

CR-Form-v7.1

PSEUDO-CHANGE REQUEST

33.878 CR CRNum rev - Current version: **1.0.0**

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

Title:	additional interworking cases		
Source:	ZTE Corporation		
Work item code:	Early IMS	Date:	27/12/2004
Category:	B	Release:	Rel-6
	Use <u>one</u> 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 <u>one</u> of the following releases: Ph2 (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:	This CR discusses issues of co-existence between the early-start IMS security and IMS security as specified in TS 33.203, and proposes to add 4 relevant inter-working cases.
Summary of change:	add 4 interworking cases
Consequences if not approved:	The existent inter-working cases are inadequate. Another four interworking cases should be added.

Clauses affected:	6.2.6										
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table>	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Other core specifications Test specifications O&M Specifications	
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Other comments:											

*** BEGIN SET OF CHANGES ***

6.2.6 Interworking cases

For the purposes of the interworking considerations in this clause, it is assumed that the IMS entities P-CSCF, I-CSCF, S-CSCF and HSS reside in the home network and all support the same variants of IMS, i.e. all support either only early IMS, or only fully compliant IMS, or both.

NOTE: It is compatible with the considerations in this document that the UE uses different APNs to indicate the IMS variant currently used by the UE, in case the P-CSCF functionality is split over several physical entities.

It is expected that both fully compliant UEs implementing the security mechanisms in TS 33.203 [2] (denoted "fully compliant IMS" in the following) and UEs implementing the early IMS security solution specified in the present document (denoted "early IMS" in the following) will access the same IMS. In addition, IMS networks will support only fully compliant IMS UEs, early IMS UEs, or both. Both UEs and IMS networks must therefore be able to properly handle the different possible interworking cases.

Since early IMS security does not require the security headers specified for fully compliant IMS UEs, these headers shall not be used for early IMS. The REGISTER request sent by an early IMS UE to the IMS network shall not contain the security headers specified by TS 33.203 (Authorization and Security-Client).

As a result, early IMS UEs shall not add an explicit indication for the security used to the IMS signaling. An IMS network supporting both early IMS and fully 3GPP compliant IMS UEs shall use early IMS security for authenticating the UE during registrations that do not contain the security headers specified by TS 33.203 (Authorization and Security-Client).

Without sending an Authorization Header in the initial REGISTER request, early IMS UEs only provide the IMS public identity (IMPU), but not the IMS private identity (IMPI) to the network (this is only present in the Authorization header for fully compliant IMS UEs).

During the process of user registration for early IMS, the Cx interface carries only the public user identity in Cx-MAR requests (sent by I-CSCF and S-CSCF HSS). The private user identity within these requests shall contain the IMPU as received by the UE. This avoids changes to the message format on the Cx interface.

If the S-CSCF receives an indication that the UE is early IMS, then it shall be able to select the "Early-IMS-Security" authentication scheme in the Cx-MAR request. The Cx interface shall support the error case that the S-CSCF selects the "Digest-AKA_{v1}-MD5" authentication scheme based on UE indication, but the HSS detects that the subscriber has a SIM instead of a USIM or ISIM. In this case the HSS shall respond with an appropriate error command. The S-CSCF will then respond to the UE with a 403 (Forbidden) response. If the UE is capable of early IMS then, according to step 5, the UE will take this as an indication to attempt registration using early IMS.

For interworking between early IMS and fully compliant IMS implementations during IMS registration, the following cases shall be supported:

1. Both UE and IMS network support early IMS only

IMS registration shall take place as described by the present document.

2. UE supports early IMS only, IMS network supports both early IMS and fully compliant IMS access security

Early IMS security according to this annex shall be used for authenticating the UE for all registrations from UEs that do not provide the fully compliant IMS security headers.

3. UE supports both, IMS network supports early IMS only

If the UE already has knowledge about the IMS network capabilities (which could for example be preconfigured in the UE), the appropriate authentication method shall be chosen. The UE shall use fully compliant IMS security, if the network supports this, otherwise the UE shall use early IMS security.

If the UE does not have such knowledge it shall start with the fully compliant IMS Registration procedure. The early IMS P-CSCF shall answer with a 420 (Bad Extension) failure, since it does not recognize the method mandated by the Proxy-Require header that is sent by the UE in the initial REGISTER request.

NOTE: The Proxy-Require header cannot be ignored by the P-CSCF.

The UE shall, after receiving the error response, send an early IMS registration, i.e., shall send a new REGISTER request without the fully compliant IMS security headers.

4. UE and IMS network support both

The UE shall start with the fully compliant IMS registration procedure. The network, with receiving the initial REGISTER request, receives indication that the IMS UE is fully compliant and shall continue as specified by TS 33.203 [2].

5. Mobile equipment and IMS network support both, UE contains a SIM

The UE might start with the fully compliant IMS registration procedure. However, when the S-CSCF requests authentication vectors from the HSS, the HSS will discover that the UE contains a SIM and return an error.

The S-CSCF shall answer with a 401 (Unauthorized) with an Error-info: header containing the text "Early security required". The UE then retries using early IMS security.

6. UE supports early IMS only, IMS network supports fully compliant IMS access security only

The UE sends a REGISTER request to the IMS network that does not contain the security headers required by fully compliant IMS. The fully compliant P-CSCF will detect that the Security-Client header is missing and return a 4xx responses, as described in clause 5.2.2 of TS 24.229 [7].

7. UE supports fully compliant IMS access security only, IMS network supports early IMS only

The UE shall start with the fully compliant IMS registration procedure. The early IMS P-CSCF shall answer with a 420 (Bad Extension) failure, since it does not recognize the method mandated by the Proxy-Require header that is sent by the UE in the initial REGISTER request. After receiving the error response, the UE shall stop the attempt to register with this network, since the fully compliant IMS security according to TS 33.203 [2] is not supported.

8. UE supports fully compliant IMS access security only, IMS network supports both

The UE shall start with the fully compliant IMS registration procedure. The network, with receiving the initial REGISTER request, receives indication that the IMS UE is fully compliant and shall continue as specified by TS 33.203 [2].

9. UE supports both, IMS network supports fully compliant IMS access security only

The UE shall start with the fully compliant IMS registration procedure. The network, with receiving the initial REGISTER request, receives indication that the IMS UE is fully compliant and shall continue as specified by TS 33.203 [2].

10. UE supports both, IMS network supports fully compliant IMS access security only, UE contains a SIM

The UE might start with the fully compliant IMS registration procedure. However, when the S-CSCF requests authentication vectors from the HSS, the HSS will discover that the UE contains a SIM but the IMS network supports fully compliant IMS access security only and return an error. After receiving the error response, the UE shall stop the attempt to register with this network.

11. Both UE and IMS network support fully compliant IMS access security only.

IMS registration shall take place as described by TS 33.203 [2].

*** END SET OF CHANGES ***