



Smart City Standards

City x City Festival

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Standards are clear descriptions of agreed best practice

A standard is an agreed way of doing something; a common solution for a mutual problem. It reflects the expertise and know-how of the often world-renowned experts who developed it.

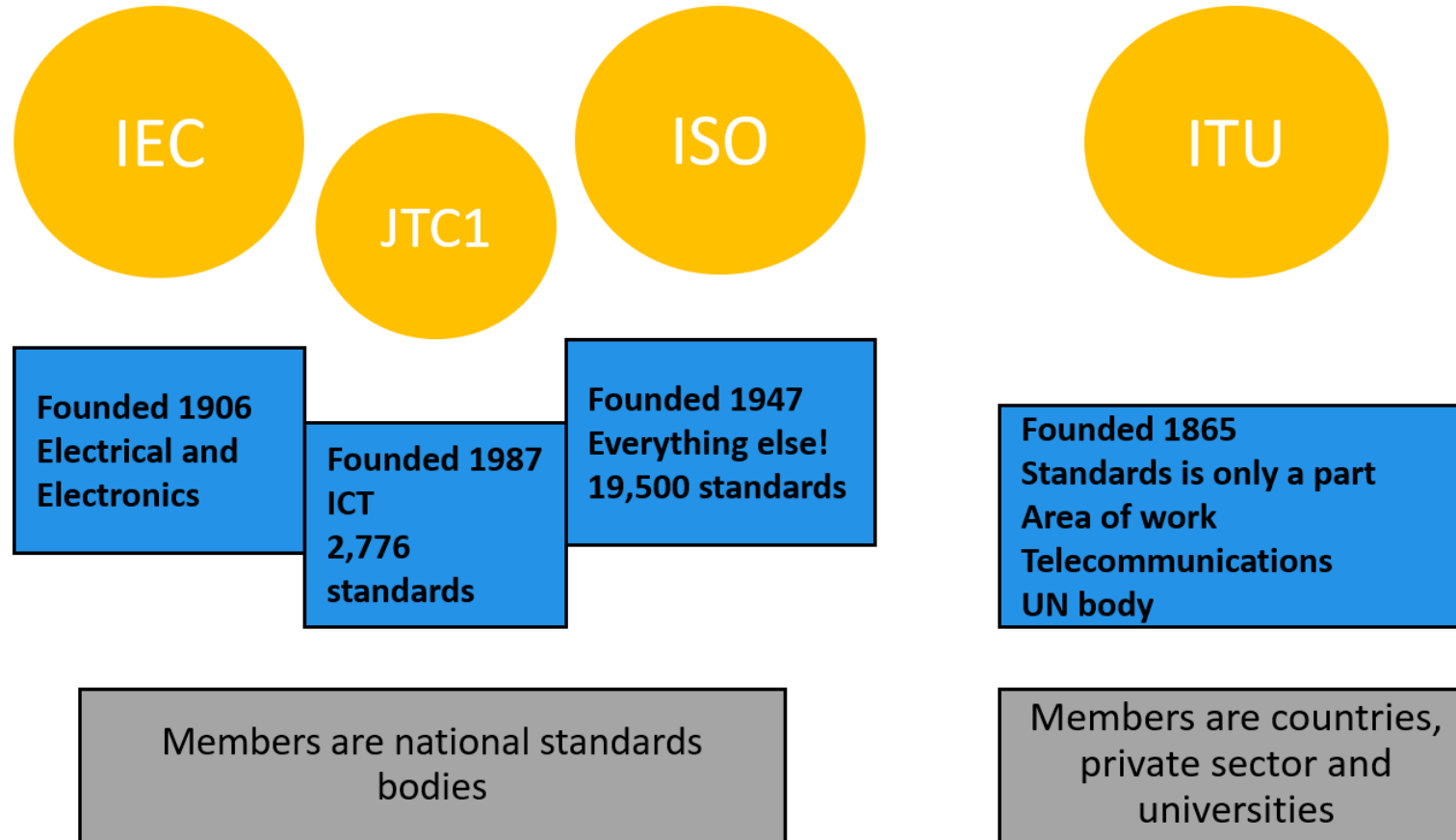
International Standards allow products to work safely with each other anywhere in the world. For example, MPEG standards enable the sharing, distribution and exchange of content on a whole range of different devices.

International Standards also facilitate global trade, making it easier to buy, sell and use products in many markets. A USB stick manufactured in China can be used on a computer bought in Norway. A halogen bulb from Germany can be used in a lamp in Brazil.

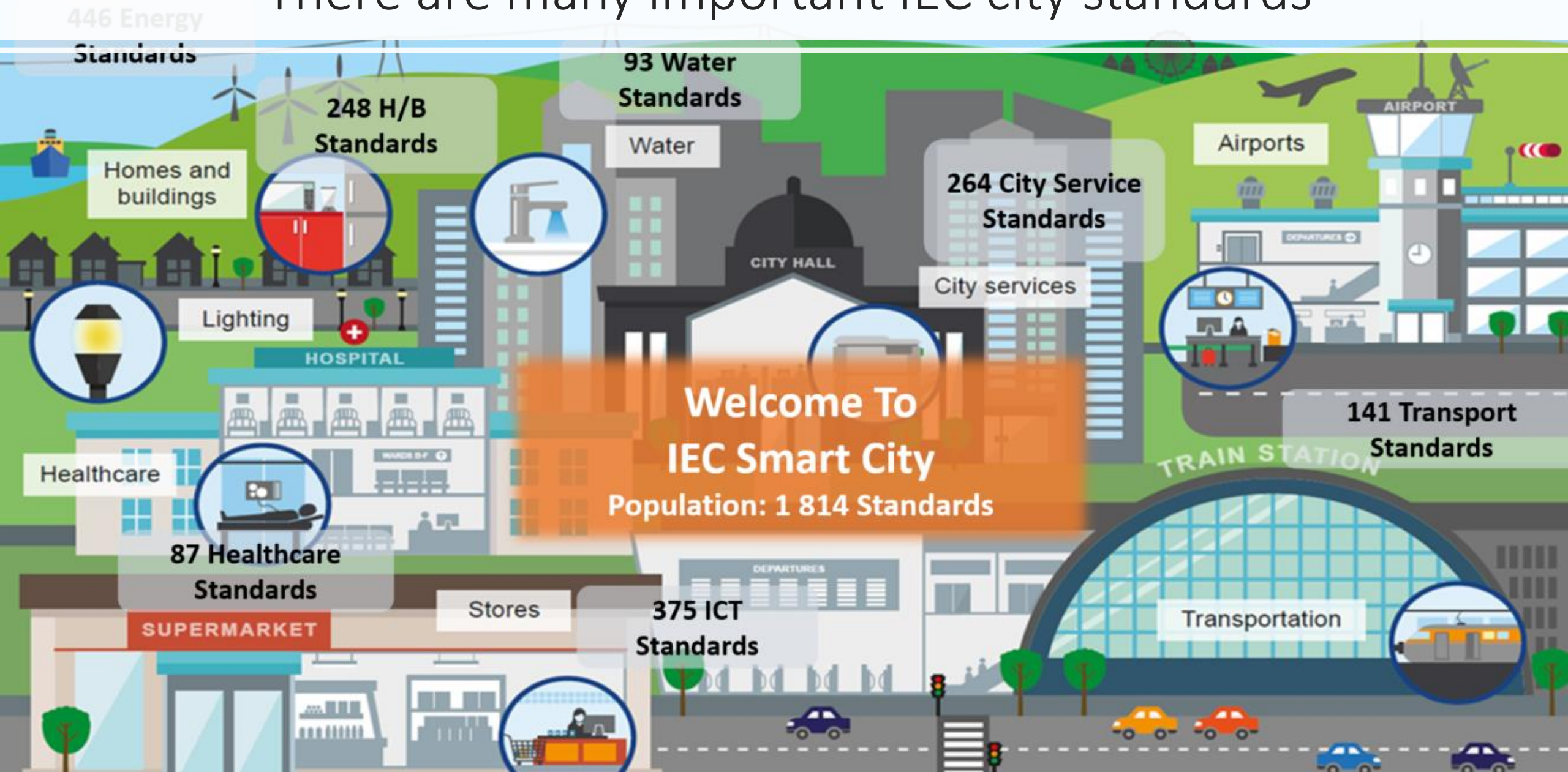


Standards are not only about products but can also relate to services

WTO recognised International Standards Development Organisations



There are many important IEC city standards



Types of smart city standards

Helping cities work

The basic “plumbing”

Helping cities improve

Incremental improvements
eg Open 311

Helping cities Transform

Families of standards to fundamentally change the way the city works – Digital Twins, Data Spaces etc

Smart City standards speed up the move to smarter cities

1

They build scale – many cities implementing the same things → cheaper, better products

2

They make things easy to procure – and easy to design for procurement

3

They eliminate worry of vendor “lock in”

4

They make sure things “fit together”

Developing standards for complex systems requires a systems approach



System: *a group of interacting, interrelated, or interdependent elements forming a purposeful whole of a complexity that requires specific structures and work methods in order to support applications and services relevant to stakeholders.*



Systems Approach: *a holistic, iterative, discovery process that helps first defining the right problem in complex situations and then in finding elegant, well-designed and working solutions. It incorporates not only engineering, but also logical human and social aspects.*

The IEC Systems approach and systems committees

The IEC Systems Committees were set up because, while **electrical and electronics standards** are vitally important, they are **often only part of the solution to a system requirement**. In order to be sure that the IEC standard properly contributes to that system requirement, **it is important to start by studying the whole system**.

The role of a Systems Committee is to analyse the system as a whole, and then provide relevant information to the IEC TCs to enable them to develop the electrotechnical standards needed.

IEC Smart Cities Systems Committee

To foster the development of standards in the field of electrotechnology to help with the integration, interoperability and effectiveness of city systems.

This will be done:

- by promoting the collaboration and systems thinking between IEC/TCs, the SyC and other SDOs in relation to City systems standards,
- by undertaking systems analysis to understand the needs for standards and assess new work item proposals (NWIPs) related to city systems,
- by developing systems standards where needed and by providing recommendations to existing SyCs, TCs/SCs and other SDOs.

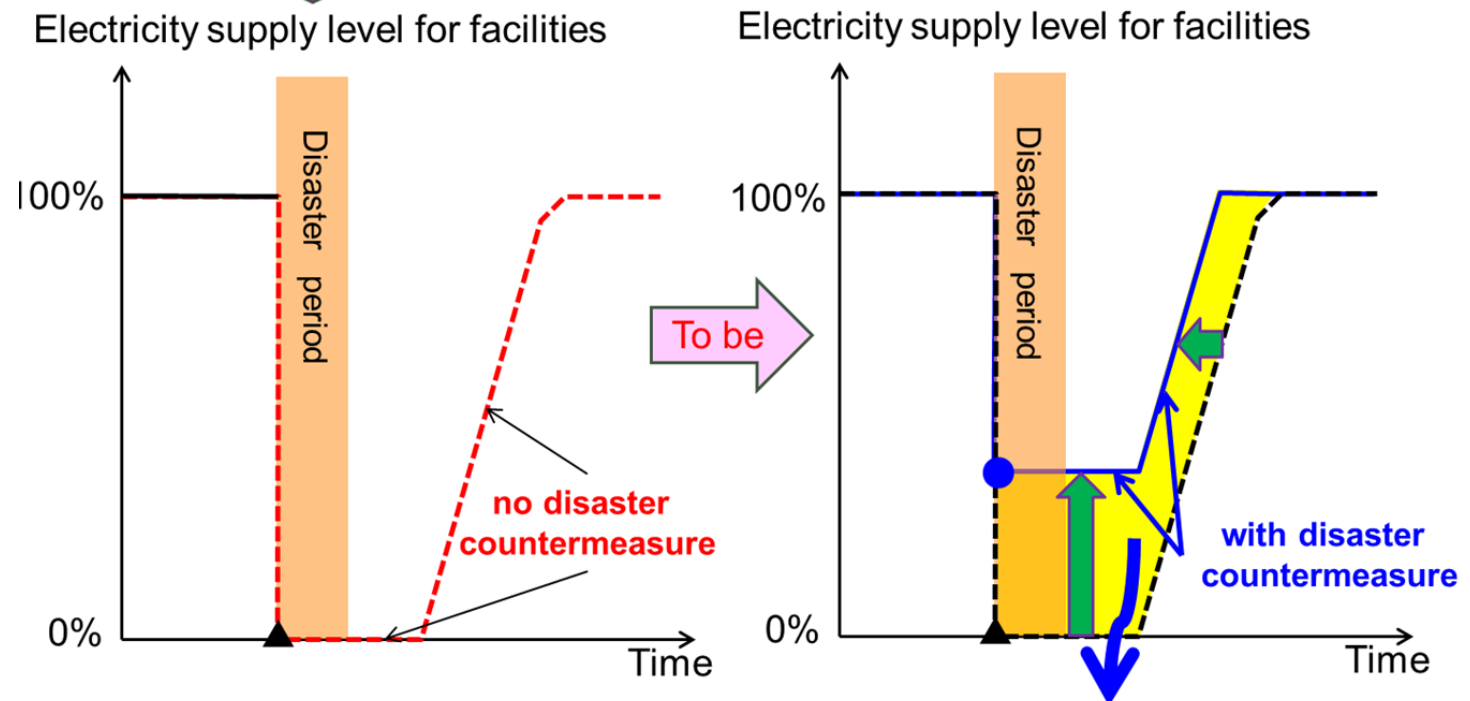
Note “Cities” refers to any geographically located population.

We do make some standards ...

IEC 63152:2020

City service
continuity against
disasters - The
role of the
electrical supply

Discontinuity of electricity supply due to disaster
causes all facilities for city services to stop functioning



Establish ECP and implement ECS

But our
main role
is to
support
others

Our main role is to gain a deep understanding of cities and city systems by identifying and analysing use cases and developing tools such as a Smart Cities Reference Architecture in order to make it easy for the IEC TCs to see how their focused standards work fits in with the wider requirements of Smart Cities.

We also support ISO, ITU and other relevant Standards Development Organisations in developing the consistent set of standards that cities need

What we are working on

1. Citywide guidance standards:
 - a. A common reference architecture
 - To help identify commonalities between cities
 - b. A common language – terms, definitions, frameworks
 - To ensure partners and suppliers have a common understanding
2. Cataloguing and mapping smart city related standards
 - To help city stakeholders and standards bodies easily find the standards they need
3. Scoping families of standards to help solve city needs
 - To tackle a city need or to define a smart solution, a whole family of different types of standards is required – management, electronics, data, IoT, communications ... and they need to be designed to work together



IEC-ISO-ITU JOINT SMART CITIES TASK FORCE



Increasing collaboration

- We are exploring with ISO TC 268 setting up a joint Working Group on Smart City Reference Architecture. This could be extended to ITU and JTC1.
- ISO/IEC JTC1 SC41 have agreed to work with IEC SyC Smart Cities to set up a joint Working Group on Urban Digital Twins. This could be extended to ISO TC268 SC1



MIMs and Standards

The MIMs provide a good start into the standards world, allowing cities to move at their own pace into benefiting from the many standardised sets of good practice available internationally

The MIMs could act as Minimal Viable Products helping to quickly identify what standards cities and city service providers find valuable, and so set the agenda for future standards development