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## **Draft Recommendation ITU-T Y.NGNe-O-CPN-reqts**

### **Requirements and framework of NGNe orchestration enhancements for support computing power network**

#### **1. Scope**

This draft Recommendation provides an overview of NGNe orchestration enhancements for support computing power network, and defines the requirements and framework of NGNe orchestration enhancements for the support of computing power network in NGNe environment.

The NGNe orchestration enhancements is an evolved version of orchestration in NGNe which has already been standardized by ITU-T Recommendations [ITU-T Y.2323], [ITU-T Y.2324] and [ITU-T Q.3058] for its requirements, capabilities, functional architectures and signalling architecture. This draft Recommendation builds on those published Recommendations and Y.CPN-arch. The content of this draft recommendation is aligned with other CPN related Recommendations.

#### **2. References**

The following ITU-T Recommendations and other references contain provisions which, through reference in this text, constitute provisions of this Recommendation. At the time of publication, the editions indicated were valid. All Recommendations and other references are subject to revision; users of this Recommendation are therefore encouraged to investigate the possibility of applying the most recent edition of the Recommendations and other references listed below. A list of the currently valid ITU-T Recommendations is regularly published.

The reference to a document within this Recommendation does not give it, as a stand-alone document, the status of a Recommendation.

[ITU-T Y.2323] Recommendation ITU-T Y.2323 (2018), *Requirements and capabilities of orchestration in NGNe*.

[ITU-T Y.2324] Recommendation ITU-T Y.2324 (2019), *Functional architecture of orchestration in NGNe*.

[ITU-T Q.3058] Recommendation ITU-T Q.3058 (2020), *Signalling architecture of orchestration in NGNe*.

[ITU-T Y.CPN-arch] *framework and architecture of Computing power Network*.

TBD

#### **3. Definitions**

##### **3.1. Terms defined elsewhere**

This Recommendation uses the following terms defined elsewhere:

TBD

##### **3.2. Terms defined in this Recommendation**

This Recommendation defines the following terms:

TBD

#### **4. Abbreviations and acronyms**

This Recommendation uses the following abbreviations and acronyms:

TBD

## 5. Conventions

In this Recommendation:

The keywords "is required to" indicate a requirement which must be strictly followed and from which no deviation is permitted, if conformance to this Recommendation is to be claimed.

The keywords "is recommended" indicate a requirement which is recommended but which is not absolutely required. Thus, this requirement need not be present to claim conformance.

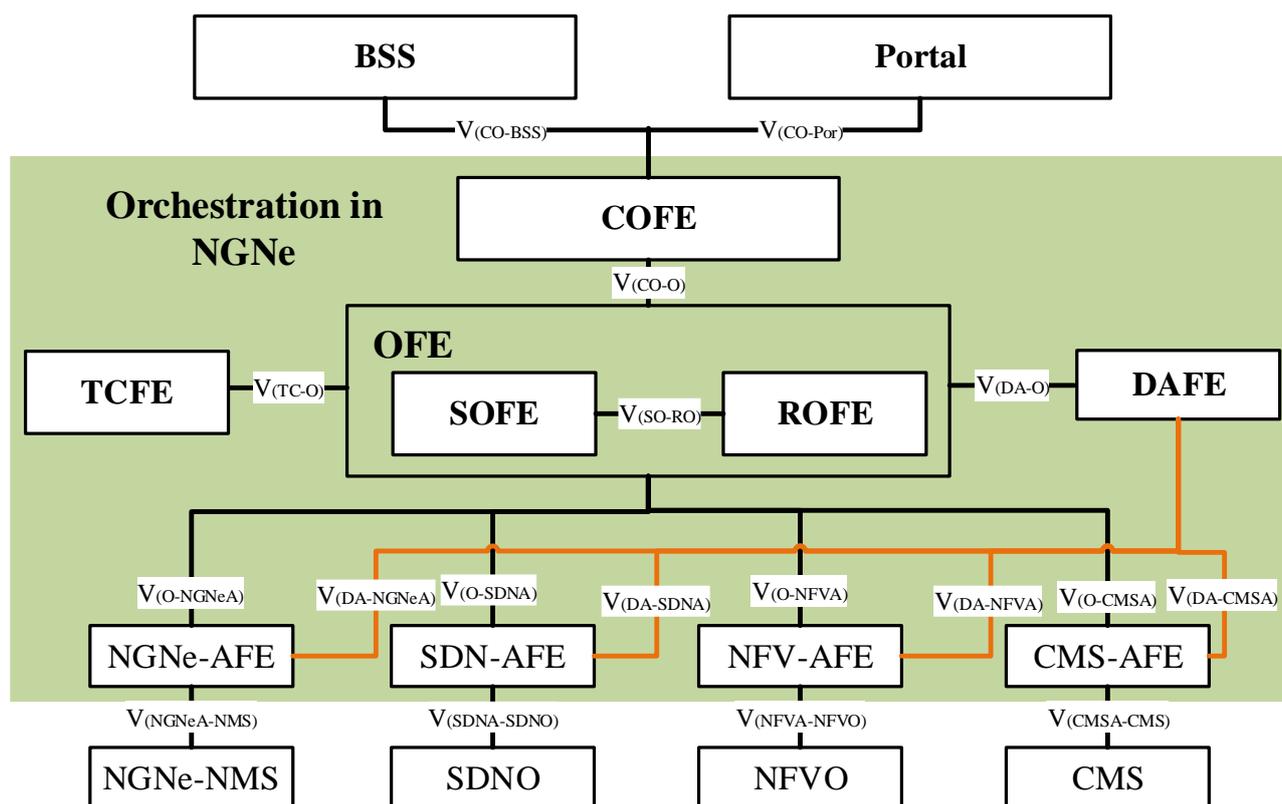
The keywords "can optionally" indicate an optional requirement which is permissible, without implying any sense of being recommended. This term is not intended to imply that the vendor's implementation must provide the option, and the feature can be optionally enabled by the network operator/service provider. Rather, it means the vendor may optionally provide the feature and still claim conformance with this Recommendation.

## 6. Background and motivations

*Editor's Note: This section would provide an overview of the background, purpose of NGNe orchestration enhancements to support CPN.*

### 6.1. NGNe Orchestration

Traditional operator networks, especially NGNe, are lack of agility, self-maintenance, on demand deployment and so on. As the raise of innovative technologies such as SDN, NFV and cloud computing, NGNe need to adopt their advantages to achieve end-to-end automatic provisioning and connection, unified management of multi-vendor devices, centralized network service and network resource controlling, etc. To fulfil the above features, the NGNe orchestration has been introduced. The NGNe orchestration takes the coexistence and corporation of traditional network such NGNe and SDN/NFV enabled networks and cloud computing platforms into consideration. ITU-T has already published a set of NGNe orchestration related Recommendations including ITU-T Y.2323(*Requirements and capabilities of orchestration in NGNe*), ITU-T Y.2324(*Functional architecture of orchestration in NGNe.*) and ITU-T Q.3058(*Signalling architecture of orchestration in NGNe.*), which standardized the requirements and capabilities, functional architecture and signalling architecture of NGNe orchestration. The following figure provide the functional architech of orchestration in NGNe from ITU-T Y.2324.



TBD

## 6.2. Computing power network

TBD

## 6.3. Enhancements of NGNe orchestration for support CPN

TBD

## 7. Requirements of NGNe orchestration enhancements for support CPN

### 7.1. General requirements

*Editor's note: This section will provide the general requirements of Y.NGNe-O-CPN-reqts, contributions are welcomed.*

### 7.2. Service requirements

*Editor's note: service requirements of Y.NGNe-O-CPN-reqts will be addressed in this clause, contributions are welcomed.*

### 7.3. Capability requirements

*Editor's: capability requirements of Y.NGNe-O-CPN-reqts will be addressed in this clause, contributions are welcomed.*

## 8. Framework of NGNe orchestration enhancements for support CPN

### 8.1. Overview

*Editor's note: overview of the framework of NGNe orchestration enhancements to support CPN will be addressed in this clause, contributions are welcomed.*

## **8.2. Management Layer**

*Editor's note: the management layer of NGNe orchestration enhancements to support CPN will be addressed in this clause, contributions are welcomed.*

## **8.3. Control Layer**

*Editor's note: the control layer of the framework of NGNe orchestration enhancements to support CPN will be addressed in this clause, contributions are welcomed.*

## **8.4. Infrastructure Layer**

*Editor's note: the infrastructure layer of the framework of NGNe orchestration enhancements to support CPN will be addressed in this clause, contributions are welcomed.*

## **9. Security considerations**

*Editor's Note: The security considerations of this draft recommendation except for the general security issues of NGNe will be addressed in this clause, contributions are welcomed.*

## Annex 1

### A.1 justification for Proposal on initiating the study of the requirements and framework of NGNe orchestration enhancements for support computing power network

<b>Question:</b>	2/13	<b>Proposed new ITU-T Recommendation</b>	Virtual, 5-16 July 2021
<b>Reference and title:</b>	Y.NGNe-O-CPN-reqts “Requirements and framework of NGNe orchestration enhancements for support computing power network”		
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<b>Editor(s):</b>	Huan Deng, China Telecom, China <a href="mailto:denghuan@chinatelecom.cn">denghuan@chinatelecom.cn</a> Bo Lei, China Telecom, China <a href="mailto:leibo@chinatelecom.cn">leibo@chinatelecom.cn</a> Chang Cao, China Unicom, China <a href="mailto:caoc15@chinaunicom.cn">caoc15@chinaunicom.cn</a>	<b>Approval process:</b>	AAP
<p><b>Scope</b> (defines the intent or object of the Recommendation and the aspects covered, thereby indicating the limits of its applicability):</p> <p>This draft Recommendation provides an overview of NGNe orchestration enhancements for support computing power network, and defines the requirements and framework of NGNe orchestration enhancements for the support of computing power network in NGNe environment.</p> <p>The NGNe orchestration enhancements is an evolved version of orchestration in NGNe which has already been standardized by ITU-T Recommendations [ITU-T Y.2323], [ITU-T Y.2324] and [ITU-T Q.3058] for its requirements, capabilities, functional architectures and signalling architecture. This draft Recommendation builds on those published Recommendations and Y.CPN-arch. The content of this draft recommendation is aligned with other CPN related Recommendations.</p>			
<p><b>Summary</b> (provides a brief overview of the purpose and contents of the Recommendation, thus permitting readers to judge its usefulness for their work):</p> <p>By adopting the notion of orchestration in NGNe, end to end orchestration between devices supporting traditional protocols and interfaces, and SDN/NFV enabled networks could be obtained, and the coordination between the cloud and the network could also be achieved. The orchestration in NGNe has already been studied in SG13 and ITU-T has already published a set of NGNe orchestration related Recommendations including ITU-T Y.2323(Requirements and capabilities of orchestration in NGNe), ITU-T Y.2324(Functional architecture of orchestration in NGNe.) and ITU-T Q.3058(Signalling architecture of orchestration in NGNe.), which standardized the requirements and capabilities, functional architecture and signalling architecture of NGNe orchestration. Furthermore, the computing power network integrates multi-party and heterogeneous resources into a unified resource plane, providing flexible resource supply and agile connection for users, which can meet the rapid response of emerging business to resource demand and effectively improve resource utilization.</p> <p>To implement the concept and key principles of computing power network to existing heterogeneous network infrastructure including NGNe, SDN enabled networks, NFV enabled networks and to cooperated with current cloud platforms, the orchestration in NGNe has to be enhanced to support the advanced features that are raised by computing power network in the present complex network situation. Based on these materials, we propose to study the enhancements orchestration in NGNe to support computing power network.</p>			
<p><b>Relations to ITU-T Recommendations or to other standards</b> (approved or under development):</p> <p>ITU-T Y.2323, ITU-T Y.2324, ITU-T Q.3058, ITU-T Y.CPN-arch</p>			
<p><b>Liaisons with other study groups or with other standards bodies:</b></p> <p>ITU-T SG11 Q1, ITU-T SG11 Q4, 3GPP SA5</p>			
<p><b>Supporting members that are committing to contributing actively to the work item:</b></p> <p>China Telecom, China Unicom</p>			