Technical Specification Group Services and System Aspects **TSGS#21(03)0489**

Meeting #21, Frankfurt, Germany, 22-25 September 2003

Source: **SA WG3**

Title: **2 CRs to 33.210: Update draft-ietf-ipsec-sctp-03.txt reference to new standard RFC: RFC3554 (Rel-5 & Rel-6)**

Document for: **Approval**

Agenda Item: **7.3.3**

Meet	SA Doc	TS No.	CR No	Rev	Rel	Cat	Subject	Vers. Current	Vers New	SAWG3 Doc
SP-21	SP-030489	33.210	013	-	Rel-5	F	Update draft-ietf-ipsec-sctp-03.txt reference to new standard RFC: RFC3554	5.4.0	5.5.0	S3-030404
SP-21	SP-030489	33.210	014	-	Rel-6	A	Update draft-ietf-ipsec-sctp-03.txt reference to new standard RFC: RFC3554	6.2.0	6.3.0	S3-030405

3GPP TSG-SA3 Meeting #29
San Francisco, USA, July 15-18, 2003

Tdoc ⌘S3-030404

CR-Form-v7

CHANGE REQUEST

⌘ **33.210** **CR** **013** ⌘**rev** **-** ⌘ Current version: **5.4.0** ⌘

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

Title:	⌘	Update draft-ietf-ipsec-sctp-03.txt reference to new standard RFC: RFC3554
Source:	⌘	SA WG3
Work item code:	⌘	SEC-NDS-IP
Date:	⌘	09/07/2003
Category:	⌘	**F**
Release:	⌘	Rel-5

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)*

Reason for change:	⌘	draft-ietf-ipsec-sctp-06.txt has been accepted by the IETF as a standard RFC: RFC3554
Summary of change:	⌘	Replacement of referenced draft-ietf-ipsec-sctp-03.txt by RFC3554 Removal of remaining editors note.
Consequences if not approved:	⌘	The specification will reference to an old expired IETF-draft

Clauses affected:	⌘	2, Annex C			
		Y	**N**		
Other specs affected:	⌘		**X**	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘				

*** first change ***

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.
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[1] 3GPP TS 21.133: "3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; 3G Security; Security Threats and Requirements".

[2] 3GPP TR 21.905: "3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; Vocabulary for 3GPP Specifications".

[3] 3GPP TS 23.002: "3rd Generation Partnership Project; Technical Specification Group Services and Systems Aspects; Network architecture".

[4] 3GPP TS 23.060: "3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; General Packet Radio Service (GPRS); Service description; Stage 2".

[5] 3GPP TS 23.228: "3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; IP Multimedia Subsystem (IMS); Stage 2".

[6] 3GPP TS 29.060: "3rd Generation Partnership Project; Technical Specification Group Core Network; General Packet Radio Service (GPRS); GPRS Tunnelling Protocol (GTP) across the Gn and Gp Interface".

[7] 3GPP TS 33.102: "3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; 3G Security; Security Architecture".

[8] 3GPP TS 33.103: "3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; 3G security; Integration guidelines".

[9] 3GPP TS 33.120: "3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; 3G Security; Security Principles and Objectives".

[10] 3GPP TS 33.203: "3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; Access security for IP-based services".

[11] RFC-2393: "IP Payload Compression Protocol (IPComp)".

[12] RFC-2401: "Security Architecture for the Internet Protocol".

[13] RFC-2402: "IP Authentication Header".

[14] RFC-2403: "The Use of HMAC-MD5-96 within ESP and AH".

[15] RFC-2404: "The Use of HMAC-SHA-1-96 within ESP and AH".

[16] RFC-2405: "The ESP DES-CBC Cipher Algorithm With Explicit IV".

[17] RFC-2406: "IP Encapsulating Security Payload".

[18] RFC-2407: "The Internet IP Security Domain of Interpretation for ISAKMP".

[19] RFC-2408: "Internet Security Association and Key Management Protocol (ISAKMP)".

[20] RFC-2409: "The Internet Key Exchange (IKE)".

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[22] RFC-2411: "IP Security Document Roadmap".

[23] RFC-2412: "The OAKLEY Key Determination Protocol".

[24] RFC-2451: "The ESP CBC-Mode Cipher Algorithms".

[25] RFC-2521: "ICMP Security Failures Messages".

[26] RFC-3554: "On the Use of Stream Control Transmission Protocol (SCTP) with IPsec"~~Internet Draft: "On the Use of SCTP with IPsec ", available as "draft-ietf-ipsec-sctp-03.txt"~~

[27] RFC-1750: "Randomness Recommendations for Security".

**** next change ****

Annex C (normative): Security protection of IMS protocols

This section details how NDS/IP shall be used to protect IMS protocols and interfaces.

C.1 The need for security protection

The security architecture of the IP multimedia Core Network Subsystem (IMS) is specified in 3GPP TS 33.203 [10]. 3GPP TS 33.203 [10] defines that the confidentiality and integrity protection for SIP-signalling are provided in a hop-by-hop fashion.

The first hop i.e. between the UE and the P-CSCF through the IMS access network (i.e. Gm reference point) is protected by security mechanisms specified in 3GPP TS 33.203 [10].

The other hops, within the IMS core network including interfaces within the same security domain or between different security domains are protected by NDS/IP security mechanisms as specified by this Technical Specification.

3GPP TS 23.002 [3] specifies the different reference points defined for IMS.

C.2 Protection of IMS protocols and interfaces

IMS control plane traffic within the IMS core network shall be routed via a SEG when it takes place between different security domains (in particular over those interfaces that may exist between different IMS operator domains). In order to do so, IMS operators shall operate NDS/IP Za-interface between SEGs.

IPSec ESP shall be used with both encryption and integrity protection for all SIP signalling traversing inter-security domain boundaries.

It will be for the IMS operator to decide whether and where to deploy Zb-interfaces in order to protect the IMS control plane traffic over those IMS interfaces within the same security domain.

Diameter messages over the Cx interface shall make use of SCTP. Additional guidelines on how to apply IPSec in SCTP are specified in [26]. This RFC shall also apply to NDS/IP if IMS operator chooses to deploy Zb-interface at Cx interface.

~~Editor's Note; The reference to I-D "draft-ietf-ipsec-sctp-02.txt" shall be replaced by the corresponding RFC reference when this draft reaches RFC status.~~

3GPP TSG-SA3 Meeting #29
San Francisco, USA, July 15-18, 2003

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CHANGE REQUEST

⌘ **33.210** **CR** **CRNum** ⌘**rev** **-** ⌘ Current version: **6.2.0** ⌘

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

Title:	⌘	Update draft-ietf-ipsec-sctp-04.txt reference to new standard RFC: RFC3554
Source:	⌘	SA WG3
Work item code:	⌘	SEC-NDS-IP
Date:	⌘	09/07/2003
Category:	⌘	**A**
Release:	⌘	Rel-6

Use one of the following categories:
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Rel-6	*(Release 6)*

Reason for change:	⌘	draft-ietf-ipsec-sctp-06.txt has been accepted by the IETF as a standard RFC: RFC3554
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Consequences if not approved:	⌘	The specification will reference to an old expired IETF-draft

Clauses affected:	⌘	2, Annex C, Annex D

		Y	N		
Other specs affected:	⌘		X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	

Other comments: ⌘

*** first change ***

2 References

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[10] 3GPP TS 33.203: "3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; Access security for IP-based services".

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[26] RFC-3554: “On the Use of Stream Control Transmission Protocol (SCTP) with IPsec”~~Internet Draft: "On the Use of SCTP with IPsec ", available as "draft-ietf-ipsec-sctp-04.txt"~~

[27] RFC-1750: “Randomness Recommendations for Security".

[28] 3GPP TS 25.412: "3rd Generation Partnership Project; Technical Specification Group Radio Access Network; UTRAN Iu interface signalling transport".

**** next change ****

Annex C (normative): Security protection of IMS protocols

This section details how NDS/IP shall be used to protect IMS protocols and interfaces.

C.1 The need for security protection

The security architecture of the IP multimedia Core Network Subsystem (IMS) is specified in 3GPP TS 33.203 [10]. 3GPP TS 33.203 [10] defines that the confidentiality and integrity protection for SIP-signalling are provided in a hop-by-hop fashion.

The first hop i.e. between the UE and the P-CSCF through the IMS access network (i.e. Gm reference point) is protected by security mechanisms specified in 3GPP TS 33.203 [10].

The other hops, within the IMS core network including interfaces within the same security domain or between different security domains are protected by NDS/IP security mechanisms as specified by this Technical Specification.

3GPP TS 23.002 [3] specifies the different reference points defined for IMS.

C.2 Protection of IMS protocols and interfaces

IMS control plane traffic within the IMS core network shall be routed via a SEG when it takes place between different security domains (in particular over those interfaces that may exist between different IMS operator domains). In order to do so, IMS operators shall operate NDS/IP Za-interface between SEGs.

IPSec ESP shall be used with both encryption and integrity protection for all SIP signalling traversing inter-security domain boundaries.

It will be for the IMS operator to decide whether and where to deploy Zb-interfaces in order to protect the IMS control plane traffic over those IMS interfaces within the same security domain.

Diameter messages over the Cx interface shall make use of SCTP. Additional guidelines on how to apply IPSec in SCTP are specified in [26]. This RFC shall also apply to NDS/IP if IMS operator chooses to deploy Zb-interface at Cx interface.

~~Editor's Note; The reference to I-D "draft-ietf-ipsec-sctp-02.txt" shall be replaced by the corresponding RFC reference when this draft reaches RFC status.~~

***** next change ****

Annex D (normative): Security protection of UTRAN/GERAN IP transport protocols

This annex details how NDS/IP shall be used to protect UTRAN/GERAN IP transport protocols and interfaces.

D.1 The need for security protection

The control plane in question is used to transfer signalling messages in UTRAN/GERAN IP transport network. The UTRAN IP transport option is specified in Rel5 UTRAN Technical Specifications. UTRAN Iu interface signalling transport is specified in 3GPP TS 25.412 [28]. Based on the known security threats in IP networking, the traffic shall be

protected properly. This is in order not to restrict the application of IP in UTRAN and GERAN only to closed network environments.

The security solution for IP based UTRAN/GERAN transport shall follow the principles introduced in the NDS/IP since the IPSec provides application independent security solution for all IP traffic.

Iu interface is carrying information that is classified as sensitive. Iu is used for conveying e.g. subscriber specific security keys. These keys are vital for the end-user security. Hence Iu shall be encrypted along with the integrity check.

D.2 Protection of UTRAN/GERAN IP transport protocols and interfaces

IPSec ESP shall be used with both encryption and integrity protection for all RANAP messages traversing inter-security domain boundaries.

Iu control plane traffic shall be routed via a SEG when it takes place between different security domains (in particular over those interfaces that may exist between different operator domains). In order to do so, operators shall operate NDS/IP Za-interface between SEGs.

It will be for the operator to decide whether and where to deploy Zb-interfaces in order to protect the RANAP messages over the Iu interface within the same security domain.

According to TS 25.412 [28] the multi homing services of SCTP shall be required at both ends of an SCTP-association to enable transport redundancy and reliability. Additional guidelines on how to apply IPSec in SCTP are specified in [26]. This RFC shall also apply to this NDS/IP Technical Specification.

~~Editor's Note; The reference to I-D "draft-ietf-ipsec-sctp-04.txt" shall be replaced by the corresponding RFC reference when this draft reaches RFC status.~~