

SWITCHED ETHERNET SERVICES ADDENDUM

1. INTERCONNECTION SPECIFICATIONS. Switched Ethernet service will be delivered at standard 10/100/1000/10000/25000/40000/100000 Mbps interfaces. The signal characteristics and supported MAC Layers at the Network Interface (“NI”) will be as specified in the IEEE 802.3-2002 standard. Unless mutually agreed upon by Fidium and you, the Physical NI for Gigabit Ethernet services delivered on the core ring will be a duplex FC-PC connector on Fidium’s Fiber Distribution Panel (“FDP”). For 10/100 Ethernet service at remote sites, the Physical NI will be at an RJ-45 jack on the Rate Interface Converter (“Media Converter”). This Service Level Agreement (“SLA”) is for Switched Ethernet Private Line (“EPLine”) and Ethernet Virtual Private Line (“EVPLine”) Services within the same metro market. These services are point-to-point User Network Interface (“UNI”) to UNI. “SLA Credits” are defined as the credits to be provided to you by Fidium for an Outage under this SLA.

2. PERFORMANCE STANDARDS. Ethernet service standards apply on a one-way basis between the Ethernet service points of demarcation (“DEMARC”), which are Fidium-installed designated Category 5 Patch Panel for electrical and FDP for optical interfaces or our edge equipment (“CPE”) service port when patch panels are not utilized. 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, known as Type 2 service. Fidium will derive the 1-way measurement from an average of a 2-way measurement. Ethernet service standards exclude nonperformance due to force majeure or planned interruptions for necessary maintenance purposes. The actual end-to-end availability and performance of Ethernet 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. Type 2 UNI to other Carrier NNI are not subject to SLA unless agreed to by you and Fidium. The end-to-end availability standards for Ethernet service are:

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). In this case, the Service will consist of a pair of Ethernet Virtual Circuits (“EVCs”), one on each NI, between at least two (2) different sites. Availability is based on both EVCs’ status. For instance, if one EVC fails the availability specification, but the other does not, then the availability specification is met. It is your responsibility to switch from one EVC to the other as needed.

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

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

5. FRAME LOSS. Frame Loss Ratio, also known as Packet Loss Ratio, is defined as percentage of in-profile Ethernet frames not reliably delivered between Fidium DEMARCs over a given measurement interval. Type 2 UNI to other Carrier NNI are not subject to this SLA unless agreed to by you and Fidium. The Frame Loss Ratio standards for end-to-end portions of Ethernet service are:

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

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

6. LATENCY. Latency, also known as delay, is a measure of the time required to transmit a Service frame from the source to the destination across the Layer 2 Ethernet network and back to the source. Type 2 UNI to other Carrier NNI are not subject to this SLA unless agreed to by you and Fidium. Latency is reviewed for SLA commitments only when CoS has been purchased. The Latency standard for Ethernet 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 frames arriving, caused by network congestion, timing drift, or route changes. Type 2 UNI to other Carrier NNI are not subject to this SLA unless agreed to by you and Fidium. Jitter is reviewed for SLA commitments only when CoS has been purchased. End-to-end Jitter standards for Ethernet 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 Ethernet 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 Ethernet 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, Frame 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 FRAME 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%