***Proposed changes to IPNNI-2019-00126, Executive Summary to Study of Full Attestation Alternatives for Enterprises and Business Entities with Multi-Homing and Other Arrangements***

# Executive Summary

This Technical Report describes use cases where a SHAKEN Originating Service Provider (OSP) may not have complete locally available information to establish a verified association between a calling telephone number (calling TN) and its direct Customer, as the basis for assigning a “full attestation” value to particular calls. In addition, this report summarizes a few different mechanisms; Delegated Certificates, EV Certificates with TN Letter of Authorization (LOA, and Central Database, that have been proposed to provide the OSP with additional information regarding the entity placing a call and the telephone numbers that entity has a valid association with in order to support the OSP marking the call with the highest attestation level. All three approaches are considered viable, however, they do present different tradeoffs in terms of complexity, cost to service providers and enterprises, and the assumptions around the relationship between service providers, their customers, and other entities in the SHAKEN and voice network ecosystems. It is difficult to predict how these tradeoffs will influence industry acceptance of one solution over another, and it is likely that the “best” solution will vary based on the deployment use case.

The assessment in Annex A is a relative comparison of how these different solution mechanisms approach the general problem. The three approaches in Annex A provide different solution alternatives to provide the OSP with sufficient information to fully attest that the calling TN is associated with the calling entity where that might not otherwise be supported by local policy and locally available information. The three approaches are 1) Delegated Certificates, 2) EV Certificates with TN Letter of Authorization (LOA) and 3) Central Database. Within the Delegated Certificate approach there are various solution sub-options that differ based on who authorizes the Enterprise to obtain a certificate and who issues the certificate. It should be noted that these approaches are not mutually exclusive and more than one approach can be implemented without impacting the other(s).

With that said, the EV Certificates with TN Letter of Authorization (LOA) and Central Database solution mechanisms can be deployed at an origination independent of support at the termination end. Delegated Certificates on the other hand needs to be supported on both the origination and termination ends in order to provide the correct Attestation.

As shown in the Solution Comparison Matrix in Table A.1, all three solution approaches are technically viable in terms of their ability to support the principles listed in Section 6. The three approaches share the following fundamental constructs:

* Enterprises and their trusted vendors are vetted by the TNSP or a selected vetting agency,
* The OSP continues to perform its role of setting attestation via a SHAKEN Identity header field.

This report recommends that the industry consider all three mechanisms as viable and a matter of Originating Service Provider local policy when determining how to address the more complex attestation use cases. The OSPs reputation and continued membership in the SHAKEN ecosystem may be directly dependent on how rigorously they have applied the principles in this report when implementing any of these mechanisms or other policy approaches in their SHAKEN attestation decisions.

**Also add these changes to Annex A**