

I n t e r n a t i o n a l T e l e c o m m u n i c a t i o n U n i o n

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

WORLD TELECOMMUNICATION STANDARDIZATION
ASSEMBLY

Hammamet, 25 October – 3 November 2016

Resolution 77 – Enhancing the standardization work in the ITU Telecommunication Standardization Sector for software-defined networking

ITU-T



FOREWORD

The International Telecommunication Union (ITU) is the United Nations specialized agency in the field of telecommunications, information and communication technologies (ICTs). The ITU Telecommunication Standardization Sector (ITU-T) is a permanent organ of ITU. ITU-T is responsible for studying technical, operating and tariff questions and issuing Recommendations on them with a view to standardizing telecommunications on a worldwide basis.

The World Telecommunication Standardization Assembly (WTSA), which meets every four years, establishes the topics for study by the ITU-T study groups which, in turn, produce Recommendations on these topics.

The approval of ITU-T Recommendations is covered by the procedure laid down in WTSA Resolution 1.

In some areas of information technology which fall within ITU-T's purview, the necessary standards are prepared on a collaborative basis with ISO and IEC.

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RESOLUTION 77 (Rev. 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 trend towards maturity of software-defined networking (SDN) technology, many organizations are involved in SDN standardization, including those developing open-source solutions;
- b) that many SDN-related standards activities are still ongoing in various ITU Telecommunication Standardization Sector (ITU-T) study groups;
- c) the fact that SDN will profoundly change the telecommunication and information and communication technology (ICT) industry's landscape 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 in the telecommunication/ICT industry;
- e) that the Joint Coordination Activity on SDN (JCA-SDN) under the ITU-T Telecommunication Standardization Advisory Group (TSAG) was established in June 2013, and that JCA-SDN is coordinating standardization work on SDN and related technical topics within ITU-T, as well as communication between ITU-T study groups and outside organizations;
- f) that new technologies such as network function virtualization (NFV) have been emerging, which may support SDN by providing the virtualized infrastructure upon which the SDN software can operate;
- g) that the SDN orchestrator will provide 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 Orchestrator project (OPEN-O) and the ETSI Open-Source NFV Management and Orchestration (MANO) project (OSM);
- h) Resolution 139 (Rev. Busan, 2014) of the Plenipotentiary Conference, on telecommunications/ICT to bridge the digital divide and build an inclusive information society;
- i) 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 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 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, as appropriate, taking into account the outcome of TSAG work on open source;
- 2 to continue to expand and accelerate the work on SDN standardization, especially carrier SDN;
- 3 to research the advancement of emerging technology such as NFV container/docker to evolve the SDN technology;
- 4 to continue to develop the ITU-T SDN standards to enhance interoperability between the controller products;
- 5 to consider the potential implications of the SDN orchestrator layer for ITU-T operation supporting system (OSS) related work,

instructs Study Group 13

to continue the JCA-SDN work, to coordinate and help plan the work so as to ensure that ITU-T SDN standardization is progressed in a well-coordinated manner and more efficiently among relevant study groups, to study the SDN-related work programmes (including NFV, 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 to provide information on this work for use by the relevant study groups in planning their 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 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 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,

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 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, and to organize the annual SDN&NFV workshop with open-source solutions representation to share the progress in SDN/NFV standards and real experience in the current carrier network,

invites Member States, Sector Members, Associates and academia

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