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| Asia-Pacific Telecommunity Member Administrations |
| Proposed modification of WTSA-12 Resolution 77 - Standardization work in the ITU Telecommunication Standardization Sector for software-defined networking |
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| **Abstract:** | In this document the Asia-Pacific Telecommunity Administrations propose modifications to Resolution 77. |

Introduction

SDN (Software-Defined Networking) is considered as a well-established shift in networking technology which will give network operators the ability to create and manage new virtualized resources and networks without deploying new hardware technologies. Over the last four years, SDN has been witnessing many profound changes. Its combination and inter-working with another major ICT convergence technology NFV (Network Function Virtualization) are becoming more and more influential in the industry. As a result, ICT market players see SDN and NFV as critical to countering the increases in network complexity, management and operational costs traditionally associated with the introduction of new services or technologies. We have reasons to envisage SDN as a long-term technical trend that will fundamentally reshape the ICT industry in the decades to come.

ITU-T SDN achieved some gratifying successes in this study period; Many SDN-related activities are ongoing in various study groups (SGs) of ITU-T. Besides, there are plenty of SDN standardization activities in other standards development bodies outside ITU-T.

Proposal

APT Member Administrations would like to propose to amend Resolution 77 as provided in annex so that ITU-T continues and enhances its SDN standardization activities. APT Member Administrations also believe that ITU-T should continue to play a prominent role in the development of a system of SDN standards to facilitate the SDN’s broad applications in ICT industry.

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RESOLUTION 77 (HAMMAMET, 2016)

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

(Dubai, 2012; Hammamet, 2016)

The World Telecommunication Standardization Assembly (Hammamet, 2016),

considering

*a)* that, with the development and maturity trend of SDN technology, many organizations are involved in the SDN standardization or open source work, and ITU-T SDN should take the responsibility toward a new bond between different Standards Developing Organizations, industry fora, and open-source communities;

*b)* that many SDN-related standard activities are still ongoing in various Study Groups (SGs) of ITU-T;

*c)* the fact that software-defined networking (SDN) will profoundly change the telecommunication and information and communication technology (ICT) industry's landscape in the decades to come, and multiple benefits that SDN can bring for the telecommunication/ICT industry;

*d)* the rapidly growing interest in the application of SDN in the telecommunication/ICT industry on the part of a significant number of ITU members;

*e)* that the Joint Coordination Activity on SDN under the ITU-T Telecommunication Standardization Advisory Group (JCA-SDN) established in June 2013, and the ITU-T JCA-SDN is coordinating the standardization work on SDN and related technical topics within ITU-T, taking into consideration the work of relevant other standards development organizations (SDOs), Open Source Communities, forums and consortia;

*f)* that new technologies like NFV (Network Functionality virtualization) has been emerging, which is able to support SDN by providing the virtualized infrastructure upon which the SDN software can be run;

*g)*that SDN orchestrator will provide the important bond between a wide range of technologies that enable cloud-based network and telecom communications services. Other organizations like ETSI NFV ISG, OPEN-O, ETSI OSM (Open Source MANO project) are working on Open Source and standard of SDN/NFV Management and Orchestration software stack;

*h)* that Resolution 139 (Rev. Busan, 2014) of the Plenipotentiary conference, on telecommunications/ICTs to bridge the digital divide and build an inclusive information society;

*i)* that Resolution 199 (Busan, 2014), to promote efforts for capacity building on software-defined networking in developing countries,

noting

*a)* that the ITU Telecommunication Standardization Sector (ITU‑T) should play a prominent role in the development of the above-mentioned system of deployable SDN standards;

*b)* that a standards ecosystem should be created 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 requirements and architecture standards, so that the whole set of standards may be built through an industry-wide synergy,

resolves to instruct ITU-T Study Groups

1 to continue and enhance collaboration and cooperation between different SDOs, industry fora, and open-source software projects on SDN;

2 to continue to expand and accelerate the work on SDN standardization, especially carrier SDN;

3 to make a research about the advancement of emerging technology like NFV (Network Function Virtualization), Container/Docker to evolve the SDN technology;

4 to continue to develop SDN standard to harmonize the different open-source and vendor specific controller product;

5 to consider the potential implications by the new layer SDN orchestrator to 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 other relevant study groups and take the necessary actions, as appropriate, with a view to deciding on the necessary SDN standardization activities in ITU‑T, with the following actions:

* to continue coordination and assistance in SDN standardization across different ITU-T study groups effectively and efficiently;
* to continue the JCA SDN work, coordinate and help plan the work to ensure that the ITU-T SDN standardization is progressed in a well-coordinated manner and more efficiently among relevant study groups study the SDN-related work programmes (including virtualization of network functions, programmable networks and Network as a Service) in ITU-T study groups, as well as in other SDOs, forums and consortia, for use in its coordination function and will provide information on this work for use by the relevant study groups in planning their work;
* to continue collaboration with other SDN-related standards bodies and forums;

• to coordinate the work on technical issues of SDN across the study groups according to their areas of expertise;

• to define a clear strategic vision for SDN standardization and an important active role that ITU‑T should play;

* to organize the annual SDN&NFV workshop to share the SDN/NFV standard progress and real experience in the current carrier network;
* to cooperate with ITU-D to organizing a regularly training program on SDN/NFV standard and solution,

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. Dubai, 2012) of this assembly) and in particular to promote participation of the industry in SDN standardization work in ITU‑T;

2 to conduct workshops, with other relevant organizations, for capacity building on SDN, so that the gap in technology adoption in developing countries may be bridged at the early stages of implementation of SDN-based networks,

instructs Telecommunication Standardization Advisory Group

to provide necessary strategic planning guidance and enhance the coordination among related SGs in order to promote more productive and holistic SDN standard work,

invites Member States, Sector Members, Associates and academia

to submit contributions for developing SDN standardization in ITU‑T.