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IEEE Standard for Self-Organizing Management Protocols of Next Generation Service Overlay Network

IEEE Communications Society

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Virtualized and Software Defined Networks and Services Standards Committee

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IEEE Standard for Self-Organizing Management Protocols of Next Generation Service Overlay Network

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Abstract: Protocols between overlay management (OM) functional entity (FE) and all other NGSON FEs and/or NGSON nodes to enable OM FE involved self-organizing management capability are specified in this standard. Activation and deactivation of an NGSON node and addition, deletion, movement, and copy of an NGSON function entity from or to an NGSON node are included in this capability. Protocols among service routing (SR) FEs to enable OM FE non-involved self-organizing management capability such as re-organization of overlay structure among multiple SR FEs for recovery from a failed or overloaded SR FE or for performance improvement of service routing are also specified in this standard.

Keywords: IEEE Std 1903.3™, NGSON, self-configuration, self-optimization, self-organization, self-recovery

The Institute of Electrical and Electronics Engineers, Inc.
3 Park Avenue, New York, NY 10016-5997, USA

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Yesenia Cevallos
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Introduction

This introduction is not part of IEEE Std 1903.3-2017, IEEE Standard for Self-Organizing Management Protocols of Next Generation Service Overlay Network.

This standard specifies content delivery protocols for Next Generation Service Overlay Networks (NGSONs). NGSON defines the operation management functional entity (OM FE) and service routing functional entity (SR FE) to support self-organization. These FEs coordinate with each other to support self-configuration, self-optimization, self-recovery, and self-organization functions. The interactions among these FEs are carried via their reference points defined in the NGSON.

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IEEE Standard for Self-Organizing Management Protocols of Next Generation Service Overlay Network

1. Overview

1.1 Scope

This standard specifies protocols between the overlay management (OM) functional entity (FE) and all other NGSON functional entities, and/or NGSON nodes to enable the OM FE involved self-organizing management capability. This capability includes activation and deactivation of an NGSON node and addition, deletion, movement, and copy of an NGSON function entity from or to an NGSON node. This standard also specifies protocols among service routing (SR) FEs to enable OM FE non-involved self-organizing management capability, such as re-organization of overlay structure among multiple SR FEs for recovery from a failed or overloaded SR FE or for performance improvement of service routing.

1.2 Purpose

The purpose of this standard is to enable NGSON network operators to reduce OPEX of NGSON networks based on self-organizing management capabilities of NGSON including self-configuration, self-recovery, and self-optimization of NGSON nodes and functional entities.

2. Normative references

The following referenced documents are indispensable for the application of this document (i.e., they must be understood and used, so each referenced document is cited in text and its relationship to this document is explained). For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments or corrigenda) applies.

IEEE P1903™/D1_May 2008, Draft White Paper for Next Generation Service Overlay Network.[1]

IEEE P1903™/D1_April 2008, Draft Standard for a Next Generation Service Overlay Network.

IEEE Std 1903™-2011, IEEE Standard for the Functional Architecture of Next Generation Service Overlay Networks.[2,3]

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