ETSI TR 122 934 V13.0.0 (2016-01)

Digital cellular telecommunications system (Phase 2+);
Universal Mobile Telecommunications System (UMTS);
LTE;
Feasibility study on 3GPP system
to Wireless Local Area Network (WLAN) interworking
(3GPP TR 22.934 version 13.0.0 Release 13)

Reference
RTR/TSGS-0122934vd00

Keywords
GSM,LTE,UMTS

ETSI

650 Route des Lucioles
F-06921 Sophia Antipolis Cedex - FRANCE

Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - NAF 742 C
Association à but non lucratif enregistrée à la
Sous-Préfecture de Grasse (06) N° 7803/88

Intellectual Property Rights

IPRs essential or potentially essential to the present document may have been declared to ETSI. The information pertaining to these essential IPRs, if any, is publicly available for **ETSI members and non-members**, and can be found in ETSI SR 000 314: *"Intellectual Property Rights (IPRs); Essential, or potentially Essential, IPRs notified to ETSI in respect of ETSI standards"*, which is available from the ETSI Secretariat. Latest updates are available on the ETSI Web server (https://ipr.etsi.org/).

Pursuant to the ETSI IPR Policy, no investigation, including IPR searches, has been carried out by ETSI. No guarantee can be given as to the existence of other IPRs not referenced in ETSI SR 000 314 (or the updates on the ETSI Web server) which are, or may be, or may become, essential to the present document.

Foreword

This Technical Report (TR) has been produced by ETSI 3rd Generation Partnership Project (3GPP).

The present document may refer to technical specifications or reports using their 3GPP identities, UMTS identities or GSM identities. These should be interpreted as being references to the corresponding ETSI deliverables.

The cross reference between GSM, UMTS, 3GPP and ETSI identities can be found under http://webapp.etsi.org/key/queryform.asp.

Modal verbs terminology

In the present document "**shall**", "**shall not**", "**should**", "**should not**", "**may**", "**need not**", "**will**", "**will not**", "**can**" and "**cannot**" are to be interpreted as described in clause 3.2 of the ETSI Drafting Rules (Verbal forms for the expression of provisions).

"**must**" and "**must not**" are **NOT** allowed in ETSI deliverables except when used in direct citation.

Contents

Foreword

This Technical Specification has been produced by the 3rd Generation Partnership Project (3GPP).

The contents of the present document are subject to continuing work within the TSG and may change following formal TSG approval. Should the TSG modify the contents of the present document, it will be re-released by the TSG with an identifying change of release date and an increase in version number as follows:

Version x.y.z

where:

x the first digit:

1 presented to TSG for information;

2 presented to TSG for approval;

3 or greater indicates TSG approved document under change control.

y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.

z the third digit is incremented when editorial only changes have been incorporated in the document.

Introduction

This document studies the feasibility of interworking between 3GPP systems and Wireless Local Area Networks (WLANs). For the purpose of this document the term 3GPP - WLAN interworking refers to the utilisation of resources and access to services within the 3GPP system by the WLAN UE and user respectively. The intent of 3GPP - WLAN Interworking is to extend 3GPP services and functionality to the WLAN access environment. Thus the WLAN effectively becomes a complementary radio access technology to the 3GPP system.

The WLAN provides access to services located in WLANs and/or networks behind the WLAN. In 3GPP - WLAN interworking, 3GPP system functionalities can reside behind the WLAN or in parallel to the WLAN. In the case of 3GPP system functionalities located behind WLAN, the interworking between 3GPP system and WLAN may include:

- Enabling usage of 3GPP system functionalities between mobile terminals and 3GPP systems via the WLAN (e.g. providing SIP calls)
- Utilising 3GPP system functionalities to complement the functionalities available in the WLAN (e.g. providing charging means, authentication, authorization, and accounting functions)

In a case when the WLAN is seen as a parallel system to the 3GPP system, the interworking between the systems may include

- Creation of mechanisms for selecting and switching between the WLAN and 3GPP systems

Enabling any of these interworking cases may result in modifications or additions in 3GPP systems, in WLANs or both.

1 Scope

This document studies the feasibility of interworking between 3GPP systems and Wireless Local Area Networks (WLANs). This document identifies and describes:

- Scenarios for 3GPP - WLAN Interworking
- 3GPP - WLAN interworking service requirements
- Guidelines for standardisation of 3GPP-WLAN interworking

The document includes a number of different scenarios of 3GPP-WLAN interworking ranging from common billing to the provision of services seamlessly between the WLAN and the 3GPP system. In addition, 3GPP-WLAN interworking feasibility study includes the analysis of a number of environments where both the 3GPP system and WLAN may be deployed. Finally, this report outlines some of the different WLAN technologies that may be interworked with 3GPP systems.

It is beyond the scope of 3GPP to develop new system functionalities for WLANs that are not interworking with any 3GPP system functionality.

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[2] 3GPP TS 21.133: "Security Threats and Requirements"

[3] 3GPP TS 22.001: "Principles of circuit telecommunication services supported by a Public Land Mobile Network (PLMN)".

[4] 3GPP TS 22.004: "General on supplementary services".

[5] 3GPP TS 22.057: "Mobile Execution Environment (MExE); Service description; Stage 1".

[6] 3GPP TS 22.060: " General Packet Radio Service (GPRS); Service description; Stage 1".

[7] 3GPP TS 22.071: " Location Services (LCS); Service description, Stage 1".

[8] 3GPP TS 22.078: "Customised Applications for Mobile network Enhanced Logic (CAMEL); Service definition - Stage 1".

[9] 3GPP TS 22.101: "Service principles".

[10] 3GPP TS 22.105 'Services and Service Capabilities'

[11] Open Mobile Alliance (OMA): OMA-RD-Parlay_Service_Access-V1_0-20100427-A

[12] 3GPP TS 22.129: "Handover Requirements between UTRAN and GERAN or other Radio Systems"

[13] 3GPP TS 22.140: "Multimedia messaging service; Stage 1".