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City Stakeholder Group Workshop II

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ABSTRACT

The City Stakeholder Board of the CPaaS.io has been set up to get feedback on and validation of the project's results from cities in Japan and Europe, as well as to foster an exchange of experiences and thus maximize the real-world impact of the project. We decided for the second City Stakeholder Workshop to focus on the latter, and thus joined forces with the Open and Agile Smart Cities Iniative for a open workshop during IoT Week in Bilbao, Spain. The main idea was that CPaaS.io city representatives could get in contact with other cities and see first-hand what is happening in the IoT/Smart City space in Europe. This exchange was fruitful for all parties, and furthermore it was validated that the approach CPaaS.io is taking fits well with what is happening in other initiatives, leading to the identification of opportunities for further collaboration.

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Document Information

Editors	Stephan Haller (BFH), Chiaki Ishikawa (YRP)
Authors	Stephan Haller (BFH), Chiaki Ishikawa (YRP), Antonio Skarmeta (OdinS)
Reviewers	Ernö Kovacs (NEC)
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1   Overview

The City Stakeholder Board of the CPaaS.io has been set up to get feedback on and validation of the project's results from cities in Japan and Europe, as well as to foster an exchange of experiences and thus maximize the real-world impact of the project. We decided for this second City Stakeholder Workshop to focus on the latter, and thus rather than organizing a separate, CPaaS.io-only workshop, we joined forces with the Open and Agile Smart Cities Iniative (OASC[1]) in the Joint Workshop on IoT for Smart Cities & Communities Platform Convergence (IOT4SCC) organized at IoT Week[2] in Bilbao, Spain. The main idea was that CPaaS.io city representatives could get in contact with other cities and see first-hand what is happening in the IoT/Smart City space in Europe.

CPaaS.io brought representatives of Murcia and Zurich to this workshop, while a representative of Amsterdam had already been invited separately by OASC. Representatives of Japanese cities did not participate as simultaneous translations English-Japanese weren't available at IoT Week. Instead, the collaboration with the Japanese cities was deepened through individual meetings (see .chapter 4).

Table 1 shows the participants from CPaaS.io cities.

Table 1: Participants from CPaaS.io stakeholder cities at the IOT4SCC workshop

City	Name	Title
Amsterdam	Jacco Brouwer	Program Manager Data Innovation
Murcia	Antonio Skarmeta	Technical Coordinator Murcia Smart City project MiMurcia, University of Murcia
Zurich	Benno Seiler	Head of Economic Development, responsible for drafting Zurich's Smart City strategy

2   Agenda

Below is the complete agenda of the first dayof IOT4SCC workshop (June 6). Speakers from CPaaS.io cities are highlighted in blue. On the second day of the workshop (June 7), these speakers didn't have an active speaking role, but they were attending different sessions nonetheless.

Table 2: OASC Sessions at IoT Week 2018[3]

Time	Session	Speakers
09:00 - 09:15	**Welcome and Introductory Remarks**	Martin Brynskov (OASC) Sébastian Ziegler (Mandat Int'l.)
09:15 – 09:45	**Keynote Speech**	Bilel Jamoussi (ITU)
09:45 – 10:45	**Session 1 - Insights on Recent Trends and Evolution**	Paul Wilson (TM Forum) Jacco Brouwer (Amsterdam) Bipin Pradeep Kumar (Gaia Smart Cities)

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[1] See *http://oascities.org/*

[2] See *https://iotweek.org/*

[3] Slides are available for most sessions on the OASC website at *http://oascities.org/iot-week-2018/*

		Vinicius García de Oliveira (CPqD)
		Ulrich Ahle (FIWARE Foundation)
		Petra Turkama (CKIR / Aalto University)
		Tania Marcos Paramio (Spanish Association for Standardization (UNE))
		Moderated by Nikolaos Kontinakis (EUROCITIES)
12:00-13:00 14:00 – 15:00	**Session 2 - Smart City IoT Convergence: Platform and Solutions Convergence & Interoperability**	Lindsay Frost (NEC Laboratories Europe GmbH
		Jesús Cañadas (Spanish Government - Cabinet Secretary of State for the Information Society and Digital Agenda
		José Manuel Cantera (FIWARE Foundation
		Kees Van der Klauw (AIOTI)
		Martin Brynskov (OASC)
		Svetoslav Mihaylov (European Commission)
		Omar Elloumi (Nokia)
		Olavi Luotonen (European Commission)
		Ramy A. Fathy (ITU)
		Moderated by Tanya Suarez (BluSpecs/IoT Tribe)
15:15 – 16:15 16:45 – 17:45	**Breakout A: IoT Intergration and Interoperability in Smart Cities (Southbound)**	Antonio Skarmeta (Murcia)
		Hanna Niemi-Hugaerts (Forum Virium's new IoT projects mySMARTLife and SynchroniCity)
		Moderated by Eunah Kim (Device Gateway SA & UDG Alliance) & Alexander Gluhak (Digital Catapult)
15:15 – 16:15 16:45 – 17:45	**Breakout B: Cross-Domain Applications (Northbound)**	Benno Seiler (City of Zürich)
		Claus Mullie (Bax & Company)
		Javier García Díaz (CENELEC)
		Ulrich Fastenrath (BMW)
		Moderated by Nathan Pierce (Greater London Authority) & Martin Brynskov (OASC)

3   Summary of IOT4SCC Sessions with CPaaS.io Contribution

IoT Week 2018 attracted approx. 800 visitors. As there were many parallel track, the attendance in the individual sessions varied greatly, between 15 and approx. 100 participants for the sessions summarized

below. However, the discussions between sessions, at lunch or the evening receptions and dinners at great value as information exchange can be deepened and future collaborations initiated.

Pictures from the event are availble on the OASC Flickr account[4]; the pictures shown below are also taken from there.

3.1   IOT4SCC Session 1 - Insights on Recent Trends and Evolution

This session about trends in IoT for Smart Cities validated several assumptions under which the CPaaS.io project is operating: in particular, the importance of collaboration between different actors in the city, the value of co-creation, and the usefulness of open platforms to foster innovation. Jacco Brouwer, representing both Amsterdam as well as the European North Sea Region project SCORE ("Smart Cities and Open data RE-use") highlighted three important points for making cities smart in his presentation[5]: The opening up of data, the lowering of thresholds – both from a technology perspective as well as from a governance and process perspective –, and the availability of open standards. As an example for the first two points he mentioned the Amsterdam Public IoT Register, where people can find on a map IoT devices deployed in Amsterdam. Such transparency is creating a level playing field, and, more importantly it potentially enables multiple usages of the same devices.

Figure 1: Jacco Brouwer presenting about Amsterdam (Source: OASC)

The session also helped to identify other actors with interests to which the CPaaS.io project could potentially contribute, thus further disseminating results from the project and generating impact going beyond the project. In particular, CPaaS.io will address the following speakers and aspects:

- Petra Turkama, Aalto University: According to Dr. Turkama, IoT business models is still an understudied area, in particular as industry models cannot simply be adopted by cities – requirements and boundary conditions are different in the public sector. A "cookbook" on collaboration would be useful, and the currently ongoing work within CPaaS.io on Smart City

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[4] See *https://www.flickr.com/photos/139200052@N06/sets/72157669979158128*
[5] Slides are available at *http://oascities.org/wp-content/uploads/2018/06/7_Slides-IoT-week-Bilbao-june-2018.pdf*

blueprints and a "Smart City Canvas" (a Smart City adoption of Osterwalder's Business Model Canvas) could be a useful part of such a cookbook.

- Paul Wilson, tmforum: In his speech entitled "City as a Platform", Paul Wilson talked about a hierarchy of needs for Smart Cities, with ICT technology infrastructure as a foundation, followed by the layers "static and real-time open data", "City data platform", "Multi-stakeholder governance & engagement", "Ecosystem curation", and "Urban actualization" on top. He also mentioned an urban manifesto covering the top 4 layers. We believe the work that CPaaS.io is doing, both the work on the platform itself, but even more so the above-mentioned work on blueprints as well as the Smart City Strategy Framework, could provide valuable and useful input to the signatories of this manifesto.

3.2 IOT4SCC Breakout A: IoT Integration and Interoperability in Smart Cities (Southbound)

Within this session Dr. Antonio Skarmeta from Odin Solutions on behalf of Mr José Guillen (Deputy Mayor for Modernization of the Administration, of the City of Murcia) and José Márquez (Head of the ICT Services of the City of Murcia) presented the collaboration with the City of Murcia on the design and deployment of the platform named MiMurcia[6]. This platform it is a 8 mio. Euro project funded by the Spanish Ministry of Economy and Competitiveness and the City of Murcia to create a Smart City solution for Murcia. As part of the work to prepare the tender OdinS and the University of Murcia have collaborated with the City of Murcia to test a prototype that will work as proof of concept to analize how the different sensors, data sources and existing services will be integrated.

Dr. Skarmeta presented this vision based on the integration over a FIWARE platform of different sources like: tram, buses information in real tiem; information about sharing bike system; traffic situation; water and energy usage on the city buildings; and other.

Figure 2: Antonio Skarmeta presenting about Murcia (Source: OASC)

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[6] Slides are available at *http://oascities.org/wp-content/uploads/2018/06/Antonio_Skarmeta_MiMurcia-IoTWeek.pdf*

This integration it is also getting benefits from the collaboration of OdinS in CPaaS.io project as some of the results related to data interoperability based on NSGI9 and 10 are being considered and also the consideration of security enablers for data sharing. Finally the experience of exchanging information with other cities and solution as CPaaS.io provided to consider technical and organization solution was highly welcome from the City of Murcia responsible, as indicate by Dr. Skarmeta.

3.3   IOT4SCC Breakout B: Cross-Domain Applications (Northbound)

While many of the sessions in this workshop focused on technology and standards, breakout session B looked at issues that cities face when actually trying to deploy smart city solutions. As Nathan Pierce from the Greater London Authority and programme director of the Sharing Cities 'lighthouse' programme pointed out in the introduction to the session, smart city solutions still often have an exploratory character, and cities often are not able to take the whole financial risks alone. The European Innovation Partnership on Smart Cities and Communities (EIP-SCC) offers here a platform with guides and toolkits as well as well as a financial matchmaking platform for cities, investors and solution providers.

Benno Seiler from Zürich then gave some insights into Zurich's Smart City strategy, which he currently is responsible for developing by the end the year. Zurich is one of the forerunners of providing open government data, and open data also plays an important role in Zurich's Smart City strategy. In his view, Smart City is more about connecting people than connecting machines, technology and machines are just an enabler. Important to him is in this respect the aspect of data sovereignity; citizens should be able to control their personal data. Zurich has therefore established what they call "My Account"[7]: An account for each citizen through which they can interact with the city for all city services.

Figure 3: Benno Seiler presenting about Zurich (Source: OASC)

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[7] "Mein Konto" in German, see *https://www.stadt-zuerich.ch/meinkonto*

In order to become a smart city, it is according to Benno Seiler key to become a more agile city, and to just try things out. However, such an approach faces two challenges: On the one hand, citizens currently expect "perfect" solutions from the city and are not used to things being deployed on a trial basis. How to change such a mindset and how to involve people more (beyond the currently already used Hackathons like "MakeZurich") is still an open issue, in particular how to involve both people used to offline round-tables (e.g., at district meetings) as well as people using online channels and platforms (e.g., the tech communities). On the other hand, regulations regarding tenders often also prevent cities from deploying new and innovative solutions. In any case, Zurich is moving forward using Switzerland's largest innovation acceleration program, Kickstart Accelerator, for pilots and proof-of-concepts in the area of Smart City.[8]

4   Meetings with Japanese Cities

Several meetings took place with our city stakeholders in Japan since the first workshop in December 2017 to strengthen the CPaaS.io deployment in Japan as well as to get feedback from the users.

4.1   Sapporo

Mr. Itoh of MSJ is visiting the government of the city of Sapporo every month to keep contacts updated on the latest development of CPaaS.io and to share information on other issues related to smart city such as open data.

On top of the regular monthly visit, there were additional contacts during the last six months:

Jan. 9-10   Meeting with Mr. Motoi Ichihashi, Director of ICT Strategy Promotion, City of Sapporo. Mr. Ichihashi was at the city stakeholder workshop during 2017 TRON Symposium (TRONSHOW) in December 2017.

Jan.15   Visit to Sapporo Information Network Co., Ltd.: this is a third-sector, i.e. half-public half-commercial, organization established in 1988 to promote the application of ICT-related advanced technologies in Sapporo city. This is an important partner for Sapporo Open Data promotion.

Feb. 4-10   Additional field experiments during the Sapporo Snow Festival. Data was gathered for 8 participants using equipment provided by AGT.

4.2   Yokosuka

Emergency Medical Care system in two cities (Yokosuka and Miura) are routine operation at the firefighters' offices and a couple of routine maintenance have been performed monthly.

Additionally, three visits were made in March to introduce three new ambulance cars. These visits are great occasions to learn the problems from the rank and file in both cities. Also, from time to time, we receive problem reports who go beyond simple repair. Thus, Japanese CPaaS.io partners are in constant contact with Yokosuka and Miura and obtain valuable feedback for future development and deployment.

A new installation in other area is being negotiated but is still at a very early stage.

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[8] See *https://kickstart-accelerator.com/kickstart-2018-switzerland-on-its-way-to-become-an-international-hub-for-deep-technologies/* for details.

4.3 Kochi

A new opportunity has arisen with the government of Kochi prefecture on Shikoku, the smallest of the four major islands of Japan. Through the collaboration Kochi hopes to solve regional issues in Kochi prefecture including but not limited to regional economic promotion using the advanced IoT technology. Prof. Koshizuka acts as a an official IoT advisor to Kochi prefecture and since January has visited Kochi every month, and reciprocoal meetings from Kochi officials took place in Tokyo.

On June 12, a Memorandum of Understanding was signed between Kochi prefecture and the University of Tokyo.[9]

4.4 Takamatsu

The city of Takamatsu, also on Shikoku, has started to utilize FIWARE in Takamatsu. On May 8-9, Mr. Ichiro Hirose visited the FIWARE Summit in Porto and reported on their findings. The event was also used to talk to members of the CPaaS.io project about the progress of IoT and FIWARE in Japan.

5 Conclusions and Outlook

The following table contains a condensed and summarized results from the workshop and the findings from the stakeholder

Topics	Description
Process and Governance Aspects	
Co-Creation	Involving citizens in the development of cities is important for acceptance, finding good solutions. This is offset that co-creation is more driven by a prototype, minimal viable products, and in general an evolution aspect. As citizens are expecting perfect services from their cities, a evolutionary approach needs intensive training and communication with the public.
Regulation and Tenders	Regulations and the public tender process are making city solutions quite heavy to implement. Innovative cities need to find ways to progress the digital transformation but avoid being delayed by government processes.
Technical Aspects	
Identity Management	IdM and a specially a single account for each citizens is an important requirement for Smart Cities.
Open Data	Open government and Open Linked Data are a basic MUST for Smart Cities.
Data Sharing	Data sharing either via open platforms or in a secured data space is an important aspect needing data sharing, data governance and data security technologies.
IoT devices and networks	IoT is the core of a smart city platform
API Re-Use	Public API and their use by developprs are an important aspect of Digital Transformation. It enables agility in the development and evolution process. This is also true for the Digital Transformation of Cities. So the FIWARE Context API (NGSI-9/10) and its evolution towards NGSI-LD (as part of ETSI SIG CIM) is important for cities.
Semantic Interoperability	As city are actually not uniform single systems but rather "Systems-of-Systems", there is a growing need to ensure that exchanged data is understood and can be re-used between the involved stakeholders. Semantic Interoperability is an important aspect for this.

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[9] See *https://cpaas.io/?p=917*

The participation of city representatives from CPaaS.io partner cities in the OASC sessions at IoT week proved beneficial for all sides. It enabled these cities to see and understand what is happening in other cities as well as to network with important European activities regading Smart City, like OASC and the EIP-SCC. In exchange, these cities provided additional insights to the event and the event participants. Furthermore, it could be validated that the approach CPaaS.io is taking fits well with what is happening in the area, and opportunities for further collaboration have been identified.

The final city stakeholder workshop is planned to take place again at the TRON Symposium in Tokyo. With simultaneous translation available, we will have representatives from both European and Japanese cities. The focus for that event will be again more on the international dimension: What can European cities learn from Japan, and what can Japanese cities learn from Europe?