

**ITU Regional Forum on “Internet of Things, Telecommunication Networks and Big Data as
basic infrastructure for Digital Economy”
Saint-Petersburg, Russian Federation, 4-6 June 2018**

Overview of ITU-T SG11 activities on 5G

Andrey KOUCHERYAVY
Chairman, ITU-T Study Group 11



CONTENT

- **Areas of study and leadership of SG11**
- **5G activities on signaling**
- **5G activities on testing**
- **Key tools of ITU-T SG11 for achieving the goals**



Areas of study and leadership of SG11



Resolution 2 of WTSA-16

“ITU Telecommunication Standardization Sector study group responsibility and mandates”

ITU-T SG11 Lead study group on:

- **signalling and protocols**, including for **IMT-2020** technologies
- establishing **test specifications**, conformance and interoperability testing for all types of networks, technologies and services that are the subject of study and standardization by all ITU-T study groups
- **combating counterfeiting** of ICT devices
- combating the use of **stollen ICT devices**



Resolution 2 of WTSA-16

“ITU Telecommunication Standardization Sector study group responsibility and mandates”

AREAS OF STUDY OF ITU-T SG11:

- studies related to **signalling-system architecture, signalling requirements and protocols, for all types of networks and technologies**
- studies to **combat counterfeiting products** including telecommunication/ICT and **mobile device theft**
- **test specifications** for testing conformance and interoperability (C&I) for **all types of networks, technologies and services**, including a testing methodology and test suites for standardized network parameters in relation to the framework for **Internet-related performance measurement**
- Implementation of a **testing laboratory recognition procedure** in ITU-T (through CASC)



5G Activities on Signalling



5G as a base for Digital Economy

Two main features of 5G:

- Super high dense network (1 million devices per 1 square km) – Internet of Things
- Ultra small latency (1ms for end-to-end connections) – Tactile Internet, Internet of Skills



New network

- Structure: Multilevel Cloud, Swarm
- Control: SDN
- Communication: D2D

The new signaling protocols are needed



New ITU-T Recommendations (1)

- ITU-T X.609.3: Managed P2P communications: Multimedia streaming signalling requirements
- ITU-T X.609.4: Managed P2P communications: Multimedia streaming peer protocol
- ITU-T X.609.5: Managed P2P communications: Multimedia streaming overlay management protocol



New ITU-T Recommendations (2)

- ITU-T Q.3740: Signalling Requirements for SDN and NFV based Central Office services
- ITU-T Q.3716: Signalling Requirements for Mapping between Physical and Virtual Networks
- ITU-T Q.3715: Signalling requirements for dynamic bandwidth adjustment on demand on broadband network gateway implemented by software defined networking technologies



New ITU-T Recommendations (3)

- ITU-T Q.3714: Signalling requirements of SDN-based access networks with media independent management capabilities

New work items (1)

- Q.NS-LCMP “Protocol for network slice lifecycle management”
- Q.CE-APIMP: Protocol for managing capability exposure APIs in IMT-2020 network
- Q.D2D-EECP: Energy efficient D2D communication protocol for IMT 2020 network
- Q.QMP-TCA: QoS management protocol for time constraint applications over SDN

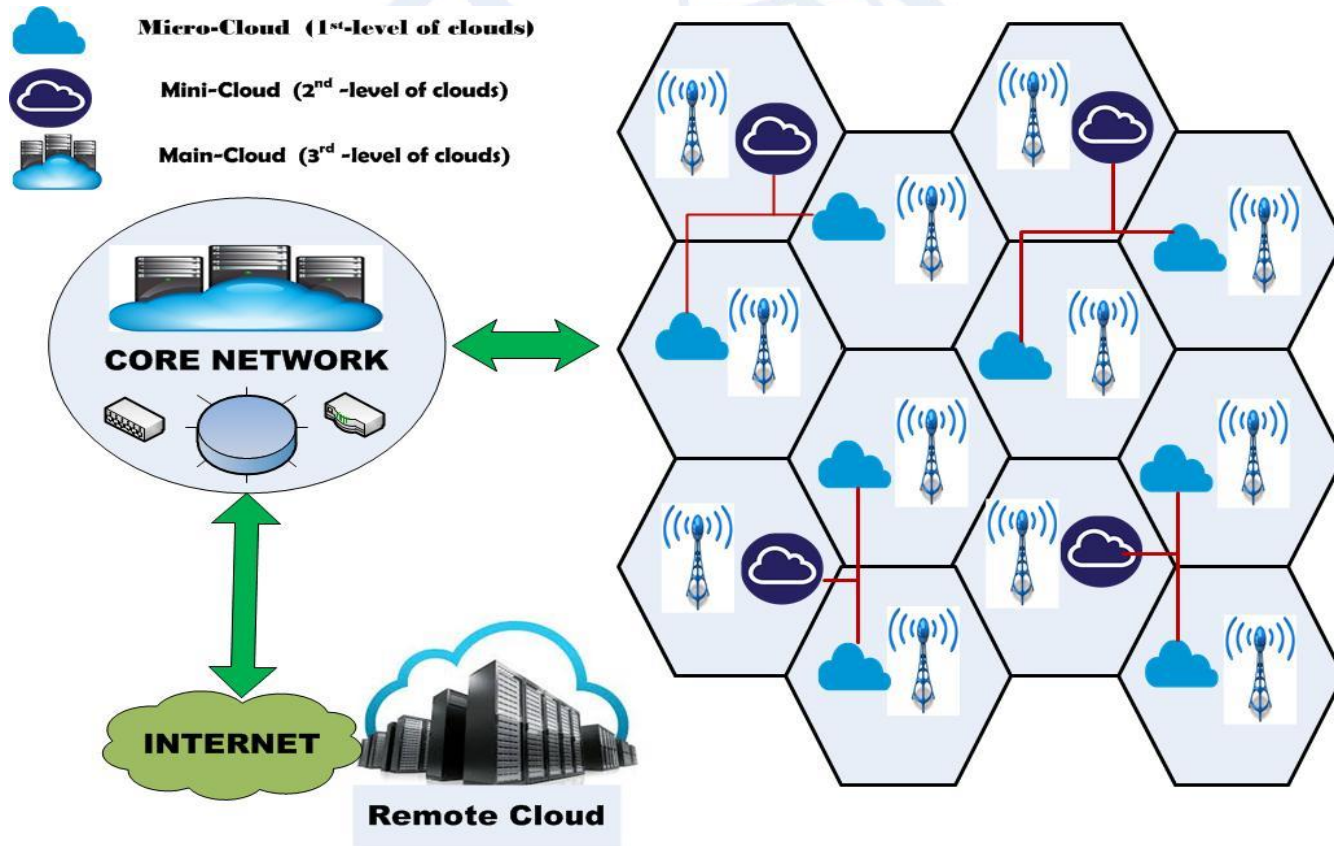


New work items (2)

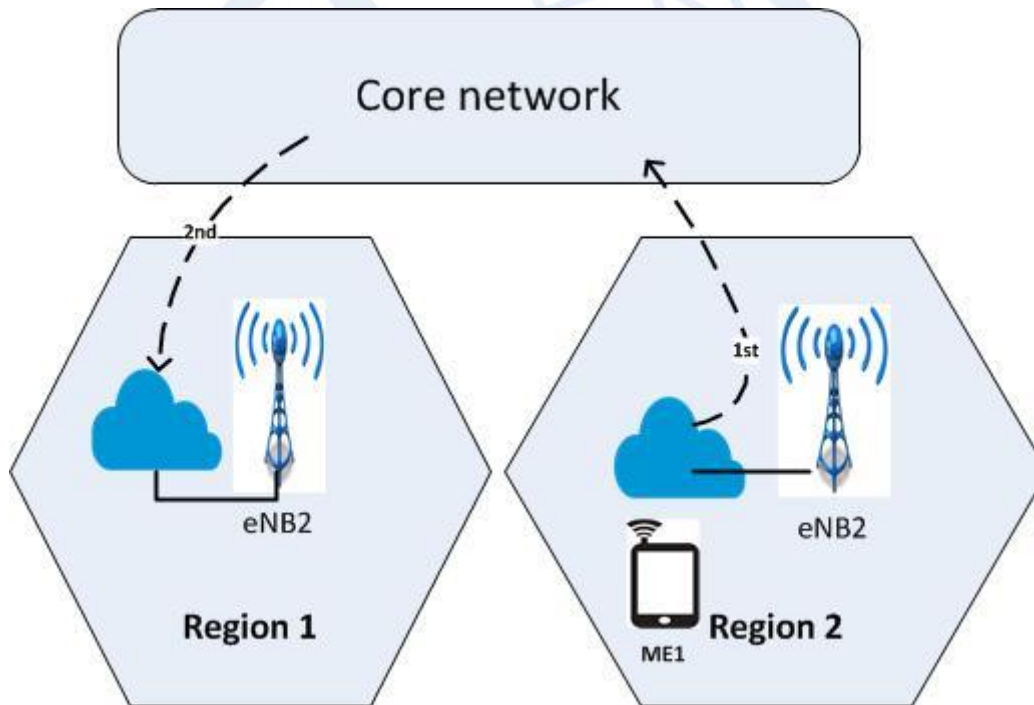
- Q.ETN-DS: Signalling architecture of the fast deployment emergency telecommunication network to be used in a natural disaster
- Q.SR-Trust: Signalling requirements and architecture for interconnection between trustable network entities



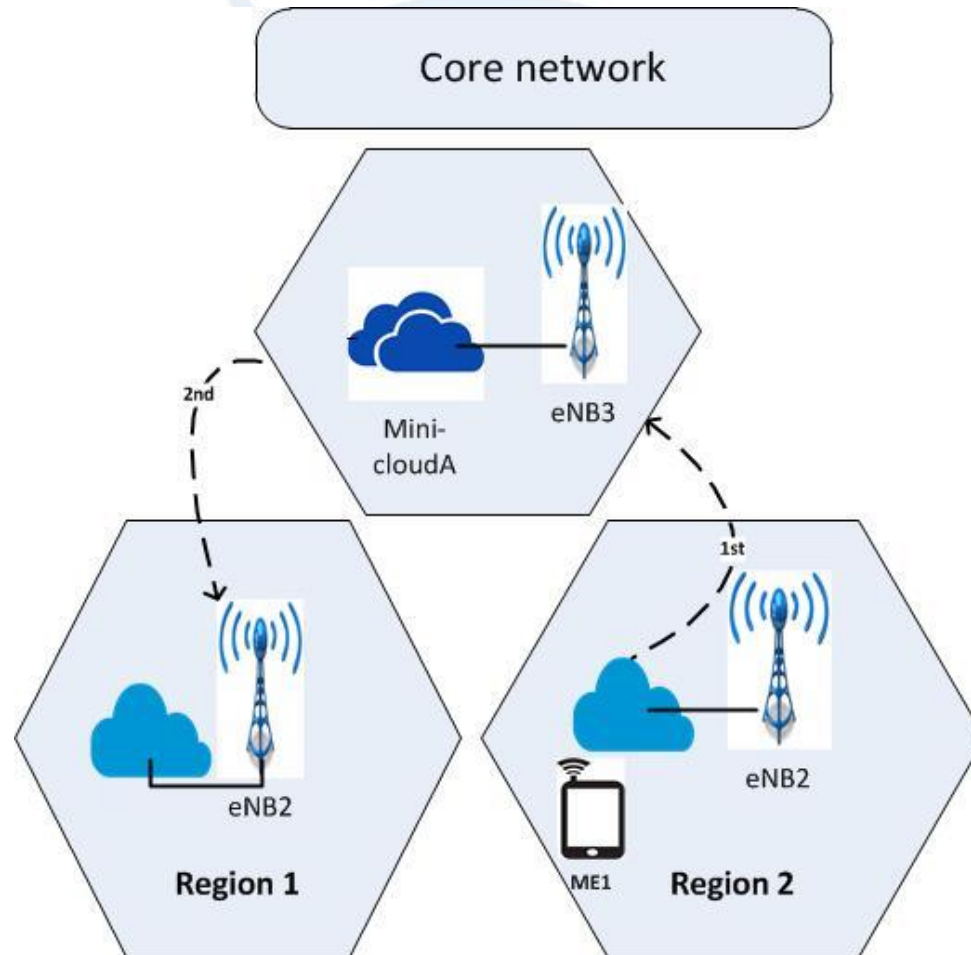
Multilevel cloud based Tactile Internet system



Roaming from eNB2 to eNB1 through the core network



Roaming from eNB2 to eNB1 through the mini-cloud A



5G Activities on Testing

ITU



C&I Programme

- SG11 updated the reference table of ITU-T Recommendations suitable for C&I testing and list of pilot projects on conformance testing against ITU-T Recommendations. The information was updated on the [ITU C&I Portal](#) accordingly and it is available at:

www.itu.int/go/pilot-projects;

www.itu.int/go/reference-table.



CASC (1)

- SG11 approved the revised Terms of Reference (ToR) of CASC, which were aligned with WTSA-16 Resolution 2 and Resolution 76 referring to joint ITU/IEC certification scheme. The revised ToR for CASC are available in [SG11-TD314/GEN.](#)



CASC (2)

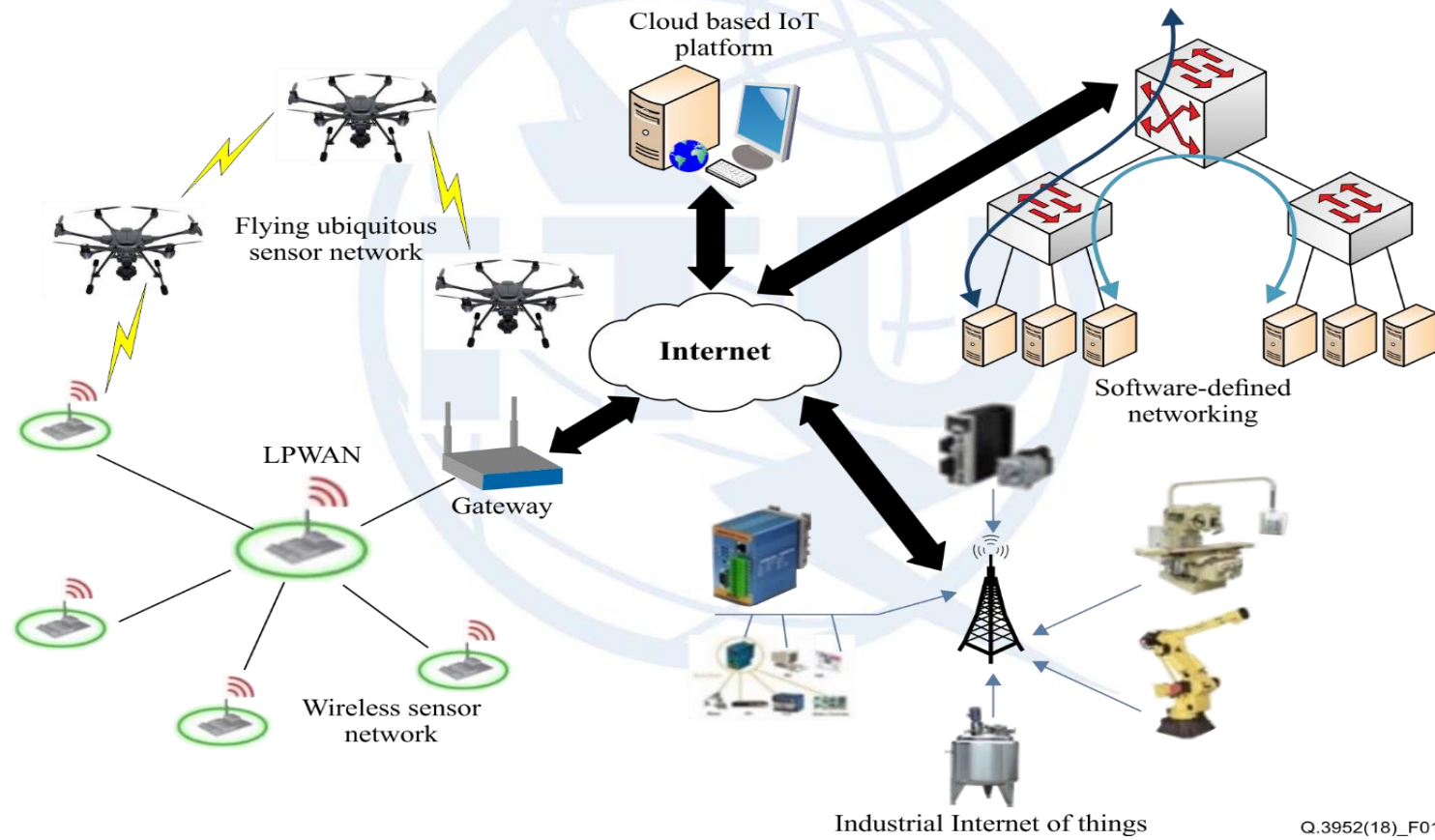
- CASC discussed the collaboration approach with IECEE TF in order to establish a joint certification scheme
- The IEC CMC Task Force “ITU Requirements” (IECEE TF) is established by IECEE ([IEC web site](#)).



New ITU-T Recommendations (1)

- ITU-T Q.3952: The architecture and facilities of Model network for IoT testing
- ITU-T Q.3914: Set of parameters of cloud computing for monitoring

The structure of the model network (ITU-T Q.3952)



Q.3952(18)_F01

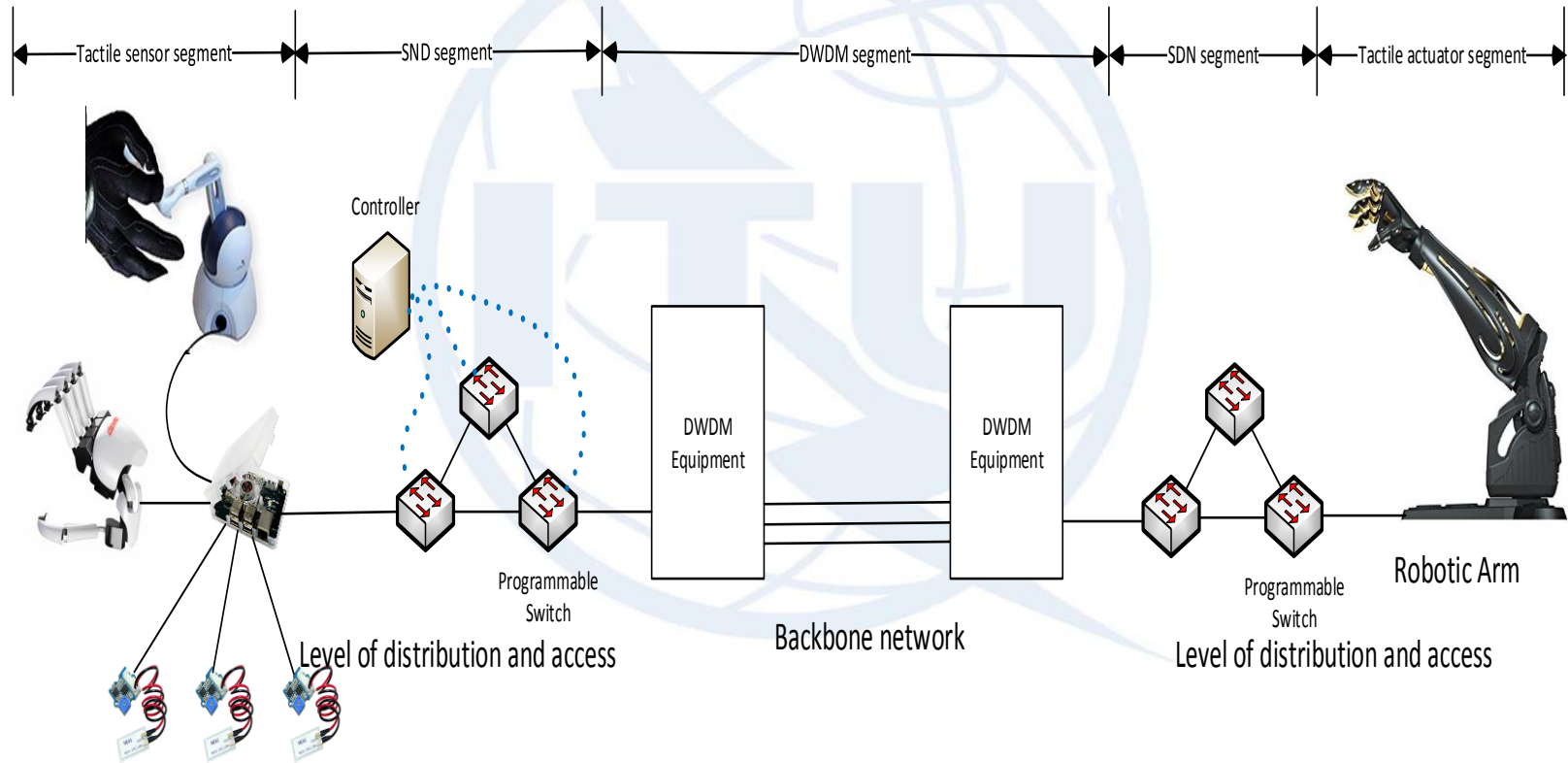


New work item

- Q.SDN-CT: Framework of SDN controller testing
- Q.TI-TEST: Framework of model network for Tactile Internet testing

Draft New Recommendation ITU-T Q.TI-TEST

Framework of model network for Tactile Internet testing





KEY TOOLS OF SG11 FOR ACHIEVING THE GOALS **Study Period (2017-2020)**

Key tools of ITU-T SG11

- SG11 meetings (regular meetings and interim meetings)
- Collaboration with ETSI TC INT
Note: the collaboration agreement is in force since Dec.15 - [TD913-GEN/11](#)
- Regional Groups
 - SG11RG-AFR
 - SG11RG-CIS/RCC
- Conformity Assessment Steering Committee ([CASC](#))
- ITU Conformance and Interoperability Programme
(*C&I Portal – www.itu.int/go/citest*)
- *Workshops*



SG11 Regional Groups

One of the goals of the Regional Groups is to encourage the involvement of developing countries in standardization activities in their regions, and to submit written contributions to the parent Study Group in which they work in accordance with approved terms of reference reflecting the priorities of their respective regions (rev. Resolution 54 of WTSA-16)

THERE ARE TWO REGIONAL GROUPS UNDER ITU-T SG11

NOTE: the scope focuses on C&I and combating counterfeiting

- For Africa Region ([SG11RG-AFR](#))
- For EECAT Region ([SG11RG-EECAT](#))



Thank you for your attention!

Andrey KOUCHERYAVY

Chairman, ITU-T Study Group 11

Email: akouch@mail.ru

