Intelligent Assistants for Flexibility Management (Grant Agreement No 957670)

D1.2 Revised data management plan

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1.1	Dušan Gabrijelčič (JSI)	2022-06-02	A number of small updates to answer reviewers' comments and suggestions. Few more deliverable references have been added

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Trine F. Sørensen (IN-JET)	2022-06-01	Minor suggestion for improvements and corrections
Roman Tomažič (ZPS)	2022-06-02	Minor suggestion for improvements and corrections

Table of Contents:

1 Executive summary

The deliverable presents the iFLEX project revised 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 current work on iFLEX Assistant architecture reported in D2.3 (iFLEX D2.3, 2021).

The deliverable advances the project data life-cycle with a proposal of data management process. The process has four phases: initialization, assessment, management and reporting. The proces is iterative and will produce additional revision of the data management plan besides this deliverable and initial version of the deliverable. The process is augmented with a simple data management template which will be used to document data sets addressed by the project. The template extends the current data summary as is reported in the deliverable D2.3 (iFLEX D2.3, 2021).

The initialisation 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. All three other phases have started through the work proposed in the deliverable.

In the second phase the data managment plan has been implemented. A project Jira tool has been utilized to support the data management process. The collection and initial assessment of the datasets processed in the project has been perfomed and is reported in the deliverable. In the next phase of the project the datasets will be further evaluated during regular project work and their status, if updated or changed, will be duly noted. Additional datasets will be added if identified. Evaluation of possibility for reporting and sharing the datasets will be performed and reported in the next version of the deliverable.

2 Introduction

This deliverable presents the iFLEX project data management plan. The document has a goal of initiating the work on data management and setting the general guiding principles for the work. The document 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 lifespan.

In the second phase the deliverable has been extended with a report on data managment plan implementation and datasets that are curently processed in the project.

2.1 Context and scope

The deliverable is the second of three deliverables that will be provided during the project at M6, M18 and M36 of the project. The context of the first version of the deliverable were early stages of the development in the project. A deliverable D2.1 (iFLEX D2.1, 2021) on use cases and requirements has provided a general scope of the project work. A deliverable D2.3 (iFLEX D2.3, 2021), has provided an initial common architecture of the iFLEX framework. Initial pilot specification has been provided in the deliverable D7.1 (iFLEX D7.1, 2021), which has given first insight into the data that will be 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 detailled in the 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 managment plan and on collected and initially assesed datasets. The source of the work were 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).

2.2 Content and structure

The deliverable introduces first general guiding principles in Section 3 and 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 allocation of resources in the project to data management explained. In Section 8 the implementation of the data managment plan is reported together with collected and initially assessed datasets. Finally, conclusions and future work are given in Section 9.

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

The deliverable D1.2 has been updated from the deliverable D1.1 in the following:

- Section 8 on the data managment 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.

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 will provide current view on the project data life-cycle in Section 4 and data summary in Section **Error! Reference source not found.**. 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 life-cycle in yellow and the data management plan in blue. In this section only the data life-cycle will be explained, while the data management plan part will be addressed in Section 7.

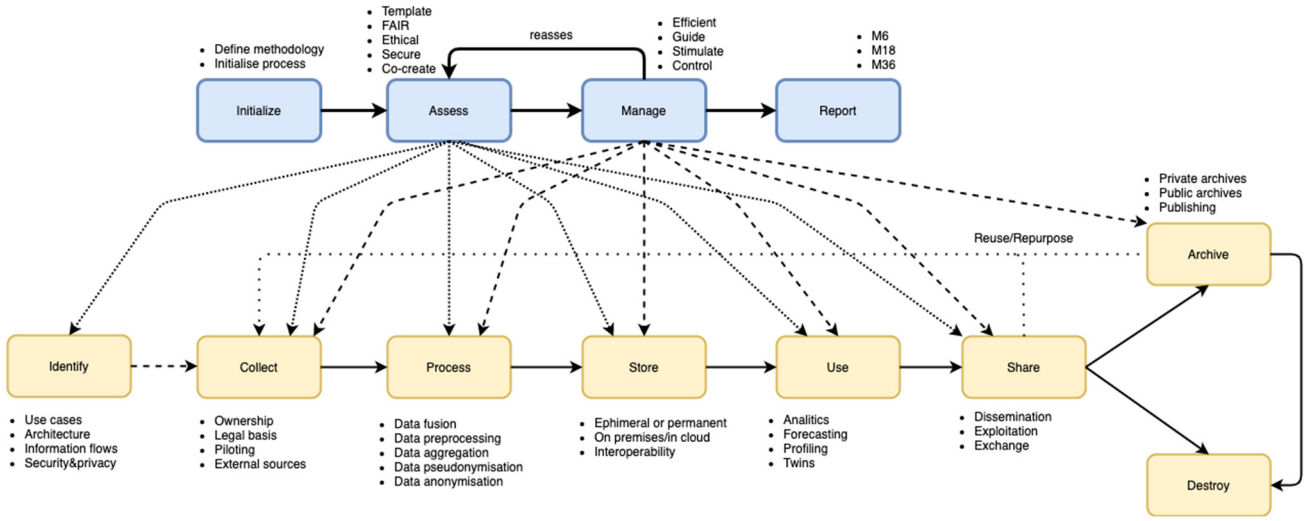

Figure 1: iFLEX project Data life-cycle and management process

The data life-cycle 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 D.24 (iFLEX D2.4, 2022),
- *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 life-cycle beyond identify phase is defined as common life-cycle 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 specification has 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 or CO2 emission data. The pilot specification has been further updated in the second revision of the pilot specification D7.2 (iFLEX D7.2, 2021). The inputs discussed had lead to collection of the datasets as are summarised in Section 8.1 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 the 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 a private storage when the storage is under control of the data owner or the data controller or a 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 needs 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 data export can be reused or repurposed in another data life-cycle 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 with 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 at well.

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 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 deliverable D4.7 on Secure consumer data management module (iFLEX D4.7, 2021). Security aspects of the sharing of the data will be 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 life-cycle as is presented in Figure 1. During the assessment a data management template is used to record information about the data passed through the life-cycle. 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 of the project.

7.1 Data management template

The data management template is a simple table extending the data summary initial table as introduced in the data summary Section **Error! Reference source not found.**. The summary table is extended with a data identifier, FAIR, Extended views, owner and status rows as is shown in Table 1. The column(s) of the table present one or more data sets considered in the project. The table could be split in multiple tables.

Table 1: The data management template

Field	Data set
Column 1 text	Column 2 text
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 will be provided in an appendix of one of revisions of this deliverable.

7.2 Allocation of resources

Current allocation of resources is 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 will be 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 yet.

8 Implementing the data management process

The data management process as has been described in Section 7 has been implemented in 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.

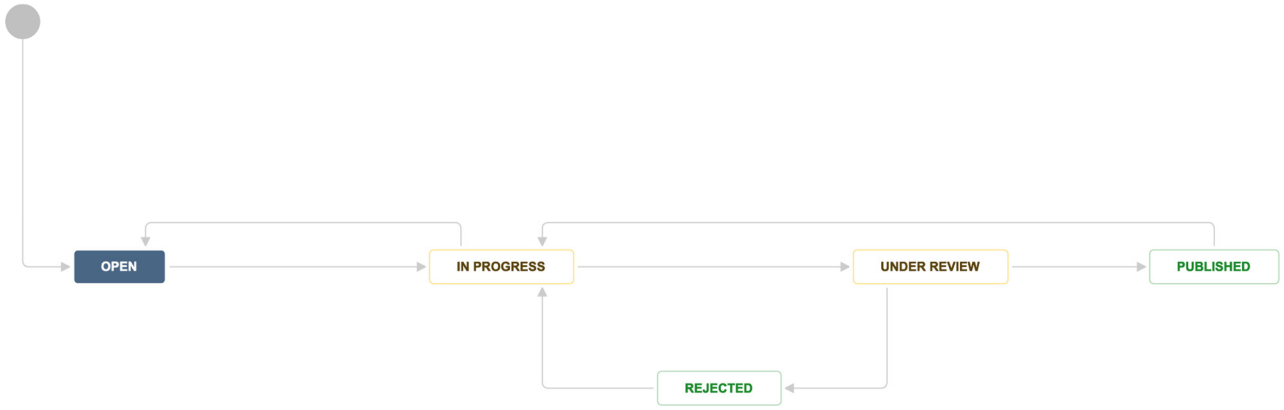

Figure 2: Data management process implementation in Jira

A workflow has been created for managing individual datasets in Jira. The workflow is presented in Figure 2. It consists of possible five 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 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.

8.1 Collected datasets

In the initial phase of the data management plan 11 datasets have been collected. A datasets summary 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.

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

Table 2: Collected datasets

Dataset	Issue key	Reporter	Extended attributes	FAIR	Processing partners	Short description
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.
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.
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.
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.
Slovenian pilot smart meter measurement data	IFDMP-10	IJS	P	I	ELE, ICOM, JSI, VTT	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.
Slovenian pilot HEMS measurement data	IFDMP-9	IJS	P	I	ECE, ICOM, JSI, VTT	HEMS mesured 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.
Slovenian pilot smart meter measurement data	IFDMP-8	IJS	P	I	ICOM, JSI, VTT	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.
Slovenian pilot ARSO weather data	IFDMP-7	IJS	O	I	ICOM, JSI, VTT	The wether data is essential for Digital Twin Repository component to provide predictions to be used by Automated Flexibility Managment component. The data is usable as well for the End User Interface.
Slovenian pilot Open Weather Map Weather data	IFDMP-6	IJS	O	I	AUEB, HERON, ICOM, JSI, VTT	The wether data is essential for Digital Twin Repository component to provide predictions to be used by Automated Flexibility Managment component. The data is usable as well for the End User Interface.
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 Managment component. The data is usable as well for the End User Interface.
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.

An extended datasets report is provided in Appendix 1. It has to be noted that the datasets have been collected and are now in state in-progress. In this state they will be further evaluated regarding the FAIR and extended SPACO attributes. Any changes to the datset status will be duly noted in Jira and reported in the next revision of the deliverable.

9 Conclusions and future work

The deliverable presented basic guidelines for data management and introduced FAIR data management principles. Based on current and planned work in the project a data life-cycle was proposed and corresponding data management process defined. To facilitate data assessment a data management template has been introduced, matching current data summary and extended with essential attributes.

The data management process has been initialized and assessment and management phases of the process started. A project Jira tool has been utilized to support the data management process. The collection and initial assessment of the datasets processed in the project has been perfomed and is reported in this deliverable. In the next phase of the project the datasets will be further evaluated during regular project work and their status, if updated or changed, will be duly noted. Additional datasets will be added if identified. Evaluation of the possibility for reporting and sharing the datasets will be performed and reported in the next version of the deliverable together with a report on shared datasets.

10 List of figures and tables

10.1 Figures

10.2 Tables

11 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 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, May 2021.

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

(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, in preparation, target release June 2021.

Appendix 1 Project datasets

[IFDMP-14] Finnish pilot: Finnish Meteorological Institute weather forecast data Created: 25/May/22 Updated: 25/May/22	
Status:	Open
Project:	iFlex Data Management Plan
Component/s:	None
Affects Version/s:	None
Fix Version/s:	None

Type:	Data Management Plan		
Reporter:	Jussi Kiljander	**Assignee:**	Unassigned
Resolution:	Unresolved	**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/
Processing partners:	VTT, CAVERION

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

[IFDMP-13] Feedback from pilot users (Finland) Created: 25/May/22 Updated: 25/May/22 Due: 25/May/23	
Status:	Open
Project:	iFlex Data Management Plan
Component/s:	None
Affects Version/s:	None
Fix Version/s:	None

Type:	Data Management Plan		
Reporter:	Jussi Kiljander	**Assignee:**	Unassigned
Resolution:	Unresolved	**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
Processing partners:	VTT

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.)

[IFDMP-12] Finnish_pilot_BEMS_measurement_data Created: 25/May/22 Updated: 25/May/22 Due: 25/May/23	
Status:	Open
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:	Unresolved	**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
Processing partners:	VTT, JSI, AUEB, CAVERION

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

[IFDMP-11] Finland public survey 2021 Created: 23/May/22 Updated: 23/May/22	
Status:	Open
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:**	Dusan Gabrijelcic
Resolution:	Unresolved	**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
Processing partners:	VTT, IN-JET

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.

[IFDMP-10] Slovenian pilot smart meter measurement data Created: 19/May/22 Updated: 19/May/22 Due: 31/May/23	
Status:	Open
Project:	iFlex Data Management Plan
Component/s:	None
Affects Version/s:	None
Fix Version/s:	None

Type:	Data Management Plan		
Reporter:	Dusan Gabrijelcic	**Assignee:**	Unassigned
Resolution:	Unresolved	**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
Processing partners:	VTT, JSI, ICOM, ELE

Description

The data-set contains smart metering measurements at 15 minutes resolution for the pilot users in Celje region. The data is of 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 data-set 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.

[IFDMP-9] Slovenian pilot HEMS measurement data Created: 19/May/22 Updated: 19/May/22 Due: 31/May/23	
Status:	Open
Project:	iFlex Data Management Plan
Component/s:	None
Affects Version/s:	None
Fix Version/s:	None

Type:	Data Management Plan		
Reporter:	Dusan Gabrijelcic	**Assignee:**	Unassigned
Resolution:	Unresolved	**Votes:**	0
Labels:	household, measurements		

Identifier:	SP-HEMS-MD-0.1
Rationale:	HEMS mesured 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
Processing partners:	VTT, JSI, ICOM, ECE

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]

[IFDMP-8] Slovenian pilot smart meter measurement data Created: 18/May/22 Updated: 19/May/22 Due: 31/May/23	
Status:	Open
Project:	iFlex Data Management Plan
Component/s:	None
Affects Version/s:	None
Fix Version/s:	None

Type:	Data Management Plan		
Reporter:	Dusan Gabrijelcic	**Assignee:**	Unassigned
Resolution:	Unresolved	**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
Processing partners:	VTT, JSI, ICOM

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 avalable 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 transfromer stations. All the measurements are aggregated per 1 hour, 6 hours and a day for presentation purposes.

[IFDMP-7] Slovenian pilot ARSO weather data Created: 18/May/22 Updated: 19/May/22 Due: 31/May/23	
Status:	Open
Project:	iFlex Data Management Plan
Component/s:	None
Affects Version/s:	None
Fix Version/s:	None

Type:	Data Management Plan		
Reporter:	Dusan Gabrijelcic	**Assignee:**	Unassigned
Resolution:	Unresolved	**Votes:**	0
Labels:	measurements, smart-metering, weather		

Identifier:	SP-ARSO-WD-0.1
Rationale:	The wether data is essential for Digital Twin Repository component to provide predictions to be used by Automated Flexibility Managment component. The data is usable as well for the End User Interface.
FAIR:	I - Interoperable
Extended attributes:	O - Other issues exist in the dataset
Processing partners:	VTT, JSI, ICOM

Description

The dataset presents weather realisation 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.

[IFDMP-6] Slovenian pilot Open Weather Map Weather data Created: 18/May/22 Updated: 18/May/22 Due: 31/May/23	
Status:	Open
Project:	iFlex Data Management Plan
Component/s:	None
Affects Version/s:	None
Fix Version/s:	None

Type:	Data Management Plan		
Reporter:	Dusan Gabrijelcic	**Assignee:**	Unassigned
Resolution:	Unresolved	**Votes:**	0
Labels:	None		

Identifier:	SP-OWM-WD-0.1
Rationale:	The wether data is essential for Digital Twin Repository component to provide predictions to be used by Automated Flexibility Managment component. The data is usable as well for the End User Interface.
FAIR:	I - Interoperable
Extended attributes:	O - Other issues exist in the dataset
Processing partners:	VTT, JSI, AUEB, ICOM, HERON

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.

[IFDMP-5] Heron pilot Open Weather Map Weather data Created: 18/May/22 Updated: 18/May/22 Due: 31/May/23	
Status:	Open
Project:	iFlex Data Management Plan
Component/s:	None
Affects Version/s:	None
Fix Version/s:	None

Type:	Data Management Plan		
Reporter:	Dusan Gabrijelcic	**Assignee:**	Unassigned
Resolution:	Unresolved	**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 Managment component. The data is usable as well for the End User Interface.
FAIR:	I - Interoperable
Extended attributes:	O - Other issues exist in the dataset
Processing partners:	VTT, JSI, AUEB, ICOM, HERON

Description

The dataset presents weather realisation 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.

[IFDMP-4] Heron pilot smart meter measurement data Created: 18/May/22 Updated: 18/May/22 Due: 31/May/23	
Status:	Open
Project:	iFlex Data Management Plan
Component/s:	None
Affects Version/s:	None
Fix Version/s:	None

Type:	Data Management Plan		
Reporter:	Dusan Gabrijelcic	**Assignee:**	Unassigned
Resolution:	Unresolved	**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
Processing partners:	VTT, JSI, AUEB, HERON

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.