Technical Specification Group Services and System Aspects   **TSGS#27(05) 0066**
Meeting #27, Tokyo, Japan, 14-17 March 2005

Source: **SA1**

Title: **CRs to 22.234 on Over-the-air update of I-WLAN operator lists and editorial changes (Rel-7)**

Document for: **Approval**

Agenda Item: **7.1.3**

Meeting	SA Doc	TS No.	CR No	Rev	Rel	Cat	Subject	Vers. Current	Vers New	SA1 Doc
SP-27	SP-050066	22.234	011	-	Rel-7	C	Over-the-air update of I-WLAN operator lists	7.0.0	7.1.0	S1-050206
SP-27	SP-050066	22.234	012	-	Rel-7	F	Editorial change and addition of missed abbreviation	7.0.0	7.1.0	S1-050209

CR-Form-v7.1

CHANGE REQUEST

⌘ **22.234** CR **011** ⌘**rev** **-** ⌘ Current version: **7.0.0** ⌘

For **HELP** *on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ **X** ME **X** Radio Access Network **X** Core Network ☐

Title: ⌘	Over-the-air update of I-WLAN operator lists	
Source: ⌘	SA1 (Siemens, T-Mobile International)	
Work item code:⌘	WLAN-SC	***Date:*** ⌘ 17/01/2005

Category: ⌘ **C**

	Release: ⌘ **Rel-7**
Use <u>one</u> of the following categories:	*Use <u>one</u> of the following releases:*
F *(correction)*	2 *(GSM Phase 2)*
A *(corresponds to a correction in an earlier release)*	R96 *(Release 1996)*
B *(addition of feature),*	R97 *(Release 1997)*
C *(functional modification of feature)*	R98 *(Release 1998)*
D *(editorial modification)*	R99 *(Release 1999)*
Detailed explanations of the above categories can	Rel-4 *(Release 4)*
be found in 3GPP TR 21.900.	Rel-5 *(Release 5)*
	Rel-6 *(Release 6)*
	Rel-7 *(Release 7)*

Reason for change: ⌘	The need to update the "Operator Controlled PLMN Selector list for I-WLAN" and the "Operator Controlled WLAN identities list for I-WLAN".	
Summary of change:⌘	Add a new requirement addressing the over-the-air update of the above mentioned lists.	
Consequences if not approved: ⌘	Having no means to update the mentioned lists would result in a non-satisfying behaviour of the network selection procedures.	

Clauses affected: ⌘	new section 6.3	

		Y	N		
Other specs affected:	⌘	X		Other core specifications ⌘	TS 23.234, TS 24.234, TS 29.234
			X	Test specifications	
			X	O&M Specifications	

Other comments: ⌘	TS 22.038 may need to be updated	

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

****** FIRST MODIFIED SECTION ******

6.1.1.1 PLMN selection procedures

General

For the purpose of selecting a PLMN two lists may be present in the UICC: the "User Controlled PLMN Selector list for I-WLAN" and the "Operator Controlled PLMN Selector list for I-WLAN". It is not mandatory for the UICC to support these lists, however if the "Operator Controlled PLMN Selector list for I-WLAN" is supported then the "User Controlled PLMN Selector list for I-WLAN" shall also be present. Both the lists contain the preferred PLMNs for I-WLAN in priority order, and the User Controlled PLMN Selector list for I-WLAN has higher priority than the Operator Controlled PLMN Selector list for I-WLAN.

The purpose of the procedure is to enable the WLAN UE to find an I-WLAN, however, in case no PLMN is found to be supported by any of the available WLANs, the behaviour of the UE is not specified.

For the purpose of selecting the preferred I-WLAN in case multiple I-WLANs can support the connection to the desired PLMN and for optimising the PLMN selection, two lists may be present in the UICC: the "User Controlled WLAN identities list for I-WLAN" and the "Operator Controlled WLAN identities list for I-WLAN". It is not mandatory for the UICC to support these lists, however if the "Operator Controlled WLAN identities list for I-WLAN" is supported then the "User Controlled WLAN identities list for I-WLAN" shall also be present. Both the lists contain the preferred WLAN identities in priority order, and the "User Controlled WLAN identities list for I-WLAN" has higher priority than the "Operator Controlled WLAN identities list for I-WLAN".

If the "Operator Controlled PLMN Selector list for I-WLAN" and the "Operator Controlled WLAN identities list for I-WLAN" are present, it shall be possible to efficiently update these lists over-the-air.

****** END OF MODIFICATION ******

TSG-SA WG1 #27   **S1-050209**
Cape Town, South Africa, 17 - 21 January 2005

                                                                                                                CR-Form-v7

CHANGE REQUEST

⌘   **22.234 CR 012** ⌘**rev -** ⌘ Current version: **7.0.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐   ME ☐ Radio Access Network ☐ Core Network ☐

Title: ⌘	Editorial change and addition of missed abbreviation	
Source: ⌘	SA1 (Samsung Electronics)	
Work item code: ⌘	WLAN-SC	***Date:*** ⌘ 17/01/2005

Category: ⌘	**F**	***Release:*** ⌘ **Rel-7**

Use one of the following categories:
   F *(correction)*
   A *(corresponds to a correction in an earlier release)*
   B *(addition of feature),*
   C *(functional modification of feature)*
   D *(editorial modification)*
Detailed explanations of the above categories can
be found in 3GPP TR 21.900.

Use one of the following releases:
   2   *(GSM Phase 2)*
   R96 *(Release 1996)*
   R97 *(Release 1997)*
   R98 *(Release 1998)*
   R99 *(Release 1999)*
   Rel-4 *(Release 4)*
   Rel-5 *(Release 5)*
   Rel-6 *(Release 6)*
   Rel-7 *(Release 7)*

Reason for change: ⌘	Rel-7 I-WLAN TS currently needs some editorial change such as clause numbering and deletion of duplicated definition. The TS also not only misses the description of an abbreviation and uses wrong description, but also has an equivocal sentence.

Summary of change: ⌘	Editorial change, addition of missed abbreviation, and the modified sentence for clarification.

In Contents, section 6.1.1 is modified to 6.1, and section 6.1.1.1 is modified to 6.1.1. This also applies to the body of the TS.

In section 3.1 the definition ordering is modified and the duplicated definition, 3GPP PS based services, is deleted.

In section 3.2 the description of PDG is added and the description of SIM is modified.

In section 6.1.1 A) Automatic selection mode, a sentence is modified in accordance with the 'General' clause to clarify its meaning.

Consequences if not approved: ⌘	TS having error

Clauses affected: ⌘	Contents, 3.1, 3.2, 6.1, 6.1.1

Y N

Other specs affected:	⌘		**X**	Other core specifications	⌘	
			X	Test specifications		
			X	O&M Specifications		
Other comments:	⌘					

****** FIRST MODIFIED SECTION ******

Contents

****** END OF FIRST MODIFICATION ******

****** SECOND MODIFIED SECTION ******

3   Definitions and abbreviations

3.1   Definitions

For the purposes of the present document, the following terms and definitions apply

3GPP-WLAN Interworking: Used generically to refer to interworking between the 3GPP system and the WLAN family of standards

3GPP PS based services: All services transported by the 3GPP PS domain.

Environment: The type of area to be covered by the WLAN network of a 3GPP-WLAN interworking; e.g. public, corporate and residential

Home WLAN: The WLAN that is interworking with the HPLMN of the 3GPP-WLAN interworking user

Interworking WLAN: WLAN that interworks with a 3GPP system**.**

Offline Charging: See [1]

Online Charging: See [1]

~~**Offline Charging:** See [1]~~

~~**3GPP PS based services**: All services transported by the 3GPP PS domain.~~

Serving WLAN: The interworking WLAN that the user is connected to, i.e. either a visited or a home WLAN.

Visited WLAN: An interworking WLAN that i~~I~~nterworks only with a visited PLMN.

WLAN coverage: ~~a~~An area where wireless local area network access services are provided for interworking by an entity in accordance with WLAN standards.

WLAN roaming: The ability for a 3GPP-WLAN interworking user (subscriber) to function in a serving WLAN different from the home WLAN

~~**3GPP-WLAN Interworking:** Used generically to refer to interworking between the 3GPP system and the WLAN family of standards~~

3.2 Abbreviations

For the purposes of the present document, the following abbreviations apply:

APN	Access Point Name
CDR	Charging Data Record
CS	Circuit Switched
GGSN	Gateway GPRS Support Node
GPRS	General Packet Radio Service
HPLMN	Home PLMN
IMS	IP Multimedia Subsystem
IP	Internet Protocol
IPv4	IP version 4
IPv6	IP version 6
I-WLAN	Interworked / interworking WLAN
PDG	Packet Data Gateway
PLMN	Public Land Mobile Network
PS	Packet Switched
SIM	Subscriber Identity~~Interface~~ Module
UE	User Equipment
UICC	USIM Integrated Circuit Card
USIM	Universal Subscriber Identity Module
VPLMN	Visited PLMN
WLAN	Wireless Local Area Network

****** END OF SECOND MODIFICATION ******

****** THIRD MODIFIED SECTION ******

6   Service requirements

6.1.~~1~~   Network selection

The UE shall support both manual and automatic network selection mechanisms (modes) as standardized.

The UE shall use the last network selection mode used, as the default mode, at every switch-on.

The user shall be given the opportunity to change the network selection mode at any time.

When selecting a PLMN that is accessed via an interworked WLAN the UE shall be able to determine if the home or preferred PLMNs are available. The I-WLAN and PLMN selection shall adhere to operator and end user preferences using similar procedures as for Network Selection without WLAN interworking. This set of preferences may be different from the preferences used for direct 3GPP access. In manual network selection the user shall be able to request a list of available PLMNs via interworked WLANs. The detailed procedures are described below.

   NOTE 1:   The 3GPP operator may have agreements with multiple I-WLANs in the area and has preference over which WLAN to connect to based on the services supported.

   NOTE 2:   The adaptation of the Network Selection procedures to the WLAN interworking environment should take into account performance criteria (e.g. power consumption, network load).

   NOTE 3:   The preference of ~~a~~an I-WLAN and connected PLMN may change from one country to another, even when the I-WLAN identity is unchanged.

6.1.1.~~1~~ PLMN selection procedures

General

For the purpose of selecting a PLMN two lists may be present in the UICC: the "User Controlled PLMN Selector list for I-WLAN" and the "Operator Controlled PLMN Selector list for I-WLAN". It is not mandatory for the UICC to support these lists, however if the "Operator Controlled PLMN Selector list for I-WLAN" is supported then the "User Controlled PLMN Selector list for I-WLAN" shall also be present. Both ~~the~~ lists contain the preferred PLMNs for I-WLAN in priority order, and the "User Controlled PLMN Selector list for I-WLAN" has higher priority than the "Operator Controlled PLMN Selector list for I-WLAN".

The purpose of the procedure is to enable the WLAN UE to find an I-WLAN, however, in case no PLMN is found to be supported by any of the available WLANs, the behaviour of the UE is not specified.

For the purpose of selecting the preferred I-WLAN in case multiple I-WLANs can support the connection to the desired PLMN and for optimising the PLMN selection, two lists may be present in the UICC: the "User Controlled WLAN identities list for I-WLAN" and the "Operator Controlled WLAN identities list for I-WLAN". It is not mandatory for the UICC to support these lists, however if the "Operator Controlled WLAN identities list for I-WLAN" is supported then the "User Controlled WLAN identities list for I-WLAN" shall also be present. Both ~~the~~ lists contain the preferred WLAN identities in priority order, and the "User Controlled WLAN identities list for I-WLAN" has higher priority than the "Operator Controlled WLAN identities list for I-WLAN".

A) Automatic selection mode

In the automatic mode the WLAN UE shall perform the following procedure:

   1. For each of the WLANs available the WLAN UE shall attempt to discover the PLMNs available via the particular I-WLAN. If the UICC contains ~~an~~ I-WLAN identities' preference list~~s~~, this initial step shall be done in the order of the "User Controlled WLAN identities list for I-WLAN" and then the "Operator Controlled WLAN identities list for I-WLAN"~~this list~~. For each I-WLAN, if the WLAN UE receives a list of available PLMNs, then

   1a) If the HPLMN is found then the procedure is stopped and the HPLMN is selected.

   1b) If the HPLMN is not found, the UE creates a list of PLMNs accessible over the particular WLAN

2. Among all the PLMNs obtained in step 1b), select a PLMN following this order:

   i) PLMNs contained in the "[0] User Controlled PLMN Selector list for I-WLAN" data file in the USIM in priority order, if the list is available;

   ii) PLMNs contained in the "Operator Controlled PLMN Selector list for I-WLAN " data file in the USIM in priority order, if the list is available;

   iii) PLMNs contained in the "User Controlled PLMN Selector list with access technology", if available;

   iv) PLMNs contained in the "Operator Controlled PLMN Selector list with access technology", if available;

   v) PLMNs contained in the optional "[0]User Controlled PLMN Selector list for I-WLAN " in the ME in priority order, if the list is available;

   vi) PLMNs contained in the optional "Operator Controlled PLMN Selector list for I-WLAN " in the ME in priority order, if the list is available;

   vii) any other PLMN not included in the lists (randomly)

3. Attempt association with the highest priority I-WLAN in the I-WLAN identities' preference list (if available) providing connection to the PLMN selected in step 2 and attempt authentication with the selected PLMN.

B) Manual selection mode

In manual selection mode the WLAN UE shall perform the following procedure:

1. For each of the available WLANs the WLAN UE shall attempt to discover the PLMNs available via the particular WLAN.

2. If the WLAN UE receives a list of available PLMNs, then the WLAN UE presents the available PLMNs in the following order:

   i) HPLMN;

   ii) PLMNs contained in the "[0] User Controlled PLMN Selector list for I-WLAN " data file in the USIM in priority order, if the list is available;

   iii) PLMNs contained in the "Operator Controlled PLMN Selector list for I-WLAN " data file in the USIM in priority order, if the list is available;

   iv) PLMNs contained in the "User Controlled PLMN Selector list with access technology", if available;

   v) PLMNs contained in the "Operator Controlled PLMN Selector list with access technology", if available;

   vi) PLMNs contained in the optional "[0]User Controlled PLMN Selector list for I-WLAN " in the ME in priority order, if the list is available;

   vii)PLMNs contained in the optional "Operator Controlled PLMN Selector list for I-WLAN " in the ME in priority order, if the list is available;

   viii) any other PLMN not included in the lists (in random order)

In case more than one I-WLAN gives access to the same PLMN, an indication of the I-WLAN identity should also be presented to the user.

NOTE: it is possible to have repetitions of the same PLMN in the list presented to the user

3. Upon user selection of the desired PLMN the WLAN UE shall attempt to register on this PLMN. If more than one I-WLAN offers connection to the selected PLMN[0], then the WLAN UE shall attempt registration via the selected I-WLAN . To do so, the WLAN UE associates with the I-WLAN supporting the PLMN selected by the user and attempt authentication.

****** END OF THIRD MODIFICATION ******