

Case study n°4

València Smart City Platform – City Standard Based KPIs for Smart City Management

Country: Spain

Level: Local

SDG Addressed: SDG 11 – Sustainable Cities and Communities



Summary

The objective of this case study is to show how the administration of the City of Valencia (Spain) has used a number of standards including ISO 37120 to develop key performance indicators (KPIs) shared on an open platform and dashboards. This allowed breaking information silos in the administration, leading to integrated, transparent and enhanced decision management.

This supports several indicators under SDG 11 including in particular SDG 11.3 “By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management”

Background

City management involves handling the right information in order to take correct decisions. ISO37120 supports policymakers to achieve this goal, by providing a global framework for cities; defining a hundred KPIs common for all cities adopting the standard.

Further, having standard KPIs has enabled València to build solutions based on information coming from internet-of -things (IoT) devices but in the end reporting ISO KPIs: air quality measures, noise level control are specific problems addressed with IoT solutions but eventually reporting ISO 37120 KPIs.

Strategy

When the began in July 2014, there were no global standards for Sustainable Cities. On its launch, ISO 37120 became a guide for València’s KPI standardization. València became Platinum Certified by the World Council on City Data in 2015. Since adopting the ISO standard, the VLCi project Team contributed on the Spanish Working Group AENOR CTN178 on Smart City topics, contributing to the document “UNE178201” on Smart City Attributes and Requirements and working on UNE178202 on Smart City, UNE178104 on Smart City Platform Interoperability.

Since 2016, València has been a contributor to the ITU Y.4903/L.1603 standard on “Key performance indicators for smart sustainable cities to assess the achievement of sustainable development goals”. This work is ongoing and València plans to be ITU Y.4903/L.1603 compliant by 2018/19. Every smart solution, built by means of the VLCi platform, contributes with ISO37120 KPIs, which are reported by the city management using city dashboards.

Results and Impact

Basing our KPI definition and city strategy on City Global Standards (e.g. ISO37120, ITU Y.4903/L.1603) – in addition to a number of other national standards (e.g. UNE178104, UNE178201, UNE178202 and UNE178108) - has allowed València to:

- Report KPIs at a global level, allowing us and other compliant cities to check and compare with them
- Build rational Dashboards based on standard well defined KPIs to support city manager decisions
- Align vertical solutions (IoT deployments) so standard KPIs are fed from devices deployed in the city
- Quicker results as following the standards as our guideline

The application of City Standards and the utilisation of the open platform (i.e. VLCi platform) have resulted in greater levels of visibility and global compliance.

Challenges and Lessons Learned

The implementation of ISO37120 was a considerable undertaking for València City Hall. In addition to numerous joint commitments and consultations, the standard's implementation necessitated collaboration across all government departments.

Prior to all these meetings, a document collecting all KPI functional definitions, attributes, operators and formulas in order to structure the work with all the City Hall Departments, find the data sources and document it accordingly.

Collaboration is key but methodology and a structured work plan is essential: We found some KPI calculations challenging as not always the information is detailed to the "local level", the "city level" and interpolation or further research is required. Good technical resources are critical, in order to achieve a quick data integration.

Potential for Replication

València's smart city and KPI experience can be replicated easily as forms (in Spanish) and methodology can be reutilized and adapted easily to any other city. The solutions built on the VLCi platform are FIWARE based (data is integrated using NGSI and stored and processed in HDFS), using FIWARE (open source platform) datamodels to give structure to the information provided by the devices deployed in the city, so it should be easy to replicate in any other city using FIWARE components (i.e. Context Broker).