

Title: LS on protection of Rx and Gx interfaces
Response to: LS (S2-050481) on LS on protection of Rx and Gx interfaces from WG2
Release: Release 6
Work Item:

Source: SA3
To: CN3, SA2
Cc:

Contact Person:
Name: Bengt Sahlin
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E-mail Address: Bengt.Sahlin@ericsson.com

Attachments: S2-050481 (S3-050028)

1. Overall Description:

SA3 thanks SA2 for the liaison related to protection of Rx and Gx interfaces (S2-050481).

Rx Interface:

SA3 acknowledges the SA2 guidance that the same architectural assumptions that was made for the Gq reference point also apply to the Rx reference point. As for the Gq reference point, NDS/IP (TS 33.210) can provide sufficient security for the Rx interface. Accordingly (as specified in 33.210), the Za interface shall be operated for the Rx interface when the AF and the CRF reside in different security domains. If the AF and CRF reside in the same security domain, it is up to the operator to decide whether to deploy the Zb interface.

Gx interface:

Accordingly, NDS/IP can provide sufficient security for the Gx interface. If the CRF and TPF reside in different security domains, the Za interface shall be operated. If the CRF and TPF reside in the same security domain, it is up to the operator to decide whether to deploy the Zb interface.

SA3 would advise CN3 and SA2 to disregard the proposal about TLS in S2-050102, and implement the security based on NDS/IP according to the guidelines provided above.

2. Actions:

To CN3 group.

ACTION: SA3 kindly asks CN3 to implement protection for the Rx and Gx interfaces in release 6, according to the guidelines provided above.

To SA2 group.

ACTION: SA3 kindly asks SA2 to implement protection for Rx and Gx interfaces according to the guidelines provided above, in case SA2 intends to implement protection for Rx and Gx interfaces into TS 23.125.

3. Date of Next SA3 Meetings:

SA3 #38	26 - 29 April 2005	Geneva, Switzerland	EF3
SA3 #39	28 June - 1 July 2005	Toronto, Canada	NAF

3GPP TSG-SA WG2 Meeting #44.
Budapest, Hungary. 26th Jan. - 2nd Feb. 2005.

Tdoc S2-050481

Title: LS on protection of Rx and Gx interfaces
Response to: -
Release: Rel 6
Work Item: CH-FBC

Source: TSG_SA WG2.
To: SA3, CN3
Cc:

Contact Person:

Name: Krister Boman
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Attachments: S2-050102, S2-034362

1. Overall Description:

SA2 has discussed and noted the attached CR S2-050102 and asks SA3 and CN3 to update the relevant specifications to ensure that the Rx and Gx interfaces are adequately protected for Release 6.

Rx Reference point

As a basis for the definition of appropriate security requirements for AF and CRF interaction SA2 would like to inform SA3 and CN3 that the same architectural assumptions that was made for the Gq reference point also apply to the Rx reference point. Hence SA2 would like to guide SA3 and CN3 to base their work on giving Rx reference point relevant protection on the attached LS S2-034362 that describes the assumptions for the Gq reference point.

Gx Reference Point

For the definition of adequate protection for the Gx reference point SA2 would like to guide SA3 and CN3 that the CRF and the TPF exist in the same operator's network.

2. Actions:

To SA3 and CN3 group.

ACTION: SA2 kindly asks SA3 and CN3 group to complete the protection of the Rx and Gx reference points for Release 6 based on the guidance as provided above.

3. Date of Next SA2 Meetings:

SA2 #45	4th - 8th April 2005	Beijing, China.
SA2 #46	9 th - 13th May 2005	Athens, Greece.

CR-Form-v7.1

CHANGE REQUEST

23.125 CR 114 rev - Current version: 6.3.0

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:	Protection of Rx and Gx interfaces		
Source:	Ericsson		
Work item code:	CH-FBC	Date:	20/01/2005
Category:	F	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:	The specification suggest that Rx interface shall use adequate protection however there is no requirement or recommendation what protection to use. This CR makes a reference to Network Domain Security and TLS for the intra-domain and inter-domain scenarios respectively.
Summary of change:	Introduces a reference to TS 33.210 Network Domain Security and TLS for protection of the Rx and Gx interfaces.
Consequences if not approved:	The TS do only specify that protection for Rx is needed however there is no guidance available for implementaors what protection should be used. This lack of guidance may cause interoperability issues.

Clauses affected:	2, 6.2.6, 6.3.4.1										
Other specs affected:	<table border="1" style="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;">X</td> <td style="text-align: center;"></td> </tr> <tr> <td style="text-align: center;"></td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;"></td> <td style="text-align: center;">X</td> </tr> </table>	Y	N	X			X		X	Other core specifications	TS 33.210
	Y	N									
	X										
		X									
	X										
Test specifications											
O&M Specifications											
Other comments:	If this CR is agreed an LS should be sent to SA3 so that SA3 can take appropriate actions										

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 *****

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 41.001: "GSM Release specifications".
- [2] 3GPP TS 21.905: "Vocabulary for 3GPP Specifications".
- [3] 3GPP TS 32.200: "Charging Principles".
- [4] 3GPP TS 23.228: "IP Multimedia (IM) Subsystem - Stage 2".
- [5] 3GPP TS 23.002: "Network architecture".
- [6] 3GPP TS 23.060: "General Packet Radio Service (GPRS); Service description; Stage 2".
- [7] 3GPP TS 32.225: "Telecommunication management; Charging management; Charging data description for the IP Multimedia Subsystem (IMS)".
- [8] 3GPP TS 23.078: "Customised Applications for Mobile network Enhanced Logic (CAMEL); Stage 2".
- [9] Diameter Credit-Control Application, draft-ietf-aaa-diameter-cc-06.txt, work in progress

Editor's note: The above document cannot be formally referenced until it is published as an RFC.

- [10] 3GPP TS 23.234: "3GPP system to Wireless Local Area Network (WLAN) Interworking"
- [11] 3GPP TR 33.919: "Generic Authentication Architecture (GAA)"
- [12] 3GPP TS 23.207: "End-to-end Quality of Service (QoS) concept and architecture"

[xx] [3GPP TS 33.210: "Network Domain Security"](#)

[yy] [T. Dierks, et al.: "The TLS Protocol Version 1.0", RFC 2246, January 1999.](#)

***** NEXT MODIFIED SECTION *****

6.2.6 Relationship between functional entities

The AF and the CRF need not exist within the same operator's network. The Rx interface may be intra- or inter-domain and shall support the relevant protection mechanisms for an inter-operator or third party interface. [For the inter-domain case Rx shall be secured using TLS as specified in RFC 2246 \[yy\]. For the intra-domain case protection as specified in TS 33.210 \[xx\] shall be utilized.](#) The TPF and the CRF exist within the same operator's network. [Protection of the Gx interface is based on TS 33.210 \[xx\].](#)

***** NEXT MODIFIED SECTION *****

6.3.4.1 General

The Rx reference point enables transport of information (e.g. dynamic media stream information) from the AF to the CRF. An example of such information would be filter information to identify the service data flow. The AF and the CRF, which may reside in the same or different security domain, shall have a trust relationship. Hence the information exchanged between an AF and a CRF shall be protected with adequate security [as described in 6.2.6](#).

***** END OF CHANGE *****

Title: Reply LS on security implications of Gq interface
Response to: S2-032818 (S3-030444)
S2-033909 (N3-030830)
Release: Rel-6
Work Item: QoS1

Source: SA2
To: SA3, CN3
Cc: -

Contact Person:

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Attachments: None

1. Overall Description:

SA2 would like to kindly thank SA3 and CN3 for their respective LSs on the security aspects of the Gq interface.

The LS in S2-032818 (S3-030444) indicates that NDS/IP is able to provide the necessary security functionalities for Gq. However, the LS also points out that NDS/IP by definition only provides interfaces within and between 3GPP operator domains. This has the implications that NDS/IP formally cannot provide protection to "external" parties. Hence, SA WG3 asks whether the "third party" is considered to be within a 3GPP domain or not.

SA WG2 would like to advise SA WG3 that the AF is considered to be provided within a 3GPP operator domain, or within the domain of a 3GPP trusted body such as GSMA. Usage of Application Functions outside of these domains is considered outside the scope of these specifications.

However, operators may still elect to use an AF server outside of these domains. The operator and the AF provider must ensure that security mechanisms such as NDS/IP are in place between the operator domain and the AF server.

CN WG3 has also raised the following questions in LS S2-033909 (N3-030830):

- if the support of third party AFs in an untrusted domain is required;
- If the support of untrusted proxies is required.

SA2 would like to provide the following guidance:

1. As indicated above, the specifications only cover AFs within operator PLMNs, or other trusted domains such as GSMA. Use of AFs outside of these domains are operator specific and outside the scope of 3GPP standardization.
2. Support of untrusted proxies is not required. Furthermore, SA2 strongly recommends against the use of an untrusted proxy agent.

2. Actions:

To SA WG3 and CN WG 3.

Please note the statements relating to proxy agents and Application Functions within the network architecture, and consider these factors in the development of the stage 3 specifications.

3. Date of Next SA2 meetings:

SA2 #37	12 th – 16 th January 2004	Innsbruck, Austria
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SA2#38	16 th – 20 th February, 2004	Atlanta, USA
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