**3GPP TSG-SA WG1 Meeting #94e S1-211085**

**Electronic Meeting, 10 – 20 May 2021** *(revision of S1-21xxxx)*

Title: PIN – Definitions update – PIN, PIN Element, PIN Gateway

Agenda Item: 7.12.1

Source: Vivo Mobile Communications Ltd

Contact: Adrian(dot)Buckley(at)vivo(dot)com

*Abstract: This document proposes to update some definitions based on offline email discussions.*

Discussion

Two email discussions and 2 conference calls took place to help refine some definitions. The outcome of those offline discussions is below.

Relationship between the eRG and PIN Element with gateway capability with be refined in the normative phase.

One other change that has been applied was there was one instance of “gateway” on its own in a usecase, this was aligned with the existing term in the definitions section.

\*\*\*\*Changes\*\*\*\*

# 3 Definitions and abbreviations

## 3.1 Definitions

For the purposes of the present document, the terms and definitions given in 3GPP TR 21.905 [1] and the following apply. A term defined in the present document takes precedence over the definition of the same term, if any, in 3GPP TR 21.905 [1].

**direct device connection:** See definition in TS 22.261 [2].

**direct network connection:** See definition in TS 22.261 [2].

**Guest PIN Element:** Is a PIN Element that is a member of one PIN (Home PIN) and can access any other PIN, if allowed to by that PIN to communicate with the Home PIN.

**IoT device:** See definition in TS 22.261 [2].

**PIN direct connection:** the connection between two PIN elements without any 3GPP RAN or core network entity in the middle.

NOTE 1: A PIN direct connection could internally be relayed amongst other PIN elements or other entities (such as a WLAN access point).

Editor's Note: It is for FFS if further clarification to the term is needed and whether a separate term for an indirect connection or relayed connection is needed.

Editor’s Note: The above term PIN direct connection was agreed at SA1#93e, it needs to be applied to all usecases in this TR. This will be via contribution to the next SA1 meeting.

**PIN Element:** UE’s and devices authorised to communicate within a PIN.

**PIN Element with Gateway Capability:** a UE PIN Element with the ability to provide access (for other PIN Elements) or indirect Network connection (for other PIN Elements) to and from the 5G network ~~for intra-PIN communications~~.

NOTE 2: A PIN Element can have both PIN management capability and Gateway Capability.

Editor’s Note: The relationship with FS\_RESIDENT Evolved Residential Gateway will be resolved in the normative phase.

**PIN Element with Management Capability:** A PIN Element with PIN management Capability has capability to manage the PIN.

**Personal IoT Network:** A configured and managed group of at least one UE and one or more devices or UEs, that are (pre-) authorised to communicate with each other using PIN direct connections.

NOTE 1: The PIN may be used for user-plane communication between devices, and also for routing and managing the non-PIN services consumed by PIN Elements.

NOTE 2: The configuration and management of the PIN may be maintained locally or by the 3GPP Network.

**PIN-User:** The PIN-User is the person who owns the PIN with respective subscriptions at one service provider.

\*\*\*\*NEXT CHANGE\*\*\*\*

### 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] For a PIN it shall be possible to have more than one PIN Element with Gateway Capability.

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

\*\*\*\*NEXT 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] The PIN Element with gateway capability shall support optimization of service discovery of PIN Elements in a PIN by UEs on the public network, e.g. by reducing the amount and frequency of service discovery messages sent from PIN Elements.

\*\*\*\*NEXT CHANGE\*\*\*\*

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

[PR 5.9.6-1] The 5G system shall support access to the 5G network and its services for an authorized PIN Element (linked to a 3GPP subscription and provisioned with credentials) via a PIN Element with gateway capability or directly via non-3GPP access.