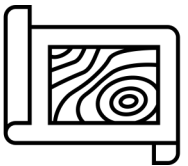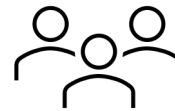# Smart Sustainable Cities in the CIS Region:

Organizational and Technical Aspects

Cristina Bueti
Counsellor, ITU
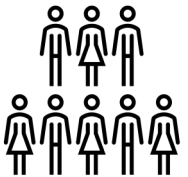
The CIS region in numbers

Total estimated area
~ 22.1 million km^2
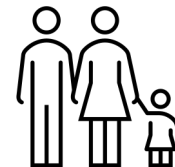
Population density per km^2
13

Total estimated population
~ 288 million people (in 2018)

Urban population
67% of total CIS population

Share of the world population
~ 4%

Population aged 15 – 64
69% of total CIS population

ITU facilitating Smart Sustainable Cities

ITU:
International Telecommunication Union
– the UN specialized agency for ICTs

U4SSC:
United for Smart Sustainable
Cities initiative

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

Connect 2030

GROWTH INCLUSIVENESS

SUSTAINABILITY INNOVATION & PARTNERSHIP

SUSTAINABLE DEVELOPMENT GOALS
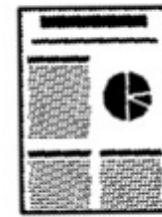
ITU's activities

Standardization

1 **Example:** ITU-T Study Group 20 on 'IoT and Smart Cities and Communities'

Research

2 **Example:** global community of ICT experts from universities and research institutes

Publications

3 **Example:** reports, such as 'Frontier technologies to protect the environment and tackle climate change'

Awareness-Raising

4 **Example:** international events such as webinars

Projects and Collaboration

5 **Example:** projects featured in the U4SSC Implementation Programme

Networking and Partnerships

6 **Example:** joint work with other standards developing organizations

ITU-T Study Group 20

Q1/20 Interoperability and interworking of IoT and SC&C applications and services

Q2/20 Requirements, capabilities and architectural frameworks across verticals enhanced by emerging digital technologies

Q3/20 IoT and SC&C architectures, protocols and QoS/QoE

Q4/20 Data analytics, sharing, processing and management, including big data aspects, of IoT and SC&C

Q5/20 Study of emerging digital technologies, terminology and definitions

Q6/20 Security, privacy, trust and identification for IoT and SC&C

Q7/20 Evaluation and assessment of Smart Sustainable Cities and Communities

Lead Study Group on

Internet of Things and its applications

Smart cities and communities

IoT Identification

Areas of ITU-T SG20 standards for SSCs

Interoperability

Data Management & Processing

Master Plan and Assessment

Emergency response & management

IoT Security, Trust & Identification

Health and Accessibility

Examples of ITU-T SG20 standards

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 SCPs'

- Recommendation ITU-T Y.4459: 'Digital entity architecture framework for Internet of things interoperability'

- Recommendation ITU-T Y.4500.13: 'oneM2M – Interoperability testing'

- ITU-T Y Supplement 61: 'Features of application programming interfaces for IoT data in SC&Cs'

- Technical Specification D3.3: 'Framework to support data interoperability in IoT environments'

Examples of ITU-T SG20 standards

🗄️ **Data Management & Processing**

- Recommendation ITU-T Y.4114: 'Specific requirements and capabilities of the Internet of things for big data'

- Recommendation ITU-T Y.4461: 'Framework of open data in smart cities'

- Recommendation ITU-T Y.4560: 'Blockchain-based data exchange and sharing for supporting Internet of Things and Smart Cities and Communities'

- Recommendation ITU-T Y.4561: 'Blockchain-based data management for supporting IoT and SC&Cs'

- TR D2.1: 'Data process and management framework for IoT and SC&Cs'

- TR D2.3: 'Web based data model on IoT and smart city'

- TR D4.3: 'Overview of technical enablers for trusted data'

- TS D4.4: 'Framework to support IoT data quality management'

- TS D.5: 'Data economy: commercialization, ecosystem, and impact assessment'

Examples of ITU-T SG20 standards

Master Plan and Assessment

- ITU-T Series Y Supplement 32: 'A guide for city leaders'

- ITU-T Series Y Supplement 33: 'Master Plan'

- Recommendation ITU-T Y.4903/L.1603: 'Key performance indicators for smart sustainable cities to assess the achievement of sustainable development goals'

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

- Recommendation ITU-T Y.4905: 'Smart sustainable cities impact assessment'

- Recommendation ITU-T Y.4906: 'Assessment framework for digital transformation of sectors in smart cities'

Examples of ITU-T SG20 standards

Emergency Response & Management

- Recommendation ITU-T Y.4102: 'Requirements for IoT devices and operation of IoT applications during disasters'

- Recommendation ITU-T Y.4116: 'Requirements of transportation safety services including use cases and service scenarios'

- Recommendation ITU-T Y.4119: 'Requirements and capability framework for IoT-based automotive emergency response system'

- Recommendation ITU-T Y.4467: 'Minimum set of data structure for automotive emergency response system'

- Recommendation ITU-T Y.4468: 'Minimum set of data transfer protocol for automotive emergency response system'

- Recommendation ITU-T Y.4558: 'Requirements and functional architecture of smart fire smoke detection service'

Examples of ITU-T SG20 standards

IoT Security, Trust & Identification

- Recommendation ITU-T Y.4805: 'Identifier service requirements for the interoperability of smart city applications'

- Recommendation ITU-T Y.4806: 'Security capabilities supporting safety of the Internet of Things'

- Recommendation ITU-T Y.4807: 'Agility by design for telecommunication/ICT systems security used in the IoT'

- Recommendation ITU-T Y.4808: 'Digital entity architecture framework to combat counterfeiting in Internet of things'

- Technical Report D4.1: 'Framework for security, privacy, risk and governance in data processing and management'

- Technical Report: 'Cybersecurity, data protection and cyber resilience in smart sustainable cities'

Examples of ITU-T SG20 standards

Health and Accessibility

- Recommendation ITU-T Y.4110/Y.2065: 'Service and capability requirements for e-health monitoring services'

- Recommendation ITU-T Y.4117: 'Requirements and capabilities of IoT for support of wearable devices and related services'

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

- Recommendation ITU-T Y.4408/Y.2075: 'Capability framework for e-health monitoring services'

ITU-T SG20 Regional Group for Eastern Europe, Central Asia and Transcaucasia (SG20RG-EECAT)

Alexey BORODIN

SG20RG-EECAT Chairman

Umida MUSAEVA

SG20RG-EECAT Vice-chairman
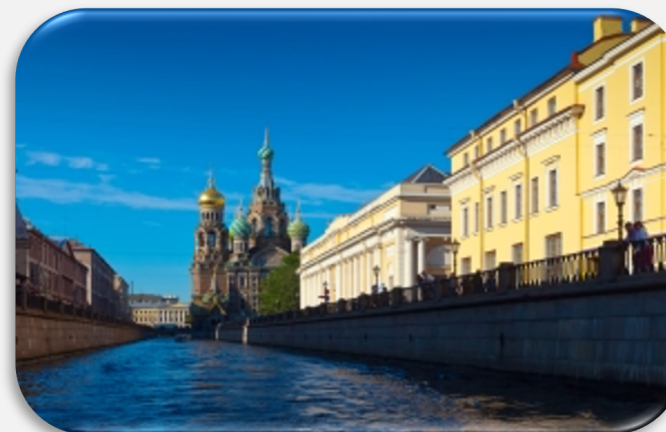
Coordination with external bodies

Coordinating ITU-T work on IoT and SC&C

Providing contact point for IoT & applications, incl. SC&C activities
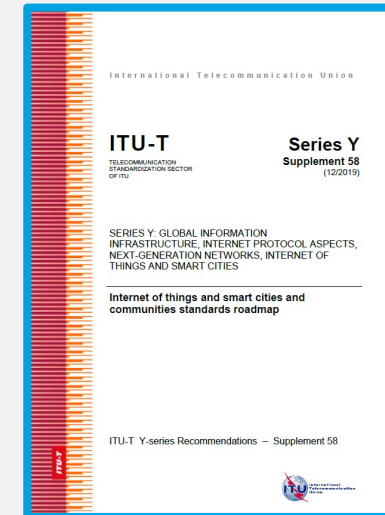
Presenting the JCA-IoT and SC&C roadmap

Collaboration with SDOs and Forums

United for Smart Sustainable Cities
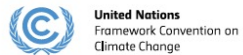
U4SSC Thematic Groups

City Platforms

Economic recovery in cities and urban resilience building in the time of COVID-19

Guiding principles for artificial intelligence in cities
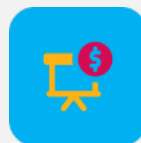
Innovative Financing Instruments for Smart Sustainable Cities

Procurement Guidelines for Smart Sustainable Cities

Simple ways to be smart

U4SSC Publications

Provides insights into the potential of blockchain in building trust in the SSC endeavours

Sheds light on the impact of frontier technologies in cities and on citizens; includes cases.
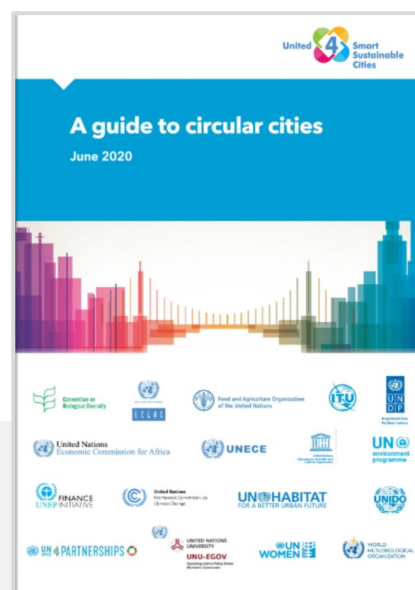
Provides a circular city implementation framework designed to improve circularity in cities; includes case studies.
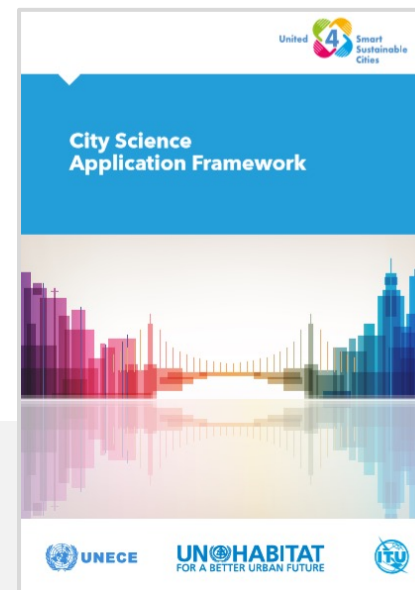
Offers a four-step methodology for cities to assess, prioritize & boost city applications; includes case studies.
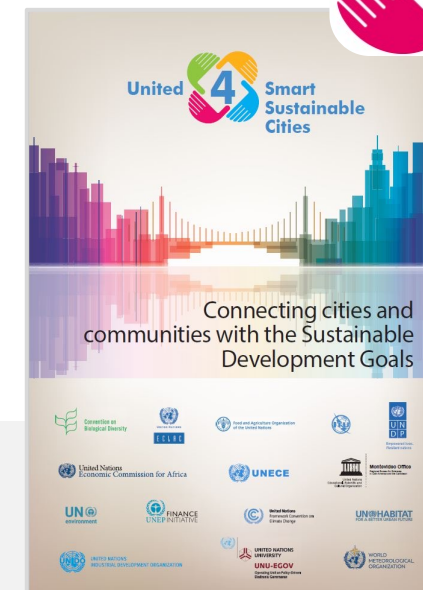
Gives an overview of how cities can use ICTs to achieve the SDGs; includes case studies.

U4SSC KPIs for SSCs

Collection Methodology for Key Performance Indicators for Smart Sustainable Cities
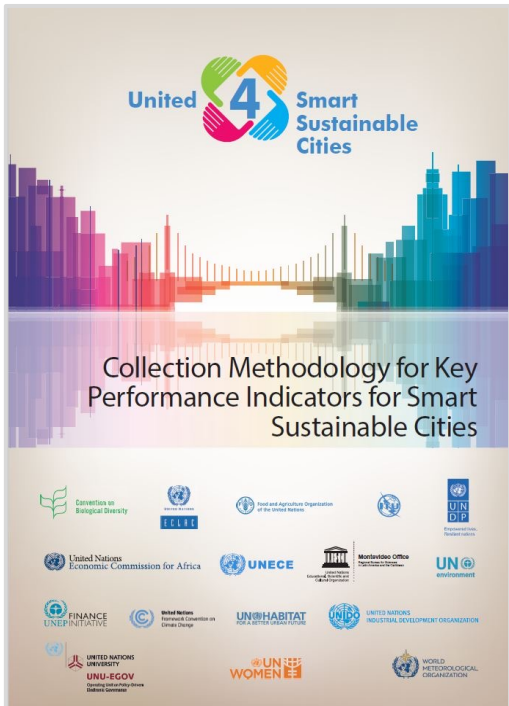
Currently implemented in:

🏙 Moscow
🏙 Santa Fe
🏙 Esperanza
🏙 Montevideo
🏙 Wels
🏙 Dubai

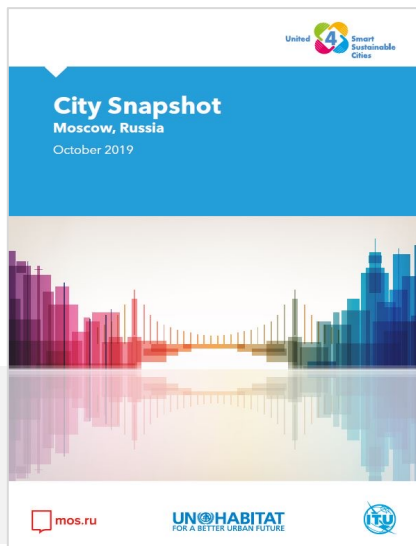🏙 Singapore
🏙 Pully
🏙 Ålesund
🏙 Kristiansund
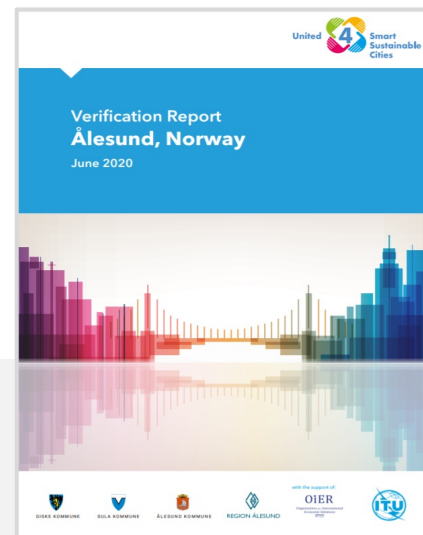🏙 Bodø
🏙 and **100+ more cities!**

ITU's implementation of the U4SSC KPIs

City Snapshots

Provide a visual overview of a city's U4SSC KPIs performance based on global benchmarks.

Verification Reports

Summarize the conclusions of a city's U4SSC KPIs project.

Factsheets

Elaborate and analyze the results of a city's U4SSC KPIs project.

Case Studies

Detail a city's journey towards successfully becoming a Smart Sustainable City.

ITU's global portal on Environment & SSCs

Smart sustainable cities

Energy efficient ICTs

Cities' actions to tackle COVID-19

E-waste and circular economy

Frontier Technologies

Climate actions

Thank you!

Questions? Interested in learning more?
Let us know!

Email

u4ssc@itu.int

Website

ITU-T, Smart Sustainable Cities