**3GPP TSG-CT WG1 Meeting #141eC1-232856**

**Online 17– 21 April 2023**

**Source: Samsung**

**Title: Discussion paper on impact of CH list with validity information in manual selection**

**Agenda item: eNPN\_Ph2**

**Document for: DISCUSSION**

**1. Abstract**

This paper tries to discuss the impact of Credentials Holder controlled prioritized list of preferred SNPN(s) and/or with validity information, w.r.t manual selection in the MS.

**2. Discussion**

**2.1. Introduction**

With Rel-18 3GPP introduced the concept of Localized services and equivalent SNPNs. Localized service is a service which is localized (i.e. provided at specific/ limited area) and/or can be bounded in time. The service can be realized via applications (e.g. live or on-demand audio/video stream, electric game, IMS, etc.), or connectivity (e.g. UE to UE, UE to Data Network, etc.). A service provider that provides such service is called a Localized service provider. A Localized service provider is an application provider or network operator who make their services localized and to be offered to end user via a hosting-network.

A network providing access to such services is called a hosting network. An SNPN for example can be a hosting network. The hosting SNPNs are configured in the Credentials Holder controlled prioritized list of SNPN(s)/ GIN(s) which come with validity information. As per CT1 #140 meeting, this will be a new Credentials Holder list in the MS, and will be handled different from the existing Credentials Holder list.

This paper identifies 2 problems.

1. It is not clear, for an MS that supports access to an SNPN for localized services and the access to localized services has been enabled, how this new Credentials Holder list is handled for manual selection mode procedure. This problem exists for SNPNs which meet or do not meet the validation information criterion configured for that MS.
2. It is not clear, for an MS that supports access to an SNPN for localized services but the access to localized services has not been enabled, how this new Credentials Holder list is handled for manual selection mode procedure.

**2.2. Issues**

**2.2.1 MS that supports access to an SNPN for localized services and the access to localized services has been enabled.**

Let us consider a UE operating in SNPN access operation mode. Say the MS supports access to an SNPN providing access for localized services and access for localized services in SNPN is enabled. The MS is operating in manual network selection mode procedure. Say the MS is configured with the following:

1. SNPN-2, SNPN-3 configured in user controlled prioritized list of preferred SNPNs.
2. SNPN-4, SNPN-5 configured in the Credentials Holder controlled prioritized list of preferred SNPN(s).
3. SNPN-6 configured in the Credentials Holder controlled prioritized list of preferred SNPNs with validity information for localized services and the validity information is met.

At the current location of the UE all of the above SNPNs are available. SNPN-2, SNPN-3, SNPN-4 & SNPN-5 will be displayed to the user. But SNPN-6 might not get displayed based on legacy behaviour although the validity information for the SNPN is met. But SNPN-6 is a hosting network configured for the MS and the MS needs to display this SNPN to the user as well, and if possible with a high priority.

**Observation-1:** An SNPN configured in the Credentials Holder controlled prioritized list of preferred SNPNs for access to localized services will not get presented to the user. But this needs to be presented to the user as a higher priority SNPN.

**Proposal-1:** When an MS supports access to an SNPN providing access for localized services and access for localized services in SNPN is enabled, the MS needs to present the available SNPNs which match the SNPNs configured in the Credentials Holder controlled prioritized list of preferred SNPNs for localized services, and the validity condition is met. And such SNPNs should be presented higher up in the order of all available SNPNs to the user.

**2.2.2 MS that supports access to an SNPN for localized services and the access to localized services has been enabled.**

Let us consider a UE operating in SNPN access operation mode. Say the MS supports access to an SNPN providing access for localized services and access for localized services in SNPN is enabled. The MS is operating in manual network selection mode procedure. Say the MS is configured with the following:

1. SNPN-2, SNPN-3 configured in user controlled prioritized list of preferred SNPNs.
2. SNPN-4, SNPN-5 configured in the Credentials Holder controlled prioritized list of preferred SNPN(s).
3. SNPN-6 configured in the Credentials Holder controlled prioritized list of preferred SNPNs with validity information for localized services and the validity information is not met.

At the current location of the UE all of the above SNPNs are available. SNPN-2, SNPN-3, SNPN-4 & SNPN-5 will be displayed to the user. But it is not clear whether SNPN-6 will be displayed to the user.

**Observation-2:** It is unclear whether to present a hosting SNPN to the user, if it does not meet the validity information configured in the MS for access to that SNPN.

**Proposal-2:** When an MS supports access to an SNPN providing access for localized services and access for localized services in SNPN is enabled, the MS shall present the hosting SNPN(s) available in the location which do not meet the validity information condition meant for that MS with lower priority.

**2.2.3 MS that supports access to an SNPN for localized services but the access to localized services has not been enabled.**

Let us consider a UE operating in SNPN access operation mode. Say the MS supports access to an SNPN providing access for localized services but access for localized services in SNPN is not enabled in the MS. The MS is operating in manual network selection mode procedure. Say the MS is configured with the following:

1. SNPN-2, SNPN-3 configured in user controlled prioritized list of preferred SNPNs.
2. SNPN-4, SNPN-5 configured in the Credentials Holder controlled prioritized list of preferred SNPN(s).
3. SNPN-6 configured in the Credentials Holder controlled prioritized list of preferred SNPNs with validity information for localized services. This is possible because the MS will indicate support of localized services to the network, but there is no way to indicate whether access to localized services has been enabled or not.

Say at the current location of the UE all of the above SNPNs are available. SNPN-2, SNPN-3, SNPN-4 & SNPN-5 will be displayed to the user. But it is not clear whether SNPN-6 will be displayed to the user. SNPN-6 is clearly a hosting SNPN as it has been configured with specific validity information. And the MS should not try to access the SNPN until access to localized services has been enabled, by MS implementation specific means. If this SNPN is presented to the user, and the user manually selects this SNPN, the MS will try to access the SNPN which might get rejected. In fact too many such manual attempts from MSs which are not meant to access the hosting SNPN might impact services of other valid MSs which are supposed to access the SNPN within that time period for example.

**Observation-3:** It is unclear whether to present a hosting SNPN to the user, if configured in the Credentials Holder controlled prioritized list of preferred SNPN(s) for localized services, if access to localized services for the UE has not been enabled.

**Proposal-3:** When an MS supports access to an SNPN providing access for localized services, but access for localized services in SNPN is not enabled by any MS implementation specific means, the MS should not present the hosting SNPN(s) available in the location, even if configured in the MS at the moment.

**3. Conclusions**

**Observation-1:** An SNPN configured in the Credentials Holder controlled prioritized list of preferred SNPNs for access to localized services will not get presented to the user. But this needs to be presented to the user as a higher priority SNPN.

**Proposal-1:** When an MS supports access to an SNPN providing access for localized services and access for localized services in SNPN is enabled, the MS needs to present the available SNPNs which match the SNPNs configured in the Credentials Holder controlled prioritized list of preferred SNPNs for localized services, and the validity condition is met. And such SNPNs should be presented higher up in the order of all available SNPNs to the user.

**Observation-2:** It is unclear whether to present a hosting SNPN to the user, if it does not meet the validity information configured in the MS for access to that SNPN.

**Proposal-2:** When an MS supports access to an SNPN providing access for localized services and access for localized services in SNPN is enabled, the MS shall present the hosting SNPN(s) available in the location which do not meet the validity information condition meant for that MS with lower priority.

**Observation-3:** It is unclear whether to present a hosting SNPN to the user, if configured in the Credentials Holder controlled prioritized list of preferred SNPN(s) for localized services, if access to localized services for the UE has not been enabled.

**Proposal-3:** When an MS supports access to an SNPN providing access for localized services, but access for localized services in SNPN is not enabled by any MS implementation specific means, the MS should not present the hosting SNPN(s) available in the location, even if configured in the MS at the moment.

**4. Proposal**

It is proposed to discuss the above and agree related CR C1-232383.