



## CASE STUDY TITLE

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



### SUMMARY

The objective of this case study is to show how the administration of the City of València (Spain) has used a number of standards, including ISO 37120 and ITU/United for Smart Sustainable Cities (U4SSC) Key Performance Indicators (KPIs), to develop valuable data on an open platform and municipal and citizen 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 to make correct decisions. U4SSC initiative proposes a set of indicators to make it easier for cities and stakeholders to know objectively to what extent they can be considered sustainable and smart. Working with KPIs certifications supports policymakers to achieve these goals, 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 from internet-of-things (IoT) devices. In the end, reporting ISO KPIs (ISO37120): air quality measures, noise level control, waste management, parking management are specific problems addressed with IoT solutions.

### STRATEGY

When Valencia strategy began in July 2014, there were no global standards for Sustainable Cities. ISO 37120 became a guide for València’s KPI standardization, becoming Platinum Certified by the World Council on City Data in 2015.

### AT A GLANCE

#### COUNTRY

- Spain

#### LEVEL

- National

#### SDG ADDRESSED

- SDG 11 - Sustainable Cities and Communities

Since adopting the ISO standard, the VLCi project Team contributed to 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 standard ITU-T Y.4903 on “Key performance indicators for smart and sustainable cities to assess the achievement of sustainable development goals.”

In 2019 València certified on the U4SSC KPI certification programme (that is based on the ITU standard cited above), the city became one of the first cities to have ISO and U4SSC certifications.



## STRATEGY

Since 2019, València has led the ITU working group on City Platforms, allowing it to share its experience of having a city platform as a data aggregator and exploiting valuable information through indicators.

## RESULTS & IMPACT

basing our KPI definition and city strategy on City Global Standards (i.e., ISO37120, ITU-T Y.4903, U4SSC) – in addition to some other national standards (i.e., 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.
- Monitoring of the progress achieved in Sustainable Development Goals (SDGs).

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

## CHALLENGES & LESSONS LEARNED

The implementation of standards 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.

Before all these meetings with the municipal services, it is necessary to study and compile all the functions, attributes, sources, references, methodology, and unit. To structure the work with all the City Council Departments, find the data sources and document it accordingly to facilitate the highest number of KPIs.

## POTENTIAL FOR REPLICATION

València's smart city data strategy and KPI experience can be replicated easily, 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) data models 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).





## CHALLENGES & LESSONS LEARNED

Collaboration is crucial, but the methodology and a structured work plan are essential: We found some KPI methodologies 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 to achieve quick data integration.

## POTENTIAL FOR REPLICATION

Most of the indicators that València includes in the city platform are published in the Open Data Portal and can be used by the citizenship, the innovation ecosystem, universities, start-ups, and local businesses.

U4SSC deliverable on city platforms “Digital solutions for integrated city management & use cases” with “Compendium of survey results on integrated digital solutions for city platforms around the world” show how cities in the world use smart city platforms as a fundamental element for the fulfillment of SDGs.

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