Technical Specification Group Services and System Aspects
Meeting #28, 06 - 08 June 2005,
Quebec, Canada

TSGS#28(05)0352

Source: SA WG2
Title: Revised WID: Voice call continuity between CS and IMS (incl. I-WLAN)
Agenda Item: 7.2.3
Document for: Approval

3GPP TSG SA WG2 Architecture — S2#46
9th – 13th April 2005
Athens, Greece

S2-051452
(S2-051446 rev1)

Source: Orange

Title: Change of WI completion dates

Document for: Approval

Agenda Item: 8.4

Work Item / Release: Voice Call Continuity

Work Item Description

Title

Voice call continuity between CS and IMS (incl. I-WLAN)

1 3GPP Work Area

	Radio Access
X	Core Network
X	Services

2 Linked work items

- WLAN Interworking Technical Report (31020)
- WLAN Interworking Technical Specification Stage 1 (31035)
- 3GPP System Architecture Evolution (????)
- WLAN – UMTS Interworking (32018)

- WLAN Interworking Security (32704)
- WLAN Interworking CN3 Aspect (13019)
- WLAN Interworking CN4 Aspect (14013)
- Combining CS Bearer with IMS (32066, 32067)
- Multimedia Telephony Capabilities for IMS Stage 1(????)

3 Justification

Technical Specification 23.234 (3GPP system to Wireless Local Area Network (WLAN) interworking: System description) provides the possibility to offer VoIP over *WLAN interworking with home IMS*. The converged IMS architecture offers the possibility to support the most prevalent GSM service, voice calls, over WLAN when there is coverage. A seamless voice call between *CS Domain* and the *WLAN* could provide relief to the GSM/UMTS radio resources and increase service revenue. In addition, wireline operators with VoIP offerings should be able to use the 3GPP IMS architecture to offer converged services.

Seamless session continuity between WLAN and 3GPP access assumes the continuation of a WLAN IP service as a 3GPP IP service (i.e. via the PS domain). This current assumption is not realistic for real-time voice services; in particular those with GSM radio coverage. Ongoing work on WIDs 32066 and 32067 do not consider the aspect of voice call continuity between CS domain and IMS. As such additional work is needed.

4 Objectives

This work item studies and intends to implement the necessary enhancements to 3GPP systems so that real-time voice call can be offered seamlessly between the *CS Domain* and the *WLAN interworking with IMS* architecture. This will be accomplished through the development of a Technical Report (feasibility study) that will lead to the development of a Technical Specification that defines this functionality as a standard 3GPP feature.

This work item studies and defines real-time voice call continuity when moving between the GSM/UMTS CS Domain and WLAN interworking with home IMS functionality. It also studies the framework in which the continuity takes place, e.g. the following aspects:

- Ability for the UE to detect and automatically select the appropriate Access Network (such as GSM/UMTS radio or IP Connectivity Access Network) based on operator policy for real-time voice service.
- Mechanism for selecting how to route the terminating voice calls to the UE: either through the GSM/UMTS CS Domain or through the WLAN interworking networks with IMS based on the user registration. Criteria for the routing decision as well as the routing mechanism itself should be covered.
- Voice call continuity when the user is moving between GSM/UMTS *CS Domain* and *WLAN interworking with home IMS*
- Support of calls to/from roaming subscribers accessing service from I-WLANs connected over the public internet.
-

Whilst the objectives above assume WLAN as the underlying access for IMS, the solution developed for CS-IMS voice call continuity shall be independent of the use of the underlying IP Connectivity Access Network. E.g. the solution shall be applicable to IMS over GPRS or fixed broadband access.

This work item should reuse the existing features that have been developed for the GSM /UMTS whenever possible. In this study the CS call scenarios **should** include the *traditional GSM/UMTS CS calls* and **possibly** the newly developed *Combining CS Bearer with IMS* (32066) capability.

5 Service aspects

To provide subscribers with seamless access to real-time wireless voice service while operating in the GSM/UMTS CS Domain and *a WLAN interworking with home IMS* deployment

6 MMI aspects

None

7 Charging Aspects

The billing/charging impacts should be studied. Specifically, the ability to generate the appropriate accounting parameters as subscribers move between WLAN networks and GSM/UMTS networks is necessary. The capability to separately charge for sessions in each access network needs to be provided.

8 Security Aspects

In general, the security in each domain will be covered by existing security specifications in those domains. In other words, CS security aspects will be covered by existing CS security specifications, I-WLAN security aspects by existing I-WLAN security specifications and IMS security aspects by existing IMS security specifications. The voice call continuity across these domains shall not compromise the security mechanisms of the individual domains.

9 Impacts

Affects:	USIM	ME	AN	CN	Others
Yes		X		**X**	
No					
Don't know	X		X		X

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for information at plenary#	Approved at plenary#	Comments
TR 23.~~8XX~~806.	Voice call continuity between CS and IMS Study ~~(incl I-WLAN)~~	SA2		SA#28 (06/05)	SA#29	TR
TS 23.XXX	Voice call continuity between CS and IMS ~~(incl. I-WLAN)~~	SA2		~~SA#29~~	~~SA#30(12/05)~~	Note that it shall be decided whether a TS is necessary based on the conclusion of the TR
Affected existing specifications						
22.101, 22.228						SA1 should review the assumed requirements and identify any stage 1 impacts
23.228						The conclusion of the TR will identify the affected existing Technical Specifications

11 Work item rapporteurs

Cingular, Lucent (editor: Andy Bennett, Roger Bunting)

12 Work item leadership

SA2

13 Supporting Companies

Cingular Wireless, SBC Communications, Lucent, Nokia, Siemens, Ericsson, Motorola, Nortel, Huawei, Azaire Networks, Samsung, China Mobile, ZTE, NEC, TeliaSonera, LG Electronics

14 Classification of the WI (if known)

The work item is a new feature, includes a feasibility study as well as stage-2 technical specification.

X	Feature (go to 14a)
	Building Block (go to 14b)
	Work Task (go to 14c)

14a The WI is a Feature: List of building blocks under this feature

14b The WI is a Building Block: parent Feature

14c The WI is a Work Task: parent Building Block

~~15 Cooperative work with other forums and with standards bodies~~