



NEWSLETTER # 04

// JUNE 2016

Editorial

ClouT project (April 1st 2013 - June 30th 2016) had been jointly funded by the European Commission and the National Institute of Information and Communications Technology (NICT) in Japan. ClouT, which stands for Cloud of Things, offers a virtualization framework to provide an uniform way of representing various city data sources such as IoT devices, legacy devices, social networks, mobile applications and World Wide Web. ClouT platform allows secure access to real-time data as well as historical data with easy-to use tools targeting municipalities, citizens, service developers and application integrators to create, deploy and manage smart city applications.

The project has developed several smart city applications using the developed platform and tools and deployed them in 4 pilot cities of the project: Santander, Genova, Fujisawa and Mitaka. Applications such as environmental monitoring, context aware coupons, city dashboards, citizen safety and elderly care social networks have been validated via field trials involving real end-users.

This last edition of the ClouT newsletter will give you an overview of the project final outcomes thanks to a fruitful EU-Japan collaboration, including last year field trials results and feedbacks from our latest exhibitions where ClouT demos have been shown to industrial partners. As for our future plan: we are pleased to announce that ClouT project outcomes will be fully leveraged and extended with Big Data capabilities within a new H2020 EU-Japan funded project named BigClouT! An introduction to the BigClouT project which has started on July 1st 2016 is also included.

Stay tuned on bigclout.eu ! (coming soon)



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ClouT, a joint European-Japanese project

CONCEPT

Cloud + IoT = ClouT

- Cloud computing as an enabler to bridge the Internet of Things with Internet of People via Internet of Services.
- User-centric approach making citizens aware of city resources and improving their quality of life.

OBJECTIVES

- Provide reusable infrastructures, platforms and applications for city stakeholders.
- Generate applications by leveraging open data and big data.
- Create long-lasting synergy for smart city initiatives between Europe and Japan.

END-USERS

- Reusable infrastructures, platforms and applications for:
- Citizens / city visitors.
 - Smart city service departments, city services providers: emergency, police, transportation companies, event organizers, shops and restaurant owners...
 - Application developers and integrators, telecom operators...

BUSINESS OPPORTUNITIES

- New business to build on city data for application developers, integrators, platforms and infrastructures providers.
- New public-private business models for smart cities development, inspired by Cloud models supporting win-win strategies for all stakeholders.

ClouT 2016 Field Trials final results

Final field trials are fully implemented within the ClouT Reference Architecture. The applications aim at enabling end-users (citizens, municipality technicians, tourists, policy makers, etc.) to naturally interact with the city, its services and other end-users while demonstrating ClouT platform robustness and advantages from Cloud + IoT benefits.

FUJISAWA - "Sensorized garbage cars"

This application aims to collect atmospheric information by mobile sensor system installed on garbage collection cars in Fujisawa City. Fujisawa municipality can monitor "on-the fly" the location and operational status of each garbage collection car through the Control Center application. New functionalities have been implemented for dynamically changing sensing parameters, e.g. sampling rate of some specific air pollution sensor data in line with the city needs.

Contact: fujisawa-ft@lab.ntt.co.jp

More information: clout-project.eu/...sensorized-garbage-cars

SANTANDER - "Smiley Coupon" replication

After the successful trial of the Smiley Coupon in Fujisawa, ClouT replicates it in the Santander city. The application provides customized coupons for the citizens and tourists based upon their degree of smiling: "your smile has a reward". Commercial establishments (30 shops, 10 restaurants and bars, etc.) participated with a wide range of 41 special offers to be exchanged by Smiley Coupon users.

Contact: ssotero@ayto-santander.es

More information: clout-project.eu/.../smiley-coupon

MITAKA - "Sanpoki"

Sanpoki application in collaboration with Stamp Rally Event "The Mitaka Solar System Walk" targets health improvement, local community activation and city attractiveness. 527 participants (more than expected!), half of them between 30's - 40's, contributed to involve the younger generation of citizens in finding out the most attractive things of Mitaka by just walking through the city.

Contact: mitaka2014@lab.ntt.co.jp

More information: www.ntt-east.co.jp/.../160212_01_01.html

GENOVA - "I don't risk"

This application aims to inform citizens about good practices and general information on environmental risks and emergency situations by using environmental data from weather sensors, hydrometers, webcams, etc. "I don't risk" is one of the most popular mobile applications in Genova City.

Contact: clout@comune.genova.it

More information: clout-project.eu/...i-dont-risk-field-trial

INTERCONTINENTAL field trial

This EU-Japan intercontinental field trial gathers information from the different applications developed during the two first years in Europe and in Japan. It is a kind of friendly "competition" among the four pilot cities in comparing similar data gathered from all them. Specific indexes related to environment, transport or quality of life, have been defined and included in a City dashboard available for public display and smartphone.

Contact: takuro@ht.sfc.keio.ac.jp

More information: clout-project.eu/.../CnC_dashboard



From 3 equipped cars in the first year to over 30 garbage collection cars in the last project year. All fleet (100 cars) will be sensorized in the near future!



116 participants and 97% recommended this application as useful for the city



Participants download and install the application from AppStore and GooglePlay

Everywhere other than the stamp spots is available to post

How to play Sanpoki in Mitaka city, 527 participants, > 18 000 photos posted



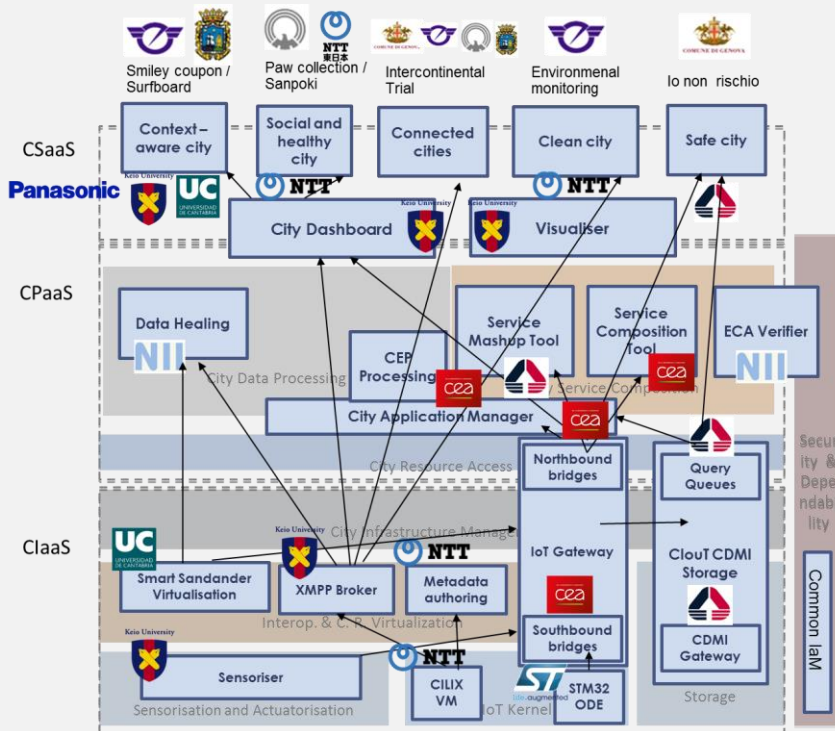
4700 downloads, 5500 web-app access and average rating of 4/5



ClouT Collaboration & Competition Dashboard

ClouT final outcomes

Fruitful integration work and strong collaboration between European and Japanese partners



- More than 15 software components have been developed, integrated and demonstrated via field trials in the 4 pilot cities.
- More than 10 000 physical devices and 500 000 virtual devices have been connected to the ClouT platform via more than 10 communication protocols and sensorizers. More than 5000 end-users used 5 ClouT applications deployed in 4 pilot cities.
- More than 25 scientific publications, 7 co-organised workshops, 8 joint events with other EU projects, 10 stakeholder meetings and 6 booths in various events.

ClouT partners have been regularly communicating best practices on EU-Japan collaboration. For more information on this first of its kind experience feel free to contact: Levent Gürgen, levent.gurgen@cea.fr and Takuro Yonezawa, takuro@ht.sfc.keio.ac.jp

ClouT book

ClouT partners prepared a book “Enablers for Smart Cities” which contains the main ClouT results. It will be released on August 2016 and published by Wiley. The book is composed of three parts answering the following questions:

- How enable sensing, the most significant aspect, and then to enable “smart” processing and management of city entities/resources?
- How enable various kinds of applications integrating different city entities/resources?
- How make use of technology to realize values in cities and citizens’ lives?

[Get your copy soon by pre-ordering it](#)

Public deliverables

ClouT project has already published the final year public deliverables including:

- D2.4 ClaaS specification and reference implementation – final release
- D3.4 CPaaS specification and reference implementation – final release
- D4.3 Final report of City Application software, field trials and evaluation results

[Deliverables can be downloaded here](#)

ClouT Cookbook

Hands-on tutorials for ClouT components that will be released open source are available online! It includes sensiNact Platform and Studio, CDMI gateway implementation, Data Mashup tool, XMPP server, Web Sensorizer, etc.

ClouT cookbook first version is available: <http://clout-project.eu/clout-cookbook>

Interactions with ClouT stakeholders

During the last phase of the project, ClouT has kept on organizing stakeholders meetings with new Cities interested in ClouT platform and its expertise for tackling their own challenges. In addition, interactions have been developed with industrials at professional exhibition booths as well as developer events such as Civic Tech.

Meetings with City representatives and Citizens associations

- *Stakeholders meeting, 24th February 2016, Grenoble (France)*

The participants included Grenoble City representatives and both ClouT European and Japanese project members; about 20 people, among which one representative of each 4 pilot cities where ClouT platform and applications have been successfully deployed during the last 3 years.

More information: <http://clout-project.eu/clout-stakeholder-meeting-in-grenoble-24-feb>

- *Ideathon / APPLIC meeting, 12th January 2016, Tokyo*

ClouT project has been introduced through NPO such as the Association for Promotion of Public Local Information and Communication (APPLIC). The meeting gathered 61 people from 12 municipalities and 20 companies, and led to discussions between the cities on how to share and to solve their current issues.

Exhibition booths and panels for industry-oriented professionals

- *ClouT booth at SiDO Event (AIOTI Village), 6-7 April 2016, Lyon (France)*

SiDO has become the event of the Internet of Things in France and in Europe, thanks to 5.300 professional visitors and 200 exhibitors. ClouT members from CEA-Leti held a booth in the AIOTI village together with [ALMANAC](#), [COSMOS](#), [VITAL](#) and [FIESTA-IOT](#), EU funded projects in the IoT domain.

- *ClouT booth at Smart City Expo Kyoto, 1-2 June 2016, Kyoto and at Smart Community Japan, 15-17 June 2016, Tokyo*

NTTE, NTTRD and KEIO partners held a booth for ClouT project in the EU-Japan village (managed by the [JEUPISTE](#) project for Japan-EU Partnership in Innovation, Science and Technology). Smart city challenges and possible collaboration with Europe have been put to fruitful discussions.

Civic Tech and hackathon with developers

- *Civic Tech Party 2015, 11-12 November 2015, Toyama*

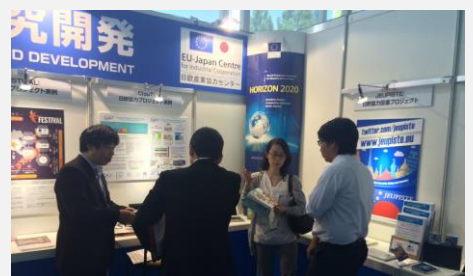
KEIO partners presented the ClouT web sensorizer component to be used by the Toyama citizens during the event and prepared online tutorial and video: <http://sox.ht.sfc.keio.ac.jp/Toyama/howToSensorize.html>, <https://www.youtube.com/watch?v=zmvwDTCDgcQ>.

More information: <http://hack-toyama.com/>

- *IoT week 2016 hackathon, 31 May-2 June, Belgrade (Serbia)*

CEA-Leti and KEIO partners held a booth for ClouT project during [IoT week 2016](#), in Belgrade. ClouT project available results have been also presented during plenary session. Finally, ClouT tools have been proposed to the developer teams participating to the hackathon.

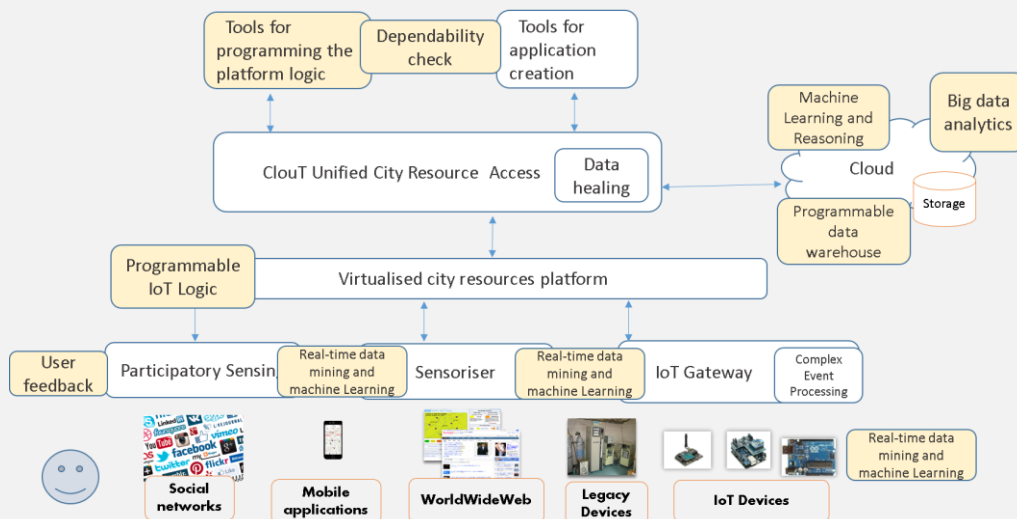
More information: <http://clout-project.eu/clout-at-iot-week-2016-hackathon-1-2-june>



From ClouT to BigClouT

The core of the ClouT consortium prepared a new project proposal in response to the call [H2020 EUJ-02-2016](#): “IoT/Cloud/Big Data platforms in social application contexts”. BigClouT proposal has been selected among the 13 proposal received for this EU-Japan call. The BigClouT project has started officially on 1st July 2016, the kick-off meeting will take place on July 19th in Tokyo (Tsukuba University Tokyo Campus).

The overall concept of the BigClouT project is to offer an analytics capability to the city by leveraging IoT, cloud and big data technologies creating a distributed intelligence that can be implanted throughout the whole city network. The following figure illustrates the BigClouT additional components (shown in color) to the ClouT architecture.



The core of the consortium mainly remains the same (CEA, Engineering, NTT East, Keio University, NII, NTT R&D). New partners, in particular from the big data domain, have joined (Lancaster University, National Technical University of Athens, Tsukuba University and YRP-IoT corporation). In addition, the project has welcomed 3 new cities: Grenoble via Grenoble-Alpes Métropole and Tsukuba city (Grenoble and Tsukuba are twin cities), as well as the Bristol city via its joint venture with the Bristol University, Bristol is Open Ltd. Fujisawa will also remain as a pilot city.

Smart City Workshop - BigClouT Café - July 20th, 3:30-6 p.m. Tsukuba University Tokyo Campus Come and join us!

In particular if your organization or community belongs to:


Municipalities / Local governments Interested in answering new urban challenges and EU-Japan cities field trials best practices exchanges	SMEs and Entrepreneurs associations Interested in re-using ClouT/BigClouT available components in their business environment
EU-Japan community of developers Interested in implementing and testing ClouT/BigClouT intercontinental platform	NPOs and Citizens associations Interested in benchmarking new technologies for a more liveable city

After the presentation of the ClouT final results, which will serve as a baseline for the BigClouT project, BigClouT's concept, objectives and use cases will be introduced to the participants. The participants will have also dedicated time to present to the European and Japanese BigClouT partners their organization and their interests and current needs.

Since the project is planning to set up field trials in 4 pilot cities during the second year and third year of the project, the workshop will take the benefit to propose ideas for these new field trials. If you are interested in joining us for the Smart City Workshop - BigClouT Café -, please contact NTT East Corporation at eujp@ml.bch.east.ntt.co.jp

ClouT in the press and public communications

Dealing with two key technologies in the ICT domain, which are Internet of Things and Cloud Computing, ClouT project has attracted a lot of attention from various communities, press, blogs, projects, etc... Moreover, the last year field trials have generated multiple communications in print and visual media.

- ClouT results are published in IoT European Research Cluster [book 2016](#), chapter 10.6 on EU-Japan Collaboration for a World Leading Research in IoT.
- Sonia Sotero, Santander Municipality, Smiley coupon replication in Santander reportage, on Spanish TV RTVE news, April 2016: <https://vimeo.com/171374253>
- Takuro Yonezawa, Keio University, general chair of conference [Urb-IoT 2016](#) interview in convergence of technology + citizen science: www.youtube.com/watch?v=kTGXj8wIxE
- Levent Gürgen, CEA-Leti, interview on Internet Of Things and Smart Cities in SiDO, the professional showroom of the Internet of Things, April 2016: www.youtube.com/watch?v=7yRlmF79egw
- ClouT in EU-Japan Centre for Industrial Cooperation newsletter ([March 2016 issue](#))
- ClouT intercontinental field trial launch (Mitaka, Fujisawa, Santander and Genova Cities, Press release by NTT-EAST (in Japanese), February 2016: www.ntt-east.co.jp/release/.../20160212_01.pdf
- Latest news still continue to be posted in social network: [@cloutsmarcity](#) 



Major events in Europe / Asia on Cloud, Internet of Things and Smart Cities

The ClouT results have been promoted in industry oriented events where partners had the opportunity to present the results in plenary session and to organize dedicated panels:

- SiDO (European IoT professional event), April 6-7 2016, Lyon. “European Innovation for citizen-centric smart cities” panel: the session has focused on citizen driven innovation supported by local business and developer ecosystem, which is the key for smart sustainable cities. The panel included representatives of CEA-Leti (chair), City of Paris, City of Lyon, EIT Digital and CitizenData.
- ClouT project was represented in EC [Net Futures 2016](#) event, 20-21 April 2016, Brussels, both in EU-Japan projects village and in Engineering booth, core partner of ClouT and sponsor of Net Futures event.
- [IoT week 2016](#), 31 May-2 June 2016, Belgrade, presentation of the available ClouT results during plenary session and participation to the international collaboration session (Brasil, Japan, S. Korea, Australia).



Next events: ClouT is ending, come and meet BigClouT!

- NTTE will organize BigClouT Smart City Workshop, July 20, Tsukuba University Campus, Tokyo.
- CEA-LETI has submitted a talk to eclipsecon Europe 2016, [OSGi for European and Japanese smart cities - experiences and lessons learnt](#), October 25-27, Ludwigsburg, Germany.
- CEA-Leti and Grenoble-Alpes Métropole will have a common booth in [Smart City Expo 2016](#), November 15-17, Barcelona, including SMEs associations from Grenoble area.
- Keio University will organize a workshop in [Middleware 16](#), December 12-16, 2016 - Trento, Italy

