



TPx Communications Service Level Agreement (SLA) Packet-Based Services

1. General

- a. TPx Communications is committed to providing its customers with the highest quality communications services. As a result, TPx will provide network service level remedies for the following categories, if applicable, for the listed services and features below purchased by the Customer:
 - Network Availability
 - Time to Repair
 - Service Response Time
 - Latency
 - High Availability Network and CPE
 - Packet Delivery
 - Packet Delay Variation
 - UCx Availability
 - SmartVoice Availability
 - Single Availability Network and CPE
- b. These guarantees apply to those services that use TPx's Local Access Circuit and Core Network for the delivery of its voice and/or data services, as well as TPx services delivered over customer-provided local access transport if TPx provides Customer Premises Equipment (CPE) and other equipment for those specific TPx services. Local Access Circuit and services provided directly to the customer by an independent local access transport service provider, such as Internet or other services, are not covered by this SLA. TPx-provided cellular network access is covered under this SLA only if sufficient real-time signal strength and bandwidth are available from the cellular provider to support the TPx services that will access it. These services are described in Section 3 below. For integrated services over the same access circuit, the SLA will only apply to the service affected by the impairment.
- c. TPx service is interrupted or impaired when it falls below the performance specifications of this SLA due to failure of the TPx network, equipment, or facility component used to provide service under this SLA. An interruption or impairment period begins when the customer reports an inoperative service to TPx, or when TPx notifies the customer of such interruption or impairment and the service is made available' by the customer to TPx for testing and repair. The interruption ends when TPx notifies the customer that the service is operative.

2. Service Credit Claim Procedure and Limitations

- a. The customer must initiate the service credit claim within 45 business days after the end of the calendar month during which the event occurred. TPx will take all measures it deems appropriate to investigate reported failures. In no event shall the combined credits for the guarantees listed above, separately or combined with any other service credit claims against TPx, exceed in any month the total Monthly Recurring Charge (MRC) owed by the customer for the affected service(s) and associated local access in that calendar month. No more than one service credit allowance shall be provided to a customer for an outage or interruption in service from a single or the same occurrence.
- b. TPx will not provide any credit allowance for service interruptions or impairments that are:
 1. Caused by the negligence of the customer or any third party not associated with TPx.
 2. Due to the failure of communications and network services, equipment, local access or systems provided by the customer or any third party not associated with TPx.
 3. During any period in which TPx does not have access to the premises where the service is located.
 4. Released to TPx for maintenance purposes, to make rearrangements or reconfigurations, or to implement an order for a change in the service during the time period that was negotiated with the customer prior to the release of that service.
 5. During planned or emergency/unplanned network maintenance activities. Planned maintenance activities are scheduled from 12 midnight to 6 AM local time, seven days per week. Unplanned, emergency network maintenance activities may occur at any time. Both of these activities could result in a customer service interruption or impairment. TPx will make every reasonable effort to minimize any customer service interruption or impairment during these activities. TPx will use reasonable efforts to notify Customer in advance of a planned or emergency maintenance that may cause an extended impairment or interruption to their services.
 6. Caused when the customer elects not to release the service for testing and/or repair and continues to use it on an impaired basis.

TPx Communications Service Level Agreement (SLA) Packet-Based Services

7. Caused by or related to labor difficulties, governmental orders, civil commotions, acts of terrorism, any third party not associated with TPx, criminal actions taken against TPx, acts of God, and other circumstances beyond TPx's reasonable control.
8. During periods of temporary discontinuance of service as specified in TPx's applicable tariffs, Fraud Guidelines, Acceptable Use Policy (AUP), Customer's TPx Account Agreement (TAA) and Customer Addendums.

3. SLA definitions and other relevant information

- a. **Month** is measured over any thirty (30) day period.
- b. **Cellular 4G network availability** is dependent upon the cellular network provider's network bandwidth and signal strength at any point in time after the 4G service connection is placed at the customer premises by TPx or the customer. TPx will make reasonable efforts for 4G equipment placement to ensure maximum bandwidth and signal strength access according to the customer's placement requirements. After installation, TPx is not responsible under this SLA if the 4G network's performance including, but not limited to, bandwidth availability and signal strength, is not capable at any point in time to support TPx services.
- c. **Core Network** is defined as being where the Customer's Local Access Circuit is terminated to the TPx Core Network edge equipment's ingress demarcation, across our Core Network to the far end TPx Core Network edge egress demarcation. The far end is then terminated to another customer Local Access Circuit, an Internet peering point, an interconnection to the Public Switched Telephone Network, other public voice termination network, or other circuit or service that is not part of TPx's Core Network. TPx Core Network Availability Objective is TPx's calendar month goal for availability of our core network. It is calculated as the percentage of time that the core network is capable of accepting and delivering customer communications to the total time in the measurement period.
- d. **Local Access Circuit** is defined as being provided to the Customer directly by TPx and not by an independent and unaffiliated third party.
- e. **Customer local access latency** or other Customer network destination latency outside TPx's Core Network, whether on TPx- or customer-provided or another network end point, is not covered by this SLA, although TPx-provided Local Access availability is covered under Time to Repair for Network Availability. Local Access (whether provided by TPx or the Customer) and other non-TPx destination network latency varies greatly by a number of factors for each location. For further information, TPx has a latency application note available for Customer review that further addresses these factors regarding their application latency requirements.
- f. **Customer MRCs (Monthly Recurring Charges)** covered by this SLA may include Access, Port, Service, Feature and CPE according to the impact of a service outage or interruption.
- g. **Customer-provided Local Access Circuit** is defined as any Local Access Circuit at the Customer's premises that is not provided by TPx. Customer-Provided Local Access Circuits are not covered by TPx SLAs for Local Access Circuit availability. However, the services TPx provides over that circuit are covered in this SLA if: (1) the service is managed by a TPx-provided CPE, (2) the Customer-Provided Local Access Circuit is the bandwidth and quality recommended by TPx for all TPx-provided services and non-TPx bound traffic, (3) the Customer-Provided Local Access Circuit is operating within the service provider's SLA, and (4) the customer provides such SLA to TPx prior to installation of TPx services, as well as at any subsequent updates in the future, and upon our request.
- h. **High Availability CPE** is defined as multiple instances of TPx-provided equipment configured in a High Availability design. Remedies are available when all instances of TPx-provided High Availability CPE are out of service.
- i. **High Availability Local Access Network** is defined as a combination of two or more independent TPx-provided Local Access Circuits, High-Speed Internet Access (HSIA) services, and/or Customer-provided local access services terminated into TPx-provided High Availability equipment at the Customer's premises, as defined below. Remedies are available when the Customer is completely out of service. Customer-provided Local Access Circuits may be included in a High Availability Local Access Network and

TPx Communications Service Level Agreement (SLA) Packet-Based Services

this SLA, but their monthly recurring charges are not covered by this SLA's remedies for any interruption or impairment of those services or a High Availability Local access outage.

- j. **HSIA** is defined as high-speed Internet access provided by a TPx-authorized vendor. TPx services that are delivered over a fully operational HSIA service and managed by TPx-provided CPE are treated according to their respective service SLAs. Broadband HSIA utilizes a shared connection. Dedicated HSIA does not utilize a shared connection.
- k. **Latency** is how much time it takes for a packet of data to get from one designated Core Network PE demarcation point to another Core Network PE demarcation point as defined above, and the packet's return to its origination point across TPx's Core Network.
- l. **Measured throughput** for services at any point in time is the actual available bandwidth for Customer data which can vary from the subscribed bandwidth due to service port speed, network and application protocol overhead (such as IP, Ethernet and application headers, transmissions, retransmissions and application protocol acknowledgments, error correction and time stamps), types of traffic contending for bandwidth and their prioritization plus other factors associated with communication services and the technologies used. Measured throughput rate is also determined by the slowest link between you and the endpoint you are communicating with especially over the Internet.
- m. **Packet Availability** is the difference between the number of packets transmitted at ingress to TPx's Core Network and the total number of packets received at egress from TPx's Core Network.
- n. **Packet Delay Variation (Jitter)** is the variation in the time between individual packets arriving. Jitter is measured one-way across TPx's Core Network. SmartVoice and UCx services are covered under the Network Availability SLA Objective when the customer reports Packet Delay Variation or Jitter.
- o. **Service Response Time** is the time between when a service ticket is opened (by either TPx or the Customer), and the time when TPx begins performance of remedial services, either in person or remotely.
- p. **Single CPE** is defined as a single instance of TPx-provided CPE.
- q. **Single Local Access Circuit** is defined as a TPx-provided Local Access Circuit from the Customer's premises terminated to the TPx Core Network edge equipment's ingress demarcation and may include a TPx-provided network terminating unit. Customer-provided Local Access Circuit and CPE are not included in this definition.
- r. **SmartVoice Voice Availability** – SmartVoice objective is to be available and capable of transmitting inbound and/or outbound calls 100% of the time The TPx voice platform includes the TPx voice switching platforms and trunking connections to the public switched telephone network (PSTN) or other public voice termination networks. Voice platform downtime shall exist when a Customer location's voice service is unable to transmit inbound and/or outbound voice calls on at least 25% of its SmartVoice subscribed call paths. Voice platform downtime is measured based on the total outage time incurred by the Customer.
- s. **Time to Repair** is the time between when the Customer first reports a service outage to TPx, or TPx notifies the customer that a trouble ticket has been opened on their behalf and the customer releases the service for repair, and when TPx notifies the customer that it is back in service.
- t. **UCx Voice Availability** – UCx's objective is to be available and capable of transmitting inbound and/or outbound calls 100% of the time. The TPx voice platform includes the TPx voice switching platforms and trunking connections to the public switched telephone network (PSTN) or other public voice termination networks. Voice platform downtime shall exist when a particular Customer location's voice service is unable to transmit inbound and/or outbound voice calls on at least 25% of its UCx subscribed seats or 25% of incoming/outgoing subscribed call path capacity. Voice platform downtime is measured based on the total outage time incurred by the Customer.
- u. TPx Service acronym definitions
 - UCx – Hosted Unified Communications
 - SmartVoice/SIP Trunking – Session Initiation Protocol Trunking Services using Voice over Internet Protocols for delivery of SIP, Primary Rate interface
 - MSR IP VPN – Managed Services Router using Internet Protocol Virtual Private Network
 - VPLS – Virtual Private Local Area Network
 - EPL – Ethernet Private Line
 - Internet/Direct Internet Access (DIA)
 - HSIA – High Speed Internet Access



TPx Communications Service Level Agreement (SLA) Packet-Based Services

and Channel Associated Signaling
trunking or Business Lines

- OneNet IP-VPN/MPLS – Internet Protocol Virtual Private Network using Multi-Protocol Label Switching

4. TPx SLA for Services and Networks

- a. TPx’s objective for all packet-based services is 100% availability.
- b. Time to Repair (TTR) commences once the Customer or TPx opens a repair ticket, and the Customer makes the service available to TPx for repair.
- c. Services covered:
 - UCx
 - VPLS
 - SmartVoice/SIP Trunking
 - EPL
 - ①Net IP-VPN/MPLS
 - TPx Internet/DIA
 - IP VPN
 - HSIA

Service Response Time	
Time Interval Measurement	<=1 hour for all Services to begin remedial activities
Remedy	1/30 th MRC for each hour exceeding 1 hour

Core Network Availability	
TTR	<=4 hours
Remedy	>4 hours: 1/30 th MRC for each hour exceeding 4 hours

High Availability Service with a combination of Two or More TPx-Provided Local Access Circuits, HSIAs or Customer-Provided Circuits and TPx High Availability CPE	
TTR	<=4 hours
Remedy	>4 hours: 1/30 th MRC for each hour exceeding 4 hours

High Availability CPE	
TTR	<=4 hours
Remedy	>4 hours: 1/30 th MRC for each hour exceeding 4 hours

Single Local Access Circuit provided by TPx (except HSIA)	
TTR	<=4 hours
Remedy	>4 hours: 1/30 th MRC for each hour exceeding 4 hours

Single Dedicated HSIA	
TTR	<=4 hours
Remedy	>4 hours: 1/30 th MRC for each 4 hours exceeding 4 hours

Single Broadband HSIA	
TTR	<=24 hours
Remedy	>24 hours: 1/30 th MRC for each 24 hours exceeding 24 hours



TPx Communications Service Level Agreement (SLA) Packet-Based Services

Single CPE	
TTR	<=24 hours
Remedy	>24 hours: 1/30 th MRC for each 4 hours exceeding 24 hours

Core Network Availability	
Time Interval Measurement	Calendar Month
Remedy	1/30 th MRC for each .001% below 100%

Core Network Latency	West Central or East Regional Networks	Inter-Regional Networks (West to Central or East to Central)	National Network (Between West and East Regional Networks)
Latency (Round Trip, in milliseconds)	30 ms	50 ms	90 ms
Time Interval Measurement	Calendar Month	Calendar Month	Calendar Month
Remedy	1/30 th MRC for each 1 ms above 30 ms average	1/30 th MRC for each 1 ms above 50 ms average	1/30 th MRC for each 1 ms above 90 ms average

Core Network Packet Delivery Availability			
	99.9%	99.9%	99.9%
Time Interval Measurement	Calendar Month	Calendar Month	Calendar Month
Remedy	1/30 th MRC for each full 1% below 99.9%	1/30 th MRC for each full 1% below 99.9%	1/30 th MRC for each full 1% below 99.9%

Core Network Packet Delay Variation/Jitter (One way, in milliseconds)			
	①Net IP-VPN, MPLS, IP VPN, VPLS and EPL services only COS 1 <=5 ms COS 2 <=7 ms	①Net IP-VPN, MPLS, IP VPN, VPLS and EPL services only COS 1 <=5 ms COS 2 <=7 ms	①Net IP-VPN, MPLS, IP VPN, VPLS and EPL services only COS 1 <=7 ms COS 2 <=14 ms
Time Interval Measurement	Calendar Month	Calendar Month	Calendar Month
Remedy	1/30 th MRC for each 2 ms above SLA for one Class of Service	1/30 th MRC for each 2 ms above SLA for one Class of Service	1/30 th MRC for each 2 ms above SLA for one Class of Service

UCx Voice Availability			
Time Interval Measurement	Calendar Month	Calendar Month	Calendar Month
Remedy	1/30 th MRC for each full hour of unavailability	1/30 th MRC for each full hour of unavailability	1/30 th MRC for each full hour of unavailability

SmartVoice Voice Availability			
Time Interval Measurement	Calendar Month	Calendar Month	Calendar Month
Remedy	1/30 th MRC for each full hour of unavailability	1/30 th MRC for each full hour of unavailability	1/30 th MRC for each full hour of unavailability