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

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

**Source: Ericsson (Rapporteur)**

**Title: TEI17\_DCAMP work plan**

**Document for: Information**

**Agenda Item: TBD**

**Work Item / Release: TEI17\_DCAMP / Rel-17**

*Abstract of the contribution: This contribution lists the scenario’s to be covered s in the WID* TEI17\_DCAMP *and proposes a work plan.*

# Scenarios to be covered

TEI17\_DCAMP WID defines requirements enable the change a) the RFSP index value assigned to a UE depending on the application that the UE runs and b) the Service Area of a UE when the user pays a fee. Both a) and b) are temporary conditions. RFSP index value and Service Area Restrictions are both part of the AM Policies that the PCF can provide to the AMF.

Three scenarios have been identified to be specified:

* Scenario 1: The user manually activates a bolt-on pack (e.g. via self-care web portal) to improve experience for one or more application. These are temporary conditions with a time duration provided e.g. for a week. The new conditions are applicable before the service starts to enable a seamless experience*.*
* Scenario 2: The application is automatically detected by a DPI type function; this triggers a change of RFSP while the application starts and stops.
* Scenario 3:  A third-party application such as an interactive video provider signals to the network that a call has commenced. This triggers a change of RFSP while the application starts.

The Scenario 1 is also applicable to the case where the user pays a fee to have access to a full range of coverage, not restricted to a subscribed list of TAIs, then the Service Area Restrictions are lifted until the temporary conditions expire.

The work plan below covers the 3 scenarios above, interactions and overlap between CRs is meant to be avoided, so that the update of a clause is covered in one CR

Note that it is still to be discussed if roaming scenarios are to be covered. This will be discussed over email and in the conference call(s) that may take place.

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| **Scenario #1****Application influence on Access and Mobility policy control** |
| **Tasks** | **Task description** | **SA2#143E****Volunteer/driver** | **Subtask and Clause impacted** |
| Task 1 | Specify a new NEF service Nnef\_AMInfluence that allows AF to influence PCF decisions for RFSP index value when specific services are in use and Service Area Restrictions (SAR) for a UE. The PCF serving the AMF may enforce the RFSP index change when the service or one of the services associated with the AF request starts/stops. This requires the need for the PCF to be informed when the service starts/stops.In case the AF did not include a service in its request then the PCF serving the AM enforces the change of RFSP index immediately and the RFSP or SAR change lasts until the time conditions expire.Cover the case where the same or different PCF are serving the AMF and SMF. | Ericsson | T 1.1 - TS 23.503 clause 6.1.2.1* Update access and mobility related policy control functional description to enable the AF to influence the Access and Mobility, i.e. RFSP index value and Service Area Restrictions for a UE. The PCF may apply the change either when one of the applications starts or immediately.

NOTE: The deployment option when the PCF serving the AMF and SMF are different is listed as part of the tasks of scenario#2. |
| Nokia  | T 1.2- TS 23.501 * Clause 7.2.8 Definition of the new NEF service to offer the capability to create/remove/update Access and Mobility related AF provided information to be used as input to set RFSP index value or SAR or both.
* Clause 5.20, extend Exposure with Access and Mobility i.e. RFSP index and SAR (NOTE this is common for scenario #1 and #3)
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| Nokia | T 1.3 - TS 23.502 * Update 4.16.2 to show a new trigger to change AM Policies.
* New clause to define a new procedure for the AF to influence AM Policies for a UE or an external Group Id, note that the level of detail can be similar to clause 4.3.6.2. Note that the UE may not have a PDU session established.
* clause 5.2.12.2. Store AF influence in AM Policies information as part of the Application Data in UDR.
* clause 5.2.6. Definition of the new NEF service to offer the capability to create/remove/update Access and Mobility related AF provided information to be used as input to set RFSP index value or SAR or both.
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| **Scenario #2****SDF/Application detection influence on Access and Mobility policy control** |
| **Tasks** | **Task description** | **SA2#143E****Volunteer/driver** |  |
| Task 2 | The detection of the start and stop of an application/SDF in the UPF triggers the change of the RFSP index value by the PCF serving the AMF. Cover the case where the same or different PCF are serving the AMF and SMF. | Ericsson | T 2.1 - TS 23.503 clause 6.1.2.1* Update access and mobility related policy control to define that the trigger to change AM Policies is the detection of start of stop of one or more SDF/Application.
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| Oracle | T 2.2 -TS 23.503 clause 6.1.1.2.2* Update the BSF-related sections to cover the request to be notified when a PCF-SM serving a SUPI, DNN,S-NSSAI is registered in the BSF.
* When the PCF serving the AMF and SMF are different define how the PCF-AM finds the PCF-SM serving the DNN, S-NSSAI for the application/SDF using subscription to BSF.
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| Ericsson  | T 2.3 - TS 23.502 clause 4.16.2* Include SDF/Application detection as one of the triggers to change AM Policies. Include reporting start and stop to the PCF-AM as well.
* When the PCF serving the AMF and SMF are different define how a new BSF service to provide notifications when a PCF is serving a DNN, S-NSSAI for a SUPI.
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| Oracle | T 2.4 - 23.502 clause 5.2.13* Update the BSF-related sections to cover the request for a consumer (e.g. PCF-AM) to be notified when a PCF-SM serving a SUPI, DNN, S-NSSAI is registered in the BSF.

T 2.4- 23.501 clause 7.2.15.* Clarifications to indicate that there may be both PCF-SM and PCF-AM.
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| Nokia  | T 2.5- TS 23.501 * Clause 4.3.7 When the PCF serving the AMF and SMF are different, describe that a PCF-SM may be discovered by the PCF-AM using the BSF, refer to 23.503 for the full description.
* Clause 6.2.4: Specify that PCF-AM and PCF-SM may be different NF instances (common for any scenario), refer to 23.503 for the full description.
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| China Telecom | T 2.6 - TS 23.503Update clause 6.1.3.18 to cover the event Change of RFSP index value and the event change of service area restrictions reported to the AFT 2.6 -TS 23.502 * Update clause 5.2.5 for adding PCF as new consumer of Npcf\_PolicyAuthorizationSubscribe/Unsubscribe/Notify to notify PCF-AM the start/stop of an application/SDF when PCF-AM and PCF-SM are different.
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| **Scenario #3****Application request change of Access and Mobility control** |
| **Tasks** | **Task description** | **SA2#143E****Volunteer/driver** |  |
| Task 3 | A third-party application such as an interactive video provider signals to the network that a call has commenced. This triggers a change of RFSP while the application starts. | Covered in task 1. | T 3.1 - TS 23.503 clause 6.1.2.1* Same as for scenario#1, covered in scenario#1.
* CR required but covered in scenario#1.
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| Huawei | T 3.2 - TS 23.503 clause 6.1.1* Update BSF related description to support AM PCF address provision.
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| Nokia | T 3.3 - TS 23.501 * clause 7.2.4: Definition of the new PCF service to authorize and create AM policies for the UE for RFSP and SAR changes.
* clause 7.2.8: Definition of the new NEF service to authorize and create AM policies for the UE for RFSP and SAR changes.
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| Nokia | T 3.4 - TS 23.502 * New clause: Define a new procedure for AF-request AM Policy control, similar to the procedure defined in clause 4.3.6.4
* Clause 4.16: Define that the PCF-AM updates BSF to store the PCF serving the UE.
* Clause 5.2.5 and 5.2.6: Define new PCF and NEF services for AMPolicyAuthorization for AF-requests AM Policy Changes (of RFSP etc).
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# References

[1] TEI17\_DCAMP - Dynamically Changing AM Policies in the 5GC.