IRIS

Integrated and Replicable Solutions for Co-Creation in Sustainable Cities

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Deliverable 9.1

First report on data management plan (DMP)

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Task:	T9.2 Defining the data model and the data management plan for performance and impact measurement (M4-M12)
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Version History

Version	Date	Modifications made by
0.1	01/03/2018	First complete draft: Ioannis Lampropoulos and Wilfried van Sark (UU)
0.2	09/03/2018	Second complete draft: incorporating input and feedback from Inger-Lise Svensson and Johan Nilsson (RISE)
0.3	23/03/2018	Third complete draft: incorporating input and feedback from Roel Massink (UTR), Panagiotis Tsarchopoulos and Thanasis Tryferidis (CERTH)
1.0	28/03/2018	Final version to be released to the EC

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Executive Summary

The scope of this document is to provide the procedure to be adopted by the project partners and subcontractors to produce, collect and process the data from the IRIS demonstration activities. The adopted procedure follows the guidelines provided by the European Commission in the document Guidelines on FAIR Data Management in Horizon 2020.

This document has been built based on the Horizon 2020 FAIR Data Management Plan (DMP) template (Version: 26 July 2016), which actually provides a set of questions that the partners should answer. This first report on DMP, submitted at M6 of the project, describes a preliminary plan for data production, collection and processing, and will be continuously updated until the end of the project, as part of WP9 activities. Specifically, the DMP will be updated in M12 (D9.8: First update on the Data management plan), in M30 (D9.9: Second update on the Data management plan), in M42 (D9.10: Third update on the Data management plan), and in M60 (D9.11: Fourth and final update on the Data management plan).

The project research data will be collected in two phases:

- Before the implementation of the demonstration activities in the LH (for baselines, references and design data).
- After the implementation of the demonstration activities in the LH (for evaluation purposes).

The development of the DMP is part of the work undertaken in T9.2 Defining the data model and the data management plan for performance and impact measurement (M4-M60). Since the DMP development started in M4 of the project, this first report of the DMP provides preliminary templates for data reporting, and emphasises on the interactions of T9.2 with other work packages.

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List of Abbreviations and Acronyms

Abbreviation	Definition
ALEX	Municipality of Alexandroupolis
CCS	Asociación Cluster Construcción Sostenible Cluster Construcción Sostenible / Sustainable Building Cluster
CERTH	Centre For Research And Technology Hellas
CIP	City Innovation Platform
CIV	Civity BV
DMP	Data Management Plan
DoA	Description of the Action
Energy Hive	Energy and Natural Resources Cluster of Eastern Macedonia and Thrace
EU	European Union
FC	Follower City
GDPR	General Data Protection Regulation
ICEMENERG	National Research and Development Institute for Energy
IMCG	IMCG SWEDEN AB
IRIS	Integrated and Replicable Solutions for Co-Creation in Sustainable Cities
KPI	Key Performance Indicator
LH	Lighthouse City
MERI	Oy Merinova AB
OMI	Open Model Initiative
PM	Person-Months
RISE	Research Institutes of Sweden
SCIS	Smart City Innovation System
SCT	Municipality of Santa Cruz de Tenerife
UPB	University Politechnica of Bucharest
UU	Utrecht University
USI	Utrecht Sustainability Institute
UTR	Municipality of Utrecht
UVA	University of Vaasa
UNS	University of Nice Sophia Antipolis
VAASA	City of Vaasa
VUB	Vrije Universiteit Brussel
VULOG	VULOG SA
WP	Work Package

1. Introduction

The Data Management Plan (DMP) consists of a description of the data management life cycle for the data to be produced, collected, and processed, and will include information on the handling of data during and after the end of the project, i.e. what data will be produced, collected, and processed, which methodology and standards will be applied, whether data will be shared and/or made open access, and how data will be curated and preserved (including after the end of the project).

1.1. Scope, objectives and expected impact

The scope of this document is to provide the procedure to be adopted by the project partners and subcontractors to produce, collect and process the research data from the IRIS demonstration activities. The adopted procedure follows the guidelines provided by the European Commission in the document Guidelines on FAIR Data Management in Horizon 2020.

This document has been built based on the Horizon 2020 FAIR DMP template (Version: 26 July 2016), which actually provides a set of questions that the partners should answer with a level of detail appropriate to the project. It is not required to provide detailed answers to all the questions in this first report on DMP. The DMP is intended to be a living document in which information can be made available on a finer level of granularity through updates as the implementation of the project progresses and when significant changes occur. As a minimum, the DMP shall be updated in the context of the periodic evaluation/assessment of the project.

This first report on DMP, submitted at M6 (31st March 2018), describes a preliminary plan for data production, collection and processing, and will be continuously updated until the end of the project, as part of WP9 activities. Specifically, the DMP will be updated in M12 (D9.8: First update on the Data management plan), in M30 (D9.9: Second update on the Data management plan), in M42 (D9.10: Third update on the Data management plan), and in M60 (D9.11: Fourth and final update on the Data management plan).

The availability and sharing of project data will raise the impact of IRIS activities, allowing for access to a large number of stakeholders. The DMP considers (see Figure 1):

- Data Types, Formats, Standards and Capture Methods
- Ethics and Intellectual Property
- Access, Data Sharing and Reuse
- Resourcing
- Deposit and Long-Term Preservation
- Short-Term Storage and Data Management

Figure 1. Aspects considered in the data management plan.

1.2. Contributions of partners and relation to other activities

The main project partners in T9.2 are UU, RISE and CERTH. UU, as the leader in T9.2, is responsible for coordinating the activities related to the definition of the data model and the DMP for performance and impact measurement. RISE as the WP9 leader ensures that all activities are in line with other related WPs by establishing communication with the respective WP leaders. Part of this work entails cooperation with ongoing projects, initiatives and communities in WP2, such as the H2020-SCC CITYKEYS project for smart city performance indicators, and facilitation for all performance data to be incorporated into the database of the EU Smart City Innovation System (SCIS). Furthermore, RISE as the leader in T9.1 ensures that all relevant data are addressed in D9.1, based on the initial definition of the KPIs included in T9.1, as well as that any new KPIs, being introduced if the need arises to modify them after review, are addressed in D9.8 (First update on the DMP which is due to be published in M12).

In Figure 2, the timeline for the DMP development within the IRIS project is illustrated, pointing out interactions with other tasks and WPs. Next to the D9.8 (First update on the DMP which is due to be published in M12), the DMP will be further updated in M30 (D9.9: Second update on the Data management plan), in M42 (D9.10: Third update on the Data management plan), and in M60 (D9.11: Fourth and final update on the Data management plan).

RISE will organise WP9 workshops in March and April 2018 in all the Lighthouse Cities (LH), i.e. Gothenburg, Nice and Utrecht, to discuss LH solutions and possible monitoring strategies for technologies, indicators and data collection. Instead of directly supplying data collection sheets, all the LH will be invited to provide input on relevant data to be collected, discuss the purpose of utilisation of collected data and the project goals together with IMCG representing WP3 Business models. These workshops will establish a harmonised approach among the LH with respect to the DMP development and the Pilot on Open Research Data[1]. CERTH as the leader in T9.3 ensures that the development of the first report of the DMP and T9.2 activities are in line with T9.3 activities and

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[1] https://www.openaire.eu/what-is-the-open-research-data-pilot

the development of the City Innovation Platform (CIP), and thus connect WP9 with WP4 activities (including the linkage to activities in T4.3 'Data Governance Plan' which is meant to facilitate a smooth, secure and reliable flow of data, including the description of supporting processes and assets, and also addressing privacy and ethical issues). The work in T9.2 will be performed in close and continuous collaboration with WP 5-7 to ensure that the DMP addresses data and relevant developments from the IRIS demonstration activities in the LH. Furthermore, with respect to ethical aspects each LH and FC will have its own Ethics Committee and one person will be nominated per site as responsible for following the project's recommendations and the National and European legislations (See Section 6.1.2), thus linking WP9 to WP 5-7 and to WP8 (Replication by Lighthouse regions, Follower cities, European market uptake). Finally, T9.2 will also ensure privacy and security of sensitive information, for legal or ethical reasons, for issues pertaining to personal privacy, or for proprietary concerns linking to WP3.

In the course of the project, the project partners will be guided by the T9.2 leader and the WP9 leader on how to provide input and report on data to be generated/collected during the project by using the templates listed in this first report on the DMP.

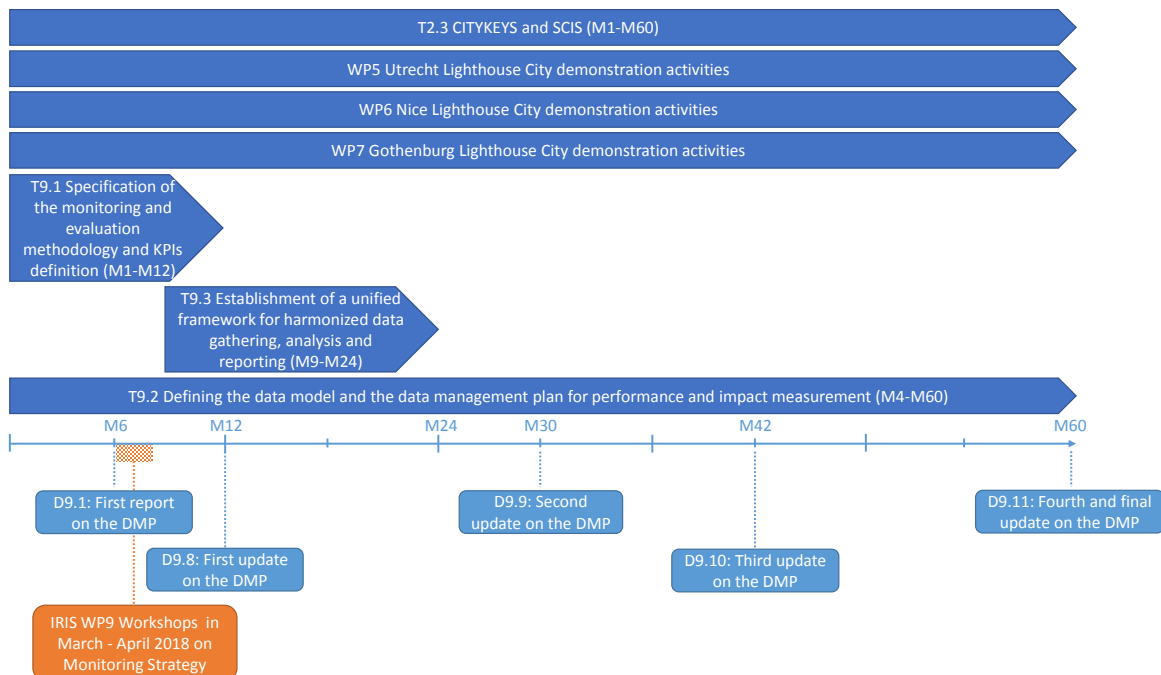*Figure 2. Timeline for the DMP development within the project duration, indicating interactions with other work tasks and packages.*

1.3. Structure of the deliverable

This document has been built based on the Horizon 2020 FAIR DMP template (Version: 26 July 2016). Accordingly, the document is structured as follows:

- ▪ **Section 2:** Data Summary

- ▪ **Section 3:** FAIR data

- ▪ **Section 4:** Allocation of resources

- **Section 5:** Data security

- **Section 6:** Ethical aspects

- **Section 7:** Other issues

- **Section 8:** Further support in developing your DMP

2. Data Summary

In Table 1, a summary is provided of the data to be generated/collected during the project. This table includes standardised items and lists as described below.

At this stage of the project it is still not possible to list in the exact data that will be generated/collected during the project, since relevant activities in T9.1 'Specification of the monitoring and evaluation methodology and KPIs definition' are running in parallel. A full overview of the data will be possible after the completion of T9.1 and the submission of D9.2 'Report on monitoring and evaluation schemes for integrated solutions'.

In **Column 1** 'Title of data set' please specify a name or a short title for the corresponding data set. The name/title shall be self-explanatory regarding the nature/purpose of the data set.

In **Column 2** 'Relation to project objective' select the objective of the project (1-8) that relates to the purpose of the data to be generated/collected:

- **Objective 1:** Demonstrate solutions at district scale integrating smart homes and buildings, smart renewables and closed-loop energy positive districts

- **Objective 2:** Demonstrate smart energy management and storage solutions targeting Grid flexibility

- **Objective 3:** Demonstrate integrated urban mobility solutions increasing the use of environmentally-friendly, alternative fuels, creating new opportunities for collective mobility and lead to a decreased environmental impact

- **Objective 4:** Demonstrate the integration of the latest generation ICT solutions with existing city platforms over open and standardised interfaces enabling the exchange of data for the development of new innovative services

- **Objective 5:** Demonstrate active citizen engagement solutions providing an enabling environment for citizens to participate in co-creation, decision making, planning and problem solving within the Smart Cities

- **Objective 6:** Put in practice bankable business models over proposed integrated solutions, tested to reduce technical and financial risks for investors guaranteeing replicability at EU scale

- **Objective 7:** Strengthening the links and active cooperation between cities in a large number of Member States with a large coverage of cities with different size, geography, climatic zones and economical situations

- **Objective 8:** Measure and validate the demonstration results after a 3-years large-scale demonstration at district scale within 3 highly innovative EU cities

In **Column 3** 'Data type' select the type of data to be generated/collected:

- **integers**

- **booleans**

- **characters**

- **floating-point numbers**

- **alphanumeric strings**

- **Other (please specify)**

- **Not known yet**

In **Column 4** 'Data format' select the format of data to be generated/collected:

- **ASCII text-formatted data (TXT)**

- **CAD data (DWG)**

- **Comma-separated values (CSV)**

- **dBase (DBF)**

- **eXtensible Mark-up Language (XML)**

- **Tab-delimited file (TAB)**

- **Geospatial open data based upon JavaScript Object Notation (GeoJSON)**

- **Geo-referenced TIFF (TIF, TFW)**

- **Hypertext Markup Language (HTML)**

- **Keyhole Markup Language (KML)**

- **MS Word (DOC/DOCX)**

- **MS Excel (XLS/XLSX)**

- **MS Access (MDB/ACCDB)**

- **OpenDocument Spreadsheet (ODS)**

- **Open Document Text (ODT)**

- **Rich Text Format (RTF)**

- **SPSS portable format (POR)**

- **Other (please specify)**

- **Not known yet**

Note: When choosing the right **format** for **open data**[2] it is recommended to start with comma separated values (CSV) files. CSV is perfect for tabular data and can be easily loaded into and saved from applications like Excel, making it accessible to users. For geospatial open data formats, formats to be considered are geoJSON (based upon JavaScript Object Notation - JSON) and Keyhole Markup Language (KML) which is based upon Extensible Markup Language – XML. These formats are specifically designed with usability in mind and can easily be imported and exported from specialist mapping tools like Open Street Map and CartoDB.

In **Column 5** 'Re-use of existing data' select one of the following options (in the case of re-use of existing data, please specify in plain text how to re-use):

- **Re-use of existing data (specify how)**

- **Non re-use of existing data**

- **Not known yet**

In **Column 6** 'Origin of the data' please specify in plain text the origin of the data.

In **Column 7** 'Expected size of the data' please specify the expected size of the data and add the appropriate units: Kilobytes (KB), Megabytes (MB), Gigabytes (GB), and Terabytes (TB).

In **Column 8** 'Data utility' please specify to whom the data might be useful in terms of Work Package (WP) and/or Task (T).

In **Column 9** 'Other info' please specify, if applicable, the **data units**, **time resolution** and **the time period** that the data set covers in DD/MM/YEAR, or any other relevant information that was not addressed in columns 1-8. For example, for time-series of power measurement data mention the units, time resolution and the time period that the data set covers (e.g. measurements in kW with 15 minutes resolution from 01/01/2018 to 01/02/2018).

In **Column 10** 'City' please specify the relevant city (Lighthouse or Follower) for the corresponding data set.

In **Column 11** 'Contact person(s)' please specify the name and e-mail of the responsible contact person(s) for the corresponding data set.

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[2] Choosing the right format for open data:
https://www.europeandataportal.eu/elearning/en/module9/#/id/co-01

Table 1. Data Summary.

Title of data set	Relation to project objective	Data type	Data format	Re-use of existing data	Origin of the data	Expected size of the data	Data utility	Other info	City	Contact person(s) (name / e-mail)
See explanation in pg. 11	See explanation in pg. 11	See explanation in pg. 11	See explanation in pg. 12	See explanation in pg. 13	See explanation in pg. 13	See explanation in pg. 13	See explanation in pg. 13	See explanation in pg. 13	See explanation in pg. 13	See explanation in pg. 13
	Choose an item.	Choose an item.	Choose an item.	Choose an item.					Choose an item.	
	Choose an item.	Choose an item.	Choose an item.	Choose an item.					Choose an item.	
	Choose an item.	Choose an item.	Choose an item.	Choose an item.					Choose an item.	
	Choose an item.	Choose an item.	Choose an item.	Choose an item.					Choose an item.	
	Choose an item.	Choose an item.	Choose an item.	Choose an item.					Choose an item.	
	Choose an item.	Choose an item.	Choose an item.	Choose an item.					Choose an item.	

* If necessary, then please add lines in Table 1 by copying-pasting the following line:

	Choose an item.	Choose an item.	Choose an item.	Choose an item.					Choose an item.	

3. FAIR data

The IRIS project partners will ensure that the project research data will be 'FAIR', that is findable, accessible, interoperable and re-usable.

For all the data produced and/or used in the project, the project partners will put effort in:

- Making data findable, including provisions for metadata
- Making data openly accessible
- Making data interoperable
- Increase data re-use (through clarifying licences)

More information about FAIR can be accessed through the FORCE11 community [1], and the FAIR principles published as an article in Nature [2].

As a first step in making the project research data 'FAIR', the projects partners involved in the LH demonstration activities will be asked during M6-12 to fill in the template with the data set description (See Table 2). This template will be filled in for each dataset summarised in Table 1. These dataset descriptions will be incorporated in the first update of the DMP (D9.8 in M12).

Table 2. Format of the data set description.

Data Identification	
Data set description	*Where are the sensor(s) installed? What are they monitoring/registering? What is the dataset comprised of? Will it contain future sub-datasets?*
Source (e.g. which device?)	*How will the dataset be collected? What kind of sensor is being used?*
Partners services and responsibilities	
Partner owner of the device	*What is the name of the owner of the device?*
Partner in charge of the data collection (if different)	*What is the name of the partner in charge of the device? Are there several partners that are cooperating? What are their names?*
Partner in charge of the data analysis (if different)	*The name of the partner.*
Partner in charge of the data storage (if different)	*The name of the partner.*
WPs and tasks	*The data are going to be collected within activities of WPxx and WPxx.*
Standards	
Info about metadata (Production and storage dates, places) and documentation?	*What is the status with the metadata so far? Has it been defined? What is the content of the metadata (e.g. datatypes like images portraying an action, textual messages, sequences, timestamps etc.)*
Standards, Format, Estimated volume of data	*Has the data format been decided on yet? What will it look like?*

Data exploitation and sharing	
Data exploitation (purpose/use of the data analysis)	*Example text:* *Production process recognition and help during the different production phases, avoiding mistakes*
Data access policy / Dissemination level (Confidential, only for members of the Consortium and the Commission Services) / Public	*Example text:* *The full dataset will be confidential and only the members of the consortium will have access on it. Furthermore, if the dataset or specific portions of it (e.g. metadata, statistics, etc.) are decided to become of widely open access, a data management portal will be created that should provide a description of the dataset and link to a download section. Of course these data will be anonymized, so as not to have any potential ethical issues with their publication and dissemination*
Data sharing, re-use and distribution (How?)	*Has the data sharing policies been decided yet? What requirements exists for sharing data? How will the data be shared? Who will decide what to be shared?*
Embargo periods (if any)	-
Archiving and preservation (including storage and backup)	
Data storage (including backup): where? For how long?	*Who will own the information that has been collected? How will it adhere to partner policies? What kind of limitation are put on the archive?*

4. Allocation of resources

Further to the FAIR principles, the DMP will also address the allocation of resources. All the data produced and/or used in the project, will be described by using the template included in Table 2. For each described dataset the partners will report on the costs for making data FAIR in the IRIS project. This information will be incorporated in the first update of the DMP (D9.8 in M12).

5. Data security

For all the data produced and/or used in the project, the project partners will ensure data security. For each described dataset (based on the template in Table 2), the partners will state the provisions taken for data security (including data recovery as well as secure storage and transfer of sensitive data), as well as for long term preservation and curation in certified repositories. This information will be incorporated in the first update of the DMP (D9.8 in M12).

6. Ethical aspects

For all the data produced and/or used in the project, the project partners will take into account ethical aspects. Specifically, the project partners will address all obligations as described in the Description of the Action (DoA)[3], in ARTICLE 34 'ETHICS AND RESEARCH INTEGRITY'. Thus, the IRIS project will assure the investigation, management and monitoring of ethical and privacy issues that could be relevant to its envisaged technological solution and will establish a close-cooperation with the Ethics Helpdesk of the European Commission. The consortium is aware that a number of privacy and data protection issues could be raised by the activities (in WP5, WP6 and WP7) to be performed in the scope of the project. The project involves the carrying out of data collection in all LH and FC in order to assess the effectiveness of the proposed solutions. For this reason, human participants will be involved in certain aspects of the project and data will be collected. This will be done in full compliance with any European and national legislation and directives relevant to the country where the data collections are taking place, as well as with the EU General Data Protection Regulation (GDPR)[4], which replaces the Directive 95/46/EC, with enforcement date the 25th May 2018.

6.1.1 IRIS Ethical Policy

IRIS will follow the opinions of various expert committees in the field (e.g. the European group on ethics in science and new technologies to the European Commission. In addition, all national legal and ethical requirements of the Member States where the research is performed will be fulfilled. Any data collection involving humans will be strictly held confidential at any time of the research. This means in detail that:

- All the test subjects will be informed and given the opportunity to provide their consent to any monitoring and data acquisition process that all the subjects will be strictly volunteers and all test volunteers will receive detailed oral information.
- No personal or sensitive data will be centrally stored. In addition, data will be scrambled where possible and abstracted in a way that will not affect the final project outcome.

In addition, they will receive in their own language:

- A commonly understandable written description of the project and its goals.
- The planned project progress and the related testing and evaluation procedures.
- Advice on unrestricted disclaimer rights on their agreement.

On the other hand, an Ethics Helpdesk will scrutinise the research, to guarantee that no undue risk for the user, neither technically nor related to the breach of privacy, is possible. Thus, the Consortium shall implement the research project in full respect of the legal and ethical national requirements and code of practice. Whenever authorisations have to be obtained from national bodies, those authorisations shall

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[3] DoA, IRIS project, GRANT AGREEMENT NUMBER: 774199.
[4] GDPR Portal: Site Overview: https://www.eugdpr.org/

be considered as documents relevant to the project. Copies of all relevant authorisations shall be submitted to the Commission prior to commencement of the relevant part of the research project.

6.1.2 IRIS Ethics Helpdesk

All used assessment tools and protocols within IRIS LH and FC will be verified beforehand by its Ethics helpdesk regarding their impact to business actors and end users before being applied to the sites. The helpdesk takes responsibility for implementing and managing the ethical and legal issues of all procedures in the project, ensuring that each of the partners provides the necessary participation in IRIS and its code of conduct towards the participants. Each LH and FC will have its own Ethics Committee and one person will be nominated per site as responsible for following the project's recommendations and the National and European legislations.

6.1.3 Data to be collected within IRIS LH and FC

Data will be both manually and automatically collected by smart sensors and other proprietary equipment installed at selected areas during the execution of the demonstration activities and will be further investigated in (WP5, WP6 and WP7). In most cases the collected data will be data needed for monitoring the contextual conditions of the pilot areas (energy consumption, energy production, temperature, humidity, weather etc.). Since some of the collected data in the latter case may involve sensitive personal data, all provisions for data management will be made in compliance with national and EU legislation: Including the European Network for Information and Security Agency[5] security measures to minimise the risk to data protection arising from smart metering and the British Sociological Association's Statement of Ethical Practice as described in the following paragraphs.

The project research data will be collected in two phases:

- Before the implementation of the demonstration activities in the LH (for baselines, references and design data).
- After the implementation of the demonstration activities in the LH (for evaluation purposes).

The consent procedure for the pilot use case realisation at each of the selected pilot sites will make use of a template of a consent form, to be adopted as required per pilot use case. Such a template is included in Annex 3: Consent form template.

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[5] European Network and Information Security Agency - Appropriate security measures for smart grids - Guidelines to assess the sophistication of security measures
implementation, 2012-12-06

7. Other issues

In this section, the project partners will report the use of any other national/funder/sectorial/ departmental procedures for data management. This information will be incorporated in the first update of the DMP (D9.8 in M12).

8. References

[1] FORCE11, "The FAIR data principles," 2017. [Online]. Available: https://www.force11.org/group/fairgroup/fairprinciples. [Accessed 1 Mar. 2018].

[2] Wilkinson, Mark D., et al, "Wilkinson, Mark D., et al., The FAIR Guiding Principles for scientific data management and stewardship, Scientific data 3 (2016)," 2018. [Online]. Available: http://www.nature.com/articles/sdata201618. [Accessed 1 Mar. 2018].

Annex 1 - Summary Table

Table 3 provides a summary of all the issues to be covered in the DMP, and will be used as a checklist for all reported datasets in the first update of the DMP (D9.8 in M12).

Table 3. Summary table - FAIR Data Management at a glance. This table provides a summary of the Data Management Plan (DMP) issues to be addressed.

DMP component	Issues to be addressed
1. Data summary	• State the purpose of the data collection/generation • Explain the relation to the objectives of the project • Specify the types and formats of data generated/collected • Specify if existing data is being re-used (if any) • Specify the origin of the data • State the expected size of the data (if known) • Outline the data utility: to whom will it be useful
2. FAIR Data 2.1. Making data findable, including provisions for metadata	• Outline the discoverability of data (metadata provision) • Outline the identifiability of data and refer to standard identification mechanism. Do you make use of persistent and unique identifiers such as Digital Object Identifiers? • Outline naming conventions used • Outline the approach towards search keyword • Outline the approach for clear versioning • Specify standards for metadata creation (if any). If there are no standards in your discipline describe what type of metadata will be created and how

2.2 Making data openly accessible	• Specify which data will be made openly available? If some data is kept closed provide rationale for doing so • Specify how the data will be made available • Specify what methods or software tools are needed to access the data? Is documentation about the software needed to access the data included? Is it possible to include the relevant software (e.g. in open source code)? • Specify where the data and associated metadata, documentation and code are deposited • Specify how access will be provided in case there are any restrictions
2.3. Making data interoperable	• Assess the interoperability of your data. Specify what data and metadata vocabularies, standards or methodologies you will follow to facilitate interoperability. • Specify whether you will be using standard vocabulary for all data types present in your data set, to allow inter-disciplinary interoperability? If not, will you provide mapping to more commonly used ontologies?
2.4. Increase data re-use (through clarifying licences)	• Specify how the data will be licenced to permit the widest reuse possible • Specify when the data will be made available for re-use. If applicable, specify why and for what period a data embargo is needed • Specify whether the data produced and/or used in the project is useable by third parties, in particular after the end of the project? If the re-use of some data is restricted, explain why • Describe data quality assurance processes • Specify the length of time for which the data will remain re-usable
3. Allocation of resources	• Estimate the costs for making your data FAIR. Describe how you intend to cover these costs • Clearly identify responsibilities for data management in your project • Describe costs and potential value of long term preservation
4. Data security	• Address data recovery as well as secure storage and transfer of sensitive data
5. Ethical aspects	• To be covered in the context of the ethics review, ethics section of DoA and ethics deliverables. Include references and related technical aspects if not covered by the former
6. Other	• Refer to other national/funder/sectorial/departmental procedures for data management that you are using (if any)

Annex 2 - Further support in developing the DMP

The Research Data Alliance provides a Metadata Standards Directory that can be searched for discipline-specific standards and associated tools.

The EUDAT B2SHARE tool includes a built-in license wizard that facilitates the selection of an adequate license for research data.

Useful listings of repositories include: Registry of Research Data Repositories

Some repositories like Zenodo, an OpenAIRE and CERN collaboration), allow researchers to deposit both publications and data, while providing tools to link them.

Other useful tools include DMP online and platforms for making individual scientific observations available such as ScienceMatters.

Annex 3: Consent form template

IRIS
Integration and Replication
for Sustainable Cities

Consent Form

Project Purpose
- *A commonly understandable written description of the project and its goals even for people that are not familiar to the project scope (2-3 paragraphs)*

Project Progress Schedule
- *The progress schedule of the project and the related testing and evaluation procedures (1-2 paragraphs)*

Disclaimer Rights
- *Advice on unrestricted disclaimer rights on their agreement.*

Voluntary Participation Form
1. General Information
   - *Participant basic information*
   - *ID (reference code) of the participant, which will be used throughout the pilot trial execution)*
2. Study Information
   - *Details about the Demonstration*
3. Participant's Questionnaire
   - *has been fully informed on the purpose, duration, procedures of the study;*
   - *has been informed on the rights to deny participating or to quit from the study and about the corresponding consequences.*
   - *has been informed on the contact person in case that I have questions and queries about the study.*
   - *had adequate time to make my decision concerning my participation in the study.*
   - *comprehend that he/she can quit from the study at any time without having to justify his/her decision.*
   - *has been informed about potential effects, difficulties and dangers.*
   - *has been informed about the sensors equipment that will be used to collect data.*
   - *has been informed about the security of the study data and results.*
   - *has been ensured about the confidentiality of his/her personal information. Publications of the study results do not allow the personal data recognition, due to the principle of anonymity. Always under the confidentiality principles.*
4. Signed Consent to Participate
   - *A signed consent of the participant allowing the study responsible to examine and inspect the data collected during the study.*