**SA WG2 Meeting #143E S2-21xxxxx**

**24 February - 09 March 2021, Electronic (revision of S2-21xxxx)**

**Source: Intel (Rapporteur)**

**Title: MUSIM work plan**

**Document for: Information**

**Agenda Item: TBD**

**Work Item / Release: MUSIM / Rel-17**

*Abstract of the contribution: This contribution proposes a work plan for MUSIM.*

# Work areas and coordination input

This is the work plan to identify work areas and volunteers for MUSIM work item.

1. Identify the required tasks (e.g. CRs and content) of the work plan below
2. When tasks are settled, identify volunteers to write and drive CR(s) per task of the work plan below
3. Volunteers should upload first draft of normative CR(s) to the SA2#143E DRAFT folder, to allow other companies to provide comments, updates and cosigning (discussions to use SA2 discussion mail list).
4. During the SA2#143E meeting, it is recommended to use the corresponding volunteer’s CR as the baseline unless the volunteer's CR doesn’t help reach consensus and the concerns against the volunteer’s CRs are well justified to consider other CRs.
   1. If we are unable to reach consensus, we can also highlight the issues during CC#1 to determine the way forward.

NOTE: The work plan below includes aspects that are concluded and agreed to be part of the WID, i.e. aspects requiring further study in Q1 2021 are excluded.

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| --- | --- | --- | --- | --- |
| **General** | | | | |
| **Tasks** | **Title** | **SA2#143E**  **Volunteer/driver**  **(company, mail address)** | **Status/Comments** | **Clause impacted** |
| T0.1 | Feature description | Ericsson  [qian.xb.chen@ericsson.com](mailto:qian.xb.chen@ericsson.com)  Nokia (alessio)  Alessio.casati@nokia.com  LGE (Myungjune)  m.youn@lge.com  Huawei (Ouyang, Steve)  ouyangguowei@huawei.com  steven.wenham@huawei.com  China Telcom(Pinghui)  [chenpingh@chinatelecom.cn](mailto:chenpingh@chinatelecom.cn)  Charter (Curt) [curt.wong@charter.com](mailto:curt.wong@charter.com)  MediaTek (Guillaume) [guillaume.sebire@mediatek.com](mailto:guillaume.sebire@mediatek.com)  Intel (Saso) [saso.stojanovski@intel.com](mailto:saso.stojanovski@intel.com)  Vodafone (Chris Pudney) [chris.pudney@vodafone.com](mailto:chris.pudney@vodafone.com)  Spreadtrum(Chunhui Zhu)  [tom.zhu@unisoc.com](mailto:tom.zhu@unisoc.com)  Sony (Lars) [lars.nord@sony.com](mailto:lars.nord@sony.com) | - A general introduction to the feature. | 23.501:  - New clause 5.x;  23.401:  - New clause 4.3.x; |
| T0.2 | MUSIM capability exchange | Nokia (alessio)  Alessio.casati@nokia.com  Lenovo (Genadi)  [gvelev@lenovo.com](mailto:gvelev@lenovo.com)  vivo(xiaowan)  [xiaowan.ke@vivo.com](mailto:xiaowan.ke@vivo.com)  Qualcomm (Juan)  juanzhan@qti.qualcomm.com  Xiaomi(Jianning)  liujianning@xiaomi.com  Samsung(Lalith)  [lalith.kumar@samsung.com](mailto:lalith.kumar@samsung.com)  Huawei (Ouyang, Steve)  ouyangguowei@huawei.com  steven.wenham@huawei.com  China Telcom(Pinghui)  [chenpingh@chinatelecom.cn](mailto:chenpingh@chinatelecom.cn)  Charter (Curt) [curt.wong@charter.com](mailto:curt.wong@charter.com)  MediaTek (Guillaume) [guillaume.sebire@mediatek.com](mailto:guillaume.sebire@mediatek.com)  OPPO (Yang)  [xuyang@oppo.com](mailto:xuyang@oppo.com)  Intel (Saso) [saso.stojanovski@intel.com](mailto:saso.stojanovski@intel.com)  Iskren Ianev Iskren.Ianev@EMEA.NEC.COM  Apple (Krisztian) [kkiss@apple.com](mailto:kkiss@apple.com)  Vodafone (Chris Pudney) [chris.pudney@vodafone.com](mailto:chris.pudney@vodafone.com)  Spreadtrum(Chunhui Zhu)  [tom.zhu@unisoc.com](mailto:tom.zhu@unisoc.com)  Sony (Lars) [lars.nord@sony.com](mailto:lars.nord@sony.com) | - MUSIM features requiring new UE-network interactions are optional, hence the UE may use MUSIM features requiring new UE-network interactions in one PLMN when it has learnt that this PLMN supports these MUSIM features.  - The details of the MUSIM capability content need to be concluded. | 23.501:  - Any updates to clause 5.4.4a (UE MM Core Network Capability handling);  23.502:  - Clause 4.2.2.2.2 (General Registration);  23.401:  - Any updates to clause 5.11.3 (UE Core Network Capability)  - Clause 5.3.2.1 (E-UTRAN Initial Attach);  - Clause 5.3.3 (Tracking Area Update procedures)?? |
| **Key Issue #1**  **Handling of Mobile Terminated service with Multi-USIM device** | | | | |
| **Tasks** | **Title** | **SA2#143E**  **Volunteer/driver**  **(company, mail address)** | **Status/Comments** | **Clause impacted** |
| T1.1 | A single paging cause with the meaning of “voice” for both EPS and 5GS | vivo(xiaowan)  [xiaowan.ke@vivo.com](mailto:xiaowan.ke@vivo.com)  LGE (Myungjune)  [m.youn@lge.com](mailto:m.youn@lge.com)  Qualcomm (Juan)  juanzhan@qti.qualcomm.com  Xiaomi(Jianning)  liujianning@xiaomi.com  Samsung(Lalith)  [lalith.kumar@samsung.com](mailto:lalith.kumar@samsung.com)  Huawei (Ouyang, Steve)  ouyangguowei@huawei.com  [steven.wenham@huawei.com](mailto:steven.wenham@huawei.com)  Charter (Curt) [curt.wong@charter.com](mailto:curt.wong@charter.com)  MediaTek (Guillaume) [guillaume.sebire@mediatek.com](mailto:guillaume.sebire@mediatek.com)  OPPO (Yang)  [xuyang@oppo.com](mailto:xuyang@oppo.com)  Intel (Saso) [saso.stojanovski@intel.com](mailto:saso.stojanovski@intel.com)  Apple (Krisztian) [kkiss@apple.com](mailto:kkiss@apple.com)  Vodafone (Chris Pudney) [chris.pudney@vodafone.com](mailto:chris.pudney@vodafone.com)  Spreadtrum(Chunhui Zhu)  tom.zhu@unisoc.com | NOTE 1: During normative phase, it will be determined whether the Paging Cause is applied 1) only for UEs with the request, or 2) to all UEs indiscriminately.  NOTE 2: Whether and how the UE discriminates (if needed) between paging for non-voice service and paging from legacy RAN node is FFS and will be determined during normative phase.  NOTE 3: "voice" refers to MMTel voice (5GS and EPS) and CS domain voice (EPS only). | 23.501:  - Any updates to clause 5.4.3.2 (Paging Policy Differentiation);  23.502:  - Clause 4.2.3.3 (Network Triggered Service Request);  - new (sub)clause for RRC\_Inactive??  23.401:  - Any updates to clause 4.9 (Paging Policy Differentiation);  - Clause 5.3.4.3 (Network Triggered Service Request); |
| T1.2 | NAS Busy Indication for both EPS and 5GS in RRC\_IDLE mode | Sony [lars.nord@sony.com](mailto:lars.nord@sony.com)  Nokia (alessio)  Alessio.casati@nokia.com  vivo(xiaowan)  xiaowan.ke@vivo.com  Qualcomm (Juan)  juanzhan@qti.qualcomm.com  Xiaomi(Jianning)  liujianning@xiaomi.com  Samsung(Lalith)  [lalith.kumar@samsung.com](mailto:lalith.kumar@samsung.com)  Huawei (Ouyang, Steve)  ouyangguowei@huawei.com  steven.wenham@huawei.com  China Telcom(Pinghui)  [chenpingh@chinatelecom.cn](mailto:chenpingh@chinatelecom.cn)  Charter (Curt) [curt.wong@charter.com](mailto:curt.wong@charter.com)  MediaTek (Guillaume) [guillaume.sebire@mediatek.com](mailto:guillaume.sebire@mediatek.com)  OPPO (Yang)  [xuyang@oppo.com](mailto:xuyang@oppo.com)  Intel (Saso) [saso.stojanovski@intel.com](mailto:saso.stojanovski@intel.com)  Convida Wireless (Mike)  [starsinic.michael@convidawireless.com](mailto:starsinic.michael@convidawireless.com)  Apple (Krisztian) [kkiss@apple.com](mailto:kkiss@apple.com)  Vodafone (Chris Pudney) [chris.pudney@vodafone.com](mailto:chris.pudney@vodafone.com)  Spreadtrum(Chunhui Zhu)  tom.zhu@unisoc.com | - If Multi-USIM device received paging by Network-A in RRC\_Idle mode and the device decides not to accept the paging, a UE supporting NAS BUSY indication attempts to send a BUSY Indication via NAS message to network unless it is unable to do so e.g. due to UE implementation constraints | 23.502:  - Clause 4.2.3.3 (Network Triggered Service Request)  23.401:  - Clause 5.3.4.3 (Network Triggered Service Request) |
| **Key Issue #2**  **Enabling Paging Reception for Multi-USIM Device** | | | | |
| **Tasks** | **Title** | **SA2#143E**  **Volunteer/driver**  **(company, mail address)** | **Status/Comments** | **Clause impacted** |
| T2.1 | Enabling paging reception for EPS | Sony [lars.nord@sony.com](mailto:lars.nord@sony.com)  Ericsson  [qian.xb.chen@ericsson.com](mailto:qian.xb.chen@ericsson.com)  Nokia (alessio)  Alessio.casati@nokia.com  Huawei (Ouyang, Steve)  ouyangguowei@huawei.com  steven.wenham@huawei.com  Charter (Curt) [curt.wong@charter.com](mailto:curt.wong@charter.com)  MediaTek (Guillaume) [guillaume.sebire@mediatek.com](mailto:guillaume.sebire@mediatek.com)  Intel (Saso) [saso.stojanovski@intel.com](mailto:saso.stojanovski@intel.com)  Vodafone (Chris Pudney) [chris.pudney@vodafone.com](mailto:chris.pudney@vodafone.com)  Spreadtrum(Chunhui Zhu)  tom.zhu@unisoc.com | - Upon the UE detecting paging collisions between two networks, the UE initiates a TAU procedure to the MME of one network, to request an IMSI offset.  - UE may provide an IMSI offset to MME during TAU procedure.  NOTE: Details on the request e.g. offset range will be defined during the normative phase.  - The MME returns an IMSI offset to the UE in the TAU Accept.  - During CN paging delivery, the MME provides to the RAN the UE\_ID which is derived based on the IMSI and the IMSI offset. RAN and UE use the UE ID as the IMSI to calculate the PF/PO. | 23.401:  - Clause 5.3.3 (Tracking Area Update procedures)  - Any updates to clause 5.3.4.3 (Network Triggered Service Request); |
| **Key Issue #3**  **Coordinated leaving for Multi-USIM device** | | | | |
| **Tasks** | **Title** | **SA2#143E**  **Volunteer/driver**  **(company, mail address)** | **Status/Comments** | **Clause impacted** |
| T3.1 | NAS-level leaving procedure for EPS | Ericsson  [qian.xb.chen@ericsson.com](mailto:qian.xb.chen@ericsson.com)  Nokia (alessio)  Alessio.casati@nokia.com  Lenovo (Genadi)  [gvelev@lenovo.com](mailto:gvelev@lenovo.com)  vivo(xiaowan)  xiaowan.ke@vivo.comLGE (Myungjune)  [m.youn@lge.com](mailto:m.youn@lge.com)  Qualcomm (Juan)  juanzhan@qti.qualcomm.com  Xiaomi(Jianning)  liujianning@xiaomi.com  Samsung(Lalith)  [lalith.kumar@samsung.com](mailto:lalith.kumar@samsung.com)  Huawei (Ouyang, Steve)  ouyangguowei@huawei.com  steven.wenham@huawei.com  China Telcom(Pinghui)  [chenpingh@chinatelecom.cn](mailto:chenpingh@chinatelecom.cn)  Charter (Curt) [curt.wong@charter.com](mailto:curt.wong@charter.com)  MediaTek (Guillaume) [guillaume.sebire@mediatek.com](mailto:guillaume.sebire@mediatek.com)  OPPO (Yang)  [xuyang@oppo.com](mailto:xuyang@oppo.com)  Intel (Saso) [saso.stojanovski@intel.com](mailto:saso.stojanovski@intel.com)  Apple (Krisztian) [kkiss@apple.com](mailto:kkiss@apple.com)  Vodafone (Chris Pudney) [chris.pudney@vodafone.com](mailto:chris.pudney@vodafone.com)  Spreadtrum(Chunhui Zhu)  tom.zhu@unisoc.com | - For leaving in E-UTRA/EPS access, the NAS-level leaving MM procedure is recommended to be supported. The UE sends NAS MM message indicating leave request to releases the RRC-Connected state.  - When the UE connection with the network is resumed, the previous assistance info, if any, to temporarily restrict/filter MT data/signalling handling is revoked.  - In the NAS MM message indicating leave request (EPS case), the UE provides leaving indication to the CN and the UE may provide assistance information to the network in the leaving procedure regarding MT data/signalling handling.  - The assistance information may include  - Information to temporarily restrict/filter MT data/signalling handling:  - An indication that the UE should only be paged for voice (MMTel voice or CS domain voice (for EPS)), or  - An indication that the UE should not be paged at all, or  - PDN connection(s) for MT notification/paging restriction. | 23.401:  - Clause 5.3.4.1 (UE Triggered Service Request);  - Clause 5.3.3 (Tracking Area Update procedures)?? |