Issue Number: Other Contributions – SHAKEN for Emergency Services

Project Area: SHAKEN for Emergency Services

Distribution: IP-NNI

Meeting Date: June 14, 2019

Type: Contribution

Title: Discussion of Potential Emergency Services Contributions

Source: Bob Sherry, West Safety Services

Description: This contribution provides discussion for topics that may be contributions for version 2 of ATIS-100074, and potentially other related ATIS standards..

Recommendation: Review and identify specific contributions.

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**Topics:**

1. *What is value for implementing SHAKEN/STIR for emergency services?*

This question was asked during the May 1 AMOC meeting.

This should not generate contributions for specific ATIS standards, but we need concurrence that SHAKEN/STIR applies to emergency services – 9-1-1 calls and callback.

Recommended Action: Make sure there is concurrence that we need to address emergency services in the SHAKEN/STIR framework – 911 calls and emergency callback.

1. *Are 9-1-1 calls ever diverted?*

This was answered during the May 1 AMOC meeting and 9-1-1 calls are not diverted in the context of what is being discussed with direct dialed calls (e.g. call forwarding).

Recommended Action: None

1. *TN origination authentication*

Origination TNs for 9-1-1 calls can be authenticated in the same manner at direct dial calling party numbers. ATIS-1000074 only mentions tel URIs. RFC 8224 allows SIP URIs as does ATIS-0700015.

Recommended Action: Update ATIS-1000074 to reflect SIP URIs.

1. *TN destination claim*

ATIS-1000074 currently states that the To can be 911. Also ATIS-1000074 expects the Request URI and To (or PAI) to be the same. ATIS-0700015 (and 3GPP) requires the Request URI to be urn:service:sos. ATIS-0700015 allows the To to be either 911 or urn:service:sos. Need to define how we can authenticate based upon the options allowed by ATIS-0700015.

Recommended Action: Make changes in ATIS1000074 to reflect headers for emergency services as discussed above. Changes to other ATIS standards?

1. *Is there a need to verify the Resource Priority Header (RPH) in the emergency services network?*

3GPP TS 24.229 allows the P-CSCF to add a Resource-Priority header in the esnet namespace. If the RPH is not present at the emergency services network ingress BCF, the BCF will add it with the designation of esnet.1. All emergency calls will have an RPH header as they progress through the emergency services network. If WPS and GETS callers make 9-1-1 calls, the calls will contain an RPH.

Recommended Action: This is something we need to address in NENA i3, but I don’t think it impacts IP-NNI unless in ATIS-1000074 we allude to the fact that the P-CSCF may add a RPH.

1. *Can a Call Validation Treatment (CVT) be invoked in the IP-based emergency services* *network?*

ATIS-1000074 states that the CVT function will not be invoked if there is a RPH header. Emergency calls will ALL have an RPH Value in the “esnet” namespace within the ESInet. In the May 1 meeting it was suggested that an emergency service network could invoke CVT based on the value of the RPH (i.e., the fact that the RPH value is from the emergency services (“esnet”) namespace).

Recommended Action: ATIS-1000074 needs to reflect that an emergency service network can invoke CVT, regardless of the presence of an RHP.

1. *Are new “Verstat” values needed for emergency services?*

Recommended Actions: Further exploration may determine if there is a need for new values.

1. *Can WPS and GETS clients make 9-1-1 calls?*

If WPS/GETS callers can make 9-1-1 calls then there would be an RPH header noting the priority service. So there would be two Identity headers – one for TN and the other for RPH. The main issue is whether the authentication procedures that are applied when an RPH value of “ETS” or “WPN” is present should be the same as when the RPH value of “esnet” is present  (i.e., authentication of the RPH vs. authentication of the Caller ID or authentication of the RPH and the Caller ID). ATIS-1000074 is not clear about whether/how authentication of the RPH and authentication of the caller ID may interact. This could have originating network implications for emergency originations if the P-CSCF can add an RPH in the esnet namespace and that RPH needs to be authenticated in addition to the caller ID.

Recommended Actions: ATIS-1000074 may need to clarify this, as well as add the discussion of RHP in general.

1. *Are Non-Service Initialized (NSI) handsets applicable to the SHAKEN framework?*

Wireless carriers are required to accept 9-1-1 calls from NSI handsets. These emergency calls will be routed, based upon location or cell site/sector, to the appropriate PSAP. The PSAP will not be able to call back the caller.

We also need to consider the non-dialable callback numbers (as defined in J-STD-036) created/populated by the E-CSCF (per 24.229 and clarified in ATIS-0700015).  In this case there will be a callback number included in the SIP INVITE, so the question is whether or how that gets authenticated.

Recommended Action: A position is needed as to whether NSI handsets fall under the SHAKEN/STIR framework.

1. *How are roamers handled in the SHAKEN/STIR framework?*

When mobile callers roam to another network (called a “visited” network) and make a 9-1-1 call, those calls are handled by the visited network and not the home network.

Recommended Action: While this is a broader issue than emergency services, if 80% or the 9-1-1 calls are wireless and “X” percent of those callers are roamers, this topic needs to be addressed. Contributions are needed to address how roamers are handled.

1. *Emergency callbacks with Resource-Priority Header (RPH) header*

A SIP INVITE associated with an emergencycallback will contain a RPH set to esnet.0. There is some question as to whether this will be maintained through BCFs.

If the RPH is maintained between the networks then, according to ATIS-1000074, CVT would not be invoked in the terminating network. Or if the procedures are changed in ATIS-1000074 to allow the CVT to be invoked on calls with RPHs in the esnet namespace, then the same mechanism could be applied in the terminating network for emergency originations or callback calls.

Recommended Action: Evaluate if changes are needed for terminating processing for emergency callbacks.

1. *Emergency callbacks with TN authentication*

Emergency callbacks should have an Identity header that attests to the TN. This has implications for an IP-based emergency services network, but should be business as normal for terminating networks.

Recommended Action: None

1. Emergency callbacks with Priority header

Emergency callbacks will have a Priority header set to “psap-callback”.

Recommended Action: None. This is just informative and shouldn’t have any impact on SHAKEN/STIR.