**3GPP TSG SA WG5 Meeting #140e S5-216128**

**Online, , 15 Nov 2021- 24 Nov 2021**

**Source: Samsung**

**Title: pCR 28.104 Paging Optimization usecase and requirements**

**Document for: Approval**

**Agenda Item: 6.5.18**

# 1 Decision/action requested

***The group is asked to discuss and approve the proposals.***

# 2 References

None

# 3 Rationale

The pCR provides use case of Paging Optimization.

# 4 Detailed proposal

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| **First modification** |

### 7.2.1.3 Paging Optimization analysis

7.2.1.3.1 Description

This capability deal with enabling various functionalities related with paging optimization.

7.2.1.3.2 Use Case

As per the current procedures, if the UE goes out-of-coverage (OOC) the paging which was initiated by the network Access and Mobility Management Function (AMF) fails. The re-attempts continue to fail until UE comes in the coverage and reacts to the paging attempts. This repetitive paging attempts result in the wastage of network resources. As an example, the use case includes a user or a group of users getting into an area, with no cellular coverage on a regular basis for a considerably long duration, for e.g., the user gets into a shielded room for some testing purpose every day for a defined period. The Network initiated paging for such users will fail until they are back in the area with cellular coverage. This would result in in-efficient network resource usage.

It is desirable to use MDAS (Management data analytic service) to optimize the current paging procedures in 5G networks. MDAS producer provides an analytics output containing the user(s) paging analytics indicating the time window at which the user is OOC on a regular basis at the particular location and hence will not be able to respond on a network-initiated paging. Based on the output MDAS consumer (e.g., AMF, gNB) decides on whether, when and where to initiate or not to initiate the paging procedures, thereby ensuring the efficient paging procedures and optimal network resource utilization, as paging can be initiated only when there are more chances for it to be successful.

#### 7.2.1.3.3 Requirements

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| **Requirement label** | **Description** | **Related use case(s)** |
| **REQ-PAG\_MDA-CON-x** | The MDAS producer should have a capability allowing the authorized consumer to get the paging analytics output describing paging result patterns for a particular user or a group of users. | Paging Optimization |
| **REQ-PAG\_MDA-CON-x** | The MDAS producer should have a capability to provide the paging analytics output describing the paging result patterns based on successful and un-successful paging attempts at a particular time and duration. | Paging Optimization |
| **REQ-PAG\_MDA-CON-x** | The paging analytics output describing the paging result patters should contain the following information:  - User Identification: Identification of the user or a group of users.  - Daily-OOC-Duration: Predicting the time window during which UE is out-of-coverage every day.  - Daily-OOC-Location: Predicting the last known location before UE going out-of-coverage every day.  - Recommended Action: The recommendation may suggest stopping paging the UE for Daily-OOC-Duration at Daily-OOC-Location. | Paging Optimization |

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| **End of First modification** |