

## **Question 2/11 – Signalling requirements and protocols for services and applications in telecommunication environments**

(Continuation of Question 2/11)

### **1 Motivation**

With the ever-increasing number of services and applications, demand has been continuously increasing to enhance the capabilities of telecommunication networks. Also, technologies, including cloud computing big data, DLT and Machine Learning/Artificial Intelligence, QKDN and related technologies and other emerging telecommunication/ICT technologies will promote new signalling protocols to enable interconnection and proper communication in IMT-2020 network and beyond. These emerging technologies, as well as the evolution of existing ones, will certainly impact on the signalling and protocol standardization.

One of the objectives of telecommunication network's evolution is to support, in a secure fashion, wide range of services, from legacy telephony and intelligent services to innovative services, encompassing audio, data, video broadcast and conversational services, streaming services, interactive games, mobile payment/banking, third party applications, etc.

### **2 Question**

Study items to be considered include, but are not limited to:

- What are the suitable signalling protocols for implementation of different services and applications in emerging telecommunication environment?
- What new signalling requirements and protocols need to be developed to support services in telecommunication networks evolving to IMT-2020 network and beyond?
- What new signalling requirements and protocols need to be developed to support emerging telecommunication/ICT technologies services and applications?
- What kind of emerging technologies, including QKDN and related technologies enabled architecture and mechanisms are required to guarantee signalling and control security, including signalling system number 7 (SS7) and emerging signalling systems?
- What signalling requirements and protocols need to be developed to support real-time communications and messaging services?
- What new signalling requirements and protocols need to be developed to support telecommunications services management?
- What new signalling requirements and protocols are required to support services and/or applications of public interest, such as mobile payment/banking, crypto currency, multimedia emergency communications, privacy, number portability, etc.?

### **3 Tasks**

Tasks include, but are not limited to:

- develop signalling requirements and protocols to implement different services and applications in telecommunication environment;
- develop signalling requirements and protocols to support future services in telecommunication networks evolving to IMT-2020 network and beyond;
- develop signalling requirements and protocols to support emerging technologies enabled services and applications;
- develop signalling requirements and protocols to support real-time communications and messaging services;

- develop signalling network's security based on emerging technologies including QKDN and related technologies;
- develop signalling requirements and protocols to support telecommunications services management;
- develop specifications for interworking between new and existing signalling and protocols;
- develop signalling requirements and protocols for public interest;
- enhance existing signalling protocols based on identified needs.

An up-to-date status of work under Q2/11 is contained in the SG11 work programme ([https://www.itu.int/ITU-T/workprog/wp\\_search.aspx?sp=17&q=2/11](https://www.itu.int/ITU-T/workprog/wp_search.aspx?sp=17&q=2/11)).

#### **4 Relationships**

##### **Recommendations:**

- Q.600-series, Q.700-series, Q.900-series, Q.1900-series, Q.2700-series, Q.2900-series, Q.3400-series, Q.3500-series and Q.3600-series

##### **Questions:**

- All Questions of SG11

##### **Study Groups:**

- SG2 on network management aspects and emergency communications
- SG13 on service requirements, architecture, cloud computing and mobility aspects
- SG15 on smart grid
- SG16 on multimedia services and applications
- SG17 on security aspects
- SG20 on IoT and its applications

##### **Other bodies:**

- ARIB
- ATIS
- Broadband Forum
- CCSA
- ETSI
- IETF
- IEEE
- TIA
- TTA
- TTC

##### **WSIS action lines:**

- C2, C5, C11

##### **Sustainable Development Goals:**

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