

MPLS SERVICES ADDENDUM

1. INTERCONNECTION SPECIFICATIONS. MPLS service will be delivered using American National Standards Institute (“ANSI”) specifications. The signal characteristics and supported MAC Layers at the Network Interface (“NI”) will be as specified in the ANSI standards. The physical NI will be dependent on the physical data rate contracted. Unless otherwise directed by Fidium, you are responsible for ensuring appropriate marking of your traffic packet headings to ensure conformance to Fidium’s MPLS network standards in order for proper prioritization of traffic.

2. ON-NET PERFORMANCE STANDARDS. MPLS service standards apply between the MPLS service points of demarcation (“DEMARC”). When a third-party provider is used to extend the Fidium network, standards apply only to the Fidium network handoff (Network to NI) to the third party. MPLS service standards exclude nonperformance due to force majeure, scheduled maintenance, off-net services, or causes beyond the control of Fidium. The actual end-to-end availability and performance of MPLS service may be affected by the customer-provided equipment, dependent upon the type and quality of your equipment used.

3. AVAILABILITY OBJECTIVE. Availability is a percentage of total time that service is operative when measured over a 30-consecutive-day (720 hour) period. The end-to-end availability standard for MPLS service is 99.99%:

Fidium MARKET	SPECIFICATION	AVAILABILITY
Fidium Legacy Markets	Fiber Access – Linear and Ring Protection with Redundant CPE*	99.999%
Fidium Legacy Markets	Fiber Access – Linear and Ring Protection with Non-Redundant CPE	99.99%
Fidium Legacy Markets	Copper Access	99.95%
Fidium NNE Markets**	Fiber Access – Linear and Ring Protection with Redundant CPE	N/A, ICB
Fidium NNE Markets	Fiber Access – Linear and Ring Protection with Non-Redundant CPE	99.95%
Fidium NNE Markets	Copper Access	99.95%

*Redundant CPE consists of two (2) NIs on two (2) different CPE devices and two (2) different uplink fiber pairs at each of your sites terminating in two (2) core nodes in two (2) different Fidium offices (dual homed).

**Fidium NNE Markets include Maine, New Hampshire and Vermont

4. INOPERABILITY. MPLS service is considered inoperative when there has been a loss of signal, or Packet Loss, Latency or Jitter do not meet the performance specifications below within any calendar month.

5. PACKET LOSS. Performance is noted in terms of packet loss. Packet Loss Ratio is defined as percentage of in-profile MPLS packets not reliably delivered between Fidium DEMARCs over a given measurement interval. MPLS service performance standards for packet loss apply on a bi-directional basis between the Fidium edge routers. The Packet Loss Ratio standards for end-to-end portions of MPLS service are:

Fidium MARKET	SPECIFICATION	CLASS OF SERVICE (“CoS”)	MONTHLY AVERAGE
Fidium Legacy Markets	Packet Loss Ratio – Fiber Access at each Endpoint	N/A	No more than 0.1%
Fidium Legacy Markets	Packet Loss Ratio – Copper Access for any Endpoint	N/A	Add 0.05% to commitment for each copper access endpoint
Fidium NNE Markets	Packet Loss Ratio – Fiber Access	Mission Critical	No more than 0.01%
Fidium NNE Markets	Packet Loss Ratio – Fiber Access	Priority Data	No more than 0.01%
Fidium NNE Markets	Packet Loss Ratio – Fiber Access	Expedited Data	No more than 0.1%
Fidium NNE Markets	Packet Loss Ratio – Fiber Access	Standard Data	N/A, ICB
Fidium NNE Markets	Packet Loss Ratio – Copper Access	N/A	Standard Data CoS average applies

Fidium reserves the right to exclude the following packet types from calculation of the Packet Loss Ratio: any packets over the Committed Information Rate (“CIR”), which may be dropped; corrupted packets (CRC, FSC or alignment errors); “runts” or packet sizes less than 64 bytes; jumbo packets over the defined MTU of the circuit; and/or packets with invalid destination MAC addresses. Packet Loss is reviewed for SLA commitments only when CoS has been purchased.

6. LATENCY. Latency, also known as delay, is defined as the average time it takes a packet to travel round trip between the Fidium edge routers over a given measurement interval. MPLS service performance standards for latency apply on a bi-directional basis between the Fidium edge routers. Latency is reviewed for SLA commitments only when CoS has been purchased. The Latency standard for MPLS service is:

Fidium MARKET	SPECIFICATION	CoS	MONTHLY AVERAGE
Fidium Legacy Markets	Latency (0-100 miles) – Fiber Access at Each Endpoint	N/A	No more than 16 ms (one way)
Fidium Legacy Markets	Latency (101-250 miles) – Fiber Access at Each Endpoint	N/A	No more than 20 ms (one way)
Fidium Legacy Markets	Latency (0-250 miles) – Copper Access (0-250 miles)	N/A	Add 3 ms to applicable commitment for each copper access endpoint
Fidium Legacy Markets	Latency (251+ miles) – Fiber or Copper Access	N/A	N/A, ICB
Fidium NNE Markets	Latency – Fiber Access	Mission Critical	No more than 15ms (one way)
Fidium NNE Markets	Latency – Fiber Access	Priority Data	No more than 20 ms (one way)
Fidium NNE Markets	Latency – Fiber Access	Expedited Data	No more than 25 ms (one way)
Fidium NNE Markets	Latency – Fiber Access	Standard Data	N/A, ICB
Fidium NNE Markets	Latency – Copper Access	N/A	Standard Data CoS average applies

7. JITTER. Jitter is a variation of Latency. It is the variation in time between packets arriving, caused by network congestion, timing drift, or route changes. MPLS service performance standards for jitter apply on a one-way basis between Fidium's edge routers. Jitter is reviewed for SLA commitments only when CoS has been purchased. End-to-end Jitter standards for MPLS service are:

Fidium MARKET	SPECIFICATION	CoS	MONTHLY AVERAGE
Fidium Legacy Markets	Jitter Rate	N/A	N/A, ICB
Fidium NNE Markets	Jitter Rate – Fiber Access	Mission Critical	No more than 5 ms (one way)
Fidium NNE Markets	Jitter Rate – Fiber Access	Priority Data	No more than 5 ms (one way)
Fidium NNE Markets	Jitter Rate – Fiber Access	Expedited Data	N/A, ICB
Fidium NNE Markets	Jitter Rate – Fiber Access	Standard Data	N/A, ICB
Fidium NNE Markets	Jitter Rate – Copper Access	N/A	Standard Data CoS average applies

8. MEAN TIME TO REPAIR. Mean Time to Repair (“**MTTRepair**”) is a basic measure of the maintainability of repairable items. It represents the average time required to repair a failed component or device from arrival of technical personnel on site. The average monthly MTTRepair objective is four (4) hours.

9. MEAN TIME TO REPAIR CPE EXTENDED SERVICE AREA. Extended Service Area refers to areas outside of direct field technician coverage, whereas a third party may be utilized for purposes of installation and repair support.

SPECIFICATION	MONTHLY AVERAGE
MTTRepair Extended Service Area	Next business day
MTTRepair Extended Service Area – Upgrade	4 hours

10. MEAN TIME TO RESPOND. Mean Time to Respond (“**MTTRespond**”) is a measure of the average time required to acknowledge the trouble ticket and dispatch technical personnel if required.

SPECIFICATION	MONTHLY AVERAGE
MTTRespond	2 hours

11. REPAIR AND SCHEDULED MAINTENANCE. Repair efforts will be undertaken upon notification of trouble by internal network surveillance and performance systems or by notification of trouble and release of MPLS service by you for testing. You will be notified a

minimum of five (5) business days in advance of any scheduled maintenance. Scheduled maintenance will be performed in a manner that minimizes any system interruption. Performance and availability standards will not apply during scheduled maintenance periods.

12. SLA SERVICE CREDIT PROCESS. SLA credits will be granted for MPLS service if Fidium fails to meet service parameters as previously defined under Availability, subject to the following terms and conditions. When CoS has been purchased, Packet Loss, Jitter and Latency are also considered. Fidium reserves the right to change, amend or revise this policy at any time. For the SLA credit process, please refer to the terms and conditions on your contract.

ACTUAL SERVICE AVAILABILITY	CONFIGURATION			EXAMPLE FOR 30-DAY MONTH
	Redundant	Non-Redundant	Type 2	
100%-99.999%	0%	0%	0%	Less than 40 sec
99.999%-99.95%	5%	0%	0%	40 sec up to 24min
99.95%-99.5%	10%	10%	0%	24 min up to 4 hrs
99.5%-98.9%	25%	25%	0%	4 hrs up to 8 hrs
98.9%-98.2%	40%	40%	0%	8 hrs up to 12 hrs
<98.2%	50%	50%	0%	Greater than 12 hrs

PERCENTAGE OVER PACKET LOSS RATIO, JITTER AND LATENCY SPECIFICATION	CREDIT AS A PERCENTAGE OF MRC
1-25%	10%
26-50%	20%
51-75%	30%
76-100%	40%
>100%	50%