**3GPP TSG-SA Meeting #92eSP-210384r1**

**Electronic Meeting, 15 – 21 June 2021** *(revision of S1-21xxxx)*

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **22.261** | **CR** | **0532** | **rev** | **-** | **Current version:** | **17.6.0** |  |
|  | | | | | | | | |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* | | | | | | | | |
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| ***Proposed change affects:*** | UICC apps |  | ME | **X** | Radio Access Network | **x** | Core Network | **x** |

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|  | | | | | | | | | | |
| ***Title:*** | Adding support of PWS over SNPN | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** |  | | | | | | | | | |
| ***Source to TSG:*** | Qualcomm, LG Electronics, one2many, Thales, KPN, Nokia, Nokia Shanghai Bell, vivo Mobile Communications Co. LTD | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NPN\_PWS | | | | |  | ***Date:*** | | | 15.06.2021 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | B |  | | | | | ***Release:*** | | | Rel-17 |
|  | *Use one of the following categories:* ***F*** *(correction)* ***A*** *(mirror corresponding to a change in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)*  Detailed explanations of the above categories can be found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | | | | | | | | *Use one of the following releases: Rel-8 (Release 8) Rel-9 (Release 9) Rel-10 (Release 10) Rel-11 (Release 11) … Rel-15 (Release 15) Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | Lack of support of PWS over SNPN | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Added new requirement for supporting PWS in non-public networks | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Issues with NPN networks that may not meet regulatory requirements on PWS (e.g. in venues with large number of users), and/or inability for UEs/Users to receive PWS messages over NPNs. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 2, 6.25.2 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  |  | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | |  |  | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  |  | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

**========= First Change ==========**

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non‑specific.

- For a specific reference, subsequent revisions do not apply.

- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[2] NGMN 5G White Paper v1.0, February 2015.

[3] 3GPP TS 22.011: "Service accessibility".

[4] NGMN, "Perspectives on Vertical Industries and Implications for 5G, v2.0", September 2016.

[5] 3GPP TR 22.278: "Service requirements for the Evolved Packet System (EPS)".

[6] 3GPP TR 22.101: "Service aspects; Service principles".

[7] 3GPP TS 22.146: "Multimedia Broadcast/Multicast Service (MBMS)".

[8] 3GPP TS 22.246: "Multimedia Broadcast/Multicast Service (MBMS) user services".

[9] 3GPP TS 22.186: "Enhancement of 3GPP support for V2X scenarios".

[10] NGMN, "Recommendations for NGMN KPIs and Requirements for 5G", June 2016

[11] 3GPP TS 22.115: "Service aspects; Charging and billing".

[12] Communication network dependability engineering. IEC 61907:2009.

[13] Soriano, R., Alberto, M., Collazo, J., Gonzales, I., Kupzo, F., Moreno, L., & Lorenzo, J. OpenNode. Open Architecture for Secondary Nodes of the Electricity Smartgrid. In Proceedings CIRED 2011 21st International Conference on Electricity Distribution, CD1. June 2011.

[14] North American Electric Reliability Council. Frequently Asked Questions (FAQs) Cyber Security Standards CIP–002–1 through CIP–009–1. Available: http://www.nerc.com/docs/standards/sar/Revised\_CIP-002-009\_FAQs\_06Mar06.pdf. 2006.

[15] McTaggart, Craig, et al. "Improvements in power system integrity protection schemes". Developments in Power System Protection (DPSP 2010). Managing the Change, 10th IET International Conference on. IET, 2010.

[16] IEEE Power Engineering Society – Power System Relaying Committee – System Protection Subcommittee Working Group C-6. Wide Area Protection and Emergency Control.

[17] Begovic, Miroslav, et al. "Wide-area protection and emergency control". Proceedings of the IEEE 93.5, pp. 876-891, 2005.

[18] ITU-T Recommendation G.1000 "Communications quality of service: A framework and definitions".

[19] IEC 61907, "Communication network dependability engineering".

[20] NIST, "Framework for Cyber-Physical Systems", 2016.

[21] 3GPP TS 22.104: "Service requirements for cyber-physical control applications in vertical domains".

[22] 3GPP TS 22.262: "Message Service within the 5G System".

[23] 3GPP TS 22.289: "Mobile Communication System for Railways".

[24] 3GPP TS 22.071: " Location Services".

[25] 3GPP TS 23.122: "Non-Access-Stratum (NAS) functions related to Mobile Station (MS) in idle mode".

[26] 3GPP TS 22.125: "Unmanned Aerial System (UAS) support in 3GPP ".

[27] 3GPP TS 22.468: "Group Communication System Enablers (GCSE) ".

[28] 3GPP TS 22.263: "Service requirements for Video, Imaging and Audio for Professional Applications (VIAPA)".

[29] 3GPP TS 22.263: "Service requirements for Video, Imaging and Audio for Professional Applications".

[30] 3GPP TS 22.179: "Mission Critical Push to Talk (MCPTT)".

[31] 3GPP TS 22.268: " Public Warning System (PWS) requirements”

**========= Next Change ==========**

### 6.25.2 Requirements

The 5G system shall support non-public networks.

The 5G system shall support non-public networks that provide coverage within a specific geographic area.

The 5G system shall support both physical and virtual non-public networks.

The 5G system shall support standalone operation of a non-public network, i.e. a non-public network may be able to operate without dependency on a PLMN.

Subject to an agreement between the operators and service providers, operator policies and the regional or national regulatory requirements, the 5G system shall support for non-public network subscribers:

- access to subscribed PLMN services via the non-public network;

- seamless service continuity for subscribed PLMN services between a non-public network and a PLMN;

- access to selected non-public network services via a PLMN;

- seamless service continuity for non-public network services between a non-public network and a PLMN.

Subject to regional or national regulatory requirements for emergency services, 5G system shall be able to support IMS emergency services for non-public networks.

Subject to regional or national regulatory requirements for PWS [31], the 5G system shall be able to support PWS for non-public networks.

A non-public network subscriber to access a PLMN service shall have a service subscription using 3GPP identifiers and credentials provided or accepted by a PLMN.

The 5G system shall support a mechanism for a UE to identify and select a non-public network.

NOTE: Different network selection mechanisms may be used for physical vs virtual non-public networks.

The 5G system shall support identifiers for a large number of non-public networks to minimize collision likelihood between assigned identifiers.

The 5G system shall support a mechanism to prevent a UE with a subscription to a non-public network from automatically selecting and attaching to a PLMN or non-public network it is not authorized to select.

The 5G system shall support a mechanism to prevent a UE with a subscription to a PLMN from automatically selecting and attaching to a non-public network it is not authorized to select.

The 5G system shall support a mechanism for a PLMN to control whether a user of a UE can manually select a non-public network hosted by this PLMN that the UE is not authorized to select automatically.

The 5G system may broadcast a human readable network name that a UE may display for manual selection of a non-public network.

The 5G system shall support a change of host of a non-public network from one PLMN to another PLMN without changing the network selection information stored in the UEs of the non-public network.

The 5G system shall enable an NPN to support multiple third-party service providers.

In the event of a loss of communication between RAN and core network, the 5G system shall be able to provide capability to securely re-connect an NPN network function within a short period of time (< 1s).