**Originating Service Provider (OSP) Interface Specification**

## January 29, 2020

Dear Originating Service Provider:

# As an Originating Service Provider (OSP) that directly transmits 9-1-1 calls to CenturyLink’s next generation 9-1-1 (NG 9-1-1) network, CenturyLink is required under its Consent Decree with the Federal Communications Commission (FCC) dated November 4, 2019, to provide you with direction regarding appropriate routing and treatment of returned 9-1-1 calls that have failed to transmit through CenturyLink’s NG 9-1-1 network.  To that end, CenturyLink’s Addendum A “Route Advancement” provides an overview of CenturyLink’s recommendations and expectations for 9-1-1 routing and interconnection.

The CenturyLink 9-1-1 Routing Network provides Selective Router functionality for 9-1-1 emergency calls.  In this role, the CenturyLink 9-1-1 Routing Network primarily accepts 9-1-1 calls from OSPs and routes them to the appropriate PSAP (Public Safety Answering Point).  CenturyLink strongly recommends that each OSP connect their network to the CenturyLink 9-1-1 Routing Network via at least two separate and independent trunking facilities (diverse routed). For each individual OSP End Office, CenturyLink recommends two separate and independent emergency service (ES) trunk groups, each terminating on a different tandem switch or CenturyLink Point of Interface (POI) in the CenturyLink 9-1-1 Routing Network. The OSP may choose to consolidate traffic from multiple end offices into these redundant and diverse trunk groups to the CenturyLink POI. CenturyLink expects that the OSP will size the trunks appropriately to support a P.01 grade of service (or better) for all traffic. If the OSP encounters routing problems over any of these facilities, the call could then be alternately routed by the OSP on another facility via a different POI into the CenturyLink 9-1-1 Routing Network.

In the event that a 9-1-1 call fails to transmit through CenturyLink’s 9-1-1 Routing network, the call typically will be returned to you with a cause code.  As an OSP, it is your responsibility to attempt to re-route returned 9-1-1 calls via a different trunk group to a different POI on CenturyLink’s network.  CenturyLink strongly recommends that your organization institute an appropriate advance routing plan to ensure delivery of the 9-1-1 call via an alternate route when a cause code is returned by CenturyLink’s 9-1-1 Routing Network.  Please refer to Addendum A “Route Advancement” of this document for further information on cause code treatment and CenturyLink’s recommendations for reference documents on cause code treatment.

Additionally, the OSP Interface Specification discusses the Public Switched Telephone Network (PSTN) interfaces supported by the CenturyLink 9-1-1 Routing Network that may be used by OSPs for these emergency calls. CenturyLink recommends that OSPs primarily use Signaling System 7 (SS7) to signal emergency calls into the CenturyLink 9-1-1 Routing Network. SS7 signaling can reduce call setup times by typically 2-6 seconds at each stage of address signaling, as compared to Centralized Automatic Message Accounting (CAMA) signaling. In addition, when compared to CAMA, SS7 can also reduce errors in transmitting telephone numbers (TNs).

CenturyLink remains committed to delivering reliable 9-1-1 service. Through implementation of the safeguards listed above, you will be supporting efforts to reduce single points of failure within the 9-1-1 network.

Should you, as an OSP, need to speak with a CenturyLink representative regarding this document please contact your CenturyLink Account Representative.

Addendum A – Route Advancement

# Best Practice

This section outlines a recommended best practices for OSPs to utilize to maximize the probability of call delivery. CenturyLink realizes that implementation of this best practice will be OSP switching facility-dependent and ultimately the OSP’s responsibility.

*Redundant Trunk Facilities*

*OSPs shall use at least two (2) trunk facilities terminating to different Points of Interface (POI). For clarification, if the OSP only has a need (based on traffic) for 1 DS0, CenturyLink’s recommendation is that two trunk facilities each with a DS0 be provided by the OSP.*

### Trunk Selection

When an OSP needs to select a trunk to deliver a 9-1-1 call, CenturyLink’s practice is to route calls to the primary trunk group first and when that trunk group is in use or out of service, the call will be routed to the secondary trunk group. For the individual trunks in each trunk group, the best practice is to “round-robin” amongst the DS0s (i.e. rotate to another individual trunk in the trunk group for each call). This will exercise all DS0s regularly. The goal is to identify trunks in need of maintenance during normal lower call load conditions as opposed to trying to use those trunks for the first time in a higher call volume condition.

### Route Advancement

In the case of SS7-based trunks, the OSPs could receive a non-success cause code indicating a failure on the CenturyLink side of the 9-1-1 Routing Network. Should that occur, the OSPs should route advance to the next trunk group (Note: you should not route advance to the next DS0 in the same trunk group). Selecting another trunk group may allow the call to be delivered to a different part of CenturyLink’s 9-1-1 Routing Infrastructure that may not be experiencing the issue that returned the cause code initially.

After utilizing route advancement, should the cause code persist, the OSPs should provide call treatment (e.g., reorder, busy, fast busy, etc.). The goal is to entice the caller to hang-up as soon as possible and try again rather than end up with dead air. CenturyLink recognizes there may be an implementation issue for some OSPs where the cause code definitions and treatments on some switch infrastructure may apply to more than just 9-1-1 traffic (i.e., POTS- Plain Old Telephone Service).

For additional information related to cause codes and treatments, reference:

*ATIS-0300019, NGIIF Reference Document Part III-Attachment H SS7 Cause Codes and*

*Tones and Announcements* [*https://www.atis.org/01\_committ\_forums/NGIIF/docs/refdoc12.0/atis0300019.doc*](https://www.atis.org/01_committ_forums/NGIIF/docs/refdoc12.0/atis0300019.doc)

OSPs should also consult the technical manuals for their specific switching facility(s).