



WP4
Mutual Exchange of Personnel and Early Stage Researcher
Involvement

D4.1

Report on Mutual Exchange of Personnel and Training Activities

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Executive Summary

The aim of work package 4 is to coordinate the Sinergy activities on staff exchange and training. Though the first half of the project was heavily affected by the COVID-19 pandemic the project team managed to fulfill the training plan using webinar technologies. The deliverable reports the performed activities and exchanges for the project duration January 2021 to March 2022 which includes:

- Participation in Big Data Analysis summer school (collaboration with Lambda project)
- Training sessions as defined in the project proposal
- Young scientist exchange workshop
- Project development sessions as defined in the project proposal
- Tender development meetings
- Project outreach in collaboration with Austria IEEE chapters

Further, the deliverable provides insight in upcoming activities in the second half of the project duration.

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1. Introduction

The aim of work package 4 is to coordinate the Sinergy activities on staff exchange and training. Though the first half of the project was heavily affected by the COVID-19.

1.1. Scope

The main scope of work package 4 (Mutual exchange of personal and early stage researcher involvement) can be summarized as:

- Task 4.1: Hosting of distinguished foreign researchers (for training lectures)
- Task 4.2: Organization of short-term and long-term stays (for all Sinergy staff)
- Task 4.3: Engagement of IMP's early stage researchers (to involve young researchers in projects)

Tasks 4.1 and 4.2 are reported in this deliverable.

1.2. Relation to other deliverables

The deliverable is linked to the following deliverables:

- D1.1 Project Work Plan
- D2.1 Scientific and Technological Landscape of Smart Energy Management and SWOT analysis
- D3.1 Training courses and learning materials on Smart Grid technologies
- D3.2 Training courses and learning materials on Energy Efficient Building Operation
- D4.3 Report on early stage researcher engagement and mentoring (for Task 4.3 activities)
- D5.1 The first Sinergy Workshop - Smart Grid Technologies
- D6.2 Sinergy web portal and communication material

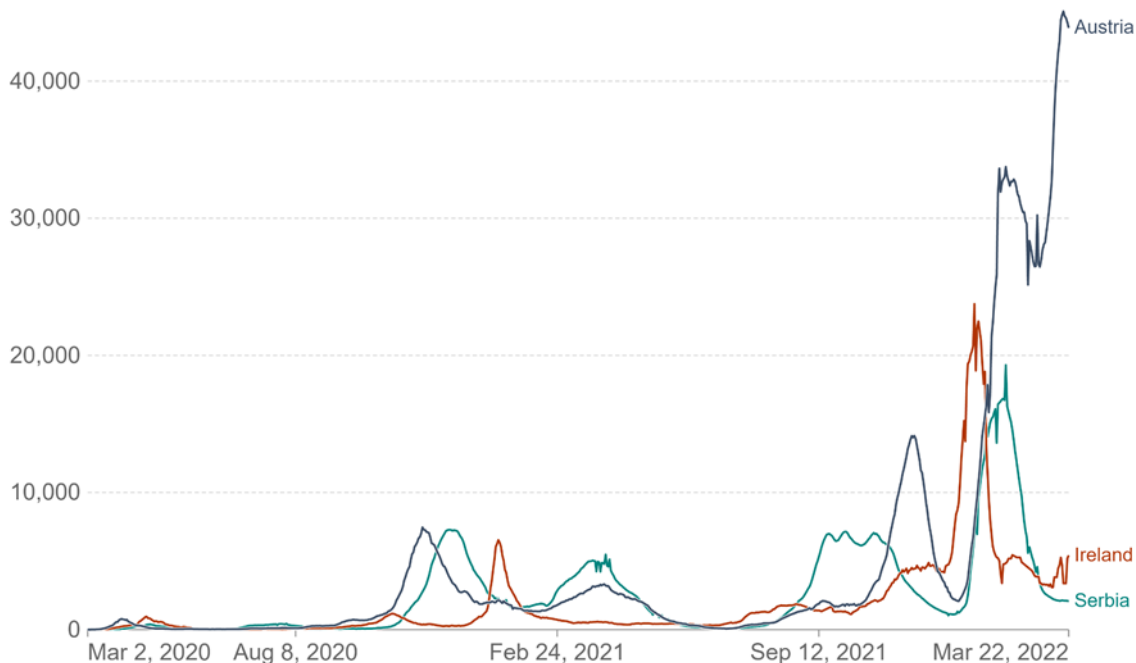
1.3. Covid-19 situation in Sinergy partner countries

The pandemic situation throughout the whole project duration so far. While the overall severity of the virus can be considered vaning the daily number of confirmed cases increased over time. This led to multiple delays of meetings as well as short term transfer to online meetings as e.g. the Sinergy workshop 2021 which was scheduled in Vienna (see Figure 1).



Daily new confirmed COVID-19 cases

7-day rolling average. Due to limited testing, the number of confirmed cases is lower than the true number of infections.



Source: Johns Hopkins University CSSE COVID-19 Data

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Figure 1. Daily confirmed cases in the Sinergy partner countries

1.4. Deliverable structure

The document reports the activities in a chronological order per partner exchange. Each section is dedicated to one event. Further, an outlook on upcoming activities will be given.



2. Staff exchange in period M1-M15

2.1. Sinergy Kick-off meeting (January 2021 - online)

The meeting, originally planned to take place in Belgrade, was switched to online participation and held via GoToMeeting on January 4th, 2021.

2.1.1. Participants

Partner	Person
European Commission	Ms. Nataša Kuručki, Policy Officer, DG Research & Innovation
European Commission Research Executive Agency	Ms. Lia Keune, Project Adviser, Research Executive Agency
	Ms. Eve Sõstra, Finance Officer, Research Executive Agency
IMP	Prof. dr. Sanja Vraneš
	Dr. Nikola Tomašević
	Dr. Marko Batić
	Dr. Valentina Janev
	Mr. Srđan Orcević. Dipl. Ecc.
	Ms. Dea Pujić, MSc
	Mr. Marko Jelić, MSc
	Mr. Dušan Popadić, MSc
AIT	Dr. Kupzog Friederich Roland B
	Dr. Johannes Stöckl
	Dr. Markus Makoschitz
	Mr. Zoran Miletić, Dipl.Ing
	Mr. Georg Lauss, Dipl.Ing.
	Dr. Thomas Strasser
NUIG	Dr. Marcus Keane
	Mr. Luis Miguel Blanes Restoy, MSc
	Dr. Federico Seri

2.1.2. Agenda

Session 1: Thursday, January 14, 2:00pm-3:10pm		
02:00	Opening	
02:00	Welcome speech and Introducing the Coordinator	Prof. Sanja Vraneš, IMP Director General

Capacity building in Smart and Innovative eENERGY management



02:15	Sinergy Project Presentation	Dr. Nikola Tomašević, IMP Scientific Director
02:30	Introduction to TWINNING	Ms. Nataša Kuručki, Policy Officer, DG Research & Innovation, European Commission
	Overview of H2020 project management rules	Ms. Lia Keune, Project Adviser, Research Executive Agency Ms. Eve Sõstra, Finance Officer, Research Executive Agency
03:00	Questions and Answers	All
03:10	Break	
Session 2: Thursday, January 14, 3:20pm-5:00pm		
03:20	Presentation of Partner AIT Pilot 1 “Smart grid technologies”	Dr. Johannes Stöckl, AIT
03:30	Presentation of Partner NUIG Pilot 2 “Energy efficient building operation”	Dr. Marcus Keane, NUIG
03:40	WP2 - Exploiting Synergies and Planning the Strategic Partnership “SWOT Analysis” presented by IMP	Dr. Johannes Stöckl, AIT Dr. Nikola Tomašević, IMP
03:50	Pilot 3 Testbed	Dr. Marko Batić, IMP
04:00	Break	
04:10	WP3 - Learning Material, Training Courses	Dr. Marcus Keane, NUIG
04:20	WP4 - Mutual Exchange of Personnel and Early Stage Researcher Involvement	Dr. Nikola Tomašević, IMP
04:30	WP5 - Organization of Joint Sinergy Events for Expertise Exchange and Hands-on Experience	Dr. Valentina Janev, IMP All
04:40	WP6 - Stakeholder Networking, Community Building, Dissemination and Promotional Activities	Dr. Valentina Janev, IMP All
04:50	WP1 - Project Management, Quality Control and Impact Analysis	Dr. Nikola Tomašević, IMP Dr. Valentina Janev, IMP, All
05:00	End of the Meeting	



2.2. Big Data Analytics Summer School (June 2021 - online)

Within the big data analytics summer school (BDA) a special session for the Sinergy project was organized. Presentations were held by Sinergy partner institutions.

2.2.1. Agenda

Session 5: Wednesday, June 16, 13:30pm-17:00pm		
13:30	Introducing SINERGY	Chair: Nikola Tomašević, Institute Mihajlo Pupin, Serbia
13:50	Modern ICT/Automation Approaches for Smart Grids and Industrial Environments	Thomas Strasser, Austrian Institute of Technology
14:30	Reference architectures for Smart Grids	Friederich Kupzog, Austrian Institute of Technology
15:10	Break	
15:20	Temperature Sensing Optimization for Home Thermostat Retrofit	Federico Seri, National University of Ireland, Galway, Ireland
16:00	Reduced-Order Models as Web Application for Energy Management: Barriers and Challenge	Luis M. Blanes, National University of Ireland, Galway, Ireland
16:40	End of the Programme	

Figure 2. Agenda from LAMBDA Big Data Summer School 2021 related to Sinergy session

2.3. Smart Grids Workshop (November 2021 - Vienna, Austria)

The Smart Grids Workshop was originally planned to be held at AIT in Vienna/Austria. Due to a countrywide lockdown on the weekend before the workshop started the main activities were transferred to online participation.

However, NUIG staff was present at AIT premises (Figure 3), the staff exchange focussed on interface discussion between buildings and electric energy systems.

The Workshop is described in detail in Deliverable D5.1: [The First Sinergy Workshop - Smart Grid Technologies | Project Sinergy \(project-sinergy.org\)](#)



Figure 3. NUIG at AIT's premises during Smart Grid Technologies Workshop



2.4. Staff exchange session (March 2022 - Belgrade Serbia)

In March 2022, Zoran Miletic and Anja Banjac from AIT visited IMP and gave a lecture regarding simulation and modeling of grid power converters. In total 16 attendees have been present on the training, some of them present in Figure 4. The corresponding list of attendees has been made, but will not be presented due to GDPR, since this is public document.

In this lecture, participants got an insight on how grid power converters can be modelled and simulated within a C-HIL environment in order to test and validate their control and analyze their behavior when connected to the grid. Controller hardware-in-the-loop (C-HIL) is a type of real-time simulation in which the real hardware controller is interfaced with the simulation of the power system. It is an effective way of testing the controls since it provides insight into the real time behavior of the system and shows signals in very high fidelity.

The first part of the lecture gave a recap on what was discussed in the lecture “Control of Grid Power Converters for Photovoltaic Applications” with the second part focusing on implementing such control on a C-HIL setup. The setup consisted of an AIT HIL Controller representing the behavior of the grid power converter and a Typhoon HIL simulator in which the rest of the power system is modelled and simulated.

A Reference Power Converter Application example was given focusing on two grid support functions of the converter: Volt-Var function and LVRT (Low Voltage Ride Trough) given in Figure 5.



Figure 4. Attendees of AIT’s lecture regarding modeling of power grid converters at IMP’s premises

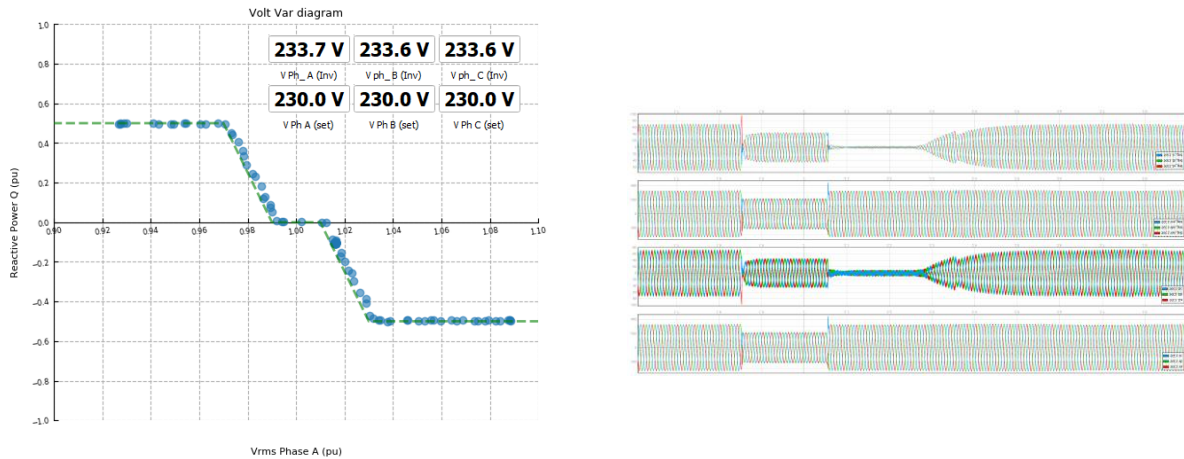


Figure 5. Volt-Var and LVRT functions of the controller

2.5. Staff exchange PUPIN and AIT (March 2022 - Vienna, Austria)

2.5.1. Agenda



Agenda

- › 29th – 1st day:
 - › 11:30 arrival at AIT and lunch
 - › 12:30 – 14:00: Work on Deliverables
 - › 14:00 – 15:00: VICTORY proposal discussion
 - › 15:00 – 17:00: Work on Deliverables
- › 30th – 2nd day:
 - › 09:00 – 11:30: Meeting with Business Managers
 - Business Cases: POWER SYSTEM TECHNOLOGIES DEVELOPMENT & VALIDATION (Kupzog)
 - ENERGY MARKETS & INFRASTRUCTURE POLICY (Gahleitner)
 - › 11:30 – 12:30: Lunch
 - › 12:30 – 17:00: Meeting with Business Managers and Funding Opportunities (Horizon Europe)
 - Business Cases: NETWORK OPERATORS & ENERGY SERVICE PROVIDERS (Zegers)
 - PHOTOVOLTAIC MODULES & POWER PLANTS (Mayr)
- › 31st – 3rd day:
 - › 9:00 – 11:30 Laboratory visits and Content creation
 - › 11:30 – 13:00 Lunch and closing



Figure 6. Meeting Agenda (29 - 31.03.2022)

Staff exchange that was organized at AIT premises for IMP employees lasted for three days, as given in agenda (Figure 6). On the first day, 6 attendees were present: Johannes Stöckl, Friederich Kupzog and Anja Banjac (AIT) and Valentina Janev, Marko Jelić and Dea Pujić (IMP), as given in Figure 7. The focus was put on revising the state of five upcoming deliverables (D1.2, D3.1, D3.3, D4.1 and D4.3). Additionally, attendees were present at the hybrid meeting regarding the VICTORY proposal (Figure 8), which has been presented in more detail within section 4 of deliverable D4.3. Potential pilot and corresponding use cases have been discussed. Apart from above-mentioned attendees, during proposal writing meeting additional partners have been present - National University of Ireland Galway, R2M Italy and GridAbility.



Figure 7. IMP's physical visit to AIT (29.03.2022)



Figure 8. Hybrid meeting regarding VICTORY proposal (29.03.2022)

The second day of IMP's visit was focused on developing different business cases in the energy domain (Figure 9). Apart from previously mentioned attendees, during the second day additional AIT members joined the meeting. Bernhard Gahleitner, Antony Zegers and Christoph Mayr, together with Friederich Kupzog gave the presentation of their experience creating various business cases in the energy domain.

Friedrich Kupzog has presented the topics that his team is currently focused on, with the special focus on the merging to DC grids, especially in the industry domain. Potential for establishing collaboration on preparing proposals for H2020 calls regarding factories of the future has been underlined.

Bernhard Gahleitner has presented AIT's business organization and strategies. Special focus was put on an example set of projects in which AIT has developed a methodology of analyzing the necessary fuel mixtures of the future energy system in support of various GHG-reduction goals.



As AIT is a well-known research institution, various business applications are present within the institute. Christoph Mayr has presented some of those specially focused on PV systems, e.g., AIT's consultancy services such as helping in choosing appropriate PV solutions, site inspections, exploring building potential for PV systems, etc. An example of reference projects is given through exploiting noise barriers on Austrian highways, as a novel and approach full of the potential for future exploitation. Additionally, AIT's activities regarding energy storage have been presented, both consultancy and lab testing services. Finally, support in the domain of hybrid power plants was mentioned, as well.

Antony Zegers started discussion regarding the previous collaborations on the proposal writing with IMP which is expected to be continued soon. Additionally, Antony Zegers mentioned additional various topics that are relevant for AIT and have not been covered during the meeting - energy market analysis, distribution grid analysis, energy production, demand and price forecasting, etc.

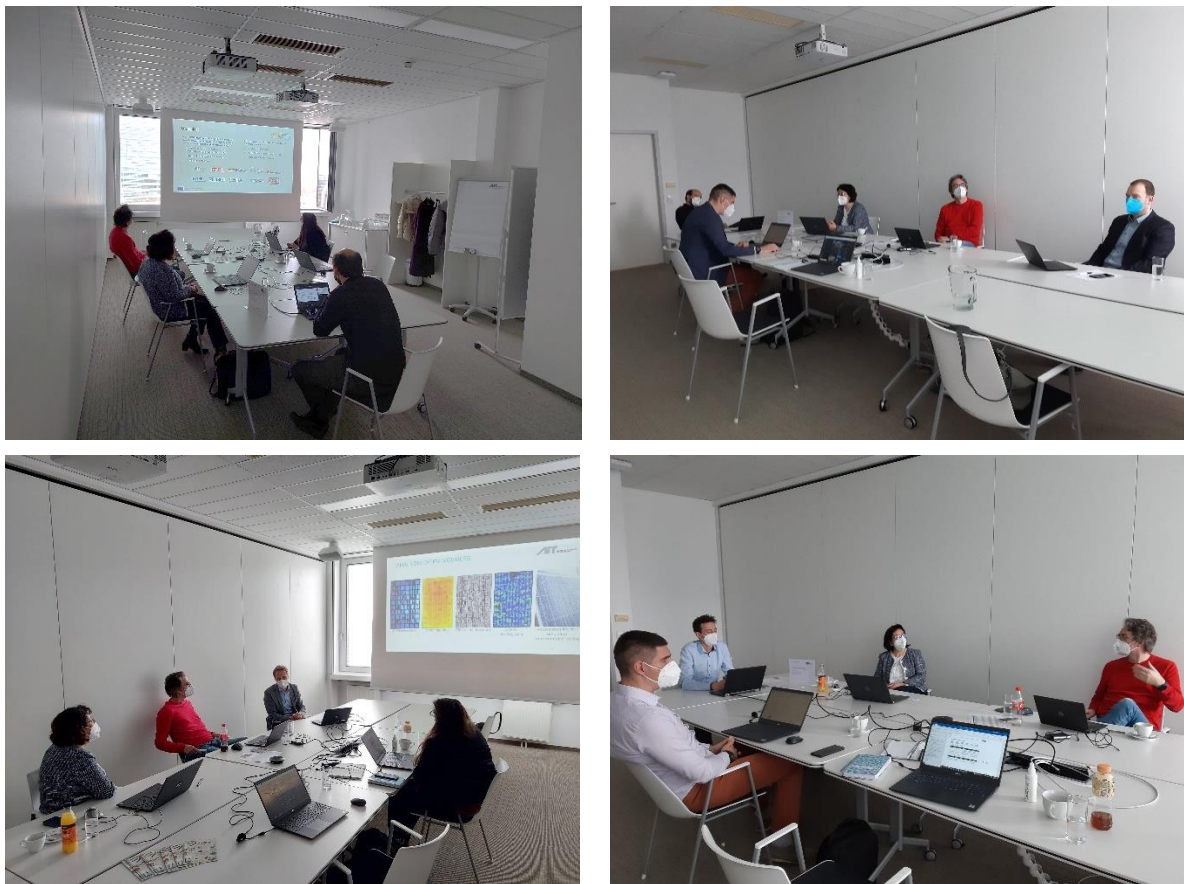


Figure 9. Business cases meeting (30.03.2022)

Finally, during the last day of IMP's visit, AIT has organized the tour through the advanced and heavily equipped power system state-of-the-art laboratories for the attendees, as given in Figure 10. Power laboratory, hardware-in-the-loop laboratory, high voltage testing laboratory, smartest laboratory, etc. have been visited.



Figure 10. Visit to AIT laboratories (31.03.2022)



3. Plan for further activities

This section gives information on the defined exchange staff from all project partners which were participating in exchange activities and who are also considered exchange staff for the upcoming project duration.

3.1. Exchange in 2022 (AIT and IMP)

Event	Who	Reason	When and where
PCIM/Intersolar	IMP, AIT	Smart Grid Technologies Dissemination Activities (Showcase)	May 2022, Germany (Nuremberg/Munich)
Staff exchange	IMP, AIT	Laboratory training	Summer 2022, AIT
Third workshop	IMP, AIT	PhD workshop	November 2022, IMP

3.2. Exchange in 2022 (NUIG and IMP)


Event	Who	Reason	When and where
Second workshop	IMP, NUIG	PhD training	June 2022, NUIG
Third workshop	IMP, NUIG	PhD workshop	November 2022, IMP




4. Main staff involved in exchange activities

4.1. AIT


The following main AIT staff was involved in the Sinergy project so far.


Name	Dr. Johannes Stöckl	
Job Title	Thematic Coordinator for “Power Electronics & System Components”	
Short CV	Johannes Stöckl received the PhD degree from TU Wien (Vienna/Austria) in the field of experimental atomic physics in 2003. Afterwards he joined Infineon Technologies Austria for power semiconductor fabrication and technology transfer including a long term delegation to Kulim/Malaysia. He was later active in IGBT (insulated bipolar gate transistor) development. In 2011 he moved to AIT Austrian Institute of Technology where he started to focus on rapid prototyping of power electronics systems. Since 2015 he is Thematic Coordinator for “Power Electronics & System Components” responsible for strategy and project development in the Competence Unit “Electric Energy Systems”. Current activities focus on system reliability, artificial intelligence for converter design and control as well as rapid prototyping methods for novel power converters for grid tied applications such as PV, EV-charging, energy storage and hydrogen fuel cells.	
Activities	<ul style="list-style-type: none"> • Power electronics • Design automation • Rapid prototyping • Reliability 	

Name	Thomas Strasser	
Job Title	Senior Scientist	
Short CV	Thomas Strasser received a master's and a PhD degree from the Technische Universität Wien (TU Wien) and he was awarded with the venia docendi (habilitation) in the field of automation from the same university. For several years, he has been a senior scientist in the Center for Energy of the AIT Austrian Institute of Technology. His main responsibilities involve the strategic development of smart grid automation and validation research projects. He is also active as a docent at TU Wien.	
Activities	<ul style="list-style-type: none"> • Smart Grids • Power and Energy Systems • Power Utility Automation 	



	<ul style="list-style-type: none"> Automation and Control Education and Teaching 	
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Name	Zoran Miletic	
Job Title	Senior Research Engineer	
Short CV	<p>Zoran Miletic received his MSc degree in Electrical Engineering from the University of Belgrade, Faculty of Electrical Engineering, Serbia in 1996, and the Professional Certificate in Power Electronics from the University of Colorado at Boulder, Department of Electrical and Computer Engineering, USA in 2008. For over two decades he has been leading the product development of power electronics converters for Renewable Energy Applications at Xantrex Technology Inc, in Vancouver, Canada and Schneider Electric Solar, in both Europe and Canada. Since 2014 he is employed at AIT, Austrian Institute of Technology at the Senior Research Engineer position. His experience includes design of Power electronics and Control for solar MPPT charge controllers and single and 3-phase solar inverters from few KW to several hundreds of KVA. At AIT, his research interests are focused on grid-connected and grid-forming converters and their control for emerging smart grid applications.</p> <p>He is a senior member of IEEE, and a holder of several US and International utility patents. Currently, he is pursuing his PhD degree at the University of Innsbruck, focusing on the Multi-Level Multi-Cell power converters for the LV power quality applications.</p>	
Activities	<ul style="list-style-type: none"> Control of Grid Power Converters - Lecture Simulation and Modeling of Grid Connected Power Converters - Workshop/Training 	

Name	Dr. Markus Makoschitz	
Job Title	Senior Scientist	
Short CV	<p>Univ.Lektor DI Dr.techn. Markus Makoschitz born in Vienna in 1987 received his PhD (w/D) in 2016 from TU Wien in the field of power electronics. During his research studies he was working together with Schneider Electric Austria in the field of active, hybrid and passive rectifier systems. Since 2016, he has been working at AIT (Senior Scientist - 2019), where he deals with modelling, design and implementation of existing and novel inverter topologies. Furthermore, he is responsible for the thematic topics wide bandgap semiconductors for volume optimized and highly efficient power electronic applications and medium voltage power electronics. In addition to leading</p>	





	<p>numerous research projects and publishing various scientific papers, he is also a reviewer for high-level conferences and journals. Since 2020, he took the position of the IEEE Austria IES/PELS/IAS Joint Chapter Chair. In 2021, he was awarded IEEE Senior Member.</p> <p>Since 2018/2019 he is holding several lectures at the TU Wien as well as at the University of Applied Sciences Technikum Wien (topics: power electronic topologies, control, gate drives etc.). Also since 2019 he is engaged as Operating Agent and Expert, coordinating the IEA 4E Power Electronics Conversion Technology Annex (PECTA).</p>	
Activities	<ul style="list-style-type: none"> • Power Electronics Topologies and Control • Power Electronics Optimization • Wide Bandgap Semiconductors • Low Voltage • Medium Voltage • AC/DC-, DC/AC-, DC/DC-converters 	

Name	Georg Lauss	
Job Title	Research Engineer	
Short CV	<p>Georg Lauss received the Dipl.- Ing. degree from the Johannes Kepler University JKU Linz, Austria, and jointly from the Eidgenössischen Technischen Hochschule ETHZ, Zürich, Switzerland, and the Université Pierre-et-Marie-Curie, Paris, France, in 2006. He is currently a Researcher with the AIT Austrian Institute of Technology, Vienna.</p>	
Activities	<ul style="list-style-type: none"> • electromagnetic systems, power electronics. • control theory, mathematical methods for optimized control systems. • hardware-in-the-loop simulation, real-time simulation for power systems. • Chairman IEEE WG P2004 Recommended Practice for Hardware-in-the-Loop (HIL) Simulation Based Testing of Electric Power Apparatus and Controls. • Chairman IEEE PES Task Force on Real-Time Simulation of Power and Energy Systems. 	

Name	Gerhard JAMBRICH	
Job Title	Research Engineer & Business Development	
Short CV	<p>Dipl.-Ing. Dr.techn. Gerhard Jambrich is responsible at AIT Austrian Institute of Technology for research and project development for system operators and service providers with a focus on DC networks.</p>	




	<p>Actually, he is the coordinator of H2020 project HYPERRIDE, dealing with modular, resilient and high RES share hybrid DC- AC-DC distribution grids and an expert on the erection/operation of HV-MV substations and high-voltage technologies of power grids with more than 20 years' experience on utility and manufacturer side. He is CIRED SAG1 member, Session 1 rapporteur for CIRED Austria and since April 2019 Convener of CIRED WG DC distribution networks / since 2022: DC- and hybrid ACDC distribution networks integration.</p>	
<p>Activities</p>	<ul style="list-style-type: none"> • Power System Engineering (focus HV-MV substation planning, erecting and operation) • DC technology, hybrid ACDC distribution grids • Power Quality Monitoring (Voltage) 	

<p>Name</p>	<p>Dr. Friederich Kupzog</p>	
<p>Job Title</p>	<p>Head of Competence Unit Electrical Energy Systems</p>	
<p>Short CV</p>	<p>Friederich Kupzog is head of the Electric Energy Systems (EES) Competence Unit, Center for Energy, AIT Austrian Institute of Technology GmbH.</p> <p>Since 2006, Friederich Kupzog has worked in research and industry, promoting the digitization of electrical energy systems. His passion always lies in the practical implementation of scientific concepts together with industry and infrastructure operators. He has over ten years of experience in university research, industry and applied research in the field of electrical energy systems. In Austria and in the D-A-CH region he is considered one of the pioneers in the development of smart grids.</p> <p>Until 2012 he headed the “Energy & IT” research group at the Institute for Computer Technology. At Siemens Cooperate Research, he set up a test environment for intelligent low-voltage networks. After moving to AIT, he devoted himself to a wide range of technologies from software-defined networking to blockchain in the context of electrical energy supply.</p> <p>Kupzog holds lectures in Smart Grid related topics at Vienna University of Technology as well as other universities and is active in numerous conferences.</p>	
<p>Activities</p>	<ul style="list-style-type: none"> • Digitalization of Power System Infrastructure (Synergie: Reference Architectures) • Direct Current in Medium and Low Voltage Applications and Laboratory Testing (Synergie: Introduction to the topic) 	



4.2. IMP

Name	Dr. Nikola Tomašević	
Job Title	Director General, Project Coordinator	
Short CV	Nikola Tomašević, PhD, is appointed as the Director General of the Mihajlo Pupin Institute. He received a Dipl. Ing. Degree in July 2007 at the School of Electrical Engineering, University of Belgrade, Serbia. In December 2013, he defended his PhD thesis at the Department of Communications and Information Technologies of the School of Electrical Engineering, University of Belgrade. He is involved in technical management and research activities of R&D projects in various domains.	
Activities	Currently, under the H2020 Work Programme, he is involved in project coordination (SINERGY), technical coordination (NEON, HESTIA and REACT), and he is taking an active role in several other H2020 projects (such as AI-PROFICIENT, TRAPEZE, PLATOON and LAMBDA). So far, he took part in a number of EU H2020, FP7 and FP6 projects and also was actively involved in R&D projects financed by the Ministry of Science and Technological Development of Serbia. In his scientific career, his research activities were focused on artificial intelligence, energy efficiency, emergency management, recommendation and support systems, semantic web technologies, mobile communication systems, learning analytics and natural language processing resulting in more than 40 publications. He (co-)authored more than 40 scientific and technical papers as journal, conference and workshop contributions.	

Name	Dr. Valentina Janev	
Job Title	Senior Researcher, Project Manager	
Short CV	Dr Valentina Janev is a Senior Researcher at the Mihajlo Pupin Institute, University of Belgrade, Serbia. She graduated in Electrical Engineering from the University of Ljubljana, Slovenia and received the PhD degree in the field of Semantic Web technologies from the University of Belgrade, School of Electrical Engineering and Computer Science. She worked as a Researcher Assistant at the Institute Jozef Štefan, Ljubljana, Slovenia (1991-1994), Guest Researcher at the Technical University of Vienna, Austria (1995-1996) and Consultant and Education Manager at SAS Institute, Slovenia (1999-2001). Since 1996, she has participated in many information systems projects for	





	clients in Serbia and the region, coordinating 2 of them (e.g. H2020 LAMBDA).	
Activities	She has taken part in many research projects funded by the European Commission including 5 H2020 projects, 5 FP7 projects, 1 CIP/EIP project, 1 FP6 project, 1 Interreg project, 1 IPA Adriatic, 1 SEE project, 2 COST actions and 2 projects funded by the BMBF. She had more than 90 publications. She was a Serbian Ambassador for the European Linked Data Contest and serves as an expert evaluator of EC Framework Programme Projects. She is a reviewer and Editorial Board Member of respectable international journals and a member of Program Committees of various conferences.	

Name	Dr. Marko Batic	
Job Title	International Cooperation and Technology Transfer Director	
Short CV	Marko Batić PhD, is appointed as the head of Fraunhofer-Pupin Joint Project Office. He received the BSc, MSc and PhD degrees from the School of Electrical Engineering, the University of Belgrade (RS). He graduated at the Department of Communications and Information Technologies while he defended his PhD thesis at the Department of Software Engineering. He is responsible for the technical management of R&D projects in several domains with a special focus to those related to ICT applications in the domain of energy efficiency, smart energy management and smart grids.	
Activities	Presently, he is managing two EU H2020 projects on behalf of IMP (TRINITY and IDEAS) and takes an active role in several other H2020s. He also manages a research project funded by the Serbian Science Fund, Applied AI Programme (ARTEMIS). Previously, he took active part (e.g. technical coordinator) in a number of EU H2020s, Fp7s and Interreg as well as scientific projects financed by the Ministry of Science and Technological Development of Serbia. Moreover, he was managing two commercial software development projects involving enterprise information systems. The aforementioned projects are dealing with smart energy management, integration of renewable energy technologies, smart grids, energy efficiency and demand side management. In particular, his main research activities and interests involve multi-criteria decision support systems for planning of hybrid renewable energy systems, energy management systems in multi-carrier environments (SCADAs), optimal energy dispatching, improved energy data analytics through AI and Semantic Web applications	




	<p>and energy efficiency through ICT behavioral change. In the aforementioned domains, he has published over 40 scientific and technical articles covering international and national journal, conference, and workshop contributions. Moreover, he was employed by the European Commission as an external expert for the evaluation process of H2020 Low Carbon Energy calls for proposals.</p>	
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Name	Marko Jelic	
Job Title	R&D Associate	
Short CV	<p>Marko Jelic, MSc, obtained his BSc EE & CS degree at the School of Electrical Engineering, University of Belgrade in September 2018 and later his MSc degree in September 2019. In parallel to currently being enrolled as a PhD student at the School of Electrical Engineering, he has been working on eight European research projects from the H2020 program, with five of them currently active: IDEAS, REACT, HESTIA, SINERGY and NEON.</p>	
Activities	<p>His main focus is on novel applications of optimization algorithms in the domain of automated energy management of hybrid renewable energy systems. His PhD thesis will be focused on modeling and optimization of multisource heat pump systems with a focus on medium-term efficiency. Marko is also working on developing energy efficiency benchmarking and energy saving services which are considered as critical components in the integration and deployment of futuristic IoT platforms that incorporate a large number of smart sensors and actuators in order to maximize efficiency for both users and energy suppliers.</p>	

Name	Dea Pujic	
Job Title	R&D Associate	
Short CV	<p>Dea Pujic, MSc, got her BSc in EE & CS degree in 2018 and her MSc in 2019 at the School of Electrical Engineering, University of Belgrade, where she is, currently, a PhD student. She has been working as a researcher in The Institute Mihajlo Pupin for more than three years on eight research projects from H2020 program, out of which five are still active: REACT, PLATOON, AI-PROFICIENT, HESTIA and SINERGY.</p>	
Activities	<p>She is working on different data driven problems in the energy domain, with a specific focus on solving the Non-Intrusive Load Monitoring problem using beyond-state-of-the-art convolutional neural</p>	



	<p>networks, forecasting production of renewable sources by employing various machine learning algorithms and developing advanced energy efficiency user benchmarking models based on IoT measurements. Furthermore, she is exploring explainable artificial intelligence (XAI) methodologies for improving manufacturing production processes. Her work is mostly based on the implementation of various novel artificial intelligence approaches.</p>	
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Name	Dusan Popadic	
Job Title	R&D Associate	
Short CV	<p>Dusan Popadic obtained his BSc EE & CS degree at School of Electrical Engineering, University of Belgrade (Department for Signals and Systems) in 2018 and his masters degree in 2019. He is currently a PhD student at the same faculty. He has been employed at Mihajlo Pupin Institute since 2019 as a Junior Research Assistant where he has worked on 3 European H2020 projects: InBetween, LAMBDA and TRINITY, and on ARTEMIS, a project financed by Ministry of Education, Science and Technological Development.</p>	
Activities	<p>The most crucial activities are as follows:</p> <ul style="list-style-type: none"> developed an IoT system for smart buildings which relies on semantic technologies and which promotes efficient use of electrical energy participated in the development of a platform for coordination and restoration of electrical power grids in Southeast Europe. 	


Name	Katarina Stankovic	
Job Title	R&D Associate	
Short CV	<p>Katarina Stanković got her BSc EE & CS and MSc EE & CS degree at the School of Electrical Engineering, University of Belgrade, in 2019 and 2020 respectively, when she enrolled in her PhD studies. She has been employed as researcher at the Mihajlo Pupin Institute since February 2020.</p>	
Activities	<p>She is involved in two European research projects from the H2020 programme, IDEAS and AI-PROFICIENT, with the following activities to be underlined:</p> <ul style="list-style-type: none"> In the domain of control systems and automation, she is working on the design of an optimal control and regulation strategy for an energy efficient HVAC system, with renewable 	



	<p>energy sources integrated. Katarina’s work includes PLC programming and HMI design</p> <ul style="list-style-type: none"> • She is developing an optimization engine for the manufacturing process control with the aim of improving product quality 	
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4.3. NUIG

Name	Dr. Marcus Martin Keane	
Job Title	Assistant Professor	
Short CV	<p>Dr. Keane is a lecturer in NUIG, and director of the Informatics Research Unit in Sustainable Engineering (IRUSE). IRUSE has secured over €3.5m over the last 5 years from SFI, H2020 and the Irish Research Council (IRC). His academic production accounts for 130 publications with 40 high-impact journal papers and a H-index of 24. Dr. Keane has supervised 17 PhD and 10 research masters to completion.</p>	
Activities	<ul style="list-style-type: none"> • Dr. Keane lectures in modules postgraduate and Undergraduate related to Building Energy and Smart Grid. • Director of IRUSE research group at NUIG • Member of <u>CUSP</u> team at NUIG • Director of the <u>Ryan Institute Built Environment and Smart Cities Research Cluster</u> 	

Name	Luis Miguel Blanes Restoy	
Job Title	Assistant Researcher - Architect - MSc BEEPM	
Short CV	<p>Luis M. Blanes is an Architect (2001) trained at ETSA University of Seville (Seville, Spain) and at IUAV (Venice, Italy). His professional career started in 2001 working as an Architect for <u>Industrial Group Leche Pascual S.A.</u> where he earned a wide understanding of the Design-Procurement-Construction-Operation cycle acting from the client side perspective. In 2005 he joined engineering group <u>Tecnicas Reunidas S.A.</u> and worked within the Infrastructure and Environmental division. He was responsible for the Construction Management of multiple complex projects. In 2011 he received a MSc.in Energy Building and Environmental Performance Modeling at Cardiff University (UK). Following this, in October 2011 he was awarded a PhD Scholarship at IRUSE Galway, funded by FP7 Research Programme "CASCADE - ICT for Energy Efficient Airports", under the supervision of Dr. Marcus Keane. Luis Blanes is a Chartered Architect, Member of COAGR, Member of CMAS (Construction Management Association of Spain) and holder of a PMP credential. He also has been involved</p>	



	in several projects working as an independent advisor and is actively involved in multiple professional associations in Spain and UK.	
Activities	<ul style="list-style-type: none"> • Project Manager for the GEOFIT EU-2020 - Smart Geothermal • Project Manager for SINERGY project • Developing lecture material for SINERGY 	

Name	Dr. Federico Seri	
Job Title	Postdoctoral Researcher	
Short CV	<p>Federico Seri is a graduate of Università Politecnica delle Marche (UNIVPM), Italy, where he obtained a Master of Thermo-mechanical Engineering. The topic of his dissertation was “Development of a method based on genetic algorithms to predict and control indoor air temperature and humidity in large spaces”. In 2015, he pursued and was awarded a PhD and the title of "Doctor Europaeus" in Mechanical and Management Engineering at Università Politecnica delle Marche (UNIVPM). The PhD studies were part of the FP7 European project SportE2, under the supervision of Professor Gian Marco Revel at Università Politecnica delle Marche. PhD studies focused on development and implementation of methodologies to support smart metering systems optimizing comfort and energy monitoring in buildings. PhD thesis title: “Development of a methodology for the optimal sensor placement to optimize air temperature monitoring in large spaces”.</p> <p>From 2015 to 2017, Federico was working as junior postdoctoral researcher at the Department of Industrial Engineering and Mathematical Sciences (DIISM) at Università Politecnica delle Marche (UNIVPM), Ancona (Italy). Federico was involved in a H2020 European project NewTREND and technology scouting activity for leading companies in the curtain walling sector.</p>	
Activities	<p>Currently, Federico is a senior postdoctoral researcher and adjunct lecturer in the College of Engineering and Informatics at NUI Galway. Federico is involved in a number of research projects: (1)H2020-RESPOND, studying demand response for residential buildings, (2)H2020-REACT, researching the potential of large-scale deployment of RES and storage assets on geographical island, (3)H2020-SPHERE, developing reduced order models and web application, and (4) SINERGY by developing lecturing material and proposal preparation</p>	



Name	Dayanne Peretti Correa	
Job Title	PhD Candidate	
Short CV	<p>Dayanne Peretti holds a BSc in Electrical Engineering from Universidade Positivo (Curitiba, Brazil). Her first contact with research programs was in 2011 when she won a scholarship by Fundação Araucária for supporting scientific and technological development. Right after this experience, she worked over the following three years in two companies from different sectors, public and private ones. These experiences were related to energy projects for commercial and industrial buildings.</p> <p>In 2014 she started to work in the industrial sector. Her first experience was in a financial team supporting engineering projects analysis for government and internal reports. After that she worked in two industrial companies focused in smart grid and renewable energy management, where for 5 years she developed projects related to product management.</p> <p>She moved to Ireland in 2019 and worked as a research assistant for 6 months at the NUI Galway. In 2020 she won a PhD scholarship in the Department of Civil Engineering at NUI Galway under the supervision of Dr. Marcus Keane and Dr. Federico Seri (IRUSE) studying Measurement and Verification applied to Smart Grid residential demand response projects.</p>	
Activities	Dayanne collaborates developing lecture material for SINERGY and liaising with IMP PhD students on joint proposals and publications.	



5. Conclusion

During the reporting period training sessions and workshops have been organized and held by means of:

- Training sessions (6x AIT, 2x NUIG)
- Workshop meetings for tenders (1 face-to-face meeting) and proposals (2 face-to-face meeting related to proposal named VICTORY; online meetings related to proposal AI4GreenDanube)
- Open Sinergy IEEE events (1 organized by AIT)
- Young scientist workshop (1 organized by AIT)

Planning of the meetings was done well in advance including backup scenarios to mitigate the influence of the pandemic development. These plans were used e.g., during the lockdown in Austria at the time of the Smart Grids workshop (November 2021).

The assessment of the pandemic situation in March 2022 showed a decreasing threat despite increasing infections. Consequently, a more ambitious exchange plan has been defined in order to offset delays and impact due to previous waves on the project execution.

Table 1. Summary of training in the 1st Reporting period

June 2021	Friederich Kupzog, Kazmi Jawad, and Thomas Strasser (all AIT) provided training sessions in the area of power systems and automation. Details can be found in D3.1.
June 2021	Luis Blanes and Federico Seri provided training sessions for building operation optimization. Details can be found in D3.3.
November 2021	Markus Makoschitz, Zoran Miletic, and Georg Lauss (all AIT) held lectures in the field of power electronics and power system simulation based on hardware-in-the-loop methods. Details can be found in D3.1.
March 2022	Zoran Miletic and Anja Banjac provided hands-on training at IMP premises in Belgrade/Serbia. The content was building on November trainings. Details can be found in D3.1.