Question 12/12 – Operational aspects of telecommunication network service quality and end-to-end performance considerations

(Continuation of Question 12/12, parts of Question 11/12 and parts of Question 16/12)

1 Motivation

It is essential to specify network service quality parameters to enable telecommunication services to be offered to customers/users in order to satisfy customers'/users' quality of service expectations.

These parameters relate to both implementation and ongoing use of the service. Service quality is also related to all aspects of network assessment and management.

Service quality of networks needs to be assessed as a total connection, focusing on the end-to-end network service offered at all times.

Service quality parameters are required in order to meet customers'/users' expectation of a service, and related network performance parameters should relate to service quality parameters.

Network providers must plan, dimension and operate their networks to parameters which will ensure that services offered to customers/users meet the latter's quality of service expectations. In addition, Regulators need guidance in order to ensure that customers are experiencing an acceptable level of quality of service.

In addition, there is a need to give guidance on general transmission planning and keeping it up to date with technological evolution.

With the increasing industry focus on new and future technologies, there is a need for guidance on the associated end-to-end QoS, performance and resource management issues. This includes interworking aspects between different networks (e.g., cellular, wireless, wireline and also such of different generations) and packet-based technologies.

Issues and guidelines for transmission performance necessary to ensure high end-user satisfaction must be reconsidered in light of introduction of new services and their interconnection with existing networks.

The following Recommendations/Supplements, in force at the time of approval of this Question, fall under its responsibility:

E.420, E.421, E.422, E.423, E.424, E.425, E.426, E.427, E.428, E.431, E.432, E.433, E.434, E.436, E.437, E.438, E.439, E.440, E.450, E.451, E.452, E.453, E.454, E.455, E.456, E.457, E.458, E.459, E.460, E.470, E.475, E.801, E.802, E.803, E.804, E.804.1, E.805, E.805.1, E.806, E.807, E.810, E.811, E.812, E.820, E.830, E.840, E.845, E.846, E.847, E.850, E.855, E.800-series Suppl. 8, Suppl. 9, Suppl. 10, G.101, G.102, G.103, G.105, G.108, G.108.1, G.108.2, G.109, G.111, G.114, G.115, G.116, G.117, G.120, G.121, G,122, G.126, G.131, G.136, G.142, G.172, G.173, G.174, G.175, G.176, G.177, G.1028, G.1028.1, G.1028.2, G.Sup61, I.352, I.354, I.358, I.359, I.371, I.378, P.11, Y.1221, Y.1222, Y.1223, Y.1530, Y.1531, Y.1542, Y.1545, Y.1545.1.

2 Question

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

– How can existing Recommendations covering quality of service and network performance be interpreted to meet customers'/users' expectations of service quality under operational scenarios?

– What new or revised Recommendations are required to ensure that adequate network service quality can be provided to meet customers'/users' expectations under operational scenarios? A key focus of these new or revised recommendations relates to service providers, regulators and vendors.

– What guidance can be provided for transmission planning for voice, data and multimedia services, taking into account that end-to-end connections are established via heterogeneous and interconnected networks with different transmission technologies? This includes guidance on transmission planning for the interconnection of evolving networks.

– What guidance can be provided on reference models, performance parameters and interworking requirements in end-to-end communication paths, and how can the values of performance parameters be managed across multiple network segments? In addition, the effects of the transmission delay on services and applications including multimedia are studied.

3   Tasks

Tasks include, but are not limited to:

– Maintain and revise the existing literature under responsibility of the Question, as the need arises,

– Develop new guidance on issues described above, to address the needs of service providers, regulators and vendors, with the goal of meeting customers'/users' expectations of service quality.

An up-to-date status of work under this Question is contained in the SG12 work programme https://www.itu.int/ITU-T/workprog/wp_search.aspx?sp=17&q=12/12.

4   Relationships

WSIS Action Lines:

–   C2

Sustainable Development Goals

–   9

Recommendations

–   P.10/G.100, P.862, P.863, Y.1540

Questions

–   1/12, 2/12, 9/12, 13/12, 14/12, 17/12

Study Groups

–   ITU-T SG2, SG3, SG13, ITU-R, ITU-D

Other bodies

–   ETSI TC STQ, 3GPP