Question 17/13 – Future Networks: Requirements and capabilities for computing including cloud computing and data handling

(Continuation of Question 17/13)

1 Motivation

Digital transformation is the strategic adoption of new, fast and frequently changing technology to improve process and productivity, manage risk, reduce cost, etc. Competitiveness of digital transformation depends on evolving technology, that is, its ability to quickly adapt to future computing technologies. In particular, cloud computing and big data are driving digital transformation. In addition, future computing technologies take into account artificial intelligence including machine learning, distributed computing, edge computing, data-centric computing, memory-centric computing, quantum cloud computing and computing aware networking. Therefore, the telecommunication industry has an important role to play in the fields of future computing and furthermore, the integration and development of future computing technologies in Future Networks will drive a rapid move towards a digital transformation.

Cloud computing is a model for enabling service user's ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services), that can be rapidly provisioned and released with minimal management effort or service provider interaction.

Data is of high value to build applications and services based on future computing. For this reason, not only the big data capabilities, but also technologies and standards to support data usage, processing, analysing, exchanging, sharing, and data quality assessment are essential in terms of data handling.

The primary focus of this Question is to provide the necessary overall frameworks, definitions, and ecosystems including requirements, capabilities related to the integration or support of future computing including cloud computing and data handling in telecommunication ecosystem.

This Question is intended to develop new Recommendations for:

–   definitions, overview, ecosystem, and use cases for future computing (including cloud computing and data handling);
requirements, and capabilities for future computing;

–   interoperability, data portability, and exchange information in future computing;

–   application of future computing in vertical domains;

–   relationship among future computing technologies.

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

–   ITU-T Y.3500, Y.3501, Y.3503, Y.3504, Y.3505, Y.3506, Y.3507, Y.3508;

–   ITU-T Y.3600, Y.3601.

2 Question

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

–   What new Recommendations should be developed for future computing (including

–   cloud computing and data handling) definitions, ecosystem, use cases, and capabilities from telecommunication perspectives?

–   What new Recommendations should be developed for requirements and capabilities?

– What new Recommendations should be developed for requirements for future computing interoperability and data portability between service providers that are appropriate and achievable for use cases?

– What new Recommendations should be developed for future computing 'as a Service'?

– What new Recommendations should be developed for the application of future computing in vertical domains?
What collaboration is necessary to minimize duplication of efforts with other SDOs?

3   Tasks

Tasks include, but are not limited to:

– Developing Recommendations for future computing (including cloud computing and data handling) definitions, overview, ecosystem, use cases, business roles and benefits from telecommunication perspectives;

– Developing Recommendations for future computing requirements and capabilities;

– Developing Recommendations for future computing interoperability and data portability as well as the applications of future computing in vertical domains;

– Providing the necessary collaboration for the work in the Question with relevant SDOs, consortia and fora;

– Maintenance and enhancement of the Recommendations for which the Question is responsible.

An up-to-date status of work under this Question is contained in the SG13 work programme: https://www.itu.int/ITU-T/workprog/wp_search.aspx?sp=17&q=17/13.

4   Relationships

Recommendations

– Other relevant Y-series Recommendations, in particular in Y.3500- and Y.3600-series

– Y-series and Cloud computing and data handling related Recommendations in the M-, Q- and X-series Recommendations

Questions

– Cloud computing and data handling related Questions

– Other relevant Questions with networking aspects

Study Groups

– ITU-T Study Groups and ITU-D Study Groups involved in cloud computing and data handling related studies

Other bodies

– ISO/IEC JTC 1/SC 27, 32, SC38 and SC42

– National Institutes of Standards and Technology (NIST)

– Distributed Management Task Force (DMTF)

– Storage Networking Industry Association (SNIA)

– Cloud Security Alliance (CSA)

– ETSI ISG NFV

– Open Computing Project (OCP)

– Linux Foundation projects

– Organization for the Advancement of Structured Information Standard (OASIS)

–   World Wide Web Consortium (W3C)

WSIS Action Lines:

–   C2, C3, C10

Sustainable Development Goals:

–   9