**3GPP TSG-WG SA2 Meeting #158 *S2-2309712***

**Goteborg, Sweden, Ago 21 – 25, 2023 (revision of S2-2309535)**

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| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **23.501** | **CR** | **4832** | **rev** | **2** | **Current version:** | **18.2.0** |  |
|  | | | | | | | | |
| *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 |  | Radio Access Network |  | Core Network | **X** |

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| ***Title:*** | Terminology and specification of functinalties not applicable to PIN. | | | | | | | | | |
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| ***Source to WG:*** | Huawei, HiSilicon | | | | | | | | | |
| ***Source to TSG:*** | SA2 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | PIN | | | | |  | ***Date:*** | | | 2023-08-11 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***Release:*** | | | Rel-18 |
|  | *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-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | The support of PIN functionalities by 5G-RG is specified in this release, but also for FN-RG which is missing.  The USRP definition for PIN states that some parameters are not applicable since the corresponding functionalities is not supported. Unfortuntaely these specification are not reflected in 23.501., therefore is proposed to clarify and to complete the list of funcitonalities which are not supported in conjuction with PIN, specifically :   * . * URLLC is not supported since it implies to have 2 pair PDU session used by PINE device behind. The usage of both features has not been investigated. * The V2X, A2X services posiitoning are not applicable to a PIN network.   In clause 5.44.4 and Annex P some terminology clean up. | | | | | | | | |
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| ***Summary of change:*** | | The following revisions are proposed In clause 5.44.1 added the text to exclude the support of PIN for FN-RG, URLLC | | | | | | | | |
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| ***Consequences if not approved:*** | | Support of erroneous feature with PIN and erroneous implementation | | | | | | | | |
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| ***Clauses affected:*** | | 5.44.1, | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **X** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | |  | **X** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

\* \* \* \* First change \* \* \* \*

## 5.44 Support of Personal IoT network service

### 5.44.1 General

Personal IoT Network (PIN) provides local connectivity between PIN elements i.e. UEs and/or non-3GPP devices. PIN elements communicate using PIN direct communication, PIN indirect communication and the PIN-DN communication. The management of the PIN direct communication is out of the scope of this specification. For the PIN indirect communication and PIN-DN communication, the data traffic and management traffic pass via a UE acting as PIN element with Gateway Capability (PEGC). With the support of the PEGC registered to 5G network, the PIN Elements have access to the 5G network services and may communicate with other PIN Elements via 5GC. A PEGC may support multiple PINs. For each PIN, a dedicated DNN/S-NSSAI shall be configured.

PIN and PIN elements are managed by specific PIN element with Management Capability (PEMC) with the support by an AF if AF deployed. A PIN includes at least one PEGC and at least one PEMC. The management of the PIN network (i.e. the management of PIN network creation, deletion and update) and PIN Element (including the management role distribution between PEMC and AF) is out of the scope of this specification.

The PEGC is a UE with subscription data related to PIN within the 5GS and shall register to 5GS as UE in order to connect and to act as a PEGC for forwarding the traffic via dedicated PDU session to the DN. The UE acting as PEGC and the PEMC does not have subscription data related to PIN within the 5GS. See information in Annex O for the relation between PIN and 5GS. The PINE, PEMC and PEGC application layer functionalities are defined in TS 23.542 and are not seen directly by the 5GS.

An AF for PIN may be deployed to support the PIN service. The AF for PIN may communicate with PEMC and PEGC via application layer for management of the PIN which is transported as user plane data transparently to 5GS and with the 5GC via NEF.

The PEMC can manage the PIN via direct interaction with the other elements of PIN or via interaction with PIN AF which enables the exchange of information with 5GC.

The 5GC is enhanced to support the delivery of UE policy related to PIN service for UE acting as PEGC (as specified in clause 5.44.2) and to support the PDU session management for PIN service (as specified in clause 5.44.3).

The support of PIN by 5G-RG and FN-RG is not specified.

The following features are not supported in conjunction with PIN:

* The URLLC, i.e. the PDU session for transporting the traffic related to PIN can not be used as redundant PDU session for URLLC.
* The V2X service can not be provided via the PDU session dedicated to PIN
* The A2X service can not be provided via the PDU session dedicated to PIN

\* \* \* \* End of changes \* \* \* \*