Exh. JDW-23C Docket UT-181051 Witness: James D. Webber REDACTED VERSION

#### BEFORE THE WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION, **DOCKET UT-181051** 

Complainant,

v.

CENTURYLINK COMMUNICATIONS, LLC.,

**Respondent.** 

#### EXHIBIT TO TESTIMONY OF

#### **JAMES D. WEBBER**

### ON BEHALF OF STAFF OF WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

TSYS Response to Staff Investigation Data Requests

December 15, 2021

### **CONFIDENTIAL PER PROTECTIVE ORDER - REDACTED VERSION**

#### REDACTED VERSION TSYS Response to UTC Staff Data Request Nos. RS-1 – RS-3

#### UTC STAFF DATA REQUEST NO. RS-1:

# During the WA 911 outage period covering Dec. 27 – Dec. 28, 2018, what was the state of the PSAP migration project for the transitioning of CenturyLink PSAP service and management to TCSYS/Comtech PSAP service and management?

During the Washington 911 outage covering Dec. 27 – December 28, 2018 (the "Washington Outage"), forty-eight (48) of the sixty-six (66) PSAPs in Washington had transitioned to Telecommunication Systems, Inc. ("TSYS"). Specifically, during the Washington Outage, TSYS served the following PSAPs:

- 1. RiverCom 911
- 2. WHITCOM 911 Emergency Center
- 3. Columbia County Public Safety Communications
- 4. Lewis County 911
- 5. Okanogan County Sheriff's Office
- 6. Pend Oreille County 911
- 7. Lincoln County Sheriff's Office
- 8. Adams County Communications Center
- 9. Garfield County Sheriff's Office
- 10. University of Washington Police Department
- 11. Joint Base Lewis McChord (JBLM)
- 12. WSP Wenatchee
- 13. Bothell Police Dept.
- 14. Issaquah Police Department
- 15. Enumclaw Police Department
- 16. Seattle Police Dept.
- 17. Skamania County Sheriff's Office
- 18. Redmond Police Dept.
- 19. Ferry County E911
- 20. WSP Bellevue
- 21. WSP Marysville
- 22. Kitsap County Central Communications (CENCOM)
- 23. San Juan County Sheriff's Office
- 24. Kittitas County 911 (KITTCOM)
- 25. Walla Walla Emergency Services Communications Center (WESCOM)
- 26. WSP Spokane
- 27. South Sound 911
- 28. South Sound 911 (Eastside) Virtual Primary ESNs only
- 29. Tacoma Fire Communications Center
- 30. Southeast Communications Center (SECOMM)
- 31. WSP Yakima
- 32. Port of Seattle Police/Fire Communications
- 33. Skagit 911 Center

#### REDACTED VERSION TSYS Response to UTC Staff Data Request Nos. RS-1 – RS-3 Page 2 of 4

- 34. TCOMM 911
- 35. Clark Regional Emergency Services Agency
- 36. Wahkiakum County Sheriff's Office
- 37. Yakima Public Safety Communications Center (SUNCOM)
- 38. Seattle Fire Department
- 39. WSP Vancouver
- 40. Cowlitz County 911 Center
- 41. WSP Tacoma
- 42. Pacific County Sheriff's Office Communications
- 43. Grays Harbor E911 Communications
- 44. Peninsula Communications
- 45. JEFFCOM 911 Communications
- 46. Island County Emergency Services Communications Center (I-COM 911)
- 47. WSP Bremerton
- 48. Mason County Emergency Communications (MACECOM)

#### UTC STAFF DATA REQUEST NO. RS-2:

## Please report on which of the three phases of the migration project were each of the PSAPs in at the time of the outage (all WA PSAPs not just those migrating to TCSYS/Comtech).

At the time of the Washington Outage, the 48 above-listed PSAPs had completed Phase 1 of the migration project, meaning that they had fully migrated to the Comtech ESInet. All other active PSAPs in Washington at that time were preparing to complete Phase 1.

#### UTC STAFF DATA REQUEST NO. RS-3:

#### In response to request for information CP4, at page 2, the company responded:

During the Washington Outage, TCS observed an intermittent loss of circuit redundancy for all active Washington customers over a forty-nine (49) hours and thirty-two (32) minute period, starting at 0048 PT on December 27, 2018. More specifically, TCS's services were completely unavailable to receive 911 call traffic due to complete CenturyLink circuit failures during the following three time-periods

# A. Were both primary and alternate networks and/or circuits between CenturyLink and the TCSYS/Comtech ESInet2 down or were the networks and/or circuits up and network services down that run on those networks and/or circuits?

During the Washington Outage, the SS7 signaling between TSYS's ESInet-2 and the CenturyLink Selective Router was impacted. The SS7 signaling was provided by Transaction Network Services (TNS), and TNS's SS7 connections failed where it relied on CenturyLink transport circuits.

Specifically, there were four (4) physically diverse circuits between TSYS and TNS data centers that supported the above-referenced SS7 services. CenturyLink provides TSYS and TNS

#### REDACTED VERSION TSYS Response to UTC Staff Data Request Nos. RS-1 – RS-3 Page 3 of 4

with transport for these circuits. CenturyLink's nationwide outage on Dec. 27 - 28, 2018 affected the availability of such circuits.

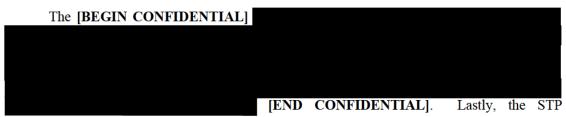
During the forty-nine hours and thirty-two minutes period when TSYS experienced intermittent loss of circuit redundancy, at least one of such SS7 circuits were down. In the three time-periods cited in TSYS's response to CP4, all four circuits were simultaneously down, resulting in the TSYS ESInet-2 becoming completely unavailable to receive 911 call traffic from the Selective Router during such time periods.

Please note that traffic on these circuits was evenly distributed and there was no "primary" or "alternative" network structure. When one or more circuits were down, SS7 traffic was automatically diverted to the operational one(s). The capacity of each link is enough to handle all SS7 traffic between TNS and TSYS in normal circumstances.

B. Based on the statement that "TCS observed an intermittent loss of circuit redundancy," please provide any detailed network level management information and/or process that was used to determine that CenturyLink circuit redundancy failed.

TSYS learned of the loss of connectivity through internal alarms and reports from PSAPs in the State of Washington. More specifically, during the CenturyLink outage, the following types of alarms generated on the TSYS network: **[BEGIN CONFIDENTIAL]** 

[END CONFIDENTIAL] and (c) alarms from TSYS's Signal Transfer Points (STPs) in Seattle and Phoenix.



alarms triggered when TSYS experienced errors or loss of connectivity between its STPs and SS7 signaling provider connected nodes.

Exh. JDW-23C Docket UT-181051 REDACTED VERSION Page 4 of 4

REDACTED VERSION TSYS Response to UTC Staff Data Request Nos. RS-1 – RS-3 Page 4 of 4

C. Given that the actual (rather than potential or virtual) physical networks and circuits were in an 'up state' with only the services and actual call/data using those physical networks and circuits in a 'down state,' what methods and network management information did TCS use to determine a failure of circuit redundancy?

As discussed above, TSYS learned of the Washington Outage, which was a total loss of connectivity that resulted from CenturyLink's outage, through internal alarms and reports from Washington PSAPs. CenturyLink's outage affected enough of TSYS's SS7 links with TNS to cause TSYS not to receive 911 calls.

More specifically, CenturyLink's outage simultaneously affected the following TSYS and TNS SS7 connection: [BEGIN CONFIDENTIAL]

[END CONFIDENTIAL] during the three outage

periods.