

CR-Form-v7

## CHANGE REQUEST

**33.234 CR 032** rev - Current version: **6.2.0**

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

<b>Title:</b>	Tunnel Redirection Procedure		
<b>Source:</b>	Samsung		
<b>Work item code:</b>	WLAN	<b>Date:</b>	23/06/2004
<b>Category:</b>	<b>B</b>	<b>Release:</b>	Rel-6
Use <u>one</u> of the following categories: <b>F</b> (correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (addition of feature), <b>C</b> (functional modification of feature) <b>D</b> (editorial modification) Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .		Use <u>one</u> 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)	

**Reason for change:** Tunnel Redirection is mentioned as necessary functionality and requirement, but the procedure of tunnel redirection is not mentioned in the specification. As specified in the TS 23.234, procedure for tunnel redirection during the tunnel establishment procedure is defined in this CR.

**Summary of change:** Add feature on tunnel redirection during the tunnel establishment procedure.

**Consequences if not approved:** No method defined to intimate the tunnel redirection and to trasmit the IP address of the alternate PDG during the tunnel establishment procedure to the WLAN UE.

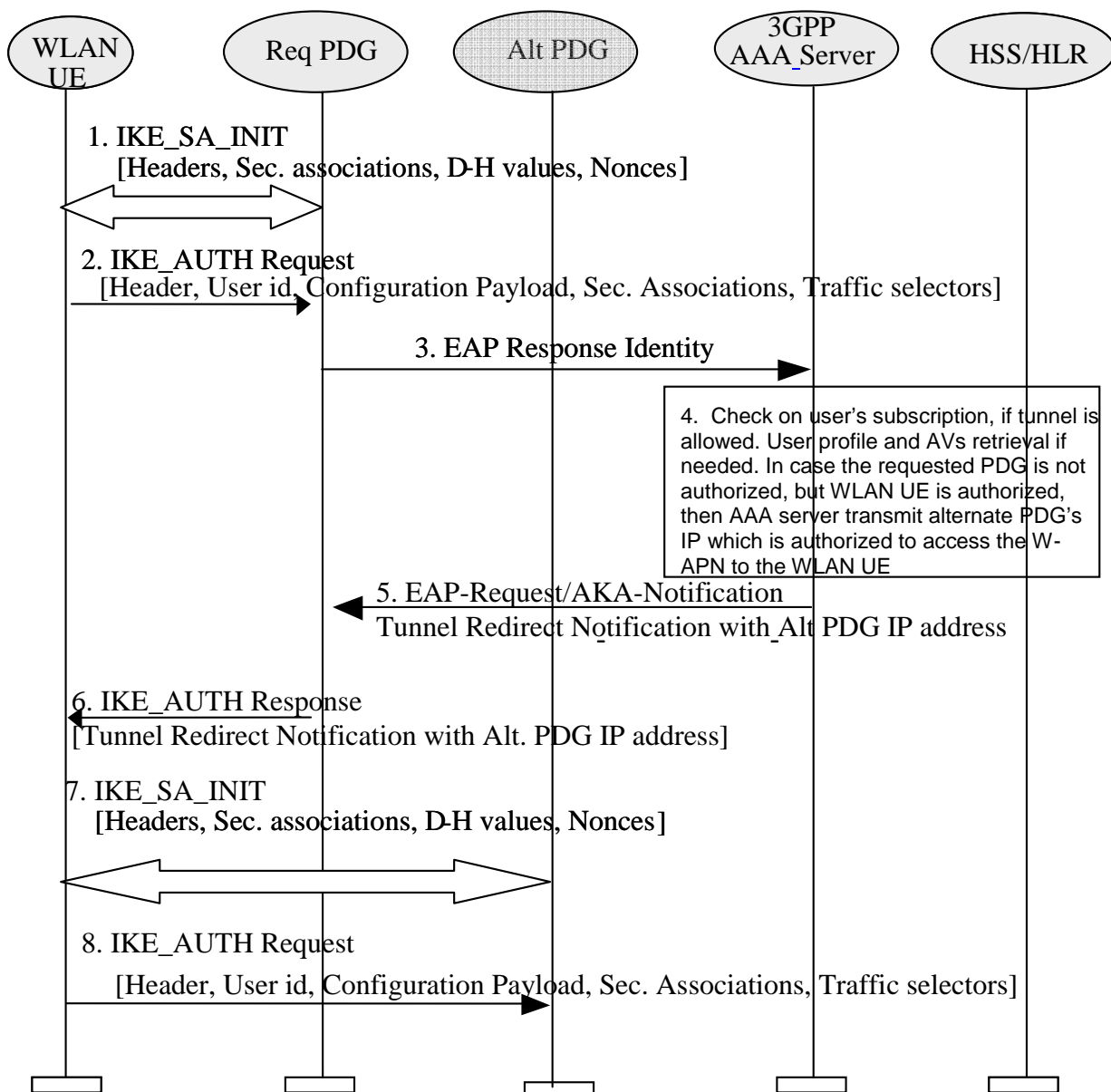
<b>Clauses affected:</b>	6.1.5.3										
<b>Other specs affected:</b>	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="padding: 2px 5px;">Y</td> <td style="padding: 2px 5px;">N</td> </tr> <tr> <td style="text-align: center; padding: 2px 5px;">X</td> <td style="padding: 2px 5px;"></td> </tr> <tr> <td style="text-align: center; padding: 2px 5px;">X</td> <td style="padding: 2px 5px;"></td> </tr> <tr> <td style="text-align: center; padding: 2px 5px;">X</td> <td style="padding: 2px 5px;"></td> </tr> </table>	Y	N	X		X		X		Other core specifications	
	Y	N									
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		Test specifications									
		O&M Specifications									
<b>Other comments:</b>											

\*\*\* BEGIN SET OF CHANGES \*\*\*

6.1.5.3 Tunnel Redirection

This procedure is to redirect the tunnel during tunnel establishment procedure. When the AAA server determines that the user is authorised to access the W-APN through the different PDG and not through the requested PDG, then AAA server sends the alternate PDG's IP address for the requested W-APN. The WLAN UE will attempt a new tunnel establishment request to the alternate PDG.

The sequence diagram is shown in this chapter. The EAP message parameters and procedures regarding tunnel redirection are omitted since they are already described in this technical specification. Only decisions and processes relevant to tunnel redirection procedure are explained.



Sequence of events:

1. The WLAN UE and the Requested PDG exchange the first pair of messages, known as IKE SA INIT, in which the PDG and WLAN UE negotiation cryptographic algorithms, exchange nonces and perform a Diffie Hellman exchange.

2. The WLAN UE sends the user identity in this first message of the IKE AUTH phase, and begins negotiation of child security associations. The WLAN UE omits the AUTH parameter in order to indicate to the PDG that it wants to use EAP over IKEv2. The user identity shall be compliant with Network Access Identifier (NAI) format specified in ref [14], containing the IMSI or the pseudonym. The identity in NAI format generated from the IMSI is described in ref. [4] and [5], depending on the type of EAP method to be used (EAP SIM or EAP AKA).

Editors note: (1) The control of simultaneous sessions in the EAP authentication has to be possible as in WLAN access authentication. Nevertheless, it is needed to study in detail how the parameters to perform this control have to be transferred in EAP/IKEv2. For example, the VPLMN id could be included in the NAI (see ref. [33] section 5.3.4) (2) W-APN should be sent in this step, because in [33], there is following sentence; "The WLAN UE shall include the W-APN and the user identity in the initial tunnel establishment request." One possibility is to include the W-APN in the IDr parameter in the IKE AUTH phase, but this has to be studied in detail.

3. The PDG sends the EAP Response identity message to the AAA server, containing the user identity. The PDG shall include a parameter indicating that the authentication is being performed for tunnel establishment, as indicated in ref. [32]. This will help the AAA server to distinguish between authentications for WLAN access and authentications for tunnel setup. Also the PDG sends W-APN to the AAA server in the Diameter message.
4. AAA server verifies that the WLAN UE requesting for the W-APN access is authorized to access with the selected PDG. If not, but the WLAN UE is authorized to access the W-APN through the different PDG, then the AAA server shall transmit the alternate PDG's IP address to the WLAN UE.
5. AAA server shall transmit an EAP AKA Notification as tunnel redirection and includes alternate PDG's IP address in the Diameter message.

Editors note: Passing the alternate PDG's IP address from the AAA server to the PDG in the diameter message has to be studied in detail. One possibility is by sending the Diameter error code as DIAMETER AUTHORIZATION REJECTED, 'E' bit set and including the redirect-host AVP to carry the alternate IP address.

6. The PDG relays the EAP AKA Notification within the IKEv2 Auth Response. The PDG shall include Alternate PDG's IP address with in the IKEv2 Message.

Editors note: Passing the alternate PDG's IP address from the PDG to the WLAN UE in the IKEv2 message has to be studied in detail. One possibility is by sending Notify payload by setting Notify Message type as tunnel redirect and including the alternate PDG's IP address in the Notification Data.

7. WLAN UE then starts the IKE SA INIT exchange with the Alternate PDG to negotiate cryptographic algorithms, exchange nonces and performs a Diffie\_Hellman exchange.
8. WLAN UE initiates the tunnel establishment procedure with the alternate PDG and follow the procedure as described in the section 6.1.5.1

\*\*\* END SET OF CHANGES \*\*\*