



DELIVERABLE

D8.5 – Data Management Plan (DMP) V2

Project Acronym: ESPRESSO

Grant Agreement number: 691720

Project Title: systemic Standardisation apPRoach to Empower Smart cities and cOmmunities

Revision:

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|---|--|---|
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| Dissemination Level | | |
| P | Public | X |
| C | Confidential, only for members of the consortium and the Commission Services | |

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|---|---------------|
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1. Revision history and statement of originality

1.1. Revision history

| Re v | Date | Author | Organizatio n | Description |
|-----------------|-------------|---------------|--------------------------|----------------------------|
| 1 | 15/06/16 | Irene Facchin | TRILOGIS | First version of document |
| 2 | 27/02/17 | Irene Facchin | TRILOGIS | Second version of document |
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1.2. Statement of originality

This deliverable contains original unpublished work except where clearly indicated otherwise. Acknowledgement of previously published material and of the work of others has been made through appropriate citation, quotation or both.



2. List of references

| Number | Full Reference |
|--------|----------------|
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3. Table of Acronyms

| Acronym | Description |
|-----------------|--|
| AA | <i>Administrative and Financial Assistant</i> |
| AB | <i>Advisory Board</i> |
| CEN | <i>European Committee for Standardisation</i> |
| CENELEC | <i>European Committee for Electrotechnical Standardisation</i> |
| D | <i>Deliverables</i> |
| DAGs | <i>Directed Acyclic Graphs</i> |
| DTDs | <i>Decision-Tree Diagrams</i> |
| ETSI | <i>European Telecommunications Standards Institute</i> |
| GA | <i>General Assembly</i> |
| M | <i>Month</i> |
| MS | <i>Milestones</i> |
| MVVM | <i>Model-View-ViewModel</i> |
| OM | <i>Operational Manager</i> |
| PC | <i>Project coordinator</i> |
| PMI | <i>Project Management Institute</i> |
| PMIBOK | <i>PMI Body of Knowledge</i> |
| QRM | <i>Quality and Risk Manager</i> |
| SmaCStak | <i>Smart City Stakeholder Network</i> |
| TB | <i>Technical Board</i> |
| TL | <i>Task leaders</i> |
| WPL | <i>Work Package leaders</i> |
| WPs | <i>Work Packages</i> |



4. Executive Abstract

The goal of the Data Management Plan (DMP) is to detail the data to be used and generated by the project. This is a precise requirement since ESPRESSO is a Pilot on H2020 Open Research Data initiative. Therefore, the ESPRESSO project will make publicly available the data generated and that will include data regarding the community of stakeholders, market analysis, best practice assessment and other activities to be carried on during the CSA. In addition, corresponding metadata generated within the project will be made available through open data portals (including the European Open Data Portal). This will ensure the widest public accessibility as well as long-term preservation. Indeed, ESPRESSO will ensure that all the data generated is properly collected accessed, curated, preserved, and eventually made public after any possible data-ownership issue has been cleared.

For this reason, a specific Data Management Plan is planned. This actual document is the second of three reports that are due on M06, M14, and M24.



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Figure 1. SmaCStak registration page. Available [here](#). 9



7. Data managed through the ESPRESSO website

This section describes the data that are being managed directly by the ESPRESSO project. The section is subdivided into different groups to cover all the different types of information collected.

7.1. Personal Data/registry of SmaCStak participants

The ESPRESSO system collects and stores information about the personal data of the SmaCStak participants that give their consent to record their personal data in the project ESPRESSO database. This is done through a form available from the website at the following address: <https://espressoprojekt.typeform.com/to/fo1DK0> and that collects the following information:

- Name
- Surname
- Email address
- Company name
- Company website
- Country
- City
- Nature of the company. Be it:
 - Public
 - Private
 - Industry
 - Research Institution
 - University
 - NGO
 - SDO
 - NSB
 - ESO
 - City/Municipality
 - Regional Planning Association
 - Other

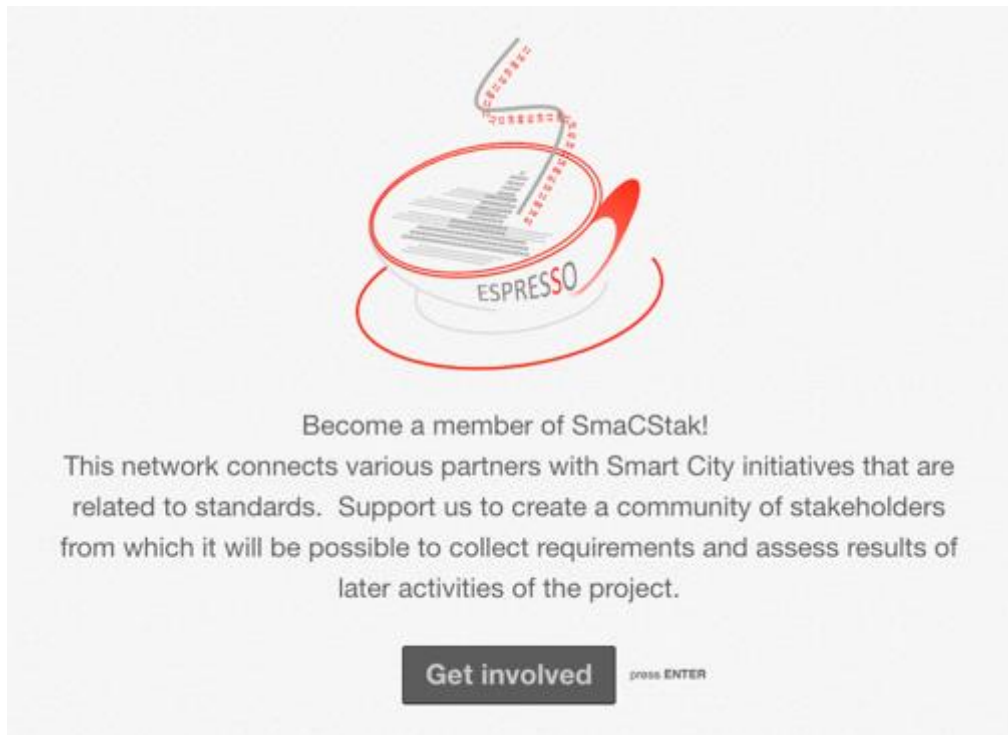
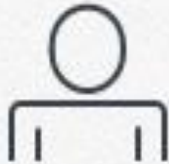


Figure 1. SmaCStak registration page. Available [here](#).

Below, screenshots of the questions for being registered as SmaCStak participant are presented.



1 → What's your first name?*



Name|



press ENTER

2 → Hey Name, nice to meet you.

What is your last name?*

Surname|



press ENTER



3 → Which email address shall we use? *

Don't worry, we're not going to spam you.



name.surname@company.com|



4 → What is the name of your organization? *

Company|



5 → Do you have a website?

http://

6 → In which country is your organization based in, Name? *



5 → Do you have a website?

http://www.company.com



6 → In which country is your organization based in, Name?*



Type or select an option

7 →

8 →

Afghanistan

Albania

Algeria

Andorra

Angola

Antigua & Deps

Argentina

Armenia

Australia

Austria

Azerbaijan



7 → And in which city?*

City|

Ok ✓ press ENTER

8 → What nature is your organization, Name?*

Choose as many as you like

- A Public
- B Private
- C Industry
- D Research Institution
- E University
- F NGO
- G SDO
- H NSB
- I ESO
- J City/Municipality
- K Regional Planning Association
- L Other



9 → Please tell us if you are member of one or more of the organizations. If you are not, just skip the question.

Choose as many as you like

- A EIP-SCC
- B EUROCITIES
- C Council of European Municipalities and Regions (CEMR)
- D CIVITAS
- E CONCERTO
- F Covenant of Mayors
- G European Institute of Innovation and Technology (EIT)
- H ENERGY CITIES
- I European Regions Research and Innovation Network (ERRIN)
- J EUROCITIES
- K ICLEI
- L Network of European Metropolitan Regions and Area (METREX)
- M POLIS
- N Other

10 → Name, is your city/organization supporting Smart City Standardisation initiatives? If yes, could you give a brief description and tell us what kind of open standards are used?

|



“ The ESPRESSO-project is thankful for your support within the SmaCStak-network. We will you keep updated with information with a newsletter, our website and our social media channels. After putting "continue" you can close the registration process for SmaCStak by confirming with "Register"!

Continue press ENTER

Continue press ENTER

Register press ENTER

Never submit passwords! - [Report abuse](#)

Those registering to the SmaCStak by filling in the form above will have their personal data stored herewith: <https://www.typeform.com>. To this database, only Mr. Mario Conci of Trentino Innovation and Mr. Jan-Philipp Exner of the University of Kaiserslautern have access and can extract regular copies locally stored for analysis. Names and email addresses are also stored on Mailchimp.org, used for sending the project ESPRESSO newsletter.



7.2. Personal Data/registry of participants to the ESPRESSO Atlas of smart cities and standards

The ESPRESSO system also collects and stores information about the personal data of the participants to the ESPRESSO Atlas of smart cities and standards that give their consent to record their personal data in the project ESPRESSO database. The Atlas is accessible through the website: <http://www.espresso-project.eu/>.

The platform is composed by a multitier architecture, which the presentation layer, the business logic layer, the service layer, and the data access layer.

The **Presentation Layer** represents the web application through which the content is available to the end users. It is developed in AngularJS, an open source framework with Model-View-ViewModel (MVVM) architecture. The UI component is developed using Angular Material with responsive patterns, in order to extend the compatibility and ensure the same user experience through different devices, included the mobile devices. The GIS features and 3D visualization are developed over the framework NASA Web World Wind, an open source virtual globe with advanced features for managing and viewing geometries and display of map layers.

The **Business Logic Layer** is developed in NodeJs, and handles the manipulation of the Smart Cities data and the related ancillary information (i.e. geographic information, documents, attributes, sections, etc.). At this level the permissions and the filters are managed, ensuring data integrity and proper handling of sensitive and confidential data. Regarding the data visibility, it handles different types of users with different permissions associated in order to limit both the visibility of some information and the operations that can be executed (Note that the data source of the users has not been defined yet).

The **Service Layer** deals with data exchange with other layers through a RESTful architecture. In addition, it provides public APIs for a limited data exposure and for the data insert/update in order to make possible integration with third-party software. This also ensures a greater facility for importing data and therefore a benefit for the data population in order to enrich the platform

Finally, **the Data Access Layer** provides access to the database, for which it was used PostgreSQL with PostGIS, a relational database with an extension to provide support for the geo-data.

The Smart Cities data is organized over a dynamic template.

Each Smart City contains a set of basic attributes (i.e. identifier, coordinates, name, website, etc.) and a set of categories. Then, each category can contain a set of subcategories or a set of attributes. The template can be represented as follows:

- Smart City
 - Basic attributes
 - ...
 - Basic attributes
 - Category A
 - ...



- Category Z
- Sub-Category A
- ...
- Sub-Category Z
- Attribute A
- ...
- Attribute Z

The architecture allows to customize the smart city template by inserting and editing of categories and attributes. It means that new categories and new attributes can be created and added (as well as they can be removed) to existing smart cities without changing the database structure.

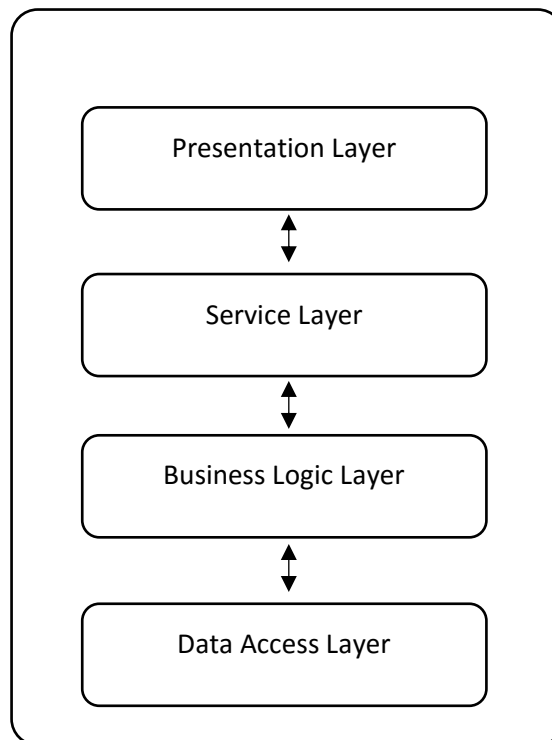


Figure 2. Platform diagram.