Identified all applicable partners required for development of foreground IPs	
Identified all applicable financial and technical constraints for development of foreground IPs	
Indicated all applicable additional IPs	
Identified all applicable licenses required for development of additional IPs	
Identified all applicable partners required for development of additional IPs	
Identified all applicable financial and technical constraints for development of additional IPs	

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Ownership of results

Results are owned by the Party that generates them. In the DESCA consortium agreement, 2 options are provided for the joint ownership of results, access rights for exploitation, and additional access rights. Please read the following section carefully and fill in below your initial preference. This is in no case binding but is used for an early evaluation of the strategies of each consortium partner, and to identify potential clashes as early as possible.

Joint ownership

Joint ownership is governed by Grant Agreement Article 26.2 with the following additions:

[Option 1:]	[Option 2:]
Unless otherwise agreed: – each of the joint owners shall be entitled to use their jointly owned Results for non-commercial research activities on a royalty-free basis, and without requiring the prior consent of the other joint owner(s), and – each of the joint owners shall be entitled to otherwise Exploit the jointly owned Results and to grant non-exclusive licenses to third parties (without any right to sub-license), if the other joint owners are given: (a) at least 45 calendar days advance notice; and (b) Fair and Reasonable compensation.	In case of joint ownership, each of the joint owners shall be entitled to Exploit the joint Results as it sees fit, and to grant non-exclusive licences, without obtaining any consent from, paying compensation to, or otherwise accounting to any other joint owner, unless otherwise agreed between the joint owners. The joint owners shall agree on all protection measures and the division of related cost in advance.
Preferred option:	

Access Rights to Results

[Option 1:]	[Option 2:]
Access Rights to Results if Needed for Exploitation of a Party's own Results shall be granted on Fair and Reasonable conditions. Access rights to Results for internal research activities shall be granted on a royalty-free basis.	Access Rights to Results if Needed for Exploitation of a Party's own Results shall be granted on a royalty-free basis.
Preferred option:	

Additional Access Rights

[Option 1:]	[Option 2:]
For the avoidance of doubt any grant of Access Rights not covered by the Grant Agreement or this Consortium Agreement shall be at the absolute discretion of the owning Party and subject to such terms and conditions as may be agreed between the owning and receiving Parties.	The Parties agree to negotiate in good faith any additional Access Rights to Results as might be asked for by any Party, upon adequate financial conditions to be agreed.
Preferred option:	

End of questionnaire

This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement n°957852

RDIUP

Survey Questions for all consortium partners

Deliverable link	D8.6 Protection and allocation of Intellectual Property Rights
IPR Questionnaire version	1
Deliverable Date	M12
Questionnaire main editor	BUL
Participants	All partners
Final response date	26 May 2021

Introduction

The deliverable 8.6, following from Task 8.6 - Protection and allocation of Intellectual Property (IP), will focus on a thorough IPR clinic of all exploitable results in the project, with the aim to assess partners' IP background and foreground, find the necessary balance between collaboration and IP protection, reach consensus among contributors for each potential piece of IP, agree upon ownership early in the project and define the most effective innovation protection mechanisms, IPR and non-IPR (Open Innovation) oriented appropriation strategies [18] and market exploitation routes. The analysis is necessary in view of timely addressing all the potential issues that may hamper consortium interaction and project deliverables, ownership, partners hierarchy of needs and IP exploitations. IPR evolution will be discussed in the two planned internal workshops (with particular focus on IPR of joint results) and through dedicated interviews with the partners.

This questionnaire is designed to identify all Intellectual Property Rights (IPR) (the formal protection methods [12], granted as exclusive rights for a certain period of time, are: patent, utility model[25], trademark, copyright, secrecy, design registration)[26] of the VPP4ISLANDS project, including:

- Background IPs that consortium partners are using in VPP4Islands project.

[25] *The utility model was introduced as a "petty patent" in some countries (including Germany) to provide a cheaper but simpler alternative to patent protection. It is deemed particularly suited to the specific needs of SMEs. Utility models are available for less inventive steps (incremental improvements and adaptations of existing products), can be registered more quickly and are less expensive to acquire and maintain than patents. Compared with patents, however, they have a shorter protection term and provide less legal protection* (Alfred Radauer, 2007)

[26] *For more information about the different types of IP, please refer to: https://intellectual-property-helpdesk.ec.europa.eu/regional-helpdesks/european-ip-helpdesk/europe-frequently-asked-questions_en*

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- Foreground IPs that are expected to be developed during the project through joined owned results.
- Any other IP that is generated during the term of the research project but outside of the project (either with or without third parties), which knowledge is critical for use in the VPP project.

To get the most useful information possible at this stage, please fill the survey with as much technical details about the IP as possible, including the originality, novelties of the innovations, specific claims of inventions & exploitation, shared inventions & licensing, patent cumulative value, post-grant patents review, challenged claims, risk of IP infringements and litigated patents [22]. This will be beneficial not only for the exploitation agreement, but more importantly will inform the tasks of T2.3 – Concept definition and Subtask 2.5.1 Specification of the VPP4Islands solutions.
Thank you in advance for providing your feedback and for the time spent in filling this questionnaire.

Questions

13. Who is your company's point of contact for Intellectual Property Rights?

Table 55: Contact details

Full name:	Habib NASSER
Title:	Ph.D-Ing
Function:	CEO and project manager
Email:	Habib.nasser@rdiup.com

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Background Intellectual Property

13. Does your organisation own any existing background Intellectual Properties potentially to be used in the project? (Yes/No) If yes, please complete Table 6 on page 51 for each IP. **If there is more than one IP, please copy the complete table and paste in on a new page and fill the table for each identified IP.**

Table 56: Background IP identification

Virtual Power Plant concepts	No
VPPI-Box	No
Forecasting Engine (weather, market prices, energy consumption)	No
User Interface Module	No
Pre-process (data analytics and knowledge elaboration)	No
Balancing Service Provider	No
Smart Planning Tools & decision support system	No
Shared Knowledge Base	No
Smart APIs	No
Any other relevant IPs:	No
…	

This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement n°957852

Table 57: Background IPR identification sheet

General	Answers
Name/title of IP.	
Description of IP and number of updates (latest version number)	
IPR number (e.g patent number, trademark number, etc.)	
Product (Hardware/ Software/Algorithm/Process, etc).	
Type of IP (e.g., patent, trademark, copyright, secrecy, utility model, design registration).	
IP condition (submitted, granted, etc.) and application date, date granted, and expiry date.	
Affiliation of IP granting organization.	
Geographic area where IP applies (e.g. Spain, EU, Worldwide, etc.)	
What is the relevance of your organisations IPs to the VPP4Islands project? E.g., what challenges are expected if the IP is not accessible/useable in the VPP4Islands project?	
TRL at start of project / expected TRL at end of project.	/
Ownership of IP	
Ownership (please indicate all parties)	
If the IP is co-owned, which other organisations are currently using the IP and how is ownership shared?	
Specific limitations for implementation and exploitation (e.g. exclusive license).	
Is the IP previously transferred from a third party to your organization? If yes, please indicate the original owner of the IP and the year the ownership is transferred.	
Access rights and usage of IP	
Are any other access rights, e.g. third party licenses, needed for the utilisation of existing IPs in the VPP4Islands project?	
Are there any financial and/or technical constraints to access and/or use the existing IP in the VPP4Islands project?	
Are any of the IPs prevented to be exploited in the industry, and for what reason (e.g., because of implications to human health, ethical issues, or potential ecological damage)?	
Additional information	
Please provide any additional links, descriptions and/or other publicly available information of your background IPs:	
Is there any additional information regarding your background IPR that VPP4Island exploitation leaders should be aware of?	
Additional comments (i.e. challenged claims, risk of IP infringements and litigated patents)	

This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement n°957852

4.

Please complete the below checklist below

Table 58: Checklist for completion of the IPR Questionnaire

Indicated all applicable background IPs	
Identified all applicable co-owners of background IPs	
Supplied all applicable documentation/links to background IPs	
Identified all applicable third-party licenses required to use IPs	
Indicated all applicable foreground IPs	X
Identified all applicable licenses required for development of foreground IPs	
Identified all applicable partners required for development of foreground IPs	X
Identified all applicable financial and technical constraints for development of foreground IPs	X
Indicated all applicable additional IPs	
Identified all applicable licenses required for development of additional IPs	
Identified all applicable partners required for development of additional IPs	
Identified all applicable financial and technical constraints for development of additional IPs	

This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement n°957852

Ownership of results

Results are owned by the Party that generates them. In the DESCA consortium agreement, 2 options are provided for the joint ownership of results, access rights for exploitation, and additional access rights. Please read the following section carefully and fill in below your initial preference. This is in no case binding but is used for an early evaluation of the strategies of each consortium partner, and to identify potential clashes as early as possible.

Joint ownership

Joint ownership is governed by Grant Agreement Article 26.2 with the following additions:

[Option 1:]	[Option 2:]
Unless otherwise agreed: – each of the joint owners shall be entitled to use their jointly owned Results for non-commercial research activities on a royalty-free basis, and without requiring the prior consent of the other joint owner(s), and – each of the joint owners shall be entitled to otherwise Exploit the jointly owned Results and to grant non-exclusive licenses to third parties (without any right to sub-license), if the other joint owners are given: (a) at least 45 calendar days advance notice; and (b) Fair and Reasonable compensation.	In case of joint ownership, each of the joint owners shall be entitled to Exploit the joint Results as it sees fit, and to grant non-exclusive licences, without obtaining any consent from, paying compensation to, or otherwise accounting to any other joint owner, unless otherwise agreed between the joint owners. The joint owners shall agree on all protection measures and the division of related cost in advance.
Preferred option: Option 2	

Access Rights to Results

[Option 1:]	[Option 2:]
Access Rights to Results if Needed for Exploitation of a Party's own Results shall be granted on Fair and Reasonable conditions. Access rights to Results for internal research activities shall be granted on a royalty-free basis.	Access Rights to Results if Needed for Exploitation of a Party's own Results shall be granted on a royalty-free basis.
Preferred option: Option 1	

Additional Access Rights

[Option 1:]	[Option 2:]
For the avoidance of doubt any grant of Access Rights not covered by the Grant Agreement or this Consortium Agreement shall be at the absolute discretion of the owning Party and subject to such terms and conditions as may be agreed between the owning and receiving Parties.	The Parties agree to negotiate in good faith any additional Access Rights to Results as might be asked for by any Party, upon adequate financial conditions to be agreed.
Preferred option: Option 2	

This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement n°957852

End of questionnaire

REGE

Survey Questions for all consortium partners

Deliverable link	D8.6 Protection and allocation of Intellectual Property Rights
IPR Questionnaire version	1
Deliverable Date	M12
Questionnaire main editor	BUL
Participants	All partners
Final response date	26 May 2021

Introduction

The deliverable 8.6, following from Task 8.6 - Protection and allocation of Intellectual Property (IP), will focus on a thorough IPR clinic of all exploitable results in the project, with the aim to assess partners' IP background and foreground, find the necessary balance between collaboration and IP protection, reach consensus among contributors for each potential piece of IP, agree upon ownership early in the project and define the most effective innovation protection mechanisms, IPR and non-IPR (Open Innovation) oriented appropriation strategies [18] and market exploitation routes. The analysis is necessary in view of timely addressing all the potential issues that may hamper consortium interaction and project deliverables, ownership, partners hierarchy of needs and IP exploitations. IPR evolution will be discussed in the two planned internal workshops (with particular focus on IPR of joint results) and through dedicated interviews with the partners.

This questionnaire is designed to identify all Intellectual Property Rights (IPR) (the formal protection methods [12], granted as exclusive rights for a certain period of time, are: patent, utility model[27], trademark, copyright, secrecy, design registration)[28] of the VPP4ISLANDS project, including:

- Background IPs that consortium partners are using in VPP4Islands project.

[27] *The utility model was introduced as a "petty patent" in some countries (including Germany) to provide a cheaper but simpler alternative to patent protection. It is deemed particularly suited to the specific needs of SMEs. Utility models are available for less inventive steps (incremental improvements and adaptations of existing products), can be registered more quickly and are less expensive to acquire and maintain than patents. Compared with patents, however, they have a shorter protection term and provide less legal protection* (Alfred Radauer, 2007)

[28] *For more information about the different types of IP, please refer to: https://intellectual-property-helpdesk.ec.europa.eu/regional-helpdesks/european-ip-helpdesk/europe-frequently-asked-questions_en*

This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement n°957852

- Foreground IPs that are expected to be developed during the project through joined owned results.
- Any other IP that is generated during the term of the research project but outside of the project (either with or without third parties), which knowledge is critical for use in the VPP project.

To get the most useful information possible at this stage, please fill the survey with as much technical details about the IP as possible, including the originality, novelties of the innovations, specific claims of inventions & exploitation, shared inventions & licensing, patent cumulative value, post-grant patents review, challenged claims, risk of IP infringements and litigated patents [22]. This will be beneficial not only for the exploitation agreement, but more importantly will inform the tasks of T2.3 – Concept definition and Subtask 2.5.1 Specification of the VPP4Islands solutions.
Thank you in advance for providing your feedback and for the time spent in filling this questionnaire.

Questions

14. Who is your company's point of contact for Intellectual Property Rights?

Table 59: Contact details

Full name:	Francisco David Gallego Martínez
Title:	Mr.
Function:	Managing Director
Email:	fdgallego@regeneralevante.com

This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement n°957852

Background Intellectual Property

14. Does your organisation own any existing background Intellectual Properties potentially to be used in the project? (Yes/No) If yes, please complete Table 6 on page 51 for each IP. **If there is more than one IP, please copy the complete table and paste in on a new page and fill the table for each identified IP.**

Table 60: Background IP identification

Virtual Power Plant concepts	No
Forecasting engine (weather, market prices, energy consumption)	No
Energy & CO2 savings engine	No
Digital Twin System	No
Shared Knowledge Base	No
Smart APIs	No
Any other relevant IPs:	No
…	

This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement n°957852

Table 61: Background IPR identification sheet

General	Answers
Name/title of IP.	
Description of IP and number of updates (latest version number)	
IPR number (e.g patent number, trademark number, etc.)	
Product (Hardware/ Software/Algorithm/Process, etc).	
Type of IP (e.g., patent, trademark, copyright, secrecy, utility model, design registration).	
IP condition (submitted, granted, etc.) and application date, date granted, and expiry date.	
Affiliation of IP granting organization.	
Geographic area where IP applies (e.g. Spain, EU, Worldwide, etc.)	
What is the relevance of your organisations IPs to the VPP4Islands project? E.g., what challenges are expected if the IP is not accessible/useable in the VPP4Islands project?	
TRL at start of project / expected TRL at end of project.	/
Ownership of IP	
Ownership (please indicate all parties)	
If the IP is co-owned, which other organisations are currently using the IP and how is ownership shared?	
Specific limitations for implementation and exploitation (e.g. exclusive license).	
Is the IP previously transferred from a third party to your organization? If yes, please indicate the original owner of the IP and the year the ownership is transferred.	
Access rights and usage of IP	
Are any other access rights, e.g. third party licenses, needed for the utilisation of existing IPs in the VPP4Islands project?	
Are there any financial and/or technical constraints to access and/or use the existing IP in the VPP4Islands project?	
Are any of the IPs prevented to be exploited in the industry, and for what reason (e.g., because of implications to human health, ethical issues, or potential ecological damage)?	
Additional information	
Please provide any additional links, descriptions and/or other publicly available information of your background IPs:	
Is there any additional information regarding your background IPR that VPP4Island exploitation leaders should be aware of?	
Additional comments (i.e. challenged claims, risk of IP infringements and litigated patents)	

This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement n°957852

Please complete the below checklist below

Table 62: Checklist for completion of the IPR Questionnaire

Indicated all applicable background IPs	
Identified all applicable co-owners of background IPs	
Supplied all applicable documentation/links to background IPs	
Identified all applicable third-party licenses required to use IPs	
Indicated all applicable foreground IPs	
Identified all applicable licenses required for development of foreground IPs	
Identified all applicable partners required for development of foreground IPs	
Identified all applicable financial and technical constraints for development of foreground IPs	
Indicated all applicable additional IPs	
Identified all applicable licenses required for development of additional IPs	
Identified all applicable partners required for development of additional IPs	
Identified all applicable financial and technical constraints for development of additional IPs	

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[Option 1:]	[Option 2:]
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Preferred option:	

Access Rights to Results

[Option 1:]	[Option 2:]
Access Rights to Results if Needed for Exploitation of a Party's own Results shall be granted on Fair and Reasonable conditions. Access rights to Results for internal research activities shall be granted on a royalty-free basis.	Access Rights to Results if Needed for Exploitation of a Party's own Results shall be granted on a royalty-free basis.
Preferred option:	

Additional Access Rights

[Option 1:]	[Option 2:]
For the avoidance of doubt any grant of Access Rights not covered by the Grant Agreement or this Consortium Agreement shall be at the absolute discretion of the owning Party and subject to such terms and conditions as may be agreed between the owning and receiving Parties.	The Parties agree to negotiate in good faith any additional Access Rights to Results as might be asked for by any Party, upon adequate financial conditions to be agreed.
Preferred option:	

End of questionnaire

This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement n°957852

TROYA

Survey Questions for all consortium partners

Deliverable link	D8.6 Protection and allocation of Intellectual Property Rights
IPR Questionnaire version	1
Deliverable Date	M12
Questionnaire main editor	BUL
Participants	All partners
Final response date	26 May 2021

Introduction

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This questionnaire is designed to identify all Intellectual Property Rights (IPR) (the formal protection methods [12], granted as exclusive rights for a certain period of time, are: patent, utility model[29], trademark, copyright, secrecy, design registration)[30] of the VPP4ISLANDS project, including:

- Background IPs that consortium partners are using in VPP4Islands project.

[29] *The utility model was introduced as a "petty patent" in some countries (including Germany) to provide a cheaper but simpler alternative to patent protection. It is deemed particularly suited to the specific needs of SMEs. Utility models are available for less inventive steps (incremental improvements and adaptations of existing products), can be registered more quickly and are less expensive to acquire and maintain than patents. Compared with patents, however, they have a shorter protection term and provide less legal protection* (Alfred Radauer, 2007)

[30] *For more information about the different types of IP, please refer to: https://intellectual-property-helpdesk.ec.europa.eu/regional-helpdesks/european-ip-helpdesk/europe-frequently-asked-questions_en*

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- Foreground IPs that are expected to be developed during the project through joined owned results.
- Any other IP that is generated during the term of the research project but outside of the project (either with or without third parties), which knowledge is critical for use in the VPP project.

To get the most useful information possible at this stage, please fill the survey with as much technical details about the IP as possible, including the originality, novelties of the innovations, specific claims of inventions & exploitation, shared inventions & licensing, patent cumulative value, post-grant patents review, challenged claims, risk of IP infringements and litigated patents [22]. This will be beneficial not only for the exploitation agreement, but more importantly will inform the tasks of T2.3 – Concept definition and Subtask 2.5.1 Specification of the VPP4Islands solutions.
Thank you in advance for providing your feedback and for the time spent in filling this questionnaire.

Questions

15. Who is your company's point of contact for Intellectual Property Rights?

Table 63: Contact details

Full name:	Oral Kaya
Title:	Mr.
Function:	Head of Troya Environmental Association
Email:	info@troyacevre.org , oralkaya@gmail.com

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Background Intellectual Property

15. Does your organisation own any existing background Intellectual Properties potentially to be used in the project? (Yes/No) If yes, please complete Table 6 on page 51 for each IP. **If there is more than one IP, please copy the complete table and paste in on a new page and fill the table for each identified IP.**

Table 64: Background IP identification

Virtual Power Plant concepts	No
Peer-2-Peer trading engine	No
Shared Knowledge Base	No
Smart APIs	No
Any other relevant IPs:	No

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Table 65: Background IPR identification sheet

General	Answers
Name/title of IP.	
Description of IP and number of updates (latest version number)	
IPR number (e.g patent number, trademark number, etc.)	
Product (Hardware/ Software/Algorithm/Process, etc).	
Type of IP (e.g., patent, trademark, copyright, secrecy, utility model, design registration).	
IP condition (submitted, granted, etc.) and application date, date granted, and expiry date.	
Affiliation of IP granting organization.	
Geographic area where IP applies (e.g. Spain, EU, Worldwide, etc.)	
What is the relevance of your organisations IPs to the VPP4Islands project? E.g., what challenges are expected if the IP is not accessible/useable in the VPP4Islands project?	
TRL at start of project / expected TRL at end of project.	/
Ownership of IP	
Ownership (please indicate all parties)	
If the IP is co-owned, which other organisations are currently using the IP and how is ownership shared?	
Specific limitations for implementation and exploitation (e.g. exclusive license).	
Is the IP previously transferred from a third party to your organization? If yes, please indicate the original owner of the IP and the year the ownership is transferred.	
Access rights and usage of IP	
Are any other access rights, e.g. third party licenses, needed for the utilisation of existing IPs in the VPP4Islands project?	
Are there any financial and/or technical constraints to access and/or use the existing IP in the VPP4Islands project?	
Are any of the IPs prevented to be exploited in the industry, and for what reason (e.g., because of implications to human health, ethical issues, or potential ecological damage)?	
Additional information	
Please provide any additional links, descriptions and/or other publicly available information of your background IPs:	
Is there any additional information regarding your background IPR that VPP4Island exploitation leaders should be aware of?	
Additional comments (i.e. challenged claims, risk of IP infringements and litigated patents)	

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Please complete the below checklist below

Table 66: Checklist for completion of the IPR Questionnaire

Indicated all applicable background IPs	
Identified all applicable co-owners of background IPs	
Supplied all applicable documentation/links to background IPs	
Identified all applicable third-party licenses required to use IPs	
Indicated all applicable foreground IPs	
Identified all applicable licenses required for development of foreground IPs	
Identified all applicable partners required for development of foreground IPs	
Identified all applicable financial and technical constraints for development of foreground IPs	
Indicated all applicable additional IPs	
Identified all applicable licenses required for development of additional IPs	
Identified all applicable partners required for development of additional IPs	
Identified all applicable financial and technical constraints for development of additional IPs	

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Ownership of results

Results are owned by the Party that generates them. In the DESCA consortium agreement, 2 options are provided for the joint ownership of results, access rights for exploitation, and additional access rights. Please read the following section carefully and fill in below your initial preference. This is in no case binding but is used for an early evaluation of the strategies of each consortium partner, and to identify potential clashes as early as possible.

Joint ownership

Joint ownership is governed by Grant Agreement Article 26.2 with the following additions:

[Option 1:]	[Option 2:]
Unless otherwise agreed: – each of the joint owners shall be entitled to use their jointly owned Results for non-commercial research activities on a royalty-free basis, and without requiring the prior consent of the other joint owner(s), and – each of the joint owners shall be entitled to otherwise Exploit the jointly owned Results and to grant non-exclusive licenses to third parties (without any right to sub-license), if the other joint owners are given: (a) at least 45 calendar days advance notice; and (b) Fair and Reasonable compensation.	In case of joint ownership, each of the joint owners shall be entitled to Exploit the joint Results as it sees fit, and to grant non-exclusive licences, without obtaining any consent from, paying compensation to, or otherwise accounting to any other joint owner, unless otherwise agreed between the joint owners. The joint owners shall agree on all protection measures and the division of related cost in advance.
Preferred option:	

Access Rights to Results

[Option 1:]	[Option 2:]
Access Rights to Results if Needed for Exploitation of a Party's own Results shall be granted on Fair and Reasonable conditions. Access rights to Results for internal research activities shall be granted on a royalty-free basis.	Access Rights to Results if Needed for Exploitation of a Party's own Results shall be granted on a royalty-free basis.
Preferred option:	

Additional Access Rights

[Option 1:]	[Option 2:]
For the avoidance of doubt any grant of Access Rights not covered by the Grant Agreement or this Consortium Agreement shall be at the absolute discretion of the owning Party and subject to such terms and conditions as may be agreed between the owning and receiving Parties.	The Parties agree to negotiate in good faith any additional Access Rights to Results as might be asked for by any Party, upon adequate financial conditions to be agreed.
Preferred option:	

End of questionnaire

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