Intelligent Assistants for Flexibility Management (Grant Agreement No 957670)

D1.3 Final data management plan

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1 Executive summary

The deliverable presents the iFLEX project final data management plan. The plan is based on Horizon 2020 Manual (EC, 2020) which lays out basic guiding principles and introduces essential findable, accessible, interoperable and re-usable (FAIR) data attributes and some extended views related to data management, like security and privacy. Mentioned concepts are briefly introduced in the deliverable and interwoven with the project proposed management plan.

A core element of the data management plan is the data management life-cycle. The deliverable proposes the project data life-cycle and describes its essential steps of data identification, collection, processing, storage, usage, sharing, archiving and destroying. Brief project data summary is provided based on work on iFLEX Assistant architecture reported in deliverables D2.3 (iFLEX D2.3, 2021), D2.4 (iFLEX D2.4, 2022) and D2.5 (iFLEX D2.5, 2023).

The deliverable advances the project data life-cycle with a proposal of a data management process. The process has four phases: initialization, assessment, management and reporting. The process is augmented with a simple data management template which is used to document data sets addressed by the project. The template extends the data summary as is reported in the deliverable D2.3 (iFLEX D2.3, 2021).

The work described in the deliverable has been carried out in three phases, with milestones at M6, M18 and M42 of the project. The initialization phase of the data management plan has been carried out by defining the data management methodology which is based on a combination of data life-cycle and data management process.

In the second phase, the data management plan has been implemented. A project-management tool, i.e., Jira, has been utilized to support the data management process. A collection and initial assessment of the datasets processed in the project has been performed and is reported in the deliverable. In the second phase, 10 unique datasets were collected and analyzed for the extended attributes defined by the project.

The final phase of the data management plan has resulted in the collection of additional 16 datasets. The new datasets were analyzed and those already collected were reassessed. One duplicate dataset has been removed. The data management process has been performed to the end when the decision has been reached on which datasets are suitable for publication and which should be restricted for publication beyond the project boundaries.

Overall, 26 datasets have been collected and analyzed according to the rules defined by the data management plan. 34 % of the reported datasets have been labeled as *Published*, denoting that the datasets could be published as provided or with minor modifications or restrictions. The rest of the datasets have got the label *Restricted*, which denotes that the datasets as such currently cannot be published beyond the project boundaries without major modifications. The most frequent reasons for restricting the publishing are privacy concerns and security/commercial concerns.

Overall, the work done in the data management task has shown that with the right information, understanding, process guidance and tools the project partners are able to keep track of the major datasets processed in the project and decide on the dataset potential for publication and reuse. The information gathered through the data management plan implementation will be valuable for the project partners even after the project-end. The collected information can guide the partners towards what needs to be focused on when deciding on the dataset publishing and provide some examples on how to overcome the considerations raised.

2 Introduction

Initially, this deliverable presents the iFLEX project data management plan. The document has a goal of setting the general guiding principles for the data management work. It should help the project, project partners and practitioners in the pilots to systematically document the data collected through the project work and utilize it ethically and with FAIR principles (Findable, Accessible, Interoperable and Re-usable) in mind during and after the project's lifespan. The work has been caried out in three phases, the initial phase, till M6, the second phase, till M18 and the third phase, till the end of the project.

In the second phase, the deliverable has been extended with a report on the implementation of the data management plan and on the datasets that were processed in the project until M18.

In the third phase, the deliverable has been updated with additional datasets collected in the third piloting phase of the project and updates on the status of the recorded datasets.

2.1 Context and scope

The present deliverable is the final of three deliverables that were to be provided during the project at M6, M18 and M42. The context of the first version of the deliverable was in the early stages of the development in the project. Deliverable D2.1 (iFLEX D2.1, 2021) on use cases and requirements has provided a general scope of the project work. Deliverable D2.3 (iFLEX D2.3, 2021) has provided an initial common architecture of the iFLEX framework. Initial pilot specification has been provided in deliverable D7.1 (iFLEX D7.1, 2021), which has given first insight into the data that has been collected and processed in the pilots. Deliverables D10.1 (iFLEX D10.1, 2020) and D10.2 (iFLEX D10.2, 2020) dealt with personal data management and had provided as well procedures and mechanism for privacy regulation compliant data management and use. All deliverables are closely related to the data management. They define general procedures on how and who will use the data and which data will be processed and collected in the project. Security and privacy mechanisms and services of the project have been further detailed in deliverable D4.7 (iFLEX D4.7, 2021). All stated sources have been used to scope the initial data management plan work.

In the second phase the scope of the deliverable has been extended to report on implementation of the data management plan and on collected and initially assessed datasets. The source of the work was a number of deliverables in technical work packages (WP2-WP6) as well the piloting deliverable D7.2 (iFLEX D7.2, 2022). The pre-pilot deployment and validation deliverable is a valuable source of non-technical data collections (iFLEX D7.5, 2022).

In the third phase the focus of the work in the deliverable has been on piloting and the datasets collected during the piloting. The source of the work were deliverables in WP7, in particular deliverable D7.3 on Final piloting specification and deliverable D7.7 on Large-scale pilot deployment and validation. The documentation was a basis for discussion with the piloting partners and for addition of new datasets to the data management plan collection.

2.2 Content and structure

The deliverable first introduces general guiding principles in Section 3 and then defines the project data file-cycle in Section 4. The FAIR data management principles are introduced in Section 5. Extended views on data management, covering ethical aspects, data security and other issues are presented in Section 6. The initial data management plan is provided in Section 7 where a simple data management template is presented and the allocation of resources in the project to data management is explained. In Section 8 the implementation of the data management plan is reported. Collected and assessed datasets are reported in Section 9 with a brief analysis of the results. Finally, conclusions and future work are given in Section 10. Additionally, information on all datasets in Jira guided export format is provided in Appendix 1.

2.3 Updates from the initial version of the data management plan deliverable

Deliverable D1.2 has been updated from deliverable D1.1 with regards to the following:

- Section 8 on the data management plan implementation together with a summary of the datasets collected and assessed,
- Appendix 1 as a more detailed report on the collected datasets together with information on the datasets content,

- Section 5 (Dataset summary) of the initial deliverable has been removed as it is replaced by Section 8.1 and detailed dataset information in Appendix 1,
- Minor modifications in other sections, Conclusions, Executive summary, Introduction, Context and scope and Content and structure.

This deliverable D1.3 has been updated from deliverable D1.2 with regards to the following:

- Reassessment process information has been added to the Section 7 on the Data management process,
- The collected datasets in Section 9 (previously section 8.1) has been updated with 16 additional datasets and some discussion on the results have been provided,
- Appendix 1 with Jira guided dataset information export has been updated with new datasets and previously published exports were updated,
- Minor modifications in other sections, Conclusions, Executive summary, Introduction, Context and scope and Content and structure.

3 Guiding principles

According to H2020 manual definition (EC, 2020) a Data Management Plan (DMP) is a key element of good data management. A DMP describes the data management life cycle for the data to be collected, processed and/or generated by the project. As part of making research data findable, accessible, interoperable and re-usable (FAIR), a DMP should include information on:

- what data will be collected, processed and/or generated,
- which methodology & standards will be applied,
- whether data will be shared/made open access and
- the handling of research data during & after the end of the project,
- how data will be curated & preserved (including after the end of the project).

To be in line with the guiding principles the deliverable provides a view on the project data lifecycle in Section 4, brief information on FAIR data management in Section 5 and the project take on extended views in Section 6. Based on this information it will be possible to answer the questions set above and provide the data management plan in Section 7.

4 Data life-cycle

Figure 1 shows both the data lifecycle in yellow and the data management plan in blue. In this section only the data lifecycle will be explained, while the data management plan part will be addressed in Section 7.

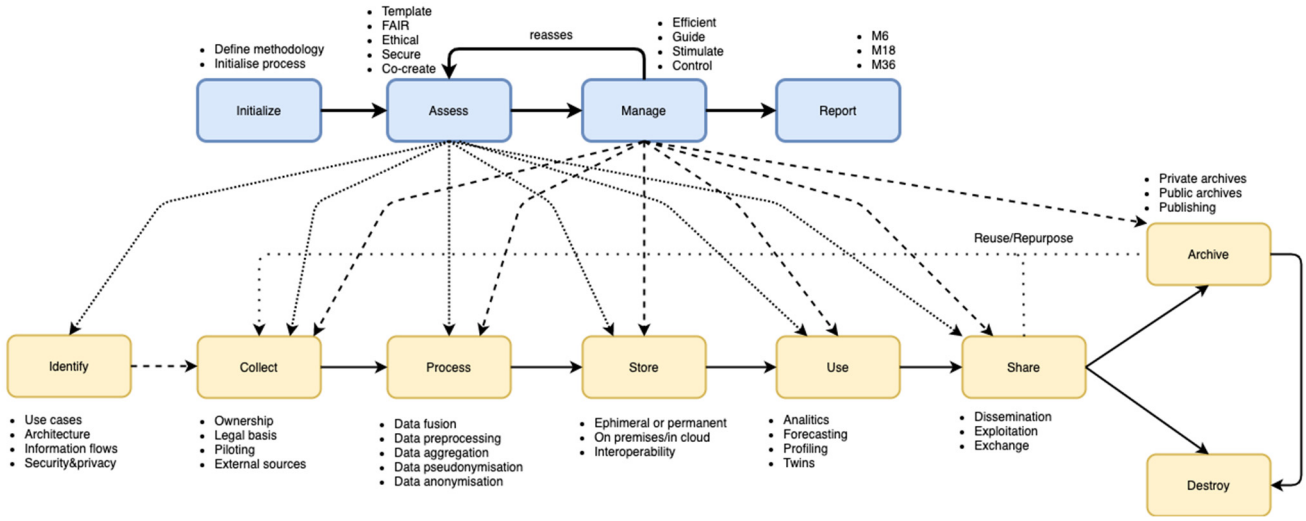

Figure 1: iFLEX project Data lifecycle and management process

The data lifecycle starts with an initial step of data identification. Important parts of this step have been already in a process of initial implementation, some parts of the process provide additional inputs as is indicated below:

- *Use cases*: the project use cases have been defined in the D2.1 (iFLEX D2.1, 2021). The use cases provide essential information between whom, when and why information/data in the project will be exchanged among stakeholders,
- *Architecture*: the architecture defined in the deliverable D2.3 (iFLEX D2.3, 2021) provides initial information on which elements of the iFLEX platform will process the data and how, the architecture has been further revised in the deliverable D2.4 (iFLEX D2.4, 2022) and D2.5 (iFLEX D2.5, 2023)
- *Security & privacy*: already in the WP10 Ethics and privacy deliverables D10.1 (iFLEX D10.1, 2020) and D10.2 (iFLEX D10.2, 2020) have provided foundations on ethics and privacy requirements and their fulfilment. The security and privacy deliverable D4.7 (iFLEX D4.7, 2021) extends the WP10 deliverables view and provide initial information on security and privacy mechanisms needed to fulfil security and privacy requirements as set in D2.3 (iFLEX D2.3, 2021),
- *Information flows*: the deliverables mentioned in the initial phase provide enough information to depict central information flows of the project identifying origins of the information and the ways and points of its processing and transformation throughout the project platform.

The data lifecycle beyond identify phase is defined as common lifecycle of mature process of data collection, processing and sharing. The phases, aligned with the project internal steps and plans are as follows:

- *Collect*: during the collection phase the data is being collected in the pilots. Initial pilot specifications have been provided in (iFLEX D7.1, 2021) which had already hinted where, when and which data will be colleted. For this phase it is of utmost importance to understand the ownership of the data and the legal basis allowing to collect the data. Proper informed consent procedure is a must as is explained in D10.1 (iFLEX D10.1, 2020). The life-cycle can cover other important data from external sources which is not privacy sensitive, such as weather. The individual pilot specifications have been further updated in the second revision D7.2 (iFLEX D7.2, 2021). The inputs discussed had lead to collection of the datasets as are summarised in Section 9 and detailed in Appendix 1,
- *Process*: the processing phase involves basic processing and preparation of the data for future use in the system and beyond. The processing can involve pseudonymization or anonymization, and general data pre-processing, fusion and aggregation. Results of the processing can be already used in the system without any further changes to the data,

- *Store*: after the processing the data is stored and ready for later use. The storage can be for a long term or just ephemeral in case of streaming and relaying the data among system elements. The system can use private storage when the storage is under control of the data owner or the data controller or public storage in a cloud. In all cases the storage needs to guarantee target security requirements as set in D2.3 (iFLEX D2.3, 2021),
- *Use*: the core step where the data is transformed into a product via analytics, forecasting, profiling, twin emulation, etc. The data usage allows providing anticipated benefits for end users and other stakeholders of the system. Relevant sources for this and previous steps are a number of deliverables delivered in WP3, WP4, WP5 and WP6,
- *Share*: the products and the data are shared in this phase with intended audiences. Dissemination, exploitation and exchange of data and services with other projects are planned in the project. Procedures need to be defined to share the data with external entities in a secure and privacy aware manner. In general, only anonymized data should be shared with the external entities. In such case the exported data can be reused or repurposed in another data lifecycle as is indicated in Figure 1 with a dashed feedback loop. The sharing of the data will be tracked to keep an archive of data sets, anonymization technique, including a version and the time of the export,
- *Archive*: one of the possibilities to share the data for long term is to archive it in a private or public archive. There it is accessible for internal or wider audiences. Typical examples are publishing archives of scientific publications, accompanied with research data. The archives can in a similar manner as in Share phase case become a source of data for another data life-cycle,
- *Destroy*: if the data is not shared anymore and there is no purpose for it to be archived, it can get destroyed. Personal data will get destroyed after the period specified in the informed consent used to set the legal basis to collect the data from the end users. The project or project members can decide that some data or publication archived is not suitable anymore for publication. In this case the data and related archive can be destroyed as well.

The reassessing phase in the second and third phase of the data management process has taken a number of other documents and sources the project has prepared into consideration:

- *Piloting reports*: a number of piloting reports were used for reassessing the datasets information from the initial, revised and final piloting specification (iFLEX D7.1, 2021, iFLEX D7.2, 2022, iFLEX D7.3, 2023),
- *Co-creation reports:* the deliverable D2.6 on User engagement and co-creation activities (iFLEX D2.6, 2024),
- *Architectural deliverables:* additional architectural deliverables, the revised and final architecture of iFLEX framework (iFLEX D2.4, 2022, iFLEX D2.5, 2023),
- *Security and privacy:* the work on security and privacy continued in deliverables D4.8 (iFLEX D4.8, 2023) and D4.9 (iFLEX D4.9, 2024).

5 FAIR data management

The term FAIR data management refers to the following data management attributes: findable, accessible, interoperable and reusable data. Below a basic introduction for FAIR data attributes based on Horizon 2020 Data Management Manual (EC, 2020) will be provided.

Findable attribute refers to the possibility to make data discoverable via metadata or standard identification mechanisms. The metadata should support not only the project needs but as well potential re-use. Whenever possible already standardised metadata and data format should be selected and extended, if needed. If there are estimated significant benefits from simplifying the conventions they could be considered as well. A possibility to have multiple revisions of metadata and related data should result in a clear versioning system proposed in the data management plan.

Accessible attribute refers to a selection process of data that will be made openly available as default. If the data cannot be provided in open manner an explanation should be provided for such restriction. For open data it should be described how it will be published; open, standard and certified repositories are preferred to non-certified ones. If there is a specialized software needed to access and read the data such software should be preferably provided under open-source license. When the data is openly published it should be provided under well-defined open license.

Interoperability attribute requires that open and standardised data and metadata formats are compliant as much as possible with available open software applications. The attribute should guarantee open exchange of the data with other researchers, organisations and institutions.

Reusable attribute measures the re-usability of the data. The attribute can be affected with a selection of data license, time-frame and actual actuality of the data release, quality, usability of the data, etc. It is needless to say that the other three attributes can have considerable effect on the achieved level of re-usability.

6 Extended views

There are a number of extended views that could affect the data management. *Data security* is important both for the data collected, stored, processed and used in the project as well for the data shared outside the project. Security of the in-project use is covered by the deliverables D4.7, D4.8 and D4.9 on initial, revised and final secure consumer data management module (iFLEX D4.7, 2021, iFLEX D4.8, 2022, iFLEX D4.9, 2024). Security aspects of the sharing of the data are covered by the data management plan and revisions of this deliverable.

Ethical aspects cover legal and ethical issues that can have impact on data sharing. For the iFLEX project, the data privacy is of particular importance. According to the data management plan no personal data will be shared outside the project. All the shared data will be either not private or anonymized. The data management will include control over the sharing of data and approval will be needed to share the data. The approving process will be supported by Ethical Advisory Board (EAB) as is defined in the deliverable D10.2 (iFLEX D10.2, 2020).

There could be *other views* that should be considered as well, like national, sectorial, company, institutional or departmental procedures or policies related to data management. If there are any such views they should be considered and reported together with the data.

7 Data management process

The data management plan should consider all information provided in previous sections. A general process of the data management is presented in Figure 1, in the top line denoted with blue boxes. The process consists of the following phases:

- *Initialize*: the phase when the data management plan methodology is defined and process of data management initialised. This deliverable boosts the initialisation phase and defines necessary concepts and processes to start data management,
- *Assess*: the assess phase carefully monitors the phases of the data lifecycle as is presented in Figure 1. During the assessment a data management template is used to record information about the data passed through the lifecycle. The template is defined in Section 7.1. Together with the template the FAIR principles and Ethical and Security views are evaluated as well. The assessment is done by the project partners with closest understanding of the data under consideration. At each data management process cycle care will be taken to involve end users into a co-creation of the data management process. The co-creation involvement will be included in each cycle report,
- *Manage*: the management phase manages the data management process as well influences the data life-cycle stages. The process should be managed in a way to be efficient and lean. It should guide the data life-cycle stages and stimulate proper assessment of the data. Sharing of the data should be encouraged through internal assessment, selection and recommendation of potential repositories for publishing the data. The guiding is done through project general and technical meetings as well dedicated data workshops. The management will take care of control both of quality and quantity of the shared data as well in coordination with Ethics Advisory Board about security and privacy aspects of the shared data. The management phase triggers assessment phase before every reporting phase to reassess the data templates and to add potentially new data to the collection of the templates. Data Protection Impact Assessments will also be carried out. The management phase will be active constantly during the project lifetime,
- *Report*; the reporting phase is done at scheduled intervals. After this deliverable the next release of the Data Management Plan is expected at the end of the project.

7.1 Data management template

The data management template is a simple table based on initial deliverable D2.3 on Common iFLEX architecture (iFLEX D2.3, 2021), see the data summary in Table 2 for details. The D2.3 table reported the Data item name, description and data type. The summary table is for the data management purposes extended with a data identifier, changelog field, FAIR attributes, extended views, owner and status rows as is shown in Table 1. All the row(s) of the table combined present information on a potential data set considered in the project.

Table 1: The data management template

Field	Data set
Identifier	Unique identifier of the data set, consisting of combination of abbreviation and version number: ABBR-x.y
Name	The name of the dataset
Change log	Change log of the data set, includes the date of change and changes description
Description	The description of the dataset, similar to one provided in the deliverable D2.3 (iFLEX D2.3, 2021)
Type	The type of the dataset, similar to one provided in the deliverable D2.3 (iFLEX D2.3, 2021)

FAIR	Conformance to FAIR principles as discussed in Section 5, denoted with letters F, A, I, R, if the attribute is achieved.
Extended	Denotes a status of the Extended views, denoted with letters: • S: security of the exported data set provided • P: data privacy noted • A: the data set is anonymized • C: co-created dataset • O: other issues exist
Owner	The owner or caretaker of the dataset, one of the partners in the project
Status	Status if the dataset has been shared or not, together with the repository

The design of the table is deliberately simple to ease tracking the data sets assessed in the project. Not all data sets will reach the level to be shared. For the shared ones the template information will be extended to match target repository requirements. Extended dataset information together with information on repository is provided in Appendix 1.

7.2 Allocation of resources

Allocation of resources was limited to the manpower withheld within WP1 for the purpose of data management. Three man-months are allocated to JSI, authoring institution of this deliverable. The resources have been used for preparing the deliverables and for performing the data management tasks as have been laid out in the data management plan in Section 7. Potential costs of open access publishing have been accounted for in some of the partner's budget. The resources for long term preservation haven't been discussed.

8 Implementing the data management process

The data management process as has been described in Section 7 has been implemented in the Jira. Jira is a software tool used for issue tracking and project management[1]. In the project, Jira is used to track requirements in the technical work packages WP2, WP4, WP4, WP5 and WP6. An additional Jira project has been opened for the data management plan and the datasets within the project.

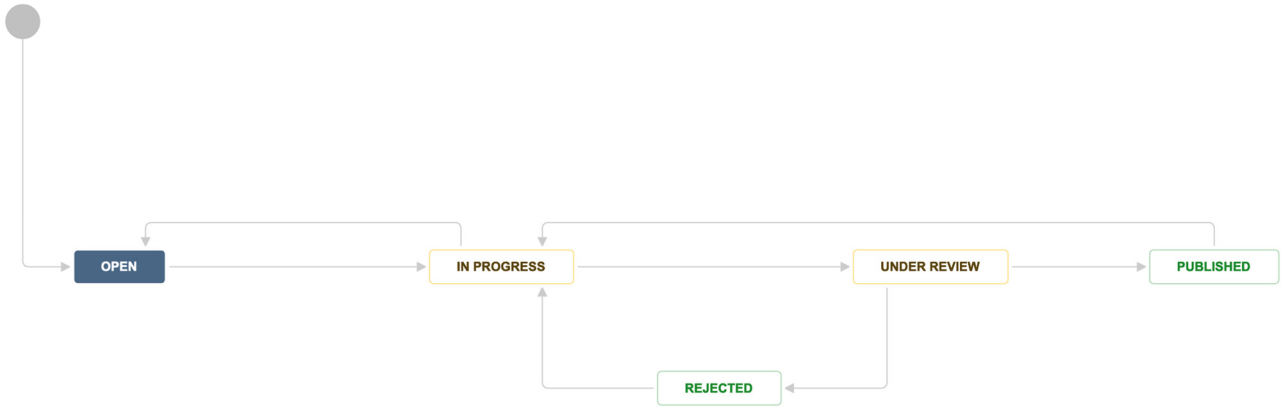

Figure 2: Data management process implementation in Jira

A workflow has been created for managing individual datasets in Jira. The workflow is presented in Figure 2. It consists of five possible states: open, in progress, under review, published and rejected. The states correspond to/implement/support the assess, manage and report phases of the data management plan process explained in Section 7. The open phase initialises the dataset and provides an initial assessment. The dataset gets into the in-progress state where the datasets are additionally assessed and evaluated through the work of the project. The data-lifecycle steps of processing, storing and usage as are presented in Figure 1 are carried out. The dataset gets into the under-review stage when the datasets are about to be shared with the general and professional public. In this stage, it is decided if the datasets could be shared and if the intended ways of sharing are appropriate and/or meet the FAIR principles as described in Section 5. A dataset can get rejected for sharing if it either could not be shared for privacy or commercial reasons or if the ways of sharing are not appropriate. In this case the dataset returns to the in-progress state or proceeds to the reporting state. If the dataset is in this state, it is considered to be shared according to data management plan principles as described in this deliverable.

[1] More information about Jira can be obtained form Wikipedia: https://en.wikipedia.org/wiki/Jira_(software)

9 Collected datasets

During the implementation of the data management plan 26 datasets have been collected. 10 unique datasets have been reported in the second phase and additional 16 datasets in the third phase. A summary of the datasets is reported in Table 2. The following fields are reported:

- Dataset: the dataset name
- Issue key: the dataset identifier
- Reporter: the partner reporting the dataset
- Extended attributes (SPACO): a set of extended attributes is reported, namely S - Security of the exported data set provided, P - Privacy of the dataset noted, A - Anonymized dataset, C - Co-created dataset and O - Other issues exist in the dataset, see also the template section 7.1
- FAIR: FAIR attributes are noted, characters stand as F – Findable, A – Accessible, I – Interoperable and R – Reusable, see also the template section 7.1
- Processing partners: noted are partners that are processing the dataset
- Short description: a short description of the dataset.
- Publish/Rejected: either the dataset is publishable or it is rejected for public publishing for certain reasons like privacy, security or other/commercial concerns.

Table 2: Collected datasets

Dataset	Issue key	Reporter	Extended attributes	FAIR	Processing partners	Short description	Published/ Rejected
Finnish pilot: Finnish Meteorological Institute weather forecast data	IFDMP-14	VTT		FAIR	CAVERION, VTT	The weather forecast data is necessary for Digital Twin Repository component to provide weather forecasts to be used by Automated Flexibility Management component.	P
Feedback from pilot users (Finland)	IFDMP-13	VTT	ACPS	I	VTT	It is important to take feedback from pilot user's into account when executing DR events and designing the next iterations of the iFLEX Assistants.	P
Finnish pilot BEMS measurement data	IFDMP-12	VTT	ACPS	I	AUEB, CAVERION, JSI, VTT	The data is needed for creating a digital twin of the apartment building.	P
Finland public survey 2021	IFDMP-11	IN-JET	P	I	IN-JET, VTT	Email addresses were used to select, identify and contact the winner of the prize draw.	R
Slovenian pilot HEMS measurement data	IFDMP-9	IJS	P	I	ECE, ICOM, JSI, VTT, AUEB	HEMS measured data presents an essential data in the project. Based on this data all the Digital Twin models are build, the data is used to provide optimal response calculated by Automated Flexibility Management module and is used to present the state of a household to the end user through End User Interface.	R
Slovenian pilot smart meter measurement data	IFDMP-8	IJS	P	I	ELE, ICOM, JSI, VTT, AUEB	Smart metering data is obtained directly from ELE DMS system and presents the basic data set the other datasets are checked to, like household data measurements.	R
Slovenian pilot ARSO weather data	IFDMP-7	IJS	O	I	ICOM, JSI, VTT	The weather data is essential for Digital Twin Repository component to provide predictions to be used by Automated Flexibility Management component. The data is usable as well for the End User Interface.	R
Slovenian pilot Open Weather Map Weather data	IFDMP-6	IJS	O	I	AUEB, HERON, ICOM, JSI, VTT	The weather data is essential for Digital Twin Repository component to provide predictions to be used by Automated Flexibility Management component. The data is usable as well for the End User Interface.	R

Dataset	Issue key	Reporter	Extended attributes	FAIR	Processing partners	Short description	Published/ Rejected
Heron pilot Open Weather Map Weather data	IFDMP-5	IJS	O	I	AUEB, HERON, ICOM, JSI, VTT	The weather data is essential for Digital Twin Repository component to provide predictions to be used by Automated Flexibility Management component. The data is usable as well for the End User Interface.	R
Heron pilot smart meter measurement data	IFDMP-4	IJS	P	I	AUEB, HERON, JSI, VTT	The data set represent consumption and related energy grid parameters measurements at high resolution of each pilot user smart meter. As such they are used in a number of primary use cases of the project.	R
Public survey data	IFDMP-15	ZPS	AS	FAIR	ECE, HERON, VTT, ZPS, IN-JET, AUEB	A survey among public related to personal behaviour and preferences in regards to energy saving and flexible resource, incentives for demand response programs and iFLEX application specific questions. The survey was done in all 3 pilot countries.	P
Slovenian pilot - End user workshop	IFDMP-16	ZPS	A	AR	ZPS, SCOM, ECE, ELE, JSI	Gathered feedback from Slovenian potential users about iFLEX business models and use cases, iFLEX incentives and reward mechanisms, iFLEX assistant application.	P
DPIA Slovenian pilot	IFDMP-17	IN-JET	A	FAI	IN-JET, JSI, ECE, ELE, SCOM, ZPS	The DPIA of the Slovenian pilot has assessed what privacy risks there are and the severity of those risks concerning the personal data collected and processed in the pilot.	R
DPIA Greek pilot	IFDPM-18	IN-JET	A	FAI	IN-JET, HERON, OPTIMUS, ICOM	The DPIA of the Greek pilot has assessed what privacy risks there are and the severity of those risks concerning the personal data collected and processed in the pilot.	R
DPIA Finnish pilot	IFDMP-19	IN-JET	A	FAI	IN-JET, VTT, CAVDRION, EMPOWER	The DPIA of the Finnish pilot has assessed what privacy risks there are and the severity of those risks concerning the personal data collected and processed in the pilot.	R
Survey for Finnish pilot participants	IFDMP-20	VTT	P	I	VTT	This dataset contains the pilot user feedback collected via on-line survey	P
Final survey for Finnish pilot participants	IFDMP-21	VTT	P	I	VTT	This dataset contains the pilot user final feedback collected via on-line survey	P
Finnish pilot (supermarket) BEMS measurement data	IFDMP-22	VTT	O	I	VTT	Data is used to simulate building energy consumption of a supermarket	R
Slovenian pilot - Pilot users data (pseudo-anonymized) for iFLEX app validation	IFDMP-23	JSI	SP	I	JSI	The complete personal data of pilot consumers is kept by the pilot host ECE and not shared among partners. For the validation purposes iFLEX partners are processing pseudo-anonymized data of pilot users to perform validation scenarios.	R
Slovenian pilot - Focus Groups Survey data	IFDMP-24	ZPS		FA	ZPS	Focus groups survey was accomplished in Slovenia in two regions (LJ, MB) with two types of consumers not involved with iFLEX project before. The aim was to get insights how consumers understand the energy transition and modern concepts that are approaching (e.g. demand response)	P
Greek pilot - PV data forecast	IFDMP-25	OPTIMUS	SO	I	OPTIMUS	The forecast data is a collection of 15 minutes forecast (Day-ahead market forecasts) of 500-kw PV located in Northern Greece which is used for calculation of flexibility request together with SCADA data.	R
Greek pilot - PV SCADA data	IFDMP-26	OPTIMUS	SO	I	OPTIMUS	The PV SCADA data presents power production in kWh from the 500kW PV power plant located in Greece reported on 15-minute interval.	R

Dataset	Issue key	Reporter	Extended attributes	FAIR	Processing partners	Short description	Published/ Rejected
Greek pilot - PV flexibility request data collection	IFDMP-27	OPTIMUS	SO	I	OPTIMUS	The flexibility request data collection is collection of requests to the DR aggregator describing needed flexibility in the next period.	R
Heron smart plug data	IFDMP-28	HERON	P	I	HERON, ICOM	This dataset reports on smart plug data collected in the Greek pilot	R
Questionnaires related to iFA EUI user experience	IFDMP-29	ICOM	A	FAR	ICOM	Online questionnaires following online end user usability test of the iFLEX Application. The goal of the questionnaires has been to improve ICOM application and to test user experience in general	P
Slovenian pilot - iFA App notification trials questionnaire	IFDMP-30	JSI	A	FA	ECE	A questionnaire collected after Slovenian pilot iFA App notification trials evaluating iFA App and iFA performance, usability and collecting general user feedback	P

An extended dataset report is provided in Appendix 1 where the datasets are reported in a Jira controlled export format. From the reported datasets, 9 are marked as *Published* (P) in the last column. The label denotes the state of the dataset as explained in Section 8. In our case, the label indicates that the dataset can be published according to the rules the project has proposed in this document, see Section 8 for details. Some partners can have a different view, i.e. VTT promotes the Published label to some of the datasets even if the dataset doesn't have clearance yet from their originating institution such as the IFDMP-12 BEMS data. In this case, VTT has asked the originator of the data for permission for publishing but no answer have been received yet. The same dataset has also been attributed with extended P – privacy attribute. This means, in case of publishing, some parts of the data will need to be removed from the published dataset before its publication. In general, 34 % of the datasets can be published without or with minor modifications.

10 Conclusions and future work

The deliverable presents basic guidelines for data management and introduces FAIR data management principles. It proposes a project-related data lifecycle and defines a corresponding data management process. To facilitate data assessment, a data management template has been introduced, defining a basic data summary extended with essential dataset attributes denoting privacy, security or other attributes, among the others. The data management process has been supported with a Jira tool which enabled the datasets collection and tracking of the datasets through different stages of the data management process.

The defined process, the template and the tools have enabled the project partners to collect 10 unique datasets in the second phase of the plan implementation and additional 16 in the third phase. In overall, 26 datasets have been collected and analyzed according to the rules, defined by the data management plan. 34 % of the reported datasets have been labeled as *Published*, denoting that the datasets could be published as provided or with minor modifications or restrictions. The rest of the datasets have got the label *Restricted*, which denotes that the datasets as such currently cannot be published beyond the project boundaries without major modifications. The most frequent reasons for restricting the publishing are privacy concerns and security/commercial concerns.

Overall, the work done in the data management task has shown that with the right information, understanding, process guidance and tools the project partners are able to keep track of the major datasets processed in the project and decide on the dataset potential for publication and reuse. The information gathered through the data management plan implementation will be valuable for the project partners even after the projectend. The collected information can guide the partners towards what needs to be focused on when deciding on the dataset publishing and give some examples how to overcome the considerations raised.

11 List of figures and tables

11.1 Figures

11.2 Tables

12 References

(iFLEX D2.1, 2021) Use cases and requirements. The iFLEX project deliverable D2.1, January 2021.

(iFLEX D2.3, 2021) Common architecture of iFLEX Framework. The iFLEX project deliverable D2.3, April 2021.

(iFLEX D2.4, 2022) Revised architecture of iFLEX Framework. The iFLEX project deliverable D2.4, May 2022.

(iFLEX D2.5, 2023) Final architecture of iFLEX Framework. The iFLEX project deliverable D2.5, August 2023.

(iFLEX D2.6, 2024) Report on user engagement and co-creation activities. The iFLEX project deliverable D2.6, April 2024.

(iFLEX D4.1, 2021) Inititial Resource Abstraction Interface. The iFLEX project deliverable D4.1, May 2021.

(iFLEX D4.2, 2022) Revised Resource Abstraction Interface. The iFLEX project deliverable D4.2, June 2022.

(iFLEX D7.1, 2021) Initial pilot specification. The iFLEX project deliverable D7.1, February 2021.

(iFLEX D7.2, 2022) Revise pilot specification. The iFLEX project deliverable D7.2, June 2022.

(iFLEX D7.3, 2022) Revise pilot specification. The iFLEX project deliverable D7.3, April 2023.

(iFLEX D7.5, 2022) Pre-pilot deployment and validation. The iFLEX project deliverable D7.5, April 2022.

(iFLEX D7.6, 2022) Small-scale pilot deployment and validation. The iFLEX project deliverable D7.6, March 2023.

(iFLEX D7.6, 2022) Large-scale pilot deployment and validation. The iFLEX project deliverable D7.6, May 2024.

(EC, 2020) Horizon 2020 Manual. [Online, accessed 26. 3. 2020] https://ec.europa.eu/research/participants/docs/h2020-funding-guide/cross-cutting-issues/open-access-data-management/data-management_en.htm

(iFLEX D10.1, 2020) D10.1 H - Requirement No. 1. The iFLEX project deliverable 10.1, December 2020.

(iFLEX D10.2, 2020) D10.2 POPD - Requirement No. 2. The iFLEX project deliverable 10.2, December 2020.

(iFLEX D4.7, 2021) Secure consumer data management module. The IFLEX project deliverable D4.7, November 2021.

(iFLEX D4.8, 2021) Revised secure consumer data management module. The IFLEX project deliverable D4.8, August 2022.

(iFLEX D4.9, 2021) Final secure consumer data management module. The IFLEX project deliverable D4.9, March 2024.

Appendix 1 Project datasets

[IFDMP-4] Heron pilot smart meter measurement data Created: 18/May/22 Updated: 08/May/24 Due: 31/May/23 Resolved: 08/May/24

Status:	Rejected		
Project:	iFlex Data Management Plan		
Component/s:	None		
Affects Version/s:	None		
Fix Version/s:	None		
Type:	Data Management Plan		
Reporter:	Dušan Gabrijelčič	**Assignee:**	Dušan Gabrijelčič
Resolution:	Done	**Votes:**	0
Labels:	None		
Attachments:	HP-SM-MD-0.1-data-samples.org		
Identifier:	HP-SM-MD-0.1		
Rationale:	The data set represent consumption and related energy grid parameters measurements at high resolution of each pilot user smart meter. As such they are used in a number of primary use cases of the project.		
FAIR:	I - Interoperable		
Extended attributes:	P - Privacy of the dataset noted		

Description

The dataset consists of measurements of Heron pilot
users smart meter data. The following quantities are measured:
- energy energy counter consumption in Watt-minute Wmin
- returned_energy energy returned to the grid in Watt-minute Wmin
- total total energy consumed in Wh Wh
- total_returned total energy returned to the grid in Wh Wh
- power instantaneous active power in Watts W
- reactive_power instantaneous reactive power in Watts W
- voltage grid voltage in Volts V
- current current in Amps A
- pf power factor (dimensionless) -

All the variables are collected at rate of one or up to 10
measurement per minute. The data is available as aggregates at 1
min, 15 min, 1 hour, 6 hours and a day resolution.

Comments

Comment by Dušan Gabrijelčič [08/May/24]

The sharing has been rejected due to the privacy concerns of the dataset.

[IFDMP-5] Heron pilot Open Weather Map Weather data Created: 18/May/22 Updated: 08/May/24 Due: 31/May/23 Resolved: 08/May/24

Status:	Rejected		
Project:	iFlex Data Management Plan		
Component/s:	None		
Affects Version/s:	None		
Fix Version/s:	None		
Type:	Data Management Plan		
Reporter:	Dušan Gabrijelčič	**Assignee:**	Dušan Gabrijelčič
Resolution:	Done	**Votes:**	0
Labels:	None		
Identifier:	HP-OWM-WD-0.1		
Rationale:	The weather data is essential for Digital Twin Repository component to provide predictions to be used by Automated Flexibility Management component. The data is usable as well for the End User Interface.		
FAIR:	I - Interoperable		
Extended attributes:	O - Other issues exist in the dataset		

Description

The dataset presents weather realization and forecast. The data originates from OpenWeatherMap (https://openweathermap.org/). The description of the dataset can be found at following location: https://openweathermap.org/api/one-call-3. The dataset is commercial so it cannot be redistributed further. This is the reason for O mark in SPACO section. The weather is collected for three locations in Greece: Athens, Thessaloniki and Volos.

Comments

Comment by Dušan Gabrijelčič [08/May/24]

Commercial dataset, cannot be shared

[IFDMP-6] Slovenian pilot Open Weather Map Weather data Created: 18/May/22 Updated: 08/May/24 Due: 31/May/23 Resolved: 08/May/24

Status:	Rejected		
Project:	iFlex Data Management Plan		
Component/s:	None		
Affects Version/s:	None		
Fix Version/s:	None		
Type:	Data Management Plan		
Reporter:	Dušan Gabrijelčič	**Assignee:**	Dušan Gabrijelčič
Resolution:	Done	**Votes:**	0
Labels:	None		
Identifier:	SP-OWM-WD-0.1		
Rationale:	The weather data is essential for Digital Twin Repository component to provide predictions to be used by Automated Flexibility Management component. The data is usable as well for the End User Interface.		
FAIR:	I - Interoperable		
Extended attributes:	O - Other issues exist in the dataset		

Description

The data set presents weather realization and forecast. The data originates from OpenWeatherMap (https://openweathermap.org/). The description of the dataset can be found at following location: https://openweathermap.org/api/one-call-3. The dataset is commercial so it cannot be redistributed further. This is the reason for O mark in SPACO section. The weather is collected for three locations in Slovenia: Celje, Nova cerkev and Petrovče.

Comments

Comment by Dušan Gabrijelčič [08/May/24]

Commercial dataset, cannot be shared.

[IFDMP-7] Slovenian pilot ARSO weather data Created: 18/May/22 Updated: 08/May/24 Due: 31/May/23 Resolved: 08/May/24

Status:	Rejected		
Project:	iFlex Data Management Plan		
Component/s:	None		
Affects Version/s:	None		
Fix Version/s:	None		
Type:	Data Management Plan		
Reporter:	Dušan Gabrijelčič	**Assignee:**	Dušan Gabrijelčič
Resolution:	Done	**Votes:**	0
Labels:	measurements, smart-metering, weather		
Identifier:	SP-ARSO-WD-0.1		
Rationale:	The weather data is essential for Digital Twin Repository component to provide predictions to be used by Automated Flexibility Management component. The data is usable as well for the End User Interface.		
FAIR:	I - Interoperable		
Extended attributes:	O - Other issues exist in the dataset		

Description

The dataset presents weather realization and forecast for the following variables: temperature, radiation and precipitation. The data is available in 1h resolution. Historic data is available from 2019. Forecast are available in 1h hour resolution for seven days ahead. The data is available for a number of transform stations in Celje region: Kostanjevica Krško, Ljubno Velenje, Mežica Slovenj Gradec, Planina Krško, Podsreda Krško, Vransko Velenje, Brežice Krško, Laško Celje, Mokronog Krško, Mozirje Velenje, Podlog Velenje, Ravne Slovenj Gradec, Rogaška Slatina Celje, Sevnica Krško, Slovenj Gradec, Vojnik Celje, Vuzenica Slovenj Gradec, Šentjur Celje. The dataset is commercial so it cannot be redistributed further. This is the reason for O mark in SPACO section.

Comments

Comment by Dušan Gabrijelčič [08/May/24]

Commercial dataset, cannot be shared.

[IFDMP-8] Slovenian pilot smart meter measurement data Created: 18/May/22 Updated: 08/May/24 Due: 31/May/23 Resolved: 08/May/24

Status:	Rejected		
Project:	iFlex Data Management Plan		
Component/s:	None		
Affects Version/s:	None		
Fix Version/s:	None		
Type:	Data Management Plan		
Reporter:	Dušan Gabrijelčič	**Assignee:**	Dušan Gabrijelčič
Resolution:	Done	**Votes:**	0
Labels:	measurements, smart-metering		
Identifier:	SP-SM-MD-0.1		
Rationale:	Smart metering data is obtained directly from ELE DMS system and presents the basic data set the other datasets are checked to, like household data measurements.		
FAIR:	I - Interoperable		
Extended attributes:	P - Privacy of the dataset noted		

Description

The dataset contains smart metering measurements at 15 minutes resolution for the pilot users in Celje region. The data is od D-1+ type, which means it is available with more than a day of delay. The following measurements are collected per pilot user: power consumed and power generated. The dataset includes also the consumption and generation from the network side on adjacent transformer stations. All the measurements are aggregated per 1 hour, 6 hours and a day for presentation purposes.

Comments

Comment by Dušan Gabrijelčič [08/May/24]

Cannot be shared due to privacy reasons.

[IFDMP-9] Slovenian pilot HEMS measurement data Created: 19/May/22 Updated: 08/May/24 Due: 31/May/23 Resolved: 08/May/24

Status:	Rejected		
Project:	iFlex Data Management Plan		
Component/s:	None		
Affects Version/s:	None		
Fix Version/s:	None		
Type:	Data Management Plan		
Reporter:	Dušan Gabrijelčič	**Assignee:**	Dušan Gabrijelčič
Resolution:	Done	**Votes:**	0
Labels:	household, measurements		
Identifier:	SP-HEMS-MD-0.1		
Rationale:	HEMS measured data presents an essential data in the project. Based on this data all the Digital Twin models are build, the data is used to provide optimal response calculated by Automated Flexibility Management module and is used to present the state of a household to the end user through End User Interface.		
FAIR:	I - Interoperable		
Extended attributes:	P - Privacy of the dataset noted		

Description

The data set presents complete measurements information from a household. The main group of measurements are from a heat pump, photovoltaic power plant and distribution smart meter. A least the distribution smart meter measurements from the meter I1 port needs to be presented, other datasets are optional. current time resolution is 5 minutes. More fain grain resolutions are expected, up to 1 minute.

- Heat pump data:
  + Outside temperature [°C], measured on outside unit of the heat pump
  + Thermostat temperature [°C], one or more circles inside the house
  + Produced heat energy [kWh],
  + Consumed electrical energy [kWh],
  + Water storage boiler temperature [°C],
  + Temperature of outgoing water circle [°C],
  + Temperature of incoming water circle [°C],
  + Virtual circuit temperature [°C],
- Photovoltaic power plant:
  + PV power [kW],
  + PV current per phases L1, L2, L3 [A]
  + PV voltage per phases L1, L2, L3 [V]
- Distribution smart meter:
  + Power [kW]
  + Current per phase [A]
  + Voltage per phase [V]

Comments

Comment by Dušan Gabrijelčič [08/May/24]

Cannot be shared due to privacy reasons.

[IFDMP-11] Finland public survey 2021 Created: 23/May/22 Updated: 08/May/24 Resolved: 08/May/24

Status:	Rejected		
Project:	iFlex Data Management Plan		
Component/s:	None		
Affects Version/s:	None		
Fix Version/s:	None		
Type:	Data Management Plan		
Reporter:	Trine F. Sørensen	**Assignee:**	Trine F. Sørensen
Resolution:	Done	**Votes:**	0
Labels:	Email		
Rationale:	Email addresses were used to select, identify and contact the winner of the prize draw.		
Extended attributes:	P - Privacy of the dataset noted		

Description

The Finnish public survey 2021 offered respondents to enter into a prize draw amongst completed surveys. To enter the prize draw, respondents had to insert their email address into the survey.

Comments

Comment by Dušan Gabrijelčič [08/May/24]

Cannot be shared due to privacy reasons.

[IFDMP-12] Finnish pilot BEMS measurement data Created: 25/May/22 Updated: 30/Apr/24 Due: 25/May/23 Resolved: 30/Apr/24

Status:	Published		
Project:	iFlex Data Management Plan		
Component/s:	None		
Affects Version/s:	None		
Fix Version/s:	None		
Type:	Data Management Plan		
Reporter:	Jussi Kiljander	**Assignee:**	Jussi Kiljander
Resolution:	Done	**Votes:**	0
Labels:	None		
Rationale:	The data is needed for creating a digital twin of the apartment building.		
FAIR:	I - Interoperable		
Extended attributes:	S - Security of the exported data set provided, P - Privacy of the dataset noted, A - Anonymized dataset, C - Co-created dataset		

Description

This dataset contains the data collected from the pilot building via building automation system. Following attributes are collected in the dataset:
- Electricity consumption for the whole building (heat pump, elevator, common sauna, common area lighting, ventilation)
- Control commands sent to the building HVAC system (heating water temperature set point, heat pump control, ventilation control)
- District heating consumption and current power
- Average, minimum and maximum room temperature.
-Space heating water temperatures, measurements from incoming and outcoming points
-Outdoor temperature of the building

Comments

Comment by Dušan Gabrijelčič [08/May/24]

Could be published. We are waiting BEMS owner Hoax to confirm the publishing. Some of the data has privacy concerns and could be removed from the dataset.

[IFDMP-13] Feedback from pilot users (Finland) Created: 25/May/22 Updated: 29/Apr/24 Due: 25/May/23 Resolved: 29/Apr/24

Status:	Published		
Project:	iFlex Data Management Plan		
Component/s:	None		
Affects Version/s:	None		
Fix Version/s:	None		
Type:	Data Management Plan		
Reporter:	Jussi Kiljander	**Assignee:**	Jussi Kiljander
Resolution:	Done	**Votes:**	0
Labels:	None		
Rationale:	It is important to take feedback from pilot user's into account when executing DR events and designing the next iterations of the iFLEX Assistants.		
FAIR:	I - Interoperable		
Extended attributes:	S - Security of the exported data set provided, P - Privacy of the dataset noted, A - Anonymized dataset, C - Co-created dataset		

Description

This dataset contains the pilot user feedback collected via the End-user interface. The dataset contains following attributes:
- Thermal comfort feedback
- Common feedback (bugs, proposal for new features, etc.)

Comments

Comment by Dušan Gabrijelčič [08/May/24]

Could be published.

[IFDMP-14] Finnish pilot: Finnish Meteorological Institute weather forecast data Created: 25/May/22 Updated: 30/Apr/24 Resolved: 30/Apr/24

Status:	Published		
Project:	iFlex Data Management Plan		
Component/s:	None		
Affects Version/s:	None		
Fix Version/s:	None		
Type:	Data Management Plan		
Reporter:	Jussi Kiljander	**Assignee:**	Jussi Kiljander
Resolution:	Done	**Votes:**	0
Labels:	weather		
Rationale:	The weather forecast data is necessary for Digital Twin Repository component to provide weather forecasts to be used by Automated Flexibility Management component.		
FAIR:	F - Findable, A - Accessible, I - Interoperable, R - Reusable		
Sharing repository:	https://ba.vtt.fi/cox/1/wgw/forecast/		

Description

This dataset contains Finnish Meteorological Institute weather forecast data using Harmonie and Hirlam weather models in various locations in Finland. Some of the most important data points in the dataset:
*Pressure
*Temperature
*Dewpoint
*Humidity
*Windspeed
*WindDirection
*TotalCloudCover
*RadiationGlobal

Comments

Comment by Dušan Gabrijelčič [08/May/24]

Could be published.

[IFDMP-15] Public survey data Created: 22/Jun/23 Updated: 08/May/24 Resolved: 08/May/24

Status:	Published		
Project:	iFlex Data Management Plan		
Component/s:	None		
Affects Version/s:	None		
Fix Version/s:	None		
Type:	Data Management Plan		
Reporter:	Dušan Gabrijelčič	**Assignee:**	Dušan Gabrijelčič
Resolution:	Done	**Votes:**	0
Labels:	User_co-creation		
Identifier:	UE-Public.01		
Rationale:	The data was used to better design and implement iFLEX Use Cases, iFLEX mobile application and business models.		
FAIR:	F - Findable, A - Accessible, I - Interoperable, R - Reusable		
Extended attributes:	S - Security of the exported data set provided, A - Anonymized dataset		
Sharing repository:	https://teams.microsoft.com/		

Description

We made a survey among public related to personal behavior and preferences in regards to energy saving and flexible resource, incentives for demand response programs and iFLEX application specific questions. The survey was done in all 3 pilot countries. The pool of participants was partly preselected and partly open. The answers are anonymous. The tool that was used for a public survey was Survey Monkey. The answers were used to better design and implement iFLEX Use Cases, iFLEX mobile application and business models.

Link to data: https://vttgroup.sharepoint.com/:f:/r/sites/pp_lc-sc3-ec-3-2020/Shared%20Documents/General/Work%20in%20Progress/WP7%20Piloting%20and%20validation/Pilot%20Validation%20-%20PHASE%201/End-user%20validation/Public%20survey%202021/Public%20survey%202021%20DATA?csf=1&web=1&e=xMuF10

Comments

Comment by Dušan Gabrijelčič [08/May/24]

The dataset could be published.

[IFDMP-16] Slovenian pilot - End user workshop Oct 2022 Created: 22/Jun/23 Updated: 08/May/24 Resolved: 08/May/24

Status:	Published		
Project:	iFlex Data Management Plan		
Component/s:	None		
Affects Version/s:	None		
Fix Version/s:	None		
Type:	Data Management Plan		
Reporter:	Dušan Gabrijelčič	**Assignee:**	Dušan Gabrijelčič
Resolution:	Done	**Votes:**	0
Labels:	User_co-creation		
Identifier:	SP-UE-2022.01		
Rationale:	Based on SLO users further develop iFLEX assistant application, business models and incentives mechanisms. Recruit new pilot users for phase 2 and 3.		
FAIR:	A - Accessible, R - Reusable		
Extended attributes:	A - Anonymized dataset		
Sharing repository:	https://vttgroup.sharepoint.com/		

Description

Gathered feedback from Slovenian potential users about iFLEX business models and use cases, iFLEX incentives and reward mechanisms, iFLEX assistant application. Results were used to develop iFLEX solution in Phase 2 according to user preferences and needs. Besides the workshop there was also a recruiting of new pilot users after the workshop.
Link to data: https://vttgroup.sharepoint.com/:f:/r/sites/pp_lc-sc3-ec-3-2020/Shared%20Documents/General/Work%20in%20Progress/WP2%20User-centric%20service%20and%20system%20design/T2.4%20Coordination%20of%20user%20engagement%20%26%20co-creation%20activities/Workshop%20SLO%20Pilot%20(27.10.2022)?csf=1&web=1&e=L36SN7

Comments

Comment by Dušan Gabrijelčič [08/May/24]

The dataset could be published.

[IFDMP-17] DPIA Slovenian pilot Created: 20/Mar/24 Updated: 08/May/24 Resolved: 08/May/24

Status:	Rejected		
Project:	iFlex Data Management Plan		
Component/s:	None		
Affects Version/s:	None		
Fix Version/s:	None		
Type:	Data Management Plan		
Reporter:	Trine F. Sørensen	**Assignee:**	Trine F. Sørensen
Resolution:	Done	**Votes:**	0
Labels:	None		
Identifier:	DPIA-SLO		
Rationale:	Data Protection Impact Assessment (DPIA) to assess the risk associated with the collection and processing of personal data in the Slovenian pilot.		
FAIR:	F - Findable, A - Accessible, I - Interoperable		
Extended attributes:	A - Anonymized dataset		
Sharing repository:	https://vttgroup.sharepoint.com/		

Description

The DPIA of the Slovenian pilot has assessed what privacy risks there are and the severity of those risks concerning the personal data collected and processed in the pilot. The DPIA is reported in D1.10 Annual Compliance Monitoring Report 1. Updates to the DPIA are reported in D1.11 and D1.12.

Comments

Comment by Dušan Gabrijelčič [08/May/24]

The DPIA is published but in a confidential report, see the deliverable D1.10. For this reason, is rejected as being not publishable in general.

[IFDMP-18] DPIA Greek pilot Created: 20/Mar/24 Updated: 08/May/24 Resolved: 08/May/24

Status:	Rejected		
Project:	iFlex Data Management Plan		
Component/s:	None		
Affects Version/s:	None		
Fix Version/s:	None		
Type:	Data Management Plan		
Reporter:	Trine F. Sørensen	**Assignee:**	Trine F. Sørensen
Resolution:	Done	**Votes:**	0
Labels:	None		
Identifier:	DPIA-GRE		
Rationale:	Data Protection Impact Assessment (DPIA) to assess the risk associated with the collection and processing of personal data in the Greek pilot.		
FAIR:	F - Findable, A - Accessible, I - Interoperable		
Extended attributes:	A - Anonymized dataset		
Sharing repository:	https://vttgroup.sharepoint.com/		

Description

The DPIA of the Greek pilot has assessed what privacy risks there are and the severity of those risks concerning the personal data collected and processed in the pilot. The DPIA is reported in D1.10 Annual Compliance Monitoring Report 1. Updates to the DPIA are reported in D1.11 and D1.12.

Comments

Comment by Dušan Gabrijelčič [08/May/24]

The DPIA is published but in a confidential report, see the deliverable D1.10. For this reason, is rejected as being not publishable in general.

[IFDMP-19] DPIA Finnish pilot Created: 20/Mar/24 Updated: 08/May/24 Resolved: 08/May/24

Status:	Rejected		
Project:	iFlex Data Management Plan		
Component/s:	None		
Affects Version/s:	None		
Fix Version/s:	None		
Type:	Data Management Plan		
Reporter:	Trine F. Sørensen	**Assignee:**	Trine F. Sørensen
Resolution:	Done	**Votes:**	0
Labels:	None		
Identifier:	DPIA-FIN		
Rationale:	Data Protection Impact Assessment (DPIA) to assess the risk associated with the collection and processing of personal data in the Finnish pilot.		
FAIR:	F - Findable, A - Accessible, I - Interoperable		
Extended attributes:	A - Anonymized dataset		
Sharing repository:	https://vttgroup.sharepoint.com/		

Description

The DPIA of the Finnish pilot has assessed what privacy risks there are and the severity of those risks concerning the personal data collected and processed in the pilot. The DPIA is reported in D1.10 Annual Compliance Monitoring Report 1. Updates to the DPIA are reported in D1.11 and D1.12.

Comments

Comment by Dušan Gabrijelčič [08/May/24]

The DPIA is published but in a confidential report, see the deliverable D1.10. For this reason, is rejected as being not publishable in general.

[IFDMP-20] Survey for Finnish pilot participants Created: 26/Mar/24 Updated: 29/Apr/24 Resolved: 29/Apr/24

Status:	Published		
Project:	iFlex Data Management Plan		
Component/s:	None		
Affects Version/s:	None		
Fix Version/s:	None		
Type:	Data Management Plan		
Reporter:	Jussi Kiljander	**Assignee:**	Jussi Kiljander
Resolution:	Done	**Votes:**	0
Labels:	None		
Rationale:	It is important to ask for feedback from pilot user's when executing DR events and designing the user interface and the next iterations of the iFLEX Assistants.		
FAIR:	I - Interoperable		
Extended attributes:	P - Privacy of the dataset noted		

Description

This dataset contains the pilot user feedback collected via on-line survey. The dataset contains feedback on the following:

- user interface
- data provided through the user interface
- the effect of data on energy awareness
- living comfort

Comments

Comment by Dušan Gabrijelčič [08/May/24]

The dataset could be published if the privacy concerns are resolved.

[IFDMP-21] Final survey for Finnish pilot participants Created: 26/Mar/24 Updated: 30/Apr/24 Resolved: 30/Apr/24

Status:	Published		
Project:	iFlex Data Management Plan		
Component/s:	None		
Affects Version/s:	None		
Fix Version/s:	None		
Type:	Data Management Plan		
Reporter:	Jussi Kiljander	**Assignee:**	Jussi Kiljander
Resolution:	Done	**Votes:**	0
Labels:	None		
Rationale:	It is important to ask for feedback and experiences from pilot users in the end phase of the project.		
FAIR:	I - Interoperable		
Extended attributes:	P - Privacy of the dataset noted		

Description

This dataset contains the pilot user feedback collected via on-line survey. The dataset contains the following:

- feedback on user interface
- evaluation of data provided through the user interface
- evaluation of the development of energy awareness during the pilot
- evaluation of the impact of the control commands on living comfort
- feedback on iFLEX project itself

Comments

Comment by Dušan Gabrijelčič [08/May/24]

The dataset could be published if the privacy concerns are resolved.

[IFDMP-22] Finnish pilot (supermarket) BEMS measurement data Created: 26/Mar/24 Updated: 30/Apr/24 Resolved: 30/Apr/24

Status:	Rejected		
Project:	iFlex Data Management Plan		
Component/s:	None		
Affects Version/s:	None		
Fix Version/s:	None		
Type:	Data Management Plan		
Reporter:	Jussi Kiljander	**Assignee:**	Jussi Kiljander
Resolution:	Done	**Votes:**	0
Labels:	None		
Rationale:	Data is used to simulate building energy consumption		
FAIR:	I - Interoperable		
Extended attributes:	O - Other issues exist in the dataset		

Description

The following data are collected from the pilot building via building automation system:
- Total electricity consumption
- Electricity consumption of the heat pump system
- Temperature of indoor air, heating system water temperature (in and out), floor heating water temperature (in and out), heat pump system heat exchanger temperature points (in and out), hot water tank.
- Set points for temperature of indoor air, returning water temperature
- Energy meter data, measuring the energy consumed by the heating system

Comments

Comment by Dušan Gabrijelčič [08/May/24]

The dataset cannot be published due to security/commercial concerns

[IFDMP-23] Slovenian pilot - Pilot users data (pseudo-anonymized) for iFLEX app validation Created: 09/Apr/24 Updated: 08/May/24 Resolved: 08/May/24

Status:	Rejected		
Project:	iFlex Data Management Plan		
Component/s:	None		
Affects Version/s:	None		
Fix Version/s:	None		
Type:	Data Management Plan		
Reporter:	Dušan Gabrijelčič	**Assignee:**	Dušan Gabrijelčič
Resolution:	Done	**Votes:**	0
Labels:	None		
Rationale:	To complete the validation of the iFLEX solution it is mandatory to involve end consumers. To perform validation tasks, it is mandatory to keep and manage pseudo anonymized data of pilot users and their equipment (e.g. HEMS ID, Home equipment, preferences, etc.).		
FAIR:	I - Interoperable		
Extended attributes:	S - Security of the exported data set provided, P - Privacy of the dataset noted		

Description

The complete personal data of pilot consumers is kept by the pilot host ECE and not shared among partners. For the validation purposes iFLEX partners are processing pseudo-anonymized data of pilot users to perform validation scenarios. This data includes: unique ID of the household or HEMS, data about household equipment (e.g. digital meter, heat pump).
Consumer pseudo-anonymized data is not accessible outside the project; it is kept and managed by iFLEX pilot partners.

Comments

Comment by Dušan Gabrijelčič [08/May/24]

The data has security and privacy implications and won’t be published.

[IFDMP-24] Slovenian pilot - Focus Groups Survey data Created: 09/Apr/24 Updated: 08/May/24 Resolved: 08/May/24

Status:	Published		
Project:	iFlex Data Management Plan		
Component/s:	None		
Affects Version/s:	None		
Fix Version/s:	None		
Type:	Data Management Plan		
Reporter:	Dušan Gabrijelčič	**Assignee:**	Dušan Gabrijelčič
Resolution:	Done	**Votes:**	0
Labels:	None		
Rationale:	The aim was to get insights how consumers understand the energy transition and modern concepts that are approaching (e.g. demand response) and how they see iFLEX solution would fit to their needs. Results were used in phase 3.		
FAIR:	F - Findable, A - Accessible		

Description

Focus groups survey was accomplished in Slovenia in two regions (LJ, MB) with two types of consumers not involved with iFLEX project before. The aim was to get insights how consumers understand the energy transition and modern concepts that are approaching (e.g. demand response) and how they see iFLEX solution would fit to their needs.
Consumers were anonymous to iFLEX project, no personal data was shared within iFLEX project.
The data is available in final report, presenting statistic and findings through graphics, structured descriptions and patterns and general description. It can be accessed here: https://vttgroup.sharepoint.com/:b:/r/sites/pp_lc-sc3-ec-3-2020/Shared%20Documents/General/Work%20in%20Progress/WP2%20User-centric%20service%20and%20system%20design/T2.4%20Coordination%20of%20user%20engagement%20%26%20co-creation%20activities/Focus%20Groups%20survey%202023%20(SLO)/iFlex_FocusG_Report_A4_V5.pdf?csf=1&web=1&e=L65iPs

Comments

Comment by Dušan Gabrijelčič [08/May/24]

The dataset could be published since it has no security or privacy concerns.

[IFDMP-25] Greek pilot - PV data forecast Created: 19/Apr/24 Updated: 08/May/24 Resolved: 08/May/24

Status:	Rejected		
Project:	iFlex Data Management Plan		
Component/s:	None		
Affects Version/s:	None		
Fix Version/s:	None		
Type:	Data Management Plan		
Reporter:	Dušan Gabrijelčič	**Assignee:**	Dušan Gabrijelčič
Resolution:	Done	**Votes:**	0
Labels:	A&M		
Identifier:	OPT-PV-FOR-0.2		
Rationale:	The PV forecast is needed for calculation of a flexibility request to DR aggregator.		
FAIR:	I - Interoperable		
Extended attributes:	S - Security of the exported data set provided O - Other issues exist in the dataset		

Description

The forecast data is a collection of 15 minutes forecast (Day-ahead market forecasts) of 500-kw PV located in Northern Greece which is used for calculation of flexibility request together with SCADA data.

Comments

Comment by Dušan Gabrijelčič [08/May/24]

The dataset won’t be published due to security/commercial concerns.

[IFDMP-26] Greek pilot - PV scada data Created: 19/Apr/24 Updated: 08/May/24 Resolved: 08/May/24

Status:	Rejected		
Project:	iFlex Data Management Plan		
Component/s:	None		
Affects Version/s:	None		
Fix Version/s:	None		
Type:	Data Management Plan		
Reporter:	Dušan Gabrijelčič	**Assignee:**	Dušan Gabrijelčič
Resolution:	Done	**Votes:**	0
Labels:	A&M		
Identifier:	OPT-PV-SCADA-0.2		
Rationale:	PV SCADA data is used to calculate a flexibility request to a DR aggregator		
FAIR:	I - Interoperable		
Extended attributes:	S - Security of the exported data set provided O - Other issues exist in the dataset		

Description

The PV SCADA data presents power production in kWh from the 500kW PV power plant located in Greece reported on 15-minute interval.

Comments

Comment by Dušan Gabrijelčič [08/May/24]

The dataset won't be published due to security/commercial concerns.

[IFDMP-27] Greek pilot - PV flexibility request data collection Created: 19/Apr/24 Updated: 08/May/24 Resolved: 08/May/24

Status:	Rejected		
Project:	iFlex Data Management Plan		
Component/s:	None		
Affects Version/s:	None		
Fix Version/s:	None		
Type:	Data Management Plan		
Reporter:	Dušan Gabrijelčič	**Assignee:**	Dušan Gabrijelčič
Resolution:	Done	**Votes:**	0
Labels:	None		
Identifier:	OPT-PV-FLEX-0.2		
Rationale:	The flexibility request data collection is collection of requests to the DR aggregator describing needed flexibility in the next period.		
FAIR:	I - Interoperable		
Extended attributes:	S - Security of the exported data set provided O - Other issues exist in the dataset		

Description

The description provides details on a creation of a flexibility request. The dataset contains a collection of such requests over the time. The calculation is performed as follows. Every 15 min, we collect a) the most recent SCADA measurements and b) the most recent PV generation forecast, which are available in our database. This procedure takes place in XX:02, XX:17, XX:32: XX:47 of every hour of the day, and refers to the data of the previous 15-min interval (i.e. XX:00, XX:15, XX:30, XX:45, respectively). Based on the previous data availability, we calculate the 15-min percentage forecast error, as follows: Historical Forecast Error_15min =(Forecast-SCADA)/Forecast in [%]. For the first 15-min interval that follows after a 30-min period, we calculate the following initial flexibility request: Flexibility request_initial = Forecast_next_15min * Historical Forecast Error_15min.

Comments

Comment by Dušan Gabrijelčič [08/May/24]

The dataset won’t be published due to security/commercial concerns.

[IFDMP-28] Heron smart plug data Created: 26/Apr/24 Updated: 08/May/24 Resolved: 08/May/24

Status:	Rejected		
Project:	iFlex Data Management Plan		
Component/s:	None		
Affects Version/s:	None		
Fix Version/s:	None		
Type:	Data Management Plan		
Reporter:	Dušan Gabrijelčič	**Assignee:**	Dušan Gabrijelčič
Resolution:	Done	**Votes:**	0
Labels:	None		
Identifier:	HP-SP-0.1		
Rationale:	This dataset reports on smart plug data collected in the Greek pilot.		
FAIR:	I - Interoperable		
Extended attributes:	P - Privacy of the dataset noted		

Description

The dataset consists of a smart plug data, containing:
- power in Watts (W)
- energy in Watt minutes (Wmin)

The dataset has been collected from begging of 2021 till the end of the project.

Comments

Comment by Dušan Gabrijelčič [08/May/24]

The dataset won't be published due to privacy concerns.

[IFDMP-29] Questionnaires related to iFA EUI user experience Created: 26/Apr/24 Updated: 08/May/24 Resolved: 08/May/24

Status:	Published		
Project:	iFlex Data Management Plan		
Component/s:	None		
Affects Version/s:	None		
Fix Version/s:	None		
Type:	Data Management Plan		
Reporter:	Dušan Gabrijelčič	**Assignee:**	Dušan Gabrijelčič
Resolution:	Done	**Votes:**	0
Labels:	None		
Identifier:	ICOM-QUEST-0.1		
Rationale:	Online questionnaires following online end user usability test of the iFLEX Application. The goal of the questionnaires has been to improve ICOM application and to test user experience in general.		
FAIR:	F - Findable, A - Accessible, R - Reusable		
Extended attributes:	A - Anonymized dataset		

Description

The dataset consists of four sets of questionnaires related to the end user experience of the end user interface online testing. The questionnaires have been collected in Slovenian and Greek pilot, in each pilot twice. The questionnaires have been collected through online means, e.g., Google forms have been used for collection.

The format/content of the questionnaire was the same in the both pilots.

The questionnaires have been published in iFLEX public deliverables D7.5 and D7.6. Related IFA EUI documentation is available as well in D3.4 and D3.5 deliverables of the project.

Comments

Comment by Dušan Gabrijelčič [08/May/24]

The dataset could be published.

[IFDMP-30] Slovenian pilot - iFA App notification trials questionnaire Created: 08/May/24 Updated: 08/May/24 Resolved: 08/May/24

Status:	Published		
Project:	iFlex Data Management Plan		
Component/s:	None		
Affects Version/s:	None		
Fix Version/s:	None		
Type:	Data Management Plan		
Reporter:	Dušan Gabrijelčič	**Assignee:**	Dušan Gabrijelčič
Resolution:	Done	**Votes:**	0
Labels:	None		
Identifier:	SP-IFA-QEST-1		
Rationale:	A questionnaire collected after Slovenian pilot iFA App notification trials evaluating iFA App and iFA performance, usability and collecting general user feedback.		
FAIR:	F - Findable, A - Accessible		
Extended attributes:	A - Anonymized dataset		

Description

A questionnaire collected after Slovenian pilot iFA App notification trials evaluating iFA App and iFA performance, usability and collecting general user feedback. The questionnaire was semi-structured, collected through individual interviews with the pilot users.

Comments

Comment by Dušan Gabrijelčič [08/May/24]

The questionnaire can be published.