**Notes of SA2#138E\_CC#1**

# Opened: 20 April 2020, 15:00 CEST

~ 162 people attended the conference call

**Attendees**: The following companies were recorded as present (list not exhaustive)

Affirmed Networks

AT&T

Broadcom

BT

Cablelabs

CATT

Charter

China Mobile

China Telecom

China Unicom

Cisco

Convida Wireless

Deutsche Telekom

Ericsson

ETRI

FirstNet

Fraunhofer

Futurewei

Huawei

IDCC

Intel

Interdigital

KDDI

KPN

Lenovo

LGE

Matrixx

Mavenir

MCC

MediaTek

Mitsubishi

Motorola Mobility

NEC

Nokia

NTIA

NTT DOCOMO

OpenNet

OPPO

Oracle

OTD

Philips

Prospecta labs

Qualcomm

Samsung

Telecom Italia

Tencent

T-Mobile USA

Vivo

Vodafone

Volkswagen

ZTE

Puneet Jain (SA2 Chairman) chaired the conference call. Notes were taken by Maurice Pope (MCC).

NOTE: Meeting notes are not exhaustive and may not contain all the comments made during the conference call.

Opening statements by SA WG2 Chairman: The CC was arranged to discuss issues in the e-meeting in order to try to come to a way forward on difficult issues. All inputs were provided before the CC.

## SA2#138E\_WUS\_way forward.pptx

System support for WUS - way forward

<https://www.3gpp.org/ftp/tsg_sa/WG2_Arch/TSGS2_138e_Electronic/Inbox/CCs/SA2%23138E_CC%231/SA2%23138E_WUS_way%20forward.pptx>

Related papers

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| S2-2002660 | LS In | Action | LS from RAN WG3: Reply LS on assistance indication for WUS | RAN WG3 (R3-201397) |
| S2-2002885 | LS OUT | Approval | [DRAFT] Reply LS on assistance indication for WUS | Qualcomm Incorporated |
| S2-2002897 | LS OUT | Approval | [DRAFT] Reply LS on assistance indication for WUS | VODAFONE Group Plc |
| S2-2002881 | CR | Approval | 23.401 CR3582R7 (Rel-15, 'F'): System support for Wake Up Signal | Vodafone |
| S2-2002882 | CR | Approval | 23.401 CR3583R2 (Rel-16, 'F'): System support for Wake Up Signal | Vodafone |
| S2-2002883 | CR | Approval | 23.401 CR3600 (Rel-15, 'F'): System support for Wake Up Signal | Qualcomm Incorporated, Ericsson, ZTE |
| S2-2002985 | DISCUSSION | Agreement | Discussion on CN awareness of WUS | Huawei, HiSilicon |
| S2-2002986 | CR | Approval | 23.401 CR3582R8 (Rel-15, 'F'): System support for Wake Up Signal | Huawei, HiSilicon |
| S2-2002987 | CR | Approval | 23.401 CR3583R3 (Rel-16, 'F'): System support for Wake Up Signal | Huawei, HiSilicon |

**Open issues and proposed solutions
Non-controversial aspects (common aspects in the input papers)**

Issue 1: How to avoid increase of idle mode UE power consumption due to use of WUS?

- Limit use of WUS to last used cell for eNB and UE

Issue 2: How to limit of WUS by eNBs to last used cell?

- eNB determines last used cell based on Assistance Data for Recommended Cells in S1-AP Paging message

- MME populates Assistance Data for Recommended Cells in S1-AP Paging message with Information on Recommended Cells and eNBs for Paging (if provided by eNB)

**Controversial aspects**

Issue 3: How to ensure that Information on Recommended Cells and eNBs for Paging is provided by last used eNB?

- Proposal A (Vodafone) S2-2002881

- MME to construct Assistance Data for Recommended Cells for WUS-capable UEs based on User Location Info IE/Information for EC received as part of last S1AP release

- MME to include last used cell ID within the Assistance Data for Recommended Cells at least when paging WUS-capable UEs in WUS-capable eNBs

- MME determines whether UE is WUS capable from the UE Radio Capability for Paging Information stored in the MME

- MME determines if eNB is WUS capable based on explicit indication from eNB

- Proposal B (Huawei) S2-2002986

- Same as 3a except

- MME determines whether UE is WUS capable based on explicit indication from eNB in S1-AP UE CAPABILITY INFO INDICATION message.

- Proposal C (QC, Ericsson, ZTE) S2-2002883

- Networks that intend to deploy WUS are assumed to ensure that WUS-capable eNBs provide Information on Recommended Cells and eNBs for Paging to MMEs and that MMEs reflect this information back to eNBs while paging.

**Way forward:
How to ensure that Information on Recommended Cells and eNBs for Paging is provided by last used eNB?**

- Option 1: Mandate WUS-capable eNBs to provide the Recommended Cells for Paging IE to the MME when releasing the S1 connection or suspending the UE context.

- Option 2: Document an assumption (in a note) that networks that intend to deploy WUS are assumed to ensure that WUS-capable eNBs provide the Recommended Cells for Paging IE to the MME when releasing the S1 connection or suspending the UE context.

**Discussion:**

For the way forward, Nokia asked whether a third option could be added to answer either Yes or No for whether the MME needs to be aware.

Question: Does MME needs to be aware?

Answer: NO for information for last cell information (proposal from Huawei still needs to be considered at a future meeting).

Vodafone commented that this could lead to battery drain if the information is not sent when the cell is released.

Prefer Option 1: Vodafone, Orange

Prefer Option 2: Ericsson and Qualcomm prefer option 2 but could accept option 1 if using 'should'. Nokia commented that Option 2 should be documented as conditional normative text (provide the information if the MME knows WUS is supported).

**Conclusion:**

Option 1 will be progressed. “Shall” vs “Should” would be discussed further during the e-meeting. S2-2002883 will be taken as a basis for the proposals.

## SA2#138E\_Way forward on abnormal behavior related network data analytics....doc

<https://www.3gpp.org/ftp/tsg_sa/WG2_Arch/TSGS2_138e_Electronic/Inbox/CCs/SA2%23138E_CC%231/SA2%23138E_Way%20forward%20on%20abnormal%20behavior%20related%20network%20data%20analytics_final.doc>

Way forward on abnormal behavior related network data analytics for target of analytics reporting being any UE (eNA Rapporteur (Huawei))

**Proposed Way Forward:** In order to complete the support for "any UE" as "Target of Analytics Reporting" for abnormal behaviour related network data analytics while keeping the generated signaling load under control, in principle it is proposed to capture the two above approaches.

**Discussion:**

Ericsson commented that the meaning of the linkage needs to be clarified.

Nokia considered approach A requires more work during the e-meeting and not decided on this CC and both approaches should be worked on at the e-meeting.

AT&T would not like to conclude to have both approaches.

Samsung commented that both approaches will be merged and agreed as a single approach.

SA2 Chairman asked to work further during the e-meeting to try to converge on a single approach. If that’s not achieved during the week then it can be brought back for final decision on Friday CC#2.

**Conclusion:**

This should be further worked on at the e-meeting to try to converge on a single approach.

### SA2#138E-Vertical\_LAN-WayForward-Proposals-r2.pptx

<https://www.3gpp.org/ftp/tsg_sa/WG2_Arch/TSGS2_138e_Electronic/Inbox/CCs/SA2%23138E_CC%231/SA2%23138E-Vertical_LAN-WayForward-Proposals-r2.pptx>

Vertical\_LAN Way forward for SA2 CC on April 20th, 2020 (Devaki Chandramouli Rapporteur, Nokia)

**Item #1**

**1) Parameters for UPF selection upon PDU Session establishment.**

-  Current text refers to: DNN, Traffic classes, VLANs.

-  Options in submitted papers:

- 1A: remove Traffic classes and VLANs (2782 (Ericsson), 3036 (ZTE), 3173 (Nokia), QCOM)

- 1B: keep existing parameters (3049 (CATT), 3050 (CATT), 3109 (CMCC), 2960/2961 (Samsung), 3079/3080 (Huawei))

- 1C: remove Traffic classes and VLANs, but add Bridge identifier stored in subscription (3156 (Intel), 3044 (Intel), 3083(Intel)).

- 1D: remove Traffic classes and VLANs, but add Bridge identifier provided by DS-TT (3156 (Intel), 3101, 3105 (Intel)).

**Way forward proposal:** Seems like 1B is simply copying existing text to UPF selection section. Commonality between 1A, 1B, 1C is removal of Traffic Class, VLAN ID for UPF selection section.

- Determine whether Traffic Class, VLAN ID are needed for UPF discovery and UPF selection by show of hands.

- Discuss separately if there is a need for Bridge ID for UPF discovery & selection.

**Item #2**

2) Port and Bridge Management Information.

- Current text: 23.501 Table Port Management Information table contains information that is both port and bridge specific.

- Options in submitted papers:

- 2A) Split of the Port Management Information table into Port-specific and Bridge-specific tables (2706).

- 2B) Essential enhancements on the existing table (e.g. 3211, 3172) to address the gaps.

**Way forward proposal:** show of hands during the call.

Note: use the outcome as the basis to determine which paper should be used as the baseline for revisions to the table.

**Item #3**

3) Bridge ID and Bridge MAC address

- Current text: states that Bridge ID is derived from the "Bridge MAC address".

- Options in submitted papers:

- 3A) define Bridge ID as independent parameter, but keep "Bridge MAC address" (2716 (Ericsson), 3081 (Huawei)).

- 3B) define Bridge ID as independent parameter as in 2716, 3081 but remove "Bridge MAC address" (no proposal?).

- 3C) continue to use Bridge ID derived from 'Bridge MAC address'

**Way forward proposal:** show of hands during the call.

**Item #4**

4) DS-TT MAC address and session binding in PCF.

- Current text: DS-TT MAC address is provided by DS-TT. A "UE MAC address" is used for session binding in PCF.

- Options in submitted papers:

- A) Removal of DS-TT MAC address. Session binding based on (Bridge ID, port number) tuple (2716, 2717, 2718).

- B) Session binding is performed with DS-TT MAC address (e.g. 3204).

**Consideration:**

Option B is an essential correction to existing spec while Option A is a radical change to current approach.

**Way forward proposal:** Go with Option B?

**Item #5**

5) PSFP based Hold and Forward buffering (for per stream H&F buffering)

- SA2 Moderated email discussion outcome/Working assumption:

- Support for PSFP based Hold and Forward Buffering rule

- Given no clear majority this functionality will not be supported in Rel-16.

- 3082, 2841 proposes to support this in Rel-16 (not compliant to agreed working assumption)

- As a consequence following papers propose to fix the 5GS Bridge delay reporting to avoid the issue of lack of in-order delivery and incorrect Qbv enforcement:

- 2889, 3121, 3035

**Way forward proposal:** Note 3082, 2841 for Rel-16 to be aligned with working assumption. Merge 2889, 3121, 3035.

If the group wishes to re-open the working assumption, then do informal show of hands to determine one way or the other.

**Item #6**

6) Reporting CAG ID list over N2

Options:

- 5A) S2-2003076, S2-2003077 - Proposes Reporting of CAG ID list per cell over N2

- 5B) S2-2002845 - The NG-RAN reports supported CAG ID(s) per TAI over N2

Consideration:

- Neither of the proposal has been agreed in RAN3 yet. This is still being discussed in RAN3.

- Given that we agreed S2-2001614, which says
NOTE 2: It is assumed that the AMF is made aware of the supported CAG Identifier(s) of the CAG cell by the NG-RAN.

- it should be clear that the ball is now in RAN3's court. Let us avoid parallel discussions, time and effort in two WGs, postpone the discussion in SA2 and leave the discussion to RAN3, align TS 23.501/2 after they conclude.

**Way Forward proposal:** Postpone 3077/2845 for SA2#138E.

**Discussion:**

**Item #1:**

Huawei paper proposes to remove Traffic Classes and keep VLAN ID. Some papers would like to keep both and some to remove both. Nokia commented that there was no strong request to keep the Traffic Classes.

It was agreed to remove Traffic Classes.

Huawei, CMCC and CATT did not wish to remove the VLAN ID. Ericsson, ZTE, Nokia, Qualcomm, Intel, Samsung, Vivo, Cisco wished to remove VLAN ID. (S2-2003036, S2-2003173).

Based on majority view, removing VLAN IDs was taken as working assumption.

S2-2002782 should be used as a basis for discussion.

It was suggested that Bridge ID needs to be added. This should be discussed at the e-meeting

**Item #2:**

Cisco commented that this is not only about structuring of the port specific and bridge specific table and that stage 3 had already moved in this direction.

Keep current structure: Nokia

Split the table: Intel, Ericsson, NTT DOCOMO, Samsung, China Mobile

It was agreed to split the table. S2-2002706 will be taken as a basis.

**Item #3:**

Intel suggested 3B should be that Bridge ID is Bridge MAC address. Ericsson commented that this contradicts IEEE specifications as they are different parameters. This should be further discussed during the e-meeting.

**Item #4:**

This should be further discussed during the e-meeting.

**Item #5:**

NTT DOCOMO clarified that in S2-2002841, they were not asking for the Hold & Forward issue but to suport priority values. Huawei were asked whether they could go with the current working assumption. Huawei asked who supported their proposal. The SA WG2 Chairman replied that the support should be gained before the e-meeting and multiple company supported proposals submitted. The current working assumption should be worked on and counter proposals not worked on further.

S2-2003082 will not be further progressed in the e-meeting. S2-2002841 is not related to PSFP based Hold and Forward buffering, and will be discussed separately. S2-2002889 will be used as a basis for further discussion.

**Item #6:**

Nokia clarified that the need for CAG ID is already agreed. Qualcomm asked why we await RAN WG3 response as they will provide the same answer as before. S2-2003077 and S2-2002845 were postponed.

**Conclusion:**

Item#1: Traffic classes and VLAN ID will be removed. S2-2002782 should be used as a basis for discussion. Addition of Bridge ID will be discussed further.

Item#2: Working assumption: Split the table. S2-2002706 will be taken as a basis.

Item#3: This should be further discussed during the e-meeting.

Item#4: This should be further discussed during the e-meeting.

Item#5: S2-2003082 will not be further progressed in the e-meeting. S2-2002841 is not related to PSFP based Hold and Forward buffering and will be discussed separately. S2-2002889 will be used as a basis for further discussion.

Item#6: Working assumption to postpone S2-2003077 and S2-2002845 to the next meeting.

## SA2#138E-CC#1\_Local\_NR\_Positioning\_Replay-WF.pptx

<https://www.3gpp.org/ftp/tsg_sa/WG2_Arch/TSGS2_138e_Electronic/Inbox/CCs/SA2%23138E_CC%231/SA2%23138E-CC%231_Local_NR_Positioning_Replay-WF.pptx>

Way forward on Reply to LS on Local NR positioning in NG-RAN for SA2 CC on April 20th, 2020 (Ming Ai, CATT).

Related documents:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| S2-2002612 | LS In | Action | LS from TSG RAN: LS on Local NR positioning in NG-RAN | TSG RAN (RP-193262) |
| S2-2002893 | LS OUT | Approval | [DRAFT] Reply LS on Local NR positioning in NG-RAN | Nokia, Nokia Shanghai Bell |
| S2-2003117 | LS OUT | Approval | [DRAFT] Reply LS on Local NR positioning in NG-RAN | Huawei, Hisilicon |

**Some Highlights of Pervious 2 Meetings**

The LS in and two draft Replies (one from Nokia, one from HUAWEI) has been discussed during SA2 meetings this Q1;

Some agreements reached:

- Confirm RAN WG that the requirements on positioning latency, refer to SA1

- Some architecture e.g. LMF functionality in RAN or LMF and LMF located closer to RAN, could reduce the latency.

Open issues:

- Consensus couldn't be reached on the quantitative evaluation of the latency reduction.

**Way forward proposal**

- Observations:

- Nokia/Sherry initiated an email discussion on this, and proposed how to merge two Draft LS back ;

- Way forward proposal :

- LS back to RAN should not be delayed anymore. i.e. we/SA2 should reply RAN within Q2;

- In the LS back, agreement reached (in pervious and this meetings) should be captured, e.g.:

- Confirm RAN WG that the requirements on positioning latency, refer to SA1;

- Some architecture e.g. LMF functionality in RAN or LMF and LMF located closer to RAN, could reduce the latency.

- (further agreements…..)

**Discussion:**

It was agreed that SA WG2 will send a LS response capturing that the requirements on positioning latency, refer to SA WG1. There was some discussion on the architecture choices which could reduce the latency, and this should be further discussed.

**Conclusion:**

SA WG2 will send a LS response confirming that there are requirements on positioning latency, refer to SA WG1. Additional agreements should be further discussed.

## SA2#138E\_CC#1 on Draft Reply LS to RAN3 on URLLC QoS Monitoring.doc

Way forward on Reply LS to RAN3 on URLLC QoS Monitoring (Susan Shi (Huawei))

Proposes to move forward the reply LS based on the proposal in the S2-2002838 and the S2-2002953, and the corresponding CRs S2-2002839 (23.501), S2-2002949 (23.501), S2-2002840 (23.502).

**Discussion:**

Nokia supported also option 1 (Huawei/Qualcomm). Ericsson commented that this may not make sense in deployment as this is for Real-Time services and would need to be used in real time.

Question: Whether D1 measurement shall be included in the RAN part of UL packet delay for QoS Monitoring for URLLC?

Yes: Nokia, Qualcomm, Huawei, Lenovo

No: Ericsson

SA2 Chairman commented that this issue has not been discussed before so would not prefer to take decision on the CC#1. This should be further discussed in the e-meeting. If no conclusion is reached it can be brought back for conclusion on the Friday CC#2.

**Conclusion:**

This should be further discussed in the e-meeting.

## AOB

Nokia provided a summary document on NAS PDU error handling in order to get convergence on high level principles and decided which documents to use as a basis. Huawei commented that there are CRs related to this which can be progressed. Nokia considered it better to decide on the way forward to answer the questions in the response LS and then to update the CRs accordingly. This may be discussed off-line.

Qualcomm asked for a TD number to reply to the LS in **S2-2002665**. This was allocated as **S2-2003214** (agenda item 6.8).

Nokia requested a number for a companion 23.502 CR to the 23.501 CR in S2-2002687. This was allocated as **S2-2003215 (23.502 CR2306).**

# Closed: 20 April 2020, 17.12 CEST