**Third Generation Partnership Project (3GPP™)**

**Meeting Report  
for  
TSG SA WG3  
meeting: 94**

**Kochi, India, 28/01/2019 to 01/02/2019**

Contents:

1 Opening of the meeting 4

2 Approval of Agenda and Meeting Objectives 4

3 IPR and Anti-Trust Law Reminder 4

4 Meeting Reports 4

4.1 Approval of the report from previous SA3 meeting(s) 4

4.2 Report from SA Plenary 4

4.3 Report from SA3-LI 5

5 Items for early consideration 5

6 Reports and Liaisons from other Groups 5

6.1 3GPP Working Groups 5

6.2 IETF 7

6.3 ETSI SAGE 7

6.4 GSMA 8

6.5 OMA 8

6.6 TCG 8

6.7 oneM2M 9

6.8 TC-CYBER 9

6.9 ETSI NFV 10

6.10 CVDs and Research 10

6.11 Other Groups 10

7 Work Areas 10

7.1 Security aspects of 5G System - Phase 1 (5GS\_Ph1-SEC) (Rel-15) 10

7.1.1 Key hierarchy 10

7.1.2 Key derivation 10

7.1.3 Mobility 11

7.1.4 AS security 13

7.1.5 NAS security 19

7.1.6 Security context 21

7.1.7 Visibility and Configurability 21

7.1.8 Primary authentication 21

7.1.9 Secondary authentication 23

7.1.10 Interworking 23

7.1.11 non-3GPP access 25

7.1.12 NDS 25

7.1.13 Service based architecture 25

7.1.13.1 Interconnect (SEPP related) 25

7.1.13.2 Other 26

7.1.14 Privacy 26

7.1.15 Incoming and outgoing Lses 28

7.1.16 Others 33

7.2 Security Assurance Specification for 5G (SCAS\_5G) (Rel-16) 35

7.2.1 NR Node B (gNB) (TS 33.511) 35

7.2.2 Access and Mobility Management Function (TS 33.512) 35

7.2.3 User Plane Function (UPF) (TS 33.513) 36

7.2.4 Unified Data Management (UDM) (TS 33.514) 36

7.2.5 Session Management Function (SMF) (TS 33.515) 36

7.2.6 Authentication Server Function (AUSF) (TS 33.516) 37

7.2.7 Security Edge Protection Proxy (SEPP) (TS 33.517) 37

7.2.8 Network Resource Function (NRF) (TS 33.518) 39

7.2.9 Network Exposure Function (NEF) (TS 33.519) 39

7.3 eMCSec R16 security (MCXSec) (Rel-16) 40

7.4 Security aspects of single radio voice continuity from 5GS to UTRAN () (Rel-16) 40

7.5 Other work areas 40

7.5.1 SAE/LTE Security 40

7.5.2 IP Multimedia Subsystem (IMS) Security 40

7.5.3 Network Domain Security (NDS) 40

7.5.4 UTRAN Network Access Security 41

7.5.5 GERAN Network Access Security 41

7.5.6 Generic Authentication Architecture (GAA) 41

7.5.7 Security Aspects of Home(e)NodeB (H(e)NB) 41

7.5.8 Mission Critical (MCPTT, MCSec, eMCSec, MONASTERY\_SEC) 41

7.5.9 Security Assurance Specifications (SCAS-SA3, SCAS\_PGW, SCAS\_eNB) 46

7.5.10 Security Aspects of Narrowband IOT (CIoT) 49

7.5.11 EPC enhancements to support 5G New Radio via Dual Connectivity (EDCE5) 52

7.5.12 Northbound APIs Security for SCEF - SCS/AS Interworking (NAPS\_Sec) (Rel-15) 52

7.5.13 Security Aspects of Common API Framework for 3GPP Northbound APIs (CAPIF\_Sec) (Rel-15) 52

7.5.14 PLMN RAT selection (Steering of Roaming) (Rel-15) 52

7.5.15 Battery Efficient Security for very low Throughput Machine Type Communication Devices (BEST\_MTC\_Sec) (Rel-15) 53

7.5.16 Other work items 54

7.6 New Work Item proposals 54

8 Studies 56

8.1 Study on Security Aspects of the 5G Service Based Architecture (FS\_SBA-Sec) (Rel-15) 56

8.2 Study on Long Term Key Update Procedures (FS\_LTKUP) (Rel-16) 58

8.3 Study on Supporting 256-bit Algorithms for 5G (FS\_256-Algorithms) (Rel-16) 58

8.4 Security aspects of single radio voice continuity from 5G to UTRAN (FS\_5G\_UTRAN\_SEC) (Rel-16) 59

8.5 Study on authentication and key management for applications based on 3GPP credential in 5G IoT (FS\_AKMA)(Rel-16) 59

8.6 Study on evolution of Cellular IoT security for the 5G System (FS\_CIoT\_sec\_5G) (Rel-16) 64

8.7 Study on the security of the Wireless and Wireline Convergence for the 5G system architecture (FS\_5WWC\_SEC) (Rel-16) 72

8.8 Study on Security Aspects of PARLOS (FS\_PARLOS\_Sec) (Rel-16) 80

8.9 Study on 5G security enhancement against false base stations 82

8.10 Study of KDF negotiation for 5G System Security 88

8.11 Study on Security aspects of Enhancement of Network Slicing 89

8.12 Study on Security of the enhancement to the 5GC location services 93

8.13 Study on security for 5G URLLC 95

8.14 Study on SECAM and SCAS for 3GPP virtualized network products 98

8.15 Study on Security for 5GS Enhanced support of Vertical and LAN Services 99

8.16 Study on LTKUP Detailed solutions 105

8.17 Study on User Plane Integrity Protection 105

8.18 Study on Security Impacts of Virtualisation 109

8.19 Study on authentication enhancements in 5GS 109

8.20 Other study areas 111

8.21 New study item proposals 111

9 Work Plan and Rapporteur Input 113

9.1 Review of work plan 113

9.2 Rapporteur input on status of WID or SID 113

10 Future Meeting Dates and Venues 114

11 Any Other Business 114

12 Close 114

Annex A: List of contribution documents 115

Annex B: List of change requests 133

Annex C: Lists of liaisons 139

C1: Incoming liaison statements 139

C2: Outgoing liaison statements 140

Annex D: List of agreed/approved new and revised Work Items 141

Annex E: List of draft Technical Specifications and Reports 142

Annex F: List of action items 143

Annex G: List of participants 144

Annex H: List of future meetings 146

## 1 Opening of the meeting

The Chair, Anand Prasad, welcomed the delegates to the city of Kochi, India. He thanked IF3 for organizing the meeting. Vikram Tiwathia (COAI) said a few words about IF3 and the COAI, practicalities of the meeting and local attractions.

## 2 Approval of Agenda and Meeting Objectives

**S3-190000 Agenda**

*Type: agenda For: (not specified)  
 Source: WG Chairman*

**Decision:** The document was **approved**.

## 3 IPR and Anti-Trust Law Reminder

The attention of the delegates to the meeting of this Technical Specification Group was drawn to the fact that 3GPP Individual Members have the obligation under the IPR Policies of their respective Organizational Partners to inform their respective Organizational Partners of Essential IPRs they become aware of.

The delegates were asked to take note that they were thereby invited:

to investigate whether their organization or any other organization owns IPRs which were, or were likely to become Essential in respect of the work of 3GPP.

to notify their respective Organizational Partners of all potential IPRs, e.g., for ETSI, by means of the IPR Information Statement and the Licensing declaration forms.

The attention of the delegates to the meeting was drawn to the fact that 3GPP activities were subject to all applicable antitrust and competition laws and that compliance with said laws was therefore required by any participant of the meeting, including the Chairman and Vice-Chairmen and were invited to seek any clarification needed with their legal counsel. The leadership would conduct the present meeting with impartiality and in the interests of 3GPP.

Delegates were reminded that timely submission of work items in advance of TSG/WG meetings was important to allow for full and fair consideration of such matters. Delegates were reminded of the fair network use rules established by the PCG:

1. Users shall not use the network to engage in illegal activities. This includes activities such as copyright violation, hacking, espionage or any other activity that may be prohibited by local laws.

2. Users shall not engage in non-work related activities that are consume excessive bandwidth or cause significant degradation of the performance of the network.

## 4 Meeting Reports

### 4.1 Approval of the report from previous SA3 meeting(s)

**S3-190001 Report from last SA3 meeting/s**

*Type: report For: (not specified)  
 Source: MCC*

**Decision:** The document was **approved**.

### 4.2 Report from SA Plenary

**S3-190003 Report from last SA meeting**

*Type: report For: (not specified)  
 Source: WG Chairman*

**Decision:** The document was **noted**.

### 4.3 Report from SA3-LI

Alex Leadbeater (SA3-LI Chair) gave a short oral report on the SA3-LI work from the meeting held the previous week:

- Rel-15 almost completed.

- CRs for approval in the mail list.

- LS on SAHR. Opening discussions on the necessity of turning off encryption during roaming.

- +40 attendees.

In addition it was asked to be minuted the following:

TS 33.128 needs to be approved in March if vendors and operators are to meet 5G phase 1 timescales.

SA3LI are holding SA3-LI#73-BIS to (hopefully) complete TS 33.128 in Dusseldorf 26th - 28th Feb.

Email approval will therefore run as follows;

SA3-LI email list: 28th Feb 18:00 CET to 06th Mar 15:00 CET

SA3 email list: 06th Mar 15:00 CET to 12th Mar 18:00 CET

SA3 will be notified of the SA3-LI review start but any comments by SA3 would need to be made to the SA3-LI list during first period. Timing is set in order to remain ahead of SA Plenary Weds 13th March cut-off.

For reference, V0.0.8 is already available on www.3gpp.org and is largely complete excluding ASN.1 encoding annexes (which like RAN ASN.1 is most difficult bit to complete).

## 5 Items for early consideration

## 6 Reports and Liaisons from other Groups

### 6.1 3GPP Working Groups

**S3-190042 LS on the security aspects of UE Capability ID**

*Type: LS in For: (not specified)  
 Original outgoing LS: -, to -, cc -  
 Source: S2-1812607*

**Discussion:**

373,374 and 129 are docs related to this.

**Decision:** The document was **replied to in S3-190405**.

**S3-190405 Reply to: LS on the security aspects of UE Capability ID**

*Type: LS out For: approval  
 to SA2, cc RAN2  
 Source: Qualcomm*

**Decision:** The document was **approved**.

**S3-190047 Reply LS on Control Plane Solution for Steering of Roaming in 5GS**

*Type: LS in For: (not specified)  
 Original outgoing LS: -, to -, cc -  
 Source: SP-181244*

**Decision:** The document was **noted**.

**S3-190103 Reply LS on Interim conclusions for SA2 study on Radio Capabilities Signalling Optimisations (FS\_RACS)**

*Type: LS in For: (not specified)  
 Original outgoing LS: -, to -, cc -  
 Source: R2-1819206*

**Decision:** The document was **noted**.

**S3-190373 Discussion on the incoming SA2 on security aspects of UE Capability ID**

*Type: discussion For: Discussion  
 Source: Qualcomm Incorporated*

**Decision:** The document was **noted**.

**S3-190374 Draft response LS on the security aspects of UE Capability ID**

*Type: LS out For: Approval  
 to SA2, cc RAN2  
 Source: Qualcomm Incorporated*

**Discussion:**

Huawei: The capability to be sent after AES.

**Decision:** The document was **revised**.

**S3-190396 LS on securing warning messages in ePWS**

*Type: LS in For: (not specified)  
 Original outgoing LS: -, to -, cc -  
 Source: C1-190393*

**Discussion:**

Vodafone considered a serious problem to have a possible mechanism that can shut down IoT devices.

Sprint: the focus should be on the broadcast service and not on PWS.

Nokia: we did PWS security before and didn’t reach a conclusion given the different regulations in different parts of the World. This kind of mechanism is application specific and I'm not sure what security capability we can enforce here.

NEC: IoT devices need an intelligence to distinguish the PWS message to shut down. What is the use case here?

BT: Don’t mix PWS with IoT, shutdown commands would be dangerous.

Ericsson: SA3's study had a different scope. We had a user behind the device and in here we have a new use case.

Sprint: this use case is not defined as a service. This should come as a SA1 requirement. NTT-Docomo and NCSC agreed with this.

Qualcomm: this seems to be more application layer specific.

NTT-Docomo: make it very clear that using existing PWS mechanisms without application layer security would not be acceptable.

**Decision:** The document was **replied to in S3-190406**.

**S3-190406 Reply to: LS on securing warning messages in ePWS**

*Type: LS out For: approval  
 to CT1,SA1  
 Source: Ericsson*

**Decision:** The document was **approved**.

**S3-190418 Reply LS on Interim conclusions for SA2 study on Radio Capabilities Signalling Optimisations (FS\_RACS)**

*Type: LS in For: discussion  
 Original outgoing LS: -, to -, cc -  
 Source: S2-1901303*

**Decision:** The document was **noted**.

### 6.2 IETF

### 6.3 ETSI SAGE

**S3-190403 Expectations and requirements for 256 bit algorithms**

*Type: LS in For: discussion  
 Original outgoing LS: -, to -, cc -  
 Source: ETSI SAGE*

**Decision:** The document was **replied to in S3-190407**.

**S3-190407 Reply to: Expectations and requirements for 256 bit algorithms**

*Type: LS out For: approval  
 to ETSI SAGE, cc ETSI TC CYBER  
 Source: Vodafone*

**Decision:** The document was **approved**.

**S3-190402 128-EIA3 maximum message size**

*Type: LS in For: discussion  
 Original outgoing LS: -, to -, cc -  
 Source: ETSI SAGE*

**Decision:** The document was **noted**.

**S3-190107 Expectations and requirements for 256 bit algorithms**

*Type: LS in For: (not specified)  
 Original outgoing LS: -, to -, cc -  
 Source: ETSI SAGE*

**Decision:** The document was **withdrawn**.

### 6.4 GSMA

**S3-190018 Cooperation on Generic Slice Template definition**

*Type: LS in For: (not specified)  
 Original outgoing LS: -, to -, cc -  
 Source: GSMA*

**Decision:** The document was **noted**.

**S3-190019 User Plane Security for 5GC Roaming**

*Type: LS in For: (not specified)  
 Original outgoing LS: -, to -, cc -  
 Source: GSMA*

**Discussion:**

Deutsche Telekom: we have taken into account in the FBA study already.

BT commented that this should be taken care of in Rel-16.

Vodafone: make a recommendation in Rel-15 to get around this issue and fix it in Rel-16.

BT clarified that SA plenary would take care of a response to GSMA coordinating with SA3.

**Decision:** The document was **noted**.

**S3-190039 GTP Recovery Counter & GSN node behaviour**

*Type: LS in For: (not specified)  
 Original outgoing LS: -, to -, cc -  
 Source: GSMA*

**Discussion:**

Directed to CT4.

**Decision:** The document was **noted**.

**S3-190408 User Plane Security for 5GC Roaming**

*Type: CR For: Agreement  
 33.501 v15.3.1 CR-0558 Cat: F (Rel-15)  
  
 Source: Vodafone*

**Decision:** The document was **agreed**.

**S3-190409 LS on User Plane Security for 5GC Roaming**

*Type: LS out For: Agreement  
 to SA, SA2, cc CT,CT4  
 Source: BT*

**Decision:** The document was **approved**.

### 6.5 OMA

### 6.6 TCG

1. TCG – Highlights

• Publication of new or revised deliverables (incremental changes from the status reported at SA3#92)

o TCG Trusted Platform Module 2.0 r1.50 – public review January 2019

o TCG Storage Opal Test Cases v1.0 r1.14 – public review January 2019

o TCG EK Credential Profile for TPM v2.0 – publication approved November 2018

o TCG Architect’s Guide Portable Device Security Using TNC – published November 2018

o TCG PC Client Platform Firmware Profile r1.04 – public review November 2018

o TCG Storage Security Subsystem Class: Ruby v1.0 – public review November 2018

o TCG Trusted Mobility Solutions Use Cases v2 – published September 2018

o TCG Trusted Network Communications for Mobile Platforms – published September 2018

o TCG TPM 2.0 Automotive Thin Protection Profile– public review September 2018

o TCG Guidance for TPM 2.0 Mobile Implementations – published August 2018

o TCG SNMP MIB for TPM-based Attestation – public review July 2018

2. Meetings

TCG Members Meeting in Warsaw, Poland – 10-13 June 2019

TCG Annual Members Meeting in Toronto, Canada - 15-17 October 2019

MPWG meets every Thursday at 10-11 ET

TMS WG meets every Monday and Friday at 12-13 ET

CyRes WG meets every Wednesday at 11-12:30 ET

**S3-190048 TCG Progress Report**

*Type: report For: Information  
 Source: InterDigital, Inc.*

**Abstract:**

This contribution provides a brief incremental summary of the progress in TCG Working Groups as of January 2019.

**Decision:** The document was **noted**.

### 6.7 oneM2M

Colin (BT) gave a brief report on the whereabouts of OneM2M:

The oneM2M Release 3 specifications were approved for publication at TP#38 in December 2018 and oneM2M’s Working Groups have been restructured as follows

WG1 Requirements and Domain Models (RDM) - Chair Said Gharout, Orange

WG2 System Design and Security (SDS) - Chair Dale Seed, Convida Wireless

WG3 Testing and Developers Ecosystem (TDE) - Chair Andrew Min-gyu Han, Hansung University

Next face to face meeting: TP#39 18-22 Feb 2019 Malaga (Spain) - Invitation is at TP-2018-0282

### 6.8 TC-CYBER

Colin (NCSC) gave a brief report on TC CYBER.

A new work item - Guide to Identity Based Encryption - was agreed.

A TS - Cyber Security for Consumer Internet of Things - was published.

BT: it's under discussion how 3GPP networks are tested in conformance with EU Cybersecurity act.

### 6.9 ETSI NFV

Alex (BT) gave a brief report on ETSI NFV. He commented that the security group was almost shut down and that was fortunately stopped.

### 6.10 CVDs and Research

BT: how do we discuss these kind of documents if this is of public domain?

NTT-Docomo: CVDs will not be brought here as documents under discussion. Research issues can be discussed publicly.

It was agreed to change the title of the agenda item to make it clear that the discussions would address public documents.

### 6.11 Other Groups

**S3-190033 LS to 3GPP TSG-SA WG6 on Use of ITS Dedicated Spectrum within V2X UE**

*Type: LS in For: (not specified)  
 Original outgoing LS: -, to -, cc -  
 Source: ETSI TC ITS*

**Decision:** The document was **noted**.

## 7 Work Areas

### 7.1 Security aspects of 5G System - Phase 1 (5GS\_Ph1-SEC) (Rel-15)

#### 7.1.1 Key hierarchy

#### 7.1.2 Key derivation

**S3-190232 Clarification on the Use of the SUPI in the Kamf Derivation**

*Type: CR For: Agreement  
 33.501 v15.3.1 CR-0528 Cat: F (Rel-15)  
  
 Source: Huawei, Hisilicon,Nokia,Nokia Shanghai Bell*

**Discussion:**

Ericsson didn’t agree since this would affect Legal Interception requirements. The question is whether to remove the SUPI type part.

ZTE didn’t agree with this change.

Vodafone: the wording is confusing.

**Decision:** The document was **revised to S3-190416**.

**S3-190416 Clarification on the Use of the SUPI in the Kamf Derivation**

*Type: CR For: Agreement  
 33.501 v15.3.1 CR-0528 rev 1 Cat: F (Rel-15)  
  
 Source: Huawei, Hisilicon,Nokia,Nokia Shanghai Bell,Qualcomm,Vodafone*

(Replaces S3-190232)

**Decision:** The document was **agreed**.

**S3-190500 LS on naming issues with SUPI**

*Type: LS out For: Approval  
 to CT4  
 Source: Vodafone*

**Decision:** The document was **withdrawn**.

#### 7.1.3 Mobility

**S3-190135 Clarification to the 5G-GUTI change during the NAS procedure.**

*Type: CR For: Approval  
 33.501 v15.3.1 CR-0507 Cat: F (Rel-15)  
  
 Source: NEC Europe Ltd*

**Abstract:**

Clarification to 5G-GUTI change scenario during mobility management procedure.

**Decision:** The document was **not pursued**.

**S3-190138 Handling of SUCI de-concealment during registration retry procedure**

*Type: CR For: Approval  
 33.501 v15.3.1 CR-0510 Cat: F (Rel-15)  
  
 Source: NEC Europe Ltd*

**Abstract:**

Handling of authentication procedure during registration retry procedure

**Discussion:**

Ericsson: this is done in TS 34.501 already. It's in scope of CT1.

Huawei: it doesn’t belong here. Nokia agreed with this.

There was a strong support on this being in CT1's scope.

**Decision:** The document was **not pursued**.

**S3-190327 Allocating new 5G-GUTI during the MO service request procedure**

*Type: CR For: Approval  
 33.501 v15.3.1 CR-0547 Cat: F (Rel-15)  
  
 Source: NEC Europe Ltd*

**Abstract:**

allocation of new 5G-GUTI during the MO service request procedure.

**Discussion:**

Huawei: check with CT1.

Qualcomm: we should not mandate it, it's up to the network. Nokia agreed.

Ericsson: we discussed this before and decided not to mandate it.

Docomo proposed to change NOTE1 to clarify the "more frequently" bit.

**Decision:** The document was **revised to S3-190420**.

**S3-190420 Allocating new 5G-GUTI during the MO service request procedure**

*Type: CR For: Approval  
 33.501 v15.3.1 CR-0547 rev 1 Cat: F (Rel-15)  
  
 Source: NEC Europe Ltd*

(Replaces S3-190327)

**Decision:** The document was **agreed**.

**S3-190379 CR on clarification on N2 handover**

*Type: CR For: Agreement  
 33.501 v15.3.1 CR-0554 Cat: F (Rel-15)  
  
 Source: Qualcomm Incorporated*

**Discussion:**

Ericsson wasn't fully in line with this.It was taken offline.

**Decision:** The document was **revised to S3-190421**.

**S3-190421 CR on clarification on N2 handover**

*Type: CR For: Agreement  
 33.501 v15.3.1 CR-0554 rev 1 Cat: F (Rel-15)  
  
 Source: Qualcomm Incorporated,Ericsson*

(Replaces S3-190379)

**Decision:** The document was **agreed**.

**S3-190380 CR - clarification on key handling in handover**

*Type: CR For: Agreement  
 33.501 v15.3.1 CR-0555 Cat: F (Rel-15)  
  
 Source: Qualcomm Incorporated*

**Decision:** The document was **agreed**.

**S3-190151 Align NAS connection identifier values**

*Type: CR For: Agreement  
 33.501 v15.3.1 CR-0512 Cat: F (Rel-15)  
  
 Source: ZTE Corporation*

**Discussion:**

Discussed with overlapping documents 365, 378 and 222.

Nokia: Huawei's document is proposing to re-use the concept in LTE.

Ericsson: in LTE we didn’t have the concept of NAS connection identifier.

It was finally decided to go for Qualcomm's point in 378.

The last two changes of this document were merged in 422.

**Decision:** The document was **merged**.

**S3-190378 CR on NAS connection id for NAS MAC calculation**

*Type: CR For: Agreement  
 33.501 v15.3.1 CR-0553 Cat: F (Rel-15)  
  
 Source: Qualcomm Incorporated*

**Decision:** The document was **agreed**.

**S3-190365 Non-3GPP Access: Correcting Connection Identifier**

*Type: CR For: (not specified)  
 33.501 v15.3.1 CR-0551 Cat: F (Rel-15)  
  
 Source: Samsung*

**Decision:** The document was **revised to S3-190422**.

**S3-190422 Non-3GPP Access: Correcting Connection Identifier**

*Type: CR For: -  
 33.501 v15.3.1 CR-0551 rev 1 Cat: F (Rel-15)  
  
 Source: Samsung,ZTE*

(Replaces S3-190365)

**Decision:** The document was **agreed**.

#### 7.1.4 AS security

**S3-190255 EUTRA connected to 5GC: clause 6.6.2**

*Type: CR For: Agreement  
 33.501 v15.3.1 CR-0531 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Discussion:**

Vodafone didn't see the purpose of the note. Just refer to 33.401.

Nokia: ng-eNodeB specific topics are specified in 33.501, not 33.401.

Vodafone admitted the above but preferred to have the note as a requirement. Ericsson replied that the requirement existed somewhere else.

This was taken offline.

**Decision:** The document was **revised to S3-190501**.

**S3-190501 EUTRA connected to 5GC: clause 6.6.2**

*Type: CR For: Agreement  
 33.501 v15.3.1 CR-0531 rev 1 Cat: F (Rel-15)  
  
 Source: Ericsson*

(Replaces S3-190255)

**Decision:** The document was **agreed**.

**S3-190358 Correction on RRC states terminology usage**

*Type: CR For: (not specified)  
 33.501 v15.3.1 CR-0550 Cat: F (Rel-15)  
  
 Source: Samsung*

**Discussion:**

Overlapping with 0072, 258,259.

**Decision:** The document was **revised to S3-190423**.

**S3-190423 Correction on RRC states terminology usage**

*Type: CR For: -  
 33.501 v15.3.1 CR-0550 rev 1 Cat: F (Rel-15)  
  
 Source: Samsung,Huawei*

(Replaces S3-190358)

**Decision:** The document was **agreed**.

**S3-190256 EUTRA connected to 5GC: clause 6.7.3**

*Type: CR For: Agreement  
 33.501 v15.3.1 CR-0532 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Decision:** The document was **revised to S3-190427**.

**S3-190427 EUTRA connected to 5GC: clause 6.7.3**

*Type: CR For: Agreement  
 33.501 v15.3.1 CR-0532 rev 1 Cat: F (Rel-15)  
  
 Source: Ericsson*

(Replaces S3-190256)

**Discussion:**

Revised to address issues on the cover.

**Decision:** The document was **agreed**.

**S3-190257 EUTRA connected to 5GC: clause 6.7.4**

*Type: CR For: Agreement  
 33.501 v15.3.1 CR-0533 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Decision:** The document was **revised to S3-190428**.

**S3-190428 EUTRA connected to 5GC: clause 6.7.4**

*Type: CR For: Agreement  
 33.501 v15.3.1 CR-0533 rev 1 Cat: F (Rel-15)  
  
 Source: Ericsson*

(Replaces S3-190257)

**Decision:** The document was **agreed**.

**S3-190258 EUTRA connected to 5GC: clause 6.8.1**

*Type: CR For: Agreement  
 33.501 v15.3.1 CR-0534 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Discussion:**

Nokia: There is no consistency with the key names. Don’t use KngRAN.

**Decision:** The document was **revised to S3-190424**.

**S3-190424 EUTRA connected to 5GC: clause 6.8.1**

*Type: CR For: Agreement  
 33.501 v15.3.1 CR-0534 rev 1 Cat: F (Rel-15)  
  
 Source: Ericsson*

(Replaces S3-190258)

**Discussion:**

Revised to include all clauses affected in the cover page.

**Decision:** The document was **agreed**.

**S3-190072 Corrections of messages names etc**

*Type: CR For: Approval  
 33.501 v15.3.1 CR-0497 Cat: F (Rel-15)  
  
 Source: Huawei, Hisilicon*

**Decision:** The document was **merged**.

**S3-190078 Clarification and correct clause reference for RNAU w/o context relocation**

*Type: CR For: Approval  
 33.501 v15.3.1 CR-0498 Cat: F (Rel-15)  
  
 Source: Huawei, Hisilicon*

**Decision:** The document was **agreed**.

**S3-190192 Corrections on ng-ran keys**

*Type: CR For: Agreement  
 33.501 v15.3.1 CR-0520 Cat: F (Rel-15)  
  
 Source: Huawei, HiSilicon*

**Discussion:**

Nokia didn’t agree with using multiple names for the same keys. KNG-RAN should not be used as this is causing confusion.

**Decision:** The document was **revised to S3-190426**.

**S3-190426 Corrections on ng-ran keys**

*Type: CR For: Agreement  
 33.501 v15.3.1 CR-0520 rev 1 Cat: F (Rel-15)  
  
 Source: Huawei, HiSilicon,Ericsson*

(Replaces S3-190192)

**Decision:** The document was **agreed**.

**S3-190254 Corrections to RRC Inactive procedure and RAN-based notification area update procedure.**

*Type: CR For: Agreement  
 33.501 v15.3.1 CR-0530 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Discussion:**

Huawei didn’t agree with the new requirement, since this was implementation specific and not needed.

NEC supported the Ericsson's view.

Nokia: there is an impact on implementation, it has performance implications. They needed to check if this was fine with them.

**Decision:** The document was **revised to S3-190429**.

**S3-190429 Corrections to RRC Inactive procedure and RAN-based notification area update procedure.**

*Type: CR For: Agreement  
 33.501 v15.3.1 CR-0530 rev 1 Cat: F (Rel-15)  
  
 Source: Ericsson*

(Replaces S3-190254)

**Decision:** The document was **agreed**.

**S3-190259 EUTRA connected to 5GC: clause 6.8.2**

*Type: CR For: Agreement  
 33.501 v15.3.1 CR-0535 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Discussion:**

The NOTE was removed since it was addressed in other contributions.Also other changes related with message names.

Overlaps with 192.

**Decision:** The document was **revised to S3-190425**.

**S3-190425 EUTRA connected to 5GC: clause 6.8.2**

*Type: CR For: Agreement  
 33.501 v15.3.1 CR-0535 rev 1 Cat: F (Rel-15)  
  
 Source: Ericsson*

(Replaces S3-190259)

**Decision:** The document was **agreed**.

**S3-190260 EUTRA connected to 5GC: clause 6.9.2.1**

*Type: CR For: Agreement  
 33.501 v15.3.1 CR-0536 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Decision:** The document was **revised to S3-190430**.

**S3-190430 EUTRA connected to 5GC: clause 6.9.2.1**

*Type: CR For: Agreement  
 33.501 v15.3.1 CR-0536 rev 1 Cat: F (Rel-15)  
  
 Source: Ericsson*

(Replaces S3-190260)

**Decision:** The document was **agreed**.

**S3-190193 New clause for intra ng-enb handover**

*Type: CR For: Agreement  
 33.501 v15.3.1 CR-0521 Cat: F (Rel-15)  
  
 Source: Huawei, HiSilicon*

**Discussion:**

Nokia: not sure if we need this new clause. Ericsson agreed.

**Decision:** The document was **not pursued**.

**S3-190261 EUTRA connected to 5GC: clauses 6.9.2.3.1 and 6.9.2.3.2**

*Type: CR For: Agreement  
 33.501 v15.3.1 CR-0537 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Decision:** The document was **merged**.

**S3-190262 EUTRA connected to 5GC: clauses 6.9.3 and 6.9.4**

*Type: CR For: Agreement  
 33.501 v15.3.1 CR-0538 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Decision:** The document was **revised to S3-190431**.

**S3-190431 EUTRA connected to 5GC: clauses 6.9.3 and 6.9.4**

*Type: CR For: Agreement  
 33.501 v15.3.1 CR-0538 rev 1 Cat: F (Rel-15)  
  
 Source: Ericsson*

(Replaces S3-190262)

**Discussion:**

Revised to fix mistakes on the cover page.

**Decision:** The document was **agreed**.

**S3-190263 EUTRA connected to 5GC: clause 6.9.5**

*Type: CR For: Agreement  
 33.501 v15.3.1 CR-0539 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Decision:** The document was **revised to S3-190432**.

**S3-190432 EUTRA connected to 5GC: clause 6.9.5**

*Type: CR For: Agreement  
 33.501 v15.3.1 CR-0539 rev 1 Cat: F (Rel-15)  
  
 Source: Ericsson*

(Replaces S3-190263)

**Decision:** The document was **agreed**.

**S3-190174 Clarification for section 6.10.2.1**

*Type: CR For: Approval  
 33.501 v15.3.1 CR-0515 Cat: F (Rel-15)  
  
 Source: Huawei, Hisilicon*

**Decision:** The document was **revised to S3-190433**.

**S3-190433 Clarification for section 6.10.2.1**

*Type: CR For: Approval  
 33.501 v15.3.1 CR-0515 rev 1 Cat: F (Rel-15)  
  
 Source: Huawei, Hisilicon*

(Replaces S3-190174)

**Discussion:**

Incorporating changes suggested by Ericsson.

**Decision:** The document was **agreed**.

**S3-190175 Clarification for UP security in option4&7**

*Type: CR For: Approval  
 33.501 v15.3.1 CR-0516 Cat: F (Rel-15)  
  
 Source: Huawei, Hisilicon*

**Discussion:**

Nokia: delete the "rather than".

**Decision:** The document was **revised to S3-190434**.

**S3-190434 Clarification for UP security in option4&7**

*Type: CR For: Approval  
 33.501 v15.3.1 CR-0516 rev 1 Cat: F (Rel-15)  
  
 Source: Huawei, Hisilicon*

(Replaces S3-190175)

**Decision:** The document was **agreed**.

**S3-190264 EUTRA connected to 5GC: clause 6.11**

*Type: CR For: Agreement  
 33.501 v15.3.1 CR-0540 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Decision:** The document was **agreed**.

**S3-190280 EUTRA connected to 5GC: clause 8**

*Type: CR For: Agreement  
 33.501 v15.3.1 CR-0541 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Decision:** The document was **revised to S3-190435**.

**S3-190435 EUTRA connected to 5GC: clause 8**

*Type: CR For: Agreement  
 33.501 v15.3.1 CR-0541 rev 1 Cat: F (Rel-15)  
  
 Source: Ericsson*

(Replaces S3-190280)

**Decision:** The document was **agreed**.

**S3-190297 Clarification to idle mode mobility from EPS to 5GS**

*Type: CR For: Agreement  
 33.501 v15.3.1 CR-0546 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Decision:** The document was **agreed**.

**S3-190065 Corrections of messages names etc**

*Type: CR For: (not specified)  
 33.501 v15.3.1 CR-0496 Cat: F (Rel-15)  
  
 Source: HUAWEI TECH. GmbH*

**Decision:** The document was **withdrawn**.

#### 7.1.5 NAS security

**S3-190136 Clarification to the 5G-GUTI allocation during the Notification procedure.**

*Type: CR For: Approval  
 33.501 v15.3.1 CR-0508 Cat: F (Rel-15)  
  
 Source: NEC Europe Ltd*

**Abstract:**

Clarification to the 5G GUTI allocation during notification procedure.

**Decision:** The document was **not pursued**.

**S3-190153 Handling of AMF redirection**

*Type: CR For: Agreement  
 33.501 v15.3.1 CR-0514 Cat: F (Rel-15)  
  
 Source: ZTE Corporation*

**Discussion:**

Ericsson: Why restrict the AMF from performing re-authentication procedure? It is not clear why this is needed. Nokia agreed with Ericsson.

Proposal 2 and 3 were related to one.

**Decision:** The document was **not pursued**.

**S3-190177 key update in multi-NAS scenario**

*Type: CR For: Approval  
 33.501 v15.3.1 CR-0518 Cat: F (Rel-15)  
  
 Source: Huawei, Hisilicon*

**Discussion:**

Nokia: why are we bringing these changes based on access type?

Overlapping with tdoc 282 and 372.

**Decision:** The document was **revised to S3-190556**.

**S3-190556 key update in multi-NAS scenario**

*Type: CR For: Approval  
 33.501 v15.3.1 CR-0518 rev 1 Cat: F (Rel-15)  
  
 Source: Huawei, Hisilicon,Qualcomm,Ericsson*

(Replaces S3-190177)

**Decision:** The document was **agreed**.

**S3-190222 Modification on the NAS connection identifier for backward compatibility with LTE**

*Type: CR For: (not specified)  
 33.501 v15.3.1 CR-0523 Cat: F (Rel-15)  
  
 Source: Huawei, Hisilicon*

**Decision:** The document was **not pursued**.

**S3-190281 Clarification to AKA parameter derivation**

*Type: CR For: Approval  
 33.501 v15.3.1 CR-0542 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Discussion:**

Nokia missed some text covering RES\* and XRES\*.It was proposed to add this during the next meeting.

**Decision:** The document was **agreed**.

**S3-190282 Multiple NAS connections: mobility with horizontal KAMF derivation**

*Type: CR For: Approval  
 33.501 v15.3.1 CR-0543 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Decision:** The document was **merged**.

**S3-190283 Multiple active NAS connections in the same PLMN's serving network: common algorithm identifiers**

*Type: CR For: Approval  
 33.501 v15.3.1 CR-0544 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Discussion:**

Qualcomm: how do you achieve this requirement? They didn't agree with the wording.

It was revised to reword the sentence.

**Decision:** The document was **revised to S3-190436**.

**S3-190436 Multiple active NAS connections in the same PLMN's serving network: common algorithm identifiers**

*Type: CR For: Approval  
 33.501 v15.3.1 CR-0544 rev 1 Cat: F (Rel-15)  
  
 Source: Ericsson*

(Replaces S3-190283)

**Decision:** The document was **agreed**.

**S3-190372 Handling the non-3GPP security context at mobility on the 3GPP access**

*Type: CR For: Agreement  
 33.501 v15.3.1 CR-0552 Cat: F (Rel-15)  
  
 Source: Qualcomm Incorporated*

**Discussion:**

Ericsson was fine with this proposal.

**Decision:** The document was **merged**.

#### 7.1.6 Security context

#### 7.1.7 Visibility and Configurability

#### 7.1.8 Primary authentication

**S3-190083 Alignment with TS 23.502: Optimization of UDM selection in AUSF**

*Type: CR For: Agreement  
 33.501 v15.3.1 CR-0499 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Discussion:**

Vodafone: Compatibility issue with the networks that are rolled out today. It's too late to change this.

Ericsson replied that this was alignment with SA2. Huawei disagreed. This had to be taken offline.

**Decision:** The document was **not pursued**.

**S3-190084 Correction to authentication step**

*Type: CR For: Agreement  
 33.501 v15.3.1 CR-0500 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Discussion:**

CableLabs: good requirement. Does the AUSF do the same validation?

ZTE: this depends on the discussion about the SUPI type and the AMF.

Nokia: the MNC is part of the SUPI value. Why does it depend on the SUPI type? The current procedure already addresses this. What kind of attack are we facing here? Huawei agreed with Nokia.

Ericsson: there is no attack, there is a weakness.

Lenovo didn’t understand how this could ever happen.

**Decision:** The document was **not pursued**.

**S3-190124 CR Add UE trace to UE Authentication Get Service**

*Type: CR For: Approval  
 33.501 v15.3.1 CR-0505 Cat: F (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Discussion:**

Vodafone: what data is Trace Data? NEC agreed, there was no security reasoning behind this.

Nokia: This is described in SA2 and CT4.

Huawei: limit to authentication related parameters.

Nokia: it doesn't impact the security directly. This particular definition does only exist in 33.401, that’s why it's here.

Ericsson: we need to know what is done in SA2 but at the moment there is no mentioning of this, the clause is empty. Nokia commented that this was aligned with results from the SA2 meeting held the previous week, not available at that time.

Vodafone: we might be giving away data that is covered by the GDPR.

It was agreed to send an LS to SA2 and attach this CR. The agreement on this CR would depend on the response from SA2.

After discussions on the LS, it was decided to note the LS.

**Decision:** The document was **not pursued**.

**S3-190502 LS on clarification on UE trace definition**

*Type: LS out For: Approval  
 to SA2,CT4  
 Source: Nokia*

**Decision:** The document was **approved**.

#### 7.1.9 Secondary authentication

#### 7.1.10 Interworking

**S3-190137 Clarification on Establishment of a mapped security context during intersystem handover(S1 to N1)**

*Type: CR For: (not specified)  
 33.501 v15.3.1 CR-0509 Cat: F (Rel-15)  
  
 Source: Intel Deutschland GmbH*

**Discussion:**

ZTE didn’t agree with the scenarios.

Ericsson: the clause is misplaced.

**Decision:** The document was **not pursued**.

**S3-190152 Clarification on Registration procedure for mobility from EPS to 5GS over N26**

*Type: CR For: Agreement  
 33.501 v15.3.1 CR-0513 Cat: F (Rel-15)  
  
 Source: ZTE Corporation*

**Discussion:**

Ericsson: we don’t need this clarification, nothing new here.

Vodafone: this is not an essential correction, cat-F.Nokia supported Vodafone.

**Decision:** The document was **not pursued**.

**S3-190140 Clarification on Handover message in Interworking**

*Type: CR For: (not specified)  
 33.501 v15.3.1 CR-0511 Cat: F (Rel-15)  
  
 Source: Intel Deutschland GmbH*

**Discussion:**

Qualcomm disagreed with this.

**Decision:** The document was **not pursued**.

**S3-190176 clarification on interworking case**

*Type: CR For: Approval  
 33.501 v15.3.1 CR-0517 Cat: F (Rel-15)  
  
 Source: Huawei, Hisilicon*

**Discussion:**

Vodafone: not happy with the use of "done" in these sentences.

Qualcomm: changes are not needed, they are obvious.

MCC: replace 4G with LTE.

**Decision:** The document was **revised to S3-190437**.

**S3-190437 clarification on interworking case**

*Type: CR For: Approval  
 33.501 v15.3.1 CR-0517 rev 1 Cat: F (Rel-15)  
  
 Source: Huawei, Hisilicon*

(Replaces S3-190176)

**Decision:** The document was **agreed**.

**S3-190224 NAS counter clarification on interworking**

*Type: CR For: Agreement  
 33.501 v15.3.1 CR-0524 Cat: F (Rel-15)  
  
 Source: Huawei, Hisilicon*

**Discussion:**

Ericsson: first set of changes are legacy behaviour. Not needed.

Qualcomm didn’t agree with this contribution at all.

**Decision:** The document was **revised to S3-190438**.

**S3-190438 NAS counter clarification on interworking**

*Type: CR For: Agreement  
 33.501 v15.3.1 CR-0524 rev 1 Cat: F (Rel-15)  
  
 Source: Huawei, Hisilicon*

(Replaces S3-190224)

**Discussion:**

First change is gone.

**Decision:** The document was **agreed**.

**S3-190134 Clarification on Establishment of a mapped security context during intersystem handover(N1 to S1)**

*Type: CR For: (not specified)  
 33.501 v15.3.1 CR-0506 Cat: F (Rel-15)  
  
 Source: Intel Deutschland GmbH*

**Discussion:**

Qualcomm and Ericsson didn’t agree with this.

**Decision:** The document was **not pursued**.

**S3-190231 Clarification on securing the procedure of idle mode mobility from 5GS to EPS over N26 interface**

*Type: CR For: Agreement  
 33.501 v15.3.1 CR-0527 Cat: F (Rel-15)  
  
 Source: Huawei, Hisilicon*

**Discussion:**

We don’t need this change. Initial attach procedure is done where there is no N26. Ericsson commented that it didn't matter whether there was N26 or not.

**Decision:** The document was **not pursued**.

#### 7.1.11 non-3GPP access

#### 7.1.12 NDS

**S3-190284 Clarification to the implementation requirement for the protection of the backhaul and side haul interfaces**

*Type: CR For: Agreement  
 33.501 v15.3.1 CR-0545 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Decision:** The document was **agreed**.

#### 7.1.13 Service based architecture

##### 7.1.13.1 Interconnect (SEPP related)

**S3-190090 Editorials and minor clarifications for clause 13.2**

*Type: CR For: Agreement  
 33.501 v15.3.1 CR-0502 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Decision:** The document was **revised to S3-190439**.

**S3-190439 Editorials and minor clarifications for clause 13.2**

*Type: CR For: Agreement  
 33.501 v15.3.1 CR-0502 rev 1 Cat: F (Rel-15)  
  
 Source: Ericsson*

(Replaces S3-190090)

**Decision:** The document was **agreed**.

**S3-190118 On the handling of invalid JSON patches in N32-f messages**

*Type: discussion For: Discussion  
 33.501 v..  
 Source: Telekom Deutschland GmbH*

**Decision:** The document was **noted**.

**S3-190559 LS on PLMN-ID verification**

*Type: LS out For: Approval  
 to CT3,CT4  
 Source: Deutsche Telekom*

**Discussion:**

A conference call was setup to discuss the LS.

This was sent for email approval: Friday 8th available, Tuesday 12th ,Wednesday 13th final version available.

**Decision:** The document was **approved**.

##### 7.1.13.2 Other

**S3-190089 Editorials and minor clarifications for clause 13.1**

*Type: CR For: Agreement  
 33.501 v15.3.1 CR-0501 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Decision:** The document was **agreed**.

**S3-190227 Update on the token verification**

*Type: CR For: Agreement  
 33.501 v15.3.1 CR-0525 Cat: F (Rel-15)  
  
 Source: Huawei, Hisilicon,Nokia*

**Discussion:**

Nokia: not OK with removing the verification part, agree to remove where the verification is done. This was taken offline and then agreed.

**Decision:** The document was **agreed**.

**S3-190229 Clarification on service authorization and token verification**

*Type: CR For: Agreement  
 33.501 v15.3.1 CR-0526 Cat: F (Rel-15)  
  
 Source: Huawei, Hisilicon*

**Decision:** The document was **revised to S3-190440**.

**S3-190440 Clarification on service authorization and token verification**

*Type: CR For: Agreement  
 33.501 v15.3.1 CR-0526 rev 1 Cat: F (Rel-15)  
  
 Source: Huawei, Hisilicon, Nokia*

(Replaces S3-190229)

**Decision:** The document was **agreed**.

**S3-190354 Updating Access Token Response to include token expiration time and scope**

*Type: CR For: Agreement  
 33.501 v15.3.1 CR-0549 Cat: F (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Updating Access Token Response to include token expiration time and scope

**Decision:** The document was **merged**.

#### 7.1.14 Privacy

**S3-190116 Subscriber privacy: test data for SUCI computation**

*Type: CR For: Approval  
 33.501 v15.3.1 CR-0504 Cat: D (Rel-15)  
  
 Source: Gemalto N.V.*

**Abstract:**

Subscriber privacy: test data for SUCI calculation

**Discussion:**

IDEMIA: some coding is wrong, not complying with CT4's decisions.

Qualcomm: good idea to have testers' data, but there are things missing here. We can come back next meeting with a better look at this.

**Decision:** The document was **not pursued**.

**S3-190398 Comment on S3-190116**

*Type: discussion For: Discussion  
 33.501 v..  
 Source: Huawei, Hisilicon*

**Decision:** The document was **noted**.

**S3-190383 SUPI Type clarification**

*Type: CR For: Approval  
 33.501 v15.3.1 CR-0556 Cat: F (Rel-15)  
  
 Source: Qualcomm Incorporated*

**Discussion:**

Gemalto: what happens if there are two files in the UICC? Which one do you compute?

Qualcomm: question for CT1. I don’t know if there is a scenario with two files.

We may have more types of SUPI. CT hasn’t decided to remove this yet.

There was no agreement with this contribution.

**Decision:** The document was **not pursued**.

**S3-190384 Input encoding for ECIES protection schemes**

*Type: CR For: Approval  
 33.501 v15.3.1 CR-0557 Cat: F (Rel-15)  
  
 Source: Qualcomm Incorporated*

**Discussion:**

Vodafone: does this protect types?

Qualcomm: no, just the subscription identifier part.

IDEMIA: why isn't the CT4 referenced here?

Qualcomm: it doesn’t apply to transport.

This was taken offline.

IDEMIA objected since this meant additional processing in the UICC.

**Decision:** The document was **revised to S3-190557**.

**S3-190557 Input encoding for ECIES protection schemes**

*Type: CR For: Approval  
 33.501 v15.3.1 CR-0557 rev 1 Cat: F (Rel-15)  
  
 Source: Qualcomm Incorporated,IDEMIA,Gemalto*

(Replaces S3-190384)

**Decision:** The document was **agreed**.

**S3-190397 Clarification on the allocation of 5G-GUTI**

*Type: CR For: Agreement  
 33.501 v15.3.1 CR-0529 rev 1 Cat: F (Rel-15)  
  
 Source: Huawei, Hisilicon*

(Replaces S3-190234)

**Discussion:**

Qualcomm didn’t agree with this CR.A rewording was then proposed and for that reason the CR was revised.

NEC: remove the last line and let CT1, CT4 decide.

**Decision:** The document was **revised to S3-190415**.

**S3-190415 Clarification on the allocation of 5G-GUTI**

*Type: CR For: Agreement  
 33.501 v15.3.1 CR-0529 rev 2 Cat: F (Rel-15)  
  
 Source: Huawei, Hisilicon,Nokia,Interdigital*

(Replaces S3-190397)

**Decision:** The document was **agreed**.

**S3-190234 Clarification on the allocation of 5G-GUTI**

*Type: CR For: Agreement  
 33.501 v15.3.1 CR-0529 Cat: F (Rel-15)  
  
 Source: Huawei, Hisilicon*

**Decision:** The document was **revised to S3-190397**.

#### 7.1.15 Incoming and outgoing Lses

**S3-190020 LS on new 5G-GUTI allocation**

*Type: LS in For: (not specified)  
 Original outgoing LS: -, to -, cc -  
 Source: C1-188921*

**Discussion:**

Addressed in tdoc 106.

**Decision:** The document was **replied to in S3-190410**.

**S3-190410 Reply to: LS on new 5G-GUTI allocation**

*Type: LS out For: approval  
 to CT1, cc SA2  
 Source: Ericsson*

**Decision:** The document was **approved**.

**S3-190021 LS on protection of initial NAS messages**

*Type: LS in For: (not specified)  
 Original outgoing LS: -, to -, cc -  
 Source: C1-188925*

**Decision:** The document was **noted**.

**S3-190022 Reply LS on Routing ID**

*Type: LS in For: (not specified)  
 Original outgoing LS: -, to -, cc -  
 Source: S2-1813178*

**Discussion:**

NEC had a discussion document about this in tdoc 401.

**Decision:** The document was **noted**.

**S3-190023 Reply LS on Routing ID**

*Type: LS in For: (not specified)  
 Original outgoing LS: -, to -, cc -  
 Source: C1-188979*

**Decision:** The document was **noted**.

**S3-190026 LS on Nudr Sensitive Data Protection**

*Type: LS in For: (not specified)  
 Original outgoing LS: -, to -, cc -  
 Source: C4-188524*

**Discussion:**

Vodafone commented that this shouldn’t be done at all.

BT: this is trying to structure unrestructured data.

**Decision:** The document was **replied to in S3-190411**.

**S3-190411 Reply to: LS on Nudr Sensitive Data Protection**

*Type: LS out For: approval  
 to CT4  
 Source: Ericsson*

**Decision:** The document was **approved**.

**S3-190027 Clarification request on NF authorization in UE Reachability Notification Request procedure**

*Type: LS in For: (not specified)  
 Original outgoing LS: -, to -, cc -  
 Source: C4-188603*

**Discussion:**

Vodafone pointed out that the second question was relevant for SA3.

Docomo commented that this point was about reachability, not security related.

**Decision:** The document was **noted**.

**S3-190034 LS on DRB Integrity Protection**

*Type: LS in For: (not specified)  
 Original outgoing LS: -, to -, cc -  
 Source: R2-1819080*

**Decision:** The document was **noted**.

**S3-190036 Reply LS on inclusion of selected PLMN into the complete message**

*Type: LS in For: (not specified)  
 Original outgoing LS: -, to -, cc -  
 Source: R3-187235*

**Decision:** The document was **noted**.

**S3-190037 LS on Security Result Exchange Between NG-RAN and SMF in DC**

*Type: LS in For: (not specified)  
 Original outgoing LS: -, to -, cc -  
 Source: R3-187244*

**Discussion:**

Nokia: there is no security issue here.

Ericsson: the SMF should be informed. This was taken offline.

**Decision:** The document was **replied to in S3-190412**.

**S3-190412 Reply to: LS on Security Result Exchange Between NG-RAN and SMF in DC**

*Type: LS out For: approval  
 to RAN3,SA2  
 Source: Nokia*

**Decision:** The document was **approved**.

**S3-190038 Enforcement of maximum supported data rate for integrity protection**

*Type: LS in For: (not specified)  
 Original outgoing LS: -, to -, cc -  
 Source: R3-187267*

**Discussion:**

This had to be taken offline since Docomo doubted about the necessity of doing this.

**Decision:** The document was **noted**.

**S3-190085 Reply LS on Nudr Sensitive Data Protection**

*Type: LS out For: Approval  
 to CT4  
 Source: Ericsson*

**Decision:** The document was **revised to S3-190411**.

**S3-190106 Reply LS on new 5G-GUTI allocation**

*Type: LS out For: Approval  
 to CT1, cc SA2  
 Source: Ericsson*

**Discussion:**

Qualcomm agreed with this except in the case of non-3GPP networks.

**Decision:** The document was **revised to S3-190410**.

**S3-190126 Discussion on C1-188921 LS on GUTI Re-assignment**

*Type: discussion For: Endorsement  
 Source: Nokia, Nokia Shangahi Bell*

**Decision:** The document was **noted**.

**S3-190129 Discussion on Radio Capability indication LS S2-1812607**

*Type: discussion For: Endorsement  
 Source: Nokia, Nokia Shanghai Bell*

**Discussion:**

Vodafone was in line with Nokia's comments: It could be a problem given that it wouldn't be sent after authentication. Ericsson also agreed with sending the capabilities encrypted.

**Decision:** The document was **noted**.

**S3-190394 LS on the need to update home network public key and key ID during Routing indicator update**

*Type: LS in For: (not specified)  
 Original outgoing LS: -, to -, cc -  
 Source: C1-190377*

**Discussion:**

Qualcomm had tdoc 400 related to this.

**Decision:** The document was **replied to in S3-190413**.

**S3-190413 Reply to: LS on the need to update home network public key and key ID during Routing indicator update**

*Type: LS out For: approval  
 to CT1, cc SA2,CT6  
 Source: Vodafone*

**Decision:** The document was **approved**.

**S3-190400 Discussion on incoming CT1 LS on update of Routing Indicator (S3-190394)**

*Type: discussion For: Endorsement  
 Source: Qualcomm Incorporated*

**Discussion:**

Vodafone: the mechanism of the public key update is out of standardization scope and it should be kept this way.BT, IDEMIA, CableLabs and ORANGE supported this.

**Decision:** The document was **noted**.

**S3-190395 LS on mandating 5G-GUTI allocation after network triggered service request**

*Type: LS in For: (not specified)  
 Original outgoing LS: -, to -, cc -  
 Source: C1-190380*

**Discussion:**

Huawei proposed a CR in 397.

Qualcomm proposed to respond affirmatively to this LS but didn't agree with the CR.

Nokia: on the GUTI reallocation we should be flexible.

**Decision:** The document was **replied to in S3-190414**.

**S3-190414 Reply to: LS on mandating 5G-GUTI allocation after network triggered service request**

*Type: LS out For: approval  
 to CT1  
 Source: Huawei*

**Decision:** The document was **approved**.

**S3-190401 [Late contribution] Discussion on dealing with Routing ID update Lses**

*Type: discussion For: discussion  
 Source: NEC Corporation*

**Abstract:**

Two LSes, namely S3-190022 and S3-190023 deal with the issue of Routing ID update in the UE. This document discusses the options and contains proposals on what SA3 should do.

**Discussion:**

Qualcomm and Gemalto commented that there was an existing mechanism for what SA2 was proposing. NEC replied that they were not arguing that but wanted to put it down in words and send it to them.

IDEMIA: the proof of receipt needs to go through the UDM but I'm not sure that this is the case in our spec.

Vodafone: OTA is transport independent protocol. In steering of roaming, OTA was one of the possible protocols to be used there.

Ericsson: we don’t need to send an LS saying that OTA is fine from the security point of view.

At&T considered that the LS wasn’t necessary since they wouldn't do anything with it.

Vodafone: the attached CR contains OTA as a path to and from.

**Decision:** The document was **noted**.

**S3-190404 Interception of voice services over new radio in a 5GS environment**

*Type: LS in For: discussion  
 Original outgoing LS: -, to -, cc -  
 Source: S3i190057*

**Discussion:**

Vodafone asked if a study could cover this work. BT replied that a study could be done. The Chair commented that a study would be easier to manage.

Vodafone, AT&T, Deutsche Telekom and others supported having a study item, so BT would bring it for the next meeting in May.

**Decision:** The document was **postponed**.

**S3-190417 LS Response on Enforcement of maximum supported data rate for integrity protection**

*Type: LS in For: discussion  
 Original outgoing LS: -, to -, cc -  
 Source: S2-1812600*

**Decision:** The document was **noted**.

**S3-190419 LS Response on Security Result Exchange Between NG-RAN and SMF in DC**

*Type: LS in For: discussion  
 Original outgoing LS: -, to -, cc -  
 Source: S2-1901386*

**Decision:** The document was **noted**.

#### 7.1.16 Others

**S3-190178 Clarification on the UE selecting the 4G or 5G security protection method**

*Type: CR For: Approval  
 33.501 v15.3.1 CR-0519 Cat: F (Rel-15)  
  
 Source: Huawei, Hisilicon*

**Discussion:**

Qualcomm: already specified in CT1, not needed here.

Huawei: this is not done in CT1.

Ericsson: why is NAS not mentioned here and only AS SMC procedure? Is the AS SMC part an example? This had to be taken offline.

**Decision:** The document was **revised to S3-190478**.

**S3-190478 Clarification on the UE selecting the 4G or 5G security protection method**

*Type: CR For: Approval  
 33.501 v15.3.1 CR-0519 rev 1 Cat: F (Rel-15)  
  
 Source: Huawei, Hisilicon*

(Replaces S3-190178)

**Decision:** The document was **agreed**.

**S3-190219 Clarification on UE Parameters Update Data used for MAC computation**

*Type: CR For: Agreement  
 33.501 v15.3.1 CR-0522 Cat: F (Rel-15)  
  
 Source: Huawei, HiSilicon*

**Discussion:**

Qualcomm: it is already clear, no need to clarify.

IDEMIA and Gemalto didn't support this either.

**Decision:** The document was **not pursued**.

**S3-190345 Correction to clause 14.2.1**

*Type: CR For: Approval  
 33.501 v15.3.1 CR-0548 Cat: F (Rel-15)  
  
 Source: NEC Corporation*

**Decision:** The document was **agreed**.

**S3-190355 SN Id and SNN clarification**

*Type: discussion For: Discussion  
 33.501 v..  
 Source: Ericsson India Private Limited*

**Discussion:**

It was agreed to do a CR for this (tdoc 441).

**Decision:** The document was **noted**.

**S3-190375 Modifying AKA to provide freshness for the protection of SQN in the case of re-synchronisations**

*Type: discussion For: Discussion  
 Source: Qualcomm Incorporated*

**Decision:** The document was **noted**.

**S3-190376 Adding MACS as an input parameter to the calculation of AK\* to provide freshness**

*Type: CR For: Agreement  
 33.102 v15.1.0 CR-0277 Cat: F (Rel-15)  
  
 Source: Qualcomm Incorporated*

**Discussion:**

AT&T supported this change.

Apple: we should first investigate whether it is feasible in 5G, and then evaluate the effect and make corresponding enhancement.

It was left open to verify what GSMA was doing on this topic.

**Decision:** The document was **not pursued**.

**S3-190441 SN Id and SNN clarification**

*Type: CR For: discussion  
 33.501 v15.3.1 CR-0559 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Decision:** The document was **agreed**.

### 7.2 Security Assurance Specification for 5G (SCAS\_5G) (Rel-16)

#### 7.2.1 NR Node B (gNB) (TS 33.511)

**S3-190225 Test Case: Authorization of NF Serive Access**

*Type: draftCR For: Approval  
 33.117 v16.0.0  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This paper proposes a new sub-clause for one general baseline requirement and its corresponding test case applicable to all NFs utilizing SBI, which is authorization of NF service access.

**Decision:** The document was **noted**.

**S3-190307 Security Assurance Requirement and Test for authorization handling in the NF**

*Type: draftCR For: Agreement  
 33.117 v16.0.0  
 Source: Huawei, HiSilicon*

**Decision:** The document was **revised to S3-190540**.

**S3-190540 Security Assurance Requirement and Test for authorization handling in the NF**

*Type: draftCR For: Agreement  
 33.117 v16.0.0  
 Source: Huawei, HiSilicon*

(Replaces S3-190307)

**Decision:** The document was **approved**.

**S3-190487 Output of SCAS offline session**

*Type: report For: Information  
 Source: Deutsche Telekom*

**Decision:** The document was **noted**.

**S3-190561 draftCR General aspects in TS 33.117**

*Type: draftCR For: Approval  
 33.117 v16.0.0  
 Source: Nokia*

**Decision:** The document was **approved**.

#### 7.2.2 Access and Mobility Management Function (TS 33.512)

**S3-190311 SCAS: AMF-specific adaptations of security functional requirements and related test cases**

*Type: pCR For: Approval  
 33.512 v0.4.0  
 Source: Huawei, Hisilicon*

**Discussion:**

Ericsson: interoperability testing is out of scope of SCAS.

NEC pointed out that tdoc 099 was related to this discussion. 099 was discussed and then this document gone through.

Test case one was scrapped out, related to interoperability.

Test case two: the vice Chair commented that failure of integrity protection would fit in here.

There didn’t seem to be a discussion so the vice chair proposed to take this document offline.

**Decision:** The document was **noted**.

**S3-190312 Security Assurance Requirements and Tests for the Security Functionalities Provided by UPF**

*Type: pCR For: Approval  
 33.513 v0.2.0  
 Source: Huawei, Hisilicon*

**Decision:** The document was **noted**.

#### 7.2.3 User Plane Function (UPF) (TS 33.513)

#### 7.2.4 Unified Data Management (UDM) (TS 33.514)

**S3-190310 SCAS: UDM-specific adaptations of security functional requirements and related test cases**

*Type: pCR For: Approval  
 33.514 v0.3.0  
 Source: Huawei, Hisilicon*

**Decision:** The document was **revised to S3-190508**.

**S3-190508 SCAS: UDM-specific adaptations of security functional requirements and related test cases**

*Type: pCR For: Approval  
 33.514 v0.3.0  
 Source: Huawei, Hisilicon*

(Replaces S3-190310)

**Decision:** The document was **approved**.

**S3-190509 Draft TS 33.514**

*Type: draft TS For: Approval  
 33.514 v0.4.0  
 Source: NEC*

**Decision:** The document was **approved**.

#### 7.2.5 Session Management Function (SMF) (TS 33.515)

**S3-190317 Requirement and test cases for SMF**

*Type: pCR For: Approval  
 33.515 v0.1.0  
 Source: Huawei, Hisilicon*

**Decision:** The document was **noted**.

#### 7.2.6 Authentication Server Function (AUSF) (TS 33.516)

**S3-190099 Analysis of requirements on the AUSF in TS 33.501**

*Type: discussion For: Endorsement  
 33.516 v..  
 Source: Ericsson*

**Discussion:**

Huawei: the failure should be also tested and that does not belong to any category.

Alf (Vice chair) commented that the confusion focused on whether interoperability and failure authentication were in or out of scope of SCAS.

Huawei: very few requirements deal with failure test cases: what happens if a particular test fails.

The Vice Chair asked the delegates if the requirements in the table were considered category one. NEC replied that number 3 wasn’t category one.

Ericsson: check these requirements and see what could go wrong and come back next meeting with the test cases?

Huawei: refer to CT group standard as well.

Deutsche Telekom: agree with Ericsson that these test cases are out of scope of SCAS. The way forward would be to agree on this.

NEC: at least 1,2 and 4 are category one and this is agreed by the group.

Huawei: failure test case included in the category one or not?

**Decision:** The document was **noted**.

**S3-190315 Removing the test case on Kseaf handling**

*Type: pCR For: Approval  
 33.512 v0.4.0  
 Source: Huawei, Hisilicon*

**Decision:** The document was **approved**.

**S3-190510 Draft TS 33.512**

*Type: draft TS For: Approval  
 33.512 v0.5.0  
 Source: Deutsche Telekom*

**Decision:** The document was **approved**.

#### 7.2.7 Security Edge Protection Proxy (SEPP) (TS 33.517)

**S3-190233 SCAS SEPP: Introduction and general approach**

*Type: pCR For: Approval  
 33.517 v0.1.0  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This pCR proposes the text in the clauses of Introduction for SEPP-specific security requirements and related test cases], as well as adding the references used in the main text.

**Decision:** The document was **revised to S3-190512**.

**S3-190512 SCAS SEPP: Introduction and general approach**

*Type: pCR For: Approval  
 33.517 v0.1.0  
 Source: Nokia, Nokia Shanghai Bell*

(Replaces S3-190233)

**Decision:** The document was **approved**.

**S3-190240 Test Case: Mutual Authentication**

*Type: pCR For: Approval  
 33.517 v0.1.0  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

this pCR proposes the test case of mutual authentication as one of the SEPP-specific functional requirements derived from 33.501, as well as adding the references used in the main text.

**Decision:** The document was **noted**.

**S3-190120 New Test Case: Separation of cryptographic storage within the SEPP**

*Type: pCR For: Approval  
 33.517 v0.1.0  
 Source: Telekom Deutschland GmbH*

**Decision:** The document was **revised to S3-190511**.

**S3-190511 New Test Case: Separation of cryptographic storage within the SEPP**

*Type: pCR For: Approval  
 33.517 v0.1.0  
 Source: Telekom Deutschland GmbH*

(Replaces S3-190120)

**Decision:** The document was **approved**.

**S3-190121 New Test Case: Connection-specific scope of cryptographic material by IPX-providers**

*Type: pCR For: Approval  
 33.517 v0.1.0  
 Source: Telekom Deutschland GmbH*

**Decision:** The document was **noted**.

**S3-190122 New Test Case: Precedence of preconfigured protection policies**

*Type: pCR For: Approval  
 33.517 v0.1.0  
 Source: Telekom Deutschland GmbH*

**Decision:** The document was **noted**.

**S3-190123 New Test Case: Validating the common message formatting**

*Type: pCR For: Approval  
 33.517 v0.1.0  
 Source: Telekom Deutschland GmbH*

**Decision:** The document was **noted**.

**S3-190515 Draft 33.517**

*Type: draft TS For: Approval  
 33.517 v0.2.0  
 Source: Nokia*

**Decision:** The document was **approved**.

#### 7.2.8 Network Resource Function (NRF) (TS 33.518)

**S3-190235 SCAS NRF: Introduction and general approach**

*Type: pCR For: Approval  
 33.518 v0.1.0  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This pCR proposes the text in the clauses of Introduction for NRF-specific security requirements and related test cases, as well as adding the references used in the main text.

**Decision:** The document was **approved**.

**S3-190244 Test Case: NF Discovery Service Authorization**

*Type: pCR For: Approval  
 33.518 v0.1.0  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This pCR proposes the test case of NF discovery service authorization as one of the NRF-specific security requirement derived from 33.501, as well as adding the references used in the main text.

**Decision:** The document was **noted**.

**S3-190313 Security Assurance Requirement and Test for NRF**

*Type: pCR For: Approval  
 33.518 v0.1.0  
 Source: Huawei, Hisilicon*

**Decision:** The document was **noted**.

**S3-190513 Draft TS 33.518**

*Type: draft TS For: Approval  
 33.518 v0.2.0  
 Source: Nokia*

**Decision:** The document was **approved**.

#### 7.2.9 Network Exposure Function (NEF) (TS 33.519)

**S3-190154 Authorization on northbound APIs**

*Type: pCR For: Approval  
 33.519 v0.2.0  
 Source: ZTE Corporation*

**Decision:** The document was **revised to S3-190514**.

**S3-190514 Authorization on northbound APIs**

*Type: pCR For: Approval  
 33.519 v0.2.0  
 Source: ZTE Corporation*

(Replaces S3-190154)

**Decision:** The document was **approved**.

**S3-190516 Draft TS 33.519**

*Type: draft TS For: Approval  
 33.519 v0.3.0  
 Source: ZTE*

**Decision:** The document was **approved**.

### 7.3 eMCSec R16 security (MCXSec) (Rel-16)

### 7.4 Security aspects of single radio voice continuity from 5GS to UTRAN () (Rel-16)

**S3-190167 a skeleton of security aspects of 5G SRVCC to UTRAN**

*Type: draftCR For: Approval  
 33.501 v15.3.1  
 Source: Huawei, Hisilicon, China Unicom*

**Decision:** The document was **revised to S3-190443**.

**S3-190443 a skeleton of security aspects of 5G SRVCC to UTRAN**

*Type: draftCR For: Approval  
 33.501 v15.3.1  
 Source: Huawei, Hisilicon, China Unicom*

(Replaces S3-190167)

**Discussion:**

The annex was retitled.

**Decision:** The document was **approved**.

### 7.5 Other work areas

#### 7.5.1 SAE/LTE Security

**S3-190066 LS to RAN2/3 on EDT data integrity protection**

*Type: LS out For: (not specified)  
 to RAN2, RAN3  
 Source: HUAWEI TECH. GmbH*

**Decision:** The document was **withdrawn**.

#### 7.5.2 IP Multimedia Subsystem (IMS) Security

#### 7.5.3 Network Domain Security (NDS)

**S3-190016 Correcting TLS crypto profiles**

*Type: CR For: (not specified)  
 33.210 v16.0.0 CR-0057 Cat: F (Rel-16)  
  
 Source: Juniper Networks, Ericsson*

**Abstract:**

At the SA3#93 meeting, moving TLS profiles from 33.310 to 33.210 was agreed. (S3-183256) There is a mistake in the implementation, whereas the r15 version of the profiles were copied instead of the r16.

The second editorial mistake is that the Other 3GPP

**Decision:** The document was **agreed**.

#### 7.5.4 UTRAN Network Access Security

#### 7.5.5 GERAN Network Access Security

#### 7.5.6 Generic Authentication Architecture (GAA)

#### 7.5.7 Security Aspects of Home(e)NodeB (H(e)NB)

#### 7.5.8 Mission Critical (MCPTT, MCSec, eMCSec, MONASTERY\_SEC)

**S3-190049 [33.179] R13 Annex D.3.4.2 XSD correction**

*Type: CR For: Agreement  
 33.179 v13.7.0 CR-0097 Cat: F (Rel-13)  
  
 Source: Motorola Solutions Germany*

**Abstract:**

The keys EncUserDecryptKey, EncUserSigningKeySSK and EncUserPubTokenPVT need to resolve to EncryptedKey in the xenc shema.

**Decision:** The document was **agreed**.

**S3-190050 [33.180] R14 Annex D.3.5.2 XSD correction (mirror)**

*Type: CR For: Agreement  
 33.180 v14.5.0 CR-0096 Cat: A (Rel-14)  
  
 Source: Motorola Solutions Germany*

**Abstract:**

(mirror) The keys EncUserDecryptKey, EncUserSigningKeySSK and EncUserPubTokenPVT need to resolve to EncryptedKey in the xenc shema.

**Decision:** The document was **revised to S3-190444**.

**S3-190444 [33.180] R14 Annex D.3.5.2 XSD correction (mirror)**

*Type: CR For: Agreement  
 33.180 v14.5.0 CR-0096 rev 1 Cat: F (Rel-14)  
  
 Source: Motorola Solutions Germany*

(Replaces S3-190050)

**Discussion:**

Fixing issues on the cover page.

**Decision:** The document was **agreed**.

**S3-190051 [33.180] R15 Annex D.3.5.2 XSD correction (mirror)**

*Type: CR For: Agreement  
 33.180 v15.3.0 CR-0097 Cat: A (Rel-15)  
  
 Source: Motorola Solutions Germany*

**Abstract:**

(mirror) The keys EncUserDecryptKey, EncUserSigningKeySSK and EncUserPubTokenPVT need to resolve to EncryptedKey in the xenc shema.

**Decision:** The document was **revised to S3-190445**.

**S3-190445 [33.180] R15 Annex D.3.5.2 XSD correction (mirror)**

*Type: CR For: Agreement  
 33.180 v15.3.0 CR-0097 rev 1 Cat: A (Rel-15)  
  
 Source: Motorola Solutions Germany*

(Replaces S3-190051)

**Decision:** The document was **agreed**.

**S3-190052 [33.179] R13 IdMS interface security**

*Type: CR For: Agreement  
 33.179 v13.7.0 CR-0098 Cat: F (Rel-13)  
  
 Source: Motorola Solutions Germany*

**Abstract:**

Define IdMS interface security

**Decision:** The document was **agreed**.

**S3-190053 [33.180] R14 IdMS interface security (mirror)**

*Type: CR For: Agreement  
 33.180 v14.5.0 CR-0098 Cat: A (Rel-14)  
  
 Source: Motorola Solutions Germany*

**Abstract:**

(mirror) Define IdMS interface security

**Discussion:**

CableLAbs

**Decision:** The document was **revised to S3-190446**.

**S3-190446 [33.180] R14 IdMS interface security (mirror)**

*Type: CR For: Agreement  
 33.180 v14.5.0 CR-0098 rev 1 Cat: F (Rel-14)  
  
 Source: Motorola Solutions Germany*

(Replaces S3-190053)

**Decision:** The document was **agreed**.

**S3-190054 [33.180] R15 IdMS interface security (mirror)**

*Type: CR For: Agreement  
 33.180 v15.3.0 CR-0099 Cat: A (Rel-15)  
  
 Source: Motorola Solutions Germany*

**Abstract:**

(mirror) Define IdMS interface security

**Discussion:**

Juniper: the TLS profile has been moved to 33.210.

It was commented that there was a note in 33.310 pointing to 33.210 anyway and this could be fixed later.

**Decision:** The document was **revised to S3-190447**.

**S3-190447 [33.180] R15 IdMS interface security (mirror)**

*Type: CR For: Agreement  
 33.180 v15.3.0 CR-0099 rev 1 Cat: A (Rel-15)  
  
 Source: Motorola Solutions Germany*

(Replaces S3-190054)

**Decision:** The document was **agreed**.

**S3-190055 [33.179] R13 user service authorisation**

*Type: CR For: Agreement  
 33.179 v13.7.0 CR-0099 Cat: F (Rel-13)  
  
 Source: Motorola Solutions Germany*

**Abstract:**

Per results from ETSI MCPTT Plug test, the currently defined method of initial user service authorization using the SIP REGISTER message is unusable.

**Discussion:**

Samsung: we cannot delete a feature from Release 13 for this reason. We can wait for stage 3 before deleting this.

Tim (Motorola): leave it in Rel-13? It's ok, but even beyond stage 3 problems there is an interoperability problem. We should remove it from Rel-15, Rel-16.

Nokia: plug test results should be evaluated by Samsung and bring a paper with their conclusions. Samsung agreed to do that.

**ACTION: Evaluate plug tests results and come back with a paper evaluating the results.  
 (action on: Samsung / due by: 2019-05-06)**

**Decision:** The document was **not pursued**.

**S3-190056 [33.180] R14 user service authorisation (mirror)**

*Type: CR For: Agreement  
 33.180 v14.5.0 CR-0100 Cat: A (Rel-14)  
  
 Source: Motorola Solutions Germany*

**Abstract:**

(mirror) Per results from ETSI MCPTT Plug test, the currently defined method of initial user service authorization using the SIP REGISTER message is unusable.

**Decision:** The document was **not pursued**.

**S3-190057 [33.180] R15 user service authorisation (mirror)**

*Type: CR For: Agreement  
 33.180 v15.3.0 CR-0101 Cat: A (Rel-15)  
  
 Source: Motorola Solutions Germany*

**Abstract:**

(mirror) Per results from ETSI MCPTT Plug test, the currently defined method of initial user service authorization using the SIP REGISTER message is unusable.

**Decision:** The document was **not pursued**.

**S3-190058 [33.180] R14 InK clarifications**

*Type: CR For: Agreement  
 33.180 v14.5.0 CR-0102 Cat: F (Rel-14)  
  
 Source: Motorola Solutions Germany*

**Abstract:**

Clarify that an InK may be provisioned using the KMSInit Response or KMSKeyProv Response messages.

**Decision:** The document was **revised to S3-190448**.

**S3-190448 [33.180] R14 InK clarifications**

*Type: CR For: Agreement  
 33.180 v14.5.0 CR-0102 rev 1 Cat: F (Rel-14)  
  
 Source: Motorola Solutions Germany*

(Replaces S3-190058)

**Discussion:**

Revised to address issues on the cover page.

**Decision:** The document was **agreed**.

**S3-190059 [33.180] R15 InK clarifications (mirror)**

*Type: CR For: Agreement  
 33.180 v15.3.0 CR-0103 Cat: A (Rel-15)  
  
 Source: Motorola Solutions Germany*

**Abstract:**

(mirror) Clarify that an InK may be provisioned using the KMSInit Response or KMSKeyProv Response messages.

**Decision:** The document was **revised to S3-190449**.

**S3-190449 [33.180] R15 InK clarifications (mirror)**

*Type: CR For: Agreement  
 33.180 v15.3.0 CR-0103 rev 1 Cat: A (Rel-15)  
  
 Source: Motorola Solutions Germany*

(Replaces S3-190059)

**Discussion:**

Issues on the cover page.

**Decision:** The document was **agreed**.

**S3-190060 [33.180] R14 MCX identity clarifications**

*Type: CR For: Agreement  
 33.180 v14.5.0 CR-0104 Cat: F (Rel-14)  
  
 Source: Motorola Solutions Germany*

**Abstract:**

Identity management credentials (MC ID) may be mistakenly used for the mission critical identity of the user (MCX ID), exposing the set of login credentials.

**Decision:** The document was **revised to S3-190450**.

**S3-190450 [33.180] R14 MCX identity clarifications**

*Type: CR For: Agreement  
 33.180 v14.5.0 CR-0104 rev 1 Cat: F (Rel-14)  
  
 Source: Motorola Solutions Germany*

(Replaces S3-190060)

**Decision:** The document was **agreed**.

**S3-190061 [33.180] R15 MCX identity clarifications (mirror)**

*Type: CR For: Agreement  
 33.180 v15.3.0 CR-0105 Cat: A (Rel-15)  
  
 Source: Motorola Solutions Germany*

**Abstract:**

(mirror) Identity management credentials (MC ID) may be mistakenly used for the mission critical identity of the user (MCX ID), exposing the set of login credentials.

**Decision:** The document was **revised to S3-190451**.

**S3-190451 [33.180] R15 MCX identity clarifications (mirror)**

*Type: CR For: Agreement  
 33.180 v15.3.0 CR-0105 rev 1 Cat: A (Rel-15)  
  
 Source: Motorola Solutions Germany*

(Replaces S3-190061)

**Decision:** The document was **agreed**.

#### 7.5.9 Security Assurance Specifications (SCAS-SA3, SCAS\_PGW, SCAS\_eNB)

**S3-190091 Minimized kernel functions**

*Type: CR For: Agreement  
 33.117 v15.2.0 CR-0017 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Discussion:**

If agreed, this should become a mirror and we would need a new CR for Rel-14.

**Decision:** The document was **not pursued**.

**S3-190092 Minimized kernel functions**

*Type: CR For: Agreement  
 33.117 v16.0.0 CR-0018 Cat: A (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

rel-16 mirror

**Decision:** The document was **not pursued**.

**S3-190093 Protection from buffer overflows**

*Type: CR For: Agreement  
 33.117 v15.2.0 CR-0019 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Discussion:**

MCC commented that the error should be corrected in the earliest release of this spec,Rel-14.

Huawei: the test case is not impacted, only the examples.

NTT-Docomo agreed with removing the examples to keep the spec more aligned with the reality.

**Decision:** The document was **revised to S3-190456**.

**S3-190456 Protection from buffer overflows**

*Type: CR For: Agreement  
 33.117 v15.2.0 CR-0019 rev 1 Cat: A (Rel-15)  
  
 Source: Ericsson*

(Replaces S3-190093)

**Decision:** The document was **agreed**.

**S3-190094 Protection from buffer overflows**

*Type: CR For: Agreement  
 33.117 v16.0.0 CR-0020 Cat: A (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

rel-16 mirror

**Decision:** The document was **agreed**.

**S3-190095 Unused software**

*Type: CR For: Agreement  
 33.117 v15.2.0 CR-0021 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Discussion:**

Deutsche Telekom didn't agree with this change. The test was important to maintain.

Ericsson wasn't clear on how to test this.

NEC supported Deutsche Telekom, BT as well.

**Decision:** The document was **not pursued**.

**S3-190096 Unused software**

*Type: CR For: Agreement  
 33.117 v16.0.0 CR-0022 Cat: A (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

rel-16 mirror

**Decision:** The document was **not pursued**.

**S3-190097 No unsupported components**

*Type: CR For: Agreement  
 33.117 v15.2.0 CR-0023 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Discussion:**

Deutsche Telekom didn't agree with removing this test case. NEC and BT supported this.

**Decision:** The document was **not pursued**.

**S3-190098 No unsupported components**

*Type: CR For: Agreement  
 33.117 v16.0.0 CR-0024 Cat: A (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

rel-16 mirror

**Decision:** The document was **not pursued**.

**S3-190191 Editorial corrections in TS 33.117 R15**

*Type: CR For: Approval  
 33.117 v15.2.0 CR-0025 Cat: F (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

The paper proposes the corrections in Release 15 of TS 33.117.

**Discussion:**

It was agreed in order to see if Rel-14 had the same issue to be corrected.

**Decision:** The document was **revised to S3-190458**.

**S3-190458 Editorial corrections in TS 33.117 R15**

*Type: CR For: Approval  
 33.117 v15.2.0 CR-0025 rev 1 Cat: A (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell*

(Replaces S3-190191)

**Decision:** The document was **agreed**.

**S3-190220 Test Case: Mutual Authentication between Network Functions**

*Type: draftCR For: Approval  
 33.117 v16.0.0  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

The paper proposes a new sub-clause for one general baseline requirement and its corresponding test case applicable to all NFs utilizing SBI, which is mutual authentication between NFs.

**Decision:** The document was **noted**.

**S3-190393 New proposal on the length of password and other clarifications**

*Type: CR For: Approval  
 33.117 v15.2.0 CR-0026 Cat: F (Rel-15)  
  
 Source: Huawei, Hisilicon*

**Discussion:**

DT didn’t agree with the last note (third change).

NEC supported this change.

NTT-Docomo: Anti-spoofing in internal networks is necessary. Huawei commented that SA3 didn’t do this for every network element.

CableLabs didn't agree with the first change. NCSC suggested having longer simpler passwords was a better solution.

BT wasn’t in favour of this change either. It was decided to drop the first change.

BT: there are use cases in certain interfaces where we may want to allow this, for the note in the third change. BT was in favour of maintaining this.

DT didn’t agree with the second change either. There were arguments on the 100 accounts so this was taken offline.

BT wasn’t comfortable with having SA3 imposing limitations on the products.

**Decision:** The document was **revised to S3-190503**.

**S3-190503 New proposal on the length of password and other clarifications**

*Type: CR For: Approval  
 33.117 v15.2.0 CR-0026 rev 1 Cat: A (Rel-15)  
  
 Source: Huawei, Hisilicon*

(Replaces S3-190393)

**Decision:** The document was **agreed**.

**S3-190457 Protection from buffer overflows**

*Type: CR For: Agreement  
 33.117 v14.4.0 CR-0027 Cat: F (Rel-14)  
  
 Source: Ericsson*

**Decision:** The document was **agreed**.

**S3-190459 Editorial corrections**

*Type: CR For: Agreement  
 33.117 v14.4.0 CR-0028 Cat: F (Rel-14)  
  
 Source: Nokia*

**Decision:** The document was **agreed**.

**S3-190504 New proposal on the length of password and other clarification**

*Type: CR For: Agreement  
 33.117 v14.4.0 CR-0029 Cat: F (Rel-14)  
  
 Source: Huawei*

**Decision:** The document was **agreed**.

**S3-190505 New proposal on the length of password and other clarification**

*Type: CR For: Agreement  
 33.117 v16.0.0 CR-0030 Cat: A (Rel-16)  
  
 Source: Huawei*

**Decision:** The document was **agreed**.

#### 7.5.10 Security Aspects of Narrowband IOT (CIoT)

**S3-190035 Reply LS on UP Integrity Protection for Small Data in Early Data Transfer**

*Type: LS in For: (not specified)  
 Original outgoing LS: -, to -, cc -  
 Source: R3-187230*

**Decision:** The document was **withdrawn**.

**S3-190073 EDT UP IP handling of multiple PDCP PDUs**

*Type: CR For: Approval  
 33.401 v15.6.0 CR-0672 Cat: F (Rel-15)  
  
 Source: Huawei, Hisilicon*

**Discussion:**

Intel: RAN2 hasn’t discussed the LS that we sent to them, so we don’t need to pursue this CR during this meeting. Besides this solution doesn’t cover a particular scenario and we don’t agree with this solution.

This was left open.

**Decision:** The document was **not pursued**.

**S3-190465 EDT UP IP handling of multiple PDCP PDUs**

*Type: CR For: Approval  
 33.401 v15.6.0 CR-0672 rev 1 Cat: F (Rel-15)  
  
 Source: Huawei, Hisilicon*

**Decision:** The document was **withdrawn**.

**S3-190076 LS to RAN2/3 on EDT data integrity protection**

*Type: LS out For: Approval  
 to RAN2, RAN3  
 Source: Huawei, Hisilicon*

**Decision:** The document was **revised to S3-190454**.

**S3-190454 LS to RAN2/3 on EDT data integrity protection**

*Type: LS out For: Approval  
 to RAN2,RAN3  
 Source: Huawei, Hisilicon*

(Replaces S3-190076)

**Decision:** The document was **approved**.

**S3-190298 EDT correction – input "S" to calculation of HASHUE-data and HASHeNB-data**

*Type: CR For: Agreement  
 33.401 v15.6.0 CR-0673 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

Correction of the term "uplink PDCP data PDU" by changing it to "UL EDT data", which covers multiple PDUs.

**Discussion:**

Ericsson considered that RAN2 had the responsibility for a solution and not SA3. Huawei disagreed.

Ericsson: we don’t need to take a stand on how RAN will solve the issue. We can wait for them. Huawei replied that SA3 knew what RAN solution would be about, but it didn’t work when having multiple PDCP PDUs.

Nokia: calculation at the MAC layer feasibility should be pondered by RAN2, not SA3. Let's ask them about this in an LS. Qualcomm supported involving RAN2.

Docomo commented that SA3 may reconsider the requirement for having it at the MAC layer and make it application dependent.

It was agreed to send an LS to RAN2 with several questions involving potential solutions to the multiple PDU issue.

**Decision:** The document was **not pursued**.

**S3-190299 EDT correction – length of HASHUE-data and HASHeNB-data**

*Type: CR For: Agreement  
 33.401 v15.6.0 CR-0674 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

Correction of the length of HASHue-data and HASHend-data by removing unnecessary truncation that increases collision probability.

**Discussion:**

Qualcomm: solution dependent? We may have to revisit this based on the solution we settle down on.

Ericsson clarified that this was sent through the RAN nodes, not transferred over the air.

The sentence needed rewording so it was taken offline.

**Decision:** The document was **revised to S3-190455**.

**S3-190455 EDT correction – length of HASHUE-data and HASHeNB-data**

*Type: CR For: Agreement  
 33.401 v15.6.0 CR-0674 rev 1 Cat: F (Rel-15)  
  
 Source: Ericsson*

(Replaces S3-190299)

**Decision:** The document was **agreed**.

**S3-190300 EDT correction – input to calculation of shortResumeMAC-I**

*Type: CR For: Agreement  
 33.401 v15.6.0 CR-0675 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

Correction of the input to calculation of sRMAC-I by adding the "missed" discriminator, and fixing the order of input.

**Decision:** The document was **agreed**.

**S3-190301 EDT correction – clarification of NOTE about no-integrity protection for non-EDT data**

*Type: CR For: Agreement  
 33.401 v15.6.0 CR-0676 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

Clarification of NOTE

**Discussion:**

Huawei didn’t agree with the CR.Ericsson could come back once the solution was defined.

**Decision:** The document was **not pursued**.

**S3-190302 LS on EDT security**

*Type: LS out For: Approval  
 to RAN2, RAN3  
 Source: Ericsson*

**Abstract:**

LS to RAN groups to give update on our latest changes.

**Decision:** The document was **noted**.

#### 7.5.11 EPC enhancements to support 5G New Radio via Dual Connectivity (EDCE5)

#### 7.5.12 Northbound APIs Security for SCEF - SCS/AS Interworking (NAPS\_Sec) (Rel-15)

#### 7.5.13 Security Aspects of Common API Framework for 3GPP Northbound APIs (CAPIF\_Sec) (Rel-15)

**S3-190025 LS on OAuth authorization flows supported for Northbound APIs**

*Type: LS in For: (not specified)  
 Original outgoing LS: -, to -, cc -  
 Source: C3-187660*

**Decision:** The document was **replied to in S3-190452**.

**S3-190452 Reply to: LS on OAuth authorization flows supported for Northbound APIs**

*Type: LS out For: approval  
 to CT3, cc SA6  
 Source: Nokia*

**Decision:** The document was **approved**.

**S3-190046 LS response on API invoker onboarding**

*Type: LS in For: (not specified)  
 Original outgoing LS: -, to -, cc -  
 Source: S6-181848*

**Decision:** The document was **noted**.

**S3-190321 Editorial corrections in CAPIF TS**

*Type: CR For: Approval  
 33.122 v15.2.0 CR-0018 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

Small editorial corrections.

**Decision:** The document was **agreed**.

#### 7.5.14 PLMN RAT selection (Steering of Roaming) (Rel-15)

**S3-190100 Name correction of the Nudm\_SDM\_Notification service operation**

*Type: CR For: Agreement  
 33.501 v15.3.1 CR-0503 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Decision:** The document was **agreed**.

#### 7.5.15 Battery Efficient Security for very low Throughput Machine Type Communication Devices (BEST\_MTC\_Sec) (Rel-15)

**S3-190009 Discussion document on the changes required to BEST for the authentication available on the 5G options**

*Type: discussion For: Discussion  
 33.163 v..  
 Source: Vodafone GmbH*

**Abstract:**

This document discusses the authentication service interface between BEST and the 7 options for NR/LTE

**Discussion:**

Deutsche Telekom: we support option one.

Nokia: we are having a similar issue in the AKMA work item. We prefer to analyse both before making a decision.

NEC supported Nokia. Option 2 could be studied in the scope of AKMA and option one was fine too.

BT: we are losing the focus on the battery efficiency and going for key sharing instead.

Vodafone proposed to reword the option 2 and include in the scope of the AKMA study with contributions. Option one would be the way to go.

**Decision:** The document was **noted**.

**S3-190010 CR to 33.163 - Addition of HSE to NR core authentication interface**

*Type: CR For: Endorsement  
 33.163 v16.0.0 CR-0008 Cat: B (Rel-16)  
  
 Source: Vodafone GmbH*

**Decision:** The document was **withdrawn**.

**S3-190024 LS on EAS-C&U support**

*Type: LS in For: (not specified)  
 Original outgoing LS: -, to -, cc -  
 Source: C3-186313*

**Discussion:**

Vodafone rejected CT3's last comment on the protocol details.

ORANGE: we have already an annex with these protocols and CT3 is going to talk about the same protocols with differences. We should avoid that.

Vodafone: there is no requirement for the work they are doing. We need to point them out that.

**Decision:** The document was **replied to in S3-190453**.

**S3-190453 Reply to: LS on EAS-C&U support**

*Type: LS out For: approval  
 to CT3  
 Source: Vodafone*

**Decision:** The document was **approved**.

#### 7.5.16 Other work items

### 7.6 New Work Item proposals

**S3-190011 draft WID for Addition of HSE to 5G core interface for authentication (if required)**

*Type: WID new For: Endorsement  
 Source: Vodafone GmbH*

(Replaces S3-183450)

**Abstract:**

WID (if required) for the CR to the BEST TS 33.163 to add authentication connection for NR.

**Decision:** The document was **withdrawn**.

**S3-190125 Discussion on providing AS security during RRC connection establishment to protect NSSAI**

*Type: discussion For: Agreement  
 Source: NEC Europe Ltd*

**Abstract:**

Proposals for providing AS security to encrypt the NSSAIs.

**Decision:** The document was **withdrawn**.

**S3-190128 New WID on providing the encryption of slice identity at the AS layer during RRC connection establishment procedure**

*Type: WID new For: Approval  
 Source: NEC Europe Ltd*

**Abstract:**

This document proposes a WID to provide solution to encrypt during the RRC connection establishment procedure.

**Discussion:**

Nokia: SA3 and SA2 have agreed on a solution already. If a new solution is needed, it should be triggered in SA2 and not here. Ericsson agreed with this.

NEC clarified that this was presented in SA2 and that they directed the discussions to SA3. Deustche Telekom supported this study.

Vodafone: this is a study item, not a Work Item.

NEC: it's a TR and CRs for the TS. Vodafone replied that wasn't the way of working.

Supporting the study in Rel-16: NEC, Huawei,NIST,BT,KPN,Docomo,Intel,ARICC,T-Mobile.

Not in Rel-16: Nokia.

Qualcomm: key issue in the key authentication study that we already have. Huawei agreed with this. NTT-Docomo preferred to have a separate study.

The Chair recommended to decrease the number of study items, for the sake of progress.

**Decision:** The document was **noted**.

**S3-190343 Vertical - Discussion of WID for 5GS Vertical\_LAN\_SEC**

*Type: discussion For: Endorsement  
 33.819 v..  
 Source: Nokia, Nokia Shanghai Bell*

**Discussion:**

Nokia clarified that the document referred to Rel-16.

Ericsson pointed out that if this was going for Rel-16 there was no such rush.

Huawei, ORANGE commented that there was still time and the rush was not justified.

Vodafone commented that the WID proposed was too general.

**Decision:** The document was **noted**.

**S3-190344 WID proposal for 5GS Vertical\_LAN\_SEC**

*Type: WID new For: Agreement  
 Source: Nokia, Nokia Shanghai Bell*

**Decision:** The document was **noted**.

**S3-190356 New WID on Security for NR Integrated Access and Backhaul**

*Type: WID new For: Approval  
 Source: Samsung*

**Decision:** The document was **revised to S3-190442**.

**S3-190442 New WID on Security for NR Integrated Access and Backhaul**

*Type: WID new For: Agreement  
 Source: Samsung*

(Replaces S3-190356)

**Discussion:**

It was agreed to reformulate this as a SID.

**Decision:** The document was **revised to S3-190460**.

**S3-190460 New SID on Security for NR Integrated Access and Backhaul**

*Type: SID new For: Agreement  
 Source: Samsung*

(Replaces S3-190442)

**Discussion:**

Qualcomm proposed to start working on pCRs in the ad-hoc before the study was approved in SA.

**Decision:** The document was **agreed**.

**S3-190357 Security framework for the NR integrated access backhaul**

*Type: discussion For: Decision  
 Source: Samsung*

**Discussion:**

Samsung clarified that the work in RAN was in normative phase. The purpose was to create a draftCR that would eventually become a CR to 33.501. Vodafone didn’t agree with this style of work and preferred to have a Study Item. Samsung commented that the time scales were too limited to have both SID and WID.

The Chair proposed to have a Study that could last for two meetings and then a Work Item to be sent for approval to SA together with the necessary CRs in one go. This was accepted.

**Decision:** The document was **noted**.

**S3-190363 New WID on Enhancements for Security aspects of Common API Framework**

*Type: WID new For: (not specified)  
 Source: Samsung, China Telecom, China Unicom, Nokia*

**Discussion:**

Samsung clarified that SA6 had finished their work and that this WID would only need a single CR to be brought in the next meeting.

Vodafone: there is a clear single solution for this? No other solutions to be studied?

NTT-Docomo: we don’t need studies for all the CRs we make.

**Decision:** The document was **revised to S3-190461**.

**S3-190461 New WID on Enhancements for Security aspects of Common API Framework**

*Type: WID new For: -  
 Source: Samsung, China Telecom, China Unicom, Nokia*

(Replaces S3-190363)

**Decision:** The document was **agreed**.

**S3-190399 Discussion on providing AS security during RRC connection establishment to protect slice identity**

*Type: discussion For: Agreement  
 Source: NEC Corporation*

**Abstract:**

This document proposes a WID to provide solution to encrypt during the RRC connection establishment procedure

**Decision:** The document was **noted**.

## 8 Studies

### 8.1 Study on Security Aspects of the 5G Service Based Architecture (FS\_SBA-Sec) (Rel-15)

**S3-190117 Update to Study Item Description FS\_SBA\_Sec: Enhanced-SBA aspects**

*Type: SID revised For: Approval  
 Source: Telekom Deutschland GmbH*

**Discussion:**

MCC commented that taking the Rel-15 study and expanding it for a study in Rel-16 looked a bit unusual. It was agreed to do it like this since the TR hadn’t been approved. MCC added that the document should take the original SID and add revision marks for the changes. Any discussion should be part of a different document.

**Decision:** The document was **revised to S3-190464**.

**S3-190464 Update to Study Item Description FS\_SBA\_Sec: Enhanced-SBA aspects**

*Type: SID revised For: Agreement  
 Source: Telekom Deutschland GmbH*

(Replaces S3-190117)

**Decision:** The document was **agreed**.

**S3-190105 Update to Study Item Description FS\_SBA\_Sec: Security for inter-PLMN user plane traffic (N9 reference point)**

*Type: SID revised For: (not specified)  
 Source: Ericsson, Juniper Networks, Deutsche Telekom AG*

**Decision:** The document was **merged**.

**S3-190367 Discussion paper on N9 firewall for inter-PLMN GTP-U filtering**

*Type: discussion For: Endorsement  
 33.855 v..  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Discussion paper on N9 firewall for inter-PLMN GTP-U filtering

**Decision:** The document was **noted**.

**S3-190114 New Key Issue: Basic security requirements on SFSF message transport**

*Type: pCR For: Approval  
 33.855 v1.3.0  
 Source: Telekom Deutschland GmbH*

**Decision:** The document was **noted**.

**S3-190115 New Key Issue: Protection of SFSF interfaces**

*Type: pCR For: Approval  
 33.855 v1.3.0  
 Source: Telekom Deutschland GmbH*

**Decision:** The document was **noted**.

**S3-190119 Inter-PLMN N9 Security**

*Type: discussion For: Endorsement  
 Source: Telekom Deutschland GmbH*

**Discussion:**

BT: it's up to the study to decide whether this is to be performed by a "box".

Ericsson: let's study this as a key issue.

TIM: SBA architecture is for control plane interfaces. N9 is a user plane interface. How is N9 security related to SBA architecture and why is it treated inside this SID? NTT-Docomo replied that SBA architecture should be in one study and the N9 part in a new study,

**Decision:** The document was **noted**.

**S3-190102 Update to Study Item Description FS\_SBA\_Sec: Security for inter-PLMN user plane traffic (N9 reference point)**

*Type: SID revised For: Approval  
 Source: Ericsson*

**Decision:** The document was **withdrawn**.

### 8.2 Study on Long Term Key Update Procedures (FS\_LTKUP) (Rel-16)

**S3-190012 CR to 33.834 - implementation of changes requested by edithelp**

*Type: CR For: Endorsement  
 33.834 v16.0.0 CR-0001 Cat: D (Rel-16)  
  
 Source: Vodafone GmbH*

**Decision:** The document was **agreed**.

### 8.3 Study on Supporting 256-bit Algorithms for 5G (FS\_256-Algorithms) (Rel-16)

**S3-190013 CR to 33.841 - implementation of requested by edithelp**

*Type: CR For: Endorsement  
 33.841 v16.0.0 CR-0001 Cat: D (Rel-16)  
  
 Source: Vodafone GmbH*

**Decision:** The document was **agreed**.

**S3-190216 CR to TR 33.841 regarding key derivation function**

*Type: CR For: (not specified)  
 33.841 v16.0.0 CR-0002 Cat: F (Rel-16)  
  
 Source: China Mobile*

**Discussion:**

Ericsson: the note is not clear.

NCSC commented that this wasn’t necessary for the study, which is finished.

**Decision:** The document was **not pursued**.

### 8.4 Security aspects of single radio voice continuity from 5G to UTRAN (FS\_5G\_UTRAN\_SEC) (Rel-16)

### 8.5 Study on authentication and key management for applications based on 3GPP credential in 5G IoT (FS\_AKMA)(Rel-16)

**S3-190166 Solution on privacy protection of SUPI**

*Type: pCR For: Approval  
 33.835 v0.2.0  
 Source: ZTE Corporation*

**Discussion:**

Vodafone: This assumes that we are only using GPM whereas AKMA's scope will be wider.

BT: no distribution of private key here.

Qualcomm: this solution adds nothing, it should be noted.

Vodafone: the solution doesn’t meet the criteria.

**Decision:** The document was **noted**.

**S3-190168 Resolve Editor's note in Solution for bootstrapping authentication of AKMA**

*Type: pCR For: Approval  
 33.835 v0.2.0  
 Source: Huawei, Hisilicon*

**Decision:** The document was **approved**.

**S3-190169 Solution for Key freshness in AKMA**

*Type: pCR For: Approval  
 33.835 v0.2.0  
 Source: Huawei, Hisilicon*

**Discussion:**

Vodafone, ORANGE: the document is badly structured. You have a solution in mind, write the key issues properly.

There was no support for this document.

**Decision:** The document was **noted**.

**S3-190196 Roaming key issue for AKMA**

*Type: pCR For: Approval  
 33.835 v0.2.0  
 Source: Huawei, HiSilicon*

**Discussion:**

ORANGE: why is the proxy needed?

Huawei: it’s for the roaming.

Qualcomm, Gemalto didn’t see the point for having a proxy either.

Qualcomm: roaming needs to be supported, but we only need a description of the key issue to start with. Remove everything else and come back for the next meeting with the rest.

**Decision:** The document was **noted**.

**S3-190527 Roaming key issue for AKMA**

*Type: pCR For: Approval  
 33.835 v0.2.0  
 Source: Huawei, HiSilicon*

**Decision:** The document was **withdrawn**.

**S3-190197 architecture solution for AKMA with non-standalone function**

*Type: pCR For: Approval  
 33.835 v0.2.0  
 Source: Huawei, HiSilicon*

**Discussion:**

ORANGE: why mandating a specific authentication for the network in AKMA?

Huawei: we want to reuse primary authentication. It's a general authentication procedure.

ORANGE: this authentication is not needed.

Vodafone: missing how the enterprise interacts with the system.

Qualcomm: if you don’t want to use primary authentication describe it somewhere else. This is mixing primary authentication with Kusf authentication.

Vodafone: this is two different solutions mixed.

**Decision:** The document was **noted**.

**S3-190213 New Key Issue on use of established keys for AKMA**

*Type: pCR For: Approval  
 33.835 v0.2.0  
 Source: NEC Corporation*

**Abstract:**

This contribution proposes a key issue for using established keys as root key for AKMA

**Decision:** The document was **noted**.

**S3-190214 Solution for using established keys for AKMA**

*Type: pCR For: Approval  
 33.835 v0.2.0  
 Source: NEC Corporation*

**Abstract:**

This contribution proposes a solution for using KAUSF or KSEAF in AKMA

**Decision:** The document was **revised to S3-190558**.

**S3-190558 Solution for using established keys for AKMA**

*Type: pCR For: Approval  
 33.835 v0.2.0  
 Source: NEC Corporation*

(Replaces S3-190214)

**Decision:** The document was **approved**.

**S3-190228 Proposed revision of solution 6**

*Type: pCR For: (not specified)  
 33.835 v0.2.0  
 Source: China Mobile,ZTE Corporation*

**Discussion:**

ORANGE: this is mixing two authentication procedures.

ZTE agreed to separate them.

ORANGE then commented that the authentication procedure looked strange. ORANGE didn’t see it clear that there were two procedures after all and couldn’t agree with the contribution.

ZTE wanted to add an editor's note on the need for separating both procedures but this was rejected by ORANGE. It had to be taken offline.

**Decision:** The document was **noted**.

**S3-190248 New key issue: Key revocation**

*Type: pCR For: Approval  
 33.835 v0.2.0  
 Source: Ericsson*

**Discussion:**

Vodafone: more requirements and definitions are needed. For example, who revokes the application keys.

ORANGE replied that it was the network who revoked the keys.

Qualcomm proposed to add an editor's note to proceed with the work during the next meeting.

**Decision:** The document was **revised to S3-190528**.

**S3-190528 New key issue: Key revocation**

*Type: pCR For: Approval  
 33.835 v0.2.0  
 Source: Ericsson*

(Replaces S3-190248)

**Decision:** The document was **approved**.

**S3-190249 Protocol clarifications to solution 2**

*Type: pCR For: Approval  
 33.835 v0.2.0  
 Source: Ericsson*

**Discussion:**

Vodafone: the third party application doesn’t seem represented.

Ericsson: this is about the authentication procedure, bootstrapping, not about how the keys are used.

Ericsson: this is purely used plane based. A copy of GBA making sure that it works in 5G.

ORANGE: revocation of the keys in the UE needs to be clarified.

It was agreed to add an editor's note stating the above.

**Decision:** The document was **revised to S3-190529**.

**S3-190529 Protocol clarifications to solution 2**

*Type: pCR For: Approval  
 33.835 v0.2.0  
 Source: Ericsson*

(Replaces S3-190249)

**Decision:** The document was **approved**.

**S3-190250 Evaluation of solution 2**

*Type: pCR For: Approval  
 33.835 v0.2.0  
 Source: Ericsson*

**Discussion:**

ORANGE: key issues are still coming, having the evaluation is a bit premature. Qualcomm agreed.

**Decision:** The document was **noted**.

**S3-190251 New solution:Key revocation**

*Type: pCR For: Approval  
 33.835 v0.2.0  
 Source: Ericsson*

**Discussion:**

ORANGE: remove the evaluation.

Vodafone: consequences are not described in detail.

**Decision:** The document was **revised to S3-190530**.

**S3-190530 New solution:Key revocation**

*Type: pCR For: Approval  
 33.835 v0.2.0  
 Source: Ericsson*

(Replaces S3-190251)

**Decision:** The document was **approved**.

**S3-190252 New solution: Implicit Bootstrapping**

*Type: pCR For: Approval  
 33.835 v0.2.0  
 Source: Ericsson*

**Discussion:**

NEC proposed to alter the order of some clauses.

Ericsson: too early to decide the solution since there are still revocation aspects that need to be considered.

**Decision:** The document was **revised to S3-190531**.

**S3-190531 New solution: Implicit Bootstrapping**

*Type: pCR For: Approval  
 33.835 v0.2.0  
 Source: Ericsson*

(Replaces S3-190252)

**Decision:** The document was **approved**.

**S3-190253 New solution: AKMA authentication via the control plane**

*Type: pCR For: Approval  
 33.835 v0.2.0  
 Source: Ericsson*

**Decision:** The document was **approved**.

**S3-190316 New solution - Battery efficient AKMA**

*Type: pCR For: Approval  
 33.835 v0.2.0  
 Source: KPN*

**Abstract:**

This contribution introduces a new solution for battery efficient AKMA.

**Decision:** The document was **not treated**.

**S3-190326 New KI: Interworking between AKMA and GBA**

*Type: pCR For: Approval  
 33.835 v0.2.0  
 Source: Ericsson*

**Abstract:**

Investigate if interworking between AKMA and GBA introduces any new security concerns

**Decision:** The document was **not treated**.

**S3-190350 Solution to KI#9 Key separation for AKMA AFs**

*Type: pCR For: Approval  
 33.835 v0.2.0  
 Source: NEC Corporation*

**Abstract:**

This pCR proposes a solution for Key issue #9 specified in study item on AKMA

**Decision:** The document was **not treated**.

**S3-190385 pCR: Reusing KAUSF for AKMA**

*Type: pCR For: Approval  
 33.835 v0.2.0  
 Source: Qualcomm Incorporated*

**Decision:** The document was **not treated**.

**S3-190526 Draft TR 33.835**

*Type: draft TR For: Approval  
 33.835 v0.3.0  
 Source: China Mobile*

**Decision:** The document was **approved**.

### 8.6 Study on evolution of Cellular IoT security for the 5G System (FS\_CIoT\_sec\_5G) (Rel-16)

**S3-190268 Proposal for content to introduction clause**

*Type: pCR For: Approval  
 33.861 v0.3.0  
 Source: Ericsson*

**Discussion:**

Huawei: refer to SA2 with regards to architecture. References are wrong. Clash with 194.

Vodafone: no clash with 194, really.

Vodafone and TIM agreed to have this in the introduction.

**Decision:** The document was **revised to S3-190470**.

**S3-190470 Proposal for content to introduction clause**

*Type: pCR For: Approval  
 33.861 v0.3.0  
 Source: Ericsson*

(Replaces S3-190268)

**Decision:** The document was **approved**.

**S3-190194 Clarifications CIOT security assumptions**

*Type: pCR For: Approval  
 33.861 v0.3.0  
 Source: Huawei, HiSilicon*

**Discussion:**

Vodafone: it's clearer to have the introduction of 268 instead of having it in here.

ORANGE: why comparing it with EPS? State that the Ues shall follow 5G requirements.

Huawei: we may miss solutions for IoT Ues that have EPS solutions (e.g. if they are redirected to EPS).

ORANGE: if they are connected to 5G the Ues shall have security as strong as 5G.

**Decision:** The document was **revised to S3-190473**.

**S3-190473 Clarifications CIOT security assumptions**

*Type: pCR For: Approval  
 33.861 v0.3.0  
 Source: Huawei, HiSilicon*

(Replaces S3-190194)

**Decision:** The document was **approved**.

**S3-190269 Proposal for content to clause 4**

*Type: pCR For: Approval  
 33.861 v0.3.0  
 Source: Ericsson*

**Discussion:**

Huawei: reference SA2; it is also referring to things that SA2 hasn’t decided yet.

Ericsson: SA2 concluded.

**Decision:** The document was **revised to S3-190472**.

**S3-190472 Proposal for content to clause 4**

*Type: pCR For: Approval  
 33.861 v0.3.0  
 Source: Ericsson*

(Replaces S3-190269)

**Decision:** The document was **approved**.

**S3-190172 Address EN in Key Issue 4 of Definition of Misbehaving UE**

*Type: pCR For: Approval  
 33.861 v0.3.0  
 Source: Huawei, Hisilicon*

**Discussion:**

NEC: the clause 8.8.1 in 23.791 does have nothing to do with the misbehaving UE.

Vodafone preferred to have this moved to the Definitions clause.

Qualcomm: we need to understand the definition of misbehaving UE in the context of CIoT.

Huawei: we don’t want to define anything, just to use an existing definition.

**Decision:** The document was **revised to S3-190474**.

**S3-190474 Address EN in Key Issue 4 of Definition of Misbehaving UE**

*Type: pCR For: Approval  
 33.861 v0.3.0  
 Source: Huawei, Hisilicon*

(Replaces S3-190172)

**Decision:** The document was **approved**.

**S3-190173 New Key Issue for NAS based Redirection between Core Networks**

*Type: pCR For: Approval  
 33.861 v0.3.0  
 Source: Huawei, Hisilicon*

**Discussion:**

Vodafone: the key issue is the bidding attack. The anti-bidding down is the solution.

NEC: this problem is not specific for IoT. NEC supported this.

CableLabs supported having this threat.

NTT-Docomo: What happens if there is no key negotiated, key wrong, etc? What’s there it is a solution specific requirement.

Vodafone: there is nothing that says here what protection we have in the current system. Then explain why it could be unprotected.

**Decision:** The document was **revised to S3-190475**.

**S3-190475 New Key Issue for NAS based Redirection between Core Networks**

*Type: pCR For: Approval  
 33.861 v0.3.0  
 Source: Huawei, Hisilicon*

(Replaces S3-190173)

**Decision:** The document was **approved**.

**S3-190270 A new key issue for privacy protection of new parameters for CIoT included in NAS messages**

*Type: pCR For: Approval  
 33.861 v0.3.0  
 Source: Ericsson*

**Discussion:**

Huawei: wait for SA2 to have the parameters that need to be privacy protected.

ORANGE: remove requirements, keep the key issue, analyse parameters as they come.

**Decision:** The document was **revised to S3-190476**.

**S3-190476 A new key issue for privacy protection of new parameters for CIoT included in NAS messages**

*Type: pCR For: Approval  
 33.861 v0.3.0  
 Source: Ericsson*

(Replaces S3-190270)

**Decision:** The document was **approved**.

**S3-190314 New Key Issue: Subscription identifier exposure outside 3GPP network**

*Type: pCR For: Approval  
 33.861 v0.3.0  
 Source: Ericsson India Private Limited*

**Discussion:**

ZTE: the requirement is not clear, it's also a generic one not related to cIoT. There is a requirement in 33.501 for the AMF already. Vodafone supported this.

Ericsson: there is no requirement with the NIDD API involved.

**Decision:** The document was **noted**.

**S3-190208 Evaluation text for solution #2**

*Type: pCR For: Approval  
 33.861 v0.3.0  
 Source: NEC Corporation*

**Abstract:**

This contribution introduces evaluation texts for solution #2 in TR 33.861 v0.3.0.

**Discussion:**

Vodafone: we are still adding key issues. Will you update this when new key issues will be added?

NEC: this is the evaluation for a specific solution from last meeting.

KPN: this looks like an evaluation for all key issues, this is very generic.

Vodafone: editor's note on adding an evaluation for future key issues.

**Decision:** The document was **revised to S3-190479**.

**S3-190479 Evaluation text for solution #2**

*Type: pCR For: Approval  
 33.861 v0.3.0  
 Source: NEC Corporation*

(Replaces S3-190208)

**Decision:** The document was **approved**.

**S3-190265 Updates to Solution #3: Security solution for MO SMS at AMF re-allocation**

*Type: pCR For: Approval  
 33.861 v0.3.0  
 Source: Ericsson*

**Discussion:**

Huawei: add an editor's note on why this assumption is made in the solution. Qualcomm supported this.

Ericsson: this is an editor's note on existing text. Bring it with a contribution. Huawei commented that it was impacted by the new text.

**Decision:** The document was **revised to S3-190480**.

**S3-190480 Updates to Solution #3: Security solution for MO SMS at AMF re-allocation**

*Type: pCR For: Approval  
 33.861 v0.3.0  
 Source: Ericsson*

(Replaces S3-190265)

**Decision:** The document was **approved**.

**S3-190077 Update Solution #4 to use HASHUE-data as in TS33.401**

*Type: pCR For: Approval  
 33.861 v0.3.0  
 Source: Huawei, Hisilicon*

**Decision:** The document was **approved**.

**S3-190266 Updates to Solution #5: Security solution for small data included in initial NAS signalling at mobility**

*Type: pCR For: Approval  
 33.861 v0.3.0  
 Source: Ericsson*

**Decision:** The document was **revised to S3-190481**.

**S3-190481 Updates to Solution #5: Security solution for small data included in initial NAS signalling at mobility**

*Type: pCR For: Approval  
 33.861 v0.3.0  
 Source: Ericsson*

(Replaces S3-190266)

**Decision:** The document was **approved**.

**S3-190195 CIOT solution 6 improvement**

*Type: pCR For: Approval  
 33.861 v0.3.0  
 Source: Huawei, HiSilicon*

**Decision:** The document was **approved**.

**S3-190074 Details of protecting gNB from RRC DoS attack**

*Type: pCR For: Approval  
 33.861 v0.3.0  
 Source: Huawei, Hisilicon*

**Discussion:**

Vodafone: no drawbacks at all in the evaluation, impacts and no sales pitch. Not clear which key issue is being evaluated.

**Decision:** The document was **revised to S3-190482**.

**S3-190482 Details of protecting gNB from RRC DoS attack**

*Type: pCR For: Approval  
 33.861 v0.3.0  
 Source: Huawei, Hisilicon*

(Replaces S3-190074)

**Decision:** The document was **approved**.

**S3-190075 Resolving Editor’s Note for solution #7 (clause 6.7)**

*Type: pCR For: Approval  
 33.861 v0.3.0  
 Source: Huawei, Hisilicon*

**Decision:** The document was **approved**.

**S3-190382 Solution for small data at idle mode mobility**

*Type: pCR For: Approval  
 33.861 v0.3.0  
 Source: Qualcomm Incorporated*

**Discussion:**

Vodafone: solution details are not really detailed.

It was agreed to add an editor's note to add more details in the future.

**Decision:** The document was **revised to S3-190483**.

**S3-190483 Solution for small data at idle mode mobility**

*Type: pCR For: Approval  
 33.861 v0.3.0  
 Source: Qualcomm Incorporated*

(Replaces S3-190382)

**Decision:** The document was **approved**.

**S3-190368 Protecting small data at idle mobility using the Registration Complete message**

*Type: pCR For: Approval  
 33.861 v0.3.0  
 Source: Qualcomm Incorporated*

**Discussion:**

Ericsson: not aligned with SA2 procedure on data delivery.

Qualcomm: SA2 is consulting CT1 on this issue.

NEC: this issue needs to be discussed in SA2.

Vodafone: this is a study. No point to discuss with SA2 until it is selected. The comment should be part of the evaluation of the solution. Huawei agreed, since this was part of the usual process performed in SA3.

It was agreed to add an editor's note.

**Decision:** The document was **revised to S3-190484**.

**S3-190484 Protecting small data at idle mobility using the Registration Complete message**

*Type: pCR For: Approval  
 33.861 v0.3.0  
 Source: Qualcomm Incorporated*

(Replaces S3-190368)

**Decision:** The document was **approved**.

**S3-190171 New Solution Security-Property-Group-based Mitigation for DDoS Attack Triggered by Malicious Applications on the UE**

*Type: pCR For: Approval  
 33.861 v0.3.0  
 Source: Huawei, Hisilicon*

**Discussion:**

Juniper: this is an operational issue for operators. It should be treated outside security. QUALCOMM agreed with Juniper; it's application level.

Alf (NTT-Docomo): not advisable to have standardised these kind of mechanisms since it would be too exposed to the public.

It was agreed to add two editor's notes.

Qualcomm suggested the need for discussion papers justifying why these kind of solutions should be justified.

ORANGE: editor's note on investigating whether this solutions brings new DoS attacks.

**Decision:** The document was **revised to S3-190485**.

**S3-190485 New Solution Security-Property-Group-based Mitigation for DDoS Attack Triggered by Malicious Applications on the UE**

*Type: pCR For: Approval  
 33.861 v0.3.0  
 Source: Huawei, Hisilicon*

(Replaces S3-190171)

**Decision:** The document was **approved**.

**S3-190187 Solution for DDoS attack mitigation in CIoT**

*Type: pCR For: Approval  
 33.861 v0.3.0  
 Source: Huawei, Hisilicon*

**Discussion:**

Ericsson: editor's note on how this filter is determined. This was agreed.

**Decision:** The document was **revised to S3-190486**.

**S3-190486 Solution for DDoS attack mitigation in CIoT**

*Type: pCR For: Approval  
 33.861 v0.3.0  
 Source: Huawei, Hisilicon*

(Replaces S3-190187)

**Decision:** The document was **approved**.

**S3-190308 Solution for Key Issue #7: Key refreshing for protection of small data**

*Type: pCR For: Approval  
 33.861 v0.3.0  
 Source: Lenovo, Motorla Mobility*

**Abstract:**

This contribution provides a solution for key refreshing for frequent and infrequent small data for inclusion into TR 33.861.

**Decision:** The document was **revised to S3-190488**.

**S3-190488 Solution for Key Issue #7: Key refreshing for protection of small data**

*Type: pCR For: Approval  
 33.861 v0.3.0  
 Source: Lenovo, Motorla Mobility*

(Replaces S3-190308)

**Decision:** The document was **approved**.

**S3-190271 Solution for privacy protection of new parameters for CIoT included in NAS messages**

*Type: pCR For: Approval  
 33.861 v0.3.0  
 Source: Ericsson*

**Decision:** The document was **approved**.

**S3-190170 New Conclusion for Small Data Transfer via NAS Signalling**

*Type: pCR For: Approval  
 33.861 v0.3.0  
 Source: Huawei, Hisilicon*

**Discussion:**

Vodafone: too premature for having conclusions. We still have lot of new key issues.

Nokia supported Huawei in order to make progress and not delay anything.

Ericsson: we should have a conclusion for each key issue as SA2 is doing.

**Decision:** The document was **revised to S3-190489**.

**S3-190489 New Conclusion for Small Data Transfer via NAS Signalling**

*Type: pCR For: Approval  
 33.861 v0.3.0  
 Source: Huawei, Hisilicon*

(Replaces S3-190170)

**Decision:** The document was **approved**.

**S3-190330 Conclusion for Key Issue #9**

*Type: pCR For: (not specified)  
 33.861 v0.3.0  
 Source: Ericsson*

**Discussion:**

Vodafone: we changed some of the aspects related to this. We should finish the key issues before concluding the study.

Huawei: SA2 also concluded this topic.

**Decision:** The document was **revised to S3-190490**.

**S3-190490 Conclusion for Key Issue #9**

*Type: pCR For: -  
 33.861 v0.3.0  
 Source: Ericsson*

(Replaces S3-190330)

**Decision:** The document was **approved**.

**S3-190267 Potential new security impact in Rel-16 for the selected CIoT solutions in SA2 TR 23.724**

*Type: pCR For: Approval  
 33.861 v0.3.0  
 Source: Ericsson*

**Discussion:**

Huawei didn’t see the need for having this in the TR. ORANGE agreed with Huawei.

**Decision:** The document was **noted**.

**S3-190064 Details of protecting gNB from RRC DoS attack**

*Type: pCR For: (not specified)  
 33.861 v0.3.0  
 Source: HUAWEI TECH. GmbH*

**Decision:** The document was **withdrawn**.

**S3-190111 Evaluation text for solution #2**

*Type: pCR For: Approval  
 33.861 v0.3.0  
 Source: NEC Corporation*

**Abstract:**

This contribution introduces evaluation texts for solution #2 in TR 33.861 v0.3.0.

**Decision:** The document was **withdrawn**.

**S3-190471 Draft TR 33.861**

*Type: draft TR For: Approval  
 33.861 v0.4.0  
 Source: Ericsson*

**Decision:** The document was **approved**.

**S3-190491 Cover sheet TR 33.861**

*Type: TS or TR cover For: Approval  
 33.861 v..  
 Source: Ericsson*

**Discussion:**

The TR will be sent for information.

**Decision:** The document was **approved**.

### 8.7 Study on the security of the Wireless and Wireline Convergence for the 5G system architecture (FS\_5WWC\_SEC) (Rel-16)

**S3-190030 Response to 3GPP SA2 liaison S2-1810989 on ‘Reply LS on devices behind 5G-RG accessing the 5GC’**

*Type: LS in For: (not specified)  
 Original outgoing LS: -, to -, cc -  
 Source: BBF*

**Decision:** The document was **noted**.

**S3-190028 Response to 3GPP SA2 liaison S2-189038 on ‘general status of work’**

*Type: LS in For: (not specified)  
 Original outgoing LS: -, to -, cc -  
 Source: BBF*

**Decision:** The document was **noted**.

**S3-190029 Response to 3GPP SA2 liaison S2-1811575 on ‘general status of work’**

*Type: LS in For: (not specified)  
 Original outgoing LS: -, to -, cc -  
 Source: BBF*

**Decision:** The document was **noted**.

**S3-190043 Reply LS on FS\_5WWC conclusion of study work**

*Type: LS in For: (not specified)  
 Original outgoing LS: -, to -, cc -  
 Source: S2-1812643*

**Decision:** The document was **noted**.

**S3-190031 Response to 3GPP SA2 liaison S2-1812643**

*Type: LS in For: (not specified)  
 Original outgoing LS: -, to -, cc -  
 Source: BBF*

**Decision:** The document was **noted**.

**S3-190032 Response to 3GPP SA2 on FN-RG authentication**

*Type: LS in For: (not specified)  
 Original outgoing LS: -, to -, cc -  
 Source: BBF*

**Decision:** The document was **replied to in S3-190518**.

**S3-190041 Reply LS on FN-RG authentication and related questions**

*Type: LS in For: (not specified)  
 Original outgoing LS: -, to -, cc -  
 Source: S2-1812601*

**Decision:** The document was **replied to in S3-190518**.

**S3-190081 Reply-LS on FN-RG authentication and related questions**

*Type: LS out For: Approval  
 to SA2, cc BBF  
 Source: Ericsson*

**Abstract:**

reply-LS to SA2, cc BBF

**Decision:** The document was **revised to S3-190518**.

**S3-190518 Reply-LS on FN-RG authentication and related questions**

*Type: LS out For: Approval  
 to SA2,BBF  
 Source: Ericsson*

(Replaces S3-190081)

**Decision:** The document was **approved**.

**S3-190082 Reply-LS on FN-RG authentication and related questions**

*Type: LS out For: Approval  
 to BBF, cc SA2  
 Source: Ericsson*

**Abstract:**

reply-LS to BBF, cc SA2

**Discussion:**

ORANGE: SA2 should not assume solutions before consulting SA3 on the security feasibility of these solutions.

Huawei: we agree on roaming scenarios but we don’t have solutions yet. Ericsson: progress is easier by answering LS.

**Decision:** The document was **merged**.

**S3-190040 LS on Authentication for UEs not Supporting NAS**

*Type: LS in For: (not specified)  
 Original outgoing LS: -, to -, cc -  
 Source: S2-1812600*

**Discussion:**

Vodafone: non-5G-capable over WLAN UE has nothing to do with us.

ORANGE didn't agree with the solutions shown here.

Vodafone: why they talk about primary authentication if we have settled on having secondary authentication here?

Lenovo: we have LTE over WLAN case when you could access the core network without USIM. In this case you are a subscriber of the core network, no roaming scenarios considered. We don’t see any issue if this is under control of the network operator.

ORANGE: there is an LI issue. Who's liable? The owner of the UE or the WLAN owner? There is no point in asking for anything different from EAP' .

Vodafone: You must have the USIM if you want to do the primary authentication.

Gemalto supported Vodafone and ORANGE.

The proposal by ORANGE was to tell SA2 to reuse the procedure in TS 33.501 for EAP' for primary authentication, and credential storage as detailed in the same spec.

Samsung: ask SA2 about what kind of UE they are talking about.

**Decision:** The document was **replied to in S3-190519**.

**S3-190305 Response LS on Authentication for UEs not Supporting NAS**

*Type: LS out For: (not specified)  
 to SA WG2  
 Source: Lenovo (Beijing) Ltd*

**Decision:** The document was **revised to S3-190519**.

**S3-190519 Response LS on Authentication for UEs not Supporting NAS**

*Type: LS out For: -  
 to SA WG2  
 Source: Lenovo (Beijing) Ltd*

(Replaces S3-190305)

**Decision:** The document was **approved**.

**S3-190328 Key Issue on security of the Tn interface between TNGFs**

*Type: pCR For: Approval  
 33.807 v0.2.0  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Key Issue on security of the Tn interface between TNGFs

**Discussion:**

Nokia: the scope of this study is the Tn interface.

ORANGE: generalise this since it refers to a SA2 key issue.

SA2 conclusions needed to be checked offline.

**Decision:** The document was **noted**.

**S3-190320 Key Issue on NAS termination in TWIF**

*Type: pCR For: Approval  
 33.807 v0.2.0  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Key Issue on NAS termination in TWIF

**Discussion:**

Ericsson: no need to use NAS security here, you can rely on transport security. Add it to existing key issue 6.

Nokia: we can just remove the requirements. This was agreed.

ORANGE: generalise this since it refers to a key issue from the SA2 TR.

**Decision:** The document was **revised to S3-190520**.

**S3-190520 Key Issue on NAS termination in TWIF**

*Type: pCR For: Approval  
 33.807 v0.2.0  
 Source: Nokia, Nokia Shanghai Bell*

(Replaces S3-190320)

**Decision:** The document was **approved**.

**S3-190324 Key Issue on security of TNGF mobility using EAP Reauthentication Protocol (ERP)**

*Type: pCR For: Approval  
 33.807 v0.2.0  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Key Issue on security of TNGF mobility using EAP Reauthentication Protocol (ERP)

**Decision:** The document was **noted**.

**S3-190080 New key issue: TNAP mobility for trusted non-3GPP access**

*Type: pCR For: Approval  
 33.807 v0.2.0  
 Source: Ericsson*

**Discussion:**

ORANGE: less key issues and more solutions.

**Decision:** The document was **noted**.

**S3-190329 Key Issue on access to 5GC from non-3GPP device over Trusted WLAN**

*Type: pCR For: Approval  
 33.807 v0.2.0  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Key Issue on access to 5GC from non-3GPP device over Trusted WLAN

**Discussion:**

ORANGE: this has been considered in our LS to SA2.

Huawei: non-3GPP device and non 5G capable device; What's the difference? We need to be consistent with the terminology in the future.

**Decision:** The document was **noted**.

**S3-190331 pCR to Solution #1 to include child SA creation for user plane data protection**

*Type: pCR For: Approval  
 33.807 v0.2.0  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

pCR to Solution #1 to include child SA creation for user plane data protection

**Decision:** The document was **approved**.

**S3-190306 Solution for 5GC access from WLAN UEs that do not support NAS**

*Type: pCR For: Approval  
 33.807 v0.2.0  
 Source: Motorola Mobility, Lenovo*

**Abstract:**

This paper provides a solution to Key Issue #6: Access to 5GC from WLAN UEs that do not support NAS.

**Discussion:**

Deutsche Telekom: we need to modify this according to our LS reply to SA2.

ORANGE: SUCI is enough for 3GPP credentials.

**Decision:** The document was **merged**.

**S3-190333 Access to 5GC via Trusted WLAN for UEs w/o NAS support**

*Type: pCR For: Approval  
 33.807 v0.2.0  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Access to 5GC via Trusted WLAN for UEs w/o NAS support

**Discussion:**

TIM: this is pointing wrongly to annex B of 33.501. This type of networks are not mentioned in there. It was agreed to remove the reference to annex B.

**Decision:** The document was **revised to S3-190507**.

**S3-190507 Solution for 5GC access from WLAN UEs that do not support NAS**

*Type: pCR For: Approval  
 33.807 v0.2.0  
 Source: Nokia, Lenovo*

(Replaces S3-190333)

**Decision:** The document was **approved**.

**S3-190179 Add requirement to KI#2**

*Type: pCR For: Approval  
 33.807 v0.2.0  
 Source: Huawei, Hisilicon*

**Decision:** The document was **noted**.

**S3-190079 New key issue: Protection of Line ID**

*Type: pCR For: Approval  
 33.807 v0.2.0  
 Source: Ericsson*

**Discussion:**

Threats and requirements go out, key issues are merged.

**Decision:** The document was **merged**.

**S3-190322 Key Issue on SUCI format for legacy FN-RG devices that access 5G over wireline network**

*Type: pCR For: Approval  
 33.807 v0.2.0  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Key Issue on SUCI format for legacy FN-RG devices that access 5G over wireline network

**Decision:** The document was **revised to S3-190522**.

**S3-190522 Key Issue on SUCI format for legacy FN-RG devices that access 5G over wireline network**

*Type: pCR For: Approval  
 33.807 v0.2.0  
 Source: Nokia, Ericsson*

(Replaces S3-190322)

**Decision:** The document was **approved**.

**S3-190325 Key Issue on NAS termination for registered FN-RGs**

*Type: pCR For: Approval  
 33.807 v0.2.0  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Key Issue on NAS termination for registered FN-RGs

**Discussion:**

Huawei: solution specific requirement. ORANGE proposed to keep it solution specific since it was the base for normative work.

**Decision:** The document was **revised to S3-190523**.

**S3-190523 Key Issue on NAS termination for registered FN-RGs**

*Type: pCR For: Approval  
 33.807 v0.2.0  
 Source: Nokia, Nokia Shanghai Bell*

(Replaces S3-190325)

**Decision:** The document was **approved**.

**S3-190323 Key Issue on Authorization of IPTV subsystem**

*Type: pCR For: Approval  
 33.807 v0.2.0  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Key Issue on Authorization of IPTV subsystem

**Discussion:**

Ericsson: this is already addressed in 33.501 in clause 12. There is no normative work needed for this, note it.

**Decision:** The document was **noted**.

**S3-190319 Key Issue on access to 5GC from a non-3GPP device over Wireline 5G Cable Access Network**

*Type: pCR For: Approval  
 33.807 v0.2.0  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Key Issue on access to 5GC from a non-3GPP device over Wireline 5G Cable Access Network

**Decision:** The document was **noted**.

**S3-190180 A new KI on the trust of W-5GAN**

*Type: pCR For: Approval  
 33.807 v0.2.0  
 Source: Huawei, Hisilicon*

**Discussion:**

Ericsson, ORANGE: this is not needed.

**Decision:** The document was **noted**.

**S3-190332 FN-RG registration to 5GC**

*Type: pCR For: Approval  
 33.807 v0.2.0  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

FN-RG registration to 5GC

**Decision:** The document was **revised to S3-190506**.

**S3-190506 FN-RG registration to 5GC**

*Type: pCR For: Approval  
 33.807 v0.2.0  
 Source: Nokia, Nokia Shanghai Bell*

(Replaces S3-190332)

**Discussion:**

Adding an editor's note.

**Decision:** The document was **approved**.

**S3-190334 5G-RG connecting to 5GC via Wireline Access (W-5GAN)**

*Type: pCR For: Approval  
 33.807 v0.2.0  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

5G-RG connecting to 5GC via Wireline Access (W-5GAN)

**Decision:** The document was **revised to S3-190524**.

**S3-190524 5G-RG connecting to 5GC via Wireline Access (W-5GAN)**

*Type: pCR For: Approval  
 33.807 v0.2.0  
 Source: Nokia, Nokia Shanghai Bell*

(Replaces S3-190334)

**Decision:** The document was **approved**.

**S3-190335 5G-RG connecting to 5GC via NG-RAN**

*Type: pCR For: Approval  
 33.807 v0.2.0  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

5G-RG connecting to 5GC via NG-RAN

**Decision:** The document was **revised to S3-190525**.

**S3-190525 5G-RG connecting to 5GC via NG-RAN**

*Type: pCR For: Approval  
 33.807 v0.2.0  
 Source: Nokia, Nokia Shanghai Bell*

(Replaces S3-190335)

**Decision:** The document was **approved**.

**S3-190181 Add evaluation to solution 3**

*Type: pCR For: Approval  
 33.807 v0.2.0  
 Source: Huawei, Hisilicon*

**Decision:** The document was **noted**.

**S3-190182 add conclusion clauses**

*Type: pCR For: Approval  
 33.807 v0.2.0  
 Source: Huawei, Hisilicon*

**Discussion:**

Ericsson: we don’t have conclusions yet.

Huawei: but we will.

ORANGE: just keep the Key Issue X.

**Decision:** The document was **approved**.

**S3-190183 Add conclusion to KI#1**

*Type: pCR For: Approval  
 33.807 v0.2.0  
 Source: Huawei,Hisilicon*

**Decision:** The document was **noted**.

**S3-190521 Draft TR 33.807**

*Type: draft TR For: Approval  
 33.807 v0.3.0  
 Source: Huawei*

**Decision:** The document was **approved**.

### 8.8 Study on Security Aspects of PARLOS (FS\_PARLOS\_Sec) (Rel-16)

**S3-190130 Security Requirement for Key issue 2**

*Type: pCR For: (not specified)  
 33.815 v0.2.0  
 Source: Intel Deutschland GmbH*

**Discussion:**

BT: EPC instead of EPS.

Ericsson: impact on ME is considerable.

Qualcomm: this is driving to a solution.

**Decision:** The document was **noted**.

**S3-190131 EPC solution for RLOS access**

*Type: pCR For: (not specified)  
 33.815 v0.2.0  
 Source: Intel Deutschland GmbH*

**Discussion:**

Vodafone: does PARLOS work for roaming customers? Sprint replied that it was an accepted option.

Nobody seemed to agree on this contribution so it was noted.

**Decision:** The document was **noted**.

**S3-190145 Editorial pCR for PARLOS TR 33.815**

*Type: pCR For: Approval  
 33.815 v0.2.0  
 Source: LG Electronics*

**Decision:** The document was **revised to S3-190466**.

**S3-190466 Editorial pCR for PARLOS TR 33.815**

*Type: pCR For: Approval  
 33.815 v0.2.0  
 Source: LG Electronics*

(Replaces S3-190145)

**Decision:** The document was **approved**.

**S3-190364 P-CR for PARLOS evaluation clause**

*Type: pCR For: Agreement  
 33.815 v0.2.0  
 Source: SPRINT Corporation*

**Decision:** The document was **noted**.

**S3-190469 P-CR for PARLOS evaluation clause**

*Type: pCR For: Agreement  
 33.815 v0.2.0  
 Source: SPRINT Corporation*

**Decision:** The document was **withdrawn**.

**S3-190377 Solution for PARLOS based on emergency call procedures**

*Type: pCR For: Approval  
 33.815 v0.2.0  
 Source: Qualcomm Incorporated*

**Decision:** The document was **revised to S3-190468**.

**S3-190468 Solution for PARLOS based on emergency call procedures**

*Type: pCR For: Approval  
 33.815 v0.2.0  
 Source: Qualcomm Incorporated*

(Replaces S3-190377)

**Decision:** The document was **approved**.

**S3-190389 P-CR for editor's note in PARLOS manual roaming clause**

*Type: pCR For: Agreement  
 33.815 v0.2.0  
 Source: SPRINT Corporation*

**Decision:** The document was **approved**.

**S3-190390 PARLOS TR cover sheet for plenary presentation**

*Type: TS or TR cover For: Agreement  
 33.815 v0.2.0  
 Source: SPRINT Corporation*

**Discussion:**

Vodafone: it seems to be really early-on for sending it for information. There are missing key issues.

ORANGE: no evaluations, key issues without requirements,..this not ready for presentation for information.

Sprint: we can mention these open key issues as outstanding issues.

ORANGE: this is not 60% ready.

BT: one region's regulatory issue should not affect all the handsets in the rest of the countries. I would like to see that in the evaluation.

**Decision:** The document was **noted**.

**S3-190391 Removal of editor’s note in solution #1**

*Type: pCR For: Approval  
 33.815 v0.2.0  
 Source: Lenovo, Motorola Mobility*

**Abstract:**

This contribution proposes to remove the editor’s note in solution #1.

**Discussion:**

Ericsson didn't agree with the changes. No one agreed with the change so the document was noted.

**Decision:** The document was **noted**.

**S3-190467 Draft TR 33.815**

*Type: draft TR For: Approval  
 33.815 v0.3.0  
 Source: Sprint*

**Decision:** The document was **approved**.

### 8.9 Study on 5G security enhancement against false base stations

**S3-190067 Adding Security Protection Requirement of Unicast RRC Messages**

*Type: pCR For: Approval  
 33.809 v0.1.0  
 Source: Huawei, Hisilicon*

**Discussion:**

Compared with 275.

**Decision:** The document was **noted**.

**S3-190141 requirement of protection of unicast messages**

*Type: pCR For: Approval  
 33.809 v0.1.0  
 Source: Apple (UK) Limited*

**Decision:** The document was **noted**.

**S3-190359 Requirement on security of unprotected unicast messages**

*Type: pCR For: (not specified)  
 33.809 v0.1.0  
 Source: Samsung*

**Decision:** The document was **revised to S3-190553**.

**S3-190553 Requirement on security of unprotected unicast messages**

*Type: pCR For: -  
 33.809 v0.1.0  
 Source: Samsung*

(Replaces S3-190359)

**Decision:** The document was **approved**.

**S3-190274 KI#1 in TR 33.809 – a new NOTE for requirements**

*Type: pCR For: Approval  
 33.809 v0.1.0  
 Source: Ericsson*

**Abstract:**

A clarification NOTE for requirements so that each requirements spell out RRC/NAS layer and the message name.

**Decision:** The document was **approved**.

**S3-190275 KI#1 in TR 33.809 – new requirement and solution for UECapabilityInformation RRC message**

*Type: pCR For: Approval  
 33.809 v0.1.0  
 Source: Ericsson*

**Abstract:**

A new requirement and a solution for protection of RRC UECapabilityInformation message.

**Discussion:**

The requirement was agreed. The solution had to be discussed separately.

**Decision:** The document was **revised to S3-190554**.

**S3-190554 KI#1 in TR 33.809 – new requirement and solution for UECapabilityInformation RRC message**

*Type: pCR For: Approval  
 33.809 v0.1.0  
 Source: Ericsson*

(Replaces S3-190275)

**Decision:** The document was **approved**.

**S3-190276 KI#1 in TR 33.809 – new requirement and solution for RRC Reject message**

*Type: pCR For: Approval  
 33.809 v0.1.0  
 Source: Ericsson*

**Abstract:**

A new requirement and a solution for resistance against rogue RRCReject message.

**Discussion:**

Docomo preferred 359. The requirement was removed.

**Decision:** The document was **noted**.

**S3-190068 Security Solution for RRC UE capability transfer**

*Type: pCR For: Approval  
 33.809 v0.1.0  
 Source: Huawei, Hisilicon*

**Decision:** The document was **approved**.

**S3-190360 Solution on security of RRC Reject messages**

*Type: pCR For: (not specified)  
 33.809 v0.1.0  
 Source: Samsung*

**Decision:** The document was **revised to S3-190555**.

**S3-190555 Solution on security of RRC Reject messages**

*Type: pCR For: -  
 33.809 v0.1.0  
 Source: Samsung*

(Replaces S3-190360)

**Decision:** The document was **approved**.

**S3-190069 Security Requirement for Paging Messages**

*Type: pCR For: Approval  
 33.809 v0.1.0  
 Source: Huawei, Hisilicon*

**Discussion:**

Apple: requirement should be more general.

Ericsson: protection of paging in a separate key issue should be in a separate key issue.

**Decision:** The document was **noted**.

**S3-190139 requirement of protection of broadcast messages**

*Type: pCR For: Approval  
 33.809 v0.1.0  
 Source: Apple (UK) Limited*

**Decision:** The document was **noted**.

**S3-190273 KI#2 in TR 33.809 – new requirement and solution for non-public networks**

*Type: pCR For: Approval  
 33.809 v0.1.0  
 Source: Ericsson*

**Abstract:**

A new requirement and a high-level outline of a solution for protection of SI in non-public networks.

**Discussion:**

Qualcomm was against this contribution. No other support was found.

**Decision:** The document was **noted**.

**S3-190361 Requirement on security of unprotected unicast messages**

*Type: pCR For: (not specified)  
 33.809 v0.1.0  
 Source: Samsung*

**Decision:** The document was **approved**.

**S3-190070 Protection for Incoming Paging Message Based on Stored Security Context**

*Type: pCR For: Approval  
 33.809 v0.1.0  
 Source: Huawei, Hisilicon*

**Decision:** The document was **noted**.

**S3-190146 ID-based solution in 5GFBS**

*Type: pCR For: Approval  
 33.809 v0.1.0  
 Source: Apple (UK) Limited*

**Decision:** The document was **noted**.

**S3-190147 Credential-based solution in 5GFBS**

*Type: pCR For: Approval  
 33.809 v0.1.0  
 Source: Apple (UK) Limited*

**Discussion:**

ORANGE was against these solutions.

Qualcomm: we studied those kind of solutions in PWS.

Ericsson: it's important to capture this and the scalability issues.

ORANGE: don’t repeat the same evaluations from other TRs.

Apple: why are we doing a study if we are killing all solutions?

**Decision:** The document was **noted**.

**S3-190155 Anti fake base station based on symmetric algorithm**

*Type: pCR For: Approval  
 33.809 v0.1.0  
 Source: ZTE Corporation*

**Decision:** The document was **not treated**.

**S3-190353 New solution for protecting the System Information Block**

*Type: pCR For: Approval  
 33.809 v0.1.0  
 Source: NEC Corporation*

**Abstract:**

This contribution proposes a solution to Key Issue #2 on security protection of system information for the study on 5G security enhancement against False Base station

**Decision:** The document was **not treated**.

**S3-190362 Solution for AS security during RRC Idle mode**

*Type: pCR For: (not specified)  
 33.809 v0.1.0  
 Source: Samsung*

**Decision:** The document was **noted**.

**S3-190351 Updating key issue#3 for network detection of nearby fake base station**

*Type: pCR For: Approval  
 33.809 v0.1.0  
 Source: NEC Corporation*

**Abstract:**

This contribution proposes an update to key issue #3 on network detection of nearby fake base station for the study on 5G security enhancement against False Base station

**Decision:** The document was **revised to S3-190532**.

**S3-190532 Updating key issue#3 for network detection of nearby fake base station**

*Type: pCR For: Approval  
 33.809 v0.1.0  
 Source: NEC Corporation*

(Replaces S3-190351)

**Decision:** The document was **not treated**.

**S3-190277 KI#3 in TR 33.809 – updates to requirements and editorials**

*Type: pCR For: Approval  
 33.809 v0.1.0  
 Source: Ericsson*

**Abstract:**

Updates to the requirements and other editorials for key issue on false base station detection.

**Decision:** The document was **not treated**.

**S3-190279 KI#3 in TR 33.809 – conclusion on second requirement (reactive action)**

*Type: pCR For: Approval  
 33.809 v0.1.0  
 Source: Ericsson*

**Abstract:**

A conclusion on second requirement (reactive action) in the Key Issue #3 and an accompanying skeleton for conclusions.

**Decision:** The document was **not treated**.

**S3-190071 Avoiding UE connecting to fake base station during HO**

*Type: pCR For: Approval  
 33.809 v0.1.0  
 Source: Huawei, Hisilicon*

**Decision:** The document was **not treated**.

**S3-190278 KI#3 in TR 33.809 – new solution for enriched measurement reports**

*Type: pCR For: Approval  
 33.809 v0.1.0  
 Source: Ericsson*

**Abstract:**

A new solution to enhance the network-based detection of false base stations by enriching the measurement reports.

**Decision:** The document was **not treated**.

**S3-190352 New solution for preventing UE from attaching to a false base station**

*Type: pCR For: Approval  
 33.809 v0.1.0  
 Source: NEC Corporation*

**Abstract:**

This contribution proposes a solution to TR 33.809 study on 5G security enhancement against False Base station for preventing UE from attaching to a false base station

**Decision:** The document was **not treated**.

**S3-190245 New requirement for Authentication relay attack**

*Type: pCR For: Approval  
 33.809 v0.1.0  
 Source: Huawei, Hisilicon*

**Decision:** The document was **not treated**.

**S3-190127 Key Issue for Fake Base Station**

*Type: pCR For: (not specified)  
 33.809 v0.1.0  
 Source: Intel Deutschland GmbH*

**Decision:** The document was **not treated**.

**S3-190381 Key Issue MITM attacks**

*Type: pCR For: Approval  
 33.809 v0.1.0  
 Source: Qualcomm Incorporated*

**Decision:** The document was **not treated**.

**S3-190062 Adding Security Protection Requirement of Unicast RRC Messages**

*Type: pCR For: Approval  
 33.809 v0.1.0  
 Source: HUAWEI TECH. GmbH*

**Decision:** The document was **withdrawn**.

**S3-190063 Security Solution for RRC UE capability transfer**

*Type: pCR For: (not specified)  
 33.809 v0.1.0  
 Source: HUAWEI TECH. GmbH*

**Decision:** The document was **withdrawn**.

**S3-190148 Key issue of network credential revocation consideration**

*Type: pCR For: Approval  
 33.809 v0.1.0  
 Source: Apple (UK) Limited*

**Decision:** The document was **withdrawn**.

**S3-190552 Draft TR 33.809**

*Type: draft TR For: Agreement  
 33.809 v0.2.0  
 Source: Apple*

**Decision:** The document was **approved**.

### 8.10 Study of KDF negotiation for 5G System Security

**S3-190211 Discussion on Requirement for KDF Negotiation**

*Type: discussion For: Discussion  
 33.808 v..  
 Source: NEC Corporation, Huawei, Hisilicon*

**Abstract:**

This contribution discusses rationale for KDF negotiation as was requested at the last SA3 meeting. A companion contribution adds text to the TR to clarify the rationale.

**Discussion:**

ORANGE: premature to have this proposal.

It was noted that the document was sent for discussion and not for endorsement.

**Decision:** The document was **noted**.

**S3-190212 Update to clause 4 to add KDF negotiation rationale**

*Type: pCR For: Approval  
 33.808 v0.2.0  
 Source: NEC Corporation, Huawei, Hisilicon*

**Abstract:**

This contribution adds text in clause 4 to explain the rationale for KDF negotiation.

**Discussion:**

Ericsson: geopolitics and cost issues are not true. They didn’t agree with the preferences of UE vendors either.

Qualcomm: we cannot agree with this document. Too premature. KDF negotiation is needed in 5G. That's the only point we need now.

ORANGE supported Ericsson and Qualcomm. ORANGE didn’t agree with anything in this contribution.

NEC: this is just a rational clause for the study item, not a key issue.

Colin (BT): Where are the KDFs and what's the impact on the operators?

Vodafone: can only accept he paragraph on the future proofness.

It looked like companies preferred a much shorter rational. This was taken offline.

**Decision:** The document was **revised to S3-190517**.

**S3-190517 Update to clause 4 to add KDF negotiation rationale**

*Type: pCR For: Approval  
 33.808 v0.2.0  
 Source: NEC Corporation, Huawei, Hisilicon*

(Replaces S3-190212)

**Discussion:**

The purpose of the study was argued. The Chair proposed to have conference calls before the next meeting given the disagreement between the companies.

Huawei proposed to close the study and move forward.

NTT-Docomo commented that this was an old topic and to avoid having it coming back at least a rational should be written.

**Decision:** The document was **noted**.

### 8.11 Study on Security aspects of Enhancement of Network Slicing

**S3-190045 LS On Slice-Specific Secondary Authentication**

*Type: LS in For: (not specified)  
 Original outgoing LS: -, to -, cc -  
 Source: S2-1813359*

**Discussion:**

Huawei: not urgent to send it during this meeting. Timer is defined in CT1 and would rather wait for CT1's reply. Not sure that there are security issues.

Ericsson: We don’t support the SA2 solution, let's wait and analyse this.

CableLabs: timer can be manipulated, let's discuss this and wait for CT1's reply.

Interdigital: SA3 doesn’t see any security issues, we can reply with that.

Nokia: ask CT1 if they can manage a flexible timer.

It was decided to postpone it for the next meeting.

**Decision:** The document was **postponed**.

**S3-190132 Discussion on SA2 LS on Slice Specific Authentication S2-1813359**

*Type: discussion For: Endorsement  
 Source: Nokia, Nokia Shanghai-Bell*

**Decision:** The document was **noted**.

**S3-190133 Solution for Slice Specific secondary authentication**

*Type: pCR For: Approval  
 33.813 v0.1.0  
 Source: Nokia, Nokia Shangahi Bell*

**Discussion:**

ORANGE wanted to question the SA2 solution (dependency of primary and secondary authentication) from SA3 perspective, by adding an editor's note.

TIM commented that secondary authentication was not related to the slice concept. The slice is inside the core network and does have nothing to do with the secondary authentication as SA3 had agreed. We need to agree on the correct terminology.

Slice secondary authentication would be the terminology to follow instead of secondary authentication.

Interdigital: nested authentication is an open issue between SA2 and CT1. Add an editor's note about this.

ORANGE: remove the evaluation, too early.

**Decision:** The document was **revised to S3-190533**.

**S3-190533 Solution for Slice Specific secondary authentication**

*Type: pCR For: Approval  
 33.813 v0.1.0  
 Source: Nokia, Nokia Shangahi Bell*

(Replaces S3-190133)

**Decision:** The document was **approved**.

**S3-190202 A solution to slice authentication**

*Type: pCR For: Approval  
 33.813 v0.1.0  
 Source: Huawei, HiSilicon*

**Discussion:**

ORANGE: step 5 is slice registration complete. Add step 6.An editor's note was agreed, step one revised as well.

Interdigital: this is still a nested approach and it needs waiting for SA2 and CT1's discussions.

**Decision:** The document was **revised to S3-190534**.

**S3-190534 A solution to slice authentication**

*Type: pCR For: Approval  
 33.813 v0.1.0  
 Source: Huawei, HiSilicon*

(Replaces S3-190202)

**Decision:** The document was **approved**.

**S3-190156 Solution on registration for mutual exclusive slices**

*Type: pCR For: Approval  
 33.813 v0.1.0  
 Source: ZTE Corporation*

**Discussion:**

ORANGE, TIM didn’t understand the contribution.

BT didn’t see the requirement for this.

For this reason the document was noted.

**Decision:** The document was **noted**.

**S3-190272 Solution for key separation based on slice authentication keys**

*Type: pCR For: Approval  
 33.813 v0.1.0  
 Source: Ericsson*

**Discussion:**

Overlapping with 204.

**Decision:** The document was **noted**.

**S3-190206 Security threats and requirement for KI #4**

*Type: pCR For: Approval  
 33.813 v0.1.0  
 Source: Huawei, HiSilicon*

**Discussion:**

Deutsche Telekom: privacy doesn’t leak, but user sensitive information.

NTT-Docomo, NEC: against whom are we protecting?

Editor's note was added to that effect.

**Decision:** The document was **revised to S3-190535**.

**S3-190535 Security threats and requirement for KI #4**

*Type: pCR For: Approval  
 33.813 v0.1.0  
 Source: Huawei, HiSilicon*

(Replaces S3-190206)

**Decision:** The document was **approved**.

**S3-190477 A new KI on NSSAI protection**

*Type: pCR For: Approval  
 33.813 v0.1.0  
 Source: Huawei, HiSilicon,NEC,Interdigital*

(Replaces S3-190203)

**Discussion:**

Nokia: there are implications on the study item if we proceed with this.

ORANGE clarified that NEC had a study item on this (tdoc 128) and we had agreed on adding the objectives into a key issue here. ORANGE wasn't fine with the requirements since they were out of scope of the study item.

MCC commented that it seemed a bit strange to enumerate objectives and open issues for Rel-16 in the key issue details. The format of these key issue details was to be revised.

Qualcomm: last requirement doesn't make sense. It was agreed to remove it.

**Decision:** The document was **revised to S3-190536**.

**S3-190536 A new KI on NSSAI protection**

*Type: pCR For: Approval  
 33.813 v0.1.0  
 Source: Huawei, HiSilicon,NEC,Interdigital*

(Replaces S3-190477)

**Decision:** The document was **approved**.

**S3-190204 Solutions to AMF key separation**

*Type: pCR For: Approval  
 33.813 v0.1.0  
 Source: Huawei, HiSilicon*

**Discussion:**

Orange: second solution is not related to this study item.

NCSC didn't support this either as it was introducing a new solution that should be assessed against quantum computing.

Nokia didn't support it either.

**Decision:** The document was **noted**.

**S3-190205 A solution to security features for NSaaS**

*Type: pCR For: Approval  
 33.813 v0.1.0  
 Source: Huawei, HiSilicon*

**Discussion:**

ORANGE: why defining these security features at all here? I don’t want his table.

BT, CableLabs: network slices should have their own invokable security features according to policy.

ORANGE: we only introduce secondary authentication in TS33.501, there is no other security feature added for them.

TIM: how is the secondary authentication intended here? ORANGE clarified that it referred to the slice authentication.

**Decision:** The document was **revised to S3-190537**.

**S3-190537 A solution to security features for NSaaS**

*Type: pCR For: Approval  
 33.813 v0.1.0  
 Source: Huawei, HiSilicon*

(Replaces S3-190205)

**Decision:** The document was **approved**.

**S3-190230 A key issue: Slice-specific Security in roaming**

*Type: pCR For: (not specified)  
 33.813 v0.1.0  
 Source: China Mobile*

**Discussion:**

BT: What is the difference with the non-slicing scenario? This is not slice specific.

ORANGE: have this as a key issue in the SBA study.

**Decision:** The document was **noted**.

**S3-190237 New KI: SUPI privacy protection across different security domains**

*Type: pCR For: Approval  
 33.813 v0.1.0  
 Source: Huawei, Hisilicon*

**Discussion:**

ORANGE: why sending the SUPI to the slice?

Huawei: according to SA2 several network functions can be deployed in the slice, so it is necessary in some cases to send the SUPI.

Nokia: additional protection for SUPI? They are already protected.

DT: we need a new mechanism to send the SUPI to third parties. ORANGE wasn't sure that SA2 could see the SUPI, and if that was the case SA3 should tell them not to do that.

Alf (NTT-Docomo: SUPI shall not be available outside the operator's network.

BT: struggling to see this slice specific.

**Decision:** The document was **noted**.

**S3-190318 New KI: Access token handling between network slices**

*Type: pCR For: Approval  
 33.813 v0.1.0  
 Source: Huawei, Hisilicon*

(Replaces S3-190239)

**Decision:** The document was **revised to S3-190538**.

**S3-190538 New KI: Access token handling between network slices**

*Type: pCR For: Approval  
 33.813 v0.1.0  
 Source: Huawei, Hisilicon*

(Replaces S3-190318)

**Decision:** The document was **approved**.

**S3-190203 A new KI on NSSAI protection**

*Type: pCR For: Approval  
 33.813 v0.1.0  
 Source: Huawei, HiSilicon*

**Decision:** The document was **revised to S3-190477**.

**S3-190239 New KI: Access token handling between network slices**

*Type: pCR For: Approval  
 33.813 v0.1.0  
 Source: Huawei Technologies Sweden AB*

**Decision:** The document was **revised to S3-190318**.

**S3-190539 Draft TR 33.813**

*Type: draft TR For: Approval  
 33.813 v0.2.0  
 Source: Nokia*

**Decision:** The document was **approved**.

### 8.12 Study on Security of the enhancement to the 5GC location services

**S3-190088 Resubmission of S3-183526 “WLAN positioning - new KI for the upcoming TR on FS\_eLCS\_Sec”**

*Type: pCR For: Approval  
 33.814 v0.1.0  
 Source: Ericsson*

**Decision:** The document was **approved**.

**S3-190236 pCR to TR33.814 - Key issue for end-to-end LCS data security**

*Type: pCR For: Approval  
 33.814 v0.1.0  
 Source: CATT*

**Decision:** The document was **not treated**.

**S3-190242 pCR to TR33.814 - Key issue for broadcast assistance data security**

*Type: pCR For: Approval  
 33.814 v0.1.0  
 Source: CATT*

**Decision:** The document was **not treated**.

**S3-190184 Key Issue for encryption and integrity protection of assistance data**

*Type: pCR For: Approval  
 33.814 v0.1.0  
 Source: Huawei, Hisilicon*

**Decision:** The document was **not treated**.

**S3-190185 Key Issue for encryption and integrity protection of location data**

*Type: pCR For: Approval  
 33.814 v0.1.0  
 Source: Huawei, Hisilicon*

**Decision:** The document was **not treated**.

**S3-190186 Key Issue for integrity protection of privacy setting between UE and home network**

*Type: pCR For: Approval  
 33.814 v0.1.0  
 Source: Huawei, Hisilicon*

**Decision:** The document was **not treated**.

**S3-190246 pCR to TR33.814 - Solution of provisioning keys for broadcast assistant data protection**

*Type: pCR For: Approval  
 33.814 v0.1.0  
 Source: CATT*

**Decision:** The document was **not treated**.

**S3-190247 pCR to TR33.814 - Solution of ciphering algorithms**

*Type: pCR For: Approval  
 33.814 v0.1.0  
 Source: CATT*

**Decision:** The document was **not treated**.

**S3-190086 New solution: WLAN measurements from UEs**

*Type: pCR For: Approval  
 33.814 v0.1.0  
 Source: Ericsson*

**Decision:** The document was **not treated**.

**S3-190087 New solution: Bluetooth measurements from UEs**

*Type: pCR For: Approval  
 33.814 v0.1.0  
 Source: Ericsson*

**Decision:** The document was **not treated**.

**S3-190188 Solution for integrity protection of privacy setting between UE and UDM**

*Type: pCR For: Approval  
 33.814 v0.1.0  
 Source: Huawei, Hisilicon*

**Decision:** The document was **not treated**.

**S3-190562 Draft TR 33.814**

*Type: draft TR For: Approval  
 33.814 v0.2.0  
 Source: CATT*

**Decision:** The document was **approved**.

### 8.13 Study on security for 5G URLLC

**S3-190157 Key issue for acceleration of AKA procedure for low latency**

*Type: pCR For: Approval  
 33.825 v0.2.0  
 Source: ZTE Corporation*

**Discussion:**

Vodafone: this is more a solution.

ORANGE didn’t agree with the requirement.

New editor's note added.

**Decision:** The document was **revised to S3-190541**.

**S3-190541 Key issue for acceleration of AKA procedure for low latency**

*Type: pCR For: Approval  
 33.825 v0.2.0  
 Source: ZTE Corporation*

(Replaces S3-190157)

**Decision:** The document was **approved**.

**S3-190349 New KI on Supporting low latency during Re-attach procedure**

*Type: pCR For: Approval  
 33.825 v0.2.0  
 Source: NEC Corporation*

**Abstract:**

This pCR proposes a key issue for study item on security for 5G URLLC

**Decision:** The document was **revised to S3-190542**.

**S3-190542 New KI on Supporting low latency during Re-attach procedure**

*Type: pCR For: Approval  
 33.825 v0.2.0  
 Source: NEC Corporation*

(Replaces S3-190349)

**Decision:** The document was **approved**.

**S3-190158 Solution on enhancement of handover with direct Xn tunnel for single user plan path**

*Type: pCR For: Approval  
 33.825 v0.2.0  
 Source: ZTE Corporation*

**Decision:** The document was **noted**.

**S3-190286 Update to KI#3 or KI#4 taking Dual Connectivity into considerations**

*Type: pCR For: Approval  
 33.825 v0.2.0  
 Source: Ericsson*

**Decision:** The document was **revised to S3-190543**.

**S3-190543 Update to KI#3 or KI#4 taking Dual Connectivity into considerations**

*Type: pCR For: Approval  
 33.825 v0.2.0  
 Source: Ericsson*

(Replaces S3-190286)

**Discussion:**

Last paragraph removed as proposed by Huawei.

**Decision:** The document was **approved**.

**S3-190348 New Solution for Redundant data protection**

*Type: pCR For: Approval  
 33.825 v0.2.0  
 Source: NEC Corporation*

**Abstract:**

This pCR proposes a solution to Key Issue #1 and #2 specified in study item on security for 5G URLLC

**Decision:** The document was **revised to S3-190545**.

**S3-190545 New Solution for Redundant data protection**

*Type: pCR For: Approval  
 33.825 v0.2.0  
 Source: NEC Corporation,Huawei*

(Replaces S3-190348)

**Decision:** The document was **approved**.

**S3-190199 URLLC solution for Key Issue 1**

*Type: pCR For: Approval  
 33.825 v0.2.0  
 Source: Huawei, HiSilicon*

**Discussion:**

Option 2 is merged into 545.

**Decision:** The document was **merged**.

**S3-190200 URLLC solution for Key Issue 3**

*Type: pCR For: Approval  
 33.825 v0.2.0  
 Source: Huawei, HiSilicon*

**Discussion:**

Vodafone: how do they satisfy LI requirements?

Ericsson: there are no LI issues.

**Decision:** The document was **revised to S3-190546**.

**S3-190546 URLLC solution for Key Issue 3**

*Type: pCR For: Approval  
 33.825 v0.2.0  
 Source: Huawei, HiSilicon*

(Replaces S3-190200)

**Discussion:**

Adding two editor's notes.

**Decision:** The document was **approved**.

**S3-190238 Dynamic UP security policy control solution for URLLC**

*Type: pCR For: (not specified)  
 33.825 v0.2.0  
 Source: Huawei, HiSilicon*

**Discussion:**

Vodafone: solution details need rewriting.

Ericsson: PCF issue is not clear here.

**Decision:** The document was **noted**.

**S3-190287 Evaluation to solution #1 and conclusion to key issue #3**

*Type: pCR For: Approval  
 33.825 v0.2.0  
 Source: Ericsson*

**Discussion:**

Huawei: remove the conclusion. This was agreed.

**Decision:** The document was **revised to S3-190547**.

**S3-190547 Evaluation to solution #1 and conclusion to key issue #3**

*Type: pCR For: Approval  
 33.825 v0.2.0  
 Source: Ericsson*

(Replaces S3-190287)

**Decision:** The document was **approved**.

**S3-190288 Evaluation on solution #2 and conclusion to key issue #3**

*Type: pCR For: Approval  
 33.825 v0.2.0  
 Source: Ericsson*

**Discussion:**

Same as the one above.

**Decision:** The document was **revised to S3-190548**.

**S3-190548 Evaluation on solution #2 and conclusion to key issue #3**

*Type: pCR For: Approval  
 33.825 v0.2.0  
 Source: Ericsson*

(Replaces S3-190288)

**Decision:** The document was **approved**.

**S3-190198 URLLC solution for N3 tunnel redundancy**

*Type: pCR For: Approval  
 33.825 v0.2.0  
 Source: Huawei, HiSilicon*

**Discussion:**

Ericsson: Redundancy of N9 tunnel needs more clarification.

Ericsson: there is no key issue for the backhaul interface, which is being addressed here in the N3 interface.

**Decision:** The document was **revised to S3-190549**.

**S3-190549 URLLC solution for N3 tunnel redundancy**

*Type: pCR For: Approval  
 33.825 v0.2.0  
 Source: Huawei, HiSilicon*

(Replaces S3-190198)

**Decision:** The document was **approved**.

**S3-190544 Draft TR 33.825**

*Type: draft TR For: Approval  
 33.825 v0.3.0  
 Source: Huawei*

**Decision:** The document was **approved**.

### 8.14 Study on SECAM and SCAS for 3GPP virtualized network products

**S3-190207 Considerations on network product class when using NFV technology**

*Type: pCR For: (not specified)  
 33.818 v0.1.0  
 Source: China Mobile, ZTE Corporation, Nokia, Nokia Shanghai Bell*

**Decision:** The document was **not treated**.

**S3-190215 Considerations on SECAM of the virtualized network products**

*Type: pCR For: (not specified)  
 33.818 v0.1.0  
 Source: China Mobile, ZTE Corporation, Nokia, Nokia Shanghai Bell*

**Decision:** The document was **not treated**.

### 8.15 Study on Security for 5GS Enhanced support of Vertical and LAN Services

Nokia wanted to send an LS to SA,SA1 and SA2 for getting guidance of how to proceed with the issue of authentication. The question would verse on the scope: what are a non-3gpp credentials?

Huawei wanted to have at least an LS to SA1.

ORANGE: this a security issue and those groups have no competence to advise us on this.

**S3-190104 Update to KI#2.1 in TR 33.819**

*Type: pCR For: Approval  
 33.819 v0.1.0  
 Source: InterDigital Europe. Ltd.*

**Decision:** The document was **noted**.

**S3-190304 Update on Key issue #2.1**

*Type: pCR For: Approval  
 33.819 v0.1.0  
 Source: Huawei, Hisilicon*

**Discussion:**

ORANGE: is this the right conclusion in sA2? This was confirmed.

**Decision:** The document was **approved**.

**S3-190241 Solution for NPN network access via PLMN**

*Type: pCR For: Approval  
 33.819 v0.1.0  
 Source: Huawei, Hisilicon*

**Discussion:**

Ericsson: why not use SA2's conclusion on this? There is no security problem here.

**Decision:** The document was **revised to S3-190493**.

**S3-190493 Solution for NPN network access via PLMN**

*Type: pCR For: Approval  
 33.819 v0.1.0  
 Source: Huawei, Hisilicon*

(Replaces S3-190241)

**Decision:** The document was **approved**.

**S3-190291 TR 33.819: new key issue on security and privacy aspects of service continuity and session continuity**

*Type: pCR For: Approval  
 33.819 v0.1.0  
 Source: Ericsson*

**Abstract:**

A new key issue to investigate security and privacy impacts of service continuity and session continuity while accessing PLMN via NPN and vice-versa.

**Discussion:**

Nokia: session and service continuity are requirements in SA2. This is a very vague requirement. Key issue is valid.

NTT-Docomo: security threats need to be more concrete.

**Decision:** The document was **revised to S3-190494**.

**S3-190494 TR 33.819: new key issue on security and privacy aspects of service continuity and session continuity**

*Type: pCR For: Approval  
 33.819 v0.1.0  
 Source: Ericsson*

(Replaces S3-190291)

**Decision:** The document was **approved**.

**S3-190366 Key issue on Multiple and Separate credentials for PLMN and NPN network**

*Type: pCR For: (not specified)  
 33.819 v0.1.0  
 Source: Samsung*

**Decision:** The document was **revised to S3-190495**.

**S3-190495 Key issue on Multiple and Separate credentials for PLMN and NPN network**

*Type: pCR For: -  
 33.819 v0.1.0  
 Source: Samsung*

(Replaces S3-190366)

**Decision:** The document was **approved**.

**S3-190346 New KI on Privacy aspects for NPN**

*Type: pCR For: Approval  
 33.819 v0.1.0  
 Source: NEC Corporation*

**Abstract:**

This pCR proposes a key issue for study item on security for 5GS enhanced support of Vertical and LAN Services

**Discussion:**

ORANGE: last requirement not in the scope of SA3. First requirement covered by the previous contribution.

Nokia: second requirement is too strong formulated. The operator can decide whether they can apply privacy or not (e.g. depending on regulator rules).

It was also commented that the second requirement was already covered in 33.501.

The general agreement was that all requirements covered in TS 33.501 will not be covered here as well. No repetition of work.

**Decision:** The document was **noted**.

**S3-190347 New Solution on Privacy aspects for NPN**

*Type: pCR For: Approval  
 33.819 v0.1.0  
 Source: NEC Corporation*

**Abstract:**

This pCR proposes a solution for key issue on subscriber privacy to study item on security for 5GS enhanced support of Vertical and LAN Services

**Decision:** The document was **noted**.

**S3-190243 New KI: Isolation of multiple NAS connections**

*Type: pCR For: Approval  
 33.819 v0.1.0  
 Source: Huawei, Hisilicon*

**Discussion:**

ORANGE objected to this document.

**Decision:** The document was **noted**.

**S3-190189 Key Issue for protection against DDoS attack**

*Type: pCR For: Approval  
 33.819 v0.1.0  
 Source: Huawei, Hisilicon*

**Discussion:**

Vodafone: why mandate the NPN to support anything? The first requirement needs rewording anyway.

Nokia: does the Denial of Service a key issue need to be addressed at all?

Qualcomm: this key issue is not needed.

**Decision:** The document was **noted**.

**S3-190190 Security Solution for DDoS attack mitigation in the roaming scenarios between NPN and PLMN**

*Type: pCR For: Approval  
 33.819 v0.1.0  
 Source: Huawei, Hisilicon*

**Decision:** The document was **noted**.

**S3-190370 Proposed key issue on key hierarchy for non-public networks**

*Type: pCR For: Approval  
 33.819 v0.1.0  
 Source: Qualcomm Incorporated*

**Decision:** The document was **revised to S3-190496**.

**S3-190496 Proposed key issue on key hierarchy for non-public networks**

*Type: pCR For: Approval  
 33.819 v0.1.0  
 Source: Qualcomm Incorporated*

(Replaces S3-190370)

**Decision:** The document was **approved**.

**S3-190336 Vertical - Key Issue on Authentication of a UE for Non-public network**

*Type: pCR For: Approval  
 33.819 v16.1.0  
 Source: Huawei, HiSilicon, Nokia, Nokia Shanghai Bell, CableLabs*

**Discussion:**

ORANGE: how is this different from Rel-15? There is no issue here.

IDEMIA: How to protect non-3GPP credentials is not available for us.

Huawei: there is no SA1 requirement for non-public networks having to use UICC. IDEMIA: it's up to us to decide.

Vodafone: UICC are irrelevant, we talk about USIM in our specs.

ORANGE: NPN are 5G networks, hence the UICC is needed.

NEC was fine with this contribution.

DT,ORANGE, TIM and Vodafone didn’t support this contribution.

Qualcomm: NPN operators may or may not USIMs. ORANGE replied that this wasn’t part of the contribution and should be brought separately.

Vodafone: with no USIM we will have problems to connect to the network.

Nokia: we have a SA1 requirement that cannot be fulfilled by 33.501.

**Decision:** The document was **noted**.

**S3-190338 Vertical - Requirements to Key Issue on Authentication of a UE for Non-public network**

*Type: pCR For: Approval  
 33.819 v16.1.0  
 Source: Huawei, HiSilicon, Nokia, Nokia Shanghai Bell, CableLabs*

**Discussion:**

ORANGE: no need to have these definitions in the potential security requirements clause.

Gemalto also disagreed with this contributions.

Vodafone wanted to remove note 1. Gemalto also disagreed since it implied that the credentials were stored in the device.

The Chair saw very strong support towards removing note one and very little possibility of having a compromise for this note.

DT: closed access groups should strongly and properly authenticated, not as it appears in note 2.

Nokia argued that the disagreement of this contribution endangered the future normative work, but ORANGE replied that the study didn’t depend entirely on this issue.

**Decision:** The document was **noted**.

**S3-190339 Vertical - solution on EAP authentication framework**

*Type: pCR For: Approval  
 33.819 v16.1.0  
 Source: Nokia, Nokia Shanghai Bell*

**Discussion:**

ORANGE didn’t agree with this contribution.

Gemalto,TIM and IDEMIA supported ORANGE. It’s already covered in TS 33.501 in an informative annex.

Nokia: then we should reword it in TS 33.501.

Contribution supported by Samsung.

Vodafone: the solution is not described well.

**Decision:** The document was **noted**.

**S3-190340 Vertical - solution on EAP-TLS**

*Type: pCR For: Approval  
 33.819 v16.1.0  
 Source: Nokia, Nokia Shanghai Bell, CableLabs*

**Discussion:**

Vodafone: solution is not described well enough.

ORANGE: this is more a requirement, not a solution. Why are we mandating TLS? No other options?

**Decision:** The document was **noted**.

**S3-190341 Vertical - solution on EAP-TTLS**

*Type: pCR For: Approval  
 33.819 v16.1.0  
 Source: Nokia, Nokia Shanghai Bell, CableLabs*

**Discussion:**

The Chair argued that this study needed more offline discussions, probably conference calls. ORANGE replied that the study was not based on authentication only.

Vodafone: we don’t need to specify the methods used.

**Decision:** The document was **noted**.

**S3-190337 Vertical - Key Issue on credential storage for Non-public network**

*Type: pCR For: Approval  
 33.819 v16.1.0  
 Source: Nokia, Nokia Shanghai Bell*

**Decision:** The document was **noted**.

**S3-190369 Proposed key issue on binding key to network identity for standalone non-public networks**

*Type: pCR For: Approval  
 33.819 v0.1.0  
 Source: Qualcomm Incorporated*

**Discussion:**

ORANGE: the security threat is not clear enough. Remove it with the requirements.

**Decision:** The document was **revised to S3-190497**.

**S3-190497 Proposed key issue on binding key to network identity for standalone non-public networks**

*Type: pCR For: Approval  
 33.819 v0.1.0  
 Source: Qualcomm Incorporated*

(Replaces S3-190369)

**Decision:** The document was **approved**.

**S3-190371 Proposed solution on binding key to network identity for standalone non-public networks**

*Type: pCR For: Approval  
 33.819 v0.1.0  
 Source: Qualcomm Incorporated*

**Decision:** The document was **noted**.

**S3-190342 Vertical - Conclusion on authentication**

*Type: pCR For: Approval  
 33.819 v16.1.0  
 Source: Nokia, Nokia Shanghai Bell, CableLabs*

**Decision:** The document was **noted**.

**S3-190289 New key issue on UP security policy for the 5GLAN Group**

*Type: pCR For: Approval  
 33.819 v0.1.0  
 Source: Ericsson*

**Discussion:**

Huawei didn't agree with the example.

The requirement was reworded to state "a" 5GLAN group instead of "the".

**Decision:** The document was **revised to S3-190498**.

**S3-190498 New key issue on UP security policy for the 5GLAN Group**

*Type: pCR For: Approval  
 33.819 v0.1.0  
 Source: Ericsson*

(Replaces S3-190289)

**Decision:** The document was **approved**.

**S3-190290 New security solution for handling UP security policy for a 5GLAN Group**

*Type: pCR For: Approval  
 33.819 v0.1.0  
 Source: Ericsson*

**Decision:** The document was **revised to S3-190499**.

**S3-190499 New security solution for handling UP security policy for a 5GLAN Group**

*Type: pCR For: Approval  
 33.819 v0.1.0  
 Source: Ericsson*

(Replaces S3-190290)

**Decision:** The document was **approved**.

**S3-190492 Draft TR 33.819**

*Type: draft TR For: Approval  
 33.819 v0.2.0  
 Source: Nokia*

**Decision:** The document was **approved**.

### 8.16 Study on LTKUP Detailed solutions

**S3-190008 draft skeleton document TR 33.935 - v001 - Detailed Long term key solutions**

*Type: other For: Agreement  
 33.935 v..  
 Source: Vodafone GmbH*

**Abstract:**

This is the skeleton document for the Detailed Long term key solutions study item

**Decision:** The document was **not treated**.

**S3-190017 LTKUP: addition of solution 5 in TR 33.935**

*Type: pCR For: Approval  
 33.935 v0.0.0  
 Source: Gemalto N.V.*

**Abstract:**

Addition of solution 5 in TR 33.935

**Decision:** The document was **not treated**.

### 8.17 Study on User Plane Integrity Protection

**S3-190006 Draft TR 33.xxx - Skeleton TR on User Plane Integrity Protection**

*Type: other For: Agreement  
 33.853 v..  
 Source: Vodafone Group*

**Abstract:**

This is the initial skeleton document for the User Plan Integrity Protection Study Item

**Decision:** The document was **revised to S3-190014**.

**S3-190007 pCR to TR 33.853 - addition of scope**

*Type: pCR For: Agreement  
 33.853 v0.0.0  
 Source: Vodafone GmbH*

**Abstract:**

This pCR adds the scope to the document

**Decision:** The document was **revised to S3-190015**.

**S3-190014 Draft TR 33.853 - Skeleton TR on User Plane Integrity Protection (updated after conf call)**

*Type: draft TR For: Agreement  
 33.853 v0.0.0  
 Source: Vodafone Group*

(Replaces S3-190006)

**Abstract:**

This is the initial skeleton document for the User Plan Integrity Protection Study Item updated following the conf call on 10.jan.19

**Decision:** The document was **approved**.

**S3-190015 pCR to TR 33.853 - addition of scope (updated following conf call)**

*Type: pCR For: Agreement  
 33.853 v0.0.0  
 Source: Vodafone GmbH*

(Replaces S3-190007)

**Abstract:**

This pCR adds the scope to the document updated following the conf call on 10 jan 19

**Decision:** The document was **approved**.

**S3-190101 New Key Issue: UP integrity activation in EPS**

*Type: pCR For: Approval  
 33.853 v0.0.0  
 Source: Ericsson*

**Decision:** The document was **approved**.

**S3-190112 New key issue on user plane integrity protection in MR-DC scenarios**

*Type: pCR For: Approval  
 33.853 v0.1.0  
 Source: NEC Corporation*

**Abstract:**

This contribution introduces a new key issue on integrity protection in TR 33.853.

**Decision:** The document was **withdrawn**.

**S3-190113 New key issue on data rate limitation of integrity protection in UP DRB**

*Type: pCR For: Approval  
 33.853 v0.1.0  
 Source: NEC Corporation*

**Abstract:**

his contribution introduces a new key issue on integrity protection in TR 33.853.

**Decision:** The document was **withdrawn**.

**S3-190149 Key issue of UP IP performance**

*Type: pCR For: Approval  
 33.853 v0.0.0  
 Source: Apple (UK) Limited*

**Discussion:**

Huawei: performance is not a security issue.

ORANGE: consider bidding down attack.

**Decision:** The document was **noted**.

**S3-190150 Solution of improving efficiency of UP IP**

*Type: pCR For: Approval  
 33.853 v0.0.0  
 Source: Apple (UK) Limited*

**Decision:** The document was **noted**.

**S3-190209 New key issue on user plane integrity protection in MR-DC scenarios**

*Type: pCR For: Approval  
 33.853 v0.0.0  
 Source: NEC Corporation*

**Abstract:**

This contribution introduces a new key issue on integrity protection in TR 33.853.

**Decision:** The document was **noted**.

**S3-190210 New key issue on data rate limitation of integrity protection in UP DRB**

*Type: pCR For: Approval  
 33.853 v0.0.0  
 Source: NEC Corporation*

**Abstract:**

his contribution introduces a new key issue on integrity protection in TR 33.853.

**Discussion:**

Qualcomm: max data rate is full data rate, minimum is 64Kbps. The key issue is wrong. There was a different understanding on this and had to be discussed offline.

**Decision:** The document was **noted**.

**S3-190218 Key issue to ensure the correct routing of the data packets in the user plane**

*Type: pCR For: (not specified)  
 33.853 v0.0.0  
 Source: China Mobile*

**Discussion:**

Deutsche Telekom: same key issue as the NEC contribution.

**Decision:** The document was **noted**.

**S3-190285 New key issue on the secure negotiation of the user plane integrity protection feature**

*Type: pCR For: Approval  
 33.853 v0.0.0  
 Source: Ericsson*

**Decision:** The document was **revised to S3-190551**.

**S3-190551 New key issue on the secure negotiation of the user plane integrity protection feature**

*Type: pCR For: Approval  
 33.853 v0.0.0  
 Source: Ericsson*

(Replaces S3-190285)

**Decision:** The document was **approved**.

**S3-190309 Solution for partial UP IP considering UE limitations**

*Type: pCR For: Approval  
 33.853 v0.0.0  
 Source: Motorola Mobility, Lenovo*

**Abstract:**

This solution is based on the discussion paper S3-182942 for achieving higher data rates for UP IP.

**Discussion:**

Deutsche Telekom: This is not the solution SA3 should go for.

**Decision:** The document was **noted**.

**S3-190386 pCR: New KI: Efficient handling of PDCP discardTimer expiry on the UE Uplink**

*Type: pCR For: Approval  
 33.853 v0.0.0  
 Source: Qualcomm Incorporated*

**Discussion:**

Huawei: not security related. Apple agreed.

**Decision:** The document was **noted**.

**S3-190387 pCR: New KI: Ability to prioritize certain PDCP packets on the UE uplink**

*Type: pCR For: Approval  
 33.853 v0.0.0  
 Source: Qualcomm Incorporated*

**Discussion:**

Huawei: not related to security, this should go to RAN2.

NTT-Docomo disagreed, this could lead to DoS attacks.

Ericsson, Apple: more solution than key issue.

**Decision:** The document was **noted**.

**S3-190388 pCR: New KI: Integrity Algorithm independence**

*Type: pCR For: Approval  
 33.853 v0.0.0  
 Source: Qualcomm Incorporated*

**Discussion:**

Apple: evaluation of solutions that we don’t have.

Vodafone: this is putting the framework of the solution into plan.

NEC: this is not a key issue.

NCSC agreed with NEC and Apple.

Vodafone proposed to have conference calls in order to discuss how to progress with the key issues.

**Decision:** The document was **noted**.

**S3-190550 draft TR 33.853**

*Type: draft TR For: Approval  
 33.853 v0.1.0  
 Source: Vodafone*

**Decision:** The document was **approved**.

### 8.18 Study on Security Impacts of Virtualisation

**S3-190108 TR33848 Study on Virtualisation Skeleton**

*Type: draft TR For: Agreement  
 33.848 v0.0.0  
 Source: BT plc*

**Abstract:**

TR33848 Study on Virtualisation Skeleton

**Decision:** The document was **approved**.

**S3-190109 TR33848 Introduction and Scope**

*Type: other For: Agreement  
 Source: BT plc*

**Abstract:**

TR33848 Introduction and Scope

**Decision:** The document was **withdrawn**.

**S3-190110 TR33848 Section 4 Background**

*Type: other For: Agreement  
 Source: BT plc*

**Abstract:**

TR33848 Section 4 Background

**Decision:** The document was **withdrawn**.

### 8.19 Study on authentication enhancements in 5GS

**S3-190292 Skeleton for TR 33.846 on authentication enhancements**

*Type: pCR For: Approval  
 33.846 v0.0.0  
 Source: Ericsson*

**Decision:** The document was **not treated**.

**S3-190293 Scope for the study on authentication enhancements (FS\_AUTH\_ENH)**

*Type: pCR For: Approval  
 33.846 v0.0.0  
 Source: Ericsson*

**Decision:** The document was **not treated**.

**S3-190221 Key issue to ensure the security of session anchor keys**

*Type: pCR For: (not specified)  
 33.846 v0.0.0  
 Source: China Mobile*

**Decision:** The document was **not treated**.

**S3-190201 A key issue on the long-term key and its related anchor key leakage**

*Type: pCR For: Approval  
 33.846 v0.1.0  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**S3-190294 New KI: Leakage of long-term key**

*Type: pCR For: Approval  
 33.846 v0.0.0  
 Source: Ericsson*

**Decision:** The document was **not treated**.

**S3-190217 Key issue regarding minimal computational cost when generating session anchor keys**

*Type: pCR For: (not specified)  
 33.846 v0.0.0  
 Source: China Mobile*

**Decision:** The document was **not treated**.

**S3-190160 Key issue for linkability when AUTN verification fails**

*Type: pCR For: Approval  
 33.846 v0.0.0  
 Source: ZTE Corporation*

**Decision:** The document was **not treated**.

**S3-190303 Key issue on linkability attack**

*Type: pCR For: Approval  
 33.846 v0.0.1  
 Source: Huawei, Hisilicon*

**Decision:** The document was **not treated**.

**S3-190226 Key issue to resist the linkability attacks**

*Type: pCR For: (not specified)  
 33.846 v0.0.0  
 Source: China Mobile*

**Decision:** The document was **not treated**.

**S3-190159 Key issue for SUPI concealment**

*Type: pCR For: Approval  
 33.846 v0.0.0  
 Source: ZTE Corporation*

**Decision:** The document was **not treated**.

**S3-190223 Key issue to mitigate the DDoS attacks on the UDM**

*Type: pCR For: (not specified)  
 33.846 v0.0.0  
 Source: China Mobile*

**Decision:** The document was **not treated**.

**S3-190295 New solution: EAP-AKA´ PFS**

*Type: pCR For: Approval  
 33.846 v0.0.0  
 Source: Ericsson*

**Decision:** The document was **not treated**.

**S3-190296 Update on EAP-AKA´ PFS**

*Type: pCR For: Information  
 33.846 v0.0.0  
 Source: Ericsson*

**Decision:** The document was **not treated**.

**S3-190162 Solution for linkability issue**

*Type: pCR For: Approval  
 33.846 v0.0.0  
 Source: ZTE Corporation*

**Decision:** The document was **not treated**.

**S3-190161 Solution on mitigation of large SUCI attack**

*Type: pCR For: Approval  
 33.846 v0.0.0  
 Source: ZTE Corporation*

**Decision:** The document was **not treated**.

### 8.20 Other study areas

### 8.21 New study item proposals

**S3-190044 LS on PC5 unicast and groupcast security protection**

*Type: LS in For: (not specified)  
 Original outgoing LS: -, to -, cc -  
 Source: S2-1812896*

**Discussion:**

ORANGE: do we answer SA2 before or after the study?

LG: we reply that we will investigate it with a study.

ORANGE: study all possible solutions or those two proposed by SA2? LG commented that only the two from sA2.

**Decision:** The document was **replied to in S3-190144**.

**S3-190142 Discussion about a new study on eV2X security**

*Type: discussion For: Discussion  
 Source: LG Electronics*

**Decision:** The document was **noted**.

**S3-190143 New SID on Security Aspects of 3GPP support for Advanced V2X Services**

*Type: SID new For: Approval  
 Source: LG Electronics*

**Discussion:**

ORANGE: conclusions should be based on the TR conclusions from sA2.

LG clarified that the solutions will go for the normative work that is being carried out in SA2.

**Decision:** The document was **revised to S3-190462**.

**S3-190462 New SID on Security Aspects of 3GPP support for Advanced V2X Services**

*Type: SID new For: Agreement  
 Source: LG Electronics*

(Replaces S3-190143)

**Decision:** The document was **agreed**.

**S3-190144 Reply LS on PC5 unicast and groupcast security protection**

*Type: LS out For: Approval  
 to SA2  
 Source: LG Electronics*

**Decision:** The document was **revised to S3-190463**.

**S3-190463 Reply LS on PC5 unicast and groupcast security protection**

*Type: LS out For: Approval  
 to SA2  
 Source: LG Electronics*

(Replaces S3-190144)

**Decision:** The document was **approved**.

**S3-190163 New SID on 5G forward security**

*Type: SID new For: Approval  
 Source: ZTE Corporation*

**Discussion:**

Nokia: there is a forward secrecy study item.

Ericsson: this is not very urgent for Rel-16. There is no clear threat, it's more of an enhancement.

ORANGE preferred to have a security paper for the next meeting describing the security issue. This was also recommended by the Chair.

**Decision:** The document was **noted**.

**S3-190164 New SID on IPsec enhancement to meet 5G data rate requirements**

*Type: SID new For: Approval  
 Source: ZTE Corporation*

**Decision:** The document was **noted**.

**S3-190165 Discussion on improving the efficiency of IPsec to meet 5G data rate requirements**

*Type: discussion For: Discussion  
 Source: ZTE Corporation*

**Discussion:**

ZTE clarified that the results were coming from testing.

BT: 20Gbps? What was the experimental setup? 3GPP deployment? ZTE answered that a 3GPP deployment. IPSec is an IETF standard, and the issue should be considered there.

NEC: this is about performance and implementation, not a standard issue.

**Decision:** The document was **noted**.

**S3-190392 draft SID for User Identities and Authentication**

*Type: SID new For: Agreement  
 Source: Vodafone GmbH*

**Decision:** The document was **withdrawn**.

## 9 Work Plan and Rapporteur Input

### 9.1 Review of work plan

**S3-190002 SA3 Work Plan**

*Type: Work Plan For: (not specified)  
 Source: MCC*

**Decision:** The document was **noted**.

### 9.2 Rapporteur input on status of WID or SID

**S3-190005 Work Plan input from Rapporteurs**

*Type: other For: (not specified)  
 Source: MCC*

**Decision:** The document was **revised to S3-190563**.

**S3-190563 Work Plan input from Rapporteurs**

*Type: other For: -  
 Source: MCC*

(Replaces S3-190005)

**Decision:** The document was **noted**.

## 10 Future Meeting Dates and Venues

**S3-190004 SA3 meeting calendar**

*Type: other For: (not specified)  
 Source: MCC*

**Decision:** The document was **noted**.

## 11 Any Other Business

Alex (SA3-LI Chair) announced that TS 33.108 was being presented for approval and available in the mailing list; comments from SA3 were welcome.

The Chair commented that the March Ad-hoc would deal mainly with studies. He also advised not to send anything from that meeting to the SA plenary, given that the deadline for plenary documents was for the week of the meeting.

Studies that were agreed in this meeting would have skeletons for the March meeting in order to progress the work. Scopes were welcome as well.

It was also asked not to bring CRs for the ad-hoc meeting.

Only incoming/outgoing LS relevant to the agenda topics.

Some studies will be prioritised (TBD which ones) according to their completion date.

The Chair commented that the ad-hoc meeting would have decision power, and no voting rights will be recorded.

**S3-190560 Draft agenda SA3\_94 AdHoc**

*Type: discussion For: Endorsement  
 Source: WG Vice Chair (Qualcomm)*

**Decision:** The document was **endorsed**.

## 12 Close

Vikram (COAI) thanked the delegates for coming to Kochi.

This was the last meeting of Anand Prasad as Chair of SA3. He was thanked by all delegates after 16 years attending SA3 meetings. Presentations, presents, speeches, were given in a very emotional farewell.

After this, the meeting was closed.

## Annex A: List of contribution documents

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Document | Title | Source | Decision | Replaces | Replaced by |
| * S3-190000 | * Agenda | * WG Chairman | * approved |  |  |
| * S3-190001 | * Report from last SA3 meeting/s | * MCC | * approved |  |  |
| * S3-190002 | * SA3 Work Plan | * MCC | * noted |  |  |
| * S3-190003 | * Report from last SA meeting | * WG Chairman | * noted |  |  |
| * S3-190004 | * SA3 meeting calendar | * MCC | * noted |  |  |
| * S3-190005 | * Work Plan input from Rapporteurs | * MCC | * revised |  | * S3-190563 |
| * S3-190006 | * Draft TR 33.xxx - Skeleton TR on User Plane Integrity Protection | * Vodafone Group | * revised |  | * S3-190014 |
| * S3-190007 | * pCR to TR 33.853 - addition of scope | * Vodafone GmbH | * revised |  | * S3-190015 |
| * S3-190008 | * draft skeleton document TR 33.935 - v001 - Detailed Long term key solutions | * Vodafone GmbH | * not treated |  |  |
| * S3-190009 | * Discussion document on the changes required to BEST for the authentication available on the 5G options | * Vodafone GmbH | * noted |  |  |
| * S3-190010 | * CR to 33.163 - Addition of HSE to NR core authentication interface | * Vodafone GmbH | * withdrawn |  |  |
| * S3-190011 | * draft WID for Addition of HSE to 5G core interface for authentication (if required) | * Vodafone GmbH | * withdrawn | * S3-183450 |  |
| * S3-190012 | * CR to 33.834 - implementation of changes requested by edithelp | * Vodafone GmbH | * agreed |  |  |
| * S3-190013 | * CR to 33.841 - implementation of requested by edithelp | * Vodafone GmbH | * agreed |  |  |
| * S3-190014 | * Draft TR 33.853 - Skeleton TR on User Plane Integrity Protection (updated after conf call) | * Vodafone Group | * approved | * S3-190006 |  |
| * S3-190015 | * pCR to TR 33.853 - addition of scope (updated following conf call) | * Vodafone GmbH | * approved | * S3-190007 |  |
| * S3-190016 | * Correcting TLS crypto profiles | * Juniper Networks, Ericsson | * agreed |  |  |
| * S3-190017 | * LTKUP: addition of solution 5 in TR 33.935 | * Gemalto N.V. | * not treated |  |  |
| * S3-190018 | * Cooperation on Generic Slice Template definition | * GSMA | * noted |  |  |
| * S3-190019 | * User Plane Security for 5GC Roaming | * GSMA | * noted |  |  |
| * S3-190020 | * LS on new 5G-GUTI allocation | * C1-188921 | * replied to |  |  |
| * S3-190021 | * LS on protection of initial NAS messages | * C1-188925 | * noted |  |  |
| * S3-190022 | * Reply LS on Routing ID | * S2-1813178 | * noted |  |  |
| * S3-190023 | * Reply LS on Routing ID | * C1-188979 | * noted |  |  |
| * S3-190024 | * LS on EAS-C&U support | * C3-186313 | * replied to |  |  |
| * S3-190025 | * LS on OAuth authorization flows supported for Northbound APIs | * C3-187660 | * replied to |  |  |
| * S3-190026 | * LS on Nudr Sensitive Data Protection | * C4-188524 | * replied to |  |  |
| * S3-190027 | * Clarification request on NF authorization in UE Reachability Notification Request procedure | * C4-188603 | * noted |  |  |
| * S3-190028 | * Response to 3GPP SA2 liaison S2-189038 on ‘general status of work’ | * BBF | * noted |  |  |
| * S3-190029 | * Response to 3GPP SA2 liaison S2-1811575 on ‘general status of work’ | * BBF | * noted |  |  |
| * S3-190030 | * Response to 3GPP SA2 liaison S2-1810989 on ‘Reply LS on devices behind 5G-RG accessing the 5GC’ | * BBF | * noted |  |  |
| * S3-190031 | * Response to 3GPP SA2 liaison S2-1812643 | * BBF | * noted |  |  |
| * S3-190032 | * Response to 3GPP SA2 on FN-RG authentication | * BBF | * replied to |  |  |
| * S3-190033 | * LS to 3GPP TSG-SA WG6 on Use of ITS Dedicated Spectrum within V2X UE | * ETSI TC ITS | * noted |  |  |
| * S3-190034 | * LS on DRB Integrity Protection | * R2-1819080 | * noted |  |  |
| * S3-190035 | * Reply LS on UP Integrity Protection for Small Data in Early Data Transfer | * R3-187230 | * withdrawn |  |  |
| * S3-190036 | * Reply LS on inclusion of selected PLMN into the complete message | * R3-187235 | * noted |  |  |
| * S3-190037 | * LS on Security Result Exchange Between NG-RAN and SMF in DC | * R3-187244 | * replied to |  |  |
| * S3-190038 | * Enforcement of maximum supported data rate for integrity protection | * R3-187267 | * noted |  |  |
| * S3-190039 | * GTP Recovery Counter & GSN node behaviou | * GSMA | * noted |  |  |
| * S3-190040 | * LS on Authentication for UEs not Supporting NAS | * S2-1812600 | * replied to |  |  |
| * S3-190041 | * Reply LS on FN-RG authentication and related questions | * S2-1812601 | * replied to |  |  |
| * S3-190042 | * LS on the security aspects of UE Capability ID | * S2-1812607 | * replied to |  |  |
| * S3-190043 | * Reply LS on FS\_5WWC conclusion of study work | * S2-1812643 | * noted |  |  |
| * S3-190044 | * LS on PC5 unicast and groupcast security protection | * S2-1812896 | * replied to |  |  |
| * S3-190045 | * LS On Slice-Specific Secondary Authentication | * S2-1813359 | * postponed |  |  |
| * S3-190046 | * LS response on API invoker onboarding | * S6-181848 | * noted |  |  |
| * S3-190047 | * Reply LS on Control Plane Solution for Steering of Roaming in 5GS | * SP-181244 | * noted |  |  |
| * S3-190048 | * TCG Progress Report | * InterDigital, Inc. | * noted |  |  |
| * S3-190049 | * [33.179] R13 Annex D.3.4.2 XSD correction | * Motorola Solutions Germany | * agreed |  |  |
| * S3-190050 | * [33.180] R14 Annex D.3.5.2 XSD correction (mirror) | * Motorola Solutions Germany | * revised |  | * S3-190444 |
| * S3-190051 | * [33.180] R15 Annex D.3.5.2 XSD correction (mirror) | * Motorola Solutions Germany | * revised |  | * S3-190445 |
| * S3-190052 | * [33.179] R13 IdMS interface security | * Motorola Solutions Germany | * agreed |  |  |
| * S3-190053 | * [33.180] R14 IdMS interface security (mirror) | * Motorola Solutions Germany | * revised |  | * S3-190446 |
| * S3-190054 | * [33.180] R15 IdMS interface security (mirror) | * Motorola Solutions Germany | * revised |  | * S3-190447 |
| * S3-190055 | * [33.179] R13 user service authorisation | * Motorola Solutions Germany | * not pursued |  |  |
| * S3-190056 | * [33.180] R14 user service authorisation (mirror) | * Motorola Solutions Germany | * not pursued |  |  |
| * S3-190057 | * [33.180] R15 user service authorisation (mirror) | * Motorola Solutions Germany | * not pursued |  |  |
| * S3-190058 | * [33.180] R14 InK clarifications | * Motorola Solutions Germany | * revised |  | * S3-190448 |
| * S3-190059 | * [33.180] R15 InK clarifications (mirror) | * Motorola Solutions Germany | * revised |  | * S3-190449 |
| * S3-190060 | * [33.180] R14 MCX identity clarifications | * Motorola Solutions Germany | * revised |  | * S3-190450 |
| * S3-190061 | * [33.180] R15 MCX identity clarifications (mirror) | * Motorola Solutions Germany | * revised |  | * S3-190451 |
| * S3-190062 | * Adding Security Protection Requirement of Unicast RRC Messges | * HUAWEI TECH. GmbH | * withdrawn |  |  |
| * S3-190063 | * Security Solution for RRC UE capability transfer | * HUAWEI TECH. GmbH | * withdrawn |  |  |
| * S3-190064 | * Details of protecting gNB from RRC DoS attack | * HUAWEI TECH. GmbH | * withdrawn |  |  |
| * S3-190065 | * Corrections of messages names etc | * HUAWEI TECH. GmbH | * withdrawn |  |  |
| * S3-190066 | * LS to RAN2/3 on EDT data integrity protection | * HUAWEI TECH. GmbH | * withdrawn |  |  |
| * S3-190067 | * Adding Security Protection Requirement of Unicast RRC Messges | * Huawei, Hisilicon | * noted |  |  |
| * S3-190068 | * Security Solution for RRC UE capability transfer | * Huawei, Hisilicon | * approved |  |  |
| * S3-190069 | * Security Requirement for Paging Messges | * Huawei, Hisilicon | * noted |  |  |
| * S3-190070 | * Protection for Incoming Paging Message Based on Stored Security Context | * Huawei, Hisilicon | * noted |  |  |
| * S3-190071 | * Avoiding UE connecting to fake base station during HO | * Huawei, Hisilicon | * not treated |  |  |
| * S3-190072 | * Corrections of messages names etc | * Huawei, Hisilicon | * merged |  | * S3-190423 |
| * S3-190073 | * EDT UP IP handling of multiple PDCP PDUs | * Huawei, Hisilicon | * not pursued |  | * - |
| * S3-190074 | * Details of protecting gNB from RRC DoS attack | * Huawei, Hisilicon | * revised |  | * S3-190482 |
| * S3-190075 | * Resolving Editor’s Note for solution #7 (clause 6.7) | * Huawei, Hisilicon | * approved |  |  |
| * S3-190076 | * LS to RAN2/3 on EDT data integrity protection | * Huawei, Hisilicon | * revised |  | * S3-190454 |
| * S3-190077 | * Update Solution #4 to use HASHUE-data as in TS33.401 | * Huawei, Hisilicon | * approved |  |  |
| * S3-190078 | * Clarification and correct clause reference for RNAU w/o context relocation | * Huawei, Hisilicon | * agreed |  |  |
| * S3-190079 | * New key issue: Protection of Line ID | * Ericsson | * merged |  |  |
| * S3-190080 | * New key issue: TNAP mobility for trusted non-3GPP access | * Ericsson | * noted |  |  |
| * S3-190081 | * Reply-LS on FN-RG authentication and related questions | * Ericsson | * revised |  | * S3-190518 |
| * S3-190082 | * Reply-LS on FN-RG authentication and related questions | * Ericsson | * merged |  | * S3-190518 |
| * S3-190083 | * Alignment with TS 23.502: Optimization of UDM selection in AUSF | * Ericsson | * not pursued |  |  |
| * S3-190084 | * Correction to authentication step | * Ericsson | * not pursued |  |  |
| * S3-190085 | * Reply LS on Nudr Sensitive Data Protection | * Ericsson | * revised |  | * S3-190411 |
| * S3-190086 | * New solution: WLAN measurements from UEs | * Ericsson | * not treated |  |  |
| * S3-190087 | * New solution: Bluetooth measurements from UEs | * Ericsson | * not treated |  |  |
| * S3-190088 | * Resubmission of S3-183526 “WLAN positioning - new KI for the upcoming TR on FS\_eLCS\_Sec” | * Ericsson | * approved |  |  |
| * S3-190089 | * Editorials and minor clarifications for clause 13.1 | * Ericsson | * agreed |  |  |
| * S3-190090 | * Editorials and minor clarifications for clause 13.2 | * Ericsson | * revised |  | * S3-190439 |
| * S3-190091 | * Minimized kernel functions | * Ericsson | * not pursued |  |  |
| * S3-190092 | * Minimized kernel functions | * Ericsson | * not pursued |  |  |
| * S3-190093 | * Protection from buffer overflows | * Ericsson | * revised |  | * S3-190456 |
| * S3-190094 | * Protection from buffer overflows | * Ericsson | * agreed |  |  |
| * S3-190095 | * Uunused software | * Ericsson | * not pursued |  |  |
| * S3-190096 | * Uunused software | * Ericsson | * not pursued |  |  |
| * S3-190097 | * No unsupported components | * Ericsson | * not pursued |  |  |
| * S3-190098 | * No unsupported components | * Ericsson | * not pursued |  |  |
| * S3-190099 | * Analysis of requirements on the AUSF in TS 33.501 | * Ericsson | * noted |  |  |
| * S3-190100 | * Name correction of the Nudm\_SDM\_Notification service operation | * Ericsson | * agreed |  |  |
| * S3-190101 | * New Key Issue: UP integrity activation in EPS | * Ericsson | * approved |  |  |
| * S3-190102 | * Update to Study Item Description FS\_SBA\_Sec: Security for inter-PLMN user plane traffic (N9 reference point) | * Ericsson | * withdrawn |  |  |
| * S3-190103 | * Reply LS on Interim conclusions for SA2 study on Radio Capabilities Signalling Optimisations (FS\_RACS) | * R2-1819206 | * noted |  |  |
| * S3-190104 | * Update to KI#2.1 in TR 33.819 | * InterDigital Europe. Ltd. | * noted |  |  |
| * S3-190105 | * Update to Study Item Description FS\_SBA\_Sec: Security for inter-PLMN user plane traffic (N9 reference point) | * Ericsson, Juniper Networks, Deutsche Telekom AG | * merged |  | * S3-190464 |
| * S3-190106 | * Reply LS on new 5G-GUTI allocation | * Ericsson | * revised |  | * S3-190410 |
| * S3-190107 | * Expectations and requirements for 256 bit algorithms | * ETSI SAGE | * withdrawn |  |  |
| * S3-190108 | * TR33848 Study on Virtualisation Skeleton | * BT plc | * approved |  |  |
| * S3-190109 | * TR33848 Introduction and Scope | * BT plc | * withdrawn |  |  |
| * S3-190110 | * TR33848 Section 4 Background | * BT plc | * withdrawn |  |  |
| * S3-190111 | * Evaluation text for solution #2 | * NEC Corporation | * withdrawn |  |  |
| * S3-190112 | * New key issue on user plane integrity protection in MR-DC scenarios | * NEC Corporation | * withdrawn |  |  |
| * S3-190113 | * New key issue on data rate limitation of integrity protection in UP DRB | * NEC Corporation | * withdrawn |  |  |
| * S3-190114 | * New Key Issue: Basic security requirements on SFSF message transport | * Telekom Deutschland GmbH | * noted |  |  |
| * S3-190115 | * New Key Issue: Protection of SFSF interfaces | * Telekom Deutschland GmbH | * noted |  |  |
| * S3-190116 | * Subscriber privacy: test data for SUCI computation | * Gemalto N.V. | * not pursued |  |  |
| * S3-190117 | * Update to Study Item Description FS\_SBA\_Sec: Enhanced-SBA aspects | * Telekom Deutschland GmbH | * revised |  | * S3-190464 |
| * S3-190118 | * On the handling of invalid JSON patches in N32-f messages | * Telekom Deutschland GmbH | * noted |  |  |
| * S3-190119 | * Inter-PLMN N9 Security | * Telekom Deutschland GmbH | * noted |  |  |
| * S3-190120 | * New Test Case: Separation of cryptographic storage within the SEPP | * Telekom Deutschland GmbH | * revised |  | * S3-190511 |
| * S3-190121 | * New Test Case: Connection-specific scope of cryptographic material by IPX-providers | * Telekom Deutschland GmbH | * noted |  |  |
| * S3-190122 | * New Test Case: Precendence of preconfigured protection policies | * Telekom Deutschland GmbH | * noted |  |  |
| * S3-190123 | * New Test Case: Validating the common message formatting | * Telekom Deutschland GmbH | * noted |  |  |
| * S3-190124 | * CR Add UE trace to UE Authentication Get Service | * Nokia, Nokia Shanghai Bell | * not pursued |  |  |
| * S3-190125 | * Discussion on providing AS security during RRC connection establishment to protect NSSAI | * NEC Europe Ltd | * withdrawn |  |  |
| * S3-190126 | * Discussion on C1-188921 LS on GUTI Re-assignment | * Nokia, Nokia Shangahi Bell | * noted |  |  |
| * S3-190127 | * Key Issue for Fake Base Station | * Intel Deutschland GmbH | * not treated |  |  |
| * S3-190128 | * New WID on providing the encryption of slice identity at the AS layer during RRC connection establishment procedure | * NEC Europe Ltd | * noted |  |  |
| * S3-190129 | * Discussion on Radio Capability indication LS S2-1812607 | * Nokia, Nokia Shanghai Bell | * noted |  |  |
| * S3-190130 | * Security Requirement for Key issue 2 | * Intel Deutschland GmbH | * noted |  |  |
| * S3-190131 | * EPC solution for RLOS access | * Intel Deutschland GmbH | * noted |  |  |
| * S3-190132 | * Discussion on SA2 LS on Slice Specific Authentication S2-1813359 | * Nokia, Nokia Shanghai-Bell | * noted |  |  |
| * S3-190133 | * Solution for Slice Specific secondary authentication | * Nokia, Nokia Shangahi Bell | * revised |  | * S3-190533 |
| * S3-190134 | * Clarification on Establishment of a mapped security context during intersystem handover(N1 to S1) | * Intel Deutschland GmbH | * not pursued |  |  |
| * S3-190135 | * Clarification to the 5G-GUTI change during the NAS procedure. | * NEC Europe Ltd | * not pursued |  |  |
| * S3-190136 | * Clarification to the 5G-GUTI allocation during the Notification procedure. | * NEC Europe Ltd | * not pursued |  |  |
| * S3-190137 | * Clarification on Establishment of a mapped security context during intersystem handover(S1 to N1) | * Intel Deutschland GmbH | * not pursued |  |  |
| * S3-190138 | * Handling of SUCI de-concealment during registration retry procedure | * NEC Europe Ltd | * not pursued |  |  |
| * S3-190139 | * requirement of protection of broadcast messages | * Apple (UK) Limited | * noted |  |  |
| * S3-190140 | * Clarification on Handover message in Interworking | * Intel Deutschland GmbH | * not pursued |  |  |
| * S3-190141 | * requirement of protection of unicast messages | * Apple (UK) Limited | * noted |  |  |
| * S3-190142 | * Discussion about a new study on eV2X security | * LG Electronics | * noted |  |  |
| * S3-190143 | * New SID on Security Aspects of 3GPP support for Advanced V2X Services | * LG Electronics | * revised |  | * S3-190462 |
| * S3-190144 | * Reply LS on PC5 unicast and groupcast security protection | * LG Electronics | * revised |  | * S3-190463 |
| * S3-190145 | * Editorial pCR for PARLOS TR 33.815 | * LG Electronics | * revised |  | * S3-190466 |
| * S3-190146 | * ID-based solution in 5GFBS | * Apple (UK) Limited | * noted |  |  |
| * S3-190147 | * Credential-based solution in 5GFBS | * Apple (UK) Limited | * noted |  |  |
| * S3-190148 | * Key issue of network credential revocation consideration | * Apple (UK) Limited | * withdrawn |  |  |
| * S3-190149 | * Key issue of UP IP performance | * Apple (UK) Limited | * noted |  |  |
| * S3-190150 | * Solution of improving efficiency of UP IP | * Apple (UK) Limited | * noted |  |  |
| * S3-190151 | * Align NAS connection identifier values | * ZTE Corporation | * merged |  | * S3-190422 |
| * S3-190152 | * Clarification on Registration procedure for mobility from EPS to 5GS over N26 | * ZTE Corporation | * not pursued |  |  |
| * S3-190153 | * Handling of AMF redirection | * ZTE Corporation | * not pursued |  |  |
| * S3-190154 | * Authorization on northbound APIs | * ZTE Corporation | * revised |  | * S3-190514 |
| * S3-190155 | * Anti fake base station based on symmetric algorithm | * ZTE Corporation | * not treated |  |  |
| * S3-190156 | * Solution on registration for mutual exclusive slices | * ZTE Corporation | * noted |  |  |
| * S3-190157 | * Key issue for acceleration of AKA procedure for low latency | * ZTE Corporation | * revised |  | * S3-190541 |
| * S3-190158 | * Solution on enhancement of handover with direct Xn tunnel for single user plan path | * ZTE Corporation | * noted |  |  |
| * S3-190159 | * Key issue for SUPI concealment | * ZTE Corporation | * not treated |  |  |
| * S3-190160 | * Key issue for linkability when AUTN verification fails | * ZTE Corporation | * not treated |  |  |
| * S3-190161 | * Solution on mitigation of large SUCI attack | * ZTE Corporation | * not treated |  |  |
| * S3-190162 | * Solution for linkability issue | * ZTE Corporation | * not treated |  |  |
| * S3-190163 | * New SID on 5G forward security | * ZTE Corporation | * noted |  |  |
| * S3-190164 | * New SID on IPsec enhancement to meet 5G data rate requirements | * ZTE Corporation | * noted |  |  |
| * S3-190165 | * Discussion on improving the efficiency of IPsec to meet 5G data rate requirements | * ZTE Corporation | * noted |  |  |
| * S3-190166 | * Solution on privacy protection of SUPI | * ZTE Corporation | * noted |  |  |
| * S3-190167 | * a skeleton of security aspects of 5G SRVCC to UTRAN | * Huawei, Hisilicon, China Unicom | * revised |  | * S3-190443 |
| * S3-190168 | * Resovle Editor's note in Solution for bootstrapping authentication of AKMA | * Huawei, Hisilicon | * approved |  |  |
| * S3-190169 | * Solution for Key freshness in AKMA | * Huawei, Hisilicon | * noted |  |  |
| * S3-190170 | * New Conclusion for Small Data Transfer via NAS Signaling | * Huawei, Hisilicon | * revised |  | * S3-190489 |
| * S3-190171 | * New Solution Security-Property-Group-based Mitigation for DDoS Attack Triggered by Malicious Applications on the UE | * Huawei, Hisilicon | * revised |  | * S3-190485 |
| * S3-190172 | * Address EN in Key Issue 4 of Definition of Misbehaving UE | * Huawei, Hisilicon | * revised |  | * S3-190474 |
| * S3-190173 | * New Key Issue for NAS based Redirection between Core Networks | * Huawei, Hisilicon | * revised |  | * S3-190475 |
| * S3-190174 | * Clarification for section 6.10.2.1 | * Huawei, Hisilicon | * revised |  | * S3-190433 |
| * S3-190175 | * Clarification for UP security in option4&7 | * Huawei, Hisilicon | * revised |  | * S3-190434 |
| * S3-190176 | * claification on interworking case | * Huawei, Hisilicon | * revised |  | * S3-190437 |
| * S3-190177 | * key update in multi-NAS scenario | * Huawei, Hisilicon | * revised |  | * S3-190556 |
| * S3-190178 | * Clarification on the UE selecting the 4G or 5G security protection method | * Huawei, Hisilicon | * revised |  | * S3-190478 |
| * S3-190179 | * Add requirement to KI#2 | * Huawei, Hisilicon | * noted |  |  |
| * S3-190180 | * A new KI on the trust of W-5GAN | * Huawei, Hisilicon | * noted |  |  |
| * S3-190181 | * Add evaulation to sloutlion 3 | * Huawei, Hisilicon | * noted |  |  |
| * S3-190182 | * add conclusion clauses | * Huawei, Hisilicon | * approved |  | * - |
| * S3-190183 | * Add conclusion to KI#1 | * Huawei,Hisilicon | * noted |  |  |
| * S3-190184 | * Key Issue for encryption and integrity protection of assistance data | * Huawei, Hisilicon | * not treated |  |  |
| * S3-190185 | * Key Issue for encryption and integrity protection of location data | * Huawei, Hisilicon | * not treated |  |  |
| * S3-190186 | * Key Issue for integrity protection of privacy setting between UE and home network | * Huawei, Hisilicon | * not treated |  |  |
| * S3-190187 | * Solution for DDoS attack mitigation in CIoT | * Huawei, Hisilicon | * revised |  | * S3-190486 |
| * S3-190188 | * Solution for integrity protection of privacy setting between UE and UDM | * Huawei, Hisilicon | * not treated |  |  |
| * S3-190189 | * Key Issue for protection against DDoS attack | * Huawei, Hisilicon | * noted |  |  |
| * S3-190190 | * Security Solution for DDoS attack mitigation in the roaming scenarios between NPN and PLMN | * Huawei, Hisilicon | * noted |  |  |
| * S3-190191 | * Editorial corrections in TS 33.117 R15 | * Nokia, Nokia Shanghai Bell | * revised |  | * S3-190458 |
| * S3-190192 | * Corrections on ng-ran keys | * Huawei, HiSilicon | * revised |  | * S3-190426 |
| * S3-190193 | * New clause for intra ng-enb handover | * Huawei, HiSilicon | * not pursued |  |  |
| * S3-190194 | * Clarifications CIOT security assumptions | * Huawei, HiSilicon | * revised |  | * S3-190473 |
| * S3-190195 | * CIOT solution 6 improvement | * Huawei, HiSilicon | * approved |  |  |
| * S3-190196 | * Roaming key issue for AKMA | * Huawei, HiSilicon | * noted |  | * - |
| * S3-190197 | * architecture solution for AKMA with non-standalone function | * Huawei, HiSilicon | * noted |  |  |
| * S3-190198 | * URLLC solution for N3 tunnel redundancy | * Huawei, HiSilicon | * revised |  | * S3-190549 |
| * S3-190199 | * URLLC solution for Key Issue 1 | * Huawei, HiSilicon | * merged |  | * S3-190545 |
| * S3-190200 | * URLLC solution for Key Issue 3 | * Huawei, HiSilicon | * revised |  | * S3-190546 |
| * S3-190201 | * A key issue on the long-term key and its related anchor key leakage | * Huawei, HiSilicon | * not treated |  |  |
| * S3-190202 | * A solution to slice authentication | * Huawei, HiSilicon | * revised |  | * S3-190534 |
| * S3-190203 | * A new KI on NSSAI protection | * Huawei, HiSilicon | * revised |  | * S3-190477 |
| * S3-190204 | * Solutions to AMF key separation | * Huawei, HiSilicon | * noted |  |  |
| * S3-190205 | * A solution to security features for NSaaS | * Huawei, HiSilicon | * revised |  | * S3-190537 |
| * S3-190206 | * Security threats and requirement for KI #4 | * Huawei, HiSilicon | * revised |  | * S3-190535 |
| * S3-190207 | * Considerations on network product class when using NFV technology | * China Mobile, ZTE Corporation, Nokia, Nokia Shanghai Bell | * not treated |  |  |
| * S3-190208 | * Evaluation text for solution #2 | * NEC Corporation | * revised |  | * S3-190479 |
| * S3-190209 | * New key issue on user plane integrity protection in MR-DC scenarios | * NEC Corporation | * noted |  |  |
| * S3-190210 | * New key issue on data rate limitation of integrity protection in UP DRB | * NEC Corporation | * noted |  |  |
| * S3-190211 | * Discussion on Requirement for KDF Negotiation | * NEC Corporation, Huawei, Hisilicon | * noted |  |  |
| * S3-190212 | * Update to clause 4 to add KDF negotiation rationale | * NEC Corporation, Huawei, Hisilicon | * revised |  | * S3-190517 |
| * S3-190213 | * New Key Issue on use of established keys for AKMA | * NEC Corporation | * noted |  |  |
| * S3-190214 | * Solution for using established keys for AKMA | * NEC Corporation | * revised |  | * S3-190558 |
| * S3-190215 | * Considerations on SECAM of the virtualized network products | * China Mobile, ZTE Corporation, Nokia, Nokia Shanghai Bell | * not treated |  |  |
| * S3-190216 | * CR to TR 33.841 regarding key derivation function | * China Mobile | * not pursued |  |  |
| * S3-190217 | * Key issue regarding minimal computational cost when generating session anchor keys | * China Mobile | * not treated |  |  |
| * S3-190218 | * Key issue to ensure the correct routing of the data packets in the user plane | * China Mobile | * noted |  |  |
| * S3-190219 | * Clarification on UE Parameters Update Data used for MAC computation | * Huawei, HiSilicon | * not pursued |  |  |
| * S3-190220 | * Test Case: Mutual Authentication between Network Functions | * Nokia, Nokia Shanghai Bell | * noted |  |  |
| * S3-190221 | * Key issue to ensure the security of session anchor keys | * China Mobile | * not treated |  |  |
| * S3-190222 | * Modificaiton on the NAS connection identifier for backward compatibility with LTE | * Huawei, Hisilicon | * not pursued |  |  |
| * S3-190223 | * Key issue to mitigate the DDoS attacks on the UDM | * China Mobile | * not treated |  |  |
| * S3-190224 | * NAS counter clarification on interworking | * Huawei, Hisilicon | * revised |  | * S3-190438 |
| * S3-190225 | * Test Case: Authorization of NF Serive Access | * Nokia, Nokia Shanghai Bell | * noted |  |  |
| * S3-190226 | * Key issue to resist the linkability attacks | * China Mobile | * not treated |  |  |
| * S3-190227 | * Update on the token verification | * Huawei, Hisilicon,Nokia | * agreed |  |  |
| * S3-190228 | * Proposed revision of solution 6 | * China Mobile,ZTE Corporation | * noted |  |  |
| * S3-190229 | * Clarification on service authorization and token verification | * Huawei, Hisilicon | * revised |  | * S3-190440 |
| * S3-190230 | * A key issue: Slice-specific Security in roaming | * China Mobile | * noted |  |  |
| * S3-190231 | * Clarification on securing the procedure of idle mode mobility from 5GS to EPS over N26 interface | * Huawei, Hisilicon | * not pursued |  |  |
| * S3-190232 | * Clarification on the Use of the SUPI in the Kamf Derivation | * Huawei, Hisilicon,Nokia,Nokia Shanghai Bell | * revised |  | * S3-190416 |
| * S3-190233 | * SCAS SEPP: Introduction and general approach | * Nokia, Nokia Shanghai Bell | * revised |  | * S3-190512 |
| * S3-190234 | * Clarification on the allocation of 5G-GUTI | * Huawei, Hisilicon | * revised |  | * S3-190397 |
| * S3-190235 | * SCAS NRF: Introduction and general approach | * Nokia, Nokia Shanghai Bell | * approved |  |  |
| * S3-190236 | * pCR to TR33.814 - Key issue for end-to-end LCS data security | * CATT | * not treated |  |  |
| * S3-190237 | * New KI: SUPI privacy protection across different security domains | * Huawei, Hisilicon | * noted |  |  |
| * S3-190238 | * Dynamic UP security policy control solution for URLLC | * Huawei, HiSilicon | * noted |  |  |
| * S3-190239 | * New KI: Access token handling between network slices | * Huawei Technologies Sweden AB | * revised |  | * S3-190318 |
| * S3-190240 | * Test Case: Mutual Authentication | * Nokia, Nokia Shanghai Bell | * noted |  |  |
| * S3-190241 | * Solution for NPN network access via PLMN | * Huawei, Hisilicon | * revised |  | * S3-190493 |
| * S3-190242 | * pCR to TR33.814 - Key issue for broadcast assistance data security | * CATT | * not treated |  |  |
| * S3-190243 | * New KI: Isolation of multiple NAS connections | * Huawei, Hisilicon | * noted |  |  |
| * S3-190244 | * Test Case: NF Discovery Service Authorization | * Nokia, Nokia Shanghai Bell | * noted |  |  |
| * S3-190245 | * New requirment for Authentication relay attack | * Huawei, Hisilicon | * not treated |  |  |
| * S3-190246 | * pCR to TR33.814 - Solution of provisioning keys for broadcast assistant data protection | * CATT | * not treated |  |  |
| * S3-190247 | * pCR to TR33.814 - Solution of ciphering algorithms | * CATT | * not treated |  |  |
| * S3-190248 | * New key issue: Key revocation | * Ericsson | * revised |  | * S3-190528 |
| * S3-190249 | * Protocol clarifications to solution 2 | * Ericsson | * revised |  | * S3-190529 |
| * S3-190250 | * Evaluation of solution 2 | * Ericsson | * noted |  |  |
| * S3-190251 | * New solution:Key revocation | * Ericsson | * revised |  | * S3-190530 |
| * S3-190252 | * New solution: Implicit Bootstrapping | * Ericsson | * revised |  | * S3-190531 |
| * S3-190253 | * New solution: AKMA authentication via the control plane | * Ericsson | * approved |  |  |
| * S3-190254 | * Corrections to RRC Inactive procedure.and RAN-based notification area update procedure. | * Ericsson | * revised |  | * S3-190429 |
| * S3-190255 | * EUTRA connected to 5GC: clause 6.6.2 | * Ericsson | * revised |  | * S3-190501 |
| * S3-190256 | * EUTRA connected to 5GC: clause 6.7.3 | * Ericsson | * revised |  | * S3-190427 |
| * S3-190257 | * EUTRA connected to 5GC: clause 6.7.4 | * Ericsson | * revised |  | * S3-190428 |
| * S3-190258 | * EUTRA connected to 5GC: clause 6.8.1 | * Ericsson | * revised |  | * S3-190424 |
| * S3-190259 | * EUTRA connected to 5GC: clause 6.8.2 | * Ericsson | * revised |  | * S3-190425 |
| * S3-190260 | * EUTRA connected to 5GC: clause 6.9.2.1 | * Ericsson | * revised |  | * S3-190430 |
| * S3-190261 | * EUTRA connected to 5GC: clauses 6.9.2.3.1 and 6.9.2.3.2 | * Ericsson | * merged |  | * S3-190426 |
| * S3-190262 | * EUTRA connected to 5GC: clauses 6.9.3 and 6.9.4 | * Ericsson | * revised |  | * S3-190431 |
| * S3-190263 | * EUTRA connected to 5GC: clause 6.9.5 | * Ericsson | * revised |  | * S3-190432 |
| * S3-190264 | * EUTRA connected to 5GC: clause 6.11 | * Ericsson | * agreed |  |  |
| * S3-190265 | * Updates to Solution #3: Security solution for MO SMS at AMF re-allocation | * Ericsson | * revised |  | * S3-190480 |
| * S3-190266 | * Updates to Solution #5: Security solution for small data included in initial NAS signalling at mobility | * Ericsson | * revised |  | * S3-190481 |
| * S3-190267 | * Potential new security impact in Rel-16 for the selected CIoT solutions in SA2 TR 23.724 | * Ericsson | * noted |  |  |
| * S3-190268 | * Proposal for content to introduction clause | * Ericsson | * revised |  | * S3-190470 |
| * S3-190269 | * Proposal for content to clause 4 | * Ericsson | * revised |  | * S3-190472 |
| * S3-190270 | * A new key issue for privacy protection of new parameters for CIoT included in NAS messages | * Ericsson | * revised |  | * S3-190476 |
| * S3-190271 | * Solution for privacy protection of new parameters for CIoT included in NAS messages | * Ericsson | * approved |  |  |
| * S3-190272 | * Solution for key separation based on slice authentication keys | * Ericsson | * noted |  |  |
| * S3-190273 | * KI#2 in TR 33.809 – new requirement and solution for non-public networks | * Ericsson | * noted |  |  |
| * S3-190274 | * KI#1 in TR 33.809 – a new NOTE for requirements | * Ericsson | * approved |  |  |
| * S3-190275 | * KI#1 in TR 33.809 – new requirement and solution for UECapabilityInformation RRC message | * Ericsson | * revised |  | * S3-190554 |
| * S3-190276 | * KI#1 in TR 33.809 – new requirement and solution for RRC Reject message | * Ericsson | * noted |  |  |
| * S3-190277 | * KI#3 in TR 33.809 – updates to requriements and editorials | * Ericsson | * not treated |  |  |
| * S3-190278 | * KI#3 in TR 33.809 – new solution for enriched measurement reports | * Ericsson | * not treated |  |  |
| * S3-190279 | * KI#3 in TR 33.809 – conclusion on second requirement (reactive action) | * Ericsson | * not treated |  |  |
| * S3-190280 | * EUTRA connected to 5GC: clause 8 | * Ericsson | * revised |  | * S3-190435 |
| * S3-190281 | * Clarification to AKA parameter derivation | * Ericsson | * agreed |  |  |
| * S3-190282 | * Multiple NAS connecions: mobility with horizontal KAMF derivation | * Ericsson | * merged |  | * S3-190556 |
| * S3-190283 | * Multiple active NAS connections in the same PLMN's serving network: common algorithm identifiers | * Ericsson | * revised |  | * S3-190436 |
| * S3-190284 | * Clarification to the implementation requirement for the protectaion of the backhaul and sidehaul interfaces | * Ericsson | * agreed |  |  |
| * S3-190285 | * New key issue on the secure negotiation of the user plane integrity protection feature | * Ericsson | * revised |  | * S3-190551 |
| * S3-190286 | * Update to KI#3 or KI#4 taking Dual Connectivity into considerations | * Ericsson | * revised |  | * S3-190543 |
| * S3-190287 | * Evaluation to solution #1 and conclusion to key issue #3 | * Ericsson | * revised |  | * S3-190547 |
| * S3-190288 | * Evaluation on solution #2 and conclusion to key issue #3 | * Ericsson | * revised |  | * S3-190548 |
| * S3-190289 | * New key issue on UP security policy for the 5GLAN Group | * Ericsson | * revised |  | * S3-190498 |
| * S3-190290 | * New security solution for handling UP security policy for a 5GLAN Group | * Ericsson | * revised |  | * S3-190499 |
| * S3-190291 | * TR 33.819: new key issue on security and privacy aspects of service continuity and session continuity | * Ericsson | * revised |  | * S3-190494 |
| * S3-190292 | * Skeleton for TR 33.846 on authentication enhancements | * Ericsson | * not treated |  |  |
| * S3-190293 | * Scope for the study on authentication enhancements (FS\_AUTH\_ENH) | * Ericsson | * not treated |  |  |
| * S3-190294 | * New KI: Leakage of long-term key | * Ericsson | * not treated |  |  |
| * S3-190295 | * New solution: EAP-AKA´ PFS | * Ericsson | * not treated |  |  |
| * S3-190296 | * Update on EAP-AKA´ PFS | * Ericsson | * not treated |  |  |
| * S3-190297 | * Clarification to idle mode mobility from EPS to 5GS | * Ericsson | * agreed |  |  |
| * S3-190298 | * EDT correction – input "S" to calculation of HASHUE-data and HASHeNB-data | * Ericsson | * not pursued |  |  |
| * S3-190299 | * EDT correction – length of HASHUE-data and HASHeNB-data | * Ericsson | * revised |  | * S3-190455 |
| * S3-190300 | * EDT correction – input to calculation of shortResumeMAC-I | * Ericsson | * agreed |  |  |
| * S3-190301 | * EDT correction – clarification of NOTE about no-integrity protection for non-EDT data | * Ericsson | * not pursued |  |  |
| * S3-190302 | * LS on EDT security | * Ericsson | * noted |  |  |
| * S3-190303 | * Key issue on linkability attack | * Huawei, Hisilicon | * not treated |  |  |
| * S3-190304 | * Update on Key issue #2.1 | * Huawei, Hisilicon | * approved |  |  |
| * S3-190305 | * Response LS on Authentication for UEs not Supporting NAS | * Lenovo (Beijing) Ltd | * revised |  | * S3-190519 |
| * S3-190306 | * Solution for 5GC access from WLAN UEs that do not support NAS | * Motorola Mobility, Lenovo | * merged |  | * S3-190507 |
| * S3-190307 | * Security Assurance Requirement and Test for authorization handling in the NF | * Huawei, HiSilicon | * revised |  | * S3-190540 |
| * S3-190308 | * Solution for Key Issue #7: Key refreshing for protection of small data | * Lenovo, Motorla Mobility | * revised |  | * S3-190488 |
| * S3-190309 | * Solution for partial UP IP considering UE limitations | * Motorola Mobility, Lenovo | * noted |  |  |
| * S3-190310 | * SCAS: UDM-specific adaptations of security functional requirements and related test cases | * Huawei, Hisilicon | * revised |  | * S3-190508 |
| * S3-190311 | * SCAS: AMF-specific adaptations of security functional requirements and related test cases | * Huawei, Hisilicon | * noted |  |  |
| * S3-190312 | * Security Assurance Requirements and Tests for the Security Functionalities Provided by UPF | * Huawei, Hisilicon | * noted |  |  |
| * S3-190313 | * Security Assurance Requirement and Test for NRF | * Huawei, Hisilicon | * noted |  |  |
| * S3-190314 | * New Key Issue: Subscription identifier exposure outside 3GPP network | * Ericsson India Private Limited | * noted |  |  |
| * S3-190315 | * Removing the test case on Kseaf handling | * Huawei, Hisilicon | * approved |  |  |
| * S3-190316 | * New solution - Battery efficient AKMA | * KPN | * not treated |  |  |
| * S3-190317 | * Requirement and test cases for SMF | * Huawei, Hisilicon | * noted |  |  |
| * S3-190318 | * New KI: Access token handling between network slices | * Huawei, Hisilicon | * revised | * S3-190239 | * S3-190538 |
| * S3-190319 | * Key Issue on access to 5GC from a non-3GPP device over Wireline 5G Cable Access Network | * Nokia, Nokia Shanghai Bell | * noted |  |  |
| * S3-190320 | * Key Issue on NAS termination in TWIF | * Nokia, Nokia Shanghai Bell | * revised |  | * S3-190520 |
| * S3-190321 | * Editorial corrections in CAPIF TS | * Ericsson | * agreed |  |  |
| * S3-190322 | * Key Issue on SUCI format for legacy FN-RG devices that access 5G over wireline network | * Nokia, Nokia Shanghai Bell | * revised |  | * S3-190522 |
| * S3-190323 | * Key Issue on Authorization of IPTV subsystem | * Nokia, Nokia Shanghai Bell | * noted |  |  |
| * S3-190324 | * Key Issue on security of TNGF mobility using EAP Reauthentication Protocol (ERP) | * Nokia, Nokia Shanghai Bell | * noted |  |  |
| * S3-190325 | * Key Issue on NAS termination for registered FN-RGs | * Nokia, Nokia Shanghai Bell | * revised |  | * S3-190523 |
| * S3-190326 | * New KI: Interworking between AKMA and GBA | * Ericsson | * not treated |  |  |
| * S3-190327 | * Allocating new 5G-GUTI during the MO service request procedure | * NEC Europe Ltd | * revised |  | * S3-190420 |
| * S3-190328 | * Key Issue on security of the Tn interface between TNGFs | * Nokia, Nokia Shanghai Bell | * noted |  |  |
| * S3-190329 | * Key Issue on access to 5GC from non-3GPP device over Trusted WLAN | * Nokia, Nokia Shanghai Bell | * noted |  |  |
| * S3-190330 | * Conclusion for Key Issue #9 | * Ericsson | * revised |  | * S3-190490 |
| * S3-190331 | * pCR to Solution #1 to include child SA creation for user plane data protection | * Nokia, Nokia Shanghai Bell | * approved |  |  |
| * S3-190332 | * FN-RG registration to 5GC | * Nokia, Nokia Shanghai Bell | * revised |  | * S3-190506 |
| * S3-190333 | * Access to 5GC via Trusted WLAN for UEs w/o NAS support | * Nokia, Nokia Shanghai Bell | * revised |  | * S3-190507 |
| * S3-190334 | * 5G-RG connecting to 5GC via Wireline Access (W-5GAN) | * Nokia, Nokia Shanghai Bell | * revised |  | * S3-190524 |
| * S3-190335 | * 5G-RG connecting to 5GC via NG-RAN | * Nokia, Nokia Shanghai Bell | * revised |  | * S3-190525 |
| * S3-190336 | * Vertical - Key Issue on Authentication of a UE for Non-public network | * Huawei, HiSilicon, Nokia, Nokia Shanghai Bell, CableLabs | * noted |  |  |
| * S3-190337 | * Vertical - Key Issue on credential storage for Non-public network | * Nokia, Nokia Shanghai Bell | * noted |  |  |
| * S3-190338 | * Vertical - Requirements to Key Issue on Authentication of a UE for Non-public network | * Huawei, HiSilicon, Nokia, Nokia Shanghai Bell, CableLabs | * noted |  |  |
| * S3-190339 | * Vertical - solution on EAP authentication framework | * Nokia, Nokia Shanghai Bell | * noted |  |  |
| * S3-190340 | * Vertical - solution on EAP-TLS | * Nokia, Nokia Shanghai Bell, CableLabs | * noted |  | * - |
| * S3-190341 | * Vertical - solution on EAP-TTLS | * Nokia, Nokia Shanghai Bell, CableLabs | * noted |  |  |
| * S3-190342 | * Vertical - Conclusion on authentication | * Nokia, Nokia Shanghai Bell, CableLabs | * noted |  |  |
| * S3-190343 | * Vertical - Discussion of WID for 5GS Vertical\_LAN\_SEC | * Nokia, Nokia Shanghai Bell | * noted |  |  |
| * S3-190344 | * WID proposal for 5GS Vertical\_LAN\_SEC | * Nokia, Nokia Shanghai Bell | * noted |  |  |
| * S3-190345 | * Correction to clause 14.2.1 | * NEC Corporation | * agreed |  |  |
| * S3-190346 | * New KI on Privacy aspects for NPN | * NEC Corporation | * noted |  |  |
| * S3-190347 | * New Solution on Privacy aspects for NPN | * NEC Corporation | * noted |  |  |
| * S3-190348 | * New Solution for Redundant data protection | * NEC Corporation | * revised |  | * S3-190545 |
| * S3-190349 | * New KI on Supporting low latency during Re-attach procedure | * NEC Corporation | * revised |  | * S3-190542 |
| * S3-190350 | * Solution to KI#9 Key separation for AKMA AFs | * NEC Corporation | * not treated |  |  |
| * S3-190351 | * Updating key issue#3 for network detection of nearby fake base station | * NEC Corporation | * revised |  | * S3-190532 |
| * S3-190352 | * New solution for preventing UE from attaching to a false base station | * NEC Corporation | * not treated |  |  |
| * S3-190353 | * New solution for protecting the System Information Block | * NEC Corporation | * not treated |  |  |
| * S3-190354 | * Updating Access Token Response to include token expiration time and scope | * Nokia, Nokia Shanghai Bell | * merged |  | * S3-190440 |
| * S3-190355 | * SN Id and SNN clarification | * Ericsson India Private Limited | * noted |  |  |
| * S3-190356 | * New WID on Security for NR Integrated Access and Backhaul | * Samsung | * revised |  | * S3-190442 |
| * S3-190357 | * Security framework for the NR integrated access backhaul | * Samsung | * noted |  |  |
| * S3-190358 | * Correction on RRC states terminology usage | * Samsung | * revised |  | * S3-190423 |
| * S3-190359 | * Requirement on security of unprotected unicast messages | * Samsung | * revised |  | * S3-190553 |
| * S3-190360 | * Solution on security of RRC Reject messages | * Samsung | * revised |  | * S3-190555 |
| * S3-190361 | * Requirement on security of unprotected unicast messages | * Samsung | * approved |  |  |
| * S3-190362 | * Solution for AS security during RRC Idle mode | * Samsung | * noted |  | * - |
| * S3-190363 | * New WID on Enhancements for Security aspects of Common API Framework | * Samsung, China Telecom, China Unicom, Nokia | * revised |  | * S3-190461 |
| * S3-190364 | * P-CR for PARLOS evaluation clause | * SPRINT Corporation | * noted |  | * - |
| * S3-190365 | * Non-3GPP Access: Correcting Connection Identifier | * Samsung | * revised |  | * S3-190422 |
| * S3-190366 | * Key issue on Multiple and Separate credentials for PLMN and NPN network | * Samsung | * revised |  | * S3-190495 |
| * S3-190367 | * Discussion paper on N9 firewall for inter-PLMN GTP-U filtering | * Nokia, Nokia Shanghai Bell | * noted |  |  |
| * S3-190368 | * Protecting small data at idle mobility using the Registration Complete message | * Qualcomm Incorporated | * revised |  | * S3-190484 |
| * S3-190369 | * Proposed key issue on binding key to network identity for standalone non-public networks | * Qualcomm Incorporated | * revised |  | * S3-190497 |
| * S3-190370 | * Proposed key issue on key hierarchy for non-public networks | * Qualcomm Incorporated | * revised |  | * S3-190496 |
| * S3-190371 | * Proposed solution on binding key to network identity for standalone non-public networks | * Qualcomm Incorporated | * noted |  |  |
| * S3-190372 | * Handling the non-3GPP security context at mobility on the 3GPP access | * Qualcomm Incorporated | * merged |  | * S3-190556 |
| * S3-190373 | * Discussion on the incoming SA2 on security aspects of UE Capability ID | * Qualcomm Incorporated | * noted |  |  |
| * S3-190374 | * Draft response LS on the security aspects of UE Capability ID | * Qualcomm Incorporated | * revised |  |  |
| * S3-190375 | * Modifying AKA to provide freshness for the protection of SQN in the case of re-synchronisations | * Qualcomm Incorporated | * noted |  |  |
| * S3-190376 | * Adding MACS as an input parameter to the calculation of AK\* to provide freshness | * Qualcomm Incorporated | * not pursued |  |  |
| * S3-190377 | * Solution for PARLOS based on emergency call procedures | * Qualcomm Incorporated | * revised |  | * S3-190468 |
| * S3-190378 | * CR on NAS connection id for NAS MAC calculation | * Qualcomm Incorporated | * agreed |  |  |
| * S3-190379 | * CR on clarification on N2 handover | * Qualcomm Incorporated | * revised |  | * S3-190421 |
| * S3-190380 | * CR - clarification on key handling in handover | * Qualcomm Incorporated | * agreed |  |  |
| * S3-190381 | * Key Issue MITM attacks | * Qualcomm Incorporated | * not treated |  |  |
| * S3-190382 | * Solution for small data at idle mode mobility | * Qualcomm Incorporated | * revised |  | * S3-190483 |
| * S3-190383 | * SUPI Type clarification | * Qualcomm Incorporated | * not pursued |  |  |
| * S3-190384 | * Input encoding for ECIES protection schemes | * Qualcomm Incorporated | * revised |  | * S3-190557 |
| * S3-190385 | * pCR: Reusing KAUSF for AKMA | * Qualcomm Incorporated | * not treated |  |  |
| * S3-190386 | * pCR: New KI: Efficient handling of PDCP discardTimer expiry on the UE Uplink | * Qualcomm Incorporated | * noted |  |  |
| * S3-190387 | * pCR: New KI: Ability to prioritize certain PDCP packets on the UE uplink | * Qualcomm Incorporated | * noted |  | * - |
| * S3-190388 | * pCR: New KI: Integrity Algorithm independence | * Qualcomm Incorporated | * noted |  |  |
| * S3-190389 | * P-CR for editors note in PARLOS manual roaming clause | * SPRINT Corporation | * approved |  |  |
| * S3-190390 | * PARLOS TR cover sheet for plenary presentation | * SPRINT Corporation | * noted |  |  |
| * S3-190391 | * Removal of editor’s note in solution #1 | * Lenovo, Motorola Mobility | * noted |  |  |
| * S3-190392 | * draft SID for User Identities and Authentication | * Vodafone GmbH | * withdrawn |  |  |
| * S3-190393 | * New proposal on the length of password and other clarifications | * Huawei, Hisilicon | * revised |  | * S3-190503 |
| * S3-190394 | * LS on the need to update home network public key and key ID during Routing indicator update | * C1-190377 | * replied to |  |  |
| * S3-190395 | * LS on mandating 5G-GUTI allocation after network triggered service request | * C1-190380 | * replied to |  |  |
| * S3-190396 | * LS on securing warning messages in ePWS | * C1-190393 | * replied to |  |  |
| * S3-190397 | * Clarification on the allocation of 5G-GUTI | * Huawei, Hisilicon | * revised | * S3-190234 | * S3-190415 |
| * S3-190398 | * Comment on S3-190116 | * Huawei, Hisilicon | * noted |  |  |
| * S3-190399 | * Discussion on providing AS security during RRC connection establishment to protect slice identity | * NEC Corporation | * noted |  |  |
| * S3-190400 | * Discussion on incoming CT1 LS on update of Routing Indicator (S3-190394) | * Qualcomm Incorporated | * noted |  |  |
| * S3-190401 | * [Late contribution] Discussion on dealing with Routing ID update Lses | * NEC Corporation | * noted | * - | * - |
| * S3-190402 | * 128-EIA3 maximum message size | * ETSI SAGE | * noted | * - | * - |
| * S3-190403 | * Expectations and requirements for 256 bit algorithms | * ETSI SAGE | * replied to | * - | * - |
| * S3-190404 | * Interception of voice services over new radio in a 5GS environment | * S3i190057 | * postponed | * - | * - |
| * S3-190405 | * Reply to: LS on the security aspects of UE Capability ID | * Qualcomm | * approved | * - | * - |
| * S3-190406 | * Reply to: LS on securing warning messages in ePWS | * Ericsson | * approved | * - | * - |
| * S3-190407 | * Reply to: Expectations and requirements for 256 bit algorithms | * Vodafone | * approved | * - | * - |
| * S3-190408 | * User Plane Security for 5GC Roaming | * Vodafone | * agreed | * - | * - |
| * S3-190409 | * LS on User Plane Security for 5GC Roaming | * BT | * approved | * - | * - |
| * S3-190410 | * Reply to: LS on new 5G-GUTI allocation | * Ericsson | * approved | * - | * - |
| * S3-190411 | * Reply to: LS on Nudr Sensitive Data Protection | * Ericsson | * approved | * - | * - |
| * S3-190412 | * Reply to: LS on Security Result Exchange Between NG-RAN and SMF in DC | * Nokia | * approved | * - | * - |
| * S3-190413 | * Reply to: LS on the need to update home network public key and key ID during Routing indicator update | * Vodafone | * approved | * - | * - |
| * S3-190414 | * Reply to: LS on mandating 5G-GUTI allocation after network triggered service request | * Huawei | * approved | * - | * - |
| * S3-190415 | * Clarification on the allocation of 5G-GUTI | * Huawei, Hisilicon,Nokia,Interdigital | * agreed | * S3-190397 | * - |
| * S3-190416 | * Clarification on the Use of the SUPI in the Kamf Derivation | * Huawei, Hisilicon,Nokia,Nokia Shanghai Bell,Qualcomm,Vodafone | * agreed | * S3-190232 | * - |
| * S3-190417 | * LS Response on Enforcement of maximum supported data rate for integrity protection | * S2-1812600 | * noted | * - | * - |
| * S3-190418 | * Reply LS on Interim conclusions for SA2 study on Radio Capabilities Signalling Optimisations (FS\_RACS) | * S2-1901303 | * noted | * - | * - |
| * S3-190419 | * LS Response on Security Result Exchange Between NG-RAN and SMF in DC | * S2-1901386 | * noted | * - | * - |
| * S3-190420 | * Allocating new 5G-GUTI during the MO service request procedure | * NEC Europe Ltd | * agreed | * S3-190327 | * - |
| * S3-190421 | * CR on clarification on N2 handover | * Qualcomm Incorporated,Ericsson | * agreed | * S3-190379 | * - |
| * S3-190422 | * Non-3GPP Access: Correcting Connection Identifier | * Samsung,ZTE | * agreed | * S3-190365 | * - |
| * S3-190423 | * Correction on RRC states terminology usage | * Samsung,Huawei | * agreed | * S3-190358 | * - |
| * S3-190424 | * EUTRA connected to 5GC: clause 6.8.1 | * Ericsson | * agreed | * S3-190258 | * - |
| * S3-190425 | * EUTRA connected to 5GC: clause 6.8.2 | * Ericsson | * agreed | * S3-190259 | * - |
| * S3-190426 | * Corrections on ng-ran keys | * Huawei, HiSilicon,Ericsson | * agreed | * S3-190192 | * - |
| * S3-190427 | * EUTRA connected to 5GC: clause 6.7.3 | * Ericsson | * agreed | * S3-190256 | * - |
| * S3-190428 | * EUTRA connected to 5GC: clause 6.7.4 | * Ericsson | * agreed | * S3-190257 | * - |
| * S3-190429 | * Corrections to RRC Inactive procedure.and RAN-based notification area update procedure. | * Ericsson | * agreed | * S3-190254 | * - |
| * S3-190430 | * EUTRA connected to 5GC: clause 6.9.2.1 | * Ericsson | * agreed | * S3-190260 | * - |
| * S3-190431 | * EUTRA connected to 5GC: clauses 6.9.3 and 6.9.4 | * Ericsson | * agreed | * S3-190262 | * - |
| * S3-190432 | * EUTRA connected to 5GC: clause 6.9.5 | * Ericsson | * agreed | * S3-190263 | * - |
| * S3-190433 | * Clarification for section 6.10.2.1 | * Huawei, Hisilicon | * agreed | * S3-190174 | * - |
| * S3-190434 | * Clarification for UP security in option4&7 | * Huawei, Hisilicon | * agreed | * S3-190175 | * - |
| * S3-190435 | * EUTRA connected to 5GC: clause 8 | * Ericsson | * agreed | * S3-190280 | * - |
| * S3-190436 | * Multiple active NAS connections in the same PLMN's serving network: common algorithm identifiers | * Ericsson | * agreed | * S3-190283 | * - |
| * S3-190437 | * claification on interworking case | * Huawei, Hisilicon | * agreed | * S3-190176 | * - |
| * S3-190438 | * NAS counter clarification on interworking | * Huawei, Hisilicon | * agreed | * S3-190224 | * - |
| * S3-190439 | * Editorials and minor clarifications for clause 13.2 | * Ericsson | * agreed | * S3-190090 | * - |
| * S3-190440 | * Clarification on service authorization and token verification | * Huawei, Hisilicon, Nokia | * agreed | * S3-190229 | * - |
| * S3-190441 | * SN Id and SNN clarification | * Ericsson | * agreed | * - | * - |
| * S3-190442 | * New WID on Security for NR Integrated Access and Backhaul | * Samsung | * revised | * S3-190356 | * S3-190460 |
| * S3-190443 | * a skeleton of security aspects of 5G SRVCC to UTRAN | * Huawei, Hisilicon, China Unicom | * approved | * S3-190167 | * - |
| * S3-190444 | * [33.180] R14 Annex D.3.5.2 XSD correction (mirror) | * Motorola Solutions Germany | * agreed | * S3-190050 | * - |
| * S3-190445 | * [33.180] R15 Annex D.3.5.2 XSD correction (mirror) | * Motorola Solutions Germany | * agreed | * S3-190051 | * - |
| * S3-190446 | * [33.180] R14 IdMS interface security (mirror) | * Motorola Solutions Germany | * agreed | * S3-190053 | * - |
| * S3-190447 | * [33.180] R15 IdMS interface security (mirror) | * Motorola Solutions Germany | * agreed | * S3-190054 | * - |
| * S3-190448 | * [33.180] R14 InK clarifications | * Motorola Solutions Germany | * agreed | * S3-190058 | * - |
| * S3-190449 | * [33.180] R15 InK clarifications (mirror) | * Motorola Solutions Germany | * agreed | * S3-190059 | * - |
| * S3-190450 | * [33.180] R14 MCX identity clarifications | * Motorola Solutions Germany | * agreed | * S3-190060 | * - |
| * S3-190451 | * [33.180] R15 MCX identity clarifications (mirror) | * Motorola Solutions Germany | * agreed | * S3-190061 | * - |
| * S3-190452 | * Reply to: LS on OAuth authorization flows supported for Northbound APIs | * Nokia | * approved | * - | * - |
| * S3-190453 | * Reply to: LS on EAS-C&U support | * Vodafone | * approved | * - | * - |
| * S3-190454 | * LS to RAN2/3 on EDT data integrity protection | * Huawei, Hisilicon | * approved | * S3-190076 | * - |
| * S3-190455 | * EDT correction – length of HASHUE-data and HASHeNB-data | * Ericsson | * agreed | * S3-190299 | * - |
| * S3-190456 | * Protection from buffer overflows | * Ericsson | * agreed | * S3-190093 | * - |
| * S3-190457 | * Protection from buffer overflows | * Ericsson | * agreed | * - | * - |
| * S3-190458 | * Editorial corrections in TS 33.117 R15 | * Nokia, Nokia Shanghai Bell | * agreed | * S3-190191 | * - |
| * S3-190459 | * Editorial corrections | * Nokia | * agreed | * - | * - |
| * S3-190460 | * New SID on Security for NR Integrated Access and Backhaul | * Samsung | * agreed | * S3-190442 | * - |
| * S3-190461 | * New WID on Enhancements for Security aspects of Common API Framework | * Samsung, China Telecom, China Unicom, Nokia | * agreed | * S3-190363 | * - |
| * S3-190462 | * New SID on Security Aspects of 3GPP support for Advanced V2X Services | * LG Electronics | * agreed | * S3-190143 | * - |
| * S3-190463 | * Reply LS on PC5 unicast and groupcast security protection | * LG Electronics | * approved | * S3-190144 | * - |
| * S3-190464 | * Update to Study Item Description FS\_SBA\_Sec: Enhanced-SBA aspects | * Telekom Deutschland GmbH | * agreed | * S3-190117 | * - |
| * S3-190465 | * EDT UP IP handling of multiple PDCP PDUs | * Huawei, Hisilicon | * withdrawn | * - | * - |
| * S3-190466 | * Editorial pCR for PARLOS TR 33.815 | * LG Electronics | * approved | * S3-190145 | * - |
| * S3-190467 | * Draft TR 33.815 | * Sprint | * approved | * - | * - |
| * S3-190468 | * Solution for PARLOS based on emergency call procedures | * Qualcomm Incorporated | * approved | * S3-190377 | * - |
| * S3-190469 | * P-CR for PARLOS evaluation clause | * SPRINT Corporation | * withdrawn | * - | * - |
| * S3-190470 | * Proposal for content to introduction clause | * Ericsson | * approved | * S3-190268 | * - |
| * S3-190471 | * Draft TR 33.861 | * Ericsson | * approved | * - | * - |
| * S3-190472 | * Proposal for content to clause 4 | * Ericsson | * approved | * S3-190269 | * - |
| * S3-190473 | * Clarifications CIOT security assumptions | * Huawei, HiSilicon | * approved | * S3-190194 | * - |
| * S3-190474 | * Address EN in Key Issue 4 of Definition of Misbehaving UE | * Huawei, Hisilicon | * approved | * S3-190172 | * - |
| * S3-190475 | * New Key Issue for NAS based Redirection between Core Networks | * Huawei, Hisilicon | * approved | * S3-190173 | * - |
| * S3-190476 | * A new key issue for privacy protection of new parameters for CIoT included in NAS messages | * Ericsson | * approved | * S3-190270 | * - |
| * S3-190477 | * A new KI on NSSAI protection | * Huawei, HiSilicon,NEC,Interdigital | * revised | * S3-190203 | * S3-190536 |
| * S3-190478 | * Clarification on the UE selecting the 4G or 5G security protection method | * Huawei, Hisilicon | * agreed | * S3-190178 | * - |
| * S3-190479 | * Evaluation text for solution #2 | * NEC Corporation | * approved | * S3-190208 | * - |
| * S3-190480 | * Updates to Solution #3: Security solution for MO SMS at AMF re-allocation | * Ericsson | * approved | * S3-190265 | * - |
| * S3-190481 | * Updates to Solution #5: Security solution for small data included in initial NAS signalling at mobility | * Ericsson | * approved | * S3-190266 | * - |
| * S3-190482 | * Details of protecting gNB from RRC DoS attack | * Huawei, Hisilicon | * approved | * S3-190074 | * - |
| * S3-190483 | * Solution for small data at idle mode mobility | * Qualcomm Incorporated | * approved | * S3-190382 | * - |
| * S3-190484 | * Protecting small data at idle mobility using the Registration Complete message | * Qualcomm Incorporated | * approved | * S3-190368 | * - |
| * S3-190485 | * New Solution Security-Property-Group-based Mitigation for DDoS Attack Triggered by Malicious Applications on the UE | * Huawei, Hisilicon | * approved | * S3-190171 | * - |
| * S3-190486 | * Solution for DDoS attack mitigation in CIoT | * Huawei, Hisilicon | * approved | * S3-190187 | * - |
| * S3-190487 | * Output of SCAS offline session | * Deutsche Telekom | * noted | * - | * - |
| * S3-190488 | * Solution for Key Issue #7: Key refreshing for protection of small data | * Lenovo, Motorla Mobility | * approved | * S3-190308 | * - |
| * S3-190489 | * New Conclusion for Small Data Transfer via NAS Signaling | * Huawei, Hisilicon | * approved | * S3-190170 | * - |
| * S3-190490 | * Conclusion for Key Issue #9 | * Ericsson | * approved | * S3-190330 | * - |
| * S3-190491 | * Cover sheet TR 33.861 | * Ericsson | * approved | * - | * - |
| * S3-190492 | * Draft TR 33.819 | * Nokia | * approved | * - | * - |
| * S3-190493 | * Solution for NPN network access via PLMN | * Huawei, Hisilicon | * approved | * S3-190241 | * - |
| * S3-190494 | * TR 33.819: new key issue on security and privacy aspects of service continuity and session continuity | * Ericsson | * approved | * S3-190291 | * - |
| * S3-190495 | * Key issue on Multiple and Separate credentials for PLMN and NPN network | * Samsung | * approved | * S3-190366 | * - |
| * S3-190496 | * Proposed key issue on key hierarchy for non-public networks | * Qualcomm Incorporated | * approved | * S3-190370 | * - |
| * S3-190497 | * Proposed key issue on binding key to network identity for standalone non-public networks | * Qualcomm Incorporated | * approved | * S3-190369 | * - |
| * S3-190498 | * New key issue on UP security policy for the 5GLAN Group | * Ericsson | * approved | * S3-190289 | * - |
| * S3-190499 | * New security solution for handling UP security policy for a 5GLAN Group | * Ericsson | * approved | * S3-190290 | * - |
| * S3-190500 | * LS on naming issues with SUPI | * Vodafone | * withdrawn | * - | * - |
| * S3-190501 | * EUTRA connected to 5GC: clause 6.6.2 | * Ericsson | * agreed | * S3-190255 | * - |
| * S3-190502 | * LS on clarification on UE trace definition | * Nokia | * approved | * - | * - |
| * S3-190503 | * New proposal on the length of password and other clarifications | * Huawei, Hisilicon | * agreed | * S3-190393 | * - |
| * S3-190504 | * New proposal on the length of password and other clarification | * Huawei | * agreed | * - | * - |
| * S3-190505 | * New proposal on the length of password and other clarification | * Huawei | * agreed | * - | * - |
| * S3-190506 | * FN-RG registration to 5GC | * Nokia, Nokia Shanghai Bell | * approved | * S3-190332 | * - |
| * S3-190507 | * Solution for 5GC access from WLAN UEs that do not support NAS | * Nokia, Lenovo | * approved | * S3-190333 | * - |
| * S3-190508 | * SCAS: UDM-specific adaptations of security functional requirements and related test cases | * Huawei, Hisilicon | * approved | * S3-190310 | * - |
| * S3-190509 | * Draft TS 33.514 | * NEC | * approved | * - | * - |
| * S3-190510 | * Draft TS 33.512 | * Deutsche Telekom | * approved | * - | * - |
| * S3-190511 | * New Test Case: Separation of cryptographic storage within the SEPP | * Telekom Deutschland GmbH | * approved | * S3-190120 | * - |
| * S3-190512 | * SCAS SEPP: Introduction and general approach | * Nokia, Nokia Shanghai Bell | * approved | * S3-190233 | * - |
| * S3-190513 | * Draft TS 33.518 | * Nokia | * approved | * - | * - |
| * S3-190514 | * Authorization on northbound APIs | * ZTE Corporation | * approved | * S3-190154 | * - |
| * S3-190515 | * Draft 33.517 | * Nokia | * approved | * - | * - |
| * S3-190516 | * Draft TS 33.519 | * ZTE | * approved | * - | * - |
| * S3-190517 | * Update to clause 4 to add KDF negotiation rationale | * NEC Corporation, Huawei, Hisilicon | * noted | * S3-190212 | * - |
| * S3-190518 | * Reply-LS on FN-RG authentication and related questions | * Ericsson | * approved | * S3-190081 | * - |
| * S3-190519 | * Response LS on Authentication for UEs not Supporting NAS | * Lenovo (Beijing) Ltd | * approved | * S3-190305 | * - |
| * S3-190520 | * Key Issue on NAS termination in TWIF | * Nokia, Nokia Shanghai Bell | * approved | * S3-190320 | * - |
| * S3-190521 | * Draft TR 33.807 | * Huawei | * approved | * - | * - |
| * S3-190522 | * Key Issue on SUCI format for legacy FN-RG devices that access 5G over wireline network | * Nokia, Ericsson | * approved | * S3-190322 | * - |
| * S3-190523 | * Key Issue on NAS termination for registered FN-RGs | * Nokia, Nokia Shanghai Bell | * approved | * S3-190325 | * - |
| * S3-190524 | * 5G-RG connecting to 5GC via Wireline Access (W-5GAN) | * Nokia, Nokia Shanghai Bell | * approved | * S3-190334 | * - |
| * S3-190525 | * 5G-RG connecting to 5GC via NG-RAN | * Nokia, Nokia Shanghai Bell | * approved | * S3-190335 | * - |
| * S3-190526 | * Draft TR 33.835 | * China Mobile | * approved | * - | * - |
| * S3-190527 | * Roaming key issue for AKMA | * Huawei, HiSilicon | * withdrawn | * - | * - |
| * S3-190528 | * New key issue: Key revocation | * Ericsson | * approved | * S3-190248 | * - |
| * S3-190529 | * Protocol clarifications to solution 2 | * Ericsson | * approved | * S3-190249 | * - |
| * S3-190530 | * New solution:Key revocation | * Ericsson | * approved | * S3-190251 | * - |
| * S3-190531 | * New solution: Implicit Bootstrapping | * Ericsson | * approved | * S3-190252 | * - |
| * S3-190532 | * Updating key issue#3 for network detection of nearby fake base station | * NEC Corporation | * not treated | * S3-190351 | * - |
| * S3-190533 | * Solution for Slice Specific secondary authentication | * Nokia, Nokia Shangahi Bell | * approved | * S3-190133 | * - |
| * S3-190534 | * A solution to slice authentication | * Huawei, HiSilicon | * approved | * S3-190202 | * - |
| * S3-190535 | * Security threats and requirement for KI #4 | * Huawei, HiSilicon | * approved | * S3-190206 | * - |
| * S3-190536 | * A new KI on NSSAI protection | * Huawei, HiSilicon,NEC,Interdigital | * approved | * S3-190477 | * - |
| * S3-190537 | * A solution to security features for NSaaS | * Huawei, HiSilicon | * approved | * S3-190205 | * - |
| * S3-190538 | * New KI: Access token handling between network slices | * Huawei, Hisilicon | * approved | * S3-190318 | * - |
| * S3-190539 | * Draft TR 33.813 | * Nokia | * approved | * - | * - |
| * S3-190540 | * Security Assurance Requirement and Test for authorization handling in the NF | * Huawei, HiSilicon | * approved | * S3-190307 | * - |
| * S3-190541 | * Key issue for acceleration of AKA procedure for low latency | * ZTE Corporation | * approved | * S3-190157 | * - |
| * S3-190542 | * New KI on Supporting low latency during Re-attach procedure | * NEC Corporation | * approved | * S3-190349 | * - |
| * S3-190543 | * Update to KI#3 or KI#4 taking Dual Connectivity into considerations | * Ericsson | * approved | * S3-190286 | * - |
| * S3-190544 | * Draft TR 33.825 | * Huawei | * approved | * - | * - |
| * S3-190545 | * New Solution for Redundant data protection | * NEC Corporation,Huawei | * approved | * S3-190348 | * - |
| * S3-190546 | * URLLC solution for Key Issue 3 | * Huawei, HiSilicon | * approved | * S3-190200 | * - |
| * S3-190547 | * Evaluation to solution #1 and conclusion to key issue #3 | * Ericsson | * approved | * S3-190287 | * - |
| * S3-190548 | * Evaluation on solution #2 and conclusion to key issue #3 | * Ericsson | * approved | * S3-190288 | * - |
| * S3-190549 | * URLLC solution for N3 tunnel redundancy | * Huawei, HiSilicon | * approved | * S3-190198 | * - |
| * S3-190550 | * draft TR 33.853 | * Vodafone | * approved | * - | * - |
| * S3-190551 | * New key issue on the secure negotiation of the user plane integrity protection feature | * Ericsson | * approved | * S3-190285 | * - |
| * S3-190552 | * Draft TR 33.809 | * Apple | * approved | * - | * - |
| * S3-190553 | * Requirement on security of unprotected unicast messages | * Samsung | * approved | * S3-190359 | * - |
| * S3-190554 | * KI#1 in TR 33.809 – new requirement and solution for UECapabilityInformation RRC message | * Ericsson | * approved | * S3-190275 | * - |
| * S3-190555 | * Solution on security of RRC Reject messages | * Samsung | * approved | * S3-190360 | * - |
| * S3-190556 | * key update in multi-NAS scenario | * Huawei, Hisilicon,Qualcomm,Ericsson | * agreed | * S3-190177 | * - |
| * S3-190557 | * Input encoding for ECIES protection schemes | * Qualcomm Incorporated,IDEMIA,Gemalto | * agreed | * S3-190384 | * - |
| * S3-190558 | * Solution for using established keys for AKMA | * NEC Corporation | * approved | * S3-190214 | * - |
| * S3-190559 | * LS on PLMN-ID verification | * Deutsche Telekom | * approved | * - | * - |
| * S3-190560 | * Draft agenda SA3\_94 AdHoc | * WG Vice Chair (Qualcomm) | * endorsed | * - | * - |
| * S3-190561 | * draftCR General aspects in TS 33.117 | * Nokia | * approved | * - | * - |
| * S3-190562 | * Draft TR 33.814 | * CATT | * approved | * - | * - |
| * S3-190563 | * Work Plan input from Rapporteurs | * MCC | * noted | * S3-190005 | * - |

## Annex B: List of change requests

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Document | Title | Source | Spec | CR | Rev | Rel | Cat | WI | Decision |
| * S3-190376 | * Adding MACS as an input parameter to the calculation of AK\* to provide freshness | * Qualcomm Incorporated | * 33.102 | * 0277 | * - | * Rel-15 | * F | * 5GS\_Ph1-SEC | * not pursued |
| * S3-190091 | * Minimized kernel functions | * Ericsson | * 33.117 | * 0017 | * - | * Rel-15 | * F | * SCAS-SA3 | * not pursued |
| * S3-190092 | * Minimized kernel functions | * Ericsson | * 33.117 | * 0018 | * - | * Rel-16 | * A | * SCAS-SA3 | * not pursued |
| * S3-190093 | * Protection from buffer overflows | * Ericsson | * 33.117 | * 0019 | * - | * Rel-15 | * F | * SCAS-SA3 | * revised |
| * S3-190456 | * Protection from buffer overflows | * Ericsson | * 33.117 | * 0019 | * 1 | * Rel-15 | * A | * SCAS-SA3 | * agreed |
| * S3-190094 | * Protection from buffer overflows | * Ericsson | * 33.117 | * 0020 | * - | * Rel-16 | * A | * SCAS-SA3 | * agreed |
| * S3-190095 | * Uunused software | * Ericsson | * 33.117 | * 0021 | * - | * Rel-15 | * F | * SCAS-SA3 | * not pursued |
| * S3-190096 | * Uunused software | * Ericsson | * 33.117 | * 0022 | * - | * Rel-16 | * A | * SCAS-SA3 | * not pursued |
| * S3-190097 | * No unsupported components | * Ericsson | * 33.117 | * 0023 | * - | * Rel-15 | * F | * SCAS-SA3 | * not pursued |
| * S3-190098 | * No unsupported components | * Ericsson | * 33.117 | * 0024 | * - | * Rel-16 | * A | * SCAS-SA3 | * not pursued |
| * S3-190191 | * Editorial corrections in TS 33.117 R15 | * Nokia, Nokia Shanghai Bell | * 33.117 | * 0025 | * - | * Rel-15 | * F | * SCAS-SA3 | * revised |
| * S3-190458 | * Editorial corrections in TS 33.117 R15 | * Nokia, Nokia Shanghai Bell | * 33.117 | * 0025 | * 1 | * Rel-15 | * A | * SCAS-SA3 | * agreed |
| * S3-190393 | * New proposal on the length of password and other clarifications | * Huawei, Hisilicon | * 33.117 | * 0026 | * - | * Rel-15 | * F | * SCAS-SA3 | * revised |
| * S3-190503 | * New proposal on the length of password and other clarifications | * Huawei, Hisilicon | * 33.117 | * 0026 | * 1 | * Rel-15 | * A | * SCAS-SA3 | * agreed |
| * S3-190457 | * Protection from buffer overflows | * Ericsson | * 33.117 | * 0027 | * - | * Rel-14 | * F | * SCAS-SA3 | * agreed |
| * S3-190459 | * Editorial corrections | * Nokia | * 33.117 | * 0028 | * - | * Rel-14 | * F | * SCAS-SA3 | * agreed |
| * S3-190504 | * New proposal on the length of password and other clarification | * Huawei | * 33.117 | * 0029 | * - | * Rel-14 | * F | * SCAS-SA3 | * agreed |
| * S3-190505 | * New proposal on the length of password and other clarification | * Huawei | * 33.117 | * 0030 | * - | * Rel-16 | * A | * SCAS-SA3 | * agreed |
| * S3-190321 | * Editorial corrections in CAPIF TS | * Ericsson | * 33.122 | * 0018 | * - | * Rel-15 | * F | * CAPIF-Sec | * agreed |
| * S3-190010 | * CR to 33.163 - Addition of HSE to NR core authentication interface | * Vodafone GmbH | * 33.163 | * 0008 | * - | * Rel-16 | * B | * TEI16 | * withdrawn |
| * S3-190049 | * [33.179] R13 Annex D.3.4.2 XSD correction | * Motorola Solutions Germany | * 33.179 | * 0097 | * - | * Rel-13 | * F | * MCPTT | * agreed |
| * S3-190052 | * [33.179] R13 IdMS interface security | * Motorola Solutions Germany | * 33.179 | * 0098 | * - | * Rel-13 | * F | * MCPTT | * agreed |
| * S3-190055 | * [33.179] R13 user service authorisation | * Motorola Solutions Germany | * 33.179 | * 0099 | * - | * Rel-13 | * F | * MCPTT | * not pursued |
| * S3-190050 | * [33.180] R14 Annex D.3.5.2 XSD correction (mirror) | * Motorola Solutions Germany | * 33.180 | * 0096 | * - | * Rel-14 | * A | * MCSec | * revised |
| * S3-190444 | * [33.180] R14 Annex D.3.5.2 XSD correction (mirror) | * Motorola Solutions Germany | * 33.180 | * 0096 | * 1 | * Rel-14 | * F | * MCSec | * agreed |
| * S3-190051 | * [33.180] R15 Annex D.3.5.2 XSD correction (mirror) | * Motorola Solutions Germany | * 33.180 | * 0097 | * - | * Rel-15 | * A | * eMCSec | * revised |
| * S3-190445 | * [33.180] R15 Annex D.3.5.2 XSD correction (mirror) | * Motorola Solutions Germany | * 33.180 | * 0097 | * 1 | * Rel-15 | * A | * MCSec | * agreed |
| * S3-190053 | * [33.180] R14 IdMS interface security (mirror) | * Motorola Solutions Germany | * 33.180 | * 0098 | * - | * Rel-14 | * A | * MCSec | * revised |
| * S3-190446 | * [33.180] R14 IdMS interface security (mirror) | * Motorola Solutions Germany | * 33.180 | * 0098 | * 1 | * Rel-14 | * F | * MCSec | * agreed |
| * S3-190054 | * [33.180] R15 IdMS interface security (mirror) | * Motorola Solutions Germany | * 33.180 | * 0099 | * - | * Rel-15 | * A | * MCSec | * revised |
| * S3-190447 | * [33.180] R15 IdMS interface security (mirror) | * Motorola Solutions Germany | * 33.180 | * 0099 | * 1 | * Rel-15 | * A | * MCSec | * agreed |
| * S3-190056 | * [33.180] R14 user service authorisation (mirror) | * Motorola Solutions Germany | * 33.180 | * 0100 | * - | * Rel-14 | * A | * MCSec | * not pursued |
| * S3-190057 | * [33.180] R15 user service authorisation (mirror) | * Motorola Solutions Germany | * 33.180 | * 0101 | * - | * Rel-15 | * A | * eMCSec | * not pursued |
| * S3-190058 | * [33.180] R14 InK clarifications | * Motorola Solutions Germany | * 33.180 | * 0102 | * - | * Rel-14 | * F | * MCSec | * revised |
| * S3-190448 | * [33.180] R14 InK clarifications | * Motorola Solutions Germany | * 33.180 | * 0102 | * 1 | * Rel-14 | * F | * MCSec | * agreed |
| * S3-190059 | * [33.180] R15 InK clarifications (mirror) | * Motorola Solutions Germany | * 33.180 | * 0103 | * - | * Rel-15 | * A | * MCSec | * revised |
| * S3-190449 | * [33.180] R15 InK clarifications (mirror) | * Motorola Solutions Germany | * 33.180 | * 0103 | * 1 | * Rel-15 | * A | * MCSec | * agreed |
| * S3-190060 | * [33.180] R14 MCX identity clarifications | * Motorola Solutions Germany | * 33.180 | * 0104 | * - | * Rel-14 | * F | * MCSec | * revised |
| * S3-190450 | * [33.180] R14 MCX identity clarifications | * Motorola Solutions Germany | * 33.180 | * 0104 | * 1 | * Rel-14 | * F | * MCSec | * agreed |
| * S3-190061 | * [33.180] R15 MCX identity clarifications (mirror) | * Motorola Solutions Germany | * 33.180 | * 0105 | * - | * Rel-15 | * A | * MCSec | * revised |
| * S3-190451 | * [33.180] R15 MCX identity clarifications (mirror) | * Motorola Solutions Germany | * 33.180 | * 0105 | * 1 | * Rel-15 | * A | * MCSec | * agreed |
| * S3-190016 | * Correcting TLS crypto profiles | * Juniper Networks, Ericsson | * 33.210 | * 0057 | * - | * Rel-16 | * F | * TEI16 | * agreed |
| * S3-190073 | * EDT UP IP handling of multiple PDCP PDUs | * Huawei, Hisilicon | * 33.401 | * 0672 | * - | * Rel-15 | * F | * TEI15 | * not pursued |
| * S3-190465 | * EDT UP IP handling of multiple PDCP PDUs | * Huawei, Hisilicon | * 33.401 | * 0672 | * 1 | * Rel-15 | * F | * TEI15 | * withdrawn |
| * S3-190298 | * EDT correction – input "S" to calculation of HASHUE-data and HASHeNB-data | * Ericsson | * 33.401 | * 0673 | * - | * Rel-15 | * F | * TEI15 | * not pursued |
| * S3-190299 | * EDT correction – length of HASHUE-data and HASHeNB-data | * Ericsson | * 33.401 | * 0674 | * - | * Rel-15 | * F | * TEI15 | * revised |
| * S3-190455 | * EDT correction – length of HASHUE-data and HASHeNB-data | * Ericsson | * 33.401 | * 0674 | * 1 | * Rel-15 | * F | * TEI15 | * agreed |
| * S3-190300 | * EDT correction – input to calculation of shortResumeMAC-I | * Ericsson | * 33.401 | * 0675 | * - | * Rel-15 | * F | * TEI15 | * agreed |
| * S3-190301 | * EDT correction – clarification of NOTE about no-integrity protection for non-EDT data | * Ericsson | * 33.401 | * 0676 | * - | * Rel-15 | * F | * TEI15 | * not pursued |
| * S3-190065 | * Corrections of messages names etc | * HUAWEI TECH. GmbH | * 33.501 | * 0496 | * - | * Rel-15 | * F | * 5GS\_Ph1-SEC | * withdrawn |
| * S3-190072 | * Corrections of messages names etc | * Huawei, Hisilicon | * 33.501 | * 0497 | * - | * Rel-15 | * F | * 5GS\_Ph1-SEC | * merged |
| * S3-190078 | * Clarification and correct clause reference for RNAU w/o context relocation | * Huawei, Hisilicon | * 33.501 | * 0498 | * - | * Rel-15 | * F | * 5GS\_Ph1-SEC | * agreed |
| * S3-190083 | * Alignment with TS 23.502: Optimization of UDM selection in AUSF | * Ericsson | * 33.501 | * 0499 | * - | * Rel-15 | * F | * 5GS\_Ph1-SEC | * not pursued |
| * S3-190084 | * Correction to authentication step | * Ericsson | * 33.501 | * 0500 | * - | * Rel-15 | * F | * 5GS\_Ph1-SEC | * not pursued |
| * S3-190089 | * Editorials and minor clarifications for clause 13.1 | * Ericsson | * 33.501 | * 0501 | * - | * Rel-15 | * F | * 5GS\_Ph1-SEC | * agreed |
| * S3-190090 | * Editorials and minor clarifications for clause 13.2 | * Ericsson | * 33.501 | * 0502 | * - | * Rel-15 | * F | * 5GS\_Ph1-SEC | * revised |
| * S3-190439 | * Editorials and minor clarifications for clause 13.2 | * Ericsson | * 33.501 | * 0502 | * 1 | * Rel-15 | * F | * 5GS\_Ph1-SEC | * agreed |
| * S3-190100 | * Name correction of the Nudm\_SDM\_Notification service operation | * Ericsson | * 33.501 | * 0503 | * - | * Rel-15 | * F | * 5GS\_Ph1-SEC | * agreed |
| * S3-190116 | * Subscriber privacy: test data for SUCI computation | * Gemalto N.V. | * 33.501 | * 0504 | * - | * Rel-15 | * D | * 5GS\_Ph1-SEC | * not pursued |
| * S3-190124 | * CR Add UE trace to UE Authentication Get Service | * Nokia, Nokia Shanghai Bell | * 33.501 | * 0505 | * - | * Rel-15 | * F | * 5GS\_Ph1-SEC | * not pursued |
| * S3-190134 | * Clarification on Establishment of a mapped security context during intersystem handover(N1 to S1) | * Intel Deutschland GmbH | * 33.501 | * 0506 | * - | * Rel-15 | * F | * 5GS\_Ph1-SEC | * not pursued |
| * S3-190135 | * Clarification to the 5G-GUTI change during the NAS procedure. | * NEC Europe Ltd | * 33.501 | * 0507 | * - | * Rel-15 | * F | * 5GS\_Ph1-SEC | * not pursued |
| * S3-190136 | * Clarification to the 5G-GUTI allocation during the Notification procedure. | * NEC Europe Ltd | * 33.501 | * 0508 | * - | * Rel-15 | * F | * 5GS\_Ph1-SEC | * not pursued |
| * S3-190137 | * Clarification on Establishment of a mapped security context during intersystem handover(S1 to N1) | * Intel Deutschland GmbH | * 33.501 | * 0509 | * - | * Rel-15 | * F | * 5GS\_Ph1-SEC | * not pursued |
| * S3-190138 | * Handling of SUCI de-concealment during registration retry procedure | * NEC Europe Ltd | * 33.501 | * 0510 | * - | * Rel-15 | * F | * 5GS\_Ph1-SEC | * not pursued |
| * S3-190140 | * Clarification on Handover message in Interworking | * Intel Deutschland GmbH | * 33.501 | * 0511 | * - | * Rel-15 | * F | * 5GS\_Ph1-SEC | * not pursued |
| * S3-190151 | * Align NAS connection identifier values | * ZTE Corporation | * 33.501 | * 0512 | * - | * Rel-15 | * F | * 5GS\_Ph1-SEC | * merged |
| * S3-190152 | * Clarification on Registration procedure for mobility from EPS to 5GS over N26 | * ZTE Corporation | * 33.501 | * 0513 | * - | * Rel-15 | * F | * 5GS\_Ph1-SEC | * not pursued |
| * S3-190153 | * Handling of AMF redirection | * ZTE Corporation | * 33.501 | * 0514 | * - | * Rel-15 | * F | * 5GS\_Ph1-SEC | * not pursued |
| * S3-190174 | * Clarification for section 6.10.2.1 | * Huawei, Hisilicon | * 33.501 | * 0515 | * - | * Rel-15 | * F | * 5GS\_Ph1-SEC | * revised |
| * S3-190433 | * Clarification for section 6.10.2.1 | * Huawei, Hisilicon | * 33.501 | * 0515 | * 1 | * Rel-15 | * F | * 5GS\_Ph1-SEC | * agreed |
| * S3-190175 | * Clarification for UP security in option4&7 | * Huawei, Hisilicon | * 33.501 | * 0516 | * - | * Rel-15 | * F | * 5GS\_Ph1-SEC | * revised |
| * S3-190434 | * Clarification for UP security in option4&7 | * Huawei, Hisilicon | * 33.501 | * 0516 | * 1 | * Rel-15 | * F | * 5GS\_Ph1-SEC | * agreed |
| * S3-190176 | * claification on interworking case | * Huawei, Hisilicon | * 33.501 | * 0517 | * - | * Rel-15 | * F | * 5GS\_Ph1-SEC | * revised |
| * S3-190437 | * claification on interworking case | * Huawei, Hisilicon | * 33.501 | * 0517 | * 1 | * Rel-15 | * F | * 5GS\_Ph1-SEC | * agreed |
| * S3-190177 | * key update in multi-NAS scenario | * Huawei, Hisilicon | * 33.501 | * 0518 | * - | * Rel-15 | * F | * 5GS\_Ph1-SEC | * revised |
| * S3-190556 | * key update in multi-NAS scenario | * Huawei, Hisilicon,Qualcomm,Ericsson | * 33.501 | * 0518 | * 1 | * Rel-15 | * F | * 5GS\_Ph1-SEC | * agreed |
| * S3-190178 | * Clarification on the UE selecting the 4G or 5G security protection method | * Huawei, Hisilicon | * 33.501 | * 0519 | * - | * Rel-15 | * F | * 5GS\_Ph1-SEC | * revised |
| * S3-190478 | * Clarification on the UE selecting the 4G or 5G security protection method | * Huawei, Hisilicon | * 33.501 | * 0519 | * 1 | * Rel-15 | * F | * 5GS\_Ph1-SEC | * agreed |
| * S3-190192 | * Corrections on ng-ran keys | * Huawei, HiSilicon | * 33.501 | * 0520 | * - | * Rel-15 | * F | * 5GS\_Ph1-SEC | * revised |
| * S3-190426 | * Corrections on ng-ran keys | * Huawei, HiSilicon,Ericsson | * 33.501 | * 0520 | * 1 | * Rel-15 | * F | * 5GS\_Ph1-SEC | * agreed |
| * S3-190193 | * New clause for intra ng-enb handover | * Huawei, HiSilicon | * 33.501 | * 0521 | * - | * Rel-15 | * F | * 5GS\_Ph1-SEC | * not pursued |
| * S3-190219 | * Clarification on UE Parameters Update Data used for MAC computation | * Huawei, HiSilicon | * 33.501 | * 0522 | * - | * Rel-15 | * F | * 5GS\_Ph1-SEC | * not pursued |
| * S3-190222 | * Modificaiton on the NAS connection identifier for backward compatibility with LTE | * Huawei, Hisilicon | * 33.501 | * 0523 | * - | * Rel-15 | * F | * 5GS\_Ph1-SEC | * not pursued |
| * S3-190224 | * NAS counter clarification on interworking | * Huawei, Hisilicon | * 33.501 | * 0524 | * - | * Rel-15 | * F | * 5GS\_Ph1-SEC | * revised |
| * S3-190438 | * NAS counter clarification on interworking | * Huawei, Hisilicon | * 33.501 | * 0524 | * 1 | * Rel-15 | * F | * 5GS\_Ph1-SEC | * agreed |
| * S3-190227 | * Update on the token verification | * Huawei, Hisilicon,Nokia | * 33.501 | * 0525 | * - | * Rel-15 | * F | * 5GS\_Ph1-SEC | * agreed |
| * S3-190229 | * Clarification on service authorization and token verification | * Huawei, Hisilicon | * 33.501 | * 0526 | * - | * Rel-15 | * F | * 5GS\_Ph1-SEC | * revised |
| * S3-190440 | * Clarification on service authorization and token verification | * Huawei, Hisilicon, Nokia | * 33.501 | * 0526 | * 1 | * Rel-15 | * F | * 5GS\_Ph1-SEC | * agreed |
| * S3-190231 | * Clarification on securing the procedure of idle mode mobility from 5GS to EPS over N26 interface | * Huawei, Hisilicon | * 33.501 | * 0527 | * - | * Rel-15 | * F | * 5GS\_Ph1-SEC | * not pursued |
| * S3-190232 | * Clarification on the Use of the SUPI in the Kamf Derivation | * Huawei, Hisilicon,Nokia,Nokia Shanghai Bell | * 33.501 | * 0528 | * - | * Rel-15 | * F | * 5GS\_Ph1-SEC | * revised |
| * S3-190416 | * Clarification on the Use of the SUPI in the Kamf Derivation | * Huawei, Hisilicon,Nokia,Nokia Shanghai Bell,Qualcomm,Vodafone | * 33.501 | * 0528 | * 1 | * Rel-15 | * F | * 5GS\_Ph1-SEC | * agreed |
| * S3-190234 | * Clarification on the allocation of 5G-GUTI | * Huawei, Hisilicon | * 33.501 | * 0529 | * - | * Rel-15 | * F | * 5GS\_Ph1-SEC | * revised |
| * S3-190397 | * Clarification on the allocation of 5G-GUTI | * Huawei, Hisilicon | * 33.501 | * 0529 | * 1 | * Rel-15 | * F | * 5GS\_Ph1-SEC | * revised |
| * S3-190415 | * Clarification on the allocation of 5G-GUTI | * Huawei, Hisilicon,Nokia,Interdigital | * 33.501 | * 0529 | * 2 | * Rel-15 | * F | * 5GS\_Ph1-SEC | * agreed |
| * S3-190254 | * Corrections to RRC Inactive procedure.and RAN-based notification area update procedure. | * Ericsson | * 33.501 | * 0530 | * - | * Rel-15 | * F | * 5GS\_Ph1-SEC | * revised |
| * S3-190429 | * Corrections to RRC Inactive procedure.and RAN-based notification area update procedure. | * Ericsson | * 33.501 | * 0530 | * 1 | * Rel-15 | * F | * 5GS\_Ph1-SEC | * agreed |
| * S3-190255 | * EUTRA connected to 5GC: clause 6.6.2 | * Ericsson | * 33.501 | * 0531 | * - | * Rel-15 | * F | * 5GS\_Ph1-SEC | * revised |
| * S3-190501 | * EUTRA connected to 5GC: clause 6.6.2 | * Ericsson | * 33.501 | * 0531 | * 1 | * Rel-15 | * F | * 5GS\_Ph1-SEC | * agreed |
| * S3-190256 | * EUTRA connected to 5GC: clause 6.7.3 | * Ericsson | * 33.501 | * 0532 | * - | * Rel-15 | * F | * 5GS\_Ph1-SEC | * revised |
| * S3-190427 | * EUTRA connected to 5GC: clause 6.7.3 | * Ericsson | * 33.501 | * 0532 | * 1 | * Rel-15 | * F | * 5GS\_Ph1-SEC | * agreed |
| * S3-190257 | * EUTRA connected to 5GC: clause 6.7.4 | * Ericsson | * 33.501 | * 0533 | * - | * Rel-15 | * F | * 5GS\_Ph1-SEC | * revised |
| * S3-190428 | * EUTRA connected to 5GC: clause 6.7.4 | * Ericsson | * 33.501 | * 0533 | * 1 | * Rel-15 | * F | * 5GS\_Ph1-SEC | * agreed |
| * S3-190258 | * EUTRA connected to 5GC: clause 6.8.1 | * Ericsson | * 33.501 | * 0534 | * - | * Rel-15 | * F | * 5GS\_Ph1-SEC | * revised |
| * S3-190424 | * EUTRA connected to 5GC: clause 6.8.1 | * Ericsson | * 33.501 | * 0534 | * 1 | * Rel-15 | * F | * 5GS\_Ph1-SEC | * agreed |
| * S3-190259 | * EUTRA connected to 5GC: clause 6.8.2 | * Ericsson | * 33.501 | * 0535 | * - | * Rel-15 | * F | * 5GS\_Ph1-SEC | * revised |
| * S3-190425 | * EUTRA connected to 5GC: clause 6.8.2 | * Ericsson | * 33.501 | * 0535 | * 1 | * Rel-15 | * F | * 5GS\_Ph1-SEC | * agreed |
| * S3-190260 | * EUTRA connected to 5GC: clause 6.9.2.1 | * Ericsson | * 33.501 | * 0536 | * - | * Rel-15 | * F | * 5GS\_Ph1-SEC | * revised |
| * S3-190430 | * EUTRA connected to 5GC: clause 6.9.2.1 | * Ericsson | * 33.501 | * 0536 | * 1 | * Rel-15 | * F | * 5GS\_Ph1-SEC | * agreed |
| * S3-190261 | * EUTRA connected to 5GC: clauses 6.9.2.3.1 and 6.9.2.3.2 | * Ericsson | * 33.501 | * 0537 | * - | * Rel-15 | * F | * 5GS\_Ph1-SEC | * merged |
| * S3-190262 | * EUTRA connected to 5GC: clauses 6.9.3 and 6.9.4 | * Ericsson | * 33.501 | * 0538 | * - | * Rel-15 | * F | * 5GS\_Ph1-SEC | * revised |
| * S3-190431 | * EUTRA connected to 5GC: clauses 6.9.3 and 6.9.4 | * Ericsson | * 33.501 | * 0538 | * 1 | * Rel-15 | * F | * 5GS\_Ph1-SEC | * agreed |
| * S3-190263 | * EUTRA connected to 5GC: clause 6.9.5 | * Ericsson | * 33.501 | * 0539 | * - | * Rel-15 | * F | * 5GS\_Ph1-SEC | * revised |
| * S3-190432 | * EUTRA connected to 5GC: clause 6.9.5 | * Ericsson | * 33.501 | * 0539 | * 1 | * Rel-15 | * F | * 5GS\_Ph1-SEC | * agreed |
| * S3-190264 | * EUTRA connected to 5GC: clause 6.11 | * Ericsson | * 33.501 | * 0540 | * - | * Rel-15 | * F | * 5GS\_Ph1-SEC | * agreed |
| * S3-190280 | * EUTRA connected to 5GC: clause 8 | * Ericsson | * 33.501 | * 0541 | * - | * Rel-15 | * F | * 5GS\_Ph1-SEC | * revised |
| * S3-190435 | * EUTRA connected to 5GC: clause 8 | * Ericsson | * 33.501 | * 0541 | * 1 | * Rel-15 | * F | * 5GS\_Ph1-SEC | * agreed |
| * S3-190281 | * Clarification to AKA parameter derivation | * Ericsson | * 33.501 | * 0542 | * - | * Rel-15 | * F | * 5GS\_Ph1-SEC | * agreed |
| * S3-190282 | * Multiple NAS connecions: mobility with horizontal KAMF derivation | * Ericsson | * 33.501 | * 0543 | * - | * Rel-15 | * F | * 5GS\_Ph1-SEC | * merged |
| * S3-190283 | * Multiple active NAS connections in the same PLMN's serving network: common algorithm identifiers | * Ericsson | * 33.501 | * 0544 | * - | * Rel-15 | * F | * 5GS\_Ph1-SEC | * revised |
| * S3-190436 | * Multiple active NAS connections in the same PLMN's serving network: common algorithm identifiers | * Ericsson | * 33.501 | * 0544 | * 1 | * Rel-15 | * F | * 5GS\_Ph1-SEC | * agreed |
| * S3-190284 | * Clarification to the implementation requirement for the protectaion of the backhaul and sidehaul interfaces | * Ericsson | * 33.501 | * 0545 | * - | * Rel-15 | * F | * 5GS\_Ph1-SEC | * agreed |
| * S3-190297 | * Clarification to idle mode mobility from EPS to 5GS | * Ericsson | * 33.501 | * 0546 | * - | * Rel-15 | * F | * 5GS\_Ph1-SEC | * agreed |
| * S3-190327 | * Allocating new 5G-GUTI during the MO service request procedure | * NEC Europe Ltd | * 33.501 | * 0547 | * - | * Rel-15 | * F | * 5GS\_Ph1-SEC | * revised |
| * S3-190420 | * Allocating new 5G-GUTI during the MO service request procedure | * NEC Europe Ltd | * 33.501 | * 0547 | * 1 | * Rel-15 | * F | * 5GS\_Ph1-SEC | * agreed |
| * S3-190345 | * Correction to clause 14.2.1 | * NEC Corporation | * 33.501 | * 0548 | * - | * Rel-15 | * F | * 5GS\_Ph1-SEC | * agreed |
| * S3-190354 | * Updating Access Token Response to include token expiration time and scope | * Nokia, Nokia Shanghai Bell | * 33.501 | * 0549 | * - | * Rel-15 | * F | * 5GS\_Ph1-SEC | * merged |
| * S3-190358 | * Correction on RRC states terminology usage | * Samsung | * 33.501 | * 0550 | * - | * Rel-15 | * F | * 5GS\_Ph1-SEC | * revised |
| * S3-190423 | * Correction on RRC states terminology usage | * Samsung,Huawei | * 33.501 | * 0550 | * 1 | * Rel-15 | * F | * 5GS\_Ph1-SEC | * agreed |
| * S3-190365 | * Non-3GPP Access: Correcting Connection Identifier | * Samsung | * 33.501 | * 0551 | * - | * Rel-15 | * F | * 5GS\_Ph1-SEC | * revised |
| * S3-190422 | * Non-3GPP Access: Correcting Connection Identifier | * Samsung,ZTE | * 33.501 | * 0551 | * 1 | * Rel-15 | * F | * 5GS\_Ph1-SEC | * agreed |
| * S3-190372 | * Handling the non-3GPP security context at mobility on the 3GPP access | * Qualcomm Incorporated | * 33.501 | * 0552 | * - | * Rel-15 | * F | * 5GS\_Ph1-SEC | * merged |
| * S3-190378 | * CR on NAS connection id for NAS MAC calculation | * Qualcomm Incorporated | * 33.501 | * 0553 | * - | * Rel-15 | * F | * 5GS\_Ph1-SEC | * agreed |
| * S3-190379 | * CR on clarification on N2 handover | * Qualcomm Incorporated | * 33.501 | * 0554 | * - | * Rel-15 | * F | * 5GS\_Ph1-SEC | * revised |
| * S3-190421 | * CR on clarification on N2 handover | * Qualcomm Incorporated,Ericsson | * 33.501 | * 0554 | * 1 | * Rel-15 | * F | * 5GS\_Ph1-SEC | * agreed |
| * S3-190380 | * CR - clarification on key handling in handover | * Qualcomm Incorporated | * 33.501 | * 0555 | * - | * Rel-15 | * F | * 5GS\_Ph1-SEC | * agreed |
| * S3-190383 | * SUPI Type clarification | * Qualcomm Incorporated | * 33.501 | * 0556 | * - | * Rel-15 | * F | * 5GS\_Ph1-SEC | * not pursued |
| * S3-190384 | * Input encoding for ECIES protection schemes | * Qualcomm Incorporated | * 33.501 | * 0557 | * - | * Rel-15 | * F | * 5GS\_Ph1-SEC | * revised |
| * S3-190557 | * Input encoding for ECIES protection schemes | * Qualcomm Incorporated,IDEMIA,Gemalto | * 33.501 | * 0557 | * 1 | * Rel-15 | * F | * 5GS\_Ph1-SEC | * agreed |
| * S3-190408 | * User Plane Security for 5GC Roaming | * Vodafone | * 33.501 | * 0558 | * - | * Rel-15 | * F | * TEI15 | * agreed |
| * S3-190441 | * SN Id and SNN clarification | * Ericsson | * 33.501 | * 0559 | * - | * Rel-15 | * F | * 5GS\_Ph1-SEC | * agreed |
| * S3-190012 | * CR to 33.834 - implementation of changes requested by edithelp | * Vodafone GmbH | * 33.834 | * 0001 | * - | * Rel-16 | * D | * FS\_LTKUP | * agreed |
| * S3-190013 | * CR to 33.841 - implementation of requested by edithelp | * Vodafone GmbH | * 33.841 | * 0001 | * - | * Rel-16 | * D | * FS\_256\_Algo | * agreed |
| * S3-190216 | * CR to TR 33.841 regarding key derivation function | * China Mobile | * 33.841 | * 0002 | * - | * Rel-16 | * F | * FS\_256\_Algo | * not pursued |

## Annex C: Lists of liaisons

### C1: Incoming liaison statements

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Document | Original | Title | From | Decision | Reply in |
| * S3-190018 |  | * Cooperation on Generic Slice Template definition | * GSMA | * noted |  |
| * S3-190019 |  | * User Plane Security for 5GC Roaming | * GSMA | * noted |  |
| * S3-190020 |  | * LS on new 5G-GUTI allocation | * C1-188921 | * replied to | * S3-190410 |
| * S3-190021 |  | * LS on protection of initial NAS messages | * C1-188925 | * noted |  |
| * S3-190022 |  | * Reply LS on Routing ID | * S2-1813178 | * noted |  |
| * S3-190023 |  | * Reply LS on Routing ID | * C1-188979 | * noted |  |
| * S3-190024 |  | * LS on EAS-C&U support | * C3-186313 | * replied to | * S3-190453 |
| * S3-190025 |  | * LS on OAuth authorization flows supported for Northbound APIs | * C3-187660 | * replied to | * S3-190452 |
| * S3-190026 |  | * LS on Nudr Sensitive Data Protection | * C4-188524 | * replied to | * S3-190411 |
| * S3-190027 |  | * Clarification request on NF authorization in UE Reachability Notification Request procedure | * C4-188603 | * noted |  |
| * S3-190028 |  | * Response to 3GPP SA2 liaison S2-189038 on ‘general status of work’ | * BBF | * noted |  |
| * S3-190029 |  | * Response to 3GPP SA2 liaison S2-1811575 on ‘general status of work’ | * BBF | * noted |  |
| * S3-190030 |  | * Response to 3GPP SA2 liaison S2-1810989 on ‘Reply LS on devices behind 5G-RG accessing the 5GC’ | * BBF | * noted |  |
| * S3-190031 |  | * Response to 3GPP SA2 liaison S2-1812643 | * BBF | * noted |  |
| * S3-190032 |  | * Response to 3GPP SA2 on FN-RG authentication | * BBF | * replied to | * S3-190518 |
| * S3-190033 |  | * LS to 3GPP TSG-SA WG6 on Use of ITS Dedicated Spectrum within V2X UE | * ETSI TC ITS | * noted |  |
| * S3-190034 |  | * LS on DRB Integrity Protection | * R2-1819080 | * noted |  |
| * S3-190035 |  | * Reply LS on UP Integrity Protection for Small Data in Early Data Transfer | * R3-187230 | * withdrawn |  |
| * S3-190036 |  | * Reply LS on inclusion of selected PLMN into the complete message | * R3-187235 | * noted |  |
| * S3-190037 |  | * LS on Security Result Exchange Between NG-RAN and SMF in DC | * R3-187244 | * replied to | * S3-190412 |
| * S3-190038 |  | * Enforcement of maximum supported data rate for integrity protection | * R3-187267 | * noted |  |
| * S3-190039 |  | * GTP Recovery Counter & GSN node behaviou | * GSMA | * noted |  |
| * S3-190040 |  | * LS on Authentication for UEs not Supporting NAS | * S2-1812600 | * replied to | * S3-190519 |
| * S3-190041 |  | * Reply LS on FN-RG authentication and related questions | * S2-1812601 | * replied to | * S3-190518 |
| * S3-190042 |  | * LS on the security aspects of UE Capability ID | * S2-1812607 | * replied to | * S3-190405 |
| * S3-190043 |  | * Reply LS on FS\_5WWC conclusion of study work | * S2-1812643 | * noted |  |
| * S3-190044 |  | * LS on PC5 unicast and groupcast security protection | * S2-1812896 | * replied to | * S3-190144 |
| * S3-190045 |  | * LS On Slice-Specific Secondary Authentication | * S2-1813359 | * postponed |  |
| * S3-190046 |  | * LS response on API invoker onboarding | * S6-181848 | * noted |  |
| * S3-190047 |  | * Reply LS on Control Plane Solution for Steering of Roaming in 5GS | * SP-181244 | * noted |  |
| * S3-190103 |  | * Reply LS on Interim conclusions for SA2 study on Radio Capabilities Signalling Optimisations (FS\_RACS) | * R2-1819206 | * noted |  |
| * S3-190107 |  | * Expectations and requirements for 256 bit algorithms | * ETSI SAGE | * withdrawn |  |
| * S3-190394 |  | * LS on the need to update home network public key and key ID during Routing indicator update | * C1-190377 | * replied to | * S3-190413 |
| * S3-190395 |  | * LS on mandating 5G-GUTI allocation after network triggered service request | * C1-190380 | * replied to | * S3-190414 |
| * S3-190396 |  | * LS on securing warning messages in ePWS | * C1-190393 | * replied to | * S3-190406 |
| * S3-190402 |  | * 128-EIA3 maximum message size | * ETSI SAGE | * noted |  |
| * S3-190403 |  | * Expectations and requirements for 256 bit algorithms | * ETSI SAGE | * replied to | * S3-190407 |
| * S3-190404 |  | * Interception of voice services over new radio in a 5GS environment | * S3i190057 | * postponed |  |
| * S3-190417 |  | * LS Response on Enforcement of maximum supported data rate for integrity protection | * S2-1812600 | * noted |  |
| * S3-190418 |  | * Reply LS on Interim conclusions for SA2 study on Radio Capabilities Signalling Optimisations (FS\_RACS) | * S2-1901303 | * noted |  |
| * S3-190419 |  | * LS Response on Security Result Exchange Between NG-RAN and SMF in DC | * S2-1901386 | * noted |  |

### C2: Outgoing liaison statements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Document | Title | To | Cc | reply to i/c LS |
| * S3-190405 | * Reply to: LS on the security aspects of UE Capability ID | * SA2 | * RAN2 | * S3-190042 |
| * S3-190406 | * Reply to: LS on securing warning messages in ePWS | * CT1,SA1 | * - | * S3-190396 |
| * S3-190407 | * Reply to: Expectations and requirements for 256 bit algorithms | * ETSI SAGE | * ETSI TC CYBER | * S3-190403 |
| * S3-190409 | * LS on User Plane Security for 5GC Roaming | * SA, SA2 | * CT,CT4 |  |
| * S3-190410 | * Reply to: LS on new 5G-GUTI allocation | * CT1 | * SA2 | * S3-190020 |
| * S3-190411 | * Reply to: LS on Nudr Sensitive Data Protection | * CT4 | * - | * S3-190026 |
| * S3-190412 | * Reply to: LS on Security Result Exchange Between NG-RAN and SMF in DC | * RAN3,SA2 | * - | * S3-190037 |
| * S3-190413 | * Reply to: LS on the need to update home network public key and key ID during Routing indicator update | * CT1 | * SA2,CT6 | * S3-190394 |
| * S3-190414 | * Reply to: LS on mandating 5G-GUTI allocation after network triggered service request | * CT1 | * - | * S3-190395 |
| * S3-190452 | * Reply to: LS on OAuth authorization flows supported for Northbound APIs | * CT3 | * SA6 | * S3-190025 |
| * S3-190453 | * Reply to: LS on EAS-C&U support | * CT3 | * - | * S3-190024 |
| * S3-190454 | * LS to RAN2/3 on EDT data integrity protection | * RAN2,RAN3 | * - | * - |
| * S3-190463 | * Reply LS on PC5 unicast and groupcast security protection | * SA2 | * - | * S3-190044 |
| * S3-190502 | * LS on clarification on UE trace definition | * SA2,CT4 | * - |  |
| * S3-190518 | * Reply-LS on FN-RG authentication and related questions | * SA2,BBF | * - | * S3-190041 |
| * S3-190519 | * Response LS on Authentication for UEs not Supporting NAS | * SA WG2 | * - | * S3-190040 |
| * S3-190559 | * LS on PLMN-ID verification | * CT3,CT4 | * - |  |

## Annex D: List of agreed/approved new and revised Work Items

|  |  |  |  |
| --- | --- | --- | --- |
| Document | Title | Source | new/revised |
| * S3-190460 | * New SID on Security for NR Integrated Access and Backhaul | * Samsung | * SID new |
| * S3-190462 | * New SID on Security Aspects of 3GPP support for Advanced V2X Services | * LG Electronics | * SID new |
| * S3-190464 | * Update to Study Item Description FS\_SBA\_Sec: Enhanced-SBA aspects | * Telekom Deutschland GmbH | * SID revised |
| * S3-190461 | * New WID on Enhancements for Security aspects of Common API Framework | * Samsung, China Telecom, China Unicom, Nokia | * WID new |

## Annex E: List of draft Technical Specifications and Reports

|  |  |  |  |
| --- | --- | --- | --- |
| Document | Spec | vers | Doc title |
| * S3-190014 | * 33.853 | * 0.0.0 | * Draft TR 33.853 - Skeleton TR on User Plane Integrity Protection (updated after conf call) |
| * S3-190108 | * 33.848 | * 0.0.0 | * TR33848 Study on Virtualisation Skeleton |
| * S3-190467 | * 33.815 | * 0.3.0 | * Draft TR 33.815 |
| * S3-190471 | * 33.861 | * 0.4.0 | * Draft TR 33.861 |
| * S3-190492 | * 33.819 | * 0.2.0 | * Draft TR 33.819 |
| * S3-190509 | * 33.514 | * 0.4.0 | * Draft TS 33.514 |
| * S3-190510 | * 33.512 | * 0.5.0 | * Draft TS 33.512 |
| * S3-190513 | * 33.518 | * 0.2.0 | * Draft TS 33.518 |
| * S3-190515 | * 33.517 | * 0.2.0 | * Draft 33.517 |
| * S3-190516 | * 33.519 | * 0.3.0 | * Draft TS 33.519 |
| * S3-190521 | * 33.807 | * 0.3.0 | * Draft TR 33.807 |
| * S3-190526 | * 33.835 | * 0.3.0 | * Draft TR 33.835 |
| * S3-190539 | * 33.813 | * 0.2.0 | * Draft TR 33.813 |
| * S3-190544 | * 33.825 | * 0.3.0 | * Draft TR 33.825 |
| * S3-190550 | * 33.853 | * 0.1.0 | * draft TR 33.853 |
| * S3-190552 | * 33.809 | * 0.2.0 | * Draft TR 33.809 |
| * S3-190562 | * 33.814 | * 0.2.0 | * Draft TR 33.814 |

## Annex F: List of action items

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Meeting/Number | Agenda item | Document | Details | Responsible | Due by |
| * 94/1 | * 7.5.8 | * S3-190055 | * Evaluate plugtests results and come back with a paper evaluating the results. | * Samsung | * 2019-05-06 |

## Annex G: List of participants

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| TITLE | Family Name | Given Name | Role | Employer Organization | Employer Category Code | Organization Represented | Organization Represented Category Code |
| Dr. | Arumugam | Sivabalan | Delegate | NEC Europe Ltd | ETSI | NEC Corporation | ARIB |
| Dr. | Backia Mary B | Sheeba | Delegate | NEC Corporation | ETSI | NEC Europe Ltd | ETSI |
| Dr. | Ben Henda | Noamen | Delegate | Ericsson LM | ETSI | Nanjing Ericsson Panda Com Ltd | CCSA |
| Mr. | Blanchard | Colin | Delegate | BT plc | ETSI | BT plc | ETSI |
| Mr. | Bykampadi | Nagendra | Delegate | Nokia France | ETSI | Nokia Solutions & Networks (I) | TSDSI |
| Mr. | Cano Soveri | Mirko | SECRETARY | ETSI | ETSI | ETSI | ETSI |
| Mr. | Castagno | Mauro | Delegate | TELECOM ITALIA S.p.A. | ETSI | TELECOM ITALIA S.p.A. | ETSI |
| Mr. | Cichonski | Jeffrey | Delegate | NIST | ATIS | NIST | ATIS |
| Mr. | De Kievit | Sander | Delegate | NEC Corporation | ETSI | NEC Corporation | ETSI |
| Ms. | Deng | Juan | Delegate | HuaWei Technologies Co., Ltd | CCSA | Huawei Telecommunication India | TSDSI |
| Mr. | Doerr | Johannes | Delegate | BMWi | ETSI | BMWi | ETSI |
| Mr. | Dolly | Martin | Delegate | AT&T | ATIS | AT&T GNS Belgium SPRL | ETSI |
| Miss | Driscoll | Florence | Delegate | NCSC | ETSI | NCSC | ETSI |
| Dr. | Escott | Adrian | Delegate | Qualcomm CDMA Technologies | ETSI | QUALCOMM Europe Inc. - Spain | ETSI |
| Mr. | Evans | Tim P. | Delegate | VODAFONE Group Plc | ETSI | Vodafone GmbH | ETSI |
| Mr. | Feng | Cheng | Delegate | Datang Mobile Com. Equipment | CCSA | Datang Mobile Com. Equipment | CCSA |
| Mr. | Ferdi | Samir | Delegate | InterDigital, Inc. | ETSI | InterDigital Europe. Ltd. | ETSI |
| Mr. | Gamishev | Todor | Delegate | Orange | ETSI | Orange UK | ETSI |
| Mr. | Gautam | Sheel Priya | Delegate | Department of Telecom | TSDSI | Department of Telecom | TSDSI |
| Miss | Guo | Ivy | Delegate | Apple (UK) Limited | ETSI | Apple (UK) Limited | ETSI |
| Mr. | Guo | Longhua | Delegate | CHENGDU TD TECH LTD. | CCSA | HUAWEI TECH. GmbH | ETSI |
| Dr. | James | Vinosh Babu | Delegate | Qualcomm India Pvt Ltd | TSDSI | Qualcomm Wireless GmbH | ETSI |
| Miss | Jerichow | Anja | Delegate | Nokia Germany | ETSI | Nokia UK | ETSI |
| Dr. | Jost | Christine | Delegate | Ericsson LM | ETSI | Ericsson-LG Co., LTD | TTA |
| Dr. | Keesmaat | Iko | Delegate | TNO | ETSI | KPN N.V. | ETSI |
| Dr. | Kim | Joonwoong | Delegate | LG Electronics France | ETSI | LG Electronics Inc. | TTA |
| Mr. | Kohalmi | Steve | Delegate | Juniper Networks | ETSI | Juniper Networks | ETSI |
| Mr. | Kolekar | Abhijeet | Delegate | Intel Corporation (UK) Ltd | ETSI | Intel Deutschland GmbH | ETSI |
| Mr. | Kudupudi | Ram Manohar | Delegate | Department of Telecom | TSDSI | Department of Telecom | TSDSI |
| Mr. | Kumar | Brajendra | Delegate | Department of Telecom | TSDSI | Department of Telecom | TSDSI |
| Dr. | Kunz | Andreas | Delegate | Motorola Mobility Germany GmbH | ETSI | Lenovo (Beijing) Ltd | CCSA |
| Mr. | Laitinen | Mika | Delegate | Airbus DS SLC | ETSI | Airbus DS SLC | ETSI |
| Miss | Lalwani | Sanki | Delegate | COAI | OTHER | COAI | OTHER |
| Mr. | Leadbeater | Alex | Delegate | BT plc | ETSI | BT plc | ETSI |
| Dr. | Lee | Soo Bum | Delegate | Qualcomm Incorporated | ATIS | Qualcomm Austria RFFE GmbH | ETSI |
| Dr. | Lei | Zander (Zhongding) | Delegate | HuaWei Technologies Co., Ltd | CCSA | Huawei Technologies France | ETSI |
| Mr. | Li | He | Delegate | Huawei Technologies Co. Ltd. | ETSI | Huawei Device Co., Ltd | CCSA |
| Ms. | Liu | Fei | Delegate | HuaWei Technologies Co., Ltd | CCSA | HuaWei Technologies Co., Ltd | CCSA |
| Miss | Lu | Wei | Delegate | Nokia Korea | TTA | Nokia Shanghai Bell | CCSA |
| Mr. | Manhas | O P | Delegate | Department of Telecom | TSDSI | Department of Telecom | TSDSI |
| Mr. | Mellqvist | Anders | Delegate | Sony Europe Limited | ETSI | Sony Mobile Communications | ARIB |
| Dr. | Muhanna | Ahmad | Delegate | Huawei Technologies Sweden AB | ETSI | HiSilicon Technologies Co. Ltd | CCSA |
| Mr. | Nair | Suresh | Delegate | Nokia Germany | ETSI | Nokia Corporation | ETSI |
| Mr. | Normann | Henrik Andreas | Delegate | Ericsson LM | ETSI | Ericsson Telecomunicazioni SpA | ETSI |
| Mr. | Oishi | Tateo | Delegate | Sony Europe Limited | ETSI | Sony Corporation | ARIB |
| Mrs. | PALAMALA | Radhika | Delegate | Department of Telecom | TSDSI | Department of Telecom | TSDSI |
| Mr. | Palanigounder | Anand | Delegate | Qualcomm UK Ltd | ETSI | Qualcomm Finland RFFE Oy | ETSI |
| Mrs. | Pauliac | Mireille | Delegate | Gemalto N.V. | ETSI | Gemalto N.V. | ETSI |
| Mr. | PENG | Jin | Delegate | ZTE Corporation | ETSI | ZTE Wistron Telecom AB | ETSI |
| Dr. | Prasad | Anand | Chairman | Rakuten Mobile Network, Inc. | ARIB | Rakuten Mobile Network, Inc. | ARIB |
| Mr. | Rajadurai | Rajavelsamy | Delegate | Samsung R&D Institute UK | ETSI | Samsung R&D Institute India | TSDSI |
| Mrs. | Rong | Wu | Delegate | Huawei Technologies Co. Ltd. | ETSI | HUAWEI Technologies Japan K.K. | ARIB |
| Mr. | Rudolph | Hans Christian | Delegate | Deutsche Telekom AG | ETSI | Telekom Deutschland GmbH | ETSI |
| Mr. | Schumacher | Greg | Delegate | SPRINT Corporation | ETSI | Sprint Corporation | ATIS |
| Mr. | Tangudu | Narendranath Durga | Delegate | Samsung R&D Institute India | TSDSI | Samsung Electronics Co., Ltd | TTA |
| Dr. | Targali | Yousif | Delegate | T-Mobile USA Inc. | ATIS | T-Mobile USA Inc. | ATIS |
| Mr. | Tiwari | Kundan | Delegate | NEC Corporation | TTC | NEC Telecom MODUS Ltd. | ETSI |
| Mr. | Tiwathia | Vikram | Delegate | COAI | OTHER | COAI | OTHER |
| Mr. | Toor | Gurbakshish Singh | Delegate | TD Tech Ltd | CCSA | TD Tech Ltd | CCSA |
| Dr. | Tsiatsis | Vlasios | Delegate | Ericsson LM | ETSI | Ericsson India Private Limited | TSDSI |
| Mr. | Varthakavi | Raghunandan | Delegate | Department of Telecom | TSDSI | Department of Telecom | TSDSI |
| Mr. | Vujcic | Dragan | Delegate | IDEMIA | ETSI | IDEMIA | ETSI |
| Mr. | Walia | Jagdeep | Delegate | Ericsson LM | ETSI | Ericsson España S.A. | ETSI |
| Dr. | Wan | Tao | Delegate | CableLabs | ETSI | CableLabs | ETSI |
| Dr. | Wang | Yong | Delegate | HuaWei Technologies Co., Ltd | CCSA | Huawei Technologies Co. Ltd. | ETSI |
| Mr. | Whorlow | Colin | Delegate | NCSC | ETSI | HOME OFFICE | ETSI |
| Mr. | Wong | Marcus | Delegate | Huawei Tech.(UK) Co., Ltd | ETSI | Huawei Tech.(UK) Co., Ltd | ETSI |
| Mr. | Woodward | Tim | Delegate | Motorola Solutions Danmark A/S | ETSI | Motorola Solutions Germany | ETSI |
| Miss | Xu | Hui | Delegate | CATT | ETSI | CATT | ETSI |
| Mr. | Yoshizawa | Taka | Delegate | NEC Europe Ltd | ETSI | NEC Corporation | TTC |
| Dr. | Zhang | Bo | Delegate | Huawei Technologies Co. Ltd. | ETSI | Huawei Technologies Sweden AB | ETSI |
| Mr. | Zhou | Wei | Delegate | CATT | CCSA | CATT | CCSA |
| Dr. | Zugenmaier | Alf | Delegate | NTT DOCOMO INC. | TTC | NTT DOCOMO INC. | ARIB |

## Annex H: List of future meetings

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| --- | --- | --- | --- | --- | --- |
| Title | Start date | End date (OP) | Town | Country | Reference |
| * SA3#95 | * 2019-05-06 | * 2019-05-10 | * Reno | US | * S3-95 |
| * SA3-Ad-Hoc | * 2019-06-24 | * 2019-06-28 | * Sapporo | * JP | * S3-ah-40149 |
| * SA3#96 | * 2019-08-26 | * 2019-08-30 | * Wroclaw | * PL | * S3-96 |
| * SA3-Ad-Hoc | * 2019-10-14 | * 2019-10-18 | * TBD | * CN | * S3-ah-40150 |
| * SA3#97 | * 2019-11-18 | * 2019-11-22 | * Reno | * US | * S3-97 |