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

Next Generation Networks – Generalized mobility

Mobility management framework for applications with multiple devices

Recommendation ITU-T Y.2813

ITU-T

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For further details, please refer to the list of ITU-T Recommendations.

Recommendation ITU-T Y.2813

Mobility management framework for applications with multiple devices

Summary

Recommendation ITU-T Y.2813 describes a mobility management framework that facilitates various seamless multimedia services using multiple devices.

This Recommendation identifies the design considerations, requirements, functional architecture and information flows for supporting various applications involving users with multiple devices.

History

Edition	Recommendation	Approval	Study Group	Unique ID*
1.0	ITU-T Y.2813	2016-02-13	13	11.1002/1000/11830-en

Keywords

Mobility management, multiple devices, seamless service, switchover, NGN.

* To access the Recommendation, type the URL <http://handle.itu.int/> in the address field of your web browser, followed by the Recommendation's unique ID. For example, <http://handle.itu.int/11.1002/1000/11830-en>.

FOREWORD

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The approval of ITU-T Recommendations is covered by the procedure laid down in WTSA Resolution 1.

In some areas of information technology which fall within ITU-T's purview, the necessary standards are prepared on a collaborative basis with ISO and IEC.

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Recommendation ITU-T Y.2813

Mobility management framework for applications with multiple devices

1 Scope

The objective of this Recommendation is to develop a mobility management (MM) framework for applications involving users with multiple devices. To enable seamless services between those users, it is required to provide the functions of location management and handover control for a set of devices sharing a communication session. This Recommendation specifies design considerations, service scenarios, requirements, functional architecture and information flows for mobility support in applications with multiple devices.

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.

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|----------------|---|
| [ITU-T Q.1706] | Recommendation ITU-T Q.1706/Y.2801 (2006), <i>Mobility management requirements for NGN.</i> |
| [ITU-T Q.1707] | Recommendation ITU-T Q.1707/Y.2804 (2008), <i>Generic framework of mobility management for next generation networks.</i> |
| [ITU-T Q.1708] | Recommendation ITU-T Q.1708/Y.2805 (2008), <i>Framework of location management for NGN.</i> |
| [ITU-T Q.1709] | Recommendation ITU-T Q.1709/Y.2806 (2008), <i>Framework of handover control for NGN.</i> |
| [ITU-T Y.2018] | Recommendation ITU-T Y.2018 (2009), <i>Mobility management and control framework and architecture within the NGN transport stratum.</i> |

3 Definitions

3.1 Terms defined elsewhere

This Recommendation uses the following terms defined elsewhere:

3.1.1 mobility [ITU-T Q.1706]: The ability for the user or other mobile entities to communicate and access services irrespective of changes of the location or technical environment.

3.1.2 mobility management [ITU-T Q.1706]: The set of functions used to provide mobility. These functions include authentication, authorization, location updating, paging, download of user information and more.

3.1.3 network-based mobility management [ITU-T Q.1707]: A mobility management scheme in which the MM signalling is performed (or controlled) by the network entities, on behalf of the UE.

3.2 Terms defined in this Recommendation

This Recommendation defines the following terms:

3.2.1 handover: (Definition based on [ITU-T Q.1706]) The ability to provide services with some impact on their service level agreements to a moving object during and after movement.

3.2.2 multiple devices: A set of individual user devices operated by and connected through the user. Bundling multiple devices belonging to the user together as a virtual set has the functionality as if there is only one device rather than multiple devices. One example of the usage using multiple devices is multi-screen environment. A user can have multiple devices such as TV, PC, mobile phone, digital album, etc. Each device belonging to the user can compose one logical set with the users. A user sometimes can have more than two sets of devices depending on the situation. However, in this Recommendation, one device set per user is considered.

3.2.3 switchover: The manual switch (or change) from one device to another device that belongs to the same user, to meet the needs of that user. It is assumed that, in a handover scenario, the user can move and roam between access networks using one single device within the mobility management framework. However, in this Recommendation it is assumed that the user can select and change devices, from among multiple devices, in a switchover scenario.

3.2.4 applications with multiple devices: When more than two user devices are used for a single application scenario such as one source multi use, etc. Three types of applications using multiple devices are taken in consideration in this Recommendation: One-to-multiple devices, multiple devices-to-one device and multiple devices-to-multiple devices applications.

- One-to-multiple devices application: It refers to application between a single entity (or sender) and a bundle of entities (or multiple receivers). Application with one source multi use is one example which consists of one content source on the sender side, and multiple devices on the receiver side.
- Multiple devices-to-one application: It refers to an application between a bundle of entities (or multiple senders) and a single entity (or receiver).
- Multiple devices-to-multiple devices application: It refers to an application between two bundles of entities comprising device sets. Both sender and receiver are made up of a bundle of devices that communicate with each other.

3.2.5 activated device: A user device that is selected by the user and is currently in use for on-going application.

3.2.6 deactivated device: A user device that is neither selected nor used by the user for application. Deactivated device can become an activated device based on user's selection.

3.2.7 seamless service: A service that is implemented in such way that it will ensure that users will not experience any service disruptions while changing the point of attachment or while changing devices.

4 Abbreviations and acronyms

This Recommendation uses the following abbreviations and acronyms:

AAA	Authentication, Authorization and Accounting
A-MMCF	Access MMCF
C-MMCF	Central MMCF
HCF	Handover Control Function
IMSI	International Mobile Subscriber Identifier
LMF	Location Management Function
MM	Mobility Management