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

Next Generation Networks – Frameworks and functional
architecture models

Framework of object-to-object communication for ubiquitous networking in next generation networks

Recommendation ITU-T Y.2062



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Recommendation ITU-T Y.2062

Framework of object-to-object communication for ubiquitous networking in next generation networks

Summary

Recommendation ITU-T Y.2062 describes the concept and high-level architectural model of object-to-object communication for ubiquitous networking in next generation networks (NGNs). It also presents requirements and a mechanism for identification of all objects and for providing connectivity to them.

History

Edition	Recommendation	Approval	Study Group
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NGN, object, ubiquitous networking.

FOREWORD

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Recommendation ITU-T Y.2062

Framework of object-to-object communication for ubiquitous networking in next generation networks

1 Scope

This Recommendation describes the concept and high-level architectural model of object-to-object communication for ubiquitous networking in next generation networks (NGNs). It also presents requirements and a mechanism for identification of all objects and for providing connectivity to them. This Recommendation covers the following items:

- General overview of ubiquitous networking in NGNs from the end-user perspective
- Basic concept and high-level architectural model for object-to-object communication using NGNs
- Requirements and technical considerations of object-to-object communication for ubiquitous networking
- A mechanism for object-to-object communication.

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.2001] Recommendation ITU-T Y.2001 (2004), *General overview of NGN*.
- [ITU-T Y.2002] Recommendation ITU-T Y.2002 (2009), *Overview of ubiquitous networking and of its support in NGN*.
- [ITU-T Y.2291] Recommendation ITU-T Y.2291 (2011), *Architectural overview of next generation home networks*.
- [ITU-T Y.2701] Recommendation ITU-T Y.2701 (2007), *Security requirements for NGN release 1*.
- [ITU-T Y.2702] Recommendation ITU-T Y.2702 (2008), *Authentication and authorization requirements for NGN release 1*.

3 Definitions

3.1 Terms defined elsewhere

This Recommendation uses the following terms defined elsewhere:

3.1.1 context [ITU-T Y.2002]: The information that can be used to characterize the environment of a user.

NOTE – Context information may include where the user is, what resources (devices, access points, noise level, bandwidth, etc.) are near the user, at what time the user is moving, interaction history between person and objects, etc. According to specific applications, context information can be updated.

3.1.2 object [ITU-T Y.2002]: An intrinsic representation of an entity that is described at an appropriate level of abstraction in terms of its attributes and functions.

NOTE 1 – An object is characterized by its behaviour. An object is distinct from any other object. An object interacts with its environment including other objects at its interaction points. An object is informally said to perform functions and offer services (an object which makes a function available is said to offer a service). For modelling purposes, these functions and services are specified in terms of the behaviour of the object and of its interfaces. An object can perform more than one function. A function can be performed by the cooperation of several objects.

NOTE 2 – Objects include terminal devices (e.g., used by a person to access the network such as mobile phones, Personal computers, etc.), remote monitoring devices (e.g., cameras, sensors, etc.), information devices (e.g., content delivery server), products, contents, and resources.

3.1.3 ubiquitous networking [ITU-T Y.2002]: The ability for persons and/or devices to access services and communicate while minimizing technical restrictions regarding where, when and how these services are accessed, in the context of the service(s) subscribed to.

NOTE – Although technical restrictions to access services and communicate may be minimized, other constraints such as regulatory, national, provider and environmental constraints may impose further restrictions.

3.2 Term defined in this Recommendation

None.

4 Abbreviations and acronyms

This Recommendation uses the following abbreviations and acronyms:

ANI	Application to Network Interface
API	Application Programming Interface
BT	Bio Technology
CT	Content Technology
ID	Identifier
IdM	Identity Management
IP	Internet Protocol
IT	Information Technology
ITS	Intelligent Transportation System
LAN	Local Area Network
LTE	Long Term Evolution
NGN	Next Generation Network
NT	Nano Technology
PC	Personal Computer
PDA	Personal Digital Assistant
QoE	Quality of Experience
QoS	Quality of Service
RFID	Radio Frequency Identifier
UNI	User to Network Interface