**3GPP TSG-SA1 Meeting #94e-bis *S1-212030r1***

**Electronic Meeting, 5 – 12 July 2021** *(revision of S1-21xxxx)*

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| *CR-Form-v12.1* |
| **CHANGE REQUEST** |
|  |
|  | **22.859** | **CR** |  | **rev** | **-** | **Current version:** | **18.0.1** |  |
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| *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:***  |  Clarification for potential requirements of UCs 5.3, 5.5, 5.8, 5.9 |
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| ***Source to WG:*** | Intel, vivo Mobile Communications Co. LTD |
| ***Source to TSG:*** | 3GPP SA1 |
|  |  |
| ***Work item code:*** | FS\_PIN |  | ***Date:*** | 06/28/2021 |
|  |  |  |  |  |
| ***Category:*** | B |  | ***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 canbe 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)* |
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| ***Reason for change:*** | The TR identifies a number of use cases (5.3, 5.5, 5.8, 5.9) that identify a PIN Element can be a member of more than 1 PIN.  In such situations the PIN Element could be using more than 2 PEGC, this is not clear in the current text and needs clarification. |
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| ***Summary of change:*** | Considering one PIN Element can be members of more than one PIN, the following aspects are proposed for clarification and consideration of consolidation:* UC 5.9: A PIN Element can access to 5G network via PEGC or directly via direct network connection (as a UE).
* UC 5.3: One PIN can have one or more PEGC; at any point of time, one PIN Element can only access to 5G network via one PEGC.
* UC 5.8: 5G system support for a PIN Element using direct network connection to efficiently discover PIN Elements behind one or more PEGC.
* UC 5.5: 5G system support for identifying a target PIN for desired communication bewteen two PIN Elements which are both members of one or more PIN. (new)
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| ***Consequences if not approved:*** | Unclear service requirmeents and missing general requirements for consolidation. |
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| ***Clauses affected:*** | 5.3.6, 5.5.6, 5.8.6, 5.9.6 |
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|  | **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 ...  |
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| ***Other comments:*** | The changes will also have to be reflected in consolidated requirements. This is done in a separate CR for the consolidated requirements. |
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| ***This CR's revision history:*** |  |

\*\*\*\*Start Changes \*\*\*\*

### 5.3.6 Potential New Requirements needed to support the use case

[PR 5.3.6-1] For intra-PIN communications, a PIN Element shall be able to transmit media to one or more PIN Element at the same time.

[PR 5.3.6-2] A PIN Element shall support service continuity when a PIN Element changes the communication path from one PIN Element to another PIN Element. The communication path between PIN devices may include both 3GPP and non-3GPP access.

[PR 5.3.6-3] The 5G system shall be able to support a PIN which has more than one PIN Element with Gateway Capability.

NOTE: At any point of time, a PIN Element can only connect to one PIN Element with Gateway Capability.

Editor’s Note: SA3 need to be consulted on the security aspects of having more than one PIN Element with Gateway Capability in the PIN.

\*\*\*\*2nd Change \*\*\*\*

### 5.5.6 Potential New Requirements needed to support the use case

[PR-5.5.6-1]: The 5G system shall support secure mechanisms for a PIN Element using direct PIN connection or via PIN Element with Gateway Capability to access and communicate with another PIN Element for a PIN.

Editor's Note: evolved residential gateway (eRG) defined in 3GPP TR 22.858 [6] is assuming with PIN element gateway capability which needs further clarification in both studies.

[PR-5.5.6-2]: The 5G system shall be able to support “User Identity and Authentication” requirements (as defined in 3GPP TS 22.101 [3] clause sec 26.a) for PIN Elements of a PIN.

[PR-5.5.6-3]: The 5G system shall be able to allow a PIN Element to communicate with another PIN Element of a desired PIN when they are both members of one or more PIN, e.g. via PIN direct connection, via the same or different PEGC or when one PIN Element uses direct network connection and another PIN Element connects to a PEGC.

\*\*\*\*3rd Change \*\*\*\*

### 5.8.6 Potential New Requirements needed to support the use case

[PR 5.8.6-1] The 5G system shall enable service discovery of PIN Elements (e.g. based on certain device applications) in PIN by UEs in the PIN or via the public network.

[PR 5.8.6-1a] The 5G system shall enable an authorized PIN user to configure which UEs connected to the public network can perform service discovery of PIN Elements in a PIN. The 5G system shall support configuration per 5GLAN VN, per group of UEs, or per individual UE.

[PR 5.8.6-2] When a PIN Element (as a UE) is using direct network connection for communication with other PIN Elements which are behind one or more PIN Element with Gateway Capability, the 5G system shall support efficient mechanisms for the PIN Element to discover those other PIN Elements and their capabilities.

[PR 5.8.6-3] The 5G system shall support a mechanism(s) to mitigate a malicious flood of service discovery messages.

[PR 5.8.6-4] The 5G system shall support a mechanism(s) to mitigate spoofing of service discovery messages.

\*\*\*\*4th Change \*\*\*\*

### 5.9.6 Potential New Requirements needed to support the use case

[PR 5.9.6-1] The 5G system shall support an authorized PIN Element to access the 5G network and its services via a PIN Element with Gateway Capability (e.g. when the PIN Element is associated to a 3GPP subscription and pre-configured with credentials) or via direct network connection (e.g. when the PIN Element is a UE).

\*\*\*\*End Changes \*\*\*\*