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SERIES Y: GLOBAL INFORMATION
INFRASTRUCTURE, INTERNET PROTOCOL ASPECTS
AND NEXT-GENERATION NETWORKS

Next Generation Networks – Frameworks and functional
architecture models

Functional requirements and architecture of the web service component in next generation networks

Recommendation ITU-T Y.2024



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Recommendation ITU-T Y.2024

Functional requirements and architecture of the web service component in next generation networks

Summary

Recommendation ITU-T Y.2024 provides the functional requirements and architecture of the web service component using web technologies in next generation networks (NGNs). The web service component in NGN basically supports legacy web services and converged NGN services through the interworking with the internet protocol (IP) multimedia service component and/or the internet protocol television (IPTV) services component.

History

Edition	Recommendation	Approval	Study Group
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NGN, web.

FOREWORD

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Recommendation ITU-T Y.2024

Functional requirements and architecture of the web service component in next generation networks

1 Scope

The objective of this Recommendation is to describe the functional requirements and architecture of the web service component in NGN using web technologies (e.g., HTML, HTTP, XML, SOAP, REST). The web service component in NGN basically supports legacy web services (e.g., web-browsing, e-mail, blogging, web-office services) and converged NGN services such as web-based conversational services through the interworking with the IP multimedia service component and/or web-based multimedia streaming service through the interworking with the IPTV services component.

The scope of this Recommendation includes:

- overview of the web service component in the support of legacy web services and converged NGN services;
- requirements for the web service component in NGN;
- functional architecture for the web service component in NGN;
- interworking between web service component and other service components.

This Recommendation mainly focuses on service control and content delivery functions in the service stratum of NGN. Details of web technologies are out of the scope.

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.101] | Recommendation ITU-T Y.101 (2000), <i>Global Information Infrastructure terminology: Terms and definitions.</i> |
| [ITU-T Y.1901] | Recommendation ITU-T Y.1901 (2009), <i>Requirements for the support of IPTV services.</i> |
| [ITU-T Y.1910] | Recommendation ITU-T Y.1910 (2008), <i>IPTV functional architecture.</i> |
| [ITU-T Y.2011] | Recommendation ITU-T Y.2011 (2004), <i>General principles and general reference model for Next Generation Networks.</i> |
| [ITU-T Y.2012] | Recommendation ITU-T Y.2012 (2010), <i>Functional requirements and architecture of next generation networks.</i> |
| [ITU-T Y.2021] | Recommendation ITU-T Y.2021 (2006), <i>IMS for Next Generation Networks.</i> |
| [ITU-T Y.2031] | Recommendation ITU-T Y.2031 (2006), <i>PSTN/ISDN emulation architecture.</i> |
| [ITU-T Y.2091] | Recommendation ITU-T Y.2091 (2008), <i>Terms and definitions for Next Generation Networks.</i> |

[ITU-T Y.2201]	Recommendation ITU-T Y.2201 (2009), <i>Requirements and capabilities for ITU-T NGN</i> .
[ITU-T Y.2232]	Recommendation ITU-T Y.2232 (2008), <i>NGN convergence service model and scenario using web services</i> .
[ITU-T Y.2235]	Recommendation ITU-T Y.2235 (2008), <i>Converged web-browsing service scenarios in NGN</i> .
[ITU-T Y.2701]	Recommendation ITU-T Y.2701 (2007), <i>Security requirements for NGN release 1</i> .
[ITU-T Y.2702]	Recommendation ITU-T Y.2702 (2008), <i>Authentication and authorization requirements for NGN release 1</i> .

3 Definitions

3.1 Terms defined elsewhere

This Recommendation uses the following terms defined elsewhere:

3.1.1 application [ITU-T Y.101]: A structured set of capabilities, which provide value-added functionality supported by one or more services.

3.1.2 functional architecture [ITU-T Y.2012]: A set of functional entities and the reference points between them used to describe the structure of an NGN. These functional entities are separated by reference points, and thus, they define the distribution of functions.

NOTE – The functional entities can be used to describe a set of reference configurations. These reference configurations identify which reference points are visible at the boundaries of equipment implementations and between administrative domains.

3.1.3 functional entity [ITU-T Y.2012]: An entity that comprises an indivisible set of specific functions. Functional entities are logical concepts, while groupings of functional entities are used to describe practical, physical implementations.

3.1.4 internet protocol television (IPTV) [ITU-T Y.1901]: Multimedia services such as television/video/ audio/text/graphics/data delivered over IP-based networks managed to support the required level of QoS/QoE, security, interactivity and reliability.

3.1.5 NGN service stratum [ITU-T Y.2011]: That part of the NGN which provides the user functions that transfer service-related data and the functions that control and manage service resources and network services to enable user services and applications (see also clause 7.1 of [ITU-T Y.2011]).

3.1.6 NGN transport stratum [ITU-T Y.2011]: That part of the NGN which provides the user functions that transfer data and the functions that control and manage transport resources to carry such data between terminating entities (see also clause 7.1 of [ITU-T Y.2011]).

3.1.7 service [ITU-T Y.2091]: A set of functions and facilities offered to a user by a provider.

3.1.8 web service [ITU-T Y.2232]: A service provided using web services systems.

3.2 Terms defined in this Recommendation

None.

4 Abbreviations and acronyms

This Recommendation uses the following abbreviations and acronyms:

API	Application Programming Interface
APL-GW-FE	Application Gateway Functional Entity
APL-SCM-FE	Application Service Coordination Manager Functional Entity
AS-FE	Application Support Functional Entity
CSCF	Call Session Control Function
FE	Functional Entity
FTP	File Transfer Protocol
HTML	Hyper Text Mark-up Language
HTTP	Hyper Text Transfer Protocol
IETF	Internet Engineering Task Force
IMS	IP Multimedia Subsystem
ISDN	Integrated Services Digital Network
MMoIP	Multimedia over IP
MRB-FE	Media Resource Broker Functional Entity
MRC-FE	Media Resource Control Functional Entity
NACF	Network Attachment Control Function
NGN	Next Generation Network
NSIW-FE	Network Signalling Interworking Functional Entity
PC	Personal Computer
PCC-FE	Policy and Charging Control – Functional Entity
PDF	Policy Decision Function
PSTN	Public Switched Telephone Network
PWC-FE	Proxy Web Control – Functional Entity
QoS	Quality of Service
RACF	Resource Admission Control Function
REST	Representational State Transfer
RTCWEB	Real-Time Communication in WEB-browsers
RTSP	Real Time Streaming Protocol
SAA-FE	Service Authentication and Authorization Functional Entity
SCIM	Service Capability Interaction Manager
SIP	Session Initiation Protocol
SL-FE	Subscription Locator Functional Entity
SOAP	Simple Object Access Protocol
SUP-FE	Service User Profile Functional Entity
USIW-FE	User Signalling Interworking Functional Entity