**3GPP TSG- Meeting #e *S1-214089***

**Electronic Meeting, 08 November – 18 November 2021**

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **22.261** | **CR** | **0604** | **rev** | **-** | **Current version:** | **18.4.0** |  |
|  | | | | | | | | |
| *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:*** | Update the creation and management section of PIRates | | | | | | | | | |
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| ***Source to WG:*** | vivo, KPN, Futurewei | | | | | | | | | |
| ***Source to TSG:*** | SA1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | PIRates | | | | |  | ***Date:*** | | | 2021-10-23 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **C** |  | | | | | ***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-15 (Release 15) Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | The existing specification requires to support mechanisms for a PIN User, network operator or authorized 3rd party to create and manage a PIN and PIN elements. However, it is also required to support mechanism for PIN Elements with Management Capability to create, remove and manage a PIN, which is still missing.  The existing specification requires “The 5G system shall support a PIN with at least one PIN Element with Management Capability.” However, the similar requirement for PIN Element with Gateway Capability is still missing.   * The related consolidated requirement is: PR 5.3.6-3 A: PIN shall include at least one PIN Element with Gateway Capability. * PR.5.1.5-8, PR.5.1.5-9: A PIN shall include at least one PIN Element with Management Capability. | | | | | | | | |
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| ***Summary of change:*** | | - Add tclarify that an authorized 3rd party can include PECM- Clarify that a PIN includes at least 1 PECM and PEGC | | | | | | | | |
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| ***Consequences if not approved:*** | | The requirement for PIRates is not clear. | | | | | | | | |
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| ***Clauses affected:*** | | 6.38.1 6.38.2.9 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | |  | | | | | | | | |

**\*\*\*\*START OF CHANGES\*\*\*\***

## 6.38 Personal IoT Networks and Customer Premises Networks

### 6.38.1 Description

Personal IoT Networks (PINs) and Customer Premises Networks (CPNs) provide local connectivity between UEs and/or non-3GPP devices. The CPN via an eRG, or PIN Elements via a PIN Element with Gateway Capability can provide access to 5G network services for the UEs and/or non-3GPP devices on the CPN or PIN. CPNs and PINs have in common that in general they are owned, installed and/or (at least partially) configured by a customer of a public network operator.

A Customer Premises Network (CPN) is a network located within a premises (e.g. a residence, office or shop). Via an evolved Residential Gateway (eRG), the CPN provides connectivity to the 5G network. The eRG can be connected to the 5G core network via wireline, wireless, or hybrid access. The eRG is an evolution of the 5G-RG. A Premises Radio Access Station (PRAS) is a base station installed in a CPN. Through the PRAS, UEs can get access to the CPN and/or 5G network services. The PRAS can be configured to use licensed, unlicensed, or both frequency bands. Connectivity between the eRG and the UE, non-3GPP Device, or PRAS can use any suitable non-3GPP technology (e.g. Ethernet, optical, WLAN).

A Personal IoT Network (PIN) consists of PIN Elements that communicate using PIN Direct Connection or direct network connection and is managed locally (using a PIN Element with Management Capability). Examples of PINs include networks of wearables and smart home / smart office equipment. Via a PIN Element with Gateway Capability, PIN Elements have access to the 5G network services and can communicate with PIN Elements that are not within range to use PIN Direct Connection. A PIN includes at least one PIN Element with Gateway Capability and at least one PIN Element with Management Capability.

A PIN Element with Management Capability is a PIN Element that provides a means for an authorised administrator to configure and manage a PIN.

**\*\*\*\*NEXT CHANGES\*\*\*\***

#### 6.38.2.9 Creation and Management

The 5G system shall support a mechanism for the network operator to provision an eRG with:

- policies on which transport (e.g. wireless, cable, etc.) is best suited for different negotiated QoS levels,

- authentication credentials,

- identification,

- initial OA&M information, and

- associated subscription

The 5G system shall enable the network operator to configure a PRAS with:

- radio settings pertaining to licensed spectrum,

- authentication credentials,

- identification,

- initial OA&M information, and

- associated subscription.

Subject to operator policy, the 5G system shall enable the Authorised Administrator to provision a PRAS with UE access considerations (allowing all UEs, or allowing specific UEs only)

The 5G system shall provide a mechanism for the Authorised Administrator to trigger initial provisioning of an eRG.

The 5G system shall provide a mechanism for the Authorised Administrator to trigger initial provisioning of a PRAS.

The 5G system shall support mechanisms for network operator or authorized 3rd party (e.g., a PIN User, PIN Element with Management Capability) to create, remove and manage a PIN, including:

- Authorizing/deauthorizing PIN Elements;

- Authorizing/deauthorizing PIN Elements with Management Capability;

- Authorizing/deauthorizing PIN Elements with Gateway Capability;

- Establishing duration of the PIN;

- Configure PIN Elements to enable service discovery of other PIN Elements;

- Authorize/deauthorise if a PIN Element can use a PIN Element with Gateway Capability to communicate with the 5GS;

- Authorize/deauthorise for a PIN Element(s):

- which other PIN Element it can communicate with,

- which applications/service or service in that PIN it can access,

- which PIN Element it can use as a relay.

- Authorize/deauthorise a UE to perform service discovery of PIN Elements over the 5G network;

- Configure a PIN Element for external connectivity e.g.via 5G system;

NOTE: 1 The authorization can include the consideration of the location and time validity of the PIN and its PIN elements.

The 5G system shall support mechanisms for a network operator to configure the following policies in a PIN:

- Configure the connectivity type (e.g. licensed, unlicensed PIN direct connection) a PIN Element can use.

5G system shall be able to support mechanism to provide life span information of the PIN to the authorized 3rd party or the PIN elements when the PIN is created for limited time span.

The 5G system shall provide means to control which UEs can connect to a PRAS.

The 5G system shall support mechanisms to provision a PIN Element to use either licensed (under control of a MNO) or unlicensed spectrum (may be under the control of the MNO, or not) (e.g., when it has no connectivity to the 5G system).

**\*\*\*\*END OF CHANGES\*\*\*\***