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IEEE Standard for Content Delivery Protocols of Next Generation Service Overlay Network

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Virtualized and Software Defined Networks and Services Standards Committee

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IEEE Std 1903.1™-2017

IEEE Standard for Content Delivery Protocols of Next Generation Service Overlay Network

Sponsor

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Abstract: Protocols to support advanced content delivery capability in next generation service overlay networks including content delivery (CD) functional entity (FE), service routing (SR) FE, service policy decision (SPD) FE, service discovery and negotiation (SDN) FE, and context information management (CIM) FE are specified in this standard. Content discovery, content cache and storage management, content delivery control, and transport QoS control, including context-aware and dynamically adaptive content delivery operations, are supported by the content delivery capability.

Keywords: content delivery, context awareness, dynamic adaptation, IEEE Std 1903.1™, NGSON, self organization

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Introduction

This introduction is not part of IEEE Std 1903.1-2017, IEEE Standard for Content Delivery Protocols of Next Generation Service Overlay Network.

This standard specifies content delivery protocols for a Next Generation Service Overlay Network (NGSON). NGSON supports content delivery from a service to another service, from a service to an end user, from an end user to another end user, or from an end user to a service. NGSON performs cache and forward functionalities and also supports requirements for content adaptation when the source content is in a different format than what the requester can accept. NGSON receives content from the content provider, stores, aggregates, and sends it to the end-user over underlying networks.

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1.1 Scope

This standard specifies protocols among content delivery (CD) functional entity (FE), service routing (SR) FE, service policy decision (SPD) FE, service discovery and negotiation (SDN) FE, and context information management (CIM) FE to support advanced content delivery capability in next generation service overlay networks. The content delivery capability aims to support content discovery, content cache and storage management, content delivery control, and transport QoS control including context-aware and dynamically adaptive content delivery operations.

1.2 Purpose

The purpose of this standard is to enable network operators, service/content providers, and end users to provide and consume content services based on advanced content delivery capability of a Next Generation Service Overlay Network (NGSON) with context-aware and dynamically adaptive features. This standard is also to provide interoperability of content services between network operators and content providers.

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 Std 1903™-2011, IEEE Standard for the Functional Architecture of Next Generation Service Overlay Networks.[1, 2]

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