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1 Executive summary

The document describes the methodology and approach of the user engagement and co-creation activities as it will be executed across the different work packages, including engaging users, developing use cases, gathering requirements, co-creating solutions (e.g. content and GUI), user experience evaluation and communicating the practical implications to tech developers. We identified different types of stakeholders that will engage and contribute to the co-creation process and identified methods and tools that will be used for user engagement and co-creation activities. The document concludes with a plan where user engagement and co-creation activities takes place in the iFLEX project.

2 Introduction

2.1 What is user engagement and co-creation?

We define **co-creation** as the collaborative development of use cases, gathering requirements, co-creating solutions (e.g. content and GUI), user experience evaluation and communicating the practical implications to tech developers together with experts and/or stakeholders (such as customers, suppliers etc.). **Co-creation** is a form of collaborative innovation: ideas are shared and improved together, rather than kept to oneself.

2.2 Different types of users (stakeholders) contributing to the co-creation process

The target for one of the iFLEX key performance indicators is to include up to 6 different stakeholders, including consumers, prosumers, DSOs, retailers, aggregators, technology providers represented and contributing to the co-design of iFLEX Assistant concept.

The table below illustrates the different types of stakeholders and their representation in the iFlex project.

Table 1: Types of stakeholders in the iFlex project

Types of Stakeholders	General description	iFlex stakeholder
Consumers		<p>Consumer representatives (<i>from non-energy – consumer's rights protection, legal and other socio-economic perspectives</i>):</p> <ul style="list-style-type: none"> • In-JeT APS (IN-JET) • Zveza potrošnikov Slovenije Društvo (ZPS)
Prosumers	<p>Prosumers are generally defined as electricity consumers that produce part of their electricity needs from their own power plant and use the distribution network to inject excess production and to withdraw electricity when self-production is not sufficient to meet own needs.</p>	<p>The iFLEX pilot clusters involve two types of participants (end-users):</p> <ul style="list-style-type: none"> • Residential consumers / prosumers • Small commercial consumers / prosumers <p>All participants are existing customers of one or more of the project partners in the pilot clusters:</p> <p>Greek cluster</p> <ul style="list-style-type: none"> • 200 homes, 8 charging stations <p>Slovenian cluster</p> <ul style="list-style-type: none"> • 100 households and small enterprises <p>Finnish cluster</p> <ul style="list-style-type: none"> • Apartment buildings, supermarket

Distribution System Operator (DSO)	Distribution system operators (DSOs) are the operating managers (and sometimes owners) of energy distribution networks, operating at low, medium and, in some member states, high voltage levels (LV, MV). Transmission grids transport large quantities of high (and extremely high) voltage (HV, EHV) electricity across vast distances, often from large power plants to the outskirts of large cities or industrial zones, where it is transformed into lower voltages distributed to all end-users through the distribution network. Over-head and underground cables leading to your home or business are operated by DSOs. ¹	<ul style="list-style-type: none"> • Elektro Celje d.d. (ELE)
Retailers	Electricity retailers (sometimes referred to as power companies) purchase electricity from the wholesale market to sell it to residential and business consumers.	<ul style="list-style-type: none"> • ECE d.o.o. (ECE) • HERON (HERON)
Aggregators	<p>As an electricity grid participant, the aggregator tracks companies' consumption and transmission system operators' requirements in real time.</p> <p>During peak consumption periods, the aggregator "asks" those companies that are able to do so to shut down some of their machines in order to save kWh.</p> <p>The aggregator then makes the freed-up power available to the transmission system operator, who sells it to customers requiring it.</p> <p>The aggregator provides uninterrupted grid balancing to optimise energy use and pays its customers for making their consumption flexibility available.</p>	<ul style="list-style-type: none"> • HERON (HERON) • Optimus Energy S.A. (OPTIMUS)
Technology providers	Technology providers, represented and contributing to the co-design of iFLEX Assistant concept	<ul style="list-style-type: none"> • Smart Com d.o.o. (SCOM) • EMPOWER IM Oy (EMPOWER) • Institut "Jožef Stefan" (JSI) • Athens University of Economics and Business (AUEB) • Intracom Telecom (ICOM) • Caverion Suomi Oy (CAVERION)

¹ <https://www.edsoforsmartgrids.eu/home/why-smart-grids/>

2.3 Overview of methods and tools that will be used for user engagement and co-creation activities

The table below describes different methods and tools that will be used for user engagement and co-creation activities in phases 1-3 of the project.

Table 2: Overview of methods and tools that will be used for user engagement and co-creation activities

Methods and tools for user engagement and co-creation activities	Input	Output
Desk research	Understand the users and the context through existing research and knowledge.	New insight, answers to specific questions, new (articulated and unarticulated) ideas.
Workshop (focus group).	A session at which a group of stakeholders engage in discussion on a particular project's topic or deliverable	General feedback, inputs, specific comments or suggestions for improvements, new ideas etc.
Contextual interview and observation	A structured one-on-one conversation between an interviewer and an interviewee in the use setting e.g., the home or community building'.	Answers to specific questions, general feedback, inputs, specific comments or suggestions for improvements, new (articulated and unarticulated) ideas and needs etc.
On-line survey	Questions in an on-line survey	Answers to specific questions
Review of a deliverable or a partial deliverable	A document (e.g.. functional specification), user-interface, functional prototype etc.	General feedback, inputs, specific comments or suggestions for improvements, new ideas on the deliverable or a partial deliverable
Field trial (evaluation)	The iFLEX Assistant will be offered to consumers and prosumers as their personal (or family) agent designed to meet their needs and represent their viewpoints in the daily interaction with energy service companies (ESCOs), DR aggregators, and utilities. Depending on the Phase (1,2 or 3) consumers and prosumers will get, respectively, a MVP (Minimum Viable Product), improved version, and a final prototype of the product.	General feedback, inputs, specific comments or suggestions for improvements, new (articulated and unarticulated) ideas and needs etc.
In-app analytics	With a given consent, iFLEX Assistant can report back on how it is being used and upon analysis provide a significant potential for improvements.	In-app usage statistics data, User journey and navigation through different functionalities and features
User personalisation	Users will be able to personalise their interface thereby allowing users to engage in co-creation of their personal iFLEX Assistants.	Data on iFLEX assistant personalisation.

3 iFLEX methodology and approach in the co-creation process

User engagement in the co-creation process is divided into three phases, each consisting of several agile co-creation iterations.

The goal of the first phase is to co-create and validate a minimum viable product (MVP) of the iFLEX Framework and application-specific iFLEX Assistants (month 14) and deploy them into a pre-pilot consisting of few selected users in order to collect feedback and validate against the functional requirements. In the second phase, the feedback from Phase 1 is utilized to improve the iFLEX Framework with new functionality and better user experience. At the end of this phase (month 25), the improved iFLEX Framework and Assistants developed on top of the framework have been validated with small-scale pilots. In the third phase, any missing functionality is added, and the focus is then on fine-tuning the quality of service (QoS) and user experience based on the Phase 2 feedback. At this phase the pilots are also scaled up in order to collect feedback and validate the Final iFLEX Assistants in large-scale (month 36).

The agile development approach is applied in phases 1-3 to engage end-users and enable other stakeholders to participate and contribute to the co-creation process. The key idea in the agile development methodology is having short development cycles, and thus many entry points for stakeholder input. Due to practical reasons, the first co-creation iteration will take more time but subsequent iterations can be done in shorter and shorter development cycles. A single iteration of the agile co-creation process is illustrated in Figure 2.

The iteration starts by creating specifications of the services to be developed, piloted, and evaluated in the project. These services include new services to be designed and developed in the project, as well as, existing services provided by the iFLEX industrial partners, which will be enhanced with the iFLEX Assistants.

The project will adopt a user experience design approach:

- analyse the end users' motivations for adopting iFLEX solutions, differentiating between values, views, and task related perceptions,
- end user evaluation of the functionalities including content specification
- end user evaluation of usability issues.

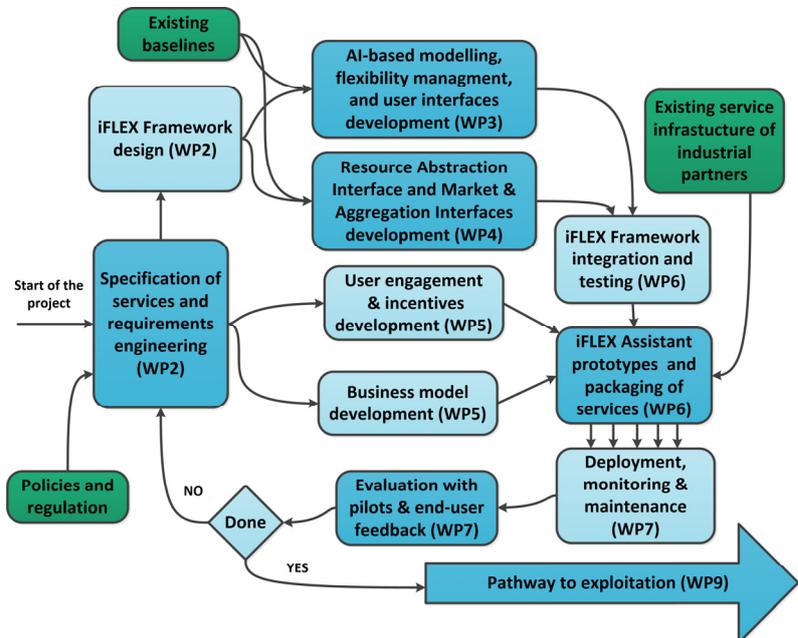


Figure 1: Agile methodology for co-design, development and validation

This work will be carried out in different tasks in WP2, WP5 and WP7. Based on the service specifications (documented as use cases), technical and business requirements will be engineered for guiding the development in WP2-WP5. In particular, the technical requirements will guide the design and specification of the iFLEX Assistant architecture (WP2) and necessary subcomponents developed in WP3 and WP4. The components are then integrated into a common iFLEX Framework in WP6.

In parallel to the technical development, user engagement strategies, incentives, and business models are developed in WP5 and a wide variety of services utilizing the application-specific iFLEX Assistant components are deployed (WP7) to the pilot sites for monitoring and validation purposes.

4 Plan of activities with user engagement and co-creation activities

User engagement in the co-creation process will be carried out in different tasks in WP2, WP5 and WP7. Based on the service specifications (documented as use cases), technical and business requirements will be engineered for guiding the development in WP2-WP5. In particular, the technical requirements will guide the design and specification of the iFLEX Assistant architecture (WP2) and necessary subcomponents developed in WP3 and WP4. The components are then integrated into a common iFLEX Framework in WP6. iFLEX project will also collaborate with the INTERRFACE project and other linked projects where further validation and user co-creation is expected:

- The INTERRFACE project creates a common architecture, which enables the connection to multiple market platforms and develops platforms for coordinated flexibility procurement by TSOs and DSOs.
- the Finnish cluster will have close cooperation with MAKING-CITY².
- The Slovenian iFLEX pilot will benefit from the close cooperation with the national UIW project³ and the H2020 BD4OPEM project⁴
- The Greek iFLEX pilot will benefit from the cooperation with the EU funded project InterConnect⁵

Table 3: Plan of activities with user engagement and co-creation activities

4.1 WP2: User-centric service and system design

WP	Activity	Phase 1 Minimum Viable Product				Phase 2 Small-scale piloting				Phase 3 Large-scale piloting				Contribution to deliverables
		Timing	Internal users	External users	Methods and tools that will be used	Timing	Internal users	External users	Methods and tools that will be used	Timing	Internal users	External users	Methods and tools that will be used	
WP2 User-centric service and system design	2.1 Services and user experience design	Q4 2020 – Q1 2021	<u>Lead:</u> IN-JET, <u>Participants:</u> ZPS, ELE, ECE, HERON, OPTIMUS, SCOM, EMPOWER, JSI, AUEB, ICOM, CAVERION	No external users are planned to participate in Year 1 at this activity.	Desk research on user and context Focus groups (workshops) Review of a deliverable or a partial deliverable	Q4 2021 - Q1 2022	<u>Lead:</u> IN-JET, <u>Participants:</u> ZPS, ELE, ECE, HERON, OPTIMUS, SCOM, EMPOWER, JSI, AUEB, ICOM, CAVERION	Pilot participants (external users) from Greek, Slovenian, and Finnish cluster + users from linked projects	With internal: • Focus groups (workshops) • Review of a deliverable or a partial deliverable With external: • Contextual interview • On-line survey • Field trial (evaluation) • In-app analytics	Q4 2022 - Q1 2023	<u>Lead:</u> IN-JET, <u>Participants:</u> ZPS, ELE, ECE, HERON, OPTIMUS, SCOM, EMPOWER, JSI, AUEB, ICOM, CAVERION	Pilot participants (external users) from Greek, Slovenian, and Finnish cluster + users from linked projects	With internal: • Focus groups (workshops) • Review of a deliverable or a partial deliverable With external: • Contextual interview • On-line survey • Field trial (evaluation) • In-app analytics	Contribution to D2.1 and D2.3.
	2.2 Requirements engineering • Subtask 2.2.1: Functional requirements	Q4 2020 – Q1 2021	<u>Lead:</u> ICOM, <u>Participants:</u> ZPS, ELE, ECE, HERON, OPTIMUS, SCOM, EMPOWER, JSI, AUEB, IN-JET, CAVERION	No external users are planned to participate in Year 1 at this activity.	Focus groups (workshops) Review of a deliverable or a partial deliverable	Q4 2021 - Q1 2022	<u>Lead:</u> ICOM, <u>Participants:</u> ZPS, ELE, ECE, HERON, OPTIMUS, SCOM, EMPOWER, JSI, AUEB, IN-JET, CAVERION	Pilot participants (external users) from Greek, Slovenian, and Finnish cluster + users from linked projects	With internal: • Focus groups (workshops) • Review of a deliverable or a partial deliverable With external: • Contextual interview	Q4 2022 - Q1 2023	<u>Lead:</u> ICOM, <u>Participants:</u> ZPS, ELE, ECE, HERON, OPTIMUS, SCOM, EMPOWER, JSI, AUEB, IN-JET, CAVERION	Pilot participants (external users) from Greek, Slovenian, and Finnish cluster + users from linked projects	With internal: • Focus groups (workshops) • Review of a deliverable or a partial deliverable	Contribution to D2.1 and D2.3.

² By providing innovative ways for engaging and adapting the flexibility management with respect to end-user behaviour, the iFLEX Assistants are a nice addition to the energy management system being developed to the Oulu PED area. On the other hand, Oulu PED area provides iFLEX with large-scale piloting venue for demonstrating the iFLEX Assistant solution in the context of holistic flexibility management, including several energy vectors (i.e., electricity, district heating, and waste heat).

³ Piloting DR with dynamic network fee pricing for managing peaks in distribution grid

⁴ Pilot on application of big data tools and techniques for operational management of distribution grid.

⁵ The main purpose is to promote IoT-based flexibility management services, through the utilization of legacy and SAREFized devices. In the Greek pilot, the developed in the project demand response solutions and business models will be applied to a selected portfolio of HERON electricity end-users and the derived results and best practices may be used as input for iFLEX activities. As a result, iFLEX will greatly benefit from InterConnect's user engagement activities, whereas InterConnect's initial results on the applicability and best practices of demand response schemes will be used as input to iFLEX's WP7 processes.

									<ul style="list-style-type: none"> Field trial (evaluation) In-app analytics 				<ul style="list-style-type: none"> On-line survey Field trial (evaluation) In-app analytics 	
2.3 IFLEX Framework architecture design	Q4 2020 – Q1 2021	<u>Lead:</u> VTT, <u>Participants:</u> EMPOWER, JSI, ICOM, SCOM, IN-JET	No external users are planned to participate in Year 1 at this activity.	Focus groups (workshops) Review of a deliverable or a partial deliverable	Q4 2021 - Q1 2022	<u>Lead:</u> VTT, <u>Participants:</u> EMPOWER, JSI, ICOM, SCOM, IN-JET	Pilot participants (external users) from Greek, Slovenian, and Finnish cluster + users from linked projects	With internal: <ul style="list-style-type: none"> Focus groups (workshops) Review of a deliverable or a partial deliverable With external: <ul style="list-style-type: none"> Contextual interview On-line survey Field trial (evaluation) In-app analytics 	Q4 2022 - Q1 2023	<u>Lead:</u> VTT, <u>Participants:</u> EMPOWER, JSI, ICOM, SCOM, IN-JET	Pilot participants (external users) from Greek, Slovenian, and Finnish cluster + users from linked projects	With internal: <ul style="list-style-type: none"> Focus groups (workshops) Review of a deliverable or a partial deliverable With external: <ul style="list-style-type: none"> Contextual interview On-line survey Field trial (evaluation) In-app analytics 	Contribution to D2.3.	

4.2 WP5: Consumer engagement, incentive mechanisms and economic sustainability

WP	Activity	Phase 1 Minimum Viable Product				Phase 2 Small-scale piloting				Phase 3 Large-scale piloting				Contribution to deliverables
		Timing	Internal users	External users	Methods and tools that will be used	Timing	Internal users	External users	Methods and tools that will be used	Timing	Internal users	External users	Methods and tools that will be used	
WP5 Consumer eng., incentive mech. & eco. sustainability	5.1 Analysis of markets & obstacles to innovation	Q1 2021 – Q2 2021	<u>Lead:</u> EMPOWER, <u>Participants:</u> AUEB, VTT, ECE, OPTIMUS, ZPS, IN-JET	No external users are planned to participate in Year 1 at this activity.	Focus groups (workshops) Review of a deliverable or a partial deliverable	Q1 2022 – Q2 2022	<u>Lead:</u> EMPOWER, <u>Participants:</u> AUEB, VTT, ECE, OPTIMUS, ZPS, IN-JET	Pilot participants (external users) from Greek, Slovenian, and Finnish cluster + users from linked projects	With internal: <ul style="list-style-type: none"> Focus groups (workshops) Review of a deliverable or a partial deliverable With external: <ul style="list-style-type: none"> Contextual interview On-line survey Field trial (evaluation) In-app analytics 	Q1 2023 – Q2 2023	<u>Lead:</u> EMPOWER, <u>Participants:</u> AUEB, VTT, ECE, OPTIMUS, ZPS, IN-JET	Pilot participants (external users) from Greek, Slovenian, and Finnish cluster + users from linked projects	With internal: <ul style="list-style-type: none"> Focus groups (workshops) Review of a deliverable or a partial deliverable With external: <ul style="list-style-type: none"> Contextual interview On-line survey Field trial (evaluation) In-app analytics 	Contribution to D5.1 and D5.4.
	5.2 Business model development	Q1 2021 – Q2 2021	<u>Lead:</u> IN-JET, <u>Participants:</u> EMPOWER,	No external users are planned to participate in	Focus groups (workshops)	Q1 2022 – Q2 2022	<u>Lead:</u> IN-JET, <u>Participants:</u> EMPOWER,	Pilot participants (external users) from Greek, Slovenian, and	With internal: <ul style="list-style-type: none"> Focus groups (workshops) 	Q1 2023 – Q2 2023	<u>Lead:</u> IN-JET, <u>Participants:</u> EMPOWER, ICOM, OPTIMUS,	Pilot participants (external users) from Greek, Slovenian, and	With internal: <ul style="list-style-type: none"> Focus groups (workshops) 	Contribution to D5.1 and D5.4.

			ICOM, OPTIMUS, HERON, ELE, SCOM, ECE, CAVERION	Year 1 at this activity.			ICOM, OPTIMUS, HERON, ELE, SCOM, ECE, CAVERION	Finnish cluster + users from linked projects	<ul style="list-style-type: none"> Review of a deliverable or a partial deliverable <p>With external:</p> <ul style="list-style-type: none"> Contextual interview On-line survey Field trial (evaluation) In-app analytics 		HERON, ELE, SCOM, ECE, CAVERION	Finnish cluster + users from linked projects	<ul style="list-style-type: none"> Review of a deliverable or a partial deliverable <p>With external:</p> <ul style="list-style-type: none"> Contextual interview On-line survey Field trial (evaluation) In-app analytics 	
5.3 Incentive mechanisms & consumer engagement	Q2 2021 – Q3 2021	<u>Lead:</u> AUEB, <u>Participants:</u> EMPOWER, VTT, IN-JET, ZPS, ECE, OPTIMUS	No external users are planned to participate in Year 1 at this activity.	Review of a deliverable or a partial deliverable	Q2 2022 – Q3 2022	<u>Lead:</u> AUEB, <u>Participants:</u> EMPOWER, VTT, IN-JET, ZPS, ECE, OPTIMUS	Pilot participants (external users) from Greek, Slovenian, and Finnish cluster + users from linked projects	<p>With internal:</p> <ul style="list-style-type: none"> Focus groups (workshops) Review of a deliverable or a partial deliverable <p>With external:</p> <ul style="list-style-type: none"> Contextual interview On-line survey Field trial (evaluation) In-app analytics 	Q2 2023 – Q3 2023	<u>Lead:</u> AUEB, <u>Participants:</u> EMPOWER, VTT, IN-JET, ZPS, ECE, OPTIMUS	Pilot participants (external users) from Greek, Slovenian, and Finnish cluster + users from linked projects	<p>With internal:</p> <ul style="list-style-type: none"> Focus groups (workshops) Review of a deliverable or a partial deliverable <p>With external:</p> <ul style="list-style-type: none"> Contextual interview On-line survey Field trial (evaluation) In-app analytics 	Contribution to D5.2.	
5.4 Economic analysis and sustainability tool	Q2 2021 – Q3 2021	<u>Lead:</u> AUEB, <u>Participants:</u> EMPOWER, ELE, HERON	No external users are planned to participate in Year 1 at this activity.	Focus groups (workshops)	Q2 2022 – Q3 2022	<u>Lead:</u> AUEB, <u>Participants:</u> EMPOWER, ELE, HERON	Pilot participants (external users) from Greek, Slovenian, and Finnish cluster + users from linked projects	<p>With internal:</p> <ul style="list-style-type: none"> Focus groups (workshops) Review of a deliverable or a partial deliverable <p>With external:</p> <ul style="list-style-type: none"> Contextual interview On-line survey Field trial (evaluation) In-app analytics 	Q2 2023 – Q3 2023	<u>Lead:</u> AUEB, <u>Participants:</u> EMPOWER, ELE, HERON	Pilot participants (external users) from Greek, Slovenian, and Finnish cluster + users from linked projects	<p>With internal:</p> <ul style="list-style-type: none"> Focus groups (workshops) Review of a deliverable or a partial deliverable <p>With external:</p> <ul style="list-style-type: none"> Contextual interview On-line survey Field trial (evaluation) In-app analytics 	Contribution to D5.3.	

4.3 WP7: Piloting and validation

WP	Activity	Phase 1 Minimum Viable Product				Phase 2 Small-scale piloting				Phase 3 Large-scale piloting				Contribution to deliverables
		Timing	Internal users	External users	Methods and tools that will be used	Timing	Internal users	External users	Methods and tools that will be used	Timing	Internal users	External users	Methods and tools that will be used	
WP7 Piloting and validation	7.1 User recruitment and pilot specifications	Q1 2021	<u>Lead:</u> ECE <u>Participants:</u> CAVERION, VTT, SCOM, EMPOWER, JSI, AUEB, ICOM, ELE, IN-JET, ECE, HERON, OPTIMUS, ZPS	Pilot participants (external users) from Greek, Slovenian, and Finnish cluster.	Review of a deliverable or a partial deliverable	Q1 2022	<u>Lead:</u> ECE <u>Participants:</u> CAVERION, VTT, SCOM, EMPOWER, JSI, AUEB, ICOM, ELE, IN-JET, ECE, HERON, OPTIMUS, ZPS	Pilot participants (external users) from Greek, Slovenian, and Finnish cluster + users from linked projects	Review of a deliverable or a partial deliverable	Q1 2023	<u>Lead:</u> ECE <u>Participants:</u> CAVERION, VTT, SCOM, EMPOWER, JSI, AUEB, ICOM, ELE, IN-JET, ECE, HERON, OPTIMUS, ZPS	Pilot participants (external users) from Greek, Slovenian, and Finnish cluster + users from linked projects	Review of a deliverable or a partial deliverable	This task produces to D7.1
	7.2 Operation of pilot clusters	Q4 2021	<u>Lead:</u> ECE <u>Participants:</u> CAVERION, VTT, SCOM, EMPOWER, JSI, AUEB, ICOM, ELE, IN-JET, ECE, HERON, OPTIMUS, ZPS ⁶	Pilot participants (external users) from Greek, Slovenian, and Finnish cluster + users from linked projects + The role of ZPS, with support from IN-JET and other project partners is to handle the consumer representation in all three pilot clusters. In practice, this will be done in close cooperation with Finnish and Greek consumer associations and the European level BEUC organization..	Contextual interview On-line survey Field trial (evaluation) In-app analytics	Q4 2022	<u>Lead:</u> ECE <u>Participants:</u> CAVERION, VTT, SCOM, EMPOWER, JSI, AUEB, ICOM, ELE, IN-JET, ECE, HERON, OPTIMUS, ZPS	Pilot participants (external users) from Greek, Slovenian, and Finnish cluster + users from linked projects + The role of ZPS, with support from IN-JET and other project partners is to handle the consumer representation in all three pilot clusters. In practice, this will be done in close cooperation with Finnish and Greek consumer associations and the European level BEUC organization.	With external: • Contextual interview • On-line survey • Field trial (evaluation) • In-app analytics	Q4 2023	<u>Lead:</u> ECE <u>Participants:</u> CAVERION, VTT, SCOM, EMPOWER, JSI, AUEB, ICOM, ELE, IN-JET, ECE, HERON, OPTIMUS, ZPS	Pilot participants (external users) from Greek, Slovenian, and Finnish cluster + users from linked projects + The role of ZPS, with support from IN-JET and other project partners is to handle the consumer representation in all three pilot clusters. In practice, this will be done in close cooperation with Finnish and Greek consumer associations and the European level BEUC organization.	With external: • Contextual interview • On-line survey • Field trial (evaluation) • In-app analytics	This task contributes to D7.3, D7.4 and D7.5.
	Subtask 7.2.1 Greek cluster	Q4 2021	HERON, OPTIMUS, ICOM	Pilot participants (external users) from Greek cluster: 200 homes, 8 charging stations	Contextual interview On-line survey Field trial (evaluation) In-app analytics	Q4 2022	HERON, OPTIMUS, ICOM	Pilot participants (external users) from Greek cluster: 200 homes, 8 charging stations	Contextual interview On-line survey Field trial (evaluation) In-app analytics	Q4 2023	HERON, OPTIMUS, ICOM	Pilot participants (external users) from Greek cluster: 200 homes, 8 charging stations	Contextual interview On-line survey Field trial (evaluation) In-app analytics	This subtask contributes to D7.3, D7.4 and D7.5.

⁶ The role of ZPS, with support from IN-JET and other project partners is to handle the consumer representation in all three pilot clusters. In practice, this will be done in close cooperation with Finnish and Greek consumer associations and the European level BEUC organization.
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	Subtask 7.2.2 Slovenian cluster	Q4 2021	ECE, ELE, SCOM, JSI	Pilot participants (external users) from Slovenian cluster: 100 households and small enterprises	Contextual interview On-line survey Field trial (evaluation) In-app analytics	Q4 2022	ECE, ELE, SCOM, JSI	Pilot participants (external users) from Slovenian cluster: 100 households and small enterprises	Contextual interview On-line survey Field trial (evaluation) In-app analytics	Q4 2023	ECE, ELE, SCOM, JSI	Pilot participants (external users) from Slovenian cluster: 100 households and small enterprises	Contextual interview On-line survey Field trial (evaluation) In-app analytics	This subtask contributes to D7.3, D7.4 and D7.5.
	Subtask 7.2.3 Finnish cluster	Q4 2021	CAVERION, EMPOWER, VTT	Pilot participants (external users) from Finnish cluster: Apartment buildings, supermarket	Contextual interview On-line survey Field trial (evaluation) In-app analytics	Q4 2022	CAVERION, EMPOWER, VTT	Pilot participants (external users) from Finnish cluster: Apartment buildings, supermarket	Contextual interview On-line survey Field trial (evaluation) In-app analytics	Q4 2023	CAVERION, EMPOWER, VTT	Pilot participants (external users) from Finnish cluster: Apartment buildings, supermarket	Contextual interview On-line survey Field trial (evaluation) In-app analytics	This subtask contributes to D7.3, D7.4 and D7.5.

4.4 WP8: Cooperation

WP	Activity	Timing	Phase 1 Minimum Viable Product			Phase 2 Small-scale piloting				Phase 3 Large-scale piloting				Contribution to deliverables
			Internal users	External users	Methods and tools that will be used	Timing	Internal users	External users	Methods and tools that will be used	Timing	Internal users	External users	Methods and tools that will be used	
WP8 Cooperation	8.2 Cooperation with INTERFACE project ⁷	User engagement and co-creation activities start in Phase 2	/	/	/	Q1-Q3 2022	<u>Lead:</u> EMPOWER, <u>Participants:</u> VTT, CAVERION	Pilot participants (external users) from Finnish cluster: Apartment buildings, supermarket	Contextual interview On-line survey Field trial (evaluation) In-app analytics	Q4 2023	<u>Lead:</u> EMPOWER, <u>Participants:</u> VTT, CAVERION	Pilot participants (external users) from Finnish cluster: Apartment buildings, supermarket	Contextual interview On-line survey Field trial (evaluation) In-app analytics	This task contributes to D8.1 and D8.3.
	8.3 Synergies with linked projects ⁸	User engagement and co-creation activities start in Phase 2	/	/	/	Q4 2022	<u>Lead:</u> HERON, <u>Participants:</u> ELE, CAVERION, OPTIMUS, ICOM, AUEB, ECE, JSI, SCOM, VTT, EMPOWER	Pilot participants (external users) from Greek, Slovenian, and Finnish cluster	Contextual interview On-line survey Field trial (evaluation) In-app analytics	Q4 2023	<u>Lead:</u> HERON, <u>Participants:</u> ELE, CAVERION, OPTIMUS, ICOM, AUEB, ECE, JSI, SCOM, VTT, EMPOWER	Pilot participants (external users) from Greek, Slovenian, and Finnish cluster	Contextual interview On-line survey Field trial (evaluation) In-app analytics	This task contributes to D8.1 and D8.3.

⁷ The objective is to integrate the Finnish pilot cluster of iFLEX into the Nordic-Baltic demonstrator, which enables the maximal utilization of flexibility for congestion management and balancing in the area of the affected networks. To this end, necessary TSO/DSO flexibility market interfaces will be implemented to the iFLEX Framework as part of the work in T4.3. Then the Finnish pilot cluster will be connected to the Single Flexibility Platform pilot of INTERFACE

⁸ The purpose of this task is to fully exploit synergies with closely related projects by fostering hands-on cooperation during development and piloting activities. These projects include InterConnect (Greek cluster), UIW (Slovenian cluster), MAKING-CITY (Finnish cluster), and BD4OPEM (Slovenian and Greek Cluster).

5 Conclusion

The document describes the methodology and approach of the user engagement and co-creation activities as it will be executed across the different work packages.

The document defines:

- what is user engagement and co-creation (chapter 2.1)
- different types of users (stakeholders) contributing to the co-creation process (chapter 2.2)
- the overview of methods and tools that will be used for user engagement and co-creation activities (chapter 2.3)
- iFLEX methodology and approach in the co-creation process (chapter 3)

User engagement in the co-creation process will be carried out in different tasks in WP2, WP5 and WP7 and this is specified in detail in the Plan of activities with user engagement and co-creation activities (chapter 4).

As many deliverables on this project, the plan of activities with user engagement and co-creation activities will face an iterative process and might be updated in later phases.

The plan will be followed by 3 yearly reports that will define a user engagement and co-creation framework and plan, for activities executed across different work packages. As they are executed across different work packages, reports will compose the plan and coordination of this process.

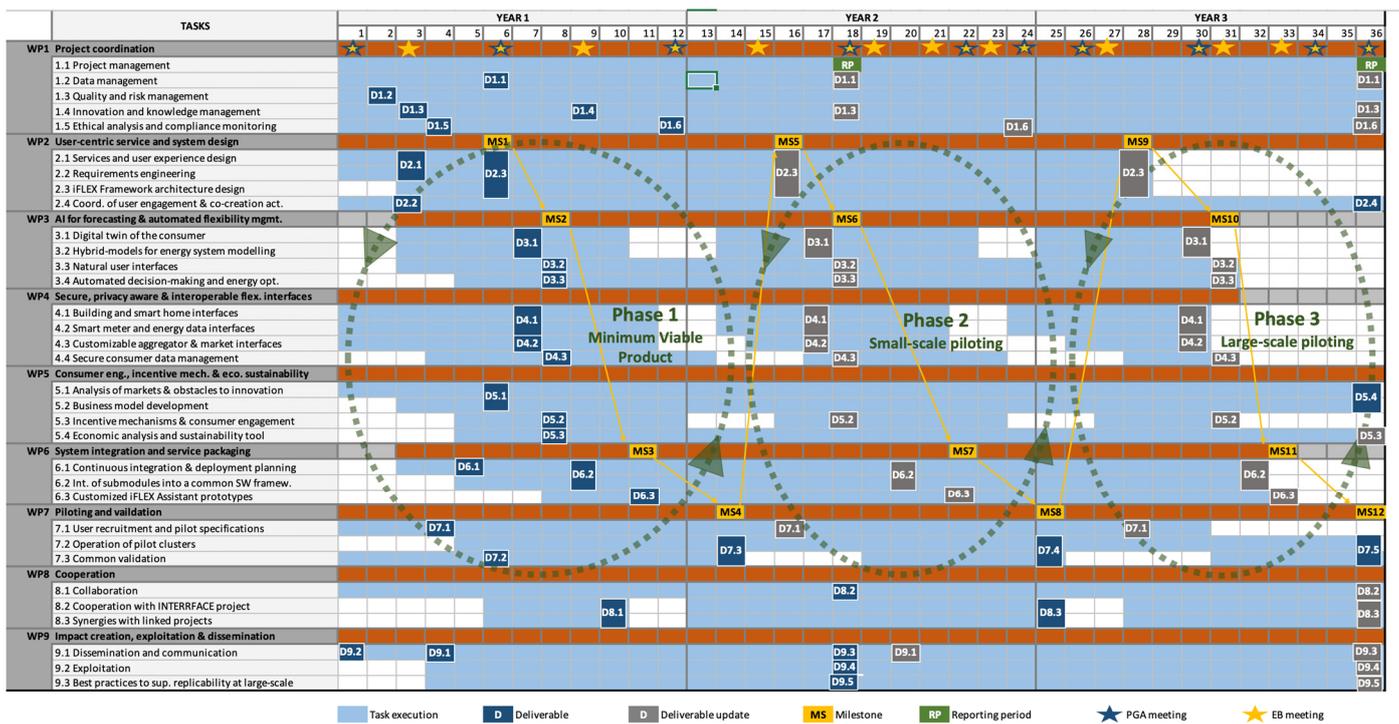


Figure 2: iFLEX Gantt Chart

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