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D8.8 – Innovation report v2

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3. Table of Acronyms

Acronym	Description



4. Executive Abstract

The goal of the innovation report is to illustrate the innovation activities of the ESPRESSO project. They can be split into four parts:

- Contribution to dissemination and industry liaison activities of the project to maximise results and impact.
- Sharing of experience, tools and methodologies and proper ground involvement of all stakeholders in the project, ensuring a common understanding of ESPRESSO innovation context and strategy.
- Development of a sustainable and comprehensive innovation ecosystem in the context of the project, in line with the strategic plan for ESPRESSO and ensuring the long-term exploitation of the results of the project.
- Provision of insights and performance indicators for monitoring the impact of the initial and future innovation-related activities undertaken in the framework of ESPRESSO.

The current report is based on the first version of the D8.7 (delivered at M6) and describes the activities that have been carried out during the lifetime of the project. In particular, this second version focuses more towards sustainability of ESPRESSO results and best practices. Specifically it concentrates on activities already executed or planned towards a broad, multi-stakeholder involvement strategy and platform that helps building the ecosystem of ESPRESSO. The "SmaCStak", the large "Smart City Stakeholder" network and key component of the ESPRESSO innovation strategy is at a quite good level in terms of amount of stakeholders involved, but further actions need to be taken for improving stakeholders' engagement. In general, actions will be devoted to promote the outcomes of ESPRESSO, leveraging on dissemination and on implementation activities.



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6. Innovation activities

6.1. Contribution to dissemination and industry liaison activities

The consortium's dissemination activities have focused on the creation of the basic tools like brochure and the website set-up. LinkedIn and twitter accounts have also been activated and actively used by ESPRESSO Partners for mainly pointing out interesting topics for the stakeholders' community. The website has passed through a general redesign making it more appealing and integrated with new functionalities.

The main target during the redesign process of the website was the integration of the ESPRESSO Web 2.0 channels and external content into the website. By integrating the ESPRESSO Social Media Channels to the website, the visitors will be provided with up-to-date news from the ESPRESSO team and important tweets related to Smart Cities and standardization.

To improve the visibility of the ESPRESSO-YouTube-Channel the redesigned website allow to integrate the videos into the website. Thus, for example, the recordings of the webinars can be watched in the webinar-section of the website.

The functionality of integrating external content on the website has been improved because at the beginning of the project some content was not directly perceived as part of the ESPRESSO project. By integrating the questionnaires or the ESPRESSO atlas into the main page they are now directly assigned to the project.

The number of liaisons have increased along the project in parallel with the outreach activities. Liaisons are based on a 'win-to-win' approach, meaning that ESPRESSO and the other projects/initiatives take reciprocally advantage from joint activities increasing their outreach. Examples of those activities are:

- disseminating messages to respective communities (web, newsletters, social media), including invitations to events, fora and calls for participation;
- cross-invitations to present the initiatives in key fora and meetings;
- sharing mapping and surveying outcomes, to contribute to gap and domain analyses;
- leadership meetings to optimize and orchestrate efforts.

Taking part in events of common interest contributed to increase the opportunities for alignment and knowledge sharing among projects. Some events have been scheduled, for example the EIP-SCC General Assembly (June and September 2017) and the Smart City Expo World Congress (14-16 November 2017). ESPRESSO took also part in the Smart Cities Forum organized at CEBIT (21-22 March 2017) where got in contact with other SCC initiatives, among them: SMIGHT, GROWSMARTER, and the Green Digital Charter. The Smart City Forum is a network of cities, municipalities, companies and science, which has existed since 2013. It includes more than 150 members. The aim of the network is to support the digital transformation of cities and municipalities, while at the same time promoting the implementation of EU climate protection targets in the context of the European Innovation Partnership Smart Cities and Communities.



6.2. Sharing of experience, tools and methodologies

6.2.1. Webinars

The relationships established during the first year have been reinforced especially with the CITYKEYS project EURO CITIES and EIP-SCC. Webinars are Examples of such collaboration activities. The table below shows the monthly webinar ESPRESSO organized. The first webinars were more focused on dissemination of preliminary results of ESPRESSO, little by little webinars have been organized in collaboration with other projects and initiatives.

Table 1. Monthly seminars of ESPRESSO project.

WHEN	WHO	Title	ABSTRACT
21/07/2016	ISOCARP	Smart City Indicators	Smart development represents a crucial factor for cities, both allowing them to gain competitive positioning on the map of Europe, but also strongly influencing the quality of life. On the path to „becoming Smart”, cities have a lot of key ingredients to consider: Leadership, Vision, Data, Participation, Communication, Innovation and Standards. Standards are the building blocks which support the different systems coming together, creating a common understanding and the possibility to track performance, and progress. Because cities need to have the possibility to measure their performance while implementing smart city strategies and solutions, ESPRESSO is setting up a City Information and Indicator Platform, as a portal to collect and share data required for indicator definition and a tool for city self-assessment. The platform will also represent a tool for promoting integrated urban approaches, supporting smart sustainable urban regeneration and development strategies.
30/08/2016	ROTT	Rotterdam Geo Information Management: from hypes to solutions	Rotterdam is one of the pilot cities in the Espresso Project. One of our aims as pilot city is to bring theory into practice. In this webinar Joris Goos will give his view on what role Geo Information can play in the Smart City approach, hereby focussing on the need of open standards and models. What problems do we encounter these days and how can we solve them? Should we introduce yet another system, should we use the solution of that one key-vendor? Or should we rather try to speak a common language, use existing
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			information to enrich our data and make connections throughout different domains?
16/09/2016	OS	Smart City Standards and Architecture	This webinar will provide the opportunity for cities to share their experiences in relation to selection and application of standards and Ordnance Survey will guide the SmaCStak members through what has been done, how it all fits together allowing discussion on the implications.
14/10/2016	PWC	Funding and Procurement approaches applied to Smart Cities	Existing as well as emerging economic, financial and procurement models can be applied in various sectorial services of actual and future Smart City (SC) scenarios. This deliverable presents the most relevant and novel funding and procurement approaches applied to the SC domain. A special focus is also dedicated to the most appropriate operating models that can guarantee financial sustainability over time of SC projects. Relevant use cases of SC solutions have been collected in order to emphasize different successful approaches depending on the specific city needs as well as funding, financial and procurement models adopted.
10/11/2016	TARTU	Smart City best practices: The City of Tartu	The webinar will introduce the main Smart City developments in currently under implementation in City of Tartu including activities related to retrofitting, energy efficiency, electric mobility, citizen engagement and ICT applications.
15/12/2016	Lluisa Marsal (SCG)	United for Smart Sustainable Cities	U4SSC initiative, a joint partnership between UN and ITU. It is a pre-standardisation group which aim is to prepare policy standards to help implement the SDGs (Sustainable development Goal), in particular Goal 11 and UN's New Urban Agenda.
19/01/2017	Peter Bosch (TNO) Aapo Huovila, (VTT) Daniel Sarasa (City of Zaragoza) In collaboration with EURO CITIES	The CITYKEYS Project	The aim of CITYkeys project was to develop and validate, with the aid of cities, a performance measurement framework for the common and transparent monitoring as well as the comparability of smart city solutions across European cities. The development of the framework included the key performance indicators (KPIs), the data collection procedure, the methods to calculate the indicators as well as policy and business model recommendations for the use of indicators. The project has built



			on existing performance measurement frameworks and has proposed the use of open standards and interfaces. It has also aspired to be the first framework that has a specific European approach and treats the smart city objectives and smart city projects in a holistic way.
07/04/2017	Daniel Homorodean (SCG - Cluji IT Cluster)	The perspective and potential of standardizing operational processes in the administration across EU, with a focus on Life Events	As citizens of an integrated Europe, we can work, relocate, conduct business in any member state and we expect that our relationship with the administration should be predictable and consistent anywhere. Yet, we are not there. From one state to another and even from one city to another our interaction with the administration is different, following particular action flows, documents and timelines. The need for standardization is highly emphasized at EU level and consistent activity is taking place in various domains of the administration, like procurement, invoicing, e-signatures, reuse of public data, data protection and privacy. Some countries pioneer their own standards in other domains, preceding a larger European approach. But what is the perspective for standardizing the Life Events at EU level? In this webinar, we will explore it together.
26/04/2017	Rebecca Retail (Green Digital Charter) Daniel Sarasa (Zaragoza City Council) Antonio Kung (EIP-SCC 'Citizen Focus' Action Cluster) In collaboration with Green Digital Charter.	Data management and citizens' privacy in smart cities open governance	Thanks to smartphones and apps, Internet of Things (IoT) devices, networks and sensors deployed throughout public spaces, cities are collecting vast amounts of data beneficial for the 'public good'. This data enables municipalities to develop better-informed decision-making and improve public services (waste management, traffic prediction, energy efficiency). This webinar intends to show how data management processes by city administrations and use of privacy-by-design standards are key to build trust and resilience in smart cities and open data.



6.3. Development of a sustainable and comprehensive innovation ecosystem

6.3.1. Outreach activities

The whole consortium has contributed to the Outreach activities by leveraging on their personal networks and implementing those actions as described in the updated version of the report on capacity building actions (D1.6 Version 2), that can be briefly summarized here below:

- Knowledge sharing among partners of the same projects, committee and working group;
- Inter-connecting partners from various networks and hence establishing a cross-sectoral smart cities network;
- Promoting ESPRESSO, its partners, aim and the importance of technical standards at numerous conferences across Europe;
- Using mailing lists of thematic groups and participation to joint activities and working groups;
- Invitation of relevant/strategic stakeholders to events organized by ESPRESSO;
- Promoting the ESPRESSO LinkedIn group and website;
- Newsletters, presentations, papers and videos disseminated via partners’ website and social network;
- On-site communication taking part to different events.

6.3.1.1. SmaCStak and the Coordination Group

The SmaCStak network serves multi-purposes. Besides aspects such as awareness raising and capacity building, the network’s participants serve as primary points of contact to discuss ESPRESSO results and research activities. The goal is to use the collective knowledge to optimize the usage of the sparse ESPRESSO resources towards an optimized innovation process. Each partner of the consortium has been requested to draft a list of stakeholders that might be interested to being part of the SmaCStak (D1.2). The invitation process has been started right from the start of the ESPRESSO project. Each partner is constantly working on the expansion of SmaCStak; a process that leads to a growing network of experts that help driving the innovation potential of ESPRESSO. From the first version of report 8.7, the participants of the SmaCStak have doubled shifting from 60 to 136.

The SmaCStak is coordinated by the SmaCStak Coordination Group (SCG). The ESPRESSO Consortium drafted a list of experts to be contacted as member of the SmaCStak coordination Group. The experts have been contacted by the WP1 leader (HIT). They were provided with details about ESPRESSO and their role in the Coordination Group. Interested members expressed their willingness by signing a letter of interest. SCG is composed of representatives from public and private sector. Important role of the SCG members is to guide the SmaCStak and increase the outreach of the ESPRESSO project. SCG members belong to networks and organizations that can act as multipliers for ESPRESSO, such as: EIP-SCC, DIN, ETSI, EURO CITIES, Fraunhofer IAO. Other members belong instead to organizations closer to the Market and research

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such as Future Cities Catapult and Cluj IT Cluster. The cities of Rotterdam and Tartu are also part of the SCG and provide support for contacting other cities. This way the SCG covers different groups of stakeholders and expertise. The SCG has been confirmed at the end of April.

Table 2. SmaCStak Coordination Group’s members.

Member	Affiliation	Representative of:
Lluisa Marsal	Future Cities Catapult/BSI	CEN-CENELEC-ETSI SSCC-CG
Patrick Guillemain Philippe Moretto	ETSI	
Rob Poll-van Dasselaar	ROTTERDAM	Pilot cities
Rene Tonnisson	TARTU	
Joachim Lonien	DIN	SDOs and NSBs
Daniel Homorodean	Cluj IT CLUSTER	Academia, Industries and SMEs
Antonio Kung	TRIALOG/EIP-SCC	
Nikolaos Kontinakis	EUROCITIES	Network of cities

The main role envisaged for the SCG members is to encourage the discussion, the discussion/collaboration by means of conference calls by i) Bring priority topics that are important for their projects/activities; ii) Actively stimulate the collaboration among members; iii) Review of/provide suggestions on our reports.

6.3.2. Liaising with Smart Cities Initiatives

The ESPRESSO project has connected with other Smart/Future/Connected Cities initiatives. The engagement with other Smart City initiatives bases on an equal level. That is, we make it clear the mutual willingness to learn from our experiences to share the insights that we will gain during the project.

Collaboration with CityKeys

A collaboration with the CityKeys Project has started. Specifically, ESPRESSO is going to adopt the KPIs developed within the CityKeys Project. Further steps need to be taken in order to define how the two projects could gain the most from each other, but this represents for ESPRESSO an opportunity to increase its visibility and to enter the CityKeys’ network.

Lighthouse Projects



With regard to lighthouse projects we identified a reference person to get in contact with some of the Lighthouse projects currently active. We capitalize on actual existing connections between us and the other projects as showed here below:

Lighthouse Project	ESPRESSO PARTNER
TRIANGULUM	Fraunhofer
SMARTENCITY	Tartu
SMARTER TOGETHER	DIN
RUGGEDISED	Rotterdam

The tasks requested to activate with the Lighthouse projects are:

- Define a reference person to get in contact with and that can provide you with information about the project.
- Get them registered to the SmaCStak
- Have access to their cities
- Have access to their information: we would like them to share with us their experiences by means of webinar, video (if any) and/or public documents.

Further activities will be carried out to find a reference person to link with other Lighthouse Projects and SCC initiatives such as REMOURBAN, GROWSMARTER, REPLICATE, SHARING CITIES.

6.3.3. Collaborative approach with EIP SCC

The European Innovation Partnership on Smart Cities and Communities (EIP-SCC) brings together cities, industry, and citizens to improve urban life through more sustainable integrated solutions.

This includes applied innovation, better planning, a more participatory approach, higher energy efficiency, better transport solutions, intelligent use of Information and Communication Technologies (ICT), etc.

ESPRESSO has been engaged, from the beginning of its lifecycle, with the EIP SCC, focusing on providing input in WS1 – and will continue to do so for the remainder of the project. The EIP SCC has a similar mission and relies on the output of ESPRESSO. A close collaboration with WS1 is essential, also keeping a close eye on WS2 and WS3.

ESPRESSO has been directly involved in the activities of the EIP-SCC initiative on urban platform becoming an example for activities concerning standardization. Urban Platform and ESPRESSO have joint effort to develop their tasks in cooperative way.

ESPRESSO continues to work together with the EIP SCC, updating the WS2 and WS1 documents with new findings and input from both ESPRESSO and EIP SCC.



6.3.4. Collaborative approach with International Initiatives

ESPRESSO has members with international connections, that can be used to promote and influence the project on an international stage – and learn from other projects outside of Europe. If we can innovate at an international level, we have more weight on Smart City initiatives.

OGC will reach out to NIST and their Smart City initiatives as well as request OGC members to connect to other projects in the world. This can be done at the OGC Technical Committee meetings, where all OGC members meet on a regular basis (see also Smart City Domain Working Group).

We are currently working for getting in contact with OASC, SCIS and the PROGRESSIVE Project. In particular, SCIS (Smart City Infosystem) will integrate ESPRESSO in their database of SCC related projects and define a collaboration for dissemination.

ETSI will be also in charge of creating a connection with the group CEN-SSCC Group: the CIM group.

The ESPRESSO team supports the “Invitation to discuss, align, agree Smart Cities Urban Platforms”, an initiative that will start the standardisation effort of the outputs of ESPRESSO and the EIP SCC. This effort is planned for June 2017.

6.3.5. Smart City Domain Working Group

Past experience has proven that Working Groups or Technical Committees in SDO, ESO, NSB created during the execution of a project gets picked up by the membership.

The GeoViQua FP7 project (Grant Nr. 265178) created the Geospatial User Feedback Domain Standards Working Group¹ (SWG) in the OGC (supported by Michel Schoupe DG RTD and Bart De Lathouwer OGC). This SWG is self-supportive and has worldwide participations and take up. The Geospatial User Feedback Domain Standards Working Group is the poster child for ESPRESSO and the project will replicate this best practice.

6.3.5.1. An OGC Smart City Domain Working Group

Domain Working Groups (DWG or WG) provide a forum for discussion of key interoperability requirements and issues, discussion and review of implementation specifications, and presentations on key technology areas relevant to solving geospatial interoperability issues. ESPRESSO is currently busy understanding the best approach to establish a coordinated discussion of Smart City topics and standards within the Open Geospatial Consortium to optimize the innovation potential of the project. Goal is to involve Smart City experts from other continents, in particular North America, in the ESPRESSO innovation process.

The OGC Smart City Domain Working Group is instrumental in the Fast Track procedure that is being developed as part of WP3, task 3.4.

¹ <http://www.opengeospatial.org/projects/groups/gufswg>.



6.4. Provision of insights and performance indicators

6.4.1. SmaCStak

The SmaCStak is the main result of the capacity-building actions of ESPRESSO. It is composed of stakeholders in the field of smart cities and particularly interested in the usage and implementation of standards. Stakeholders have been selected among the consortium’s network and include a variety of actors such as cities, SMEs, industries and research centers.

The SmaCStak gathers 144 people with a European-wide coverage and from different backgrounds. The following table shows more details regarding the composition of SmaCStak at M16.

Table 3: Composition of the SmaCStak M16

SmaCStak (at M16)	
Members in total	144
Countries	30 (Top 5 UK 19%, Germany 14%, Belgium 10%, Italy 8%, Netherlands 8%)
Nature of organizations	Public 30 %, Private 29%, Research Institutions 19%, City/Municipality 14%, NGO 5%, SDO 4%, Industry 5%
Organization Memberships	Top 3 EIP-SCC (44%), Covenant of Mayors (23%), Eurocities (11%)

Those actors are depicted in the so-called Atlas of Smart Cities. It is an online geoportal that provides a geographical overview of the composition of the stakeholders’ network. The Atlas is available on the website of the project and will continue to ‘live’ after the project end (for at least another year). All possible efforts will be done to host the services after the project. It will be made available from the website of the project and/or integrated in existing Smart Cities EU platforms, like possibly the EIP-SCC Marketplace or the Smart city information system.

SmaCStak’s members receive regular dissemination materials developed within the project such as Tips for Market newsletter and the ESPRESSO newsletter. They also receive Twitter and LinkedIn updates from the project. The ESPRESSO Webinars are also another important activity for increasing the network’s engagement. At M16 we have organized 10 webinars (more details in section 6.2.1).

6.4.2. Pivotal Points of Interoperability

The ESPRESSO project is leading an international initiatives to determine the Pivotal Points of Interoperability (PPI) as part of a White Paper. The PPI White Paper sees participation from European SDO’s, European projects and NIST in the US. Further input will be added, after the June 2017 Workshop on IoT Platform convergence for smart cities in Geneva (where all the contributors will gather, and seek further input).

The aid of the PPI White Paper is to identify the “low hanging fruit” of standards in the domain of Smart Cities, for use by the cities (this is a technical document, focussing on



the technical standards to achieve interoperability). This White Paper will continue to be maintained after the ESPRESSO project (by the various authors).

The PPI White Paper is an unbranded paper, to maximize to re-use – but contributors are clearly mentioned and cited!



7. Conclusion

The ESPRESSO Ecosystem is a key element of the innovation strategy. Its maintenance is highly related with communication of ESPRESSO's outcomes. Communication is crucial in order to keep the engagement of the community. Communication deals with contents we provide to our stakeholders but also how we provide those contents in order to reach the expected results (e.g. technical jargon should be avoided). As reported in D1.3 version 2, the for the second year of the project needs to be devoted to the promotion of the outcomes of ESPRESSO and make clear to different stakeholders the benefits of adopting ESPRESSO's principles.

Emphasize the benefits of standards in development of a smart city in order to make the project more interesting and provide the stakeholders with a clear idea about the concrete benefits of ESPRESSO's outcomes and the benefit of engaging in standardization. The implementation of an open data platform based on non-proprietary technology hinges on the use of open standards; that is, standards that are available to all users. More importantly, ESPRESSO believes users, SME, as well as multi-national IT companies should get involved in setting the right standards for IoT / Smart Cities technologies. This would prevent vendor lock-ins and guarantee a level playing field.