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

**Meeting Report  
for  
TSG SA WG3  
meeting: 95Bis**

**Sapporo, Japan, 24/06/2019 to 28/06/2019**

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## 1 Opening of the meeting

The Chair Noamen Ben Henda (Ericsson) welcomed the attendees to the beautiful city of Sapporo in Japan. Alf (NTT-Docomo) presented some slides with the usual info and tips for the week.

## 2 Approval of Agenda and Meeting Objectives

**S3-191800 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.

The Chair also gave the following statement regarding engagement with companies added to the

U.S. Export Administration Regulations (EAR) Entity List in 3GPP Activities:

1. Public Information is Not Subject to EAR

3GPP is an open platform where all contributions (including technology protected or not by patent) made by the different Individual Members under the membership of each respective Organizational Partner are publicly available. Indeed, contributions by all and any Individual Members are uploaded to a public file server when received and then the documents are effectively in the public domain.

In addition, since membership of email distribution lists is open to all, documents and emails distributed by that means are considered to be publicly available.

As a result, information contained in 3GPP contributions, documents, and emails distributed at 3GPP meetings or by 3GPP email distribution lists, because it is made available to the public without restrictions upon its further dissemination, is not subject to the export restrictions of the EAR.

Meeting minutes are maintained for 3GPP meetings. Such meeting minutes for 3GPP meetings are made available to the public without restrictions upon its further dissemination. As a result, information, including conveyed orally, contained in 3GPP meetings is not subject to the export restriction of the EAR.

2. Non-Public Information

Non-public information refers to the information not contained or not intended to be contained in 3GPP contributions, documents or emails. Such non-public information may be disclosed during informal meetings, exchanges, discussions or any form of other communication outside the 3GPP meetings and email distribution lists.

For the duration of the Temporary General License (TGL) issued by the Bureau of Industry and Security (BIS) of the US Department of Commerce on May 20, 2019, there are no restrictions on the release of non-public information to companies added to the Entity List on May 16, 2019, to the extent that information is necessary to maintain, service, or support existing handsets, networks or equipment, or “as necessary for development of 5G standards.”

3. Other Information

Certain encryption software controlled under the International Traffic in Arms Regulations (ITAR), even if publicly available, may still be subject to US export controls other than the EAR.

4. Conduct of Meetings

Until further notice, the situation should be considered as "business as usual" during all the meetings called by 3GPP.

5. Responsibility of Individual Members

It should be remembered that contributions, meetings, exchanges, discussions or any form of other communication in or outside the 3GPP meetings are of the accountability, integrity and the responsibility of each Individual Member. In addition, Individual Members remain responsible for ensuring that none of their technical contributions include classified encryption software or other information that is subject to US export control under the ITAR or other applicable US export control regulations.

Individual Members with questions regarding the impact of laws and regulations on their participation in 3GPP should contact their companies’ legal counsels.

## 4 Meeting reports

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

**S3-191801 Report from last SA3 meeting/s**

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

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

### 4.2 Report from SA Plenary

**S3-191803 Report from last SA meeting**

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

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

### 4.3 Report from SA3-LI

## 5 Items for early consideration

**S3-191840 LS reply on Nudr Sensitive Data Protection**

*Type: LS in For: (not specified)  
 Original outgoing LS: -, to -, cc -  
 Source: S2-1906761*

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

**S3-191841 Reply LS on Nudr Sensitive Data Protection**

*Type: LS in For: (not specified)  
 Original outgoing LS: -, to -, cc -  
 Source: SP-190581*

**Discussion:**

Vodafone queried if changes implemented in Rel-15 had to be reversed. The Chair replied that was the case.

NTT-Docomo: massive security work needed here, not even ready for Rel-16.

It was decided to send an LS to SA2 and CT4 and postpone the reply to SA for the next meeting.

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

**S3-192277 Reply to: Reply LS on Nudr Sensitive Data Protection**

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

**Discussion:**

It was clarified that changes in Rel-15 were needed in CT4. The Chair replied that this was not what was asked in SA.

ORANGE: we never said that we had a specific authentication that shall be used. Proprietary algorithms used currently by operators will not work.

Alex(BT): as specified this resolves in 5G weaker than 4G, due to the use of proprietary algorithms by operators.

Anja(Nokia): this means that we are in the same situation as last meeting. Gemalto replied that last meeting was about a new feature in the storage in the UDM whereas this was a correction.

The Chair commented that this may lead to a correction in a CT4 specification.

Who supports sending the LS:

Telecom Italia, Nokia, ORANGE, China Mobile, BT, Gemalto,Docomo,Hpe supported sending the LS.

Ericsson didn’t support sending the LS.

**Decision:** The document was **revised to S3-192456**.

**S3-192456 LS on Nudr Sensitive Data Protection**

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

(Replaces S3-192277)

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

**S3-192057 LS-UDR**

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

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

**S3-191985 Material related to UDM-ARPF-UDR discussion**

*Type: discussion For: Information  
 33.501 v..  
 Source: Nokia, Nokia Shanghai Bell*

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

**S3-191862 Moving Forward on Storing Authentication Data**

*Type: discussion For: Endorsement  
 33.501 v..  
 Source: Hewlett-Packard Enterprise*

**Abstract:**

Open the discussion on the storage of authentication data and access to authentication data in the 5G UDR based on SA Plenary’s guidance, and four proposals on how to move forward to be endorsed

**Discussion:**

Vodafone: there would be security interoperability issues between the ARPF and UDR, no assurance for backwards compatibility. There is no time to do any security assessments anymore for Rel-15.

It was clarified that SA3 was requested to align with stage 3.

Huawei: against adding requirements for this in 33.501 Rel-16.

Alex(BT): we need to accept that SA made the decision of keeping the UDR. All companies were OK with that in SA, except Vodafone. Go with the Plenary's decision, keep it in Rel-15 "it's in the UDR", and look at it in Rel-16.

The Chair commented that the issue on Rel-15 would the priority and work forward in Rel-16 would be discussed afterwards.

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

**S3-192140 Discussion of credential data protection**

*Type: discussion For: Endorsement  
 Source: China Mobile*

**Discussion:**

KPN, Nokia disagreed with the Rel-15 proposal. Something had to be done in Rel-15. Huawei supported this.

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

**S3-191984 Discussion on UDM-UDR-ARPF issues**

*Type: discussion For: Endorsement  
 33.501 v..  
 Source: Nokia, Nokia Shanghai Bell*

**Discussion:**

Vodafone found quite a lot to disagree in here. The document seems to imply that we take the SA's view as long term.

The Chair clarified that SA3 will follow the guidance of SA in Rel-15. There is no choice here. Some proposals wanted to add something in Rel-15, some proposals said that nothing should be done in Rel-15.

Vodafone: implementation problems as Rel-15 is showing now.

Gemalto: Authentication data and subscription credentials are different concepts and SA is confusing them.

Vodafone: there is a problem with addressing the storage of sensitive data in the UDR or proprietary repository.

China Mobile: Rel-15 is frozen in SA3 too, no need to change anything in there.

ORANGE: the definition of subscription credentials need to change.

Georg Mayer (SA Chair) commented that these were defined in CT4 specifications. The deployment may be done differently but then they would not follow CT4 specs. Extending the definition or putting a note would be helpful.

ORANGE: add a note: "Security storage in the UDR is out of scope of this document".

Anders (HP): we cannot say all storage is out of scope.

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

## 6 Reports and Liaisons from other Groups

### 6.1 3GPP Working Groups

**S3-191836 LS on Ciphering solution for broadcast of Assistance Data**

*Type: LS in For: (not specified)  
 Original outgoing LS: -, to -, cc -  
 Source: R2-1908473*

**Decision:** The document was **replied to in S3-192268**.

**S3-191941 Nokia comments on R2-1908473 UE DL assistance data.**

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

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

**S3-191942 Draft reply LS on R2-1908473 UE DL assistance data.**

*Type: LS out For: (not specified)  
 to RAN2  
 Source: Nokia , Nokia Shanghai Bell*

**Decision:** The document was **revised to S3-192268**.

**S3-192268 Reply LS on Ciphering solution for broadcast of Assistance Data**

*Type: LS out For: -  
 to RAN2  
 Source: Nokia , Nokia Shanghai Bell*

(Replaces S3-191942)

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

**S3-191924 Ciphering of broadcast assistance data for UE-based positioning**

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

**Discussion:**

Ericsson: integrity protection is needed. Qualcomm replied that the agreement was that integrity protection was not needed.

Interdigital: passive attacks are considered? When the UE is receiving coordinates from the gNodeB?.

Qualcomm: high location accuracy is needed for some Ues, apps or the operator. Access control is for Ues that are subscribed for it. This is an use case that needed cyphering.

Alf (Docomo): keystream could be used for something else. A predicted or extracted keystream should be looked at.

Vodafone: publishing the location of the gNodeBs is a usual procedure among operators. It's publicly available data.

Qualcomm: there is no security risk when using cyphering the static broadcast assistance data.

Ericsson: add a reminder that Unicast uses NAS security and integrity protection can be added.

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

### 6.2 IETF

### 6.3 ETSI SAGE

Vodafone: SAGE is waiting for SA3's reply on the performance requirements of the 256 bit-algorithm. Are we prepared to answer?

Qualcomm: this requires input contributions, and there are none for this meeting.

Vodafone encouraged companies to think about this and reply as soon as possible.

### 6.4 GSMA

**S3-191837 GTP Recovery Counter & GSN node behaviour**

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

**Discussion:**

Nokia: the choice of options require some study from SA3.

Vodafone: we need a study item for this, and reply to them with an LS that we will do a study. Better not to postpone this LS.

The Chair noted that this was an LS asking CT4 and not SA3, so no specific action for SA3 was required.

Nokia: CT4 will not give a proper answer on the security of this.

**Decision:** The document was **replied to in S3-192269**.

**S3-192269 Reply to: GTP Recovery Counter & GSN node behaviour**

*Type: LS out For: approval  
 to GSMA FASG RIFS  
 Source: Nokia*

**Discussion:**

It was agreed to send an LS reply where it would be stated that SA3 will look into this matter.

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

**S3-191845 Diameter IPX Network End-to-End Security Solution**

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

**Discussion:**

Vodafone: I expect CRs for TS 33.401 as a result of this. A study item is needed.

Iko (KPN): there is non 3GPP functionality here, that does not concern us. NCSC agreed with KPN.

Nokia: on the Diameter solution we can give some feedback in the next meeting.

AT&T: IETF has been working on Diameter security for years. How is it that GSMA has better security expertise on this issue? Vodafone commented that they had better knowledge of how the networks are implemented and deployed.

**Decision:** The document was **replied to in S3-192270**.

**S3-192270 Reply to: Diameter IPX Network End-to-End Security Solution**

*Type: LS out For: approval  
 to GSMA FASG DESS  
 Source: KPN*

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

### 6.5 OMA

### 6.6 TCG

**S3-191814 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 June 2019.

**Discussion:**

Highlights:

• Publication of new or revised deliverables (incremental changes from the status reported at SA3#95)

• TCG TPM 2.0 Auto Thin Profile – publication in June 2019

• TCG Trusted Attestation Protocol (TAP) Info Model – publication in June 2019

• TCG Trusted Attestation Protocol (TAP) Use Cases – public review June 2019

• TCG TPM 2.0 r1.55 – X.509 Certs & Attached Components – public review May 2019

• TCG TSS 2.0 TAB and Resource Manager – published April 2019

• TCG TSS 2.0 TPM Command Transmission Interface (TCTI) – published April 2019

• TCG TSS 2.0 System Level API (SAPI) – public review April 2019

• TCG TSS 2.0 Enhanced System Level API (ESAPI) – public review April 2019

• TCG PC Client Device Driver Design Principles for TPM 2.0 – public review February 2019

• TCG Platform Certificate Profile – public review February 2019

• IETF Remote ATtestation ProcedureS (RATS) WG in IETF Security Area

About: https://datatracker.ietf.org/wg/rats/about/

Charter: https://datatracker.ietf.org/doc/charter-ietf-rats/

Documents: https://datatracker.ietf.org/wg/rats/documents/

Problem Space

- Verifiable remote attestation - architecture and secure protocols

- Solutions spanning from IoT devices to Data Center systems and Cloud infrastructure

- Compact implementation solutions for resource-constrained systems

- Composition and correlation for complex systems (e.g., rack-mount routers)

- Primary support for CBOR Web Token (CWT) https://tools.ietf.org/html/rfc8392

- Secondary support for JSON Web Token (JWT) https://tools.ietf.org/html/rfc7519

- Multiple security components (GP SE, TCG TPM, TCG DICE, TCG MARS, etc.)

2. Meetings

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

o Sessions of Cyber Resilience, Network Equipment, DICE, IoT, Industrial, etc.

o Kick-off of Measurement and Attestation RootS (MARS) in Embedded Systems

• 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

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

### 6.7 oneM2M

### 6.8 TC-CYBER

Colin (NCSC) gave an update on the last TC CYBER meeting:

TC Cyber met in May. Main items of interest are:

New Work Items:

- to convert the TC Cyber TS on Cyber Security for Consumer IoT (TS 103 645) into an EN

- Network Layer MSP for enterprise network and data centre access control

The TC Cyber roadmap can be found at:

https://www.etsi.org/cyber-security/tc-cyber-roadmap

### 6.9 ETSI NFV

### 6.10 CVDs and Research

**S3-191848 Handling of UE radio network capabilities in 4G and 5G**

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

**Decision:** The document was **replied to in S3-192271**.

**S3-192271 Reply to: Handling of UE radio network capabilities in 4G and 5G**

*Type: LS out For: approval  
 to GSMA,RAN2, cc SA2,RAN3  
 Source: NTT-Docomo*

**Discussion:**

Includes agreement on proposal 1 in tdoc 992.

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

**S3-192265 Reply LS on Handling of UE radio network capabilities in 4G and 5G**

*Type: LS in For: Information  
 Original outgoing LS: -, to -, cc -  
 Source: R2-1908467*

**Decision:** The document was **replied to in S3-192271**.

**S3-191939 Nokia comments on GSMA LS on UE radio capability exchange**

*Type: discussion For: (not specified)  
 Source: Nokia*

**Discussion:**

ORANGE: what's the privacy issue?

Nokia: fingerprinting of the device. The device type can be identified, software version, capability. Also whether the user has instantiated a particular application, WhatsApp or whatever.

ORANGE: for 5G the IMSI is cyphered, not the same problem. We cannot hide the IMSI so it's not possible to provide backward compatibility in 4G. Besides, in Nokia's examples of privacy issues the user's identity is never exposed.

Futurewei: this has been discussed before with RAN2. They don’t have a problem with mandating for the security in the Uecapabilityenquiry procedure.

NTT-Docomo: I agree with the issue in 5G with device fingerprinting.

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

**S3-191938 Nokia comments on R2-1908467 reply LS to GSMA UE capability**

*Type: discussion For: Endorsement  
 Source: Nokia*

**Discussion:**

Futurewei supported this proposal.

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

**S3-191992 Proposal for handling of UE radio network capabilities in 4G and 5G**

*Type: discussion For: Endorsement  
 Source: Ericsson*

**Discussion:**

Futurewei supported proposal 1 and 4.

ORANGE: combine 1 and 2 in a new proposal 5.

Nokia: proposal 2 doesn’t address the issue and 3 is a new issue.

Vodafone also liked proposal 1.

The Chair saw that most companies supported proposal 1. Qualcomm liked proposal 2,

Docomo supported proposal 1 and 2. In case RAN2 had issues with proposal 2, the shalls could be replaced with "should".

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

**S3-191809 Draft LS to RAN2 on UECapabilitiesEnquire after AS SMC**

*Type: LS out For: Approval  
 to RAN2  
 Source: Futurewei*

**Abstract:**

LS to be sent to RAN2 to request feedback whether RAN2 has any problem in mandating the network to exchange Uecapabilities Enquiry after AS security context is established.

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

**S3-191940 Nokia comments on GSMA LS on UE radio capability exchange**

*Type: LS out For: Approval  
 to -  
 Source: Nokia, Nokia Shangahi Bell*

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

**S3-192266 Impersonation Attacks in 4G Networks**

*Type: LS in For: Discussion  
 Original outgoing LS: -, to -, cc -  
 Source: GSMA*

**Discussion:**

Qualcomm: we are already studying UP IP for LTE. If we have this, the attack cannot be launched.

Docomo: the billing issue is not here. You cannot create more traffic.

Qualcomm was uncomfortable with replying with details to a paper that was not public yet. It was agreed to reply without much detail.

**Decision:** The document was **replied to in S3-192272**.

**S3-192272 Reply to: Impersonation Attacks in 4G Networks**

*Type: LS out For: approval  
 to GSMA  
 Source: Nokia*

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

### 6.11 Other Groups

**S3-191833 NGMN 5G End-to-End Architecture Framework**

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

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

**S3-191844 LS on the availability of and requesting feedback on the stable draft TR 103 582 from ETSI STF555 - "Study of use cases and communications involving IoT devices in emergency situations**

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

**Discussion:**

Docomo: we should feedback requirements for roaming users need to be clear with regards to PWS messages in IoT devices. There is some work in SA1 and CT1 for ePWS. If we receive more LS about this work we should keep EMTEL in the loop.

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

**S3-192267 LS on withdrawal of TS 103 383 “Smart Cards; Embedded UICC; Requirements Specification**

*Type: LS in For: Information  
 Original outgoing LS: -, to -, cc -  
 Source: ETSI TC SCP*

**Discussion:**

ORANGE took the action point of preparing the CRs. A reply to this LS when the CRs were agreed would be done for the next meeting.

Telecom Italia queried why the GSMA document was more important than the TCP document. Vodafone commented that the GSMA document was more widely implemented.

ORANGE: SCP document is requirements-only and the GSMA documents has more things than requirements.

Nokia: shouldn't we add other references after removing this one?

ORANGE replied that it wasn't necessary.

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

**S3-192273 Removing references in TS 33.501 of TS 103 383**

*Type: discussion For: Information  
 Source: ORANGE*

**Discussion:**

CRs will come next meeting.

**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

**S3-192052 Mandating time based generation of SQNs**

*Type: CR For: Agreement  
 33.102 v15.1.0 CR-0279 Cat: F (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Discussion:**

Ericsson didn't agree with this recommendation. There are problems in the deployments when having different clocks. There are other ways of mitigating this attack.

Qualcomm: our understanding was to enhance the authentication to address this problem. We have a key issue related to this for the study item.

It was agreed to follow this in the related study work.

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

#### 7.1.2 Key derivation

**S3-192073 Clarification on length of EARFCN-DL in key derivation**

*Type: CR For: Approval  
 33.501 v15.5.0 CR-0625 Cat: F (Rel-16)  
  
 Source: Huawei, Hisilicon*

**Discussion:**

Related to tdoc 1971 (ZTE).

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

**S3-192135 Revisit the KAUSF desynchronization problem**

*Type: discussion For: Endorsement  
 33.501 v..  
 Source: China Mobile*

**Discussion:**

Nokia didn’t agree with this scenario.

If the authentication happened already, how can the attacker trigger another authentication? Only the AMF can do this.

Alex (BT) didn't see the issue here, it's just error handling when there is a de-synchronization. Qualcomm agreed: the system will recover itself.

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

**S3-192139 KAUSF synchronization between the UE and AUSF**

*Type: CR For: Approval  
 33.501 v15.5.0 CR-0626 Cat: F (Rel-15)  
  
 Source: China Mobile*

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

**S3-191971 length of ARFCN-DL**

*Type: CR For: Agreement  
 33.501 v15.5.0 CR-0614 Cat: F (Rel-15)  
  
 Source: ZTE Corporation*

**Discussion:**

Vodafone: Why is the length coded in two bytes? What's the point of the first 00?

Qualcomm: it was defined like that (look at L0).

Nokia: this is not a new parameter, why do we need a new definition?

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

#### 7.1.3 Mobility

**S3-191972 uplink NAS Count for KeNB derivation in idle mode mobility to EPS**

*Type: CR For: Agreement  
 33.501 v15.5.0 CR-0615 Cat: F (Rel-15)  
  
 Source: ZTE Corporation*

**Discussion:**

Overlap with tdocs 1916,1917.

This had to be taken offline.

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

**S3-192004 Security handling in registration procedure at AMF reallocation caused by slicing**

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

**Decision:** The document was **revised to S3-192262**.

**S3-192262 Security handling in registration procedure at AMF reallocation caused by slicing**

*Type: discussion For: Endorsement  
 33.501 v..  
 Source: Ericsson Hungary Ltd*

(Replaces S3-192004)

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

#### 7.1.4 AS security

#### 7.1.5 NAS security

**S3-191911 Discussion on possible solutions to AMF relocation issues**

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

**Discussion:**

Overlaps with 2148.Huawei didn’t agree and preferred to go for their proposal in 2148.

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

**S3-191912 Missing security context handling during registration procedures**

*Type: CR For: Agreement  
 33.501 v15.5.0 CR-0610 Cat: F (Rel-15)  
  
 Source: Qualcomm Incorporated*

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

**S3-192148 Solving registration failure in idle mobility registration procedure with AMF Reallocation**

*Type: CR For: Approval  
 33.501 v15.5.0 CR-0628 Cat: F (Rel-15)  
  
 Source: China Telecom, Huawei, Hisilicon*

**Discussion:**

China Mobile disagreed with this proposal. It wouldn’t work against a false base station attack.

Ericsson: we may be finding security holes in this solution and it needs to be studied more carefully.

Qualcomm: what happens when the AMF doesn’t talk to the old AMF and it doesn’t pull the old security context?

Huawei warned that if this was not solved in Release 15 there would backward compatibility issues in Release 16.

Qualcomm: Intra-AMF connection within a network would avoid this problem in Release 15.

ZTE: We prefer a solution that doesn't impact the UE.

The Chair asked the delegates if there was any chance of having this solved in Release 15. Noamen commented that more CRs would be welcome for the next meeting.

Martin (AT&T): if we don’t solve this, we are getting to the situation of having to use a proprietary solution and it will cause once again that nothing will be standardized with many proprietary solutions already in the market.

It was proposed to send an LS to CT1. This was discussed in tdoc 2281.

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

**S3-192159 Discussion paper on AMF reallocation**

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

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

**S3-192219 Clarification to Initial NAS message protection**

*Type: CR For: Approval  
 33.501 v15.5.0 CR-0636 Cat: F (Rel-16)  
  
 Source: Samsung*

**Discussion:**

MCC asked if this issue needed to be fixed, why it wasn't done in Rel-15. This was brought as TEI16, and it could be flagged out in SA.Samsung replied that it had been rejected to do it in Release 15 in the previous meeting, but in release 16 it was only introducing a new characteristic in the UE, not a new feature.

Ericsson wasn't sure if this was affecting SA2's procedures and SA3 may have to consult them firstly.

**Decision:** The document was **revised to S3-192282**.

**S3-192282 Clarification to Initial NAS message protection**

*Type: CR For: Approval  
 33.501 v15.5.0 CR-0636 rev 1 Cat: B (Rel-16)  
  
 Source: Samsung*

(Replaces S3-192219)

**Discussion:**

Small changes as proposed by Suresh (Nokia).

Futurewei suggested to reword the consequences if not approved on the CR cover.

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

**S3-192281 LS on registration issues in the AMF re-allocation**

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

**Discussion:**

The Chair warned that if this had an impact on Rel-15 stage 3, this could be rejected by CT groups.

Vodafone commented that CT groups were meeting in the same location as SA3 next time, so this could be discussed with them.

It was argued that this could have some impact on backward compatibility and the release could be discussed with CT.

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

Attachments to this outgoing LS: S3-192454

**S3-192353 Report from session on registration failures with AMF reallocation**

*Type: report For: Information  
 Source: Huawei*

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

**S3-192454 AMF reallocation**

*Type: discussion For: Endorsement  
 Source: Huawei*

**Discussion:**

It takes the problem description of S3-192159 to be forwarded in the LS S3-192281.

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

#### 7.1.6 Security context

**S3-191979 uplink NAS Count for Kasme derivation in idle mode mobility to EPS**

*Type: CR For: Agreement  
 33.501 v15.5.0 CR-0616 Cat: F (Rel-15)  
  
 Source: ZTE Corporation*

**Discussion:**

Suresh (Nokia) didn’t agree with this change.

ZTE: we guarantee that we use always the same value this way when the last COUNT is increased.

Huawei: we agree with the problem they're trying to solve, not with the solution here.Scenario too specific, NAS uplink count value would be the more generic problem.

It was agreed the existence of the problem, but the resolution/clarification needed to be taken offline.

**Decision:** The document was **revised to S3-192284**.

**S3-192284 uplink NAS Count for Kasme derivation in idle mode mobility to EPS**

*Type: CR For: Agreement  
 33.501 v15.5.0 CR-0616 rev 1 Cat: F (Rel-15)  
  
 Source: ZTE Corporation*

(Replaces S3-191979)

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

#### 7.1.7 Visibility and Configurability

**S3-191884 SoR-MAC-IUE verification failure handling by UDM**

*Type: CR For: Agreement  
 33.501 v15.5.0 CR-0609 Cat: F (Rel-15)  
  
 Source: NEC Europe Ltd*

**Discussion:**

The Chair asked if this had impact on stage 3. NEC couldn’t answer.

Ericsson: if it's a malicious AMF why it would forward the malicious message?

Vodafone: if there is no match it would just fail.

Qualcomm: this is a CT1 problem, not to be addressed here. Samsung added that this increased complexity.

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

**S3-191955 Clarification on Procedure for steering of UE in VPLMN during mobility registration update**

*Type: CR For: (not specified)  
 33.501 v15.5.0 CR-0613 Cat: F (Rel-15)  
  
 Source: Intel China Ltd., NEC*

**Discussion:**

Qualcomm: this scenario doesn’t apply here. Vodafone agreed; this only takes place in the initial registration.

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

#### 7.1.8 Primary authentication

**S3-191986 Definition of authentication subscription data**

*Type: CR For: Agreement  
 33.501 v15.5.0 CR-0617 Cat: F (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Discussion:**

Docomo: second change should not be part of a definition, it's a requirement.

Alf (Docomo): on the subscription credential(s) definition: these kind of discussion should not happen in a definition clause. This is not even a proper definition format.

The first definition on authentication subscription data was also discussed. Vodafone and MCC expressed their concerns that the definition was not used anywhere in the specification.

Telecom Italia: a list of full parameters that are subscription credentials cannot be even agreed in SA3 so we cannot expect that CT groups assume them. Telecom Italia wished that it was clear for the operator that the security processes in the second note were not described anywhere else.

MCC also noted that the term "in the present release" was redundant and just saying "not defined" would be clear enough.

**Decision:** The document was **revised to S3-192276**.

**S3-192276 Definition of authentication subscription data**

*Type: CR For: Agreement  
 33.501 v15.5.0 CR-0617 rev 1 Cat: F (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell*

(Replaces S3-191986)

**Discussion:**

NTT-Docomo: happy with this, but we need to verify that the definitions are being used in the text of the spec and that they are still correct. Maybe send a LS and have a conference call in between meetings. Gemalto and ORANGE agreed.

NTT-Docomo: this should lead to a study item in Rel-16.

Alf (Docomo): allowing the storage in the UDR goes beyond making a definition, things are being stored in the ARPF throughout the spec and we need to modify those parts as well.

ORANGE disagreed with the requirements on the UDM.

It was commented that this document would serve as a baseline for further work for the next meeting, but in the end the document was noted.

Telecom Italia: realistic to have UDR co-located/inside the ARPF? This would mean different requirements to be considered.

Hpe: implementation issue.

Tim (Vodafone) proposed to organize a conference call before the next meeting. Adrian (Qualcomm) will chair the call. Minutes were to be created and delivered to the next SA3 meeting.

Georg (SA Chair) proposed to sync with CT4 on the call.

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

**S3-191936 Requirements on UDM/ARPF**

*Type: CR For: Approval  
 33.501 v15.5.0 CR-0612 Cat: F (Rel-15)  
  
 Source: Gemalto, Nokia*

**Abstract:**

Additional requirements on UDM/ARPF

**Discussion:**

ORANGE: why are the UDM and ARPF together?

Nokia: we are not consider them as separate identities and SA2 is wrong in their specification.

Vodafone didn't support the CR. The main issue comes from the virtualization, and the virtualization study should take care of this. The same with the following CRs.

Alf(Docomo): we would need a WID to have something normative agreed in Rel-16. I'd rather have a separate SID rather than putting it into the virtualization.

The Chair commented that the objective was to create CRs to follow SA's guidance on the Release 15 open issues.

Alex (BT): this CR doesn't fix the security issue requested in SA, which is the key storage not being done somewhere else necessarily ideal. This is not easy work and it needs further consideration. He suggested to drop the standardization in Rel-15 and fix it properly in Release 16. That would save a lot of time.

Telecom Italia: practical consequences of doing nothing? The Chair understood that there would be none.

Alex: the risk exists in 4G equally. In practical terms for the implementations in Rel-15 is to reduce the level of virtualization in some of the interfaces around ARPF. We leave it to the vendors to solve this.

This was left open for offline discussion.

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

**S3-192334 Requirements on UDM/ARPF**

*Type: CR For: Approval  
 33.501 v15.5.0 CR-0612 rev 1 Cat: F (Rel-15)  
  
 Source: Gemalto, Nokia*

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

**S3-192055 Update on ARPF**

*Type: CR For: Agreement  
 33.501 v15.5.0 CR-0622 Cat: F (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Discussion:**

Vodafone: same comment as the previous CR. We only need to change the definition.

Alex (BT): UDM cannot encrypt this.

ORANGE didn’t agree with the second change at all.

This had to be taken offline.

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

**S3-192054 Missing UDR description in alignment with 29.505**

*Type: CR For: Agreement  
 33.501 v15.5.0 CR-0590 rev 1 Cat: F (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell*

(Replaces S3-191420)

**Discussion:**

ORANGE: having the "may be stored in the UDR" means that it is possible to store it somewhere else than the UDM. We need to require the storage somewhere with a "shall".

Vodafone objected to this contribution as well.

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

**S3-192053 Requirement on UDR**

*Type: CR For: Agreement  
 33.501 v15.5.0 CR-0621 Cat: F (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Discussion:**

Telecom Italia: the "e.g., permanent key" is not enough. We are not being precise enough.

Alex (BT): the requirement should be on the subscription to the UDR data only. And the authentication is separable from the authentication of any other type of data.

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

**S3-192046 Requirements for credential storage in the UDR**

*Type: CR For: Agreement  
 33.501 v15.5.0 CR-0620 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Discussion:**

Vodafone: not for Rel-15, but good input for virtualization.

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

**S3-192056 Adding Nudr service**

*Type: CR For: Agreement  
 33.501 v15.5.0 CR-0591 rev 1 Cat: F (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell*

(Replaces S3-191421)

**Discussion:**

ORANGE: don't agree with the bullet "identifier store in UDM/ARPF…". It's implementation specific.

Nokia: this is what's done in CT4.

China Mobile: this looks like a new feature rather than a correction.

Vodafone rejected the document.

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

**S3-192182 Clarification on authentication vector generation**

*Type: CR For: Agreement  
 33.501 v15.5.0 CR-0635 Cat: F (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Discussion:**

ORANGE: don’t agree with the sentence about the proprietary repository of the operator. Not part of the standard.

Vodafone rejected the document as well: Not Rel-15, better for virtualization part.

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

**S3-192259 Authentication Data Storage in 5G UDR for Release 15**

*Type: CR For: Approval  
 33.501 v15.5.0 CR-0638 Cat: C (Rel-15)  
  
 Source: Hewlett-Packard Enterprise*

**Abstract:**

SA Plenary has ruled that SA3’s proposal to disallow the storage of the authentication data in the 5G UDR is not agreeable and must take into account the deployment option where the authentication data is stored encrypted in the 5G UDR for Release 15.

**Discussion:**

ORANGE: not happy with the second change as it looks like a new requirement modifying the existing requirement.

Alf (NTT-Docomo): similar problems with the second change.

Vodafone: is trust boundary defined anywhere? They agreed with the rest of the change. The second change seemed to be allowing and forbidding SA3 at the same time.

Alex (BT): you're forbidding anyone in the network to access the UDR except the ARPF.I get the concept but it's far more nuanced.

ORANGE; "shall reside" is an implementation issue, not our problem here.

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

**S3-191881 [DRAFT] LS to SA2 for Moving Forward on Storing Authentication Data**

*Type: LS out For: Approval  
 to SA2, cc CT4, SA Plenary  
 Source: Hewlett-Packard Enterprise*

**Abstract:**

Request to SA2 to include ARPF into the Release 16 23.501 architecture.

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

**S3-191882 [DRAFT] LS to CT4 for Moving Forward on Storing Authentication Data**

*Type: LS out For: Approval  
 to CT4, cc SA Plenary  
 Source: Hewlett-Packard Enterprise*

**Abstract:**

Request to CT4 to proceed with their C4-190559 contribution and request to begin ARPF stage 3 work.

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

**S3-191999 Correction of reference to draft-ietf-emu-rfc5448bis**

*Type: CR For: Agreement  
 33.501 v15.5.0 CR-0619 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Discussion:**

Qualcomm didn't agree with the change. No update here until the IETF document is updated. The change should also be done in Rel-16. not Rel-15.

Qualcomm: leave the annex F as it is in Rel-15. As for the rest, wait until the IETF is updated. ORANGE supported this.

China Mobile: we don’t reference drafts in 3GPP.

The Chair clarified that this draft-referencing was currently done in 3GPP. The Chair added that the use of a reference in an editor's note was incorrect according to the current procedure with CT1.

Qualcomm: delete the editor's note in Release 15 and follow Annex F; come back with this issue in Release 16, where it will not produce any issues.

This was kept open in order to resolve the reference issue.

Finally not pursued but he way forward will be performed for the next meeting.

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

**S3-192154 Issues on not removing the authentication result in the UDM**

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

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

**S3-192155 Removing the authentication result in the UDM**

*Type: CR For: Approval  
 33.501 v15.5.0 CR-0630 Cat: F (Rel-15)  
  
 Source: Huawei, Hisilicon*

**Discussion:**

Ericsson: this is not needed. Qualcomm supported this.

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

**S3-192161 Removing the authentication result in the UDM**

*Type: CR For: Approval  
 33.501 v15.5.0 CR-0633 Cat: F (Rel-16)  
  
 Source: Huawei, Hisilicon*

**Discussion:**

Same comments as 2155.

The Chair commented that Huawei was welcome to bring a key issue to the study for the next meeting in order to understand better the scenario.

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

#### 7.1.9 Secondary authentication

#### 7.1.10 Interworking

**S3-191916 Issues of resetting NAS COUNT values in 5G to 4G mobility**

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

**Discussion:**

Qualcomm insisted that there was an issue to be considered here.

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

**S3-191917 NAS Count values in the mapped EPS security context in 5GS to EPS change**

*Type: CR For: Agreement  
 33.501 v15.5.0 CR-0611 Cat: F (Rel-15)  
  
 Source: Qualcomm Incorporated*

**Discussion:**

Ericsson: The COUNT value was created for replay protection. If we set the values the same as in 4G we'll be having some issues.

Qualcomm: our choice is the simplest, otherwise we need to address this in other WG's specs like CT4. The MME is not aware about the idle mobility between 5G and 4G, for the MME we are only in 4G.

This had to be taken offline.

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

**S3-191923 Reply LS on handling of native non-current 5G NAS security context**

*Type: LS out For: Approval  
 to CT1  
 Source: Qualcomm Incorporated*

**Discussion:**

Qualcomm: The problem is that there is integrity protection in the Registration request only when there is a native 5G security context. When moving from 5G to 4G the UE shall discard the 5G security context to avoid problems.

This wasn't clear for Huawei.

**Decision:** The document was **revised to S3-192279**.

**S3-192279 Reply LS on handling of native non-current 5G NAS security context**

*Type: LS out For: Approval  
 to CT1  
 Source: Qualcomm Incorporated*

(Replaces S3-191923)

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

**S3-191995 Recommendation to run AKA after IW HO from 4G to 5G**

*Type: CR For: Agreement  
 33.501 v15.5.0 CR-0618 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Discussion:**

Nokia: why the recommendation?

Ericsson: this is due to the written text under step 10. To take care of the "else" part of this statement.

ORANGE wanted to add some statement for the operator.

Vodafone: if we have a mapped 5G security context recommended at some point in the authentication why does it go here?

Huawei: this is not needed.

Docomo: we agreed not force this reauthentication. If you come from a mapped 4G context that is coming from a mapped 5G context you would need this. An operator recommended policy would have an unclear situation where to be applied.

It was agreed to refer to the operator's policy and what triggers this.

Docomo add a note about the reason for the triggering being the mapped context coming from the 3G context, otherwise there is no way of tracking why we are doing this whenever operators are switching off the 3G network. Nokia commented that this would give an additional requirement on the AMF.

This was taken offline.

**Decision:** The document was **revised to S3-192285**.

**S3-192285 Recommendation to run AKA after IW HO from 4G to 5G**

*Type: CR For: Agreement  
 33.501 v15.5.0 CR-0618 rev 1 Cat: F (Rel-15)  
  
 Source: Ericsson*

(Replaces S3-191995)

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

**S3-192218 Description of issue of security context transfer following the handover from EPS to 5GS**

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

(Replaces S3-192156)

**Discussion:**

Qualcomm disagreed with the scenario. Option 2 was not backward compatible hence not possible for Rel-15.

Ericsson preferred option 1, although the CR was based on option 2.

Nokia wasn't convinced about the issue.

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

**S3-192151 Clarification on security context transfer during handover from S1 mode to N1 mode**

*Type: CR For: Approval  
 33.501 v15.5.0 CR-0629 Cat: F (Rel-15)  
  
 Source: Huawei, Hisilicon*

**Discussion:**

Based on option 2 of tdoc 2218.

Huawei: There may be issues that need further study here. Qualcomm didn’t see any issues.

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

**S3-192156 Description of issue of security context transfer following the handover from EPS to 5GS**

*Type: CR For: Discussion  
 33.501 v15.5.0 CR-0631 Cat: F (Rel-15)  
  
 Source: Huawei, Hisilicon*

**Decision:** The document was **revised to S3-192218**.

**S3-192157 Discussion on the inconsistency of eKSI in idle mode mobility from 5GS to EPS over N26**

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

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

**S3-192158 Clarification on the eKSI in idle mode mobility from 5GS to EPS over N26**

*Type: CR For: Approval  
 33.501 v15.5.0 CR-0632 Cat: F (Rel-15)  
  
 Source: Huawei, Hisilicon*

**Discussion:**

Ericsson: we might have to involve CT1 here.

The Chair clarified that CT1 may not do anything else for Release 15.

This was left open for discussion.

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

**S3-192162 Changes on handover from EPS to 5GS over N26**

*Type: CR For: Approval  
 33.501 v15.5.0 CR-0634 Cat: F (Rel-15)  
  
 Source: Huawei, Hisilicon*

**Discussion:**

ORANGE: maybe you have to remove NOTE 2 as well.

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

#### 7.1.11 non-3GPP access

#### 7.1.12 NDS

#### 7.1.13 Service based architecture

##### 7.1.13.1 Interconnect (SEPP related)

##### 7.1.13.2 Other

#### 7.1.14 Privacy

**S3-192226 Modification on the usage of Identity Request**

*Type: CR For: Endorsement  
 33.501 v15.5.0 CR-0637 Cat: F (Rel-15)  
  
 Source: Apple (UK) Limited*

**Decision:** The document was **revised to S3-192280**.

**S3-192280 Modification on the usage of Identity Request**

*Type: CR For: Endorsement  
 33.501 v15.5.0 CR-0637 rev 1 Cat: F (Rel-15)  
  
 Source: Apple (UK) Limited*

(Replaces S3-192226)

**Discussion:**

ORANGE: Identity request is part of the registration procedure.

Docomo: There is value in this. Make it Rel-16. It protects the privacy of a single UE and it prevents DoS attacks.

Qualcomm: we have this clarified in another clause. Not needed.

Ahmad (Futurewei): the UE shall ignore if the request is coming out of the authentication procedure; I'm not sure if this is included in Release 15.

Nokia: AMF can reauthenticate the UE anytime it wants, by sending the auth request to the UE. This is not needed.

Qualcomm: we agreed to remove the requirement due to an LS from CT1 (S3-191121). Why adding this again? CT1 would have an issue.

Intel: this is already covered somewhere else.

Apple: we need to reconsider this.

Qualcomm: after checking CT1 specs, we have found that this is not correct.

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

#### 7.1.15 Incoming and outgoing Lses

**S3-191846 LS on support of non-3GPP only UE and support for PEI in IMEI format**

*Type: LS in For: (not specified)  
 Original outgoing LS: -, to -, cc -  
 Source: S2-1904836*

**Decision:** The document was **replied to in S3-192278**.

**S3-192278 Reply to: LS on support of non-3GPP only UE and support for PEI in IMEI format**

*Type: LS out For: approval  
 to SA2, cc CT1,CT4,SA3-LI  
 Source: BT*

**Discussion:**

It was agreed to reply with "Reuse the same as in 3GPP access."

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

**S3-191847 Response LS on support of non-3GPP only UE and support for PEI in IMEI format**

*Type: LS in For: (not specified)  
 Original outgoing LS: -, to -, cc -  
 Source: s3i190363*

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

**S3-191839 Further LS relating to “Response LS on reporting all Cell IDs in 5G”**

*Type: LS in For: (not specified)  
 Original outgoing LS: -, to -, cc -  
 Source: S2-1906170*

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

**S3-191830 Reply LS on Security failure of NAS container in HO command**

*Type: LS in For: (not specified)  
 Original outgoing LS: -, to -, cc -  
 Source: C1-193708*

**Discussion:**

Already taken care of.

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

**S3-192264 LS on handling of native non-current 5G NAS security context after an inter-system change from S1 mode to N1 mode in idle mode**

*Type: LS in For: Information  
 Original outgoing LS: -, to -, cc -  
 Source: C1-193944*

**Discussion:**

Qualcom's response reply in tdoc 923.

**Decision:** The document was **replied to in S3-192279**.

**S3-191832 Reply LS on Clarification for N32 security**

*Type: LS in For: (not specified)  
 Original outgoing LS: -, to -, cc -  
 Source: C4-192467*

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

**S3-191842 Reply LS on Clarification request on NF authorization in UE Reachability Notification Request procedure**

*Type: LS in For: (not specified)  
 Original outgoing LS: -, to -, cc -  
 Source: S2-1906636*

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

**S3-191831 LS on handling of native non-current 5G NAS security context after an inter-system change from S1 mode to N1 mode in idle mode**

*Type: LS in For: (not specified)  
 Original outgoing LS: -, to -, cc -  
 Source: C1-193944*

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

#### 7.1.16 Others

**S3-192142 Correction of Reference**

*Type: CR For: Approval  
 33.501 v15.5.0 CR-0627 Cat: F (Rel-15)  
  
 Source: China Mobile*

**Decision:** The document was **revised to S3-192333**.

**S3-192333 Correction of Reference**

*Type: CR For: Approval  
 33.501 v15.5.0 CR-0627 rev 1 Cat: F (Rel-15)  
  
 Source: China Mobile*

(Replaces S3-192142)

**Discussion:**

Changes on the cover sheet.

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

**S3-192248 Privacy protection for non-3GPP in 33.402**

*Type: discussion For: Agreement  
 33.402 v..  
 Source: Apple (UK) Limited*

**Decision:** The document was **revised to S3-192274**.

**S3-192274 Privacy protection for non-3GPP in 33.402**

*Type: discussion For: Agreement  
 33.402 v..  
 Source: Apple (UK) Limited*

(Replaces S3-192248)

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

**S3-192231 Privacy protection for non-3GPP in 33.402**

*Type: CR For: Endorsement  
 33.402 v15.1.0 CR-0146 Cat: B (Rel-15)  
  
 Source: Apple (UK) Limited*

**Decision:** The document was **revised to S3-192275**.

**S3-192275 Privacy protection for non-3GPP in 33.402**

*Type: CR For: Agreement  
 33.402 v15.1.0 CR-0146 rev 1 Cat: B (Rel-15)  
  
 Source: Apple (UK) Limited*

(Replaces S3-192231)

**Discussion:**

ORANGE: This is not applicable for 5G but only for 4G. Telecom Italia agreed.

Ericsson: this is a category B CR (new feature) and it needs a WID.

Huawei was also concerned about this since even 5G could be impacted.

ORANGE preferred to discuss a study item on this.

Ericsson: backward compatibility, bidding down, LI impact.

Alex(BT): there are far more security holes in 4G that have preference over this one. I don’t mind having a study, though. I'd rather go to 5G issues first.

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

**S3-192244 LS on Integrity protection data rate enumeration**

*Type: LS out For: Decision  
 to CT1  
 Source: Apple*

**Decision:** The document was **revised to S3-192434**.

**S3-192434 LS on Integrity protection data rate enumeration**

*Type: LS out For: Decision  
 to CT1  
 Source: Apple*

(Replaces S3-192244)

**Discussion:**

Vodafone asked to minute: this means that handsets will provide integrity protection at full rate/fastest speed possible. This is clearly a big problem, as a note for the companies rejecting this LS.

ORANGE supported Vodafone.

Alex (BT) supported Vodafone as well. Not all handsets high end and low end, will support this capability, it is not realistic.

Vodafone asked to be minuted: we are disgusted that our customers will be insecure.

ORANGE asked for reasons for not sending this LS but there was no reason given. This statement was asked to be minuted as well.

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

**S3-192245 UP IP data rate**

*Type: discussion For: Decision  
 33.501 v..  
 Source: Apple (UK) Limited*

**Discussion:**

Vodafone supported this. No backward compatibilities issues here.ORANGE supported the LS as well.

Alf (Docomo): Handsets that cannot do integrity protection are limited to 64Kb/s in software and in hardware have a determined supported data rate. I hope this will not be required.

Colin (BT): concerns on something in the network not supporting this and having to be dropped down due to the high requirements.

Vodafone: customers will need this integrity protection.

Alf: If you have chipsets that can do those values while supporting higher data rates there is no point in supporting this.

Qualcomm: this proposal should be discussed in RAN2 if they want to revisit this.

The Chair asked if this was for Rel-15 or Rel-16. Apple replied that ideally Rel-15 and if not rel-16. The Chair commented that Rel-15 was frozen and no more changes could be done as requested by CT groups.

Nokia asked whether this values were coming from, what they were based on.

Alex (BT): I support needing high data rates, but review CT1 specs for these values.

This was taken offline.

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

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

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

**S3-191961 Add abbreviation and correct references**

*Type: CR For: Agreement  
 33.511 v16.0.0 CR-0001 Cat: F (Rel-16)  
  
 Source: Futurewei Technologies*

**Abstract:**

Add abbreviation and correct reference as per request by EDIT Help

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

**S3-192006 STRIDE diagram for the gNB**

*Type: discussion For: Discussion  
 33.926 v..  
 Source: Ericsson*

**Discussion:**

Huawei: Is this for the TR or TS?

Ericsson: this is for discussion purposes only. Assets and threats would be the next step.

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

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

**S3-192163 Completing TS 33.512**

*Type: pCR For: Approval  
 33.512 v0.7.0  
 Source: Huawei, Hisilicon, Deutsche Telekom AG*

**Decision:** The document was **revised to S3-192288**.

**S3-192288 Completing TS 33.512**

*Type: pCR For: Approval  
 33.512 v0.7.0  
 Source: Huawei, Hisilicon, Deutsche Telekom AG*

(Replaces S3-192163)

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

**S3-192179 Addition of AMF-related Security Problem Descriptions**

*Type: CR For: Approval  
 33.926 v16.0.1 CR-0015 Cat: B (Rel-16)  
  
 Source: Huawei, Hisilicon*

**Discussion:**

Nokia: what happens if we have incorrect handling in X.2.2.3? The title needs to be changed.

Nokia: remove the "waste of time" statement.

Ericsson: who's the attacker here? Can you clarify it in the text?

Ericsson suggested some other editorials to be fixed as well.

It was clarified that this was intended to be input for the draftCR (which appears as a baseline). The CR is not pursued but the input to the draftCR is revised into tdoc 2286.

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

**S3-192286 Addition of AMF-related Security Problem Descriptions**

*Type: other For: Approval  
 33.926 v16.0.1  
 Source: Huawei, Hisilicon*

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

**S3-192287 DraftCR on Assets and threats specific to the AMF**

*Type: draftCR For: Approval  
 33.926 v16.0.1  
 Source: Huawei*

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

**S3-192403 Draft TS 33.512**

*Type: draft TS For: Approval  
 33.512 v0.8.0  
 Source: Huawei*

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

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

**S3-192164 Completing TS 33.513**

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

**Decision:** The document was **revised to S3-192291**.

**S3-192291 Completing TS 33.513**

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

(Replaces S3-192164)

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

**S3-192165 Adding UPF critical assets and threats to TR 33.926**

*Type: CR For: Approval  
 33.926 v16.0.1 CR-0009 Cat: B (Rel-16)  
  
 Source: Huawei, Hisilicon*

**Discussion:**

Ericsson: SBI interfaces should be listed too.

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

**S3-192289 Adding UPF critical assets and threats to TR 33.926**

*Type: other For: Approval  
 33.926 v16.0.1  
 Source: Huawei, Hisilicon*

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

**S3-192290 DraftCR on Aspects of the network product class UPF**

*Type: draftCR For: Approval  
 33.926 v16.0.1  
 Source: Huawei*

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

**S3-192292 Draft TS 33.513**

*Type: draft TS For: Approval  
 33.513 v0.4.0  
 Source: Samsung*

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

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

**S3-192130 Adding references, definitions and abbreviations to SCAS UDM**

*Type: pCR For: Approval  
 33.514 v0.4.0  
 Source: NEC Europe Ltd*

(Replaces S3-191885)

**Abstract:**

revision of S3-191885.

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

**S3-192134 Adding introduction text to SCAS UDM**

*Type: pCR For: Approval  
 33.514 v0.4.0  
 Source: NEC Europe Ltd*

(Replaces S3-191886)

**Abstract:**

revision of S3-191886

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

**S3-191888 New test case to SCAS UDM: SoR-MAC-IUE verification failure handling**

*Type: pCR For: Approval  
 33.514 v0.4.0  
 Source: NEC Europe Ltd*

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

**S3-192167 Adding UDM critical assets and threats to TR 33.926**

*Type: CR For: Approval  
 33.926 v16.0.1 CR-0010 Cat: B (Rel-16)  
  
 Source: Huawei, Hisilicon*

**Discussion:**

Ericsson: list SBI interfaces here, only reference points are mentioned.

Huawei: the SBI interfaces area already specified somewhere else.

It was agreed to address it later by adding an editor's note.

Revised to include some comments from Ericsson's as well.

Not pursued since its intention was to be a draftCR.

Content will go into tdoc 294.

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

**S3-192294 Adding UDM critical assets and threats to TR 33.926**

*Type: other For: Approval  
 33.926 v16.0.1  
 Source: Huawei, Hisilicon*

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

**S3-192221 Completing TS 33.514**

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

(Replaces S3-192166)

**Discussion:**

Overlap with tdoc 2134.

**Decision:** The document was **revised to S3-192296**.

**S3-192296 Completing TS 33.514**

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

(Replaces S3-192221)

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

**S3-192136 Adding content to clause 4.2.3, 4.3 and 4.4 in SCAS UDM**

*Type: pCR For: Approval  
 33.514 v0.4.0  
 Source: NEC Europe Ltd*

(Replaces S3-191887)

**Abstract:**

revision of S3-191887

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

**S3-191885 Adding references, definitions and abbreviations to SCAS UDM**

*Type: pCR For: Approval  
 33.514 v0.4.0  
 Source: NEC Europe Ltd*

**Decision:** The document was **revised to S3-192130**.

**S3-191886 Adding introduction text to SCAS UDM**

*Type: pCR For: Approval  
 33.514 v0.4.0  
 Source: NEC Europe Ltd*

**Decision:** The document was **revised to S3-192134**.

**S3-191887 Adding content to clause 4.2.3, 4.3 and 4.4 in SCAS UDM**

*Type: pCR For: Approval  
 33.514 v0.4.0  
 Source: NEC Europe Ltd*

**Decision:** The document was **revised to S3-192136**.

**S3-192166 Completing TS 33.514**

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

**Decision:** The document was **revised to S3-192221**.

**S3-192293 Draft TS 33.514**

*Type: draft TS For: Approval  
 33.514 v0.5.0  
 Source: NEC*

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

**S3-192295 DraftCR on aspects specific to the network product class UDM**

*Type: draftCR For: Approval  
 33.926 v16.0.1  
 Source: Huawei*

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

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

**S3-192168 Adding test case for UE security policy comparison during handover**

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

**Decision:** The document was **revised to S3-192298**.

**S3-192298 Adding test case for UE security policy comparison during handover**

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

(Replaces S3-192168)

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

**S3-192169 Completing TS 33.515**

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

**Decision:** The document was **revised to S3-192300**.

**S3-192300 Completing TS 33.515**

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

(Replaces S3-192169)

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

**S3-192170 Adding SMF critical assets and threats to TR 33.926**

*Type: CR For: Approval  
 33.926 v16.0.1 CR-0011 Cat: B (Rel-16)  
  
 Source: Huawei, Hisilicon*

**Discussion:**

Huawei: add a paragraph on protecting the user traffic data.

Ericsson: charging ID uniqueness is not security related. In the end, it was decided to leave it.

This CR was not pursued but the content will go into a draft CR in tdoc 2297.

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

**S3-192297 DraftCR on Adding SMF critical assets and threats to TR 33.926**

*Type: draftCR For: Approval  
 33.926 v16.0.1  
 Source: Huawei, Hisilicon*

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

**S3-192181 Adding a test case for charging id uniqueness**

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

**Decision:** The document was **revised to S3-192301**.

**S3-192301 Adding a test case for charging id uniqueness**

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

(Replaces S3-192181)

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

**S3-192299 Draft TS 33.515**

*Type: draft TS For: Approval  
 33.515 v0.4.0  
 Source: Huawei*

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

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

**S3-192172 Adding AUSF critical assets and threats to TR 33.926**

*Type: CR For: Approval  
 33.926 v16.0.1 CR-0012 Cat: B (Rel-16)  
  
 Source: Huawei, Hisilicon*

**Discussion:**

. This CR was not pursued but the contents will go into tdoc 302.

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

**S3-192302 Adding AUSF critical assets and threats to TR 33.926**

*Type: draftCR For: Approval  
 33.926 v16.0.1  
 Source: Huawei, Hisilicon*

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

**S3-192042 STRIDE diagram for the AUSF**

*Type: discussion For: Discussion  
 Source: Ericsson*

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

**S3-192043 Attack tree for sensitive data in AUSF**

*Type: discussion For: Discussion  
 Source: Ericsson*

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

**S3-192044 AUSF assets and threats**

*Type: discussion For: Discussion  
 Source: Ericsson*

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

**S3-192045 Living document: AUSF aspects in 33.926**

*Type: draftCR For: Approval  
 33.926 v16.0.1  
 Source: Ericsson*

**Discussion:**

Overlap with tdoc 172.

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

**S3-192171 Completing TS 33.516**

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

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

**S3-192303 Draft TS 33.516**

*Type: draft TS For: Approval  
 33.516 v0.2.0  
 Source: Ericsson*

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

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

**S3-192143 Living Document: New Annex for the SEPP in TR 33.926**

*Type: draftCR For: Approval  
 33.926 v16.0.1  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This is the agreed version of the draftCR for the new Annex of the SEPP network product class in TR 33.926, which is to be used as the baseline for further contributions in SA3#95bis meeting.

**Decision:** The document was **revised to S3-192304**.

**S3-192304 Living Document: New Annex for the SEPP in TR 33.926**

*Type: draftCR For: Approval  
 33.926 v16.0.1  
 Source: Nokia, Nokia Shanghai Bell*

(Replaces S3-192143)

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

**S3-192186 Threat Analysis of Incorrect Handling for Protection Policies Mismatch by the SEPP**

*Type: draftCR For: Approval  
 33.926 v16.0.1  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This draftCR proposes to add the threat analysis on “incorrect handling by the SEPP for protection policies mismatch” in the Annex for the SEPP network product class in TR 33.926.

**Decision:** The document was **revised to S3-192305**.

**S3-192305 Threat Analysis of Incorrect Handling for Protection Policies Mismatch by the SEPP**

*Type: draftCR For: Approval  
 33.926 v16.0.1  
 Source: Nokia, Nokia Shanghai Bell*

(Replaces S3-192186)

**Discussion:**

Clarify the mismatch in the threat description. Removes IPX provider in the threat description and it fixes some typos.

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

**S3-192189 Test Case: Correct Handling of Protection Policy Mismatch in the SEPP**

*Type: pCR For: Approval  
 33.517 v0.4.0  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This pCR proposes a new test case on correct handling of protection policy mismatch for a SEPP-specific functional requirement derived from TS 33.501.

**Decision:** The document was **revised to S3-192306**.

**S3-192306 Test Case: Correct Handling of Protection Policy Mismatch in the SEPP**

*Type: pCR For: Approval  
 33.517 v0.4.0  
 Source: Nokia, Nokia Shanghai Bell*

(Replaces S3-192189)

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

**S3-192192 Threat Analysis on Weak JWS Algorithm**

*Type: draftCR For: Approval  
 33.926 v16.0.1  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This draftCR proposes to add the threat analysis on “weak JWS algorithm” in the Annex for the SEPP network product class in TR 33.926.

**Decision:** The document was **revised to S3-192308**.

**S3-192308 Threat Analysis on Weak JWS Algorithm**

*Type: draftCR For: Approval  
 33.926 v16.0.1  
 Source: Nokia, Nokia Shanghai Bell*

(Replaces S3-192192)

**Discussion:**

Removing examples from the threat description.

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

**S3-192194 Test Case: JWS Profile Restriction in the SEPP**

*Type: pCR For: Approval  
 33.517 v0.4.0  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This pCR proposes a new test case of JWS profile restriction for a SEPP-specific functional requirement derived from TS 33.501.

**Decision:** The document was **revised to S3-192309**.

**S3-192309 Test Case: JWS Profile Restriction in the SEPP**

*Type: pCR For: Approval  
 33.517 v0.4.0  
 Source: Nokia, Nokia Shanghai Bell*

(Replaces S3-192194)

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

**S3-192180 Updating SEPP critical assets and threats in TR 33.926**

*Type: CR For: Approval  
 33.926 v16.0.1 CR-0016 Cat: B (Rel-16)  
  
 Source: Huawei, Hisilicon*

**Discussion:**

It overlaps with 2184.

The CR (should have been a draftCR) is not pursued but The content will be merged into 310.

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

**S3-192184 Threat Analysis on Exposure of Confidential IEs in N32-f message**

*Type: draftCR For: Approval  
 33.926 v16.0.1  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This draftCR proposes to add the threat analysis on “Exposure of confidential IEs in N32-f message” in the Annex for the SEPP network product class in TR 33.926.

**Decision:** The document was **revised to S3-192310**.

**S3-192310 Threat Analysis on Exposure of Confidential IEs in N32-f message**

*Type: draftCR For: Approval  
 33.926 v16.0.1  
 Source: Nokia, Nokia Shanghai Bell,Huawei*

(Replaces S3-192184)

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

**S3-192197 Updating TS 33.517 with the Threat Reference for the Test Case in 4.2.2.5**

*Type: pCR For: Approval  
 33.517 v0.4.0  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This pCR proposes to add the threat reference for the test case in clause 4.2.2.5, as well as some editorial corrections.

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

**S3-192173 Completing TS 33.517**

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

**Decision:** The document was **revised to S3-192311**.

**S3-192311 Completing TS 33.517**

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

(Replaces S3-192173)

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

**S3-192307 Draft TS 33.517**

*Type: draft TS For: Approval  
 33.517 v0.5.0  
 Source: Nokia*

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

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

**S3-192174 Updating TS 33.518**

*Type: pCR For: Approval  
 33.518 v0.3.0  
 Source: Huawei, Hisilicon, Nokia, Nokia Shanghai Bell*

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

**S3-192312 Draft TS 33.518**

*Type: draft TS For: Approval  
 33.518 v0.4.0  
 Source: Nokia*

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

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

**S3-192175 Completing TS 33.519**

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

**Decision:** The document was **revised to S3-192314**.

**S3-192314 Completing TS 33.519**

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

(Replaces S3-192175)

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

**S3-192176 Adding NEF critical assets and threats to TR 33.926**

*Type: CR For: Approval  
 33.926 v16.0.1 CR-0013 Cat: B (Rel-16)  
  
 Source: Huawei, Hisilicon*

**Discussion:**

Not pursued as the content will go into the draftCR in tdoc 313.

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

**S3-192313 Adding NEF critical assets and threats to TR 33.926**

*Type: draftCR For: Approval  
 33.926 v16.0.1  
 Source: Huawei, Hisilicon*

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

**S3-192315 Draft TS 33.519**

*Type: draft TS For: Approval  
 33.519 v0.5.0  
 Source: ZTE*

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

#### 7.2.10 Others

**S3-192137 Living Document: General SBA/SBI aspects in TS 33.117**

*Type: draftCR For: Approval  
 33.117 v16.1.0  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This is the update of the living document for general SBA/SBI aspects in TS 33.117 as agreed at SA3#95 meeting, which is to be used as the baseline for further contributions in SA395bis meeting.

**Decision:** The document was **revised to S3-192316**.

**S3-192316 Living Document: General SBA/SBI aspects in TS 33.117**

*Type: draftCR For: Approval  
 33.117 v16.1.0  
 Source: Nokia, Nokia Shanghai Bell*

(Replaces S3-192137)

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

**S3-192177 adding critical assets and threats to TR 33.926 for general SBA/SBI aspects**

*Type: CR For: Approval  
 33.926 v16.0.1 CR-0014 Cat: B (Rel-16)  
  
 Source: Huawei, Hisilicon*

**Discussion:**

Revised content will go to the contribution to the draftCR in 317.

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

**S3-192317 adding critical assets and threats to TR 33.926 for general SBA/SBI aspects**

*Type: other For: Approval  
 33.926 v16.0.1  
 Source: Huawei, Hisilicon*

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

**S3-192138 Addition Assets and Threats for Generic NFs**

*Type: CR For: Approval  
 33.926 v16.0.1 CR-0008 Cat: B (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

The CR proposes to add addition critical assets and threats for 5G generic Network Functions in Section 5 of TR 33.926.

**Discussion:**

Content is merged in 317.

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

**S3-192178 Update of living Document: General SBA/SBI aspects in TS 33.117**

*Type: draftCR For: Approval  
 33.117 v16.1.0  
 Source: Huawei, Hisilicon*

**Decision:** The document was **revised to S3-192318**.

**S3-192318 Update of living Document: General SBA/SBI aspects in TS 33.117**

*Type: draftCR For: Approval  
 33.117 v16.1.0  
 Source: Huawei, Hisilicon*

(Replaces S3-192178)

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

**S3-192141 Updating the Living Document with Threat References**

*Type: draftCR For: Approval  
 33.117 v16.1.0  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

The draftCR proposes to add the threat references for the existing test cases captured for general SBA/SBI aspect.

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

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

**S3-191834 Observations on standards and technical constraints from 3rd MCX remote Plugtests**

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

**Discussion:**

Motorola commented that CT1 proposed that everything went all through them, given that there was an additional LS from CT1 to which SA3 will reply directly instead of this one. CTI will be in copy in that LS whereas this one will be noted.

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

**S3-191861 [33.180] R16 - Fix hash result (mirror)**

*Type: CR For: Agreement  
 33.180 v16.0.0 CR-0114 Cat: A (Rel-16)  
  
 Source: Motorola Solutions Germany*

**Abstract:**

Fix hash value (mirror)

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

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

**S3-191989 Living document for 5G\_UTRAN\_SEC**

*Type: draftCR For: (not specified)  
 33.501 v15.5.0  
 Source: China Unicom*

**Discussion:**

Ericsson noted that this needed to show the changes with revision marks.

**Decision:** The document was **revised to S3-192335**.

**S3-192335 Living document for 5G\_UTRAN\_SEC**

*Type: draftCR For: -  
 33.501 v15.5.0  
 Source: China Unicom*

(Replaces S3-191989)

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

**S3-192067 Discussion on security handling after voice call ends**

*Type: discussion For: Endorsement  
 Source: Huawei, Hisilicon*

**Discussion:**

Alex (BT): the call drops down to the lower technology and stays down as agreed in SA. This is against that and I object to this proposal.

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

**S3-192068 security handling after voice call ends**

*Type: CR For: Approval  
 33.501 v15.5.0 CR-0624 Cat: B (Rel-16)  
  
 Source: Huawei, Hisilicon*

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

**S3-192011 SRVCC keys**

*Type: draftCR For: (not specified)  
 33.501 v15.5.0  
 Source: China Unicom*

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

**S3-192012 key generation in MME\_SRVCC**

*Type: other For: (not specified)  
 33.501 v..  
 Source: China Unicom*

**Discussion:**

Qualcomm: this implies additional signalling that we don’t need. It overlaps with our proposal in 903.

It was agreed to go for Qualcomm's contribution that deleted the editor's note where both overlapped.

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

**S3-192010 Rename the derived key**

*Type: draftCR For: (not specified)  
 33.501 v15.5.0  
 Source: China Unicom*

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

**S3-191903 Proposed updates to the draft CR on SRVCC from 5G to UTRAN CS**

*Type: other For: Approval  
 Source: Qualcomm Incorporated*

**Discussion:**

Deleting the editor's note that’s being modified by China Unicom in 2012.

**Decision:** The document was **revised to S3-192336**.

**S3-192336 Proposed updates to the draft CR on SRVCC from 5G to UTRAN CS**

*Type: other For: Approval  
 Source: Qualcomm Incorporated,China Unicom*

(Replaces S3-191903)

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

**S3-191904 Assigning a FC value to TS 33.501 for K5GSRVCC calculation**

*Type: CR For: Agreement  
 33.220 v15.4.0 CR-0198 Cat: F (Rel-16)  
  
 Source: Qualcomm Incorporated*

**Decision:** The document was **revised to S3-192337**.

**S3-192337 Assigning a FC value to TS 33.501 for K5GSRVCC calculation**

*Type: CR For: Agreement  
 33.220 v15.4.0 CR-0198 rev 1 Cat: B (Rel-16)  
  
 Source: Qualcomm Incorporated*

(Replaces S3-191904)

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

**S3-191905 Adding K5GSRVCC as a possible input key to derive IKSRVCC and CKSRVCC**

*Type: CR For: Agreement  
 33.401 v15.8.0 CR-0680 Cat: F (Rel-16)  
  
 Source: Qualcomm Incorporated*

**Decision:** The document was **revised to S3-192338**.

**S3-192338 Adding K5GSRVCC as a possible input key to derive IKSRVCC and CKSRVCC**

*Type: CR For: Agreement  
 33.401 v15.8.0 CR-0680 rev 1 Cat: B (Rel-16)  
  
 Source: Qualcomm Incorporated*

(Replaces S3-191905)

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

**S3-191906 Revision of SRVCC WID**

*Type: WID revised For: Agreement  
 Source: Qualcomm Incorporated*

**Discussion:**

ORANGE: it doesn’t make sense to keep the UICC being modified "don’t know".

IDEMIA and Gemalto disagreed with having to revise the WID to change the impact.

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

### 7.5 Enhancements for Security aspects of Common API Framework for 3GPP Northbound APIs (eCAPIF-Sec) (Rel-16)

**S3-192215 Editorial correction of CAPIF-3e/4e/5e requirements clause**

*Type: CR For: Approval  
 33.122 v16.0.0 CR-0023 Cat: D (Rel-16)  
  
 Source: Samsung*

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

**S3-191937 Requirement on authenticating unpublish requests**

*Type: CR For: (not specified)  
 33.122 v16.0.0 CR-0020 Cat: B (Rel-16)  
  
 Source: Ericsson*

**Discussion:**

Samsung: we don't need this requirement, it’s already covered.

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

**S3-192213 Security procedures for CAPIF-3e/4e/5e reference points**

*Type: CR For: Approval  
 33.122 v16.0.0 CR-0021 Cat: B (Rel-16)  
  
 Source: Samsung*

**Discussion:**

Nokia didn't agree with this contribution.

NCSC: N32 is quite heavy weight, more complicated than it appears here.

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

**S3-192214 Security aspects of CAPIF-7/7e reference points**

*Type: CR For: Approval  
 33.122 v16.0.0 CR-0022 Cat: B (Rel-16)  
  
 Source: Samsung*

**Decision:** The document was **revised to S3-192339**.

**S3-192339 Security aspects of CAPIF-7/7e reference points**

*Type: CR For: Approval  
 33.122 v16.0.0 CR-0022 rev 1 Cat: B (Rel-16)  
  
 Source: Samsung*

(Replaces S3-192214)

**Discussion:**

Third change goes away.

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

### 7.6 Security of URLLC for 5GS (5G\_URLLC\_SEC) (Rel-16)

**S3-192125 draftCR for URLLC TS**

*Type: draftCR For: Approval  
 33.501 v15.5.0  
 Source: Huawei, Hisilicon*

**Discussion:**

Qualcomm: some parts of this are still in the air and we need some conclusions before agreeing on this. Let's wait for the next meeting. Nokia supported this.

Huawei commented that this was a living document and could be changed anytime according to the discussions.

Qualcomm didn’t agree with the introduction either.

It was decided to come back to the next meeting with this.

It was the general idea that the objective was to introduce this content in an annex to TS 33.501, so it was expected to bring back a similar contribution to the next meeting.

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

### 7.7 Security for 5GS Enhanced support of Vertical and LAN Services (Vertical\_LAN\_SEC) (Rel-16)

**S3-192058 NPN references in existing text**

*Type: CR For: Agreement  
 33.501 v15.5.0 CR-0623 Cat: F (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Discussion:**

ORANGE didn't agree with this CR. There was no previous agreement on adding an Annex. They had some other issues that were shared by Gemalto. Vodafone didn’t agree with referencing to Annex Z this way.

Anja(Nokia) commented that she would bring another proposal for the next meeting.

Gemalto: each time there's a new annex, the 5G core part would be impacted and we would need to be changing it constantly.

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

### 7.8 Other work areas

#### 7.8.1 SAE/LTE Security

**S3-191954 Clarification of NIA0 with SgNB for UE NR capability**

*Type: CR For: (not specified)  
 33.401 v15.8.0 CR-0681 Cat: F (Rel-15)  
  
 Source: Intel China Ltd.*

**Discussion:**

Ericsson: there is impact on CT1.

Qualcomm was fine with the change.

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

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

#### 7.8.3 Network Domain Security (NDS)

#### 7.8.4 UTRAN Network Access Security

#### 7.8.5 GERAN Network Access Security

#### 7.8.6 Generic Authentication Architecture (GAA)

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

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

**S3-191829 LS on ETSI Plugtest standards Issues**

*Type: LS in For: (not specified)  
 Original outgoing LS: -, to -, cc -  
 Source: C1-193601*

**Decision:** The document was **replied to in S3-192332**.

**S3-192332 Reply to: LS on ETSI Plugtest standards Issues**

*Type: LS out For: approval  
 to CT1, cc SA6  
 Source: Motorola Solutions*

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

**S3-191860 [33.180] R15 - Fix hash result**

*Type: CR For: Agreement  
 33.180 v15.5.0 CR-0113 Cat: F (Rel-15)  
  
 Source: Motorola Solutions Germany*

**Abstract:**

Fix incorrect hash value

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

#### 7.8.9 Security Assurance Specifications (SCAS-SA3, SCAS\_PGW, SCAS\_eNB)

**S3-192037 Corrections on IP packet forwarding**

*Type: CR For: Agreement  
 33.117 v14.5.0 CR-0032 Cat: F (Rel-14)  
  
 Source: Ericsson*

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

**S3-192038 Corrections on IP packet forwarding**

*Type: CR For: Agreement  
 33.117 v15.3.0 CR-0033 Cat: A (Rel-15)  
  
 Source: Ericsson*

**Decision:** The document was **revised to S3-192319**.

**S3-192319 Corrections on IP packet forwarding**

*Type: CR For: Agreement  
 33.117 v15.3.0 CR-0033 rev 1 Cat: A (Rel-15)  
  
 Source: Ericsson*

(Replaces S3-192038)

**Discussion:**

Fixing some cover page errors.

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

**S3-192039 Corrections on IP packet forwarding**

*Type: CR For: Agreement  
 33.117 v16.1.0 CR-0034 Cat: A (Rel-16)  
  
 Source: Ericsson*

**Decision:** The document was **revised to S3-192320**.

**S3-192320 Corrections on IP packet forwarding**

*Type: CR For: Agreement  
 33.117 v16.1.0 CR-0034 rev 1 Cat: A (Rel-16)  
  
 Source: Ericsson*

(Replaces S3-192039)

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

**S3-192040 Threat analysis for OAM configurator spoofing**

*Type: discussion For: Discussion  
 Source: Ericsson*

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

**S3-192041 Living document: generic assets and threats**

*Type: draftCR For: Approval  
 33.926 v16.0.1  
 Source: Ericsson*

**Decision:** The document was **revised to S3-192321**.

**S3-192321 Living document: generic assets and threats**

*Type: draftCR For: Approval  
 33.926 v16.0.1  
 Source: Ericsson*

(Replaces S3-192041)

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

**S3-192092 Propose fuzz tests run 100 000 times**

*Type: CR For: Approval  
 33.117 v16.1.0 CR-0035 Cat: F (Rel-16)  
  
 Source: Huawei, Hisilicon*

**Discussion:**

Ericsson wasn't sure about stating out a number like 10000.

Huawei: there should be a baseline about the number of runs for the tester.

It was agreed to remove the number.

Some errors on the CR cover page were also pointed out.

**Decision:** The document was **revised to S3-192322**.

**S3-192322 R16\_Carification for Fuzz tests run**

*Type: CR For: Approval  
 33.117 v16.1.0 CR-0035 rev 1 Cat: A (Rel-16)  
  
 Source: Huawei, Hisilicon*

(Replaces S3-192092)

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

**S3-192093 R15\_clarification for Fuzz tests run**

*Type: CR For: Approval  
 33.117 v15.3.0 CR-0036 Cat: A (Rel-15)  
  
 Source: Huawei, Hisilicon*

**Decision:** The document was **revised to S3-192323**.

**S3-192323 R15\_clarification for Fuzz tests run**

*Type: CR For: Approval  
 33.117 v15.3.0 CR-0036 rev 1 Cat: A (Rel-15)  
  
 Source: Huawei, Hisilicon*

(Replaces S3-192093)

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

**S3-192094 R14\_clarification for Fuzz tests run**

*Type: CR For: Approval  
 33.117 v14.5.0 CR-0037 Cat: F (Rel-14)  
  
 Source: Huawei, Hisilicon*

**Decision:** The document was **revised to S3-192324**.

**S3-192324 R14\_clarification for Fuzz tests run**

*Type: CR For: Approval  
 33.117 v14.5.0 CR-0037 rev 1 Cat: F (Rel-14)  
  
 Source: Huawei, Hisilicon*

(Replaces S3-192094)

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

**S3-192095 Clarification on the intention of the requirement**

*Type: CR For: Approval  
 33.117 v16.1.0 CR-0038 Cat: A (Rel-16)  
  
 Source: Huawei, Hisilicon*

**Decision:** The document was **revised to S3-192325**.

**S3-192325 Clarification on the intention of the requirement**

*Type: CR For: Approval  
 33.117 v16.1.0 CR-0038 rev 1 Cat: A (Rel-16)  
  
 Source: Huawei, Hisilicon*

(Replaces S3-192095)

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

**S3-192096 R15\_Mirror\_Clairication on the intention of the requirement**

*Type: CR For: Approval  
 33.117 v15.3.0 CR-0039 Cat: A (Rel-15)  
  
 Source: Huawei, Hisilicon*

**Decision:** The document was **revised to S3-192326**.

**S3-192326 R15\_Mirror\_Clairication on the intention of the requirement**

*Type: CR For: Approval  
 33.117 v15.3.0 CR-0039 rev 1 Cat: A (Rel-15)  
  
 Source: Huawei, Hisilicon*

(Replaces S3-192096)

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

**S3-192097 R14\_Mirror\_Clairication on the intention of the requirement**

*Type: CR For: Approval  
 33.117 v14.5.0 CR-0040 Cat: F (Rel-14)  
  
 Source: Huawei, Hisilicon*

**Decision:** The document was **revised to S3-192327**.

**S3-192327 R14\_Mirror\_Clairication on the intention of the requirement**

*Type: CR For: Approval  
 33.117 v14.5.0 CR-0040 rev 1 Cat: F (Rel-14)  
  
 Source: Huawei, Hisilicon*

(Replaces S3-192097)

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

**S3-192098 A document is needed to show the support features**

*Type: CR For: Approval  
 33.117 v16.1.0 CR-0041 Cat: F (Rel-16)  
  
 Source: Huawei, Hisilicon*

**Decision:** The document was **revised to S3-192350**.

**S3-192350 A document is needed to show the support features**

*Type: CR For: Approval  
 33.117 v16.1.0 CR-0041 rev 1 Cat: A (Rel-16)  
  
 Source: Huawei, Hisilicon*

(Replaces S3-192098)

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

**S3-192099 R15\_Mirror\_A document is needed to show the support features**

*Type: CR For: Approval  
 33.117 v15.3.0 CR-0042 Cat: A (Rel-15)  
  
 Source: Huawei, Hisilicon*

**Decision:** The document was **revised to S3-192351**.

**S3-192351 R15\_Mirror\_A document is needed to show the support features**

*Type: CR For: Approval  
 33.117 v15.3.0 CR-0042 rev 1 Cat: A (Rel-15)  
  
 Source: Huawei, Hisilicon*

(Replaces S3-192099)

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

**S3-192100 R14\_Mirror\_A document is needed to show the support features**

*Type: CR For: Approval  
 33.117 v14.5.0 CR-0043 Cat: A (Rel-14)  
  
 Source: Huawei, Hisilicon*

**Decision:** The document was **revised to S3-192352**.

**S3-192352 R14\_Mirror\_A document is needed to show the support features**

*Type: CR For: Approval  
 33.117 v14.5.0 CR-0043 rev 1 Cat: F (Rel-14)  
  
 Source: Huawei, Hisilicon*

(Replaces S3-192100)

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

**S3-192101 Align account numbers in testcase with the requirement**

*Type: CR For: Approval  
 33.117 v16.1.0 CR-0044 Cat: F (Rel-16)  
  
 Source: Huawei, Hisilicon*

**Decision:** The document was **revised to S3-192329**.

**S3-192329 Align account numbers in testcase with the requirement**

*Type: CR For: Approval  
 33.117 v16.1.0 CR-0044 rev 1 Cat: A (Rel-16)  
  
 Source: Huawei, Hisilicon*

(Replaces S3-192101)

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

**S3-192102 R15\_Mirror\_Align account numbers in testcase with the requirement**

*Type: CR For: Approval  
 33.117 v15.3.0 CR-0045 Cat: A (Rel-15)  
  
 Source: Huawei, Hisilicon*

**Decision:** The document was **revised to S3-192330**.

**S3-192330 R15\_Mirror\_Align account numbers in testcase with the requirement**

*Type: CR For: Approval  
 33.117 v15.3.0 CR-0045 rev 1 Cat: A (Rel-15)  
  
 Source: Huawei, Hisilicon*

(Replaces S3-192102)

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

**S3-192103 R14\_Mirror\_Align account numbers in testcase with the requirement**

*Type: CR For: Approval  
 33.117 v14.5.0 CR-0046 Cat: F (Rel-14)  
  
 Source: Huawei, Hisilicon*

**Decision:** The document was **revised to S3-192331**.

**S3-192331 R14\_Mirror\_Align account numbers in testcase with the requirement**

*Type: CR For: Approval  
 33.117 v14.5.0 CR-0046 rev 1 Cat: F (Rel-14)  
  
 Source: Huawei, Hisilicon*

(Replaces S3-192103)

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

#### 7.8.10 Security Aspects of Narrowband IOT (CIoT)

#### 7.8.11 EPC enhancements to support 5G New Radio via Dual Connectivity (EDCE5)

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

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

#### 7.8.14 PLMN RAT selection (Steering of Roaming) (Rel-15)

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

**S3-192007 Discussion Document on the evolution of BEST**

*Type: discussion For: Discussion  
 Source: VODAFONE Group Plc*

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

#### 7.8.16 Other work items

**S3-192008 WID on BEST Test Specification for HSE and UE**

*Type: WID new For: Agreement  
 Source: VODAFONE Group Plc*

**Discussion:**

Qualcomm: test specs are developed in RAN5.

Vodafone: we did it for TUAK and all algorithms we've had in the past.

Qualcomm: test specs that we agree that are in our scope.RAN5 write tests not only for RAN, but for other groups. Interoperability and protocol performance test cases are done in RAN5. They even have for IMS.

Interdigital agreed.

Vodafone: RAN5 has no expertise for this work.

Alf (Docomo): ask RAN5 with an LS.

Vodafone: we will not go to RAN5 under any circumstances.

MCC: this cannot be done for Release 15 as a Rel-16 version of TS 33.163 already exists and the work will be done there.

This had to be taken offline.

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

### 7.9 New Work Item proposals

**S3-192047 New WID on evolution of Cellular IoT security for the 5G System**

*Type: WID new For: Agreement  
 Source: Ericsson*

**Discussion:**

Vodafone: the WID doesn’t detail enough the justification and objectives. MCC agreed, it seemed too brief and it needed some more wording.

**Decision:** The document was **revised to S3-192354**.

**S3-192354 New WID on evolution of Cellular IoT security for the 5G System**

*Type: WID new For: Agreement  
 Source: Ericsson*

(Replaces S3-192047)

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

**S3-192104 WID on Security of the Wireless and Wireline Convergence for the 5G system architecture**

*Type: WID new For: Approval  
 Source: Huawei, Hisilicon*

**Discussion:**

Vodafone: the objectives need rewording.

**Decision:** The document was **revised to S3-192355**.

**S3-192355 WID on Security of the Wireless and Wireline Convergence for the 5G system architecture**

*Type: WID new For: Approval  
 Source: Huawei, Hisilicon*

(Replaces S3-192104)

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

## 8 Studies

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

**S3-192035 Correction of implementation of S3-191671**

*Type: pCR For: Approval  
 33.855 v1.5.0  
 Source: Ericsson*

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

**S3-192246 Discussion paper on resource level authorization using OAuth 2.0 access tokens**

*Type: pCR For: Approval  
 33.855 v1.5.0  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Discussion paper on resource level authorization using OAuth 2.0 access tokens

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

**S3-192247 Key Issue on resource level authorization during service access**

*Type: pCR For: Approval  
 33.855 v1.5.0  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Key Issue on resource level authorization during service access

**Decision:** The document was **revised to S3-192412**.

**S3-192412 Key Issue on resource level authorization during service access**

*Type: pCR For: Approval  
 33.855 v1.5.0  
 Source: Nokia, Nokia Shanghai Bell*

(Replaces S3-192247)

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

**S3-192249 pCR – Solution for resource level authorization using access tokens**

*Type: pCR For: Approval  
 33.855 v1.5.0  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

pCR – Solution for resource level authorization using access tokens

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

**S3-192258 pCR to 33.855 on NF authorization with SeCoP**

*Type: pCR For: Approval  
 33.855 v1.5.0  
 Source: NTT DOCOMO INC.*

(Replaces S3-192256)

**Abstract:**

This revision re-introduces the change bars that went missing in S3-192256

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

**S3-192250 Discussion paper on policy-based authorization for indirect communication**

*Type: discussion For: -  
 33.855 v1.5.0  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Discussion paper on policy-based authorization for indirect communication

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

**S3-192251 pCR on Policy based authorization for Indirect communications**

*Type: pCR For: Approval  
 33.855 v1.5.0  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

pCR on Policy based authorization for Indirect communications

**Decision:** The document was **revised to S3-192413**.

**S3-192413 pCR on Policy based authorization for Indirect communications**

*Type: pCR For: Approval  
 33.855 v1.5.0  
 Source: Nokia, Nokia Shanghai Bell*

(Replaces S3-192251)

**Discussion:**

ORANGE: SA2 is using the term SCP for something else. Change the name.

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

**S3-192033 New solution: Token-based authorization for Scenario D using stateless SeCoP**

*Type: pCR For: Approval  
 33.855 v1.5.0  
 Source: Ericsson*

**Decision:** The document was **revised to S3-192439**.

**S3-192439 New solution: Token-based authorization for Scenario D using stateless SeCoP**

*Type: pCR For: Approval  
 33.855 v1.5.0  
 Source: Ericsson*

(Replaces S3-192033)

**Discussion:**

Adding two editor's notes.

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

**S3-192034 New solution: Token-based authorization for Scenario C using stateless SeCoP**

*Type: pCR For: Approval  
 33.855 v1.5.0  
 Source: Ericsson*

**Decision:** The document was **revised to S3-192440**.

**S3-192440 New solution: Token-based authorization for Scenario C using stateless SeCoP**

*Type: pCR For: Approval  
 33.855 v1.5.0  
 Source: Ericsson*

(Replaces S3-192034)

**Discussion:**

Adding three new editor's notes.

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

**S3-192150 Solution for NF service consumer verification during service access authorization**

*Type: pCR For: Approval  
 33.855 v1.5.0  
 Source: Huawei, Hisilicon*

**Decision:** The document was **revised to S3-192441**.

**S3-192441 Solution for NF service consumer verification during service access authorization**

*Type: pCR For: Approval  
 33.855 v1.5.0  
 Source: Huawei, Hisilicon*

(Replaces S3-192150)

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

**S3-192152 Evaluation of solution #15 in TR 33.855 - Delegated "Subscribe-Notify" interaction Authorization**

*Type: pCR For: Approval  
 33.855 v1.5.0  
 Source: Huawei, Hisilicon*

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

**S3-192153 Update of solution #19 in TR 33.855 - Authorization within a NF Set**

*Type: pCR For: Approval  
 33.855 v1.5.0  
 Source: Huawei, Hisilicon*

**Decision:** The document was **revised to S3-192442**.

**S3-192442 Update of solution #19 in TR 33.855 - Authorization within a NF Set**

*Type: pCR For: Approval  
 33.855 v1.5.0  
 Source: Huawei, Hisilicon,Nokia*

(Replaces S3-192153)

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

**S3-192253 Solution for Authorization of NFs within a NF Set**

*Type: pCR For: Approval  
 33.855 v1.5.0  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Solution for Authorization of NFs within a NF Set

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

**S3-192254 pCR to 33.855 on SeCoP distribution**

*Type: pCR For: Approval  
 33.855 v1.5.0  
 Source: NTT DOCOMO INC.*

**Decision:** The document was **revised to S3-192443**.

**S3-192443 pCR to 33.855 on SeCoP distribution**

*Type: pCR For: Approval  
 33.855 v1.5.0  
 Source: NTT DOCOMO INC.*

(Replaces S3-192254)

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

**S3-192252 pCR on NF to SeCoP interface security in service-mesh based deployments**

*Type: pCR For: Approval  
 33.855 v1.5.0  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

pCR on NF to SeCoP interface security in service-mesh based deployments

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

**S3-192255 pCR on removing EN in Solution #21**

*Type: pCR For: Approval  
 33.855 v1.5.0  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

pCR on removing EN in Solution #21 - OAuth 2.0 based authorization for Indirect communication with Delegated Discovery (Model D)

**Decision:** The document was **revised to S3-192444**.

**S3-192444 pCR on removing EN in Solution #21**

*Type: pCR For: Approval  
 33.855 v1.5.0  
 Source: Nokia, Nokia Shanghai Bell*

(Replaces S3-192255)

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

**S3-192256 pCR to 33.855 on NF authorization with SeCoP**

*Type: pCR For: Approval  
 33.855 v1.5.0  
 Source: NTT DOCOMO INC.*

**Decision:** The document was **revised to S3-192258**.

**S3-192365 Minutes of the SBA offline session**

*Type: report For: Information  
 Source: Ericsson*

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

**S3-192438 Draft TR 33.855**

*Type: draft TR For: Approval  
 33.855 v1.6.0  
 Source: Ericsson*

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

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

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

### 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)

**S3-192187 Meeting minutes of AKMA conference calls**

*Type: report For: Information  
 Source: China Mobile*

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

**S3-192211 Meeting minutes of AKMA conference call on 4th June**

*Type: report For: Information  
 33.835 v..  
 Source: China Mobile*

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

**S3-192190 Work Plan for moving forward AKMA**

*Type: discussion For: (not specified)  
 Source: China Mobile*

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

**S3-192146 New KI: AKMA push**

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

**Discussion:**

Qualcomm: not sure that we need this. GBA Push is not really used. There is no use case for this. Vodafone commented that it was used.

ORANGE: reword the requirement.

**Decision:** The document was **revised to S3-192428**.

**S3-192428 New KI: AKMA push**

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

(Replaces S3-192146)

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

**S3-192160 Solution for AKMA push**

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

**Discussion:**

ORANGE: remove the evaluation.

Ericsson: User identity should be clarified in step one of the figure.

**Decision:** The document was **revised to S3-192429**.

**S3-192429 Solution for AKMA push**

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

(Replaces S3-192160)

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

**S3-192263 New solution: Integrating GBA to 5GC**

*Type: pCR For: Approval  
 33.835 v0.4.0  
 Source: Ericsson Hungary Ltd*

(Replaces S3-192005)

**Discussion:**

ORANGE didn't support bringing old GBA into 5G. Something new should be created. Qualcomm and China Mobile supported this. Out of scope.

Vodafone: how are GBA services evolving into 5G then?

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

**S3-192220 Implicit bootstrapping using NEF as the AKMA Anchor Function**

*Type: pCR For: Approval  
 33.835 v0.4.0  
 Source: Nokia, Nokia Shanghai Bell, China Mobile*

**Abstract:**

Implicit bootstrapping using NEF as the AKMA Anchor Function

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

**S3-192000 Solution 2 evaluation**

*Type: pCR For: Approval  
 33.835 v0.4.0  
 Source: Ericsson*

**Discussion:**

ORANGE: second bullet point in the advantages needs to go away.

Qualcomm: authentication procedure overhead needs to be pointed out.

**Decision:** The document was **revised to S3-192450**.

**S3-192450 Solution 2 evaluation**

*Type: pCR For: Approval  
 33.835 v0.4.0  
 Source: Ericsson*

(Replaces S3-192000)

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

**S3-192001 Solution 3 evaluation**

*Type: pCR For: Approval  
 33.835 v0.4.0  
 Source: Ericsson*

**Decision:** The document was **revised to S3-192451**.

**S3-192451 Solution 3 evaluation**

*Type: pCR For: Approval  
 33.835 v0.4.0  
 Source: Ericsson*

(Replaces S3-192001)

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

**S3-191877 Update of solution #17 - Efficient key derivation for e2e security**

*Type: pCR For: Approval  
 33.835 v0.4.0  
 Source: KPN*

**Abstract:**

This contribution provides an update of solution #17 – efficient key derivation for e2e security. In this update a number of editor’s notes are resolved and an alignment is made of the terminology with other solutions.

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

**S3-191890 Resolving Editor’s Notes and adding conclusion to solution #18**

*Type: pCR For: Approval  
 33.835 v0.4.0  
 Source: NEC Europe Ltd*

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

**S3-191891 Resolving Editor’s Notes and adding conclusion to solution #20**

*Type: pCR For: Approval  
 33.835 v0.4.0  
 Source: NEC Europe Ltd*

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

**S3-192002 Solution #15 updates including evaluation update**

*Type: pCR For: Approval  
 33.835 v0.4.0  
 Source: Ericsson*

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

**S3-192003 Solution #13 evaluation**

*Type: pCR For: Approval  
 33.835 v0.4.0  
 Source: Ericsson*

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

**S3-192065 Resolve Editor's notes in Solution for Key freshness in AKMA**

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

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

**S3-192126 Evaluation for solution**

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

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

**S3-192196 Individual Evaluation of solution #6**

*Type: pCR For: Approval  
 33.835 v0.4.0  
 Source: China Mobile*

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

**S3-192198 Individual Evaluations of solution #7- #12**

*Type: pCR For: Approval  
 33.835 v0.4.0  
 Source: China Mobile*

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

**S3-192207 Evaluation of solution#1- Introducing third party key to AKMA**

*Type: pCR For: (not specified)  
 33.835 v0.4.0  
 Source: China Mobile*

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

**S3-191878 AKMA solution set analysis**

*Type: discussion For: Discussion  
 33.835 v..  
 Source: KPN*

**Abstract:**

This document intends to provide an analysis of the current set of solutions for AKMA. By analysing the existing set of solutions, the common aspects and the differences of the various solutions can be identified.

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

**S3-192201 Discussion on AKMA overall evaluation methodology**

*Type: discussion For: Endorsement  
 33.835 v..  
 Source: China Mobile, ZTE Corporation*

**Discussion:**

Vodafone: no evaluation on how this evolves from GBA here. This is replacing GBA.

Qualcomm: don’t mix GBA and AKMA.They're different. This is a separate document.

ORANGE didn’t understand the classification of the key issues.

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

**S3-192204 skeleton of clause 7- evaluation and conclusion**

*Type: pCR For: (not specified)  
 33.835 v0.4.0  
 Source: China Mobile*

**Discussion:**

ORANGE: 7.5 will be the API on the UE, not implementations.

**Decision:** The document was **revised to S3-192427**.

**S3-192427 skeleton of clause 7- evaluation and conclusion**

*Type: pCR For: -  
 33.835 v0.4.0  
 Source: China Mobile*

(Replaces S3-192204)

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

**S3-191889 Discussion on AKMA overall conclusions**

*Type: discussion For: Endorsement  
 33.835 v..  
 Source: NEC Europe Ltd*

**Discussion:**

KPN disagreed with the contribution.

Qualcomm: endorse proposal one. Nokia supported this.

The Chair asked for a show of hands:

ORANGE, Nokia, ZTE,Qualcomm,china mobile,Huawei, NEC supported proposal one.

Ericsson, KPN,Gemalto, Vodafone didn’t support endorsing this.

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

**S3-192193 Editorial Changes to TR 33.835 v0.4.0**

*Type: pCR For: Approval  
 33.835 v0.4.0  
 Source: China Mobile*

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

**S3-191892 Editorial corrections of AKMA TR 33.835 v0.4.0**

*Type: pCR For: Approval  
 33.835 v0.4.0  
 Source: NEC Europe Ltd*

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

**S3-192005 New solution: Integrating GBA to 5GC**

*Type: pCR For: Approval  
 33.835 v0.4.0  
 Source: Ericsson*

**Decision:** The document was **revised to S3-192263**.

**S3-192430 Draft TR 33.835**

*Type: draft TR For: Approval  
 33.835 v0.5.0  
 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)

**S3-191893 Editorial correction of TR 33.861**

*Type: pCR For: Approval  
 33.861 v1.1.0  
 Source: NEC Europe Ltd*

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

**S3-192106 Update Solution 17 to Supplement Missing Part When Merging with S3-191389**

*Type: pCR For: Approval  
 33.861 v1.1.0  
 Source: Huawei, Hisilicon*

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

**S3-191872 New KI: Sleep deprivation attacks to CIOT terminals**

*Type: pCR For: Approval  
 33.861 v1.1.0  
 Source: Huawei, HiSilicon*

**Discussion:**

Nokia: this will not work as it is proposed. Intel agreed and commented that the UE has to wake up to verify the integrity protection anyway.

Futurewei: 5G-TMSI cannot be leaked. They also disagreed with the contribution.

Alf: delete requirements, keep the key issue for security analysis purposes.

Ericsson: we agree with Futurewei, 5G-TMSI is sent after security activation.

There was no support for this paper.

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

**S3-192111 Key Issue for RRC Connection Re-Establishment for the control plane for NB-IoT connected to 5GC**

*Type: pCR For: Approval  
 33.861 v1.1.0  
 Source: Huawei, Hisilicon*

**Discussion:**

Ericsson: S-TMSI size, which is RAN2's concern, is not addressed here.

Nokia: Impact of S-TMSI truncation needs a security issue. We will not make the decision of truncating but we need to study the security implications.

This would mean rewriting the key issue to address the concerns of RAN2 raised in their LS.

**Decision:** The document was **revised to S3-192393**.

**S3-192393 Key Issue for RRC Connection Re-Establishment for the control plane for NB-IoT connected to 5GC**

*Type: pCR For: Approval  
 33.861 v1.1.0  
 Source: Huawei, Hisilicon*

(Replaces S3-192111)

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

**S3-191810 Update of Solution #4**

*Type: pCR For: Approval  
 33.861 v1.1.0  
 Source: Futurewei*

**Abstract:**

This document removes the reference to KI#8 from solution #4 details

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

**S3-191835 LS on RRC Connection Re-Establishment for CP for NB-IoT connected to 5GC**

*Type: LS in For: (not specified)  
 Original outgoing LS: -, to -, cc -  
 Source: R2-1908264*

**Decision:** The document was **replied to in S3-192394**.

**S3-191943 Nokia comments on R2-1908264 LS on RRC Connection Re-establishment**

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

**Discussion:**

Huawei: this is not a security perspective.

Nokia: without an ID the solution will not work.

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

**S3-191811 Evaluation of Solution #4**

*Type: pCR For: Approval  
 33.861 v1.1.0  
 Source: Futurewei*

**Abstract:**

This document provides an evaluation for solution #4

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

**S3-192397 Evaluation of Solution #4**

*Type: pCR For: Approval  
 33.861 v1.1.0  
 Source: Futurewei*

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

**S3-192016 CIOT: add evaluation to solution #4**

*Type: pCR For: Approval  
 33.861 v1.1.0  
 Source: Ericsson*

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

**S3-191952 Evaluation to Security solution 4 for UL small data transfer in RRC Suspend and Resume with early data transmission (EDT)**

*Type: pCR For: Approval  
 33.861 v1.1.0  
 Source: Intel China Ltd.*

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

**S3-191909 Evaluation of the integrity protection provided by EDT solutions #4 and #18**

*Type: pCR For: Approval  
 33.861 v1.1.0  
 Source: Qualcomm Incorporated*

**Discussion:**

Huawei: in LTE the air interface has no user plane, there is no such bidding down attack. The LTE technology does not support integrity protection.

Qualcomm: integrity protection is added in order to have it modified it over the air. Why are we having integrity protection then?

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

**S3-191876 Update of Solution #6 - Use of UE Configuration Update**

*Type: pCR For: Approval  
 33.861 v1.1.0  
 Source: KPN*

**Abstract:**

This contribution provides an update of Solution #6 Detecting and handling signalling overload due to Malicious Applications on the UE. The update resolves the remaining editor’s notes and provides an evaluation of the solution.

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

**S3-192071 Delete EN in solution12**

*Type: pCR For: Approval  
 33.861 v1.1.0  
 Source: Huawei, Hisilicon*

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

**S3-191879 Proposal for editor's note in FS\_CIoT\_sec\_5G solution #15**

*Type: pCR For: Approval  
 33.861 v1.1.0  
 Source: Philips International B.V.*

**Abstract:**

In TS 33.861 [1], solution #15 contains an Editor's Note. This pCR proposes a solution to this note.

**Discussion:**

Nokia didn’t agree with the change.

Futurewei wasn't convinced about the way the editor's notes were handled either. The first two changes went away.

**Decision:** The document was **revised to S3-192398**.

**S3-192398 Proposal for editor's note in FS\_CIoT\_sec\_5G solution #15**

*Type: pCR For: Approval  
 33.861 v1.1.0  
 Source: Philips International B.V.*

(Replaces S3-191879)

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

**S3-192105 Address EN in solution 17**

*Type: pCR For: Approval  
 33.861 v1.1.0  
 Source: Huawei, Hisilicon*

**Discussion:**

Ericsson was concerned about how the black list was maintained since the constant change would lead to an increase in signalling. Otherwise they agreed with the change.

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

**S3-192107 Add Evaluation for Solution 17**

*Type: pCR For: Approval  
 33.861 v1.1.0  
 Source: Huawei, Hisilicon*

**Discussion:**

Nokia had the same comment as Ericsson in the previous contribution: maintaining the black list would cause overhead.

Ericsson: in the practice they would be multiple black lists.

Nokia: this gets complex when considering the mobility part.

**Decision:** The document was **revised to S3-192399**.

**S3-192399 Add Evaluation for Solution 17**

*Type: pCR For: Approval  
 33.861 v1.1.0  
 Source: Huawei, Hisilicon*

(Replaces S3-192107)

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

**S3-192013 CIoT: Update to Solution #18**

*Type: pCR For: Approval  
 33.861 v1.1.0  
 Source: Ericsson*

**Discussion:**

Futurewei: "potential enhancement" is not referring to anything. I'm against this.

Remove reference to key issue integrity protection.

This was agreed.

**Decision:** The document was **revised to S3-192400**.

**S3-192400 CIoT: Update to Solution #18**

*Type: pCR For: Approval  
 33.861 v1.1.0  
 Source: Ericsson*

(Replaces S3-192013)

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

**S3-192014 CIoT: Evaluation to Solution #18**

*Type: pCR For: Approval  
 33.861 v1.1.0  
 Source: Ericsson*

**Discussion:**

Overlapping with 806, 953.

**Decision:** The document was **revised to S3-192401**.

**S3-192401 CIoT: Evaluation to Solution #18**

*Type: pCR For: Approval  
 33.861 v1.1.0  
 Source: Ericsson,Futurewei,Intel*

(Replaces S3-192014)

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

**S3-191806 Evaluation of Solution #18**

*Type: pCR For: Approval  
 33.861 v1.1.0  
 Source: Futurewei*

**Abstract:**

This document proposes an evaluation to solution #18

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

**S3-191953 Evaluation to Security solution 18 for UL small data transfer in RRC Suspend and Resume with early data transmission (EDT)**

*Type: pCR For: Approval  
 33.861 v1.1.0  
 Source: Intel China Ltd.*

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

**S3-192108 Add Details and Evaluation for Solution 19**

*Type: pCR For: Approval  
 33.861 v1.1.0  
 Source: Huawei, Hisilicon*

**Decision:** The document was **revised to S3-192402**.

**S3-192402 Add Details and Evaluation for Solution 19**

*Type: pCR For: Approval  
 33.861 v1.1.0  
 Source: Huawei, Hisilicon*

(Replaces S3-192108)

**Discussion:**

Adding an editor's note on the group of misbehaving UEs as proposed by Ericsson.

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

**S3-191920 Solution for integrity protection of EDT**

*Type: pCR For: Approval  
 33.861 v1.1.0  
 Source: Qualcomm Incorporated*

**Discussion:**

Futurewei objected to having this solution because there was a whole study item dedicated to this: user plane integrity protection. This didn’t belong here.

Qualcomm: Evaluation in solution 4 and 18 that there is a bidding down risk but we don’t have proper protection against that.

Qualcomm: what is the key issue for?

Futurewei: it's for when we don’t use the user plane integrity protection completely.

Intel supported Qualcomm but proposed to add the evaluation later when the UP IP study had a conclusion.

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

**S3-192018 CIOT: New solution for UP IP in PDCP to protect UL EDT data in Msg3**

*Type: pCR For: Approval  
 33.861 v1.1.0  
 Source: Ericsson*

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

**S3-191951 Security solution for UL small data transfer in RRC Suspend and Resume with early data transmission (EDT) with legacy fall back**

*Type: pCR For: Approval  
 33.861 v1.1.0  
 Source: Intel China Ltd.*

**Decision:** The document was **revised to S3-192328**.

**S3-192328 Security solution for UL small data transfer in RRC Suspend and Resume with early data transmission (EDT) with legacy fall back**

*Type: pCR For: Approval  
 33.861 v1.1.0  
 Source: Intel China Ltd.*

(Replaces S3-191951)

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

**S3-192017 CIOT: Optional support of RRC Inactive in eMTC connected to 5GC**

*Type: pCR For: Approval  
 33.861 v1.1.0  
 Source: Ericsson*

**Discussion:**

Futurewei: If you read RAN2 agreement, NB-IoT is not supported.

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

**S3-191871 Mitigate DDoS Attacks on RAN based on RAN coordination**

*Type: pCR For: Approval  
 33.861 v1.1.0  
 Source: Huawei, HiSilicon*

**Discussion:**

Samsung didn’t agree with this.

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

**S3-192019 DDoS protection based on NWDAF and Overload Control**

*Type: pCR For: Approval  
 33.861 v1.1.0  
 Source: Ericsson*

**Discussion:**

Huawei: out of scope of this key issue. The key issue is about how to detect and what to do after detection.

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

**S3-192115 Solution for Protection of NAS Redirection Message**

*Type: pCR For: Approval  
 33.861 v1.1.0  
 Source: Huawei, Hisilicon*

**Discussion:**

Ericsson: There is a requirement in Rel-15 and there is impact on UE and network, an overhead increase.

Remove the evaluation and add another editor's note on why legacy mechanisms are not used here.

**Decision:** The document was **revised to S3-192404**.

**S3-192404 Solution for Protection of NAS Redirection Message**

*Type: pCR For: Approval  
 33.861 v1.1.0  
 Source: Huawei, Hisilicon*

(Replaces S3-192115)

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

**S3-191873 A solution to protect CIOT terminals from sleep deprivation attacks**

*Type: pCR For: Approval  
 33.861 v1.1.0  
 Source: Huawei, HiSilicon*

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

**S3-192112 Solution for RRC Connection Re-Establishment for the control plane for NB-IoT connected to 5GC**

*Type: pCR For: Approval  
 33.861 v1.1.0  
 Source: Huawei, Hisilicon*

**Decision:** The document was **revised to S3-192452**.

**S3-192452 Solution for RRC Connection Re-Establishment for the control plane for NB-IoT connected to 5GC**

*Type: pCR For: Approval  
 33.861 v1.1.0  
 Source: Huawei, Hisilicon*

(Replaces S3-192112)

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

**S3-192113 Reply LS on RRC Connection Reestablishment for CP for NB-IoT connected to 5GC**

*Type: LS out For: Approval  
 to RAN2,CT4, cc SA2  
 Source: Huawei, Hisilicon*

**Decision:** The document was **revised to S3-192394**.

**S3-192394 Reply LS on RRC Connection Reestablishment for CP for NB-IoT connected to 5GC**

*Type: LS out For: Approval  
 to RAN2,SA2, cc CT4  
 Source: Huawei*

(Replaces S3-192113)

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

**S3-192015 CIoT: Conclusion to KI#2 and KI#3**

*Type: pCR For: Approval  
 33.861 v1.1.0  
 Source: Ericsson*

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

**S3-191812 Conclusion for KI#2 for RRC based solutions**

*Type: pCR For: Approval  
 33.861 v1.1.0  
 Source: Futurewei*

**Abstract:**

This document proposes a conclusion for KI#2 for RRC based solutions

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

**S3-191813 Conclusion for KI#3 for RRC signalling based solutions**

*Type: pCR For: Approval  
 33.861 v1.1.0  
 Source: Futurewei*

**Abstract:**

This document proposes a conclusion for KI#2 for RRC based solutions

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

**S3-192114 Conclusion for KI#2 and KI#3 of frequent CIoT Ues**

*Type: pCR For: Approval  
 33.861 v1.1.0  
 Source: Huawei, Hisilicon*

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

**S3-192109 Discussion Paper for Mitigation of DDoS Attack**

*Type: discussion For: Endorsement  
 33.861 v..  
 Source: Huawei, Hisilicon*

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

**S3-192110 conclusion for KI#4**

*Type: pCR For: Approval  
 33.861 v1.1.0  
 Source: Huawei, Hisilicon*

**Discussion:**

Ericsson: no need to do normative work. We agree with SA2 on the fact that we can rely on existing mechanisms.

KPN: both Ericsson's (tdoc 2021) and Huawei's conclusions are not correct.

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

**S3-192021 Conclusion for KI#4**

*Type: pCR For: Approval  
 33.861 v1.1.0  
 Source: Ericsson*

**Discussion:**

Supported by Nokia.

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

**S3-191870 Conclusion to KI #5**

*Type: pCR For: Approval  
 33.861 v1.1.0  
 Source: Huawei, HiSilicon*

**Discussion:**

Discussed together with tdoc 2020.

Ericsson: the solution will not make a difference if the attacker is a bit more sophisticated. Supported by Qualcomm.

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

**S3-192020 Conclusion for KI#5**

*Type: pCR For: Approval  
 33.861 v1.1.0  
 Source: Ericsson*

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

**S3-191980 Conclusion on Key Issue #7**

*Type: pCR For: (not specified)  
 33.861 v1.1.0  
 Source: Lenovo, Motorola Mobility*

**Discussion:**

Ericsson: the conclusion is better rely on existing mechanisms.

Nokia: this is not necessary.

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

**S3-192392 Draft TR 33.861**

*Type: draft TR For: Approval  
 33.861 v1.2.0  
 Source: Ericsson*

**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)

**S3-191838 Reply LS on Authentication for UEs not Supporting NAS**

*Type: LS in For: (not specified)  
 Original outgoing LS: -, to -, cc -  
 Source: S1-191595*

**Discussion:**

ORANGE: they seem to interpret the requirement in a different way. They are not really answering our question. A laptop is not an IoT device.

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

**S3-191843 LS to BBF on WWC status**

*Type: LS in For: (not specified)  
 Original outgoing LS: -, to -, cc -  
 Source: S2-1906821*

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

**S3-192083 Delete Editor's in Solution#3 and add evaluation**

*Type: pCR For: Approval  
 33.807 v0.5.0  
 Source: Huawei, Hisilicon*

**Discussion:**

Discussed with 2222 and 2223.

Vodafone: we shouldn’t write in a spec that we need input from BBF unless it's in an editor's note. MCC agreed with this.

Nokia: we conclude with what's in our scope and in case BBF comes up with a solution we can update the study.

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

**S3-192222 Resolve Editor’s Note in solution 3**

*Type: pCR For: Approval  
 33.807 v0.5.0  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Resolve Editor’s Note in solution 3

**Decision:** The document was **revised to S3-192382**.

**S3-192382 Resolve Editor’s Note in solution 3**

*Type: pCR For: Approval  
 33.807 v0.5.0  
 Source: Nokia, Nokia Shanghai Bell,Huawei*

(Replaces S3-192222)

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

**S3-192223 WWC - Evaluation of Solution #3**

*Type: pCR For: Approval  
 33.807 v0.5.0  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Evaluation of Solution #3

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

**S3-192084 Delete Editor's in Solution#5 and add evaluation**

*Type: pCR For: Approval  
 33.807 v0.5.0  
 Source: Huawei, Hisilicon*

**Decision:** The document was **revised to S3-192383**.

**S3-192383 Delete Editor's in Solution#5 and add evaluation**

*Type: pCR For: Approval  
 33.807 v0.5.0  
 Source: Huawei, Hisilicon,Nokia*

(Replaces S3-192084)

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

**S3-192225 WWC - Resolve Editor’s Note in solution 5**

*Type: pCR For: Approval  
 33.807 v0.5.0  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Resolve Editor’s Note in solution 5

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

**S3-192232 WWC - Evaluation of Solution #5**

*Type: pCR For: Approval  
 33.807 v0.5.0  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Evaluation of Solution #5

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

**S3-192085 Conclusion on KI#1**

*Type: pCR For: Approval  
 33.807 v0.5.0  
 Source: Huawei, Hisilicon*

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

**S3-192077 Add requirement to KI#2**

*Type: pCR For: Approval  
 33.807 v0.5.0  
 Source: Huawei, Hisilicon*

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

**S3-192089 Merge S3-191319 to solution 4**

*Type: pCR For: Approval  
 33.807 v0.5.0  
 Source: Huawei, Hisilicon*

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

**S3-192228 WWC - Resolve Editor’s Note on Authentication in solution 4**

*Type: pCR For: Approval  
 33.807 v0.5.0  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Resolve Editor’s Note on Authentication in solution 4

**Decision:** The document was **revised to S3-192385**.

**S3-192385 WWC - Resolve Editor’s Note on Authentication in solution 4**

*Type: pCR For: Approval  
 33.807 v0.5.0  
 Source: Nokia, Nokia Shanghai Bell*

(Replaces S3-192228)

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

**S3-192230 WWC - Resolve Editor’s Note on trust in solution 4**

*Type: pCR For: Approval  
 33.807 v0.5.0  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Resolve Editor’s Note on trust in solution 4

**Discussion:**

Taken care of in 2089.

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

**S3-192224 WWC - Evaluation of Solution #4**

*Type: pCR For: Approval  
 33.807 v0.5.0  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Evaluation of Solution #4

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

**S3-191988 Conclusion for Key Issue #5**

*Type: pCR For: (not specified)  
 33.807 v0.5.0  
 Source: Lenovo, Motorola Mobility*

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

**S3-191987 Removal of Editor’s Note and Addition of Evaluation**

*Type: pCR For: (not specified)  
 33.807 v0.5.0  
 Source: Lenovo, Motorola Mobility*

**Decision:** The document was **revised to S3-192386**.

**S3-192386 Removal of Editor’s Note and Addition of Evaluation**

*Type: pCR For: -  
 33.807 v0.5.0  
 Source: Lenovo, Motorola Mobility*

(Replaces S3-191987)

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

**S3-192227 Resolve Editor’s Note in solution 6**

*Type: pCR For: Approval  
 33.807 v0.5.0  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Resolve Editor’s Note in solution 6

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

**S3-191983 Conclusion for Key Issue #6**

*Type: pCR For: (not specified)  
 33.807 v0.5.0  
 Source: Lenovo, Motorola Mobility*

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

**S3-192078 Add threat and requirement to KI#10**

*Type: pCR For: Approval  
 33.807 v0.5.0  
 Source: Huawei, Hisilicon*

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

**S3-192233 WWC - Add conclusion on KI #10**

*Type: pCR For: Approval  
 33.807 v0.5.0  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Add conclusion on KI #10

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

**S3-192080 Add threat and requirement to KI#11**

*Type: pCR For: Approval  
 33.807 v0.5.0  
 Source: Huawei, Hisilicon*

**Decision:** The document was **revised to S3-192387**.

**S3-192387 Add threat and requirement to KI#11**

*Type: pCR For: Approval  
 33.807 v0.5.0  
 Source: Huawei, Hisilicon*

(Replaces S3-192080)

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

**S3-192234 WWC - Add conclusion on KI #11**

*Type: pCR For: Approval  
 33.807 v0.5.0  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Add conclusion on KI #11

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

**S3-192079 Add requirement to KI#12**

*Type: pCR For: Approval  
 33.807 v0.5.0  
 Source: Huawei, Hisilicon*

**Discussion:**

ORANGE, Ericsson: we need a threat for this requirement.

**Decision:** The document was **revised to S3-192388**.

**S3-192388 Add requirement to KI#12**

*Type: pCR For: Approval  
 33.807 v0.5.0  
 Source: Huawei, Hisilicon*

(Replaces S3-192079)

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

**S3-192087 Solution on Line ID protection**

*Type: pCR For: Approval  
 33.807 v0.5.0  
 Source: Huawei, Hisilicon*

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

**S3-192090 Conclusion on KI#12**

*Type: pCR For: Approval  
 33.807 v0.5.0  
 Source: Huawei, Hisilicon*

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

**S3-192235 WWC - Add conclusion on KI #12**

*Type: pCR For: Approval  
 33.807 v0.5.0  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Add conclusion on KI #12

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

**S3-192236 WWC - Add conclusion on KI #12**

*Type: pCR For: Approval  
 33.807 v0.5.0  
 Source: Nokia, Nokia Shanghai Bell*

**Decision:** The document was **revised to S3-192389**.

**S3-192389 WWC - Add conclusion on KI #12**

*Type: pCR For: Approval  
 33.807 v0.5.0  
 Source: Nokia, Nokia Shanghai Bell*

(Replaces S3-192236)

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

**S3-192081 Add requirement and delete EN for KI#14**

*Type: pCR For: Approval  
 33.807 v0.5.0  
 Source: Huawei, Hisilicon*

**Discussion:**

ORANGE: Keep the key issue and say that the scenario is not in scope of this document.

**Decision:** The document was **revised to S3-192390**.

**S3-192390 Add requirement and delete EN for KI#14**

*Type: pCR For: Approval  
 33.807 v0.5.0  
 Source: Huawei, Hisilicon*

(Replaces S3-192081)

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

**S3-192086 Conclusion on KI#14**

*Type: pCR For: Approval  
 33.807 v0.5.0  
 Source: Huawei, Hisilicon*

**Decision:** The document was **revised to S3-192391**.

**S3-192391 Conclusion on KI#14**

*Type: pCR For: Approval  
 33.807 v0.5.0  
 Source: Huawei, Hisilicon*

(Replaces S3-192086)

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

**S3-192082 Add requirement and delete EN for KI#15**

*Type: pCR For: Approval  
 33.807 v0.5.0  
 Source: Huawei, Hisilicon*

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

**S3-192088 Mapping SUCI to SUPI**

*Type: pCR For: Approval  
 33.807 v0.5.0  
 Source: Huawei, Hisilicon*

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

**S3-192091 Conclusion on KI#16**

*Type: pCR For: Approval  
 33.807 v0.5.0  
 Source: Huawei, Hisilicon*

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

**S3-191949 DraftCR - update Annex B to support the authentication of non-3GPP devices**

*Type: draftCR For: Discussion  
 33.807 v0.5.0  
 Source: CableLabs, Charter, Nokia, Nokia Shanghai Bell*

**Decision:** The document was **revised to S3-192283**.

**S3-192283 DraftCR - update Annex B to support the authentication of non-3GPP devices**

*Type: draftCR For: Discussion  
 33.807 v0.5.0  
 Source: CableLabs, Charter, Nokia, Nokia Shanghai Bell*

(Replaces S3-191949)

**Discussion:**

ORANGE: changes in B.1 not necessary. Some re-wording is needed as there is normative meaning in an informative annex.

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

**S3-191883 DraftCR - update Annex B to support the authentication of non-3GPP UE**

*Type: draftCR For: Discussion  
 33.501 v15.5.0  
 Source: CableLabs*

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

**S3-192384 Draft TR 33.807**

*Type: draft TR For: Approval  
 33.807 v0.6.0  
 Source: Huawei*

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

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

**S3-191925 Proposed conclusion for PARLOS**

*Type: pCR For: Approval  
 33.815 v0.5.0  
 Source: Qualcomm Incorporated, Intel, Samsung, Sprint, Verizon UK Ltd*

**Discussion:**

Add an editor's note on the mitigations. Second part was removed.

It was asked to be minuted: The group agreed that solution one is considered to be too complex to be the way forward.

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

**S3-191926 pCR: Resolution of EN in Solution 2 evaluation**

*Type: pCR For: Approval  
 33.815 v0.5.0  
 Source: Qualcomm Incorporated, Intel, Samsung, Sprint, Verizon UK Ltd*

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

**S3-191944 Way forward on Emergency solution for PARLOS**

*Type: pCR For: Approval  
 33.825 v1.0.0  
 Source: Nokia, Nokia Shanghai Bell*

**Discussion:**

Docomo: part of the evaluation contains part of the solution. An editor's note was added for this.

**Decision:** The document was **revised to S3-192380**.

**S3-192380 Way forward on Emergency solution for PARLOS**

*Type: pCR For: Approval  
 33.825 v1.0.0  
 Source: Nokia, Nokia Shanghai Bell*

(Replaces S3-191944)

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

**S3-192229 pCR to 33.815 on authentication of network**

*Type: pCR For: Approval  
 33.815 v0.5.0  
 Source: NTT DOCOMO INC.*

**Discussion:**

Sprint: there is a requirement that reads that the user is always informed of whether they are using RLOS. RLOS is not only for calls as well.

NTT-Docomo: if the user is not aware, we have the threat. If the UE-user interface fulfils the requirement, that's fine, but the issue is there. SA1 is giving a solution.

Vodafone: our consumers are not aware, they don't know what RLOS is about. BT supported this.

ORANGE supported NTT-Docomo's contribution. The feature should not impact the users and this is essential.

Qualcomm: I don’t agree putting this key issue. We have discussed this with other 3GPP groups like SA1 and SA2.

Vodafone: this is setting up a massive fake base station issue.

BT: the user will be directed to confirm actions that he doesn’t understand.

Alex (BT): if we don’t document this we will get CVDs about this in the future.

False base stations are a real threat and this needs to be included.

The Chair suggested to record the key issue and the threat without a requirement.

NTT-Docomo: there is a solution in SA1's specification. We need the requirement to align with what SA1 has agreed.

It was agreed to capture SA1's text, and a note on the user's interaction for increasing their awareness.

**Decision:** The document was **revised to S3-192378**.

**S3-192378 pCR to 33.815 on authentication of network**

*Type: pCR For: Approval  
 33.815 v0.5.0  
 Source: NTT DOCOMO INC.*

(Replaces S3-192229)

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

**S3-192237 pCR to 33.815 on user awareness of PARLOS service**

*Type: pCR For: Approval  
 33.815 v0.5.0  
 Source: NTT DOCOMO INC.*

**Discussion:**

Nokia supported adding a note on the user interacting and selecting the RLOS service as done in the previous contribution.

The same note was added as a baseline.

Same changes as the previous contribution as well.

Vodafone: what happens with IoT devices? Docomo answered that NB-IoT are excluded, the other are not.

**Decision:** The document was **revised to S3-192379**.

**S3-192379 pCR to 33.815 on user awareness of PARLOS service**

*Type: pCR For: Approval  
 33.815 v0.5.0  
 Source: NTT DOCOMO INC.*

(Replaces S3-192237)

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

**S3-192381 Draft TR 33.815**

*Type: draft TR For: Approval  
 33.815 v0.6.0  
 Source: Sprint*

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

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

**S3-191807 Security threat for RRCResumeRequest tampering.**

*Type: pCR For: Approval  
 33.809 v0.4.0  
 Source: Futurewei*

**Abstract:**

This contribution provide the details for the security threats of tampering of RRCResumeRequest

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

**S3-191808 Solution for protecting RRCResumeRequest against tampering**

*Type: pCR For: Approval  
 33.809 v0.4.0  
 Source: Futurewei*

**Abstract:**

This contribution propose a solution to protect ResumeCause in RRCResumeRequest message.

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

**S3-191868 Address EN in solution #1**

*Type: pCR For: Approval  
 33.809 v0.4.0  
 Source: Huawei, HiSilicon*

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

**S3-192238 UE capability protection**

*Type: pCR For: Approval  
 33.809 v0.4.0  
 Source: Apple*

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

**S3-192206 Resolving EN on New and Last serving gNB interactions**

*Type: pCR For: Approval  
 33.809 v0.4.0  
 Source: Samsung*

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

**S3-192208 Evaluation of Solution#2**

*Type: pCR For: Approval  
 33.809 v0.4.0  
 Source: Samsung*

**Decision:** The document was **revised to S3-192447**.

**S3-192447 Evaluation of Solution#2**

*Type: pCR For: Approval  
 33.809 v0.4.0  
 Source: Samsung,Apple*

(Replaces S3-192208)

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

**S3-192241 update of solution #2**

*Type: pCR For: Approval  
 33.809 v0.4.0  
 Source: Apple*

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

**S3-192116 Solution for Protection of RRC Reject Message**

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

**Decision:** The document was **revised to S3-192410**.

**S3-192410 Solution for Protection of RRC Reject Message**

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

(Replaces S3-192116)

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

**S3-192117 Solution for Protection of NAS Reject Message**

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

**Decision:** The document was **revised to S3-192411**.

**S3-192411 Solution for Protection of NAS Reject Message**

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

(Replaces S3-192117)

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

**S3-191990 New solution (SERSI - SERving network controlled SI signatures)**

*Type: pCR For: Approval  
 33.809 v0.4.0  
 Source: Ericsson*

**Discussion:**

Futurewei didn’t agree with the new solution, only the delta should be shown.

Ericsson: we have shown different aspects of the same solution in other TRs.

Apple supported this solution.

ORANGE: protection before the first registration is not covered.

There was some strong disagreement with some other parts and the document was noted.

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

**S3-192209 Updates to Solution#7 on obtaining accurate clock information**

*Type: pCR For: Approval  
 33.809 v0.4.0  
 Source: Samsung*

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

**S3-192210 Deletion of EN on Location update reject in Solution#7**

*Type: pCR For: Approval  
 33.809 v0.4.0  
 Source: Samsung*

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

**S3-192212 Assessment of solution #7 to Annex A.3**

*Type: pCR For: Approval  
 33.809 v0.4.0  
 Source: Samsung*

**Discussion:**

Ericsson: sharing aspects are missing. It was suggested to add an editor's note on this assessment.

**Decision:** The document was **revised to S3-192449**.

**S3-192449 Assessment of solution #7 to Annex A.3**

*Type: pCR For: Approval  
 33.809 v0.4.0  
 Source: Samsung*

(Replaces S3-192212)

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

**S3-192239 update of Certificate based solution**

*Type: pCR For: Approval  
 33.809 v0.4.0  
 Source: Apple*

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

**S3-192242 update of solution #14**

*Type: pCR For: Approval  
 33.809 v0.4.0  
 Source: Apple*

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

**S3-191922 Evaluation of the shared key based MIB/SIB protection solution**

*Type: pCR For: Approval  
 33.809 v0.4.0  
 Source: Qualcomm Incorporated*

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

**S3-192261 Comments of S3-191922**

*Type: pCR For: Approval  
 33.809 v0.4.0  
 Source: Futurewei Technologies*

**Abstract:**

Comments on S3-191922

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

**S3-192072 A solution to MIB and SIB protection**

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

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

**S3-191863 Resolve EN on signalling details of how the UE hands over to false base station**

*Type: pCR For: Approval  
 33.809 v0.4.0  
 Source: Huawei, HiSilicon*

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

**S3-191864 Handover Attempts failure counter**

*Type: pCR For: Approval  
 33.809 v0.4.0  
 Source: Huawei, HiSilicon*

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

**S3-191865 Solution #4: Resolving EN on network verification of the hashes of MIB/SIBs**

*Type: pCR For: Approval  
 33.809 v0.4.0  
 Source: Huawei, HiSilicon*

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

**S3-191866 Solution #4: Resolving EN on Impact on UE power consumption**

*Type: pCR For: Approval  
 33.809 v0.4.0  
 Source: Huawei, HiSilicon*

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

**S3-191867 Solution #4: Details on the hash algorithm used for MIB/SIB hashes**

*Type: pCR For: Approval  
 33.809 v0.4.0  
 Source: Huawei, HiSilicon*

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

**S3-191869 Enabling UE to detect FBS**

*Type: pCR For: Approval  
 33.809 v0.4.0  
 Source: Huawei, HiSilicon*

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

**S3-192118 Solution for Avoiding UE connecting to False Base Station during Conditional Handover**

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

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

**S3-191956 Security solution for UE to avoid connecting to the false base station during a handover procedure**

*Type: pCR For: (not specified)  
 33.809 v0.4.0  
 Source: Intel China Ltd.*

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

**S3-191991 Conclusion on KI#3'S second requirement (reactive action)**

*Type: pCR For: Approval  
 33.809 v0.4.0  
 Source: Ericsson*

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

**S3-191950 Evaluation to Solution 6.6**

*Type: pCR For: Approval  
 33.809 v0.4.0  
 Source: Intel China Ltd.*

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

**S3-191982 Update of Solution #15**

*Type: pCR For: (not specified)  
 33.809 v0.4.0  
 Source: Lenovo, Motorola Mobility*

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

**S3-192145 Resolving the ENs in solution #5**

*Type: pCR For: Approval  
 33.809 v0.4.0  
 Source: Huawei, Hisilicon, Lenovo, Motorola Mobility*

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

**S3-192240 update of Key issue#7**

*Type: pCR For: Approval  
 33.809 v0.4.0  
 Source: Apple*

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

**S3-191921 Evaluation against MitM false base station attacks**

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

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

**S3-192243 Meeting minutes of SA3 5GFBS conference call on June 2th**

*Type: pCR For: Information  
 33.809 v0.4.0  
 Source: Apple*

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

**S3-192409 Report from offline discussions on 5GFBS**

*Type: report For: Information  
 Source: Apple*

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

**S3-192448 Draft TR 33.809**

*Type: draft TR For: Approval  
 33.809 v0.5.0  
 Source: Apple*

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

### 8.10 Study of KDF negotiation for 5G System Security

### 8.11 Study on Security aspects of Enhancement of Network Slicing (FS\_eNS\_SEC) (Rel-16)

**S3-191945 Addressing EN in solution#1**

*Type: pCR For: Approval  
 33.813 v0.4.0  
 Source: Nokia, Nokia Shanghai bell*

**Discussion:**

Lenovo: You don’t want the serving network know all users' IDs.

Huawei: this solution provides protection of User ID for the slice authentication between UE and serving network. This statement was added.

**Decision:** The document was **revised to S3-192363**.

**S3-192363 Addressing EN in solution#1**

*Type: pCR For: Approval  
 33.813 v0.4.0  
 Source: Nokia, Nokia Shanghai bell*

(Replaces S3-191945)

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

**S3-192260 Evaluation for solution #4**

*Type: pCR For: Approval  
 33.813 v0.4.0  
 Source: InterDigital, Inc.*

(Replaces S3-191819)

**Abstract:**

This document replaces previously submitted S3-191819 that has a typo in the Agenda Item indication in its header. The changes are limited to the Agenda Item typo. This contribution proposes an evaluation to Solution #4: “Solution for Slice Specific Authe

**Discussion:**

Nokia clarified that this was compliant with SA2's work.

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

**S3-192199 A Solution to authentication method negotiation**

*Type: pCR For: Approval  
 33.813 v0.4.0  
 Source: Huawei, HiSilicon*

**Discussion:**

Ericsson: what is the reason for re-inventing the EAP negotiation? Nokia, ORANGE had also problems with this contribution.

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

**S3-191929 Conclusion to KI #1 (slice authentication)**

*Type: pCR For: Approval  
 33.813 v0.4.0  
 Source: Huawei, HiSilicon*

**Discussion:**

Nokia: not right for key issue 1.

**Decision:** The document was **revised to S3-192366**.

**S3-192366 Conclusion to KI #1 (slice authentication)**

*Type: pCR For: Approval  
 33.813 v0.4.0  
 Source: Huawei, HiSilicon*

(Replaces S3-191929)

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

**S3-191930 Conclusions to KI#2 (AMF Key separation)**

*Type: pCR For: Approval  
 33.813 v0.4.0  
 Source: Huawei, HiSilicon*

**Decision:** The document was **revised to S3-192367**.

**S3-192367 Conclusions to KI#2 (AMF Key separation)**

*Type: pCR For: Approval  
 33.813 v0.4.0  
 Source: Huawei, HiSilicon*

(Replaces S3-191930)

**Discussion:**

It was clarified that there was no conclusion was reached given that the use case in SA2 was not concluded either.

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

**S3-191932 Add evaluation to solution 3**

*Type: pCR For: Approval  
 33.813 v0.4.0  
 Source: Huawei, HiSilicon*

**Discussion:**

ORANGE objected to having this approved and preferred to postpone the evaluation. There are some considerations in the solution that haven’t been sufficiently assessed.

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

**S3-191931 Conclusions to KI#3 (NSaaS)**

*Type: pCR For: Approval  
 33.813 v0.4.0  
 Source: Huawei, HiSilicon*

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

**S3-191946 2. Addressing EN in KI#4.**

*Type: pCR For: Approval  
 33.813 v0.4.0  
 Source: Nokia, Nokia Shanghai bell*

**Discussion:**

Lenovo: editor's note not addressed properly. The user could be compromised by the AMF and over the air protection would not be enough.

Qualcomm: we have a big problem if the AMF is compromised, it is trusted.

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

**S3-191981 Removal of Editor’s Notes of solution #5**

*Type: pCR For: (not specified)  
 33.813 v0.4.0  
 Source: Lenovo, Motorola Mobility*

**Discussion:**

ORANGE: considerations of provisioning of public keys are being made when removing these editor's notes. We need to add a note on saying that these mechanisms will not be studied.

The contribution found some additional opposition and it was finally noted.

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

**S3-191933 Amendment to solution 6**

*Type: pCR For: Approval  
 33.813 v0.4.0  
 Source: Huawei, HiSilicon*

**Discussion:**

Nokia: what is being protected here? Is there any additional protection apart from NAS security?

Huawei: EAP mechanisms.

Qualcomm: this breaks the EAP model. You cannot encrypt the EAP ID (which is the user ID) you cannot do any routing.

ORANGE: we don’t have stable requirements today that justify the statement "meets the requirement of the key issue".

This was left open.

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

**S3-192022 Adding evaluation and resolving EN in Solution 7**

*Type: pCR For: Approval  
 33.813 v0.4.0  
 Source: Ericsson*

**Discussion:**

ORANGE: remove the evaluation. We don’t have the requirement for this.

Huawei agreed with the document.

**Decision:** The document was **revised to S3-192369**.

**S3-192369 Adding evaluation and resolving EN in Solution 7**

*Type: pCR For: Approval  
 33.813 v0.4.0  
 Source: Ericsson*

(Replaces S3-192022)

**Discussion:**

First change was kept, evaluation was removed.

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

**S3-192149 Evaluation to solution #9 and conclusion to KI#5**

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

**Decision:** The document was **revised to S3-192370**.

**S3-192370 Evaluation to solution #9 and conclusion to KI#5**

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

(Replaces S3-192149)

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

**S3-192023 Discussion paper on NSSAI in AS layer protection**

*Type: pCR For: Discussion  
 33.813 v0.4.0  
 Source: Ericsson*

**Discussion:**

ORANGE: encrypting the NSSAI brings a lot of overhead.

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

**S3-191934 Solution details on solution 8**

*Type: pCR For: Approval  
 33.813 v0.4.0  
 Source: Huawei, HiSilicon*

**Discussion:**

Nokia: RAND per UE or per NSSAI? Huawei replied that per UE. Nokia suggested that this would have to be clarified.

Ericsson: if the UE goes to IDLE and the RAND removes the context? Huawei: you would need to restart.

**Decision:** The document was **revised to S3-192371**.

**S3-192371 Solution details on solution 8**

*Type: pCR For: Approval  
 33.813 v0.4.0  
 Source: Huawei, HiSilicon*

(Replaces S3-191934)

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

**S3-191935 Evaluation for solution 8**

*Type: pCR For: Approval  
 33.813 v0.4.0  
 Source: Huawei, HiSilicon*

**Discussion:**

Nokia: Complexity in gNB needs to be considered.

Qualcomm: add an editor's note on what happens when the UE changes of NG-RAN node.

**Decision:** The document was **revised to S3-192372**.

**S3-192372 evolution for solution 8**

*Type: pCR For: Approval  
 33.813 v0.4.0  
 Source: Huawei, HiSilicon*

(Replaces S3-191935)

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

**S3-191910 Adding some details to solution #10 on protecting S-NSSAI at AS layer**

*Type: pCR For: Approval  
 33.813 v0.4.0  
 Source: Qualcomm Incorporated*

**Discussion:**

Nokia didn’t find this very clear. The procedure to allocate and refresh the needed parameters needs to be clarified. An editor's note was added for this.

Interdigital: add an editor's note on the encrypted NSSAI per UE. They were also concerned on the possibility of user tracking.

**Decision:** The document was **revised to S3-192373**.

**S3-192373 Adding some details to solution #10 on protecting S-NSSAI at AS layer**

*Type: pCR For: Approval  
 33.813 v0.4.0  
 Source: Qualcomm Incorporated*

(Replaces S3-191910)

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

**S3-191816 Discussion on S-NSSAI privacy protection**

*Type: discussion For: Endorsement  
 Source: InterDigital, Inc.*

**Abstract:**

This contribution proposes a set of considerations for privacy protection of S-NSSAI.

**Discussion:**

Nokia: this increases the complexity.

ORANGE: the requirement on confidentiality protection of the NSSAI should be applied here. I prefer it to run in the RAN network. This is also adding complexity.

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

**S3-191817 Protection of S-NSSAI transmitted in the AS layer using T-S-NSSAI**

*Type: pCR For: Approval  
 33.813 v0.4.0  
 Source: InterDigital, Inc.*

**Abstract:**

This contribution proposes a solution to address Key Issue #6: Confidentiality protection of NSSAI and home control.

**Discussion:**

Qualcomm: If the S-TMSI is stationary a dictionary attack is possible. Nokia agreed.

An editor's note was agreed on this point.

An additional editor's note were added as requested by Nokia.

**Decision:** The document was **revised to S3-192374**.

**S3-192374 Protection of S-NSSAI transmitted in the AS layer using T-S-NSSAI**

*Type: pCR For: Approval  
 33.813 v0.4.0  
 Source: InterDigital, Inc.*

(Replaces S3-191817)

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

**S3-191818 Protection of S-NSSAI transmitted in the AS layer**

*Type: pCR For: Approval  
 33.813 v0.4.0  
 Source: InterDigital, Inc.*

**Abstract:**

This contribution proposes a solution to address Key Issue #6: Confidentiality protection of NSSAI and home control.

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

**S3-191826 TR 33.813 - Evaluation for Solution X - S-NSSAI transmitted in the AS layer using T-S-NSSAI**

*Type: pCR For: Approval  
 33.813 v0.4.0  
 Source: InterDigital, Inc.*

**Abstract:**

This contribution proposes an evaluation for the newly proposed solution #X to address Key Issue #6: Confidentiality protection of NSSAI and home control.

**Discussion:**

It was clarified that this evaluated tdoc 817.

ORANGE: this is still under study, as we have added editor's notes in tdoc 817. An editor's note was added to express that more evaluation was needed.

**Decision:** The document was **revised to S3-192375**.

**S3-192375 TR 33.813 - Evaluation for Solution X - S-NSSAI transmitted in the AS layer using T-S-NSSAI**

*Type: pCR For: Approval  
 33.813 v0.4.0  
 Source: InterDigital, Inc.*

(Replaces S3-191826)

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

**S3-191827 TR 33.813 - Evaluation for Solution Y - S-NSSAI transmitted in the AS layer**

*Type: pCR For: Approval  
 33.813 v0.4.0  
 Source: InterDigital, Inc.*

**Abstract:**

This contribution proposes an evaluation for the newly proposed solution #Y to address Key Issue #6: Confidentiality protection of NSSAI and home control.

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

**S3-191947 Adding text to Clause 9 Recommendations**

*Type: pCR For: Approval  
 33.813 v0.4.0  
 Source: Nokia, Nokia Shanghai Bell*

**Decision:** The document was **revised to S3-192376**.

**S3-192376 Adding text to Clause 9 Recommendations**

*Type: pCR For: Approval  
 33.813 v0.4.0  
 Source: Nokia, Nokia Shanghai Bell*

(Replaces S3-191947)

**Discussion:**

Removing the "shall"s as suggested by MCC and removing the second point.

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

**S3-191948 Draft WID for normative work on eNS.**

*Type: WID new For: Approval  
 Source: Nokia, Nokia Shangahi Bell*

**Discussion:**

Huawei: make it more generic. Vodafone preferred to have it more specific, more detailed.

ORANGE: no reference to SA2's work.

MCC commented that this was a feature, not a WID. They added that the normative CRs in 33.501 would be part of the objectives and not the justification. The SA2 work in parent WIDs table should be added in the related work items.

**Decision:** The document was **revised to S3-192377**.

**S3-192377 WID for normative work on eNS.**

*Type: WID new For: Agreement  
 Source: Nokia, Nokia Shangahi Bell*

(Replaces S3-191948)

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

**S3-192364 Draft TR 33.813**

*Type: draft TR For: Approval  
 33.813 v0.5.0  
 Source: Nokia*

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

### 8.12 Study on Security of the enhancement to the 5GC location services (FS\_eLCS\_Sec) (Rel-16)

**S3-191874 Requirement for key issue 5 in TR 33.814 (FS\_eLCS\_Sec)**

*Type: pCR For: Approval  
 33.814 v0.4.0  
 Source: Philips International B.V.*

**Abstract:**

Certain types of location services require a UE to perform measurements and report these to the network so the location of the UE can be determined by the network. A UE can report forged measurements in order to appear somewhere else to the network than i

**Discussion:**

Sprint: what about the fake measurements that are obtained by the UE but where the UE doesn't know that they are fake (e.g. spoofed messages)?

Add a statement saying that the messages faked by the source are not covered.

ESA: limit the scope of the requirement, as 5G positioning service can come from RAN dependent or RAN independent accesses.

Ericsson: the solution for this problem doesn’t need to be standardised.

Qualcomm: it's a "should" requirement and add mechanisms to ensure the reliability of the location.

Alf: clarify which part needs to be standardised.

Huawei: keep the requirement, watch the solution.

Ericsson: we need to be specific on what problem needs to be solved.

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

**S3-192069 Address EN in key issue 5**

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

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

**S3-191875 New solution to key issue 5 in TR 33.814 (FS\_eLCS\_Sec)**

*Type: pCR For: Approval  
 33.814 v0.4.0  
 Source: Philips International B.V.*

**Abstract:**

Certain types of location services require a UE to perform measurements and report these to the network so the location of the UE can be determined by the network. A UE can report forged measurements in order to appear somewhere else to the network than i

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

**S3-192070 A solution to identify UEs that provides faked/altered location estimate or measurements**

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

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

**S3-191962 pCR to TR33.814 - Key issue for the ciphering key management of broadcast assistance data**

*Type: pCR For: Approval  
 33.814 v0.4.0  
 Source: CATT*

**Discussion:**

Ericsson, Qualcomm: this is not needed.

Nokia: SA2 hasn’t decided whether the key is stored in the AMF yet. We don’t support this document.

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

**S3-191965 pCR to TR33.814 - The solution for the ciphering key management of broadcast assistance data**

*Type: pCR For: Approval  
 33.814 v0.4.0  
 Source: CATT*

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

**S3-192027 Resolving EN in KI#4**

*Type: pCR For: Approval  
 33.814 v0.4.0  
 Source: Ericsson*

**Discussion:**

Huawei: don’t remove "system".

Qualcomm: the 5GS includes the UE and the core network, we don’t need the change. The editor's note can be removed.

Alex (BT): LCS is a server-control application whereas this reads like the UE will implement the privacy and user's consent in the handset.

Qualcomm: SA2 has done this work already, no need to work on this requirement anymore. Huawei supported this.

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

**S3-191968 pCR to TR33.814 - Add reference for TR 33.814**

*Type: pCR For: Approval  
 33.814 v0.4.0  
 Source: CATT*

**Decision:** The document was **revised to S3-192359**.

**S3-192359 pCR to TR33.814 - Add reference for TR 33.814**

*Type: pCR For: Approval  
 33.814 v0.4.0  
 Source: CATT*

(Replaces S3-191968)

**Discussion:**

It Includes the content where the reference is used.

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

**S3-191969 pCR to TR33.814 - Addition of definition and abbreviation**

*Type: pCR For: Approval  
 33.814 v0.4.0  
 Source: CATT*

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

**S3-191966 pCR to TR33.814 - The analysis of security architecture of eLCS**

*Type: pCR For: Approval  
 33.814 v0.4.0  
 Source: CATT*

**Discussion:**

Ericsson didn’t agree with this.

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

**S3-191967 pCR to TR33.814 - Conclusions for TR33.814**

*Type: pCR For: Approval  
 33.814 v0.4.0  
 Source: CATT*

**Discussion:**

Huawei: let's go through the evaluations first before approving this conclusion.

Alex (BT): the second point should be something like "no new mechanisms are needed".

Dependent on tdoc 2076.

**Decision:** The document was **revised to S3-192362**.

**S3-192362 pCR to TR33.814 - Conclusions for TR33.814**

*Type: pCR For: Approval  
 33.814 v0.4.0  
 Source: CATT*

(Replaces S3-191967)

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

**S3-192024 Conclusion on KI#1 (bluetooth positioning)**

*Type: pCR For: Approval  
 33.814 v0.4.0  
 Source: Ericsson*

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

**S3-192025 Conclusion on KI#2 (TBS positioning)**

*Type: pCR For: Approval  
 33.814 v0.4.0  
 Source: Ericsson*

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

**S3-192026 Conclusion on KI#3 (WLAN positioning)**

*Type: pCR For: Approval  
 33.814 v0.4.0  
 Source: Ericsson*

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

**S3-192076 Add evualtion to solution 4**

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

**Discussion:**

Alex (BT): we have to assume that the serving network is behaving.

This and other remarks were added into the evaluation.

**Decision:** The document was **revised to S3-192361**.

**S3-192361 Add evualtion to solution 4**

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

(Replaces S3-192076)

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

**S3-192028 Conclusion on KI#4 (privacy control)**

*Type: pCR For: Approval  
 33.814 v0.4.0  
 Source: Ericsson*

**Discussion:**

Huawei, Qualcomm didn’t agree as it was covered by SA2 already.

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

**S3-192360 Draft TR 33.814**

*Type: draft TR For: Approval  
 33.814 v0.5.0  
 Source: CATT*

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

### 8.13 Study on security for 5G URLLC (FS\_5G URLLC\_SEC) (Rel-16)

**S3-192123 Remove the paragraph of Introduction**

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

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

**S3-192124 Remove the unnecessary ENs of Key issue part**

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

**Discussion:**

ORANGE: removing the last editor's note is not editorial.

**Decision:** The document was **revised to S3-192345**.

**S3-192345 Remove the unnecessary ENs of Key issue part**

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

(Replaces S3-192124)

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

**S3-191994 URLLC: Table with available solutions in the TR**

*Type: pCR For: Approval  
 33.825 v0.5.0  
 Source: Ericsson*

**Decision:** The document was **revised to S3-192346**.

**S3-192346 URLLC: Table with available solutions in the TR**

*Type: pCR For: Approval  
 33.825 v0.5.0  
 Source: Ericsson*

(Replaces S3-191994)

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

**S3-191894 Evaluation text for solution #5 in TR 33.825**

*Type: pCR For: Approval  
 33.825 v1.0.0  
 Source: NEC Europe Ltd*

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

**S3-191913 Evaluation of solution #5: Security for redundant data transmission**

*Type: pCR For: Approval  
 33.825 v0.5.0  
 Source: Qualcomm Incorporated, Ericsson, Nokia*

**Decision:** The document was **revised to S3-192347**.

**S3-192347 Evaluation of solution #5: Security for redundant data transmission**

*Type: pCR For: Approval  
 33.825 v0.5.0  
 Source: Qualcomm Incorporated, Ericsson, Nokia*

(Replaces S3-191913)

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

**S3-191914 Conclusion on KI #1 for Study on the security for URLLC**

*Type: pCR For: Approval  
 33.825 v0.5.0  
 Source: Qualcomm Incorporated, Ericsson, Nokia*

**Discussion:**

Discussed together with tdoc 2120.

**Decision:** The document was **revised to S3-192348**.

**S3-192348 Conclusion on KI #1 for Study on the security for URLLC**

*Type: pCR For: Approval  
 33.825 v0.5.0  
 Source: Qualcomm Incorporated, Ericsson, Nokia,Huawei*

(Replaces S3-191914)

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

**S3-192120 Deleting the EN of conclusion 7.1**

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

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

**S3-191915 Conclusion on KI #2 for Study on the security for URLLC**

*Type: pCR For: Approval  
 33.825 v0.5.0  
 Source: Qualcomm Incorporated, Ericsson, Nokia*

**Discussion:**

Discussed together with tdoc 2122.

Huawei: make it more generic, not only over-the-air.

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

**S3-192122 conclusion for key issue 2**

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

**Decision:** The document was **revised to S3-192349**.

**S3-192349 conclusion for key issue 2**

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

(Replaces S3-192122)

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

**S3-191993 URLLC: Recommendation for KI#3**

*Type: pCR For: Approval  
 33.825 v0.5.0  
 Source: Ericsson*

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

**S3-192119 conclusion for key issue 3**

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

**Decision:** The document was **revised to S3-192357**.

**S3-192357 conclusion for key issue 3**

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

(Replaces S3-192119)

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

**S3-192121 Deleting the EN of conclusion 7.4**

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

**Decision:** The document was **revised to S3-192358**.

**S3-192358 Deleting the EN of conclusion 7.4**

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

(Replaces S3-192121)

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

**S3-192344 Draft TR 33.825**

*Type: draft TR For: Approval  
 33.825 v1.1.0  
 Source: Huawei*

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

### 8.14 Study on SECAM and SCAS for 3GPP virtualized network products (FS\_VNP\_SECAM\_SCAS) (Rel-16)

**S3-192183 Meeting notes of NFV SCAS conf call**

*Type: other For: (not specified)  
 Source: China Mobile*

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

**S3-192048 Scope of a SECAM SCAS for 3GPP virtualized network products**

*Type: pCR For: Approval  
 33.818 v0.2.0  
 Source: China Mobile, Nokia, Nokia Shanghai Bell*

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

**S3-192062 Scope of SECAM evaluation for 3GPP virtualized network products**

*Type: pCR For: Approval  
 33.818 v0.2.0  
 Source: China Mobile, Nokia, Nokia Shanghai Bell*

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

**S3-192063 Scope of SECAM Accreditation for 3GPP virtualized network products**

*Type: pCR For: Approval  
 33.818 v0.2.0  
 Source: China Mobile*

**Discussion:**

Alex (BT) disagreed. This is outside of the scope of the 3GPP, and he didn’t agree with the new text in the gap analysis.

An editor's note was added on the evaluation of the differences between the two types of network classes for accreditation purposes.

**Decision:** The document was **revised to S3-192436**.

**S3-192436 Scope of SECAM Accreditation for 3GPP virtualized network products**

*Type: pCR For: Approval  
 33.818 v0.2.0  
 Source: China Mobile*

(Replaces S3-192063)

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

**S3-192064 Adding roles in SECAM for 3GPP virtualized network products into clause 4.6**

*Type: pCR For: Approval  
 33.818 v0.2.0  
 Source: China Mobile, Nokia, Nokia Shanghai Bell*

**Discussion:**

Alex (BT): more of an answer, not a real gap analysis. The text doesn’t fit the title.

ORANGE: the text needs a language check.

ORANGE: remove the last clause.

Added a new editor's note on further analysis needed as well.

**Decision:** The document was **revised to S3-192437**.

**S3-192437 Adding roles in SECAM for 3GPP virtualized network products into clause 4.6**

*Type: pCR For: Approval  
 33.818 v0.2.0  
 Source: China Mobile, Nokia, Nokia Shanghai Bell*

(Replaces S3-192064)

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

**S3-192127 Adding contents into clause 4**

*Type: pCR For: Approval  
 33.818 v0.2.0  
 Source: China Mobile*

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

**S3-192128 Adding writing process overview into clause 5.1**

*Type: pCR For: Approval  
 33.818 v0.2.0  
 Source: China Mobile, Nokia, Nokia Shanghai Bell*

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

**S3-192129 Adding general description and ToE into clause 5.2.1 and 5.2.2**

*Type: pCR For: Approval  
 33.818 v0.2.0  
 Source: China Mobile*

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

**S3-192061 Scope of SECAM evaluation for 3GPP virtualized network products**

*Type: pCR For: (not specified)  
 33.818 v0.2.0  
 Source: China Mobile, Nokia, Nokia Shanghai Bell*

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

**S3-192435 Draft TR 33.818**

*Type: draft TR For: Approval  
 33.818 v0.3.0  
 Source: China Mobile*

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

### 8.15 Study on Security for 5GS Enhanced support of Vertical and LAN Services (FS\_Vertical\_LAN\_SEC) (Rel-16)

**S3-191901 Security for non-public networks**

*Type: draftCR For: Approval  
 33.501 v15.5.0  
 Source: Qualcomm Incorporated, Nokia, Nokia Shanghai Bell*

**Discussion:**

ORANGE needed more differentiation between non-standalone and standalone networks. This had to be taken offline.

**Decision:** The document was **revised to S3-192453**.

**S3-192453 Security for non-public networks**

*Type: draftCR For: Approval  
 33.501 v15.5.0  
 Source: Qualcomm Incorporated, Nokia, Nokia Shanghai Bell*

(Replaces S3-191901)

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

**S3-191902 Proposed conclusion details for key issue #1.1 in TR 33.819**

*Type: pCR For: Approval  
 33.819 v1.0.0  
 Source: Qualcomm Incorporated, Nokia, Nokia Shanghai Bell*

(Replaces S3-191496)

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

**S3-192050 Cleaning of 33819-040**

*Type: pCR For: Approval  
 33.819 v0.4.0  
 Source: Nokia, Nokia Shanghai Bell*

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

**S3-192049 TR terminology**

*Type: discussion For: Endorsement  
 33.819 v..  
 Source: Nokia, Nokia Shanghai Bell*

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

**S3-192051 Headline clash in TR resolved**

*Type: pCR For: Approval  
 33.819 v0.4.0  
 Source: Nokia, Nokia Shanghai Bell*

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

**S3-191820 Solution for (D)DoS attack mitigation in PNI NPN**

*Type: pCR For: Approval  
 33.819 v1.0.0  
 Source: InterDigital, Inc.*

**Abstract:**

This contribution proposes a solution to address key issue #6.1: (D)DoS attack in Public network integrated Non-Public Networks.

**Discussion:**

Huawei: not in the scope of 3GPP.

Qualcomm disagreed, as CAG ID was not long enough for them.

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

**S3-191821 Solution for (D)DoS attack mitigation in PNI NPN**

*Type: pCR For: Approval  
 33.819 v1.0.0  
 Source: InterDigital, Inc.*

**Abstract:**

This contribution proposes a solution to address key issue #6.3: (D)DoS attack in Public network integrated Non-Public Networks.

**Discussion:**

Huawei: not in the scope of SA3. It is not a security solution.

The Chair commented that there was a key issue about this.

Nokia supported Interdigital, they considered it within scope.

**Decision:** The document was **revised to S3-192341**.

**S3-192341 Solution for (D)DoS attack mitigation in PNI NPN**

*Type: pCR For: Approval  
 33.819 v1.0.0  
 Source: InterDigital, Inc.*

(Replaces S3-191821)

**Discussion:**

Adding an editor's note in the evaluation addressing Ericsson's comment (FFS for the case of one CAG ID is left).

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

**S3-191815 Evaluation for solution for (D)DoS attack mitigation in PNI NPN for KI#6.1**

*Type: pCR For: Approval  
 33.819 v1.0.0  
 Source: InterDigital, Inc.*

**Abstract:**

This contribution proposes an evaluation for the solution "(D)DoS attack mitigation in PNI NPN" for key issue #6.1: "(D)DoS attack in Public network integrated Non-Public Networks" how it addresses the KI potential requirements.

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

**S3-192217 Resolution of Editor’s note in Solution #3**

*Type: pCR For: Approval  
 33.819 v1.0.0  
 Source: Samsung*

**Discussion:**

Ericsson: It doesn’t remove the privacy concern for this solution.

It was agreed to reword the editor's note to make it a note.

**Decision:** The document was **revised to S3-192342**.

**S3-192342 Resolution of Editor’s note in Solution #3**

*Type: pCR For: Approval  
 33.819 v1.0.0  
 Source: Samsung*

(Replaces S3-192217)

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

**S3-192216 Conclusion to Key Issue #6.1**

*Type: pCR For: Approval  
 33.819 v1.0.0  
 Source: Samsung*

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

**S3-192195 TR 33.819 – KI #6.2 – Threats and Requirements**

*Type: pCR For: Approval  
 33.819 v1.0.0  
 Source: InterDigital, Inc.*

(Replaces S3-191828)

**Abstract:**

This contribution proposes Threats and Requirements for Key Issue #6.2: CAG ID Privacy. This contribution replaces previously submitted S3-191828 and fixes typos in it.

**Discussion:**

Discussed together with tdoc 974.

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

**S3-191974 Security threats and requirements on CAG ID privacy**

*Type: pCR For: Approval  
 33.819 v0.4.0  
 Source: ZTE Corporation*

**Decision:** The document was **revised to S3-192343**.

**S3-192343 Security threats and requirements on CAG ID privacy**

*Type: pCR For: Approval  
 33.819 v0.4.0  
 Source: ZTE Corporation,Interdigital*

(Replaces S3-191974)

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

**S3-191973 CAG ID privacy**

*Type: discussion For: Discussion  
 33.819 v..  
 Source: ZTE Corporation*

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

**S3-191900 Proposed solution to key issue 6.3 on modifying the CAG list**

*Type: pCR For: Approval  
 33.819 v1.0.0  
 Source: Qualcomm Incorporated*

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

**S3-192060 Secure device identity creation for UEs in SNPNs**

*Type: pCR For: Endorsement  
 33.819 v0.4.0  
 Source: Nokia, Nokia Shanghai Bell*

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

**S3-192059 Key issue on Secure device identity creation for constrained devices**

*Type: pCR For: Approval  
 33.819 v0.4.0  
 Source: Nokia, Nokia Shanghai Bell*

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

**S3-191895 New Key Issue on Identification of Multiple NPN Subscriptions**

*Type: pCR For: Approval  
 33.819 v1.0.0  
 Source: NEC Europe Ltd*

**Discussion:**

ORANGE: subscription to several PLMNs doesn’t mean that you are connected to all of them at the same time. The number of valid active contexts here does not correspond to what's agreed in SA2.

Qualcomm: it's possible to have multiple subscriptions although is not standardized. This contribution on the other hand is out of scope of SA3.

Interdigital was in favour of the contribution although with an editor's note.

Ericsson didn't find this necessary either. Qualcomm, IDEMIA didn’t support it either.

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

**S3-191896 Solution for Identification and Selection of Multiple NPN Subscriptions**

*Type: pCR For: Approval  
 33.819 v1.0.0  
 Source: NEC Europe Ltd*

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

**S3-191897 New Key Issue on separation and storage of multiple NPN credentials**

*Type: pCR For: Approval  
 33.819 v1.0.0  
 Source: NEC Europe Ltd*

**Discussion:**

ORANGE: we have decided not to handle the storage of security credentials. QUALCOMM, Gemalto agreed.

NEC: the intent is different, it's about how to store.

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

**S3-191898 Solution for separation of multiple NPN credentials**

*Type: pCR For: Approval  
 33.819 v1.0.0  
 Source: NEC Europe Ltd*

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

**S3-191819 Evaluation for solution #4**

*Type: pCR For: Approval  
 33.813 v0.4.0  
 Source: InterDigital, Inc.*

**Abstract:**

This contribution proposes an evaluation to Solution #4: “Solution for Slice Specific Authentication and Authorization with multiple registrations in the same PLMN"

**Decision:** The document was **revised to S3-192260**.

**S3-191828 TR 33.819 – KI #6.2 – Threats and Requirements**

*Type: pCR For: Approval  
 33.819 v1.0.0  
 Source: InterDigital, Inc.*

**Abstract:**

This contribution proposes Threats and Requirements for Key Issue #6.2: CAG ID Privacy.

**Decision:** The document was **revised to S3-192195**.

**S3-192340 Draft TR 33.819**

*Type: draft TR For: Approval  
 33.819 v1.1.0  
 Source: Nokia*

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

### 8.16 Study on LTKUP Detailed solutions (FS\_LTKUP\_Detail) (Rel-16)

**S3-192009 pCR to TR33.935 - Addition of Diffie - Helman Key agreements section**

*Type: pCR For: Agreement  
 33.935 v0.1.0  
 Source: VODAFONE Group Plc*

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

### 8.17 Study on User Plane Integrity Protection (FS\_UP\_IP\_Sec) (Rel-16)

**S3-191880 Proposal for FS\_UP\_IP\_Sec Key Issue #3 and 5: Zero-overhead user plane integrity protection on the link layer**

*Type: pCR For: Approval  
 33.853 v0.3.0  
 Source: Philips International B.V.*

**Abstract:**

This contribution proposes a new solution for key issue #3: "UE support of UP IP at the full uplink data rate" and key issue #5: "Optionality of integrity protection in UP DRB".

Despite the information from the "Response LS on full data rate support for U

**Discussion:**

Ericsson: this was already noted and our opinion is the same.

Vodafone: this is technically correct and I see no reason not to document this solution.

Qualcomm agreed with Ericsson. There were technical comments that haven’t been addressed.

Philips: Technical comments have been taken care of.

Nokia, Futurewei: remove the evaluation.

Nokia: it affects multiple protocol stacks, PHY and MAC for sure. Add an editor's note on this.

Qualcomm proposed several editor's notes to record their concerns.

**Decision:** The document was **revised to S3-192422**.

**S3-192422 Proposal for FS\_UP\_IP\_Sec Key Issue #3 and 5: Zero-overhead user plane integrity protection on the link layer**

*Type: pCR For: Approval  
 33.853 v0.3.0  
 Source: Philips International B.V.*

(Replaces S3-191880)

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

**S3-191899 New solution for KI #4**

*Type: pCR For: Approval  
 33.853 v0.3.0  
 Source: NEC Europe Ltd*

**Discussion:**

Qualcomm: too much high level. More detail is needed. An editor's note was added to detail this better in the future.

Telecom Italia: I don’t understand bullet 3 in 6.x.3.

**Decision:** The document was **revised to S3-192423**.

**S3-192423 New solution for KI #4**

*Type: pCR For: Approval  
 33.853 v0.3.0  
 Source: NEC Europe Ltd*

(Replaces S3-191899)

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

**S3-192036 UP IP: New key issue for UE indicating support of UP IP in NR PDCP with a ng-eNB connected to 5GC**

*Type: pCR For: Approval  
 33.853 v0.3.0  
 Source: Ericsson*

**Discussion:**

Qualcomm: we need the key issue but it is valid for all options except option 2. Remove all references to NR PDCP, it should be E-UTRAN.

Qualcomm: clarify what UE we are talking about in the requirement.

**Decision:** The document was **revised to S3-192425**.

**S3-192425 UP IP: New key issue for UE indicating support of UP IP in NR PDCP with a ng-eNB connected to 5GC**

*Type: pCR For: Approval  
 33.853 v0.3.0  
 Source: Ericsson*

(Replaces S3-192036)

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

**S3-192131 New solution: Integrity Protection of packet header in the User Plane**

*Type: pCR For: Approval  
 33.853 v0.3.0  
 Source: China Mobile*

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

**S3-192132 New solution: Integrity Protection of packet header in the User Plane**

*Type: pCR For: Approval  
 33.853 v0.3.0  
 Source: China Mobile*

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

**S3-192133 New solution: Integrity Protection of packet header in the User Plane**

*Type: pCR For: Approval  
 33.853 v0.3.0  
 Source: China Mobile*

**Discussion:**

Nokia, Qualcomm: this is not feasible.

Left open for offline discussions.

**Decision:** The document was **revised to S3-192455**.

**S3-192455 New solution: Integrity Protection of packet header in the User Plane**

*Type: pCR For: Approval  
 33.853 v0.3.0  
 Source: China Mobile*

(Replaces S3-192133)

**Discussion:**

The evaluation was removed and an editor's note added as proposed by Qualcomm.

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

**S3-192203 Evaluation of Solution#1**

*Type: pCR For: Approval  
 33.853 v0.3.0  
 Source: Samsung*

**Discussion:**

Ericsson: remove "completely".

Qualcomm: your solution only protects DNS queries. It doesn’t address the attacks due to lack of integrity protection.

Apple: remove the last sentence.

**Decision:** The document was **revised to S3-192426**.

**S3-192426 Evaluation of Solution#1**

*Type: pCR For: Approval  
 33.853 v0.3.0  
 Source: Samsung*

(Replaces S3-192203)

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

**S3-192205 Conclusion to Key Issue #5**

*Type: pCR For: Approval  
 33.853 v0.3.0  
 Source: Samsung*

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

**S3-192424 Draft TR 33.853**

*Type: draft TR For: Approval  
 33.853 v0.4.0  
 Source: Vodafone*

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

### 8.18 Study on Security Impacts of Virtualisation (FS\_SIV) (Rel-16)

**S3-191849 Virtualisation Study Conf Call Output**

*Type: pCR For: Approval  
 33.848 v0.1.1  
 Source: BT plc*

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

**S3-191850 pCR Virtualisation Study Key Issue 10 Merger with Key issue 1 (was S3-191569)**

*Type: pCR For: Approval  
 33.848 v0.1.1  
 Source: BT plc*

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

**S3-191851 Virtualisation Study Key Issue 11 (was S3-191570)**

*Type: pCR For: Approval  
 33.848 v0.1.1  
 Source: BT plc*

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

**S3-191852 Virtualisation Study Key Issue 12 (was S3-191571)**

*Type: pCR For: Approval  
 33.848 v0.1.1  
 Source: BT plc*

**Decision:** The document was **revised to S3-192368**.

**S3-192368 Virtualisation Study Key Issue 12 (was S3-191571)**

*Type: pCR For: Approval  
 33.848 v0.1.1  
 Source: BT plc*

(Replaces S3-191852)

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

**S3-191853 Virtualisation Study Key Issue 19 (was S3-191580)**

*Type: pCR For: Approval  
 33.848 v0.1.1  
 Source: BT plc*

**Decision:** The document was **revised to S3-192395**.

**S3-192395 Virtualisation Study Key Issue 19 (was S3-191580)**

*Type: pCR For: Approval  
 33.848 v0.1.1  
 Source: BT plc*

(Replaces S3-191853)

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

**S3-191854 Virtualisation Study Key Issue 20 (was S3-191581)**

*Type: pCR For: Approval  
 33.848 v0.1.1  
 Source: BT plc*

**Decision:** The document was **revised to S3-192446**.

**S3-192446 Virtualisation Study Key Issue 20 (was S3-191581)**

*Type: pCR For: Approval  
 33.848 v0.1.1  
 Source: BT plc*

(Replaces S3-191854)

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

**S3-191855 Virtualisation Study Key Issue 21 (was S3-191582)**

*Type: pCR For: Approval  
 33.848 v0.1.1  
 Source: BT plc*

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

**S3-191856 Virtualisation Study Key Issue 22 (was S3-191583)**

*Type: pCR For: Approval  
 33.848 v0.1.1  
 Source: BT plc*

**Decision:** The document was **revised to S3-192396**.

**S3-192396 Virtualisation Study Key Issue 22 (was S3-191583)**

*Type: pCR For: Approval  
 33.848 v0.1.1  
 Source: BT plc*

(Replaces S3-191856)

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

**S3-191857 Virtualisation Study Key Issue 23 (was S3-191583)**

*Type: pCR For: Approval  
 33.848 v0.1.1  
 Source: BT plc*

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

**S3-191858 Virtualisation Study Key Issue 24 (was S3-191585)**

*Type: pCR For: Approval  
 33.848 v0.1.1  
 Source: BT plc*

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

**S3-191859 Virtualisation Study Key Issue 25 (was S3-191587)**

*Type: pCR For: Approval  
 33.848 v0.1.1  
 Source: BT plc*

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

**S3-192445 Draft TR 33.848**

*Type: draft TR For: Approval  
 33.848 v0.2.0  
 Source: BT*

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

### 8.19 Study on authentication enhancements in 5GS (FS\_AUTH\_ENH) (Rel-16)

**S3-191977 Modification on linkability issue1**

*Type: pCR For: Approval  
 33.846 v0.1.0  
 Source: ZTE Corporation*

**Discussion:**

Vodafone: why the change in the clause numbering?

Zte: just correcting a mistake.

Vodafone: why is the requirement deleted?

ZTE: this was hard to achieve.

Gemalto: no need to remove the requirement.

Vodafone: the new text needs rewriting.

**Decision:** The document was **revised to S3-192431**.

**S3-192431 Modification on linkability issue1**

*Type: pCR For: Approval  
 33.846 v0.1.0  
 Source: ZTE Corporation*

(Replaces S3-191977)

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

**S3-191927 A key issue on forward secrecy**

*Type: pCR For: Approval  
 33.846 v0.1.0  
 Source: Huawei, HiSilicon*

**Discussion:**

Vodafone: LTKUP mitigates this in a separate study.

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

**S3-191996 Co-existence of LTKUP and PFS**

*Type: discussion For: Discussion  
 33.846 v..  
 Source: Ericsson*

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

**S3-191997 New KI: Leakage of long-term key**

*Type: pCR For: Approval  
 33.846 v0.1.0  
 Source: Ericsson*

**Discussion:**

Vodafone: very improbable case which will require a substantial amount of work. ORANGE supported this.

Alex (BT): the only way of attacking here would be not to secure the UDR.

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

**S3-191907 Key issue on protecting the SQN during a re-synchronisation procedure in AKA**

*Type: pCR For: Approval  
 33.846 v0.1.0  
 Source: Qualcomm Incorporated*

**Discussion:**

NCSC supported Qualcomm. Apple supported the solution.

It was agreed to modify the requirement to replace void with "should protect against the effect of".

Qualcomm commented that this meant updating the SID since it was very specific in its scope. This could be done for the next meeting.

**Decision:** The document was **revised to S3-192433**.

**S3-192433 Key issue on protecting the SQN during a re-synchronisation procedure in AKA**

*Type: pCR For: Approval  
 33.846 v0.1.0  
 Source: Qualcomm Incorporated*

(Replaces S3-191907)

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

**S3-192147 New KI: KAUSF storing at UE side**

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

**Discussion:**

Ericsson: not in scope.

Qualcomm also disagreed with this.

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

**S3-192185 Updating UDM with UE registration status**

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

**Discussion:**

Ericsson: not in the scope of the study.

Apple: requirements look like solutions.

Qualcomm: not in the scope of the study.

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

**S3-191963 Solution for anchor keys security**

*Type: pCR For: Approval  
 33.846 v0.1.0  
 Source: Gemalto N.V.*

**Abstract:**

Solution for anchor keys security

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

**S3-192188 Discussion paper UE initiated PFS**

*Type: discussion For: Discussion  
 33.846 v..  
 Source: Nokia, Nokia Shanghai bell*

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

**S3-191998 New solution: EAP-AKA´ PFS**

*Type: pCR For: Approval  
 33.846 v0.1.0  
 Source: Ericsson*

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

**S3-191928 A solution to forward secrecy**

*Type: pCR For: Approval  
 33.846 v0.1.0  
 Source: Huawei, HiSilicon*

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

**S3-192191 pCR UE initiated PFS**

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

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

**S3-191975 Structure RAND for authentication**

*Type: pCR For: Approval  
 33.846 v0.1.0  
 Source: ZTE Corporation*

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

**S3-191964 Mitigation against linkability issue**

*Type: pCR For: Approval  
 33.846 v0.1.0  
 Source: Gemalto N.V.*

**Abstract:**

Solution to mitigate linkability attack

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

**S3-191976 Handling of Sync failure**

*Type: pCR For: Approval  
 33.846 v0.1.0  
 Source: ZTE Corporation*

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

**S3-191908 Using MACS to provide freshness for the protection of SQN during a re-synchronisation procedure in AKA**

*Type: pCR For: Approval  
 33.846 v0.1.0  
 Source: Qualcomm Incorporated*

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

**S3-192066 mitigate the linkability attack**

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

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

**S3-192144 New solution for the linkability attack**

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

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

**S3-191978 Conclusion on linkability issues**

*Type: pCR For: Approval  
 33.846 v0.1.0  
 Source: ZTE Corporation*

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

**S3-192432 Draft TR 33.846**

*Type: draft TR For: Approval  
 33.846 v0.2.0  
 Source: Ericsson*

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

### 8.20 Study on Security for NR Integrated Access and Backhaul (FS\_NR\_IAB\_Sec)

**S3-192074 KI on protection of F1-U**

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

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

**S3-192075 KI on topology discovery**

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

**Discussion:**

Nokia: configuration issue, this topology discovery is not needed.

It was agreed to remove the requirement.

**Decision:** The document was **revised to S3-192405**.

**S3-192405 KI on topology discovery**

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

(Replaces S3-192075)

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

**S3-192029 New KI: Protection of recovery from backhaul-RLF**

*Type: pCR For: Approval  
 33.824 v0.2.0  
 Source: Ericsson*

**Discussion:**

Futurewei: Why is RLF recovery mechanism signalled?

Ericsson: this is done below F1 interface IPSec.

Futurewei: remove security threats and requirements. Add "reference to transportation layer for RLF recovery messages is FFS".

Samsung: communication between the nodes to be confirmed with RAN2.

**Decision:** The document was **revised to S3-192407**.

**S3-192407 New KI: Protection of recovery from backhaul-RLF**

*Type: pCR For: Approval  
 33.824 v0.2.0  
 Source: Ericsson*

(Replaces S3-192029)

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

**S3-192030 New solution: Secure recovery from backhaul-RLF**

*Type: pCR For: Approval  
 33.824 v0.2.0  
 Source: Ericsson*

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

**S3-192031 Update to solution #2.1 (Authentication and authorization of IAB Node)**

*Type: pCR For: Approval  
 33.824 v0.2.0  
 Source: Ericsson*

**Discussion:**

ORANGE: IAB nodes are authenticated to the Home network, into the UDM. IAB nodes are like Ues but the storage is not handled at all. The credentials for the IAB node are handled like the UE? This is not mentioned here.

Futurewei: why are not we referencing the clauses and now it's the whole specification?

Samsung supported this.

Telecom Italia: why are the other clauses of other specifications staying?

**Decision:** The document was **revised to S3-192408**.

**S3-192408 Update to solution #2.1 (Authentication and authorization of IAB Node)**

*Type: pCR For: Approval  
 33.824 v0.2.0  
 Source: Ericsson*

(Replaces S3-192031)

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

**S3-192032 New solution on authentication and authorization of IAB Node in 5G**

*Type: pCR For: Approval  
 33.824 v0.2.0  
 Source: Ericsson*

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

**S3-192200 Updates on IAB Node authentication and authorization solution**

*Type: pCR For: Approval  
 33.824 v0.2.0  
 Source: Samsung*

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

**S3-192202 Establishment of F1 security association using Shared Key**

*Type: pCR For: Approval  
 33.824 v0.2.0  
 Source: Samsung*

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

**S3-191918 Evaluation of solution #4.1: F1 interface security for IAB**

*Type: pCR For: Approval  
 33.824 v0.2.0  
 Source: Qualcomm Incorporated*

**Decision:** The document was **revised to S3-192414**.

**S3-192414 Evaluation of solution #4.1: F1 interface security for IAB**

*Type: pCR For: Approval  
 33.824 v0.2.0  
 Source: Qualcomm Incorporated*

(Replaces S3-191918)

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

**S3-191919 Conclusion of KI #4.1: F1 interface security for IAB**

*Type: pCR For: Approval  
 33.824 v0.2.0  
 Source: Qualcomm Incorporated*

**Discussion:**

Huawei: too early to reach a conclusion.

Samsung: we support this contribution. AT&T as well as they believed this needed to be finished in a timely manner.

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

**S3-192406 Draft TR 33.824**

*Type: draft TR For: Approval  
 33.824 v0.3.0  
 Source: Samsung*

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

### 8.21 Study on Security Aspects of 3GPP support for Advanced V2X Services (FS\_eV2X\_Sec)

**S3-191822 Solution for Privacy protection for unicast messages over PC5**

*Type: pCR For: Approval  
 33.836 v0.1.0  
 Source: InterDigital, Inc.*

**Abstract:**

This contribution proposes a solution to address Key Issue #1: Privacy protection for unicast messages over PC5.

**Discussion:**

LG: more explanation about Kd session ID is needed. Add an editor's note on this. This was agreed.

Editor's note: protection of messages; more explanation is needed.

Editor's note on why the number of messages is different from SA2 spec (2 instead of 3).

MCC: Reformulate NOTE not to mention SA2 but refer to stage 2 work.

**Decision:** The document was **revised to S3-192415**.

**S3-192415 Solution for Privacy protection for unicast messages over PC5**

*Type: pCR For: Approval  
 33.836 v0.1.0  
 Source: InterDigital, Inc.*

(Replaces S3-191822)

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

**S3-191823 Solution for Security for eV2X unicast messages over PC5**

*Type: pCR For: Approval  
 33.836 v0.1.0  
 Source: InterDigital, Inc.*

**Abstract:**

This contribution proposes a solution to address Key Issue #2: Security for eV2X unicast messages over PC5.

**Discussion:**

LG: there is no ProSe for NR yet.

Qualcomm proposed another editor's note for comparison with SA2's procedures.

**Decision:** The document was **revised to S3-192417**.

**S3-192417 Solution for Security for eV2X unicast messages over PC5**

*Type: pCR For: Approval  
 33.836 v0.1.0  
 Source: InterDigital, Inc.*

(Replaces S3-191823)

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

**S3-191824 Solution for Security for eV2X unicast messages over PC5**

*Type: pCR For: Approval  
 33.836 v0.1.0  
 Source: InterDigital, Inc.*

**Abstract:**

This contribution proposes a solution to address Key Issue #2: Security for eV2X unicast messages over PC5.

**Decision:** The document was **revised to S3-192418**.

**S3-192418 Solution for Security for eV2X unicast messages over PC5**

*Type: pCR For: Approval  
 33.836 v0.1.0  
 Source: InterDigital, Inc.*

(Replaces S3-191824)

**Discussion:**

Adding several editor's notes addressing comments from Qualcomm among others.

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

**S3-191825 Solution for Privacy protection for unicast messages over PC5 using rekeying**

*Type: pCR For: (not specified)  
 33.836 v0.1.0  
 Source: InterDigital, Inc.*

**Abstract:**

This contribution proposes a solution to address Key Issue #1: Privacy protection for unicast messages over PC5.

**Discussion:**

Qualcomm proposed an editor's note on integrity protection of SMC being cyphered causing an impact. This was agreed.

**Decision:** The document was **revised to S3-192419**.

**S3-192419 Solution for Privacy protection for unicast messages over PC5 using rekeying**

*Type: pCR For: -  
 33.836 v0.1.0  
 Source: InterDigital, Inc.*

(Replaces S3-191825)

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

**S3-191957 Update of key issue #2 on PC5 unicast mode**

*Type: pCR For: Approval  
 33.836 v0.1.0  
 Source: LG Electronics*

**Discussion:**

Qualcomm: rewording of requirements would be beneficial.

**Decision:** The document was **revised to S3-192420**.

**S3-192420 Update of key issue #2 on PC5 unicast mode**

*Type: pCR For: Approval  
 33.836 v0.1.0  
 Source: LG Electronics*

(Replaces S3-191957)

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

**S3-191958 Solution for security of V2X service authorisation**

*Type: pCR For: Approval  
 33.836 v0.1.0  
 Source: LG Electronics*

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

**S3-191959 Discussion on the reply LS for PC5 unicast groupcast security protection**

*Type: discussion For: Discussion  
 33.836 v..  
 Source: LG Electronics*

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

**S3-191960 Reply LS on PC5 unicast and groupcast security protection**

*Type: LS out For: Approval  
 to SA2, cc RAN2  
 Source: LG Electronics*

**Decision:** The document was **revised to S3-192421**.

**S3-192421 Reply LS on PC5 unicast and groupcast security protection**

*Type: LS out For: Approval  
 to SA2, cc RAN2  
 Source: LG Electronics*

(Replaces S3-191960)

**Discussion:**

Taking comments from Interdigitals contribution in 2257.

It was clarified that the original LS from SA2 had been replied already, so for database purposes this was a new LS instead of a reply.

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

**S3-192257 Comments to S3-191960 [DRAFT] LS on PC5 unicast and groupcast security protection**

*Type: LS out For: Approval  
 to SA2, cc RAN2  
 Source: InterDigital, Inc.*

**Abstract:**

This contribution proposes comments to S3-191960 [DRAFT] Reply LS on PC5 unicast and groupcast security protection.

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

**S3-192416 Draft TR 33.836**

*Type: draft TR For: Approval  
 33.836 v0.2.0  
 Source: LG*

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

### 8.22 Other study areas

### 8.23 New study item proposals

**S3-191970 New SID on Study on user plane security termination point in 5GC**

*Type: SID new For: Approval  
 Source: CATT, China Unicom, Qihoo360*

**Discussion:**

ORANGE: UP protection protect the data sent over the air only. Is this protection to be built on top of the current protection or to be a replacement?

If it's a replacement, we need to see how and who's providing the keys and this has legal implications. I don’t think we are going anywhere with this.

Qualcomm: it would be part of the study.

Vodafone: EN-DC already does this.

Qualcomm: there is a need for this, and it's not intended to be a replacement. Solutions should be restricted to the UPF. If this is the case we will support.

Huawei: this may not meeting LI requirements. It's problematic.

Nokia: this was studied in SA2 in CIoT. They didn't go along with these proposals for Rel-16. Work should start in SA2 and then we will follow.

Alf (Docomo): I don’t see the problem with LI. I don’t think there is time for this now and this is a proposal for Rel-17. I disagree with having SA2 starting the job.

ORANGE and Huawei objected to this.

Interdigital and Qualcomm conditionally supported this.

The Chair wondered if it was appropriate to start bringing Rel-17 WIDs at this stage where priority relied on Rel-16 work.

Eventually this was noted.

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

**S3-192356 New SID on Study on user plane security termination point in 5GC**

*Type: SID new For: Approval  
 Source: CATT, China Unicom, Qihoo360*

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

## 9 Work Plan and Rapporteur Input

### 9.1 Review of work plan

**S3-191802 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

**S3-191805 Work Plan input from Rapporteurs**

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

**Discussion:**

To be done next meeting.

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

## 10 Future Meeting Dates and Venues

**S3-191804 SA3 meeting calendar**

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

**Discussion:**

Nov 2020 may be IF3.

Some resistance to have adhoc meetings in 2020.

The Chair commented that these were reserved dates and not confirmed meetings.

Preliminary dates for 2021 to be discussed during the next meeting

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

## 11 Any Other Business

Dates of email approval:

(Draft TR/TS)

Monday Docs available (1st July)

Wednesday 3rd July deadline comments

Thursday 4th July final version available

Friday 5th July Approval

## 12 Close

The Chair Noamen Ben Henda (Ericsson) thanked JF3 for hosting the meeting, the secretary, the vice chairmen and all the delegates for their hard work.

After this, the meeting was closed.

## Annex A: List of contribution documents

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Document | Title | Source | Decision | Replaces | Replaced by |
| S3-191800 | Agenda | WG Chairman | approved |  |  |
| S3-191801 | Report from last SA3 meeting/s | MCC | approved |  |  |
| S3-191802 | SA3 Work Plan | MCC | noted |  |  |
| S3-191803 | Report from last SA meeting | WG Chairman | noted |  |  |
| S3-191804 | SA3 meeting calendar | MCC | noted |  |  |
| S3-191805 | Work Plan input from Rapporteurs | MCC | noted |  |  |
| S3-191806 | Evaluation of Solution Solution #18 | Futurewei | merged |  | S3-192401 |
| S3-191807 | Secuirty threat for RRCResumeRequest tampering. | Futurewei | withdrawn |  |  |
| S3-191808 | Solution for protecting RRCResumeRequest against tampering | Futurewei | withdrawn |  |  |
| S3-191809 | Draft LS to RAN2 on UECapabilitiesEnquire after AS SMC | Futurewei | noted |  |  |
| S3-191810 | Update of Solution Solution #4 | Futurewei | approved |  |  |
| S3-191811 | Evaluation of Solution #4 | Futurewei | noted |  | - |
| S3-191812 | Conclusion for KI#2 for RRC based solutions | Futurewei | noted |  |  |
| S3-191813 | Conclusion for KI#3 for RRC signaling based solutions | Futurewei | noted |  |  |
| S3-191814 | TCG progress report | InterDigital, Inc. | noted |  |  |
| S3-191815 | Evaluation for solution for (D)DoS attack mitigation in PNI NPN for KI#6.1 | InterDigital, Inc. | noted |  |  |
| S3-191816 | Discussion on S-NSSAI privacy protection | InterDigital, Inc. | noted |  |  |
| S3-191817 | Protection of S-NSSAI transmitted in the AS layer using T-S-NSSAI | InterDigital, Inc. | revised |  | S3-192374 |
| S3-191818 | Protection of S-NSSAI transmitted in the AS layer | InterDigital, Inc. | noted |  |  |
| S3-191819 | Evaluation for solution #4 | InterDigital, Inc. | revised |  | S3-192260 |
| S3-191820 | Solution for (D)DoS attack mitigation in PNI NPN | InterDigital, Inc. | noted |  |  |
| S3-191821 | Solution for (D)DoS attack mitigation in PNI NPN | InterDigital, Inc. | revised |  | S3-192341 |
| S3-191822 | Solution for Privacy protection for unicast messages over PC5 | InterDigital, Inc. | revised |  | S3-192415 |
| S3-191823 | Solution for Security for eV2X unicast messages over PC5 | InterDigital, Inc. | revised |  | S3-192417 |
| S3-191824 | Solution for Security for eV2X unicast messages over PC5 | InterDigital, Inc. | revised |  | S3-192418 |
| S3-191825 | Solution for Privacy protection for unicast messages over PC5 using rekeying | InterDigital, Inc. | revised |  | S3-192419 |
| S3-191826 | TR 33.813 - Evaluation for Solution X - S-NSSAI transmitted in the AS layer using T-S-NSSAI | InterDigital, Inc. | revised |  | S3-192375 |
| S3-191827 | TR 33.813 - Evaluation for Solution Y - S-NSSAI transmitted in the AS layer | InterDigital, Inc. | noted |  |  |
| S3-191828 | TR 33.819 – KI #6.2 – Threats and Requirements | InterDigital, Inc. | revised |  | S3-192195 |
| S3-191829 | LS on ETSI Plugtest standards Issues | C1-193601 | replied to |  |  |
| S3-191830 | Reply LS on Security failure of NAS container in HO command | C1-193708 | noted |  |  |
| S3-191831 | LS on handling of native non-current 5G NAS security context after an inter-system change from S1 mode to N1 mode in idle mode | C1-193944 | withdrawn |  |  |
| S3-191832 | Reply LS on Clarification for N32 security | C4-192467 | noted |  |  |
| S3-191833 | NGMN 5G End-to-End Architecture Framework | NGMN | noted |  |  |
| S3-191834 | Observations on standards and technical constraints from 3rd MCX remote Plugtests | ETSI CTI | noted |  |  |
| S3-191835 | LS on RRC Connection Re-Establishment for CP for NB-IoT connected to 5GC | R2-1908264 | replied to |  |  |
| S3-191836 | LS on Ciphering solution for broadcast of Assistance Data | R2-1908473 | replied to |  |  |
| S3-191837 | GTP Recovery Counter & GSN node behaviour | GSMA | replied to |  |  |
| S3-191838 | Reply LS on Authentication for UEs not Supporting NAS | S1-191595 | noted |  |  |
| S3-191839 | Further LS relating to “Response LS on reporting all Cell IDs in 5G” | S2-1906170 | noted |  |  |
| S3-191840 | LS reply on Nudr Sensitive Data Protection | S2-1906761 | noted |  |  |
| S3-191841 | Reply LS on Nudr Sensitive Data Protection | SP-190581 | postponed |  |  |
| S3-191842 | Reply LS on Clarification request on NF authorization in UE Reachability Notification Request procedure | S2-1906636 | noted |  |  |
| S3-191843 | LS to BBF on WWC status | S2-1906821 | noted |  |  |
| S3-191844 | LS on the availability of and requesting feedback on the stable draft TR 103 582 from ETSI STF555 - "Study of use cases and communications involving IoT devices in emergency situations | ETSI SC EMTEL | noted |  |  |
| S3-191845 | Diameter IPX Network End-to-End Security Solution | GSMA | replied to |  |  |
| S3-191846 | LS on support of non-3GPP only UE and support for PEI in IMEI format | S2-1904836 | replied to |  |  |
| S3-191847 | Response LS on support of non-3GPP only UE and support for PEI in IMEI format | s3i190363 | noted |  |  |
| S3-191848 | Handling of UE radio network capabilities in 4G and 5G | GSMA | replied to |  |  |
| S3-191849 | Virtualisation Study Conf Call Output | BT plc | approved |  |  |
| S3-191850 | pCR Virtualisation Study Key Issue 10 Merger with Key issue 1 (was S3-191569) | BT plc | approved |  |  |
| S3-191851 | Virtualisation Study Key Issue 11 (was S3-191570) | BT plc | approved |  |  |
| S3-191852 | Virtualisation Study Key Issue 12 (was S3-191571) | BT plc | revised |  | S3-192368 |
| S3-191853 | Virtualisation Study Key Issue 19 (was S3-191580) | BT plc | revised |  | S3-192395 |
| S3-191854 | Virtualisation Study Key Issue 20 (was S3-191581) | BT plc | revised |  | S3-192446 |
| S3-191855 | Virtualisation Study Key Issue 21 (was S3-191582) | BT plc | approved |  |  |
| S3-191856 | Virtualisation Study Key Issue 22 (was S3-191583) | BT plc | revised |  | S3-192396 |
| S3-191857 | Virtualisation Study Key Issue 23 (was S3-191583) | BT plc | not treated |  |  |
| S3-191858 | Virtualisation Study Key Issue 24 (was S3-191585) | BT plc | not treated |  |  |
| S3-191859 | Virtualisation Study Key Issue 25 (was S3-191587) | BT plc | not treated |  |  |
| S3-191860 | [33.180] R15 - Fix hash result | Motorola Solutions Germany | agreed |  |  |
| S3-191861 | [33.180] R16 - Fix hash result (mirror) | Motorola Solutions Germany | agreed |  |  |
| S3-191862 | Moving Forward on Storing Authentication Data | Hewlett-Packard Enterprise | noted |  |  |
| S3-191863 | Resolve EN on signaling details of how the UE hands over to false base station | Huawei, HiSilicon | not treated |  |  |
| S3-191864 | Handover Attempts failure counter | Huawei, HiSilicon | not treated |  |  |
| S3-191865 | Solution #4: Resolving EN on network verification of the hashes of MIB/SIBs | Huawei, HiSilicon | not treated |  |  |
| S3-191866 | Solution #4: Resolving EN on Impact on UE power consumption | Huawei, HiSilicon | not treated |  |  |
| S3-191867 | Solution #4: Details on the hash algorithm used for MIB/SIB hashes | Huawei, HiSilicon | not treated |  |  |
| S3-191868 | Address EN in solution #1 | Huawei, HiSilicon | not treated |  |  |
| S3-191869 | Enabling UE to detect FBS | Huawei, HiSilicon | not treated |  |  |
| S3-191870 | Conclusion to KI #5 | Huawei, HiSilicon | noted |  |  |
| S3-191871 | Mitigate DDoS Attacks on RAN based on RAN coordination | Huawei, HiSilicon | noted |  |  |
| S3-191872 | New KI: Sleep deprivation attacks to CIOT terminals | Huawei, HiSilicon | noted |  |  |
| S3-191873 | A solution to protect CIOT terminals from sleep deprivation attacks | Huawei, HiSilicon | noted |  |  |
| S3-191874 | Requirement for key issue 5 in TR 33.814 (FS\_eLCS\_Sec) | Philips International B.V. | noted |  |  |
| S3-191875 | New solution to key issue 5 in TR 33.814 (FS\_eLCS\_Sec) | Philips International B.V. | noted |  |  |
| S3-191876 | Update of Solution #6 - Use of UE Configuration Update | KPN | approved |  |  |
| S3-191877 | Update of solution #17 - Efficient key derivation for e2e security | KPN | approved |  |  |
| S3-191878 | AKMA solution set analysis | KPN | noted |  |  |
| S3-191879 | Proposal for editor's note in FS\_CIoT\_sec\_5G solution #15 | Philips International B.V. | revised |  | S3-192398 |
| S3-191880 | Proposal for FS\_UP\_IP\_Sec Key Issue #3 and 5: Zero-overhead user plane integrity protection on the link layer | Philips International B.V. | revised |  | S3-192422 |
| S3-191881 | [DRAFT] LS to SA2 for Moving Forward on Storing Authentication Data | Hewlett-Packard Enterprise | noted |  |  |
| S3-191882 | [DRAFT] LS to CT4 for Moving Forward on Storing Authentication Data | Hewlett-Packard Enterprise | noted |  |  |
| S3-191883 | DraftCR - update Annex B to support the authentication of non-3GPP UE | CableLabs | withdrawn |  |  |
| S3-191884 | SoR-MAC-IUE verification failure handling by UDM | NEC Europe Ltd | not pursued |  |  |
| S3-191885 | Adding references, definitions and abbreviations to SCAS UDM | NEC Europe Ltd | revised |  | S3-192130 |
| S3-191886 | Adding introduction text to SCAS UDM | NEC Europe Ltd | revised |  | S3-192134 |
| S3-191887 | Adding content to clause 4.2.3, 4.3 and 4.4 in SCAS UDM | NEC Europe Ltd | revised |  | S3-192136 |
| S3-191888 | New test case to SCAS UDM: SoR-MAC-IUE verification failure handling | NEC Europe Ltd | noted |  |  |
| S3-191889 | Discussion on AKMA overall conclusions | NEC Europe Ltd | noted |  |  |
| S3-191890 | Resolving Editor’s Notes and adding conclusion to solution #18 | NEC Europe Ltd | approved |  |  |
| S3-191891 | Resolving Editor’s Notes and adding conclusion to solution #20 | NEC Europe Ltd | not treated |  |  |
| S3-191892 | Editorial corrections of AKMA TR 33.835 v0.4.0 | NEC Europe Ltd | approved |  |  |
| S3-191893 | Editorial correction of TR 33.861 | NEC Europe Ltd | approved |  |  |
| S3-191894 | Evaluation text for solution #5 in TR 33.825 | NEC Europe Ltd | noted |  |  |
| S3-191895 | New Key Issue on Identification of Multiple NPN Subscriptions | NEC Europe Ltd | noted |  |  |
| S3-191896 | Solution for Identification and Selection of Multiple NPN Subscriptions | NEC Europe Ltd | noted |  |  |
| S3-191897 | New Key Issue on separation and storage of multiple NPN credentials | NEC Europe Ltd | noted |  |  |
| S3-191898 | Solution for separation of multiple NPN credentials | NEC Europe Ltd | noted |  |  |
| S3-191899 | New solution for KI #4 | NEC Europe Ltd | revised |  | S3-192423 |
| S3-191900 | Proposed solution to key issue 6.3 on modifying the CAG list | Qualcomm Incorporated | approved |  |  |
| S3-191901 | Security for non-public networks | Qualcomm Incorporated, Nokia, Nokia Shanghai Bell | revised |  | S3-192453 |
| S3-191902 | Proposed conclusion details for key issue #1.1 in TR 33.819 | Qualcomm Incorporated, Nokia, Nokia Shanghai Bell | approved | S3-191496 |  |
| S3-191903 | Proposed updates to the draft CR on SRVCC from 5G to UTRAN CS | Qualcomm Incorporated | revised |  | S3-192336 |
| S3-191904 | Assigning a FC value to TS 33.501 for K5GSRVCC calculation | Qualcomm Incorporated | revised |  | S3-192337 |
| S3-191905 | Adding K5GSRVCC as a possible input key to derive IKSRVCC and CKSRVCC | Qualcomm Incorporated | revised |  | S3-192338 |
| S3-191906 | Revision of SRVCC WID | Qualcomm Incorporated | agreed |  |  |
| S3-191907 | Key issue on protecting the SQN during a re-synchronisation procedure in AKA | Qualcomm Incorporated | revised |  | S3-192433 |
| S3-191908 | Using MACS to provide freshness for the protection of SQN during a re-synchronisation procedure in AKA | Qualcomm Incorporated | not treated |  |  |
| S3-191909 | Evaluation of the integrity protection provided by EDT solutions #4 and #18 | Qualcomm Incorporated | noted |  |  |
| S3-191910 | Adding some details to solution #10 on protecting S-NSSAI at AS layer | Qualcomm Incorporated | revised |  | S3-192373 |
| S3-191911 | Discussion on possible solutions to AMF relocation issues | Qualcomm Incorporated | noted |  |  |
| S3-191912 | Missing security context handling during registration procedures | Qualcomm Incorporated | agreed |  |  |
| S3-191913 | Evaluation of solution #5: Security for redundant data transmission | Qualcomm Incorporated, Ericsson, Nokia | revised |  | S3-192347 |
| S3-191914 | Conclusion on KI #1 for Study on the security for URLLC | Qualcomm Incorporated, Ericsson, Nokia | revised |  | S3-192348 |
| S3-191915 | Conclusion on KI #2 for Study on the security for URLLC | Qualcomm Incorporated, Ericsson, Nokia | merged |  | S3-192349 |
| S3-191916 | Issues of resetting NAS COUNT values in 5G to 4G mobility | Qualcomm Incorporated | noted |  |  |
| S3-191917 | NAS Count values in the mapped EPS security context in 5GS to EPS change | Qualcomm Incorporated | not pursued |  |  |
| S3-191918 | Evaluation of solution #4.1: F1 interface security for IAB | Qualcomm Incorporated | revised |  | S3-192414 |
| S3-191919 | Conclusion of KI #4.1: F1 interface security for IAB | Qualcomm Incorporated | approved |  |  |
| S3-191920 | Solution for integrity protection of EDT | Qualcomm Incorporated | noted |  |  |
| S3-191921 | Evaluation against MitM false base station attacks | Qualcomm Incorporated | not treated |  |  |
| S3-191922 | Evaluation of the shared key based MIB/SIB protection solution | Qualcomm Incorporated | noted |  |  |
| S3-191923 | Reply LS on handling of native non-current 5G NAS security context | Qualcomm Incorporated | revised |  | S3-192279 |
| S3-191924 | Ciphering of broadcast assistance data for UE-based positioning | Qualcomm Incorporated | noted |  |  |
| S3-191925 | Proposed conclusion for PARLOS | Qualcomm Incorporated, Intel, Samsung, Sprint, Verizon UK Ltd | noted |  |  |
| S3-191926 | pCR: Resolution of EN in Solution 2 evaluation | Qualcomm Incorporated, Intel, Samsung, Sprint, Verizon UK Ltd | not treated |  |  |
| S3-191927 | A key issue on forward secracy | Huawei, HiSilicon | noted |  |  |
| S3-191928 | A solution to forward secracy | Huawei, HiSilicon | noted |  |  |
| S3-191929 | Conclusion to KI #1 (slice authentication) | Huawei, HiSilicon | revised |  | S3-192366 |
| S3-191930 | Conclusions to KI#2 (AMF Key separation) | Huawei, HiSilicon | revised |  | S3-192367 |
| S3-191931 | Conclusions to KI#3 (NSaaS) | Huawei, HiSilicon | noted |  |  |
| S3-191932 | Add evalution to solution 3 | Huawei, HiSilicon | noted |  |  |
| S3-191933 | Amendment to solution 6 | Huawei, HiSilicon | noted |  |  |
| S3-191934 | Solution details on solution 8 | Huawei, HiSilicon | revised |  | S3-192371 |
| S3-191935 | Evalution for solution 8 | Huawei, HiSilicon | revised |  | S3-192372 |
| S3-191936 | Requirements on UDM/ARPF | Gemalto, Nokia | not pursued |  | - |
| S3-191937 | Requirement on authenticating unpublish requests | Ericsson | not pursued |  |  |
| S3-191938 | Nokia comments on R2-1908467 reply LS to GSMA UE capability | Nokia | noted |  |  |
| S3-191939 | Nokia comments on GSMA LS on UE radio capability exchange | Nokia | noted |  |  |
| S3-191940 | Nokia comments on GSMA LS on UE radio capbility exchange | Nokia, Nokia Shangahi Bell | noted |  |  |
| S3-191941 | Nokia comments on R2-1908473 UE DL assistance data. | Nokia, Nokia Shanghai Bell | noted |  |  |
| S3-191942 | Draft reply LS on R2-1908473 UE DL assistance data. | Nokia , Nokia Shanghai Bell | revised |  | S3-192268 |
| S3-191943 | Nokia comments on R2-1908264 LS on RRC Connection Re-establishment | Nokia, Nokia Shanghai Bell | noted |  |  |
| S3-191944 | Way forward on Emergency solution for PARLOS | Nokia, Nokia Shanghai Bell | revised |  | S3-192380 |
| S3-191945 | Addressing EN in solution#1 | Nokia, Nokia Shanghai bell | revised |  | S3-192363 |
| S3-191946 | 2. Addressing EN in KI#4. | Nokia, Nokia Shanghai bell | noted |  |  |
| S3-191947 | Adding text to Clause 9 Recommendations | Nokia, Nokia Shanghai Bell | revised |  | S3-192376 |
| S3-191948 | Draft WID for normative work on eNS. | Nokia, Nokia Shangahi Bell | revised |  | S3-192377 |
| S3-191949 | DraftCR - update Annex B to support the authentication of non-3GPP devices | CableLabs, Charter, Nokia, Nokia Shanghai Bell | revised |  | S3-192283 |
| S3-191950 | Evaluation to Solution 6.6 | Intel China Ltd. | not treated |  |  |
| S3-191951 | Security solution for UL small data transfer in RRC Suspend and Resume with early data transmission (EDT) with legacy fall back | Intel China Ltd. | revised |  | S3-192328 |
| S3-191952 | Evaluation to Security solution 4 for UL small data transfer in RRC Suspend and Resume with early data transmission (EDT) | Intel China Ltd. | noted |  |  |
| S3-191953 | Evaluation to Security solution 18 for UL small data transfer in RRC Suspend and Resume with early data transmission (EDT) | Intel China Ltd. | merged |  | S3-192401 |
| S3-191954 | Clarification of NIA0 with SgNB for UE NR capability | Intel China Ltd. | agreed |  |  |
| S3-191955 | Clarification on Procedure for steering of UE in VPLMN during mobility registration update | Intel China Ltd., NEC | not pursued |  |  |
| S3-191956 | Security solution for UE to avoid connecting to the false base station during a handover procedure | Intel China Ltd. | not treated |  |  |
| S3-191957 | Update of key issue #2 on PC5 unicast mode | LG Electronics | revised |  | S3-192420 |
| S3-191958 | Solution for security of V2X service authorisation | LG Electronics | approved |  |  |
| S3-191959 | Discussion on the reply LS for PC5 unicast groupcast security protection | LG Electronics | noted |  |  |
| S3-191960 | Reply LS on PC5 unicast and groupcast security protection | LG Electronics | revised |  | S3-192421 |
| S3-191961 | Add abbreviation and correct references | Futurewei Technologies | agreed |  |  |
| S3-191962 | pCR to TR33.814 - Key issue for the ciphering key management of broadcast assistance data | CATT | noted |  |  |
| S3-191963 | Solution for anchor keys security | Gemalto N.V. | noted |  |  |
| S3-191964 | Mitigation against linkability issue | Gemalto N.V. | not treated |  |  |
| S3-191965 | pCR to TR33.814 - The solution for the ciphering key management of broadcast assistance data | CATT | noted |  |  |
| S3-191966 | pCR to TR33.814 - The analysis of security architecture of eLCS | CATT | noted |  |  |
| S3-191967 | pCR to TR33.814 - Conclusions for TR33.814 | CATT | revised |  | S3-192362 |
| S3-191968 | pCR to TR33.814 - Add reference for TR 33.814 | CATT | revised |  | S3-192359 |
| S3-191969 | pCR to TR33.814 - Addition of definition and abbreviation | CATT | approved |  |  |
| S3-191970 | New SID on Study on user plane security termination point in 5GC | CATT, China Unicom, Qihoo360 | noted |  | - |
| S3-191971 | length of ARFCN-DL | ZTE Corporation | agreed |  |  |
| S3-191972 | uplink NAS Count for KeNB derivation in idle mode mobility to EPS | ZTE Corporation | not pursued |  |  |
| S3-191973 | CAG ID privacy | ZTE Corporation | noted |  |  |
| S3-191974 | Security threats and requirements on CAG ID privacy | ZTE Corporation | revised |  | S3-192343 |
| S3-191975 | Structure RAND for authentication | ZTE Corporation | not treated |  |  |
| S3-191976 | Handling of Sync failure | ZTE Corporation | not treated |  |  |
| S3-191977 | Modification on linkability issue1 | ZTE Corporation | revised |  | S3-192431 |
| S3-191978 | Conclusion on linkability issues | ZTE Corporation | not treated |  |  |
| S3-191979 | uplink NAS Count for Kasme derivation in idle mode mobility to EPS | ZTE Corporation | revised |  | S3-192284 |
| S3-191980 | Conclusion on Key Issue #7 | Lenovo, Motorola Mobility | noted |  |  |
| S3-191981 | Removal of Editor’s Notes of solution #5 | Lenovo, Motorola Mobility | noted |  |  |
| S3-191982 | Update of Solution #15 | Lenovo, Motorola Mobility | not treated |  |  |
| S3-191983 | Conclusion for Key Issue #6 | Lenovo, Motorola Mobility | approved |  |  |
| S3-191984 | Discussion on UDM-UDR-ARPF issues | Nokia, Nokia Shanghai Bell | noted |  |  |
| S3-191985 | Material related to UDM-ARPF-UDR discussion | Nokia, Nokia Shanghai Bell | noted |  |  |
| S3-191986 | Definition of authentication subscription data | Nokia, Nokia Shanghai Bell | revised |  | S3-192276 |
| S3-191987 | Removal of Editor’s Note and Addition of Evaluation | Lenovo, Motorola Mobility | revised |  | S3-192386 |
| S3-191988 | Conclusion for Key Issue #5 | Lenovo, Motorola Mobility | approved |  |  |
| S3-191989 | Living doucment for 5G\_UTRAN\_SEC | China Unicom | revised |  | S3-192335 |
| S3-191990 | New solution (SERSI - SERving network controlled SI signatures) | Ericsson | noted |  |  |
| S3-191991 | Conclusion on KI#3'S second requirement (reactive action) | Ericsson | not treated |  |  |
| S3-191992 | Proposal for handling of UE radio network capabilities in 4G and 5G | Ericsson | noted |  |  |
| S3-191993 | URLLC: Recommendation for KI#3 | Ericsson | merged |  | S3-192357 |
| S3-191994 | URLLC: Table with available solutions in the TR | Ericsson | revised |  | S3-192346 |
| S3-191995 | Recommendation to run AKA after IW HO from 4G to 5G | Ericsson | revised |  | S3-192285 |
| S3-191996 | Co-existence of LTKUP and PFS | Ericsson | noted |  |  |
| S3-191997 | New KI: Leakage of long-term key | Ericsson | noted |  |  |
| S3-191998 | New solution: EAP-AKA´ PFS | Ericsson | noted |  |  |
| S3-191999 | Correction of reference to draft-ietf-emu-rfc5448bis | Ericsson | not pursued |  | - |
| S3-192000 | Solution 2 evaluation | Ericsson | revised |  | S3-192450 |
| S3-192001 | Solution 3 evaluation | Ericsson | revised |  | S3-192451 |
| S3-192002 | Solution #15 updates including evaluation update | Ericsson | not treated |  |  |
| S3-192003 | Solution #13 evaluation | Ericsson | not treated |  |  |
| S3-192004 | Security handling in registration procedure at AMF reallocation caused by slicing | Ericsson | revised |  | S3-192262 |
| S3-192005 | New solution: Integrating GBA to 5GC | Ericsson | revised |  | S3-192263 |
| S3-192006 | STRIDE diagram for the gNB | Ericsson | noted |  |  |
| S3-192007 | Discussion Document on the evolution of BEST | VODAFONE Group Plc | withdrawn |  |  |
| S3-192008 | WID on BEST Test Specificationd for HSE and UE | VODAFONE Group Plc | noted |  |  |
| S3-192009 | pCR to TR33.935 - Addition of Diffie - Helman Key agreements section | VODAFONE Group Plc | withdrawn |  |  |
| S3-192010 | Rename the derived key | China Unicom | merged |  | S3-192336 |
| S3-192011 | SRVCC keys | China Unicom | approved |  |  |
| S3-192012 | key generation in MME\_SRVCC | China Unicom | noted |  |  |
| S3-192013 | CIoT: Update to Solution #18 | Ericsson | revised |  | S3-192400 |
| S3-192014 | CIoT: Evaluation to Solution #18 | Ericsson | revised |  | S3-192401 |
| S3-192015 | CIoT: Conclusion to KI#2 and KI#3 | Ericsson | noted |  |  |
| S3-192016 | CIOT: add evaluation to solution #4 | Ericsson | noted |  |  |
| S3-192017 | CIOT: Optional support of RRC Inactive in eMTC connected to 5GC | Ericsson | noted |  |  |
| S3-192018 | CIOT: New solution for UP IP in PDCP to protect UL EDT data in Msg3 | Ericsson | noted |  |  |
| S3-192019 | DDoS protection based on NWDAF and Overload Control | Ericsson | noted |  |  |
| S3-192020 | Conslusion for KI#5 | Ericsson | noted |  |  |
| S3-192021 | Conslusion for KI#4 | Ericsson | noted |  |  |
| S3-192022 | Adding evaluation and resolving EN in Solution 7 | Ericsson | revised |  | S3-192369 |
| S3-192023 | Discussion paper on NSSAI in AS layer protection | Ericsson | noted |  |  |
| S3-192024 | Conclusion on KI#1 (bluetooth positioning) | Ericsson | approved |  |  |
| S3-192025 | Conclusion on KI#2 (TBS positioning) | Ericsson | approved |  |  |
| S3-192026 | Conclusion on KI#3 (WLAN positioning) | Ericsson | approved |  |  |
| S3-192027 | Resolving EN in KI#4 | Ericsson | noted |  |  |
| S3-192028 | Conclusion on KI#4 (privacy control) | Ericsson | noted |  |  |
| S3-192029 | New KI: Protection of recovery from backhaul-RLF | Ericsson | revised |  | S3-192407 |
| S3-192030 | New solution: Secure recovery from backhaul-RLF | Ericsson | noted |  |  |
| S3-192031 | Update to solution #2.1 (Authentication and authorization of IAB Node) | Ericsson | revised |  | S3-192408 |
| S3-192032 | New solution on authentication and authorization of IAB Node in 5G | Ericsson | noted |  |  |
| S3-192033 | New solution: Token-based authorization for Scenario D using stateless SeCoP | Ericsson | revised |  | S3-192439 |
| S3-192034 | New solution: Token-based authorization for Scenario C using stateless SeCoP | Ericsson | revised |  | S3-192440 |
| S3-192035 | Correction of implementation of S3-191671 | Ericsson | approved |  |  |
| S3-192036 | UP IP: New key issue for UE indicating support of UP IP in NR PDCP with a ng-eNB connected to 5GC | Ericsson | revised |  | S3-192425 |
| S3-192037 | Corrections on IP packet forwarding | Ericsson | agreed |  |  |
| S3-192038 | Corrections on IP packet forwarding | Ericsson | revised |  | S3-192319 |
| S3-192039 | Corrections on IP packet forwarding | Ericsson | revised |  | S3-192320 |
| S3-192040 | Threat analysis for OAM configurator spoofing | Ericsson | noted |  |  |
| S3-192041 | Living document: generic assets and threats | Ericsson | revised |  | S3-192321 |
| S3-192042 | STRIDE diagram for the AUSF | Ericsson | noted |  |  |
| S3-192043 | Attack tree for sensitive data in AUSF | Ericsson | noted |  |  |
| S3-192044 | AUSF assets and threats | Ericsson | noted |  |  |
| S3-192045 | Living document: AUSF aspects in 33.926 | Ericsson | merged |  | S3-192302 |
| S3-192046 | Requirements for credential storage in the UDR | Ericsson | not pursued |  |  |
| S3-192047 | New WID on evolution of Cellular IoT security for the 5G System | Ericsson | revised |  | S3-192354 |
| S3-192048 | Scope of a SECAM SCAS for 3GPP virtualized network products | China Mobile, Nokia, Nokia Shanghai Bell | approved |  |  |
| S3-192049 | TR terminology | Nokia, Nokia Shanghai Bell | noted |  |  |
| S3-192050 | Cleaning of 33819-040 | Nokia, Nokia Shanghai Bell | approved |  |  |
| S3-192051 | Headline clash in TR resolved | Nokia, Nokia Shanghai Bell | approved |  |  |
| S3-192052 | Mandating time based generation of SQNs | Nokia, Nokia Shanghai Bell | not pursued |  |  |
| S3-192053 | Requirement on UDR | Nokia, Nokia Shanghai Bell | not pursued |  |  |
| S3-192054 | Missing UDR description in alignment with 29.505 | Nokia, Nokia Shanghai Bell | not pursued | S3-191420 |  |
| S3-192055 | Update on ARPF | Nokia, Nokia Shanghai Bell | not pursued |  |  |
| S3-192056 | Adding Nudr service | Nokia, Nokia Shanghai Bell | not pursued | S3-191421 |  |
| S3-192057 | LS-UDR | Nokia | noted |  |  |
| S3-192058 | NPN references in existing text | Nokia, Nokia Shanghai Bell | not pursued |  |  |
| S3-192059 | Key issue on Secure device identity creation for constrained devices | Nokia, Nokia Shanghai Bell | noted |  |  |
| S3-192060 | Secure device identity creation for UEs in SNPNs | Nokia, Nokia Shanghai Bell | noted |  |  |
| S3-192061 | Scope of SECAM evaluation for 3GPP virtualized network products | China Mobile, Nokia, Nokia Shanghai Bell | withdrawn |  |  |
| S3-192062 | Scope of SECAM evaluation for 3GPP virtualized network products | China Mobile, Nokia, Nokia Shanghai Bell | approved |  |  |
| S3-192063 | Scope of SECAM Accreditation for 3GPP virtualized network products | China Mobile | revised |  | S3-192436 |
| S3-192064 | Adding roles in SECAM for 3GPP virtualized network products into clause 4.6 | China Mobile, Nokia, Nokia Shanghai Bell | revised |  | S3-192437 |
| S3-192065 | Resovle Editor's notes in Solution for Key freshness in AKMA | Huawei, Hisilicon | not treated |  |  |
| S3-192066 | mitigate the linkability attack | Huawei, Hisilicon | not treated |  |  |
| S3-192067 | Dicussion on security handling after voice call ends | Huawei, Hisilicon | noted |  |  |
| S3-192068 | security handling after voice call ends | Huawei, Hisilicon | not pursued |  |  |
| S3-192069 | Address EN in key issue 5 | Huawei, Hisilicon | noted |  |  |
| S3-192070 | A solution to identify UEs that provides faked/altered location estimate or measurements | Huawei, Hisilicon | noted |  |  |
| S3-192071 | Delete EN in solution12 | Huawei, Hisilicon | approved |  |  |
| S3-192072 | A solution to MIB and SIB protection | Huawei, Hisilicon | not treated |  |  |
| S3-192073 | Clarification on length of EARFCN-DL in key derivation | Huawei, Hisilicon | not pursued |  |  |
| S3-192074 | KI on protection of F1-U | Huawei, Hisilicon | noted |  |  |
| S3-192075 | KI on toplogy discovery | Huawei, Hisilicon | revised |  | S3-192405 |
| S3-192076 | Add evualtion to solution 4 | Huawei, Hisilicon | revised |  | S3-192361 |
| S3-192077 | Add requirement to KI#2 | Huawei, Hisilicon | approved |  |  |
| S3-192078 | Add threat and requirement to KI#10 | Huawei, Hisilicon | approved |  |  |
| S3-192079 | Add requirement to KI#12 | Huawei, Hisilicon | revised |  | S3-192388 |
| S3-192080 | Add threat and requirement to KI#11 | Huawei, Hisilicon | revised |  | S3-192387 |
| S3-192081 | Add requirement and delete EN for KI#14 | Huawei, Hisilicon | revised |  | S3-192390 |
| S3-192082 | Add requirement and delete EN for KI#15 | Huawei, Hisilicon | approved |  |  |
| S3-192083 | Delete Editor's in Solution#3 and add evaluation | Huawei, Hisilicon | merged |  | S3-192382 |
| S3-192084 | Delete Editor's in Solution#5 and add evaluation | Huawei, Hisilicon | revised |  | S3-192383 |
| S3-192085 | Conclusion on KI#1 | Huawei, Hisilicon | approved |  |  |
| S3-192086 | Conclusion on KI#14 | Huawei, Hisilicon | revised |  | S3-192391 |
| S3-192087 | Solution on Line ID protection | Huawei, Hisilicon | noted |  |  |
| S3-192088 | Mapping SUCI to SUPI | Huawei, Hisilicon | approved |  |  |
| S3-192089 | Merge S3-191319 to solution 4 | Huawei, Hisilicon | approved |  |  |
| S3-192090 | Conclusion on KI#12 | Huawei, Hisilicon | noted |  |  |
| S3-192091 | Conclusion on KI#16 | Huawei, Hisilicon | approved |  |  |
| S3-192092 | Propose fuzz tests run 100 000 times | Huawei, Hisilicon | revised |  | S3-192322 |
| S3-192093 | R15\_clarification for Fuzz tests run | Huawei, Hisilicon | revised |  | S3-192323 |
| S3-192094 | R14\_clarification for Fuzz tests run | Huawei, Hisilicon | revised |  | S3-192324 |
| S3-192095 | Clairication on the intention of the requirment | Huawei, Hisilicon | revised |  | S3-192325 |
| S3-192096 | R15\_Mirror\_Clairication on the intention of the requirment | Huawei, Hisilicon | revised |  | S3-192326 |
| S3-192097 | R14\_Mirror\_Clairication on the intention of the requirment | Huawei, Hisilicon | revised |  | S3-192327 |
| S3-192098 | A document is needed to show the support features | Huawei, Hisilicon | revised |  | S3-192350 |
| S3-192099 | R15\_Mirror\_A document is needed to show the support features | Huawei, Hisilicon | revised |  | S3-192351 |
| S3-192100 | R14\_Mirror\_A document is needed to show the support features | Huawei, Hisilicon | revised |  | S3-192352 |
| S3-192101 | Align account numbers in testcase with the requirement | Huawei, Hisilicon | revised |  | S3-192329 |
| S3-192102 | R15\_Mirror\_Align account numbers in testcase with the requirement | Huawei, Hisilicon | revised |  | S3-192330 |
| S3-192103 | R14\_Mirror\_Align account numbers in testcase with the requirement | Huawei, Hisilicon | revised |  | S3-192331 |
| S3-192104 | WID on Security of the Wireless and Wireline Convergence for the 5G system architecture | Huawei, Hisilicon | revised |  | S3-192355 |
| S3-192105 | Address EN in solution 17 | Huawei, Hisilicon | approved |  |  |
| S3-192106 | Update Solution 17 to Supplement Missing Part When Merging with S3-191389 | Huawei, Hisilicon | approved |  |  |
| S3-192107 | Add Evaluation for Solution 17 | Huawei, Hisilicon | revised |  | S3-192399 |
| S3-192108 | Add Details and Evaluation for Solution 19 | Huawei, Hisilicon | revised |  | S3-192402 |
| S3-192109 | Discussion Paper for Mitigation of DDoS Attack | Huawei, Hisilicon | noted |  |  |
| S3-192110 | conclusion for KI#4 | Huawei, Hisilicon | noted |  |  |
| S3-192111 | Key Issue for RRC Connection Re-Establishment for the control plane for NB-IoT connected to 5GC | Huawei, Hisilicon | revised |  | S3-192393 |
| S3-192112 | Solution for RRC Connection Re-Establishment for the control plane for NB-IoT connected to 5GC | Huawei, Hisilicon | revised |  | S3-192452 |
| S3-192113 | Reply LS on RRC Connection Reestablishment for CP for NB-IoT connected to 5GC | Huawei, Hisilicon | revised |  | S3-192394 |
| S3-192114 | Conclusion for KI#2 and KI#3 of frequent CIoT Ues | Huawei, Hisilicon | noted |  |  |
| S3-192115 | Solution for Protection of NAS Redirection Message | Huawei, Hisilicon | revised |  | S3-192404 |
| S3-192116 | Solution for Protection of RRC Reject Message | Huawei, Hisilicon | revised |  | S3-192410 |
| S3-192117 | Solution for Protection of NAS Reject Message | Huawei, Hisilicon | revised |  | S3-192411 |
| S3-192118 | Solution for Avoiding UE connecting to False Base Station during Conditional Handover | Huawei, Hisilicon | not treated |  |  |
| S3-192119 | conclusion for key issue 3 | Huawei, Hisilicon | revised |  | S3-192357 |
| S3-192120 | Deleting the EN of conclusion 7.1 | Huawei, Hisilicon | merged |  | S3-192348 |
| S3-192121 | Deleting the EN of conclusion 7.4 | Huawei, Hisilicon | revised |  | S3-192358 |
| S3-192122 | conclusion for key issue 2 | Huawei, Hisilicon | revised |  | S3-192349 |
| S3-192123 | Remove the paragraph of Introduction | Huawei, Hisilicon | approved |  |  |
| S3-192124 | Remove the unnecessary ENs of Key issue part | Huawei, Hisilicon | revised |  | S3-192345 |
| S3-192125 | draftCR for URLLC TS | Huawei, Hisilicon | noted |  |  |
| S3-192126 | Evaluation for solution | Huawei, Hisilicon | not treated |  |  |
| S3-192127 | Adding contents into clause 4 | China Mobile | noted |  |  |
| S3-192128 | Adding writing process overview into clause 5.1 | China Mobile, Nokia, Nokia Shanghai Bell | not treated |  |  |
| S3-192129 | Adding general description and ToE into clause 5.2.1 and 5.2.2 | China Mobile | not treated |  |  |
| S3-192130 | Adding references, definitions and abbreviations to SCAS UDM | NEC Europe Ltd | approved | S3-191885 |  |
| S3-192131 | New solution: Integrity Protection of packet header in the User Plane | China Mobile | withdrawn |  |  |
| S3-192132 | New solution: Integrity Protection of packet header in the User Plane | China Mobile | withdrawn |  |  |
| S3-192133 | New solution: Integrity Protection of packet header in the User Plane | China Mobile | revised |  | S3-192455 |
| S3-192134 | Adding introduction text to SCAS UDM | NEC Europe Ltd | merged | S3-191886 | S3-192296 |
| S3-192135 | Revisit the KAUSF desynchronization problem | China Mobile | noted |  |  |
| S3-192136 | Adding content to clause 4.2.3, 4.3 and 4.4 in SCAS UDM | NEC Europe Ltd | approved | S3-191887 |  |
| S3-192137 | Living Document: General SBA/SBI aspects in TS 33.117 | Nokia, Nokia Shanghai Bell | revised |  | S3-192316 |
| S3-192138 | Addition Assets and Threats for Generic NFs | Nokia, Nokia Shanghai Bell | not pursued |  |  |
| S3-192139 | KAUSF synchronziation between the UE and AUSF | China Mobile | not pursued |  |  |
| S3-192140 | Discussion of credential data protection | China Mobile | noted |  |  |
| S3-192141 | Updating the Living Document with Threat References | Nokia, Nokia Shanghai Bell | merged |  | S3-192318 |
| S3-192142 | Correnction of Reference | China Mobile | revised |  | S3-192333 |
| S3-192143 | Living Document: New Annex for the SEPP in TR 33.926 | Nokia, Nokia Shanghai Bell | revised |  | S3-192304 |
| S3-192144 | New solution for the linkability attack | Huawei, Hisilicon | not treated |  |  |
| S3-192145 | Resolving the ENs in solution #5 | Huawei, Hisilicon, Lenovo, Motorola Mobility | not treated |  |  |
| S3-192146 | New KI: AKMA push | Huawei, Hisilicon | revised |  | S3-192428 |
| S3-192147 | New KI: KAUSF storing at UE side | Huawei, Hisilicon | noted |  |  |
| S3-192148 | Solving registraiton failure in ilde mobility registration procedure with AMF Reallocation | China Telecom, Huawei, Hisilicon | not pursued |  |  |
| S3-192149 | Evaluation to solution #9 and conclusion to KI#5 | Huawei, Hisilicon | revised |  | S3-192370 |
| S3-192150 | Solution for NF service consumer verification during service access authorization | Huawei, Hisilicon | revised |  | S3-192441 |
| S3-192151 | Clarification on security context transfer during handover from S1 mode to N1 mode | Huawei, Hisilicon | not pursued |  |  |
| S3-192152 | Evaluation of solution #15 in TR 33.855 - Delegated "Subscribe-Notify" interaction Authorization | Huawei, Hisilicon | noted |  |  |
| S3-192153 | Update of solution #19 in TR 33.855 - Authorization within a NF Set | Huawei, Hisilicon | revised |  | S3-192442 |
| S3-192154 | Issues on not removing the authentication result in the UDM | Huawei, Hisilicon | noted |  |  |
| S3-192155 | Removing the authentication result in the UDM | Huawei, Hisilicon | not pursued |  |  |
| S3-192156 | Description of issue of security context transfer following the handover from EPS to 5GS | Huawei, Hisilicon | revised |  | S3-192218 |
| S3-192157 | Discussion on the inconsistency of eKSI in idle mode mobility from 5GS to EPS over N26 | Huawei, Hisilicon | withdrawn |  |  |
| S3-192158 | Clarification on the eKSI in idle mode mobility from 5GS to EPS over N26 | Huawei, Hisilicon | not pursued |  |  |
| S3-192159 | Discussson paper on AMF reallocation | China Telecom, Huawei, Hisilicon | noted |  |  |
| S3-192160 | Solution for AKMA push | Huawei, Hisilicon | revised |  | S3-192429 |
| S3-192161 | Removing the authentication result in the UDM | Huawei, Hisilicon | not pursued |  |  |
| S3-192162 | Changes on handover from EPS to 5GS over N26 | Huawei, Hisilicon | agreed |  |  |
| S3-192163 | Completing TS 33.512 | Huawei, Hisilicon, Deutsche Telekom AG | revised |  | S3-192288 |
| S3-192164 | Completing TS 33.513 | Huawei, Hisilicon | revised |  | S3-192291 |
| S3-192165 | Adding UPF critical assets and threats to TR 33.926 | Huawei, Hisilicon | not pursued |  | - |
| S3-192166 | Completing TS 33.514 | Huawei, Hisilicon | revised |  | S3-192221 |
| S3-192167 | Adding UDM critical assets and threats to TR 33.926 | Huawei, Hisilicon | not pursued |  | - |
| S3-192168 | Adding test case for UE security policy comparison during handover | Huawei, Hisilicon | revised |  | S3-192298 |
| S3-192169 | Completing TS 33.515 | Huawei, Hisilicon | revised |  | S3-192300 |
| S3-192170 | Adding SMF critical assets and threats to TR 33.926 | Huawei, Hisilicon | not pursued |  | - |
| S3-192171 | Completing TS 33.516 | Huawei, Hisilicon | approved |  |  |
| S3-192172 | Adding AUSF critical assets and threats to TR 33.926 | Huawei, Hisilicon | not pursued |  | - |
| S3-192173 | Completing TS 33.517 | Huawei, Hisilicon | revised |  | S3-192311 |
| S3-192174 | Updating TS 33.518 | Huawei, Hisilicon, Nokia, Nokia Shanghai Bell | approved |  |  |
| S3-192175 | Completing TS 33.519 | Huawei, Hisilicon | revised |  | S3-192314 |
| S3-192176 | Adding NEF critical assets and threats to TR 33.926 | Huawei, Hisilicon | not pursued |  | - |
| S3-192177 | adding critical assets and threats to TR 33.926 for general SBA/SBI aspects | Huawei, Hisilicon | not pursued |  | - |
| S3-192178 | Update of living Document: General SBA/SBI aspects in TS 33.117 | Huawei, Hisilicon | revised |  | S3-192318 |
| S3-192179 | Addition of AMF-related Security Problem Descriptions | Huawei, Hisilicon | not pursued |  | - |
| S3-192180 | Updating SEPP critical assets and threats in TR 33.926 | Huawei, Hisilicon | not pursued |  | - |
| S3-192181 | Adding a test case for charging id uniqueness | Huawei, Hisilicon | revised |  | S3-192301 |
| S3-192182 | Clarification on authentication vector generation | Nokia, Nokia Shanghai Bell | not pursued |  |  |
| S3-192183 | Meeting notes of NFV SCAS conf call | China Mobile | noted |  |  |
| S3-192184 | Threat Analysis on Exposure of Confidential IEs in N32-f message | Nokia, Nokia Shanghai Bell | revised |  | S3-192310 |
| S3-192185 | Updating UDM with UE registration status | Nokia, Nokia Shanghai Bell | noted |  |  |
| S3-192186 | Threat Analysis of Incorrect Handling for Protection Policies Mismatch by the SEPP | Nokia, Nokia Shanghai Bell | revised |  | S3-192305 |
| S3-192187 | Meeting minutes of AKMA conference calls | China Mobile | noted |  |  |
| S3-192188 | Discussion paper UE initiated PFS | Nokia, Nokia Shanghai bell | noted |  |  |
| S3-192189 | Test Case: Correct Handling of Protection Policy Mismatch in the SEPP | Nokia, Nokia Shanghai Bell | revised |  | S3-192306 |
| S3-192190 | Work Plan for moving forward AKMA | China Mobile | noted |  |  |
| S3-192191 | pCR UE initiated PFS | Nokia, Nokia Shanghai Bell | noted |  |  |
| S3-192192 | Threat Analysis on Weak JWS Algorithm | Nokia, Nokia Shanghai Bell | revised |  | S3-192308 |
| S3-192193 | Editorial Changes to TR 33.835 v0.4.0 | China Mobile | approved |  |  |
| S3-192194 | Test Case: JWS Profile Restriction in the SEPP | Nokia, Nokia Shanghai Bell | revised |  | S3-192309 |
| S3-192195 | TR 33.819 – KI #6.2 – Threats and Requirements | InterDigital, Inc. | merged | S3-191828 | S3-192343 |
| S3-192196 | Individual Evaluation of solution #6 | China Mobile | not treated |  |  |
| S3-192197 | Updating TS 33.517 with the Threat Reference for the Test Case in 4.2.2.5 | Nokia, Nokia Shanghai Bell | merged |  | S3-192311 |
| S3-192198 | Individual Evaluations of solution #7- #12 | China Mobile | not treated |  |  |
| S3-192199 | A Solution to authentication method negotiation | Huawei, HiSilicon | noted |  |  |
| S3-192200 | Updates on IAB Node authentication and authorization solution | Samsung | approved |  |  |
| S3-192201 | Discussion on AKMA overall evaluation methodology | China Mobile, ZTE Corporation | noted |  |  |
| S3-192202 | Establishment of F1 security association using Shared Key | Samsung | approved |  |  |
| S3-192203 | Evaluation of Solution#1 | Samsung | revised |  | S3-192426 |
| S3-192204 | skeleton of clause 7- evaluation and conclusion | China Mobile | revised |  | S3-192427 |
| S3-192205 | Conclusion to Key Issue #5 | Samsung | noted |  |  |
| S3-192206 | Resolving EN on New and Last serving gNB interactions | Samsung | not treated |  |  |
| S3-192207 | Evaluation of solution#1- Introducing third party key to AKMA | China Mobile | not treated |  |  |
| S3-192208 | Evaluation of Solution#2 | Samsung | revised |  | S3-192447 |
| S3-192209 | Updates to Solution#7 on obtaining accurate clock information | Samsung | not treated |  |  |
| S3-192210 | Deletion of EN on Location update reject in Solution#7 | Samsung | not treated |  |  |
| S3-192211 | Meeting minutes of AKMA conference call on 4th June | China Mobile | noted |  |  |
| S3-192212 | Assessment of solution #7 to Annex A.3 | Samsung | revised |  | S3-192449 |
| S3-192213 | Security procedures for CAPIF-3e/4e/5e reference points | Samsung | not pursued |  |  |
| S3-192214 | Security aspects of CAPIF-7/7e reference points | Samsung | revised |  | S3-192339 |
| S3-192215 | Editorial correction of CAPIF-3e/4e/5e requirements clause | Samsung | agreed |  |  |
| S3-192216 | Conclusion to Key Issue #6.1 | Samsung | noted |  |  |
| S3-192217 | Resolution of Editor’s note in Solution #3 | Samsung | revised |  | S3-192342 |
| S3-192218 | Description of issue of security context transfer following the handover from EPS to 5GS | Huawei, Hisilicon | noted | S3-192156 |  |
| S3-192219 | Clarification to Initial NAS message protection | Samsung | revised |  | S3-192282 |
| S3-192220 | Implicit bootstrapping using NEF as the AKMA Anchor Function | Nokia, Nokia Shanghai Bell, China Mobile | approved |  |  |
| S3-192221 | Completing TS 33.514 | Huawei, Hisilicon, NEC | revised | S3-192166 | S3-192296 |
| S3-192222 | Resolve Editor’s Note in solution 3 | Nokia, Nokia Shanghai Bell | revised |  | S3-192382 |
| S3-192223 | WWC - Evaluation of Solution #3 | Nokia, Nokia Shanghai Bell | merged |  | S3-192382 |
| S3-192224 | WWC - Evaluation of Solution #4 | Nokia, Nokia Shanghai Bell | approved |  |  |
| S3-192225 | WWC - Resolve Editor’s Note in solution 5 | Nokia, Nokia Shanghai Bell | merged |  | S3-192383 |
| S3-192226 | Modification on the usage of Identity Request | Apple (UK) Limited | revised |  | S3-192280 |
| S3-192227 | Resolve Editor’s Note in solution 6 | Nokia, Nokia Shanghai Bell | merged |  | S3-192386 |
| S3-192228 | WWC - Resolve Editor’s Note on Authentication in solution 4 | Nokia, Nokia Shanghai Bell | revised |  | S3-192385 |
| S3-192229 | pCR to 33.815 on authentication of network | NTT DOCOMO INC. | revised |  | S3-192378 |
| S3-192230 | WWC - Resolve Editor’s Note on trust in solution 4 | Nokia, Nokia Shanghai Bell | noted |  |  |
| S3-192231 | Privacy protection for non-3GPP in 33.402 | Apple (UK) Limited | revised |  | S3-192275 |
| S3-192232 | WWC - Evaluation of Solution #5 | Nokia, Nokia Shanghai Bell | merged |  | S3-192383 |
| S3-192233 | WWC - Add conclusion on KI #10 | Nokia, Nokia Shanghai Bell | approved |  |  |
| S3-192234 | WWC - Add conclusion on KI #11 | Nokia, Nokia Shanghai Bell | approved |  |  |
| S3-192235 | WWC - Add conclusion on KI #12 | Nokia, Nokia Shanghai Bell | withdrawn |  |  |
| S3-192236 | WWC - Add conclusion on KI #12 | Nokia, Nokia Shanghai Bell | revised |  | S3-192389 |
| S3-192237 | pCR to 33.815 on user awareness of PARLOS service | NTT DOCOMO INC. | revised |  | S3-192379 |
| S3-192238 | UE capability protection | Apple | not treated |  |  |
| S3-192239 | update of Certificate based solution | Apple | not treated |  |  |
| S3-192240 | update of Key issue#7 | Apple | withdrawn |  |  |
| S3-192241 | update of solution #2 | Apple | merged |  | S3-192447 |
| S3-192242 | update of solution #14 | Apple | noted |  |  |
| S3-192243 | Meeting minutes of SA3 5GFBS conference call on June 2th | Apple | not treated |  |  |
| S3-192244 | LS on Integrity protection data rate enumeration | Apple | revised |  | S3-192434 |
| S3-192245 | UP IP data rate | Apple (UK) Limited | noted |  |  |
| S3-192246 | Discussion paper on resource level authorization using OAuth 2.0 access tokens | Nokia, Nokia Shanghai Bell | noted |  |  |
| S3-192247 | Key Issue on resource level authorization during service access | Nokia, Nokia Shanghai Bell | revised |  | S3-192412 |
| S3-192248 | Privacy protection for non-3GPP in 33.402 | Apple (UK) Limited | revised |  | S3-192274 |
| S3-192249 | pCR – Solution for resource level authorization using access tokens | Nokia, Nokia Shanghai Bell | approved |  |  |
| S3-192250 | Discussion paper on policy-based authorization for indirect communication | Nokia, Nokia Shanghai Bell | noted |  |  |
| S3-192251 | pCR on Policy based authorization for Indirect communications | Nokia, Nokia Shanghai Bell | revised |  | S3-192413 |
| S3-192252 | pCR on NF to SeCoP interface security in service-mesh based deployments | Nokia, Nokia Shanghai Bell | approved |  |  |
| S3-192253 | Solution for Authorization of NFs within a NF Set | Nokia, Nokia Shanghai Bell | merged |  | S3-192442 |
| S3-192254 | pCR to 33.855 on SeCoP distribution | NTT DOCOMO INC. | revised |  | S3-192443 |
| S3-192255 | pCR on removing EN in Solution #21 | Nokia, Nokia Shanghai Bell | revised |  | S3-192444 |
| S3-192256 | pCR to 33.855 on NF authorization with SeCoP | NTT DOCOMO INC. | revised |  | S3-192258 |
| S3-192257 | Comments to S3-191960 [DRAFT] LS on PC5 unicast and groupcast security protection | InterDigital, Inc. | noted |  |  |
| S3-192258 | pCR to 33.855 on NF authorization with SeCoP | NTT DOCOMO INC. | approved | S3-192256 |  |
| S3-192259 | Authentication Data Storage in 5G UDR for Release 15 | Hewlett-Packard Enterprise | not pursued |  |  |
| S3-192260 | Evaluation for solution #4 | InterDigital, Inc. | approved | S3-191819 |  |
| S3-192261 | Comments of S3-191922 | Futurewei Technologies | noted |  |  |
| S3-192262 | Security handling in registration procedure at AMF reallocation caused by slicing | Ericsson Hungary Ltd | noted | S3-192004 |  |
| S3-192263 | New solution: Integrating GBA to 5GC | Ericsson Hungary Ltd | noted | S3-192005 |  |
| S3-192264 | LS on handling of native non-current 5G NAS security context after an inter-system change from S1 mode to N1 mode in idle mode | C1-193944 | replied to | - | - |
| S3-192265 | Reply LS on Handling of UE radio network capabilities in 4G and 5G | R2-1908467 | replied to | - | - |
| S3-192266 | Impersonation Attacks in 4G Networks | GSMA | replied to | - | - |
| S3-192267 | LS on withdrawal of TS 103 383 “Smart Cards; Embedded UICC; Requirements Specification | ETSI TC SCP | postponed | - | - |
| S3-192268 | Reply LS on Cuiphering solution for broadcast of Assistance Data | Nokia , Nokia Shanghai Bell | approved | S3-191942 | - |
| S3-192269 | Reply to: GTP Recovery Counter & GSN node behaviour | Nokia | approved | - | - |
| S3-192270 | Reply to: Diameter IPX Network End-to-End Security Solution | KPN | approved | - | - |
| S3-192271 | Reply to: Handling of UE radio network capabilities in 4G and 5G | NTT-Docomo | approved | - | - |
| S3-192272 | Reply to: Impersonation Attacks in 4G Networks | Nokia | approved | - | - |
| S3-192273 | Removing references in TS 33.501 of TS 103 383 | ORANGE | noted | - | - |
| S3-192274 | Privacy protection for non-3GPP in 33.402 | Apple (UK) Limited | noted | S3-192248 | - |
| S3-192275 | Privacy protection for non-3GPP in 33.402 | Apple (UK) Limited | not pursued | S3-192231 | - |
| S3-192276 | Definition of authentication subscription data | Nokia, Nokia Shanghai Bell | not pursued | S3-191986 | - |
| S3-192277 | Reply to: Reply LS on Nudr Sensitive Data Protection | Nokia | revised | - | S3-192456 |
| S3-192278 | Reply to: LS on support of non-3GPP only UE and support for PEI in IMEI format | BT | approved | - | - |
| S3-192279 | Reply LS on handling of native non-current 5G NAS security context | Qualcomm Incorporated | approved | S3-191923 | - |
| S3-192280 | Modification on the usage of Identity Request | Apple (UK) Limited | not pursued | S3-192226 | - |
| S3-192281 | LS on registration issues in the AMF re-allocation | Huawei | approved | - | - |
| S3-192282 | Clarification to Initial NAS message protection | Samsung | agreed | S3-192219 | - |
| S3-192283 | DraftCR - update Annex B to support the authentication of non-3GPP devices | CableLabs, Charter, Nokia, Nokia Shanghai Bell | noted | S3-191949 | - |
| S3-192284 | uplink NAS Count for Kasme derivation in idle mode mobility to EPS | ZTE Corporation | agreed | S3-191979 | - |
| S3-192285 | Recommendation to run AKA after IW HO from 4G to 5G | Ericsson | agreed | S3-191995 | - |
| S3-192286 | Addition of AMF-related Security Problem Descriptions | Huawei, Hisilicon | approved | - | - |
| S3-192287 | DraftCR on Assests and threats specific to the AMF | Huawei | approved | - | - |
| S3-192288 | Completing TS 33.512 | Huawei, Hisilicon, Deutsche Telekom AG | approved | S3-192163 | - |
| S3-192289 | Adding UPF critical assets and threats to TR 33.926 | Huawei, Hisilicon | approved | - | - |
| S3-192290 | DraftCR on Aspects of the network product class UPF | Huawei | approved | - | - |
| S3-192291 | Completing TS 33.513 | Huawei, Hisilicon | approved | S3-192164 | - |
| S3-192292 | Draft TS 33.513 | Samsung | approved | - | - |
| S3-192293 | Draft TS 33.514 | NEC | approved | - | - |
| S3-192294 | Adding UDM critical assets and threats to TR 33.926 | Huawei, Hisilicon | approved | - | - |
| S3-192295 | DraftCR on aspects specific to the network product class UDM | Huawei | approved | - | - |
| S3-192296 | Completing TS 33.514 | Huawei, Hisilicon, NEC | approved | S3-192221 | - |
| S3-192297 | DraftCR on Adding SMF critical assets and threats to TR 33.926 | Huawei, Hisilicon | approved | - | - |
| S3-192298 | Adding test case for UE security policy comparison during handover | Huawei, Hisilicon | approved | S3-192168 | - |
| S3-192299 | Draft TS 33.515 | Huawei | approved | - | - |
| S3-192300 | Completing TS 33.515 | Huawei, Hisilicon | approved | S3-192169 | - |
| S3-192301 | Adding a test case for charging id uniqueness | Huawei, Hisilicon | approved | S3-192181 | - |
| S3-192302 | Adding AUSF critical assets and threats to TR 33.926 | Huawei, Hisilicon | approved | - | - |
| S3-192303 | Draft TS 33.516 | Ericsson | approved | - | - |
| S3-192304 | Living Document: New Annex for the SEPP in TR 33.926 | Nokia, Nokia Shanghai Bell | approved | S3-192143 | - |
| S3-192305 | Threat Analysis of Incorrect Handling for Protection Policies Mismatch by the SEPP | Nokia, Nokia Shanghai Bell | approved | S3-192186 | - |
| S3-192306 | Test Case: Correct Handling of Protection Policy Mismatch in the SEPP | Nokia, Nokia Shanghai Bell | approved | S3-192189 | - |
| S3-192307 | Draft TS 33.517 | Nokia | approved | - | - |
| S3-192308 | Threat Analysis on Weak JWS Algorithm | Nokia, Nokia Shanghai Bell | approved | S3-192192 | - |
| S3-192309 | Test Case: JWS Profile Restriction in the SEPP | Nokia, Nokia Shanghai Bell | approved | S3-192194 | - |
| S3-192310 | Threat Analysis on Exposure of Confidential IEs in N32-f message | Nokia, Nokia Shanghai Bell,Huawei | approved | S3-192184 | - |
| S3-192311 | Completing TS 33.517 | Huawei, Hisilicon,Nokia | approved | S3-192173 | - |
| S3-192312 | Draft TS 33.518 | Nokia | approved | - | - |
| S3-192313 | Adding NEF critical assets and threats to TR 33.926 | Huawei, Hisilicon | approved | - | - |
| S3-192314 | Completing TS 33.519 | Huawei, Hisilicon | approved | S3-192175 | - |
| S3-192315 | Draft TS 33.519 | ZTE | approved | - | - |
| S3-192316 | Living Document: General SBA/SBI aspects in TS 33.117 | Nokia, Nokia Shanghai Bell | approved | S3-192137 | - |
| S3-192317 | adding critical assets and threats to TR 33.926 for general SBA/SBI aspects | Huawei, Hisilicon | approved | - | - |
| S3-192318 | Update of living Document: General SBA/SBI aspects in TS 33.117 | Huawei, Hisilicon | approved | S3-192178 | - |
| S3-192319 | Corrections on IP packet forwarding | Ericsson | agreed | S3-192038 | - |
| S3-192320 | Corrections on IP packet forwarding | Ericsson | agreed | S3-192039 | - |
| S3-192321 | Living document: generic assets and threats | Ericsson | approved | S3-192041 | - |
| S3-192322 | R16\_Carification for Fuzz tests run | Huawei, Hisilicon | agreed | S3-192092 | - |
| S3-192323 | R15\_clarification for Fuzz tests run | Huawei, Hisilicon | agreed | S3-192093 | - |
| S3-192324 | R14\_clarification for Fuzz tests run | Huawei, Hisilicon | agreed | S3-192094 | - |
| S3-192325 | Clairication on the intention of the requirment | Huawei, Hisilicon | agreed | S3-192095 | - |
| S3-192326 | R15\_Mirror\_Clairication on the intention of the requirment | Huawei, Hisilicon | agreed | S3-192096 | - |
| S3-192327 | R14\_Mirror\_Clairication on the intention of the requirment | Huawei, Hisilicon | agreed | S3-192097 | - |
| S3-192328 | Security solution for UL small data transfer in RRC Suspend and Resume with early data transmission (EDT) with legacy fall back | Intel China Ltd. | noted | S3-191951 | - |
| S3-192329 | Align account numbers in testcase with the requirement | Huawei, Hisilicon | agreed | S3-192101 | - |
| S3-192330 | R15\_Mirror\_Align account numbers in testcase with the requirement | Huawei, Hisilicon | agreed | S3-192102 | - |
| S3-192331 | R14\_Mirror\_Align account numbers in testcase with the requirement | Huawei, Hisilicon | agreed | S3-192103 | - |
| S3-192332 | Reply to: LS on ETSI Plugtest standards Issues | Motorola Solutions | approved | - | - |
| S3-192333 | Correnction of Reference | China Mobile | agreed | S3-192142 | - |
| S3-192334 | Requirements on UDM/ARPF | Gemalto, Nokia | withdrawn | - | - |
| S3-192335 | Living document for 5G\_UTRAN\_SEC | China Unicom | approved | S3-191989 | - |
| S3-192336 | Proposed updates to the draft CR on SRVCC from 5G to UTRAN CS | Qualcomm Incorporated,China Unicom | approved | S3-191903 | - |
| S3-192337 | Assigning a FC value to TS 33.501 for K5GSRVCC calculation | Qualcomm Incorporated | agreed | S3-191904 | - |
| S3-192338 | Adding K5GSRVCC as a possible input key to derive IKSRVCC and CKSRVCC | Qualcomm Incorporated | agreed | S3-191905 | - |
| S3-192339 | Security aspects of CAPIF-7/7e reference points | Samsung | agreed | S3-192214 | - |
| S3-192340 | Draft TR 33.819 | Nokia | approved | - | - |
| S3-192341 | Solution for (D)DoS attack mitigation in PNI NPN | InterDigital, Inc. | approved | S3-191821 | - |
| S3-192342 | Resolution of Editor’s note in Solution #3 | Samsung | approved | S3-192217 | - |
| S3-192343 | Security threats and requirements on CAG ID privacy | ZTE Corporation,Interdigital | approved | S3-191974 | - |
| S3-192344 | Draft TR 33.825 | Huawei | approved | - | - |
| S3-192345 | Remove the unnecessary ENs of Key issue part | Huawei, Hisilicon | approved | S3-192124 | - |
| S3-192346 | URLLC: Table with available solutions in the TR | Ericsson | approved | S3-191994 | - |
| S3-192347 | Evaluation of solution #5: Security for redundant data transmission | Qualcomm Incorporated, Ericsson, Nokia | approved | S3-191913 | - |
| S3-192348 | Conclusion on KI #1 for Study on the security for URLLC | Qualcomm Incorporated, Ericsson, Nokia,Huawei | approved | S3-191914 | - |
| S3-192349 | conclusion for key issue 2 | Huawei, Hisilicon,Qualcomm | approved | S3-192122 | - |
| S3-192350 | A document is needed to show the support features | Huawei, Hisilicon | agreed | S3-192098 | - |
| S3-192351 | R15\_Mirror\_A document is needed to show the support features | Huawei, Hisilicon | agreed | S3-192099 | - |
| S3-192352 | R14\_Mirror\_A document is needed to show the support features | Huawei, Hisilicon | agreed | S3-192100 | - |
| S3-192353 | Report from session on registation failures with AMF reallocation | Huawei | noted | - | - |
| S3-192354 | New WID on evolution of Cellular IoT security for the 5G System | Ericsson | agreed | S3-192047 | - |
| S3-192355 | WID on Security of the Wireless and Wireline Convergence for the 5G system architecture | Huawei, Hisilicon | agreed | S3-192104 | - |
| S3-192356 | New SID on Study on user plane security termination point in 5GC | CATT, China Unicom, Qihoo360 | withdrawn | - | - |
| S3-192357 | conclusion for key issue 3 | Huawei, Hisilicon,Ericsson | approved | S3-192119 | - |
| S3-192358 | Deleting the EN of conclusion 7.4 | Huawei, Hisilicon | approved | S3-192121 | - |
| S3-192359 | pCR to TR33.814 - Add reference for TR 33.814 | CATT | approved | S3-191968 | - |
| S3-192360 | Draft TR 33.814 | CATT | approved | - | - |
| S3-192361 | Add evualtion to solution 4 | Huawei, Hisilicon | approved | S3-192076 | - |
| S3-192362 | pCR to TR33.814 - Conclusions for TR33.814 | CATT | approved | S3-191967 | - |
| S3-192363 | Addressing EN in solution#1 | Nokia, Nokia Shanghai bell | approved | S3-191945 | - |
| S3-192364 | Draft TR 33.813 | Nokia | approved | - | - |
| S3-192365 | Minutes of the SBA offline session | Ericsson | noted | - | - |
| S3-192366 | Conclusion to KI #1 (slice authentication) | Huawei, HiSilicon | approved | S3-191929 | - |
| S3-192367 | Conclusions to KI#2 (AMF Key separation) | Huawei, HiSilicon | approved | S3-191930 | - |
| S3-192368 | Virtualisation Study Key Issue 12 (was S3-191571) | BT plc | approved | S3-191852 | - |
| S3-192369 | Adding evaluation and resolving EN in Solution 7 | Ericsson | approved | S3-192022 | - |
| S3-192370 | Evaluation to solution #9 and conclusion to KI#5 | Huawei, Hisilicon | approved | S3-192149 | - |
| S3-192371 | Solution details on solution 8 | Huawei, HiSilicon | approved | S3-191934 | - |
| S3-192372 | Evalution for solution 8 | Huawei, HiSilicon | approved | S3-191935 | - |
| S3-192373 | Adding some details to solution #10 on protecting S-NSSAI at AS layer | Qualcomm Incorporated | approved | S3-191910 | - |
| S3-192374 | Protection of S-NSSAI transmitted in the AS layer using T-S-NSSAI | InterDigital, Inc. | approved | S3-191817 | - |
| S3-192375 | TR 33.813 - Evaluation for Solution X - S-NSSAI transmitted in the AS layer using T-S-NSSAI | InterDigital, Inc. | approved | S3-191826 | - |
| S3-192376 | Adding text to Clause 9 Recommendations | Nokia, Nokia Shanghai Bell | approved | S3-191947 | - |
| S3-192377 | WID for normative work on eNS. | Nokia, Nokia Shangahi Bell | agreed | S3-191948 | - |
| S3-192378 | pCR to 33.815 on authentication of network | NTT DOCOMO INC. | approved | S3-192229 | - |
| S3-192379 | pCR to 33.815 on user awareness of PARLOS service | NTT DOCOMO INC. | approved | S3-192237 | - |
| S3-192380 | Way forward on Emergency solution for PARLOS | Nokia, Nokia Shanghai Bell | approved | S3-191944 | - |
| S3-192381 | Draft TR 33.815 | Sprint | approved | - | - |
| S3-192382 | Resolve Editor’s Note in solution 3 | Nokia, Nokia Shanghai Bell,Huawei | approved | S3-192222 | - |
| S3-192383 | Delete Editor's in Solution#5 and add evaluation | Huawei, Hisilicon,Nokia | approved | S3-192084 | - |
| S3-192384 | Draft TR 33.807 | Huawei | approved | - | - |
| S3-192385 | WWC - Resolve Editor’s Note on Authentication in solution 4 | Nokia, Nokia Shanghai Bell | approved | S3-192228 | - |
| S3-192386 | Removal of Editor’s Note and Addition of Evaluation | Lenovo, Motorola Mobility | approved | S3-191987 | - |
| S3-192387 | Add threat and requirement to KI#11 | Huawei, Hisilicon | approved | S3-192080 | - |
| S3-192388 | Add requirement to KI#12 | Huawei, Hisilicon | approved | S3-192079 | - |
| S3-192389 | WWC - Add conclusion on KI #12 | Nokia, Nokia Shanghai Bell | approved | S3-192236 | - |
| S3-192390 | Add requirement and delete EN for KI#14 | Huawei, Hisilicon | approved | S3-192081 | - |
| S3-192391 | Conclusion on KI#14 | Huawei, Hisilicon | approved | S3-192086 | - |
| S3-192392 | Draft TR 33.861 | Ericsson | approved | - | - |
| S3-192393 | Key Issue for RRC Connection Re-Establishment for the control plane for NB-IoT connected to 5GC | Huawei, Hisilicon | approved | S3-192111 | - |
| S3-192394 | Reply LS on RRC Connection Reestablishment for CP for NB-IoT connected to 5GC | Huawei | approved | S3-192113 | - |
| S3-192395 | Virtualisation Study Key Issue 19 (was S3-191580) | BT plc | approved | S3-191853 | - |
| S3-192396 | Virtualisation Study Key Issue 22 (was S3-191583) | BT plc | approved | S3-191856 | - |
| S3-192397 | Evaluation of Solution #4 | Futurewei | withdrawn | - | - |
| S3-192398 | Proposal for editor's note in FS\_CIoT\_sec\_5G solution #15 | Philips International B.V. | approved | S3-191879 | - |
| S3-192399 | Add Evaluation for Solution 17 | Huawei, Hisilicon | approved | S3-192107 | - |
| S3-192400 | CIoT: Update to Solution #18 | Ericsson | approved | S3-192013 | - |
| S3-192401 | CIoT: Evaluation to Solution #18 | Ericsson,Futurewei,Intel | approved | S3-192014 | - |
| S3-192402 | Add Details and Evaluation for Solution 19 | Huawei, Hisilicon | approved | S3-192108 | - |
| S3-192403 | Draft TS 33.512 | Huawei | approved | - | - |
| S3-192404 | Solution for Protection of NAS Redirection Message | Huawei, Hisilicon | approved | S3-192115 | - |
| S3-192405 | KI on toplogy discovery | Huawei, Hisilicon | approved | S3-192075 | - |
| S3-192406 | Draft TR 33.824 | Samsung | approved | - | - |
| S3-192407 | New KI: Protection of recovery from backhaul-RLF | Ericsson | approved | S3-192029 | - |
| S3-192408 | Update to solution #2.1 (Authentication and authorization of IAB Node) | Ericsson | approved | S3-192031 | - |
| S3-192409 | Report from offline discussions on 5GFBS | Apple | noted | - | - |
| S3-192410 | Solution for Protection of RRC Reject Message | Huawei, Hisilicon | approved | S3-192116 | - |
| S3-192411 | Solution for Protection of NAS Reject Message | Huawei, Hisilicon | noted | S3-192117 | - |
| S3-192412 | Key Issue on resource level authorization during service access | Nokia, Nokia Shanghai Bell | approved | S3-192247 | - |
| S3-192413 | pCR on Policy based authorization for Indirect communications | Nokia, Nokia Shanghai Bell | approved | S3-192251 | - |
| S3-192414 | Evaluation of solution #4.1: F1 interface security for IAB | Qualcomm Incorporated | approved | S3-191918 | - |
| S3-192415 | Solution for Privacy protection for unicast messages over PC5 | InterDigital, Inc. | approved | S3-191822 | - |
| S3-192416 | Draft TR 33.836 | LG | approved | - | - |
| S3-192417 | Solution for Security for eV2X unicast messages over PC5 | InterDigital, Inc. | approved | S3-191823 | - |
| S3-192418 | Solution for Security for eV2X unicast messages over PC5 | InterDigital, Inc. | approved | S3-191824 | - |
| S3-192419 | Solution for Privacy protection for unicast messages over PC5 using rekeying | InterDigital, Inc. | approved | S3-191825 | - |
| S3-192420 | Update of key issue #2 on PC5 unicast mode | LG Electronics | approved | S3-191957 | - |
| S3-192421 | Reply LS on PC5 unicast and groupcast security protection | LG Electronics | approved | S3-191960 | - |
| S3-192422 | Proposal for FS\_UP\_IP\_Sec Key Issue #3 and 5: Zero-overhead user plane integrity protection on the link layer | Philips International B.V. | approved | S3-191880 | - |
| S3-192423 | New solution for KI #4 | NEC Europe Ltd | approved | S3-191899 | - |
| S3-192424 | Draft TR 33.853 | Vodafone | approved | - | - |
| S3-192425 | UP IP: New key issue for UE indicating support of UP IP in NR PDCP with a ng-eNB connected to 5GC | Ericsson | approved | S3-192036 | - |
| S3-192426 | Evaluation of Solution#1 | Samsung | approved | S3-192203 | - |
| S3-192427 | skeleton of clause 7- evaluation and conclusion | China Mobile | approved | S3-192204 | - |
| S3-192428 | New KI: AKMA push | Huawei, Hisilicon | approved | S3-192146 | - |
| S3-192429 | Solution for AKMA push | Huawei, Hisilicon | approved | S3-192160 | - |
| S3-192430 | Draft TR 33.835 | China Mobile | approved | - | - |
| S3-192431 | Modification on linkability issue1 | ZTE Corporation | approved | S3-191977 | - |
| S3-192432 | Draft TR 33.846 | Ericsson | approved | - | - |
| S3-192433 | Key issue on protecting the SQN during a re-synchronisation procedure in AKA | Qualcomm Incorporated | approved | S3-191907 | - |
| S3-192434 | LS on Integrity protection data rate enumeration | Apple | noted | S3-192244 | - |
| S3-192435 | Draft TR 33.818 | China Mobile | approved | - | - |
| S3-192436 | Scope of SECAM Accreditation for 3GPP virtualized network products | China Mobile | approved | S3-192063 | - |
| S3-192437 | Adding roles in SECAM for 3GPP virtualized network products into clause 4.6 | China Mobile, Nokia, Nokia Shanghai Bell | approved | S3-192064 | - |
| S3-192438 | Draft TR 33.855 | Ericsson | approved | - | - |
| S3-192439 | New solution: Token-based authorization for Scenario D using stateless SeCoP | Ericsson | approved | S3-192033 | - |
| S3-192440 | New solution: Token-based authorization for Scenario C using stateless SeCoP | Ericsson | approved | S3-192034 | - |
| S3-192441 | Solution for NF service consumer verification during service access authorization | Huawei, Hisilicon | approved | S3-192150 | - |
| S3-192442 | Update of solution #19 in TR 33.855 - Authorization within a NF Set | Huawei, Hisilicon,Nokia | approved | S3-192153 | - |
| S3-192443 | pCR to 33.855 on SeCoP distribution | NTT DOCOMO INC. | approved | S3-192254 | - |
| S3-192444 | pCR on removing EN in Solution #21 | Nokia, Nokia Shanghai Bell | approved | S3-192255 | - |
| S3-192445 | Draft TR 33.848 | BT | approved | - | - |
| S3-192446 | Virtualisation Study Key Issue 20 (was S3-191581) | BT plc | approved | S3-191854 | - |
| S3-192447 | Evaluation of Solution#2 | Samsung,Apple | approved | S3-192208 | - |
| S3-192448 | Draft TR 33.809 | Apple | approved | - | - |
| S3-192449 | Assessment of solution #7 to Annex A.3 | Samsung | approved | S3-192212 | - |
| S3-192450 | Solution 2 evaluation | Ericsson | approved | S3-192000 | - |
| S3-192451 | Solution 3 evaluation | Ericsson | approved | S3-192001 | - |
| S3-192452 | Solution for RRC Connection Re-Establishment for the control plane for NB-IoT connected to 5GC | Huawei, Hisilicon | approved | S3-192112 | - |
| S3-192453 | Security for non-public networks | Qualcomm Incorporated, Nokia, Nokia Shanghai Bell | approved | S3-191901 | - |
| S3-192454 | AMF reallocation | Huawei | noted | - | - |
| S3-192455 | New solution: Integrity Protection of packet header in the User Plane | China Mobile | approved | S3-192133 | - |
| S3-192456 | LS on Nudr Sensitive Data Protection | Nokia | approved | S3-192277 | - |

## Annex B: List of change requests

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Document | Title | Source | Spec | CR | Rev | Rel | Cat | WI | Decision |
| S3-192052 | Mandating time based generation of SQNs | Nokia, Nokia Shanghai Bell | 33.102 | 0279 | - | Rel-16 | F | 5GS\_Ph1-SEC | not pursued |
| S3-192037 | Corrections on IP packet forwarding | Ericsson | 33.117 | 0032 | - | Rel-14 | F | SCAS-SA3 | agreed |
| S3-192038 | Corrections on IP packet forwarding | Ericsson | 33.117 | 0033 | - | Rel-15 | A | SCAS-SA3 | revised |
| S3-192319 | Corrections on IP packet forwarding | Ericsson | 33.117 | 0033 | 1 | Rel-15 | A | SCAS-SA3 | agreed |
| S3-192039 | Corrections on IP packet forwarding | Ericsson | 33.117 | 0034 | - | Rel-16 | A | SCAS-SA3 | revised |
| S3-192320 | Corrections on IP packet forwarding | Ericsson | 33.117 | 0034 | 1 | Rel-16 | A | SCAS-SA3 | agreed |
| S3-192092 | Propose fuzz tests run 100 000 times | Huawei, Hisilicon | 33.117 | 0035 | - | Rel-16 | F | SCAS\_5G | revised |
| S3-192322 | R16\_Carification for Fuzz tests run | Huawei, Hisilicon | 33.117 | 0035 | 1 | Rel-16 | A | SCAS-SA3 | agreed |
| S3-192093 | R15\_clarification for Fuzz tests run | Huawei, Hisilicon | 33.117 | 0036 | - | Rel-15 | A | SCAS\_5G | revised |
| S3-192323 | R15\_clarification for Fuzz tests run | Huawei, Hisilicon | 33.117 | 0036 | 1 | Rel-15 | A | SCAS-SA3 | agreed |
| S3-192094 | R14\_clarification for Fuzz tests run | Huawei, Hisilicon | 33.117 | 0037 | - | Rel-14 | F | SCAS-SA3 | revised |
| S3-192324 | R14\_clarification for Fuzz tests run | Huawei, Hisilicon | 33.117 | 0037 | 1 | Rel-14 | F | SCAS-SA3 | agreed |
| S3-192095 | Clairication on the intention of the requirment | Huawei, Hisilicon | 33.117 | 0038 | - | Rel-16 | A | SCAS-SA3 | revised |
| S3-192325 | Clairication on the intention of the requirment | Huawei, Hisilicon | 33.117 | 0038 | 1 | Rel-16 | A | SCAS-SA3 | agreed |
| S3-192096 | R15\_Mirror\_Clairication on the intention of the requirment | Huawei, Hisilicon | 33.117 | 0039 | - | Rel-15 | A | SCAS-SA3 | revised |
| S3-192326 | R15\_Mirror\_Clairication on the intention of the requirment | Huawei, Hisilicon | 33.117 | 0039 | 1 | Rel-15 | A | SCAS-SA3 | agreed |
| S3-192097 | R14\_Mirror\_Clairication on the intention of the requirment | Huawei, Hisilicon | 33.117 | 0040 | - | Rel-14 | F | SCAS-SA3 | revised |
| S3-192327 | R14\_Mirror\_Clairication on the intention of the requirment | Huawei, Hisilicon | 33.117 | 0040 | 1 | Rel-14 | F | SCAS-SA3 | agreed |
| S3-192098 | A document is needed to show the support features | Huawei, Hisilicon | 33.117 | 0041 | - | Rel-16 | F | SCAS\_5G | revised |
| S3-192350 | A document is needed to show the support features | Huawei, Hisilicon | 33.117 | 0041 | 1 | Rel-16 | A | SCAS\_5G | agreed |
| S3-192099 | R15\_Mirror\_A document is needed to show the support features | Huawei, Hisilicon | 33.117 | 0042 | - | Rel-15 | A | SCAS\_5G | revised |
| S3-192351 | R15\_Mirror\_A document is needed to show the support features | Huawei, Hisilicon | 33.117 | 0042 | 1 | Rel-15 | A | SCAS\_5G | agreed |
| S3-192100 | R14\_Mirror\_A document is needed to show the support features | Huawei, Hisilicon | 33.117 | 0043 | - | Rel-14 | A | SCAS\_5G | revised |
| S3-192352 | R14\_Mirror\_A document is needed to show the support features | Huawei, Hisilicon | 33.117 | 0043 | 1 | Rel-14 | F | SCAS\_5G | agreed |
| S3-192101 | Align account numbers in testcase with the requirement | Huawei, Hisilicon | 33.117 | 0044 | - | Rel-16 | F | SCAS\_5G | revised |
| S3-192329 | Align account numbers in testcase with the requirement | Huawei, Hisilicon | 33.117 | 0044 | 1 | Rel-16 | A | SCAS-SA3 | agreed |
| S3-192102 | R15\_Mirror\_Align account numbers in testcase with the requirement | Huawei, Hisilicon | 33.117 | 0045 | - | Rel-15 | A | SCAS-SA3 | revised |
| S3-192330 | R15\_Mirror\_Align account numbers in testcase with the requirement | Huawei, Hisilicon | 33.117 | 0045 | 1 | Rel-15 | A | SCAS-SA3 | agreed |
| S3-192103 | R14\_Mirror\_Align account numbers in testcase with the requirement | Huawei, Hisilicon | 33.117 | 0046 | - | Rel-14 | F | SCAS-SA3 | revised |
| S3-192331 | R14\_Mirror\_Align account numbers in testcase with the requirement | Huawei, Hisilicon | 33.117 | 0046 | 1 | Rel-14 | F | SCAS-SA3 | agreed |
| S3-191937 | Requirement on authenticating unpublish requests | Ericsson | 33.122 | 0020 | - | Rel-16 | B | eCAPIF | not pursued |
| S3-192213 | Security procedures for CAPIF-3e/4e/5e reference points | Samsung | 33.122 | 0021 | - | Rel-16 | B | eCAPIF | not pursued |
| S3-192214 | Security aspects of CAPIF-7/7e reference points | Samsung | 33.122 | 0022 | - | Rel-16 | B | eCAPIF | revised |
| S3-192339 | Security aspects of CAPIF-7/7e reference points | Samsung | 33.122 | 0022 | 1 | Rel-16 | B | eCAPIF | agreed |
| S3-192215 | Editorial correction of CAPIF-3e/4e/5e requirements clause | Samsung | 33.122 | 0023 | - | Rel-16 | D | eCAPIF | agreed |
| S3-191860 | [33.180] R15 - Fix hash result | Motorola Solutions Germany | 33.180 | 0113 | - | Rel-15 | F | eMCSec | agreed |
| S3-191861 | [33.180] R16 - Fix hash result (mirror) | Motorola Solutions Germany | 33.180 | 0114 | - | Rel-16 | A | eMCSec | agreed |
| S3-191904 | Assigning a FC value to TS 33.501 for K5GSRVCC calculation | Qualcomm Incorporated | 33.220 | 0198 | - | Rel-16 | F | 5GS\_UTRAN\_SEC | revised |
| S3-192337 | Assigning a FC value to TS 33.501 for K5GSRVCC calculation | Qualcomm Incorporated | 33.220 | 0198 | 1 | Rel-16 | B | 5GS\_UTRAN\_SEC | agreed |
| S3-191905 | Adding K5GSRVCC as a possible input key to derive IKSRVCC and CKSRVCC | Qualcomm Incorporated | 33.401 | 0680 | - | Rel-16 | F | 5GS\_UTRAN\_SEC | revised |
| S3-192338 | Adding K5GSRVCC as a possible input key to derive IKSRVCC and CKSRVCC | Qualcomm Incorporated | 33.401 | 0680 | 1 | Rel-16 | B | 5GS\_UTRAN\_SEC | agreed |
| S3-191954 | Clarification of NIA0 with SgNB for UE NR capability | Intel China Ltd. | 33.401 | 0681 | - | Rel-15 | F | TEI15 | agreed |
| S3-192231 | Privacy protection for non-3GPP in 33.402 | Apple (UK) Limited | 33.402 | 0146 | - | Rel-15 | B | TEI15 | revised |
| S3-192275 | Privacy protection for non-3GPP in 33.402 | Apple (UK) Limited | 33.402 | 0146 | 1 | Rel-15 | B | TEI15 | not pursued |
| S3-192054 | Missing UDR description in alignment with 29.505 | Nokia, Nokia Shanghai Bell | 33.501 | 0590 | 1 | Rel-15 | F | 5GS\_Ph1-SEC | not pursued |
| S3-192056 | Adding Nudr service | Nokia, Nokia Shanghai Bell | 33.501 | 0591 | 1 | Rel-15 | F | 5GS\_Ph1-SEC | not pursued |
| S3-191884 | SoR-MAC-IUE verification failure handling by UDM | NEC Europe Ltd | 33.501 | 0609 | - | Rel-15 | F | 5GS\_Ph1-SEC | not pursued |
| S3-191912 | Missing security context handling during registration procedures | Qualcomm Incorporated | 33.501 | 0610 | - | Rel-15 | F | 5GS\_Ph1-SEC | agreed |
| S3-191917 | NAS Count values in the mapped EPS security context in 5GS to EPS change | Qualcomm Incorporated | 33.501 | 0611 | - | Rel-15 | F | 5GS\_Ph1-SEC | not pursued |
| S3-191936 | Requirements on UDM/ARPF | Gemalto, Nokia | 33.501 | 0612 | - | Rel-15 | F | 5GS\_Ph1-SEC | not pursued |
| S3-192334 | Requirements on UDM/ARPF | Gemalto, Nokia | 33.501 | 0612 | 1 | Rel-15 | F | 5GS\_Ph1-SEC | withdrawn |
| S3-191955 | Clarification on Procedure for steering of UE in VPLMN during mobility registration update | Intel China Ltd., NEC | 33.501 | 0613 | - | Rel-15 | F | 5GS\_Ph1-SEC | not pursued |
| S3-191971 | length of ARFCN-DL | ZTE Corporation | 33.501 | 0614 | - | Rel-15 | F | 5GS\_Ph1-SEC | agreed |
| S3-191972 | uplink NAS Count for KeNB derivation in idle mode mobility to EPS | ZTE Corporation | 33.501 | 0615 | - | Rel-15 | F | 5GS\_Ph1-SEC | not pursued |
| S3-191979 | uplink NAS Count for Kasme derivation in idle mode mobility to EPS | ZTE Corporation | 33.501 | 0616 | - | Rel-15 | F | 5GS\_Ph1-SEC | revised |
| S3-192284 | uplink NAS Count for Kasme derivation in idle mode mobility to EPS | ZTE Corporation | 33.501 | 0616 | 1 | Rel-15 | F | 5GS\_Ph1-SEC | agreed |
| S3-191986 | Definition of authentication subscription data | Nokia, Nokia Shanghai Bell | 33.501 | 0617 | - | Rel-15 | F | 5GS\_Ph1-SEC | revised |
| S3-192276 | Definition of authentication subscription data | Nokia, Nokia Shanghai Bell | 33.501 | 0617 | 1 | Rel-15 | F | 5GS\_Ph1-SEC | not pursued |
| S3-191995 | Recommendation to run AKA after IW HO from 4G to 5G | Ericsson | 33.501 | 0618 | - | Rel-15 | F | 5GS\_Ph1-SEC | revised |
| S3-192285 | Recommendation to run AKA after IW HO from 4G to 5G | Ericsson | 33.501 | 0618 | 1 | Rel-15 | F | 5GS\_Ph1-SEC | agreed |
| S3-191999 | Correction of reference to draft-ietf-emu-rfc5448bis | Ericsson | 33.501 | 0619 | - | Rel-15 | F | 5GS\_Ph1-SEC | not pursued |
| S3-192046 | Requirements for credential storage in the UDR | Ericsson | 33.501 | 0620 | - | Rel-15 | F | 5GS\_Ph1-SEC | not pursued |
| S3-192053 | Requirement on UDR | Nokia, Nokia Shanghai Bell | 33.501 | 0621 | - | Rel-15 | F | 5GS\_Ph1-SEC | not pursued |
| S3-192055 | Update on ARPF | Nokia, Nokia Shanghai Bell | 33.501 | 0622 | - | Rel-15 | F | 5GS\_Ph1-SEC | not pursued |
| S3-192058 | NPN references in existing text | Nokia, Nokia Shanghai Bell | 33.501 | 0623 | - | Rel-16 | F | Vertical\_LAN\_SEC | not pursued |
| S3-192068 | security handling after voice call ends | Huawei, Hisilicon | 33.501 | 0624 | - | Rel-16 | B | 5GS\_UTRAN\_SEC | not pursued |
| S3-192073 | Clarification on length of EARFCN-DL in key derivation | Huawei, Hisilicon | 33.501 | 0625 | - | Rel-16 | F | 5GS\_Ph1-SEC | not pursued |
| S3-192139 | KAUSF synchronziation between the UE and AUSF | China Mobile | 33.501 | 0626 | - | Rel-15 | F | 5GS\_Ph1-SEC | not pursued |
| S3-192142 | Correnction of Reference | China Mobile | 33.501 | 0627 | - | Rel-15 | F | 5GS\_Ph1-SEC | revised |
| S3-192333 | Correnction of Reference | China Mobile | 33.501 | 0627 | 1 | Rel-15 | F | 5GS\_Ph1-SEC | agreed |
| S3-192148 | Solving registraiton failure in ilde mobility registration procedure with AMF Reallocation | China Telecom, Huawei, Hisilicon | 33.501 | 0628 | - | Rel-15 | F | 5GS\_Ph1-SEC | not pursued |
| S3-192151 | Clarification on security context transfer during handover from S1 mode to N1 mode | Huawei, Hisilicon | 33.501 | 0629 | - | Rel-15 | F | 5GS\_Ph1-SEC | not pursued |
| S3-192155 | Removing the authentication result in the UDM | Huawei, Hisilicon | 33.501 | 0630 | - | Rel-15 | F | 5GS\_Ph1-SEC | not pursued |
| S3-192156 | Description of issue of security context transfer following the handover from EPS to 5GS | Huawei, Hisilicon | 33.501 | 0631 | - | Rel-15 | F | 5GS\_Ph1-SEC | revised |
| S3-192158 | Clarification on the eKSI in idle mode mobility from 5GS to EPS over N26 | Huawei, Hisilicon | 33.501 | 0632 | - | Rel-15 | F | 5GS\_Ph1-SEC | not pursued |
| S3-192161 | Removing the authentication result in the UDM | Huawei, Hisilicon | 33.501 | 0633 | - | Rel-16 | F | 5GS\_Ph1-SEC | not pursued |
| S3-192162 | Changes on handover from EPS to 5GS over N26 | Huawei, Hisilicon | 33.501 | 0634 | - | Rel-15 | F | SCAS\_5G | agreed |
| S3-192182 | Clarification on authentication vector generation | Nokia, Nokia Shanghai Bell | 33.501 | 0635 | - | Rel-15 | F | 5GS\_Ph1-SEC | not pursued |
| S3-192219 | Clarification to Initial NAS message protection | Samsung | 33.501 | 0636 | - | Rel-16 | F | TEI16 | revised |
| S3-192282 | Clarification to Initial NAS message protection | Samsung | 33.501 | 0636 | 1 | Rel-16 | B | TEI16 | agreed |
| S3-192226 | Modification on the usage of Identity Request | Apple (UK) Limited | 33.501 | 0637 | - | Rel-15 | F | TEI15 | revised |
| S3-192280 | Modification on the usage of Identity Request | Apple (UK) Limited | 33.501 | 0637 | 1 | Rel-15 | F | TEI15 | not pursued |
| S3-192259 | Authentication Data Storage in 5G UDR for Release 15 | Hewlett-Packard Enterprise | 33.501 | 0638 | - | Rel-15 | C | 5GS\_Ph1-SEC | not pursued |
| S3-191961 | Add abbreviation and correct references | Futurewei Technologies | 33.511 | 0001 | - | Rel-16 | F | SCAS\_5G | agreed |
| S3-192138 | Addition Assets and Threats for Generic NFs | Nokia, Nokia Shanghai Bell | 33.926 | 0008 | - | Rel-16 | B | SCAS\_5G | not pursued |
| S3-192165 | Adding UPF critical assets and threats to TR 33.926 | Huawei, Hisilicon | 33.926 | 0009 | - | Rel-16 | B | SCAS\_5G | not pursued |
| S3-192167 | Adding UDM critical assets and threats to TR 33.926 | Huawei, Hisilicon | 33.926 | 0010 | - | Rel-16 | B | SCAS\_5G | not pursued |
| S3-192170 | Adding SMF critical assets and threats to TR 33.926 | Huawei, Hisilicon | 33.926 | 0011 | - | Rel-16 | B | SCAS\_5G | not pursued |
| S3-192172 | Adding AUSF critical assets and threats to TR 33.926 | Huawei, Hisilicon | 33.926 | 0012 | - | Rel-16 | B | SCAS\_5G | not pursued |
| S3-192176 | Adding NEF critical assets and threats to TR 33.926 | Huawei, Hisilicon | 33.926 | 0013 | - | Rel-16 | B | SCAS\_5G | not pursued |
| S3-192177 | adding critical assets and threats to TR 33.926 for general SBA/SBI aspects | Huawei, Hisilicon | 33.926 | 0014 | - | Rel-16 | B | SCAS\_5G | not pursued |
| S3-192179 | Addition of AMF-related Security Problem Descriptions | Huawei, Hisilicon | 33.926 | 0015 | - | Rel-16 | B | SCAS\_5G | not pursued |
| S3-192180 | Updating SEPP critical assets and threats in TR 33.926 | Huawei, Hisilicon | 33.926 | 0016 | - | Rel-16 | B | SCAS\_5G | not pursued |

## Annex C: Lists of liaisons

### C1: Incoming liaison statements

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Document | Original | Title | From | Decision | Reply TDoc |
| S3-191829 |  | LS on ETSI Plugtest standards Issues | C1-193601 | replied to | S3-192332 |
| S3-191830 |  | Reply LS on Security failure of NAS container in HO command | C1-193708 | noted | (none) |
| S3-191831 |  | LS on handling of native non-current 5G NAS security context after an inter-system change from S1 mode to N1 mode in idle mode | C1-193944 | withdrawn | S3-192279 |
| S3-191832 |  | Reply LS on Clarification for N32 security | C4-192467 | noted | (none) |
| S3-191833 |  | NGMN 5G End-to-End Architecture Framework | NGMN | noted | (none) |
| S3-191834 |  | Observations on standards and technical constraints from 3rd MCX remote Plugtests | ETSI CTI | noted | (none) |
| S3-191835 |  | LS on RRC Connection Re-Establishment for CP for NB-IoT connected to 5GC | R2-1908264 | replied to | S3-192394 |
| S3-191836 |  | LS on Ciphering solution for broadcast of Assistance Data | R2-1908473 | replied to | S3-192268 |
| S3-191837 |  | GTP Recovery Counter & GSN node behaviour | GSMA | replied to | S3-192269 |
| S3-191838 |  | Reply LS on Authentication for UEs not Supporting NAS | S1-191595 | noted | (none) |
| S3-191839 |  | Further LS relating to “Response LS on reporting all Cell IDs in 5G” | S2-1906170 | noted | (none) |
| S3-191840 |  | LS reply on Nudr Sensitive Data Protection | S2-1906761 | noted | (none) |
| S3-191841 |  | Reply LS on Nudr Sensitive Data Protection | SP-190581 | postponed |  |
| S3-191842 |  | Reply LS on Clarification request on NF authorization in UE Reachability Notification Request procedure | S2-1906636 | noted | (none) |
| S3-191843 |  | LS to BBF on WWC status | S2-1906821 | noted | (none) |
| S3-191844 |  | LS on the availability of and requesting feedback on the stable draft TR 103 582 from ETSI STF555 - "Study of use cases and communications involving IoT devices in emergency situations | ETSI SC EMTEL | noted | (none) |
| S3-191845 |  | Diameter IPX Network End-to-End Security Solution | GSMA | replied to | S3-192270 |
| S3-191846 |  | LS on support of non-3GPP only UE and support for PEI in IMEI format | S2-1904836 | replied to | S3-192278 |
| S3-191847 |  | Response LS on support of non-3GPP only UE and support for PEI in IMEI format | s3i190363 | noted | (none) |
| S3-191848 |  | Handling of UE radio network capabilities in 4G and 5G | GSMA | replied to | S3-192271 |
| S3-192264 |  | LS on handling of native non-current 5G NAS security context after an inter-system change from S1 mode to N1 mode in idle mode | C1-193944 | replied to | S3-192279 |
| S3-192265 |  | Reply LS on Handling of UE radio network capabilities in 4G and 5G | R2-1908467 | replied to | S3-192271 |
| S3-192266 |  | Impersonation Attacks in 4G Networks | GSMA | replied to | S3-192272 |
| S3-192267 |  | LS on withdrawal of TS 103 383 “Smart Cards; Embedded UICC; Requirements Specification | ETSI TC SCP | postponed | (none) |

### C2: Outgoing liaison statements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Document | Title | To | Cc | reply to i/c LS |
| S3-192268 | Reply LS on Cuiphering solution for broadcast of Assistance Data | RAN2 | - | S3-191836 |
| S3-192269 | Reply to: GTP Recovery Counter & GSN node behaviour | GSMA FASG RIFS | - | S3-191837 |
| S3-192270 | Reply to: Diameter IPX Network End-to-End Security Solution | GSMA FASG DESS | - | S3-191845 |
| S3-192271 | Reply to: Handling of UE radio network capabilities in 4G and 5G | GSMA,RAN2 | SA2,RAN3 | S3-191848,R2-1908467 |
| S3-192272 | Reply to: Impersonation Attacks in 4G Networks | GSMA | - | S3-192266 |
| S3-192278 | Reply to: LS on support of non-3GPP only UE and support for PEI in IMEI format | SA2 | CT1,CT4,SA3-LI | S3-191846 |
| S3-192279 | Reply LS on handling of native non-current 5G NAS security context | CT1 | - | S3-192264 |
| S3-192281 | LS on registration issues in the AMF re-allocation | CT1,SA2 | - |  |
| S3-192332 | Reply to: LS on ETSI Plugtest standards Issues | CT1 | SA6 | S3-191829 |
| S3-192394 | Reply LS on RRC Connection Reestablishment for CP for NB-IoT connected to 5GC | RAN2,SA2 | CT4 | S3-191835 |
| S3-192421 | Reply LS on PC5 unicast and groupcast security protection | SA2 | RAN2 | S3-190044 |
| S3-192456 | LS on Nudr Sensitive Data Protection | CT4,SA2 | - | - |

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

|  |  |  |  |
| --- | --- | --- | --- |
| Document | Title | Source | new/revised |
| S3-192354 | New WID on evolution of Cellular IoT security for the 5G System | Ericsson | WID new |
| S3-192355 | WID on Security of the Wireless and Wireline Convergence for the 5G system architecture | Huawei, Hisilicon | WID new |
| S3-192377 | WID for normative work on eNS. | Nokia, Nokia Shangahi Bell | WID new |
| S3-191906 | Revision of SRVCC WID | Qualcomm Incorporated | WID revised |

## Annex E: List of draft Technical Specifications and Reports

|  |  |  |  |
| --- | --- | --- | --- |
| Document | Spec | vers | Doc title |
| S3-192292 | 33.513 | 0.4.0 | Draft TS 33.513 |
| S3-192293 | 33.514 | 0.5.0 | Draft TS 33.514 |
| S3-192299 | 33.515 | 0.4.0 | Draft TS 33.515 |
| S3-192303 | 33.516 | 0.2.0 | Draft TS 33.516 |
| S3-192307 | 33.517 | 0.5.0 | Draft TS 33.517 |
| S3-192312 | 33.518 | 0.4.0 | Draft TS 33.518 |
| S3-192315 | 33.519 | 0.5.0 | Draft TS 33.519 |
| S3-192340 | 33.819 | 1.1.0 | Draft TR 33.819 |
| S3-192344 | 33.825 | 1.1.0 | Draft TR 33.825 |
| S3-192360 | 33.814 | 0.5.0 | Draft TR 33.814 |
| S3-192364 | 33.813 | 0.5.0 | Draft TR 33.813 |
| S3-192381 | 33.815 | 0.6.0 | Draft TR 33.815 |
| S3-192384 | 33.807 | 0.6.0 | Draft TR 33.807 |
| S3-192392 | 33.861 | 1.2.0 | Draft TR 33.861 |
| S3-192403 | 33.512 | 0.8.0 | Draft TS 33.512 |
| S3-192406 | 33.824 | 0.3.0 | Draft TR 33.824 |
| S3-192416 | 33.836 | 0.2.0 | Draft TR 33.836 |
| S3-192424 | 33.853 | 0.4.0 | Draft TR 33.853 |
| S3-192430 | 33.835 | 0.5.0 | Draft TR 33.835 |
| S3-192432 | 33.846 | 0.2.0 | Draft TR 33.846 |
| S3-192435 | 33.818 | 0.3.0 | Draft TR 33.818 |
| S3-192438 | 33.855 | 1.6.0 | Draft TR 33.855 |
| S3-192445 | 33.848 | 0.2.0 | Draft TR 33.848 |
| S3-192448 | 33.809 | 0.5.0 | Draft TR 33.809 |

## Annex F: List of participants

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
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| Mr. | Velev | Genadi | Motorola Mobility Germany GmbH | ETSI | 3GPPMEMBER | Lenovo (Beijing) Ltd | CCSA |
| Mr. | Vujcic | Dragan | IDEMIA | ETSI | 3GPPMEMBER | IDEMIA | ETSI |
| Miss | Wang | Dan | China Mobile Research Inst. |  |  | China Mobile (Hangzhou) Inf. | CCSA |
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| Miss | Wang | Liang | ZTE Corporation | ETSI | 3GPPMEMBER | Jetflow | CCSA |
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| Mr. | Wenham | Steven | Huawei Technologies R&D UK | ETSI | 3GPPMEMBER | Huawei Technologies R&D UK | ETSI |
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| Mr. | Wong | Marcus | Futurewei Technologies | ATIS | 3GPPMEMBER | Futurewei Technologies | ATIS |
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## Annex G: List of future meetings

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Title | Start date | End date (OP) | Town | Country | Reference |
| 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 |