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DRAFT PRELIMINARY APT COMMON PROPOSAL

PROPOSED REVISION OF RESOLUTION 77 TO ENHANCE THE SDN AND OTHER NETWORK SOFTWARIZATION TECHNOLOGIES STANDARDIZATION WORK IN ITU-T

1   Abstract

Based on the consideration of the rapid development of SDN and other programming network technologies, Resolution 77 is proposed to revise to further enhance the relevant standardization work. The main modifications include expanding the scope from SDN to network softwarization technologies, updating the future actions of ITU-T, and other editorial changes.

2   Introduction

Over the last eight years, SDN (Software-Defined Networking) related technologies have been witnessing many profound changes. Apart from SDN, other programming network technologies, including, but not limited to, network function virtualization (NFV), intent-based networking, network virtualization, network slicing, computing power networking, big data driven networking, are emerging and more and more mature. The abovementioned programmable network technologies can be collectively known as network softwarization.

The combination and inter-working of the network softwarization technologies are becoming more and more influential in the industry. We have reasons to envisage network softwarization as a long-term technical trend that is fundamentally reshaping the ICT industry in the decades to come.

ITU-T network softwarization achieved some gratifying successes. SG13 is leading the standardization of network softwarization's functional requirements and architectures; SG 11 is focusing on developing signalling requirements and protocols standards for network softwarization, closely working with SG 13; SG17 is progressing the security standards on network softwarization.

We realize that Resolution 77 has been playing a very instrumental role in the past eight years in guiding and facilitating SDN related study in ITU-T. Some of the tasks defined by current Resolution 77 may be close to being completed, but it doesn't mean we don't need this resolution any more. On the contrary, with the development of the programmable network technologies, from the panorama view inside and outside ITU-T, we believe that ITU-T need extend SDN related study to network softwarization as a cluster of network technologies in this resolution after being updated and reinforced in its long-term strategies towards ICT convergence to provide constant guidance to specific work in ITU-T's various SGs and FGs, etc.

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3   Proposal

APT members propose to continue and enhance SDN and other network softwarization technologies standardization work in ITU-T. Attached is the proposed revision of WTSA-16 Resolution 77 on SDN and other network softwarization technologies. The main purpose is to promote TSAG and related Study Groups in ITU-T to enhance the cooperation and coordination and standardization of SDN and other network softwarization technologies, and call for TSB to provide necessary and more support in this regard.

ANNEX   Revision of WTSA-16 Resolution 77 on SDN

Enhancing the standardization work in the ITU Telecommunication Standardization Sector for software-defined networking

(Dubai, 2012; Hammamet, 2016; Hyderabad, 2020)

The World Telecommunication Standardization Assembly (Hyderabad, 2020),

considering

a)   that, with the development and trend towards maturity of software-defined networking (SDN) and other related programmable network technologies, more and more organizations are involved in these technologies' standardization, which can be collectively known as network softwarization;

b)   that, apart from SDN, as a cluster of network technologies, network softwarization technologies include, but not limited to, network function virtualization (NFV), intent-based networking, network virtualization, network slicing, computing power networking, big data driven networking;

c)   the fact that SDN and other network softwarization technologies are profoundly changing the telecommunication and information and communication technology (ICT) industry's landscape and will continue to do so in the decades to come, and may bring multiple benefits to the telecommunication/ICT industry;

d)   the rapidly growing interest of a significant number of ITU members in the application of SDN and other network softwarization technologies in the telecommunication/ICT industry;

e)   that the network softwarization orchestrator provides the important bond between a wide range of technologies that enable cloud-based network and telecommunication services, at the same time recognizing the work of other organizations such as the European Telecommunications Standards Institute (ETSI) Network Functions Virtualisation Industry Specification Group (NFV ISG), the Open Network Automation Platform (ONAP) and the ETSI Open-Source NFV Management and Orchestration (MANO) project (OSM);

f)   Several ITU Telecommunication Standardization Sector (ITU-T) study groups including SG11, SG13, SG15, SG16, SG17 have made great standardization achievements on SDN and other network softwarization technologies ranging from functional requirements, architecture, signalling and protocols, data models to security and multimedia application, and still have many standardization issues to deal with.

g)   Resolution 139 (Rev. Busan, 2014) of the Plenipotentiary Conference, on telecommunications/ICT to bridge the digital divide and build an inclusive information society;

h)   Resolution 199 (Busan, 2014) of the Plenipotentiary Conference, on promoting efforts for capacity building on SDN in developing countries,

noting

a)   that ITU-T should play a prominent role in the development of the above-mentioned system of deployable SDN and other network softwarization technologies standards;

b)   that a standards ecosystem should be enhanced, with ITU-T at its centre,

recognizing

a)   that ITU-T has unmatched advantages when it comes to requirements and architecture standards;

b)   that a solid foundation is required to continue developing and enhancing SDN and other network softwarization technologies requirements, architecture, signalling/protocol, data model

and security standards, so that the whole set of standards may be built through an industry-wide synergy,

resolves to instruct study groups of the ITU Telecommunication Standardization Sector

1   to continue and enhance collaboration and cooperation with different standards development organizations (SDOs), industry forums, and open-source software projects on SDN and other network softwarization technologies, as appropriate, including, but not limit to, NFV, intent-based networking, network virtualization, computing power networking, network slicing, big data driven networking;

2   to continue to expand and accelerate the work on SDN and other network softwarization technologies standardization, especially carrier SDN, ranging from functional requirements, architecture, signalling and protocols, data models to security and multimedia application;

3   to study and research the advancements in network softwarization technologies;

4   to derive use cases for application of current and emerging network softwarization technologies to future networks, including those that are beneficial to developing countries;

5   to continue to develop standards to coordinate the network orchestrator layer and ITU-T operation supporting system (OSS) related work;

instructs the Telecommunication Standardization Advisory Group

to examine the matter, consider the input of study groups and take the necessary actions, as appropriate, with a view to deciding on the necessary SDN and other network softwarization technologies standardization activities in ITU-T, with the following actions:

•   to continue coordination and assistance in SDN and other network softwarization technologies standardization across different ITU-T study groups effectively and efficiently;

•   to continue collaboration with other network softwarization technologies related standards bodies and forums;

•   to coordinate the work on technical issues of SDN and other network softwarization technologies across the study groups according to their areas of expertise;

•   to define a clear strategic vision for SDN and other network softwarization technologies standardization and an important active role that ITU-T should play,

instructs the Director of the Telecommunication Standardization Bureau

1   to provide the necessary assistance with a view to expediting such efforts, in particular using any opportunity within the allocated budget to exchange opinions with the telecommunication/ICT industry, including through the chief technology officer (CTO) meetings under Resolution 68 (Rev. Hammamet, 2016) of this assembly, and in particular to promote participation of the industry in SDN and other network softwarization standardization work in ITU-T;

2   to conduct workshops, with other relevant organizations, for capacity building on SDN and other network softwarization technologies, so that the gap in technology adoption in developing countries may be bridged at the early stages of implementation of SDN and other network softwarization technologies based networks, and to organize the annual SDN and other network softwarization technologies workshop with open-source solutions representation to share the progress in SDN and other network softwarization technologies standards and real experience in the current carrier network,

invites Member States, Sector Members, Associates and academia

to submit contributions for developing SDN and other network softwarization standardization in ITU-T.