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| itu_logo | World Telecommunication Standardization Assembly (WTSA-16)Hammamet, 25 October - 3 November 2016 | CCITT/ITU-T 60th Anniversary logo |
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| PLENARY MEETING | Addendum 20 toDocument 47-E |
|  | 27 September 2016 |
|  | Original: Russian |
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| ITU Member States, Members of the RCC |
| DRAFT REVISION OF Resolution 77 - Standardization work in the ITU Telecommunication Standardization Sector for software-defined networking |
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| **Abstract:** | This contribution proposes modifying Resolution 77 to reflect the importance of involving open-source software communities in the activities of ITU-T on SDN standardization. |

Introduction

At the present time many operators/suppliers of telecommunication services encounter the following problems when deploying and operating new networks and services:

– dependency on solutions developed by major foreign equipment producers and suppliers;

– inadequate security of proposed solutions in areas including network switching owing to insufficient maturity at the design, development and testing stages and other factors;

– insufficient sustainability of proposed solutions, for similar reasons;

– insufficient reliability which cannot be significantly improved within tight deadlines with regard to specific software and hardware components.

It is also of critical importance for businesses to reduce the resources needed for deployment, operation and maintenance.

One of the main ways of tackling these issues is openness – use of open standards and participation in their development and in the production of equipment based on them. ITU is doing much in this area but the increasingly closed nature of basic provisions of new Recommendations from the Standardization Sector makes many of the Recommendations in question difficult and costly to apply.

Fundamentals

Software-defined networks (SDN) are a promising component part of “cloud” infrastructure control systems.

Ensuring the rapid and least costly introduction of new and promising SDN solutions can be achieved above all on the basis of specific solutions and of products and product lines based on open-source code principles.

WTSA-16 is a unique platform where various communities and projects based on open-source software (OSS) solutions can get involved in work on new recommendations.

During the current study period a number of communities involved in developing open-source software (OSS) projects submitted information on their work to the Joint Coordination Activity on Software-Defined Networking (JCA-SDN). This should be developed and encouraged. It was noted that the Open Networking Foundation (ONF) plays an important role in SDN development. JCA-SDN found that communities developing open-source software projects are becoming key players in the standards ecosystem, providing a reference implementation in practice, feedback with developers of standards and technical specifications, proof of the viability of the concept, and acting as responsive and reliable partners. Projects developed by OSS communities including OpenDaylight, OpenStack and OPNFV are playing an important role in the field of SDN.

This will not be a new area of work. Work in collaboration with OSS organizations has already been under way in ITU, in particular in ITU-T, for a long time. For example, the ITU-T Focus Group on IMT-2020 (“5G”) at its meeting of 17 December 2015 resolved to continue its work under modified terms of reference including in-depth studies into areas such as programmable networks (network “softwarization”). The new terms of reference of the Focus Group call for the group to engage open-source communities in network‑related work, recognizing their role and influence on development and the potential benefits they can bring to the world of telecommunications in the development of a 5G standards ecosystem. The Focus Group’s assumption is that by 2020 new business development models based on programmable networks for telecom solutions will mean the convergence of the open‑source and telecom communities.

It will thus be necessary either to draft a new resolution on more in-depth work with open-source communities in all areas of ITU-T activities, or to include provisions on enhancing that work in each resolution on specific areas.

In accordance with the latter approach it is proposed to modify the existing Resolution 77 on SDN.

Proposal

Proposals to add to Resolution 77 are set out in the text that follows.

MOD RCC/47A20/1

RESOLUTION 77 (HAMMAMET, 2016)

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)* 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;

*b)* the multiple benefits that SDN can bring for the telecommunication/ICT industry;

*c)* the rapidly growing interest in the use of SDN in the telecommunication/ICT industry on the part of a significant number of communities;

*d)* that a broad application of SDN will require a system of deployable standards which are not yet in place;

*e)* the increasingly important role of open-source software (OSS) communities in implementing network infrastructure solutions,

noting

*a)* that the ITU Telecommunication Standardization Sector (ITU‑T) should play a leading 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;

*c)* the positive experience of cooperation with the OSS community on a number of ITU-T projects,

recognizing

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

*b)* that solid foundations have already been laid down in terms of SDN requirements and architecture standards, which may enable the whole set of standards to be built through an industry-wide synergy;

*c)* that ITU‑T Study Group 13 is involved in the study of SDN in the development of future networks and is collaborating with relevant standards development organizations (SDOs),

resolves to instruct ITU-T Study Group 13

1 to expand and accelerate the work on SDN architecture, requirements and specific solutions, with wider involvement of communities developing open-source software solutions (OSS communities) including as regards programmable networks;

2 to make recommendations to the Telecommunication Standardization Advisory Group (TSAG) on how to involve OSS communities in work on SDN,

instructs the Telecommunication Standardization Advisory Group

to examine the matter, consider the input of Study Group 13 and other relevant study groups and take the necessary actions, as appropriate, with a view to deciding on the necessary measures to involve OSS communities in SDN standardization activities in ITU‑T, with the following actions:

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

• promote collaboration with other SDN-related standards bodies and forums, paying particular attention to cooperation with OSS communities;

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

2 to organize, with representatives of OSS communities, a workshop on SDN in 2017 in order to promote OSS solutions for SDN within ITU-T,

invites Member States, Sector Members, Associates and academia

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

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