

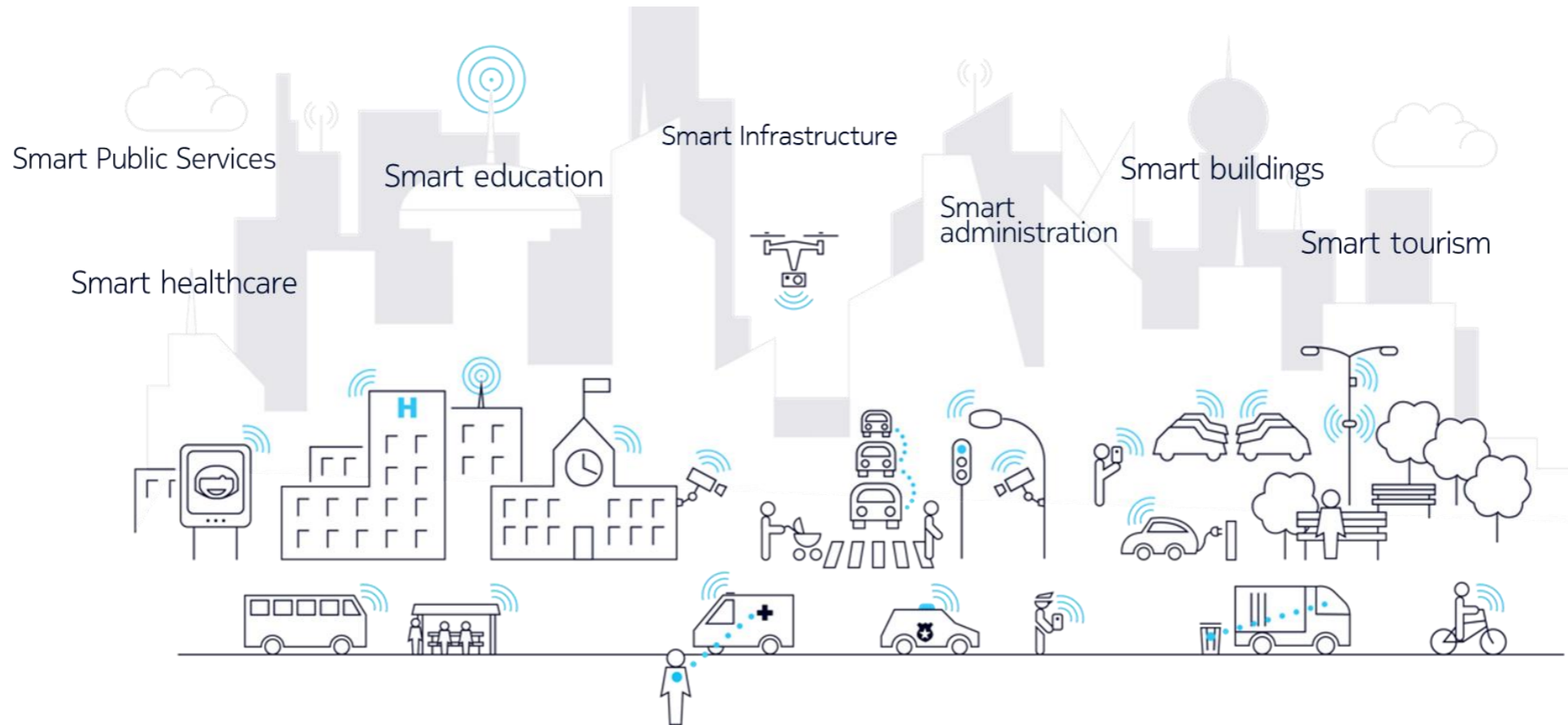


Actualizing smart cities and communities

ITU-T Study Group 20:
Internet of Things (IoT) and Smart Cities and Communities

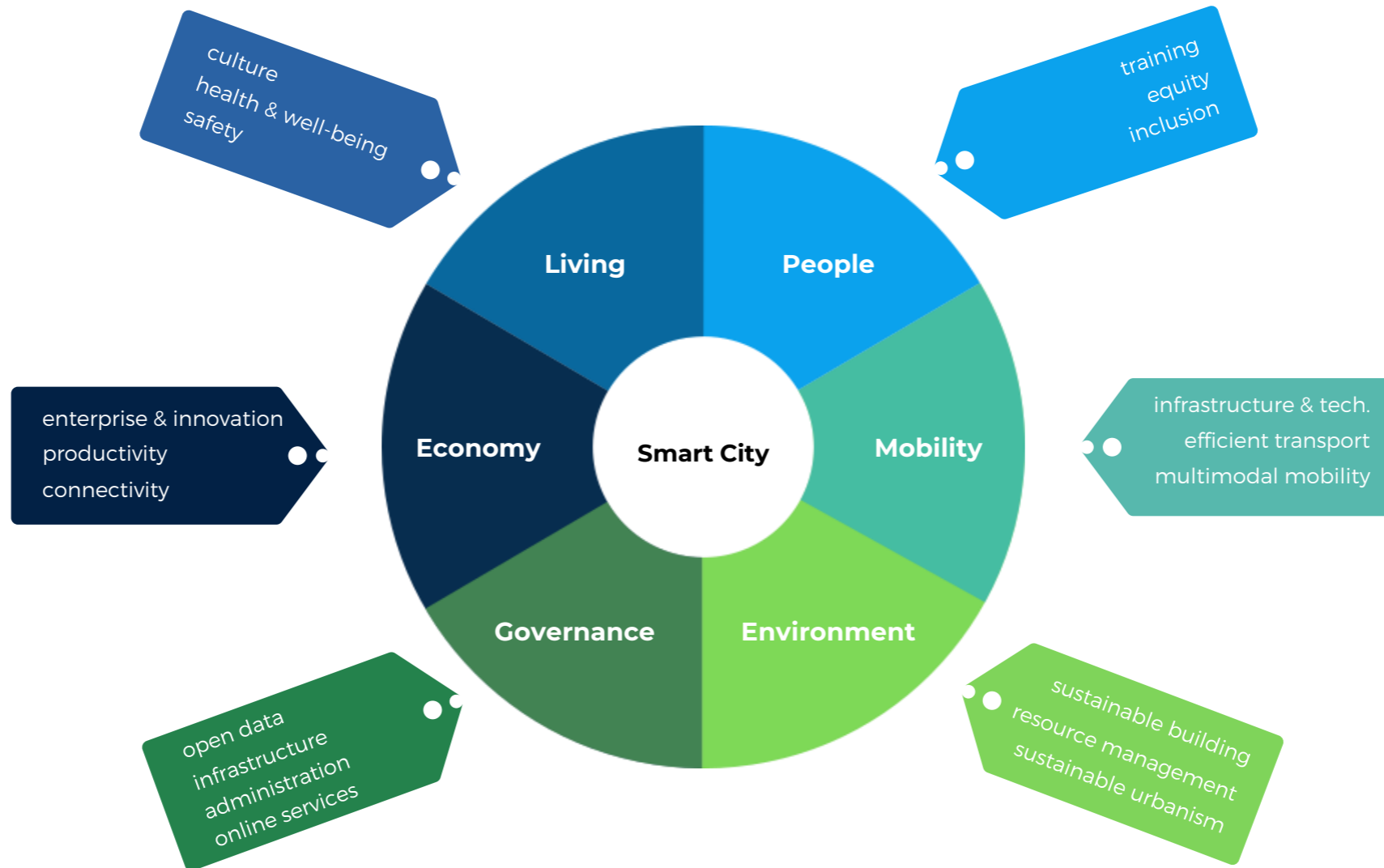
Hyung Jun Kim
Vice Chairman , ITU-T Study Group 20
Co-convener of the JCA-IoT and SC&C

What makes a city 'smart' & 'sustainable'?

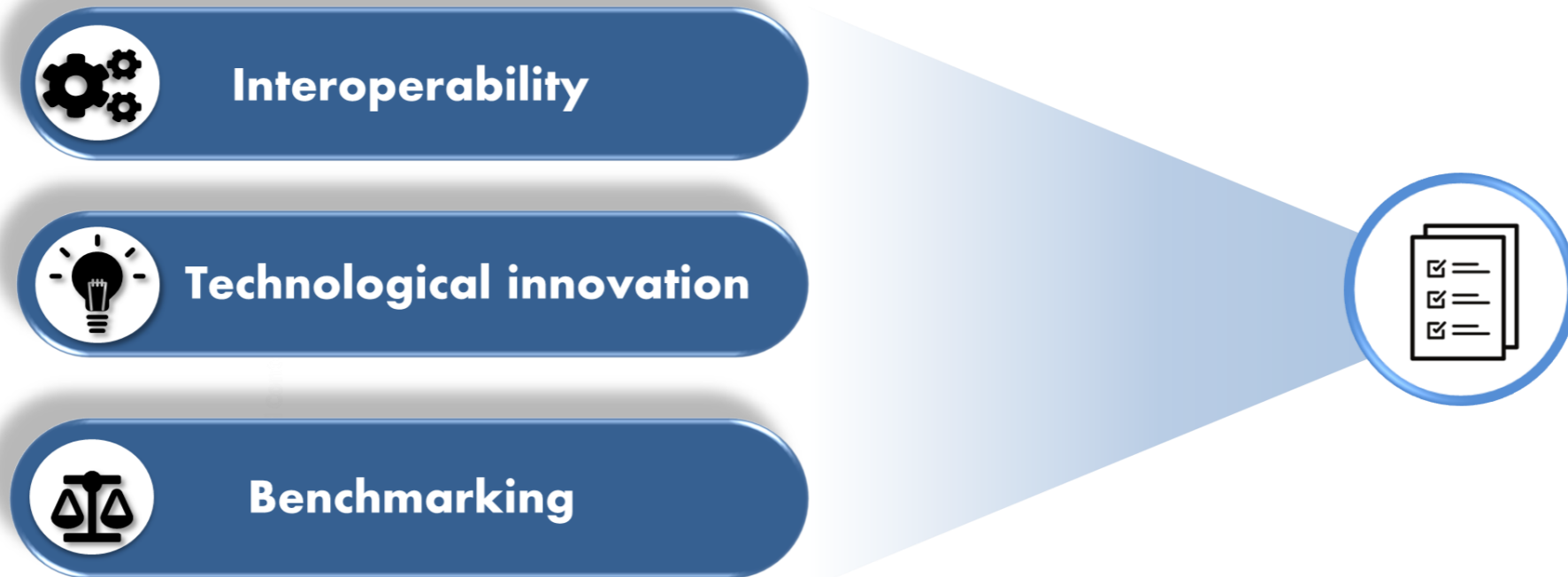


Smart applications improve people's quality of life, engagement, bolster innovation and social and economic development, and make cities more attractive places to live, visit and do business.

What makes a city 'smart' and 'sustainable'?



What part do standards play in cities' digital transformation?



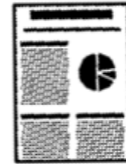
What role does ITU play in the digital transformation of cities?



Standardization



Research



Publications



Awareness-Raising

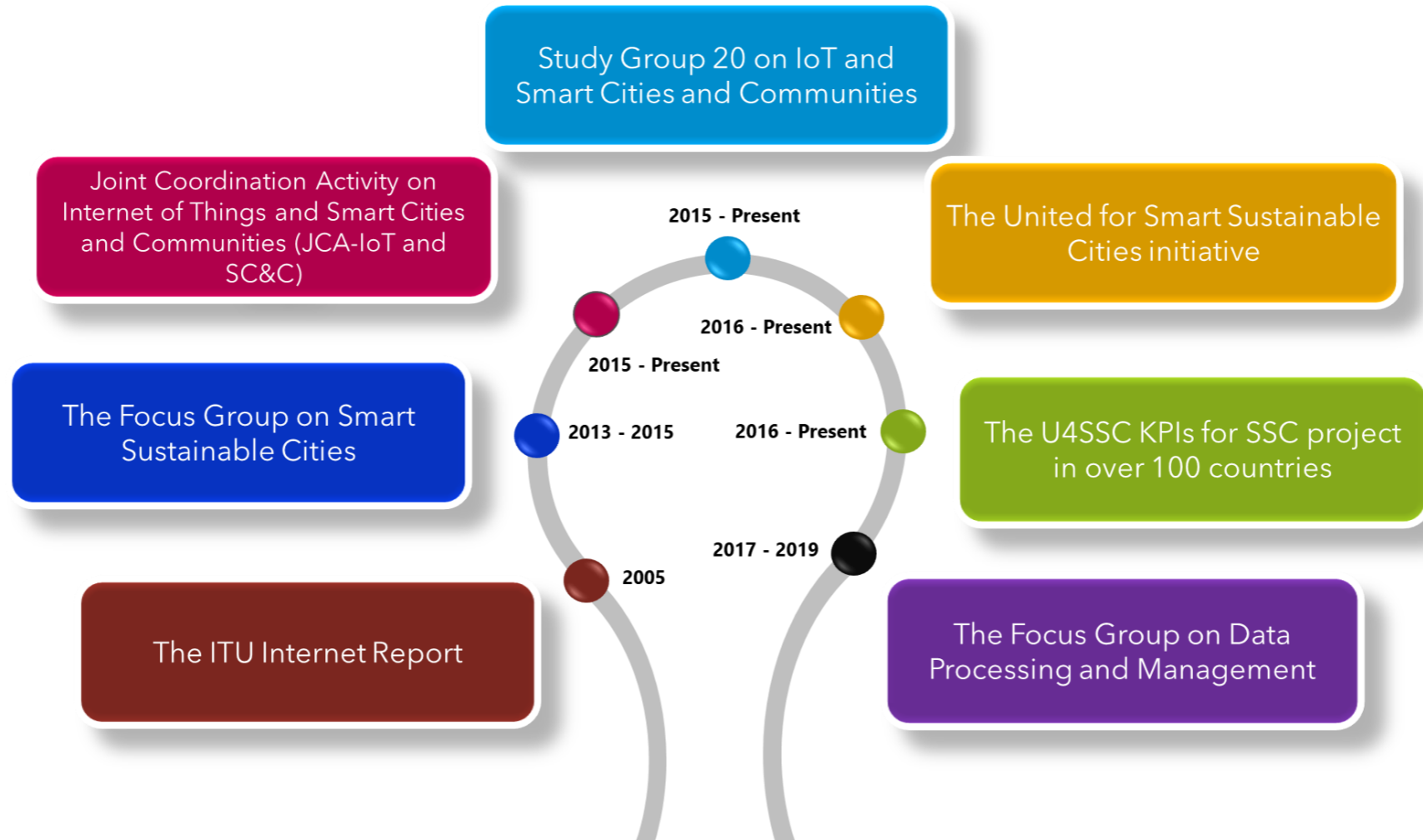


**Projects and
Collaboration**



**Networking and
Partnerships**

ITU's role: Milestones



ITU-T Study Group 20: IoT and Smart Cities and Communities



ITU-T Study Group 20:
Internet of Things and
Smart Cities and
Communities

Lead expert group to develop standards and guidelines on:

- Internet of things (IoT) and its applications
- Smart cities and communities, including its e-services and smart services
- Internet of things identification



- 2 Working Parties (7 Questions)
- 4 Regional Groups:
 - SG20RG-LATAM
 - SG20RG-AFR
 - SG20RG-ARB
 - SG20RG-EECAT

ITU-T SG20: Reach and impact



ITU-T Study Group 20:
Internet of Things and
Smart Cities and
Communities

Main Statistics and outcomes:

- **More than 120 experts** participate actively in the work and attend each meeting (including the active participation of Academia members and SMEs)
- **From 2017-2019:**
 - 63 Recommendations Decided/Determined/Approved
 - 7 Supplements agreed
 - 6 other informative texts agreed
 - Over 40 events organized related to IoT and Smart Cities and Communities



2019 Catalyst Awards finalist

Recommendations ITU-T Y.4200 "Requirements for the interoperability of smart city platforms" and Y.4201 "High-level requirements and reference framework of smart city platforms"

Next meeting: 6-16 July 2020, Geneva, Switzerland



ITU-T SG20: Ongoing standardization work

Internet of things (IoT)

- **Drones** for IoT
- IoT requirements for **edge computing**
- **Artificial Intelligence** and IoT
- **Accessibility for IoT**
- **Blockchain** and IoT
- IoT for **developing countries**
- **Intelligent Transport Systems (ITS)** based on IoT
- **Privacy and trust** of IoT systems
- **Interoperability**
- **Edge computing**
- **IoT-devices authentication**
- **Digital twins for IoT**

Smart cities and communities

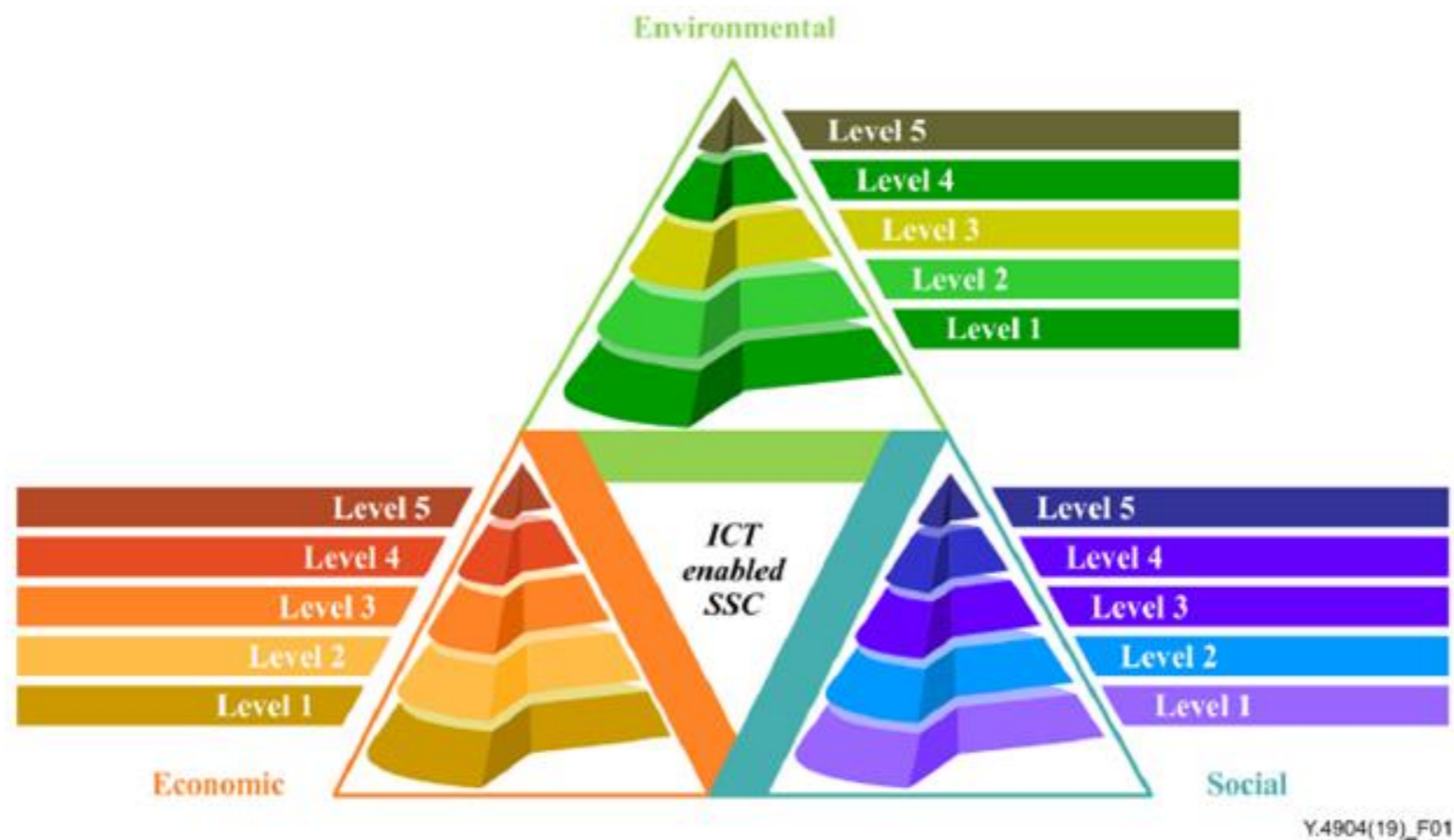
- **Open Data** in Smart Cities
- **Use cases, requirements and architectures for** Smart cities and communities
- **Smart Services in rural communities**
- **Disaster notification** of the population in smart cities and communities
- *Smart City Infrastructure*

Data management & processing

- Data structure and data transfer protocol for **automotive emergency response system**
- Function description and metadata of Spatio-temporal Information Service for SSC
- *Integrity*

Key international ITU standards to enable the digital transformation of cities & communities

Smart sustainable city maturity model

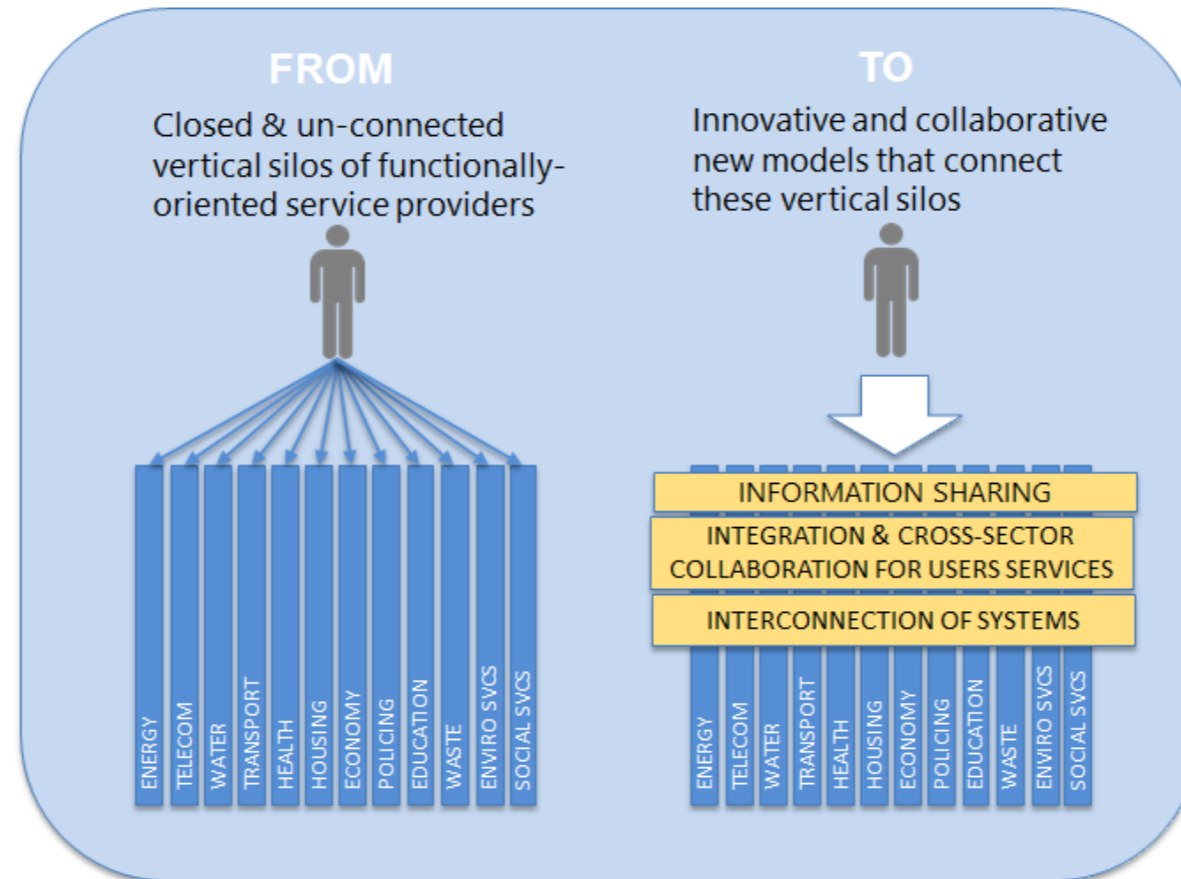


Recommendation ITU-T Y.4904: 'Smart sustainable cities maturity model'



Key international ITU standards to enable the digital transformation of cities & communities

Smart sustainable city interoperability



Recommendation ITU-T Y.4200: 'Requirements for the interoperability of smart city platforms'
Recommendation ITU-T Y.4201: 'High-level requirements and reference framework of smart city platforms'

Interoperability in Smart Sustainable Cities

Performance

ability to handle a large number of devices, services and processes efficiently



Security

guarantee of security and reliability



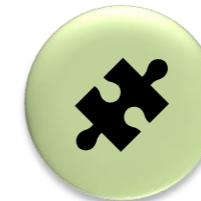
Robustness and resilience

capability to continue while facing problems



Extensibility

adaptability to meet new needs



Scalability

ability to increase processing, interconnection and storage capacities without needing to change the architecture



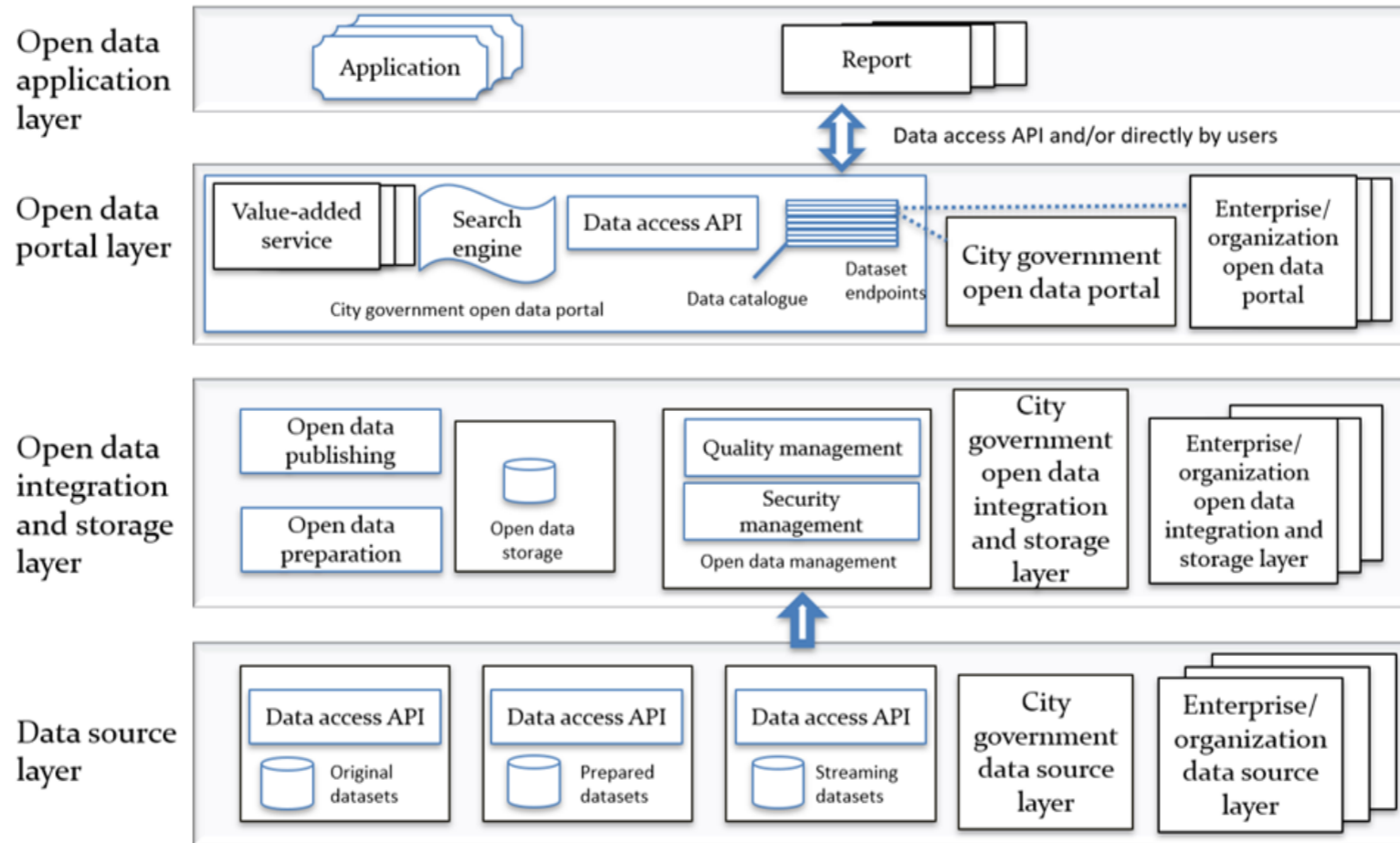
Interoperability with different technologies

capability of supporting different technologies for capturing information and communications standards



Key international ITU standards to enable the digital transformation of cities & communities

Framework of open data in smart cities

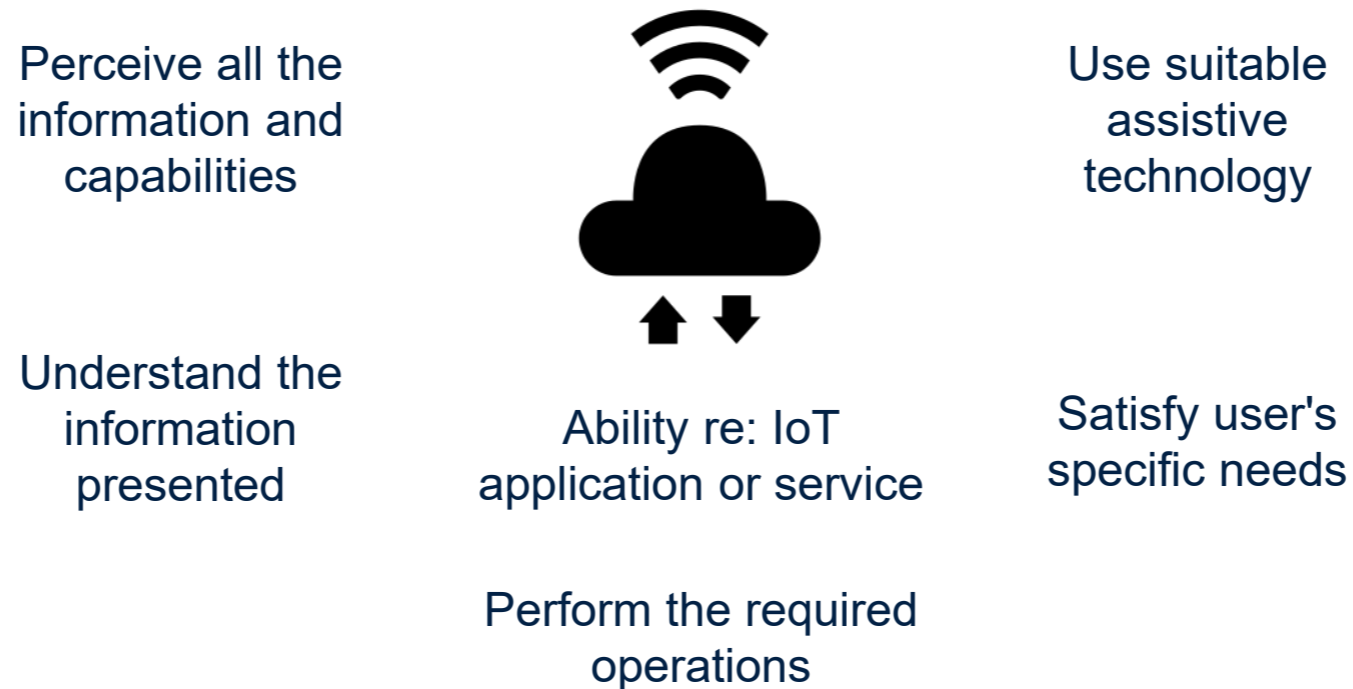


Recommendation ITU-T Y.4461: Framework of open data in smart cities



Key international ITU standards to enable the digital transformation of cities & communities

IoT accessibility in smart sustainable cities



Recommendation ITU-T Y.4204: 'Accessibility requirements for the IoT applications and services'



Collaborations



Collaboration Activities

Joint Coordination Activity: IoT and SC&C

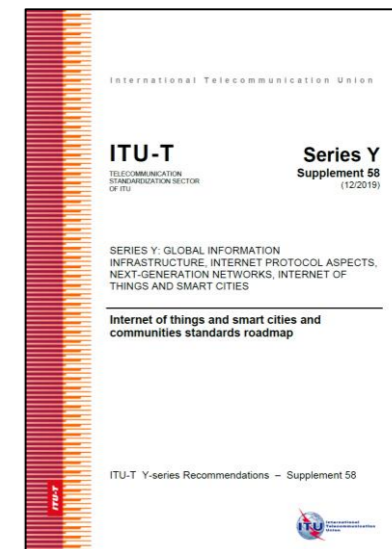


Collaboration Activities

- To coordinate the activities on IoT & SCC within ITU.
- To provide a visible contact point for IoT and SC&C activities in ITU-T
- To seek cooperation from *fora* and other SDOs.



IoT and SC&C standards online roadmap



Co-Conveners:

- Hyoung Jun Kim (ETRI, Korea)
- Fabio Bigi (Italy)

Secretariat - Contact:
tsbjcaiot@itu.int

Collaboration with other SDOs



- 17 new Recommendations approved
- 1 ongoing work item
- 6 Technical Reports agreed



- Organization of World Smart City Forums
- Working team on Smart City Terminology

Joint IEC-ISO-ITU Smart Cities Task Force

- To build synergies on ongoing work in ITU-T, IEC and ISO related to smart cities and communities;
- To maximize efforts in order to identify new areas of cooperation related to smart cities and communities;
- To develop a holistic view on smart cities and communities taking into consideration the scope, areas of work and expertise of ITU-T, IEC and ISO to support smart cities and communities development.

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