



RESPONSE

Integrated Solutions for Positive Energy
and Resilient Cities

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Energy and Resilient Cities

D12.15

Data Management Plan - V2



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PU = Public, fully open, e.g., web

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Index

Executive summary	5
1. Data Management Plan – V2	6
1.1 Introduction.....	6
1.2 Data Management Plan V2 updates.....	6
3. Conclusion	9

Executive summary

This deliverable D12.15 Data Management Plan – V2 sets out the second version of the data management plan (DMP) for the RESPONSE project. A DMP is a key element of good data management, which is especially important in the RESPONSE context, as all Horizon 2020-funded projects from 2017 onward are required to contain a DMP¹.

A previous version of this document (D12.5 Data Management Plan - V1) was drawn up in M6 of the project, and set out the basic principles of data management in RESPONSE, based on a questionnaire that was sent out to all partners. The current report has been updated to reflect the advances and current status of data management in the project. The follow-up versions of the data management plan, e.g., DMP V3 (D12.16) in M24, DMP V4 (D12.17) in M42, and finally DMP V5 (D12.18) in M60 will reflect the ongoing strategy for data management in RESPONSE project.

¹ European Commission, H2020 Programme Guidelines on FAIR Data Management in Horizon 2020 Version 3.0, July 2016, p. 3.

1. Data Management Plan – V2

1.1 Introduction

The Task 12.4 of RESPONSE project aims to develop the Data Management Plan (DMP) defining the type of data that the project will collect/process/monitor/generate, whether and how it will be exploited or made accessible for verification and re-use, and how it will be curated and preserved in compliance with GDPR legislation regarding dataprotection, privacy, security and ethical principles, and assuring that different legal and regulatory constraints and international agreed standards for data security are met. A data repository will be available, conforming to potential ethical issues, in which the DMP will describe in detail the models, anonymized metadata that will be included in the repository. RESPONSE consortium is aware of the Horizon 2020 requirement of producing open access publications. Thus, each beneficiary will ensure free of charge, online access for any user to all peer-reviewed scientific publications related to RESPONSE result.

Data Management Plan for RESPONSE project has already been defined in deliverable D12.5. It is a **key element** for good data management. A DMP describes the data management life cycle for the data to be collected, processed and/or generated by a Horizon 2020 project.

This document is the second version of the five DMPs that will be delivered throughout the project. As for the first version, it is written based on questionnaires suggested in the OPIDoR² and the required sections were filled considering the elements suggested by the European Commission³.

The European Commission also gives informations about the GDPR⁴. Those informations have already been made available in deliverable D.12.5.

1.2 Data Management Plan - V2 updates

This DMP V2 (D12.15) has been prepared following the same approach as described in DMP V1 (D12.5). To write this document we follow recommendations of European Commission⁵.

The second online questionnaire (built from EC recommendations) was sent to all of our partners, analyzing their answers and filling the online template in OPIDoR⁶. We completed this template following what was done on other H2020 DMP made after GDPR was published.

2. <https://dmp.opidor.fr/>

3. https://ec.europa.eu/research/participants/docs/h2020-funding-guide/cross-cutting-issues/open-access-data-management/data-management_en.htm

4. <https://ec.europa.eu/>

5. https://ec.europa.eu/research/participants/docs/h2020-funding-guide/cross-cutting-issues/open-access-data-management/data-management_en.htm

6 <https://dmp.opidor.fr/>

The second questionnaire was returned by some partners: RINA CONSULTING SPA, ETHNIKO KENTRO EREVNAS KAI TECHNOLOGIKIS ANAPTYXIS (CERTH) , INNOVATIVE ENERGY AND INFORMATION TECHNOLOGIES LTD (IEIT) , AYUNTAMIENTO DE ZARAGOZA, ENEDIS, ONYX SOLAR ENERGY SL, City of Turku, Univ. Bourgogne Franche-Comté (ATMO), TURUN YLIOPISTO, ONYX SOLAR ENERGY SL) but without any complementary information. Some other partners completed the questionnaire (UNIVERSIDAD PONTIFICIA COMILLAS, INSTITUTULUI NATIONAL DE CERCETARE DEZVOLTARE PENTRU INGINERIE ELECTRICA ICPE-CA BUCURESTI , Univ. Bourgogne Franche-Comté (CIAD), BOUYGUES CONSTRUCTION, Electricité de France) but indicated that there have been no substantial changes from the first questionnaire that was sent 6 months ago, and that their first answers were still valid. We bring together the information collected in the following parts of this document.

Although the vast majority of partners have answered that there were no changes since the previous questionnaire was sent, some elements have been specified and pointed out by five partners who brought out new information.

Regarding the purpose of the data collected:

Bouygues stated that the purpose of the data collection is to record the temperature, energy consumption and presence for 30 dwellings in order to forecast energy consumption and cost on a yearly basis with scenarios (programmable thermostat). The purpose of this project is to collect data in order to predict energy consumptions of a dwelling based on previous consumption measurements. It also provide insight of user behavior based on anonymized detection sensor. The objective is to calculate by machine learning both presence and energy predictions. This predictive thermostat will give the user the opportunity to manage the energy consumption and to evaluate the future energy bill when he modifies its thermostat pattern (temperature and planning of presence).

For **EDF**, the collected data helps to control the two PEBs in Fontaine d'Ouche in Dijon. Firstly, they enable the EMS algorithm to work more efficiently, and secondly, they enable EDF to monitor the state of the system.

For **ICPE**, the purpose of the data collection is to support the framework for the Smart City development, sustainability, and Governance (TA#1-TA#5) by Citizen and Stakeholder Engagement for FC#4 – Botosani.

The data collected will be based on PED strategy adopted by FC#4 - Botosani and will consist of real-time and/or historical energy data.

The historical data will be used as a benchmark for energy saving potential and real-time data will be used for definition and evaluation of the FC#4 - Botosani strategy performance.

For **CIAD**, Environmental data (temperature [float], meteo[string]) pollution[float], GHG [float], energy consumption[float], housing data (number of inhabitants[int], age of inhabitants [int], surface (m2) [float],

energy efficiency of the housing [string] will be collected to answer the use cases needed for the project. One of them is to identify correlations in PEB's energy management.

Regarding the type of data collected:

The data collected by **Bouygues** will be numerical representations of electrical measurements (power, current, voltage etc.) and states of devices, such as alarms and warnings. These data can, firstly, be collected (temperature (presence energy consumption by radiator from TECHEM platform energy consumption by radiator from connected thermostatic valve electrical consumption for appliances and lighting hot/cold water consumption and dataset relative to meteo files) – or generated (energy consumption prediction for electricity, heating, and sanitary hot/cold water Occupancy presence pattern).

The data collected by **Comillas** is related to their participation in WP9 and WP11. It is expected that information generated in WP1 (regulatory information), WP3 (ICT information), and WP5 (business models' information), will be re-used (to be determined). Most of the data will be gathered from partners and RESPONSE deliverables; other may come from other available data sources, which would be correctly referenced in the corresponding deliverable.

Regarding the source of data:

As for the vast majority of partners, the source of data can be found in both sensors or questionnaire. For **Bouygues**, it is mainly sensors and existing third-party platform as TECHEM/ISTA.

For **Comillas**, the source of data is questionnaires (in .docx. Standard formats that will be used whenever possible, such .csv, JSON...). Data requirements for ICT SRA therefore consist of characteristics of the ICT implemented and the topology. These data were collected through MS Excel files.

For **CIAD**, data will be provided from other partners of the project and open data.

Regarding access:

Several possibilities have been mentioned. **EDF**, for instance, indicated that data will be stored in the internal, secured depository of EDF, which requires access to internal EDF network. Regarding Bouygues, data will be stored via a platform from BYCN and ISTA and TECHEM (Orvitis) only for the 30 demo dwellings. All data will be made openly available except for the algorithms of energy prediction consumption and the data will be made accessible on Smalt Cloud. As for **Comillas**, if it is openly available data repository such as GitHub, Gitlab will be used, as such as standard licenses (Creative commons, MIT, etc.) whenever possible. **ICPE** will grant access based on access credentials (email/password) or other available security measures. For the duration of the RESPONSE project and a minimum of 5 years after, depending on the feedback received from third parties using the data provided by FC#4 – Botosani.

Last but not least, **EDF** indicated that interoperability will be made possible through IEC 61850 standard.

3. Conclusion

D12.15 is the second version of the Data Management Plan (V2) which aims at describing the evolution in the data management life cycle: data to be collected, processed and/or generated. It is updated considering the methodology applied in DMP V1 (D12.5) and the current stage of the project. Five sections proposed by OPIDoR were filled by some project partners following the questions suggested by the European Commission and information about GDPR.

At this stage it remains difficult to have a clear vision about the needs concerning data, although some partners have given more information in DMP V2. The more the project goes forward, the more material the partners will have to answer the questionnaire, and the more precise the DMP will be. A majority of answers states that, at this point, there has been no substantial evolution about the way they collect, store, or analyze data.

During the course of the RESPONSE project, some updates of data sets depending on configurations, results of experiments and external data availability may appear. Further information on how specific data sets are processed in the project along with results from trials will be provided in the future versions of the data management plan, e.g., DMP V3 (D12.16) in M24, DMP V4 (D12.17) in M42, and finally DMP V5 (D12.18) in M60.



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