Florida LambdaRail (FLR)
INVITATION TO NEGOTIATE
ITN #FLRNETUP2021

Procurement of Backbone Network Equipment, Optical Transport, and Related Software and Services

1.0 INTRODUCTION AND BACKGROUND

Florida LambdaRail, LLC (FLR), Florida's Research and Education Network, headquartered in Tallahassee, Florida's capital city, is an independent regional optical network (RON) owned and operated on behalf of partner institutions and affiliates. FLR is owned by its twelve (12) equity partner universities, nine of which are public and three are private. FLR also provides services to 60 affiliate organizations that include other public and private Florida colleges and universities, state colleges, research institutions, health-care organizations, as well as select local and state government entities. Utilizing next generation network technologies, protocols and services, FLR facilitates collaboration and academic, scientific, educational, and clinical application development through high-speed communications.

FLR currently operates at 100 Gigabits-per-second (Gbps) over the 1,540-mile core backbone of the FLR network. The FLR Multiprotocol Label Switching (MPLS) Backbone is based on ASR9000 routers purchased in 2011. These routers have seen multiple upgrades over the years, but the platform has reached its end of life and is need of replacement. Further, traffic on individual FLR backbone links routinely spikes above 60 Gbps, underscoring the need for a planned and budgeted system upgrade that will enable FLR's partners and affiliates to continue to share real-time, data-intensive information with each other on a statewide, regional, national and global basis. FLR is the Internet2 Community Anchor Program connector of record in the State of Florida and is one of 39 Regional Optical Networks in the nation.

FLR maintains a Regional Science DMZ as a VRF on our existing backbone. A Science DMZ is defined as a friction free network architecture that is purposely designed to support high performance computing and intensive science applications using different methodologies when compared to the typical enterprise network. A highly optimized end-to-end path utilizing Science DMZs increases the efficiency of data transmission.

FLR's partner and affiliate organizations are focused on education, research, and 21st century economy initiatives. FLR brings together these geographically distributed organizations and resources in such a way that their collective impact is far greater than the sum of their individual parts. The needs, requirements, and expectations of scientists and researchers has increased the need for special-purpose, end-to-end networks such as FLR to support the bandwidth and performance intensive applications, experiments,

and data transfers that are necessary for research intensive science and high-performance computing (HPC).

To accommodate the expanding network needs of its partners and affiliates, FLR is inviting qualified providers of network hardware and related services to respond to this solicitation. Providers may elect to respond to all or part (BACKBONE NETWORK or OPTICAL TRANSPORT) of the elements in this solicitation.

2.0 BACKBONE NETWORK - TECHNICAL OVERVIEW

The successful responder(s) will offer solution(s) that provide cost-effective network enhancements with documented performance metrics and a lifetime of at least five years. The intent of this ITN is to provide FLR with networking equipment and related software and services that enable network expansion to 400Gbps and beyond.

The “FLRNet” network consists of 7 ASR9000 routers operating as core nodes. These nodes are interconnected mostly by Dense Wave Division Multiplexing (DWDM) based 100G circuits. Pensacola is a smaller ASR 9001 connected by multiple 10G circuits and Atlanta is connected via managed 100G circuits. We also have connected to each core router, with the exception of Pensacola, a “flex” node which is used for local Content Delivery Network (CDN) caches, 100-400G volumetric DDoS integration with our cloud scrubbing provider, and our Customer Premise Equipment (CPE) service. The core FLRNet service consists of the VRFs:

- Internet: Classic Internet routing table
- R&Enet: Research and Education, this is where Internet2 is along with national and international research and education networks.
- CP: Commodity peering. All CDNs and other networks FLR peers directly with are here.

This separation of types of routes allows FLR to offer unlimited CP services while still metering classic Internet traffic. These three VRFs are delivered to most members via 3 VLANs and 3 different peering sessions. While there are a lot of advantages to this design, it does require a powerful member border router to accept all of the prefixes (well over 1 million). It also requires some Border Gateway Protocol (BGP) expertise to properly manage the BGP sessions. To lower the barrier to entry, FLR now offers a CPE (customer premise equipment) service. This small border router peers with the Flex node mentioned above. That Flex node does the 3 VRF peering and blends the prefixes, delivering only a default route to the CPE and then to the member. FLR also provides L3VPNs for our “ScienceDMZ” service as well as for individual member private VPNs. Those will likely remain as L3VPNs in the short term but may be converted to multipoint layer 2 or a layer 3 Ethernet Virtual Private Network (EVPN) in the future.

Historically, FLR has used chassis-based systems in the core role in the network. Due to the increasing costs of space and power, we are extremely interested in space and

power efficient designs. This can include one or more “pizza box” form-factor devices to replace the legacy chassis. This should be designed in such a way that additional capacity can easily be added using additional pizza boxes. Please provide topology recommendations to accommodate additional capacity (more interfaces) or higher capacity interfaces using this principal. Multiple solutions balancing among cost, quality, and other technical features are acceptable and encouraged.

Due to the layout of the FLR optical network, the new solution should have roughly the same topology as the existing network, with the exception of a new “small site” location in Gainesville, FL (See Figure 1). The solution should support client/edge speeds from 1G to 400G and backbone speeds in multiples of 400G.

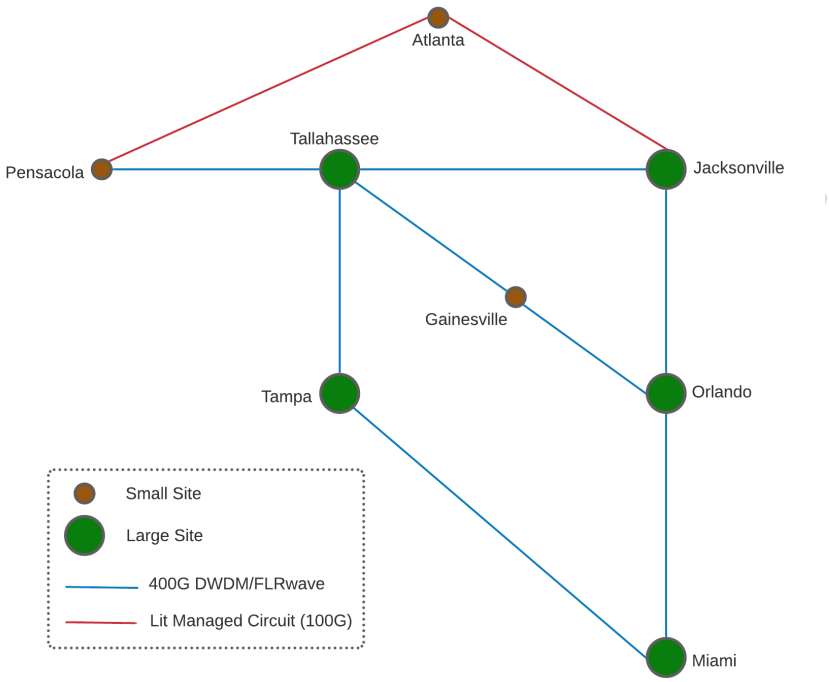

Figure 1
Desired Core Topology

To support 10G and below, FLR will accept a “subtending” switch design. This switch should be fully MPLS/SR/EVPN capable to support direct layer 2 services without having to implement such services at the core level. All layer 3 will be handled at the core level. We call devices which perform MPLS for layer 2 but not layer 3 “Hybrid Layer 2 devices”. See Figure 2.

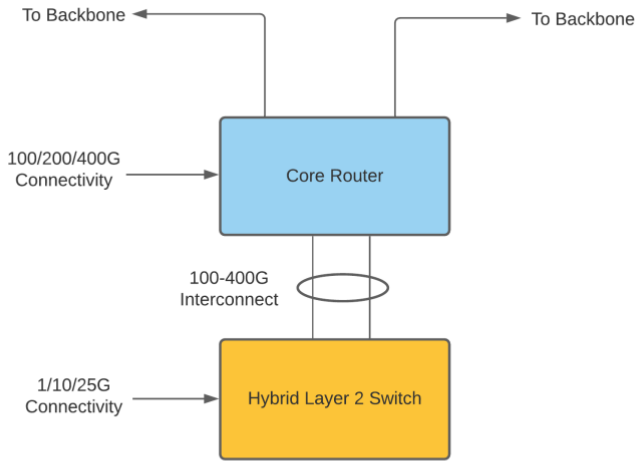

Figure 2
Core/Subtending
Topology

We are interested exploring both site level routed redundancy (multiple core routers per site) as well as backhaul redundancy (layer 1 or 2 backhaul to an adjacent core node to provider layer 3 redundancy). The goal is to avoid fiber cuts having any impact on member services, even redundant services. We would like the fiber cuts we experience on our backbone to be completely transparent to the user, but this will be a cost benefit analysis. We have designated two different types of sites in figure 1. A “Large” site is one that we would like to potentially have dual core routers along with dual subtending switches. A “Small” site would only have a single core router and subtending switch. In the case of a small site, the subtending switch would also be connected to an adjacent core router and provide redundant services via (Pseudowire Headend (PWHE) (see below). Small sites may serve 10G customers directly from the core using 4x10 breakouts so that a member may have full redundancy. These design elements are covered in Figure 3.

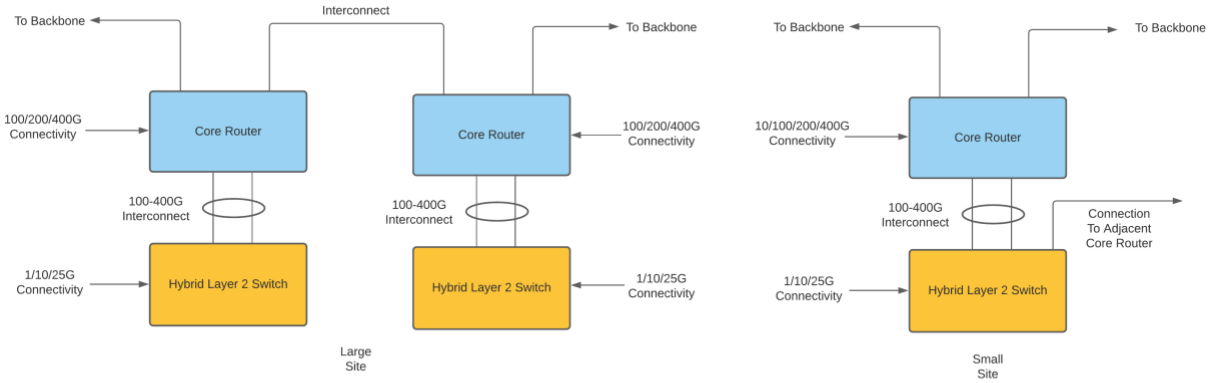

Figure 3
Small vs Large Sites

We would also like to explore adding peering routers for Internet and content peering to provide a convenient way to do inline DDoS filtering from Internet and peering sources without pushing high bandwidth R&E traffic through these scrubbers. We also need to maintain the ability to provide a blended service to our CPE devices. It seems reasonable that the "Hybrid Layer 2 Switch" may be able to serve both roles if cost effective. Otherwise, a 3rd type of box should be specified for that role. We will accept commodity and peering traffic in our Jacksonville, Orlando, Miami, Tampa, Tallahassee and Atlanta core locations.

In addition to the base network, we will also be including the requirement for a route-reflector configuration that provides for distributed route-reflectors in at most 4 locations around the state. These route reflectors should run on standalone hardware and be designed for rapid route distribution (i.e., virtual route reflectors running on server class hardware).

It is highly anticipated that we will be using third party optics in the final design, but vendors should include qty 1 pricing for 10G SR, 10G LR, 100G SR4, 100G LR4, 400G FR4 and 400G LR4 optics such that FLR can maintain officially supported spares in the case of compatibility issues.

A reasonable sized lab is also part of the design. It can also be part of the sparing strategy as well. Note the sparing of at least quantity 2 of an item is required to serve as a valid spare of parts on a next business day support contract. In addition to physical hardware, the lab configuration should include enough virtual instances to model the entire core as well as two sites in full (subtending switches). The virtual instances should have enough capacity to handle basic traffic validation but not to model any kind of scale.

2.1 BACKBONE NETWORK - REQUIRED FEATURES (Day 1):

- 4-6 million IPv4 prefixes in FIB, 1-2 million IPv6 prefixes in a Forwarding Information Base (FIB) [*]
- Fast Routing Information Base (RIB) to FIB/TCAM (Ternary Content Addressable Memory) programming (forwarding plane) [*]
- Fast BGP prefix learning (control plane) [*]
- MPLS with VRF support (RFC4364), v4 and v6 (6vPE)
- EoMPLS/Draft Martini/RFC4447
- MPLS Traffic Engineering with RSVP
- Flexible mapping of Vlans into L2VPNs (individual, range, multiple range)
- Segment Routing over MPLS with SR-TE and TI-LFA
- Lossless/Line-rate performance when running with a rich set of features and minimal oversubscription on line-card and switch fabric elements [**]
- BGP Flowspec in hardware [*]
- IPv6 support with “full width” IPv6 ACL support
- uRPF with loose and strict mode
- Support for traffic ACLs at scale (at least 64K entries) [*]
- Hitless ACL TCAM programming
- Dynamic Deep buffering support [*]
- Support for 400G including DCO ZR+
- Egress rate limiting (policing/shaping) on a per-sub interface bases
- IPv4 and v6 Multicast (ASM/SSM) in VRF, Draft Rosen
- Multi-core route-processor design with sufficient memory for future growth [*]
- Pre-emptive multitasking OS with protected memory
- Two stage config to commit with pre-commit syntax and commit-time semantic checks
- Flexible configuration templating and manipulation from the CLI
- Configuration change tracking (userid/time-date/change made)
- Configuration reversion to point in time
- Rich set of APIs. Must include at least two of the following
    - XML
    - REST
    - RESTconf
    - Netconf
    - gRPC
- Hardware based Control Plane Policing/Protection
- Port mirroring without performance impact to traffic (SPAN/SPAN to MPLS PW/ERSPAN). This should include both ACL based SPAN and full interface/sub-interface based SPAN.
- Full Netflow v9/IPFIX support with sampling with MPLS support
- Route leaking across all VRFs and the default table
- Service Provider oriented feature set [**]
- BGP PIC (protocol independent convergence) or other fast BGP failover
- Support for disabling any vendor locking of optics

- Rich route policy language with configuration re-use as a central element [**]
- Virtual instances of router for lab testing in ESXi and/or KVM environments (this should be included in final proposal).

2.2 BACKBONE NETWORK - VALUABLE FEATURES

The proposed equipment will be evaluated in addition to the above basic requirements on the following features. While not required, they are considered highly desired as immediate or roadmap items.

- In-Service-Software-Upgrade with minimal traffic impact
- Psudowire Headend (PWHE) to terminate layer 2 pseudowires as layer 3 interfaces on a core router. The resulting service should support all other features mentioned herein.
- Segment Routing over IPv6 (SRv6).
- Minimal Impact/In Service Software Upgrades
- EVPN over MPLS (ELine/ELAN/L3VPN)
- Multicast in EVPN/SR (draft-ietf-bess-mvpn-evpn-sr-p2mp-02?)
- BGP/RPKI
- BGP Monitoring Protocol (BMP)
- Streaming Telemetry
- IPv4 and v6 Multicast (ASM/SSM) in VRF, NG MVPN/mLDP
- Support for ACL Host/Network object groups as well as “embedded/included” ACL
- MACsec Support
- Design elements to provide for “medium scale” automatic DDOS detection and mitigation at the core level. FLR already has a cloud based NetFlow solution (Kentik) and a high scale cloud scrubbing solution (Radware Security Dam). The existing NetFlow platform may be used for DDOS detection if desired.
- Container/VM/Plug in module support [**]

* = Please specify scale or rate in response.
** = Please specify degree to which equipment is able to meet this guideline in response.

2.3 AUTOMATION/ORCHESTRATION AND MONITORING.

Automation/orchestration capabilities for rapid configuration deployment, compliance monitoring, code upgrades, general and atomic moves/add/changes (MAC) would be considered valuable, especially if those systems can assist us with other elements of the network such as our CPE edge (Cisco ASR920), metro access rings (Cisco NCS540 and C68xx) and OBM network (Juniper EX2350). Also, the degree to which the gear is supported by opensource orchestration systems such as Ansible, and that the vendor is

supportive of these efforts, is also considered valuable. Additionally, monitoring solutions that provide in depth element management and can provide northbound alarms to a single pane of glass or be that single pane of glass would also be considered valuable.

2.4 OPTICAL TRANSPORT

As part of the Florida LambdaRail (FLR) backbone upgrade project, the links between core nodes will be upgraded to an effective rate of 400Gbps. Currently FLR maintains a Cisco NCS2006 based optical platform. This is configured as a 40 channel 50Ghz ITU grid system using odd channel spacing.

FLR is seeking a transponder-based solution to pass 400G between our core nodes:

Option 1:

Inverse multiplexing of quantity 2 200G waves into a 400G client circuit. The 200G waves should require an OSNR of no worse than 18dB, operate at a rate less than 45GBaud, and provide a clear 400G circuit to the client router. Both Flex-E and proprietary solutions for the I-Mux function will be accepted.

Option 2:

Currently it is unclear if simple design changes can be made to the FLR optical network to support a wave operating greater than 45GBaud. Assuming such changes could be made, please provide a solution operating at 70GBaud or less with OSNR requirements no worse than 23dB.

Option 3:

2 independent 200G waves between core locations that FLR will bond at the router level. The 200G waves should require an OSNR of no worse than 18dB and operate at a rate less than 45GBaud.

The following city pairs are part of this project (as depicted in Figure 1 above):

- Jacksonville to Orlando
- Orlando to Miami
- Orlando to Gainesville
- Miami to Tampa
- Gainesville to Tallahassee
- Tampa to Tallahassee
- Jacksonville to Tallahassee
- Tallahassee to Pensacola

As part of this project, at least 2 small chassis should be included to avoid shared fate in the case of a chassis failure. FLR's core locations use telco-style single frame relay racks. Depth of the equipment should be limited to avoid racking issues. All optical equipment

should be A+B DC powered and managed via 1G Ethernet running over an out of band network. Devices should be managed via cli and snmp at a minimum. API access to retrieve information is considered a plus (Netconf/REST/etc.). Vendors are also encouraged to include NMS software to manage devices and provide northbound alarms to a primary NMS system already in use. Finally, we may elect to do a live test across our optical backbone to prove out the design and operation of the equipment.

2.5 SUPPORT/MAINTENANCE

FLR currently has 24x7x4 level of support on all packet-based network equipment. While this provides for a very aggressive recovery time objective (RTO), it has proven to be extremely costly. FLR would like to continue to provide for an aggressive RTO via 24x7x4 support, however we also require a dramatic decrease in maintenance costs. The increased use of spares, or longer-term pre-paid maintenance contracts would also be considered as mechanisms to reduce cost. We also wish to avoid pay-as-you-grow models, and as much licensing overhead as possible.

2.6 MEASUREMENT AND EVALUATION

The following criteria will be used for evaluation (in no particular order):

1. Completeness and scale of supported features from the list of required features.
2. Completeness and scale of supported features from the list of valuable features.
3. Overall cost effectiveness and value of the solution (initial capital costs, re-occurring costs, space and power, costs to implement and migrate the current solution).
4. Cost effectiveness and compatibility of the proposal with the colocation facilities that will host this equipment.
5. Vendor Site/Local Proof of Concept (POC) Testing. Based on the proposals provided, FLR may elect to conduct a vendor proof of concept for one or more designs. This POC will focus on the validation of the design, proof of feature function, and to the degree possible, validation of scale.
6. Success in similar Regional Optical Network environments: Please provide references where this type of equipment has been used successfully at other major RONs or national educational networks.
7. Highly Redundant Design: As a system, the components must operate in a highly redundant mode during normal day to day operation and minimize downtime during maintenance periods.
8. Vendor Support: The vendor's ability to provide both hardware and software support will be critical to the success of this process. Vendor will be measured on:

a. Coverage and depth of technical assistance center. Please articulate the size of the support organization which supports **this line of products.** Please confirm 24x7 support is available including problem re-creation.
b. Ability to provide a cost-effective spare/replacement program. All components should be replaced within 8 hours of failure through either a parts depot or on-site spares or both.
c. Software revision/release schedule. How often are major and minor releases provided? Does the Technical Support unit have the ability to issue engineering releases for critical items? Does the vendor support patching on the platforms rather than full release upgrades for critical issues?

9. Value adds: Certifications, training, marketing, community support/engagement, other commodities and services that add value to the procurement.

2.7 MEMBER EDGE

As a member owned organization, FLR would like to also provide recommendations for appropriate border routers for members looking to synergistically update as FLR performs its upgrades. We seek up to three designs/specifications. The first is optimized for 10G connectivity with a path to 100G, and the 2nd is optimized for 100G connectivity, and the third is optimized for 100G connectivity with a path to 400G. All three boxes should be able have at least a 2M IPv4 FIB to allow for future growth (the larger the better). These designs will be made available to our members under a pricing agreement negotiated as part of this ITN. Members would be responsible for initiating the purchase directly to the winning vendor or a value-added reseller (VAR) of their choice.

2.8 TRAINING

Training is an important component of this ITN. The winning vendor should provide both directed training specific to FLR engineering requirements as well as training credits to attend future general-purpose sessions. The amount of type of training credits will be negotiated based on the vendor responses.

3.0 ITN SUBMISSION.

All responses must be submitted electronically via the FLR website no later than the date and time specified herein. Submissions by any other means than this website will not be considered. ITN responses which for any reason are not available at the prescribed time and date will not be considered. It is the respondent's responsibility to assure that his/her ITN response is available on the correct date and.

4.0 USE BY OTHERS

Network equipment and associated services and software made available to FLR under contract as a result of this solicitation, will also be made available at the same pricing and performance levels to all of the individual institutions and organizations that comprise the

FLR Equity Partner and Affiliate communities throughout the term of any negotiated agreement. Refer to https://www.flrnet.org/participants/and https://www.flrnet.org/flr-affiliate-participants/ for complete lists.

5.0 ITN CORRESPONDENCE AND AMENDMENTS.
All correspondence and amendments to this ITN solicitation will be issued by the Requestor and posted to *https://www.flrnet.org/solicitations-and-notices/*. Questions regarding the ITN may be submitted verbally at the pre-negotiation conference. All other questions prior to or subsequent to the pre-negotiation conference MUST be submitted via email to ITNQuestions@flrnet.org. Under no circumstances will responses be given to questions posed in any other manner. Responses to all questions will be posted to *https://www.flrnet.org/solicitations-and-notices/* Responders are advised that any and all amendments to the ITN will be posted to *https://www.flrnet.org/solicitations-and-notices/*. It is strongly recommended that respondents visit this site regularly during the ITN process to make certain that all addenda (if required) and responses to questions have been received.

6.0 OBJECTIVE.
FLR desires to obtain the best price and performance offer(s) for the network equipment and related software and services required to expand its current network bandwidth to 400Mbps and beyond.

A "short list" of companies that will be joined in further and final negotiations with the Requestor will be developed from this initial response. Only representatives of the selected companies who are authorized to negotiate and make agreements shall be involved in negotiations.

7.0 DEFINITIONS.
Requestor: Florida LambdaRail, LLC.
Respondent/Responder/Offeror - Any entity submitting a written and electronic response to the ITN.
Awardee(s) - Any entity(ies) awarded one or more purchase order(s)/contract(s) pursuant to this ITN.
Equity Partner - One of twelve equity owners of FLR (see https://www.flrnet.org/participants/)
Affiliate(s) - Non-equity participants in FLR (see https://www.flrnet.org/flr-affiliate-participants/)
FLR – Florida LambdaRail, LLC, a 501(c)3, limited liability, not-for-profit corporation.
ITN – Invitation to Negotiate.
Gbps – Gigabits per second.
DMZ – network demilitarized zone.

8.0 SOLE POINT OF CONTACT.

Sole Point of Contact - The designee to whom Respondents shall address any questions regarding the solicitation or award process. The sole point of contact shall be the arbitrator of any dispute concerning performance of the Contract.

Lance Taylor
Chief Operating Officer
Florida LambdaRail, LLC
1607 Village Square Blvd, Suite 4
Tallahassee, FL 32308
Phone: (850) 385-1250
Email: ITN@flrnet.org

9.0 SOLICITATION FORMAT.

FLR has elected to use the Invitation to Negotiate (ITN) process for this solicitation. The ITN is not an Invitation to BID (ITB) or Request for Proposal (RFP). Respondents are expected to understand the difference between these procedures. The ITN is a more flexible procurement process designed for the acquisition (in this instance sale) of specialty goods and services such as technology products. The process has two steps in which FLR will review all responsive proposals and develop a "short list" of the offers, which seem to best meet the requirements of the Requestor. Once the "short list" of offerors/respondents has been developed a series of negotiations between designated respondent and FLR representatives. Negotiations offer an opportunity for the selected respondents to discuss their offers with FLR representatives. As with the RFP, respondents are compared to each other on technical merit, quality of service and support, as well as to best price offer. The goal of this process is for FLR to identify the optimal outcome or the solution that best meets the needs of the FLR Equity Partner Institutions and Affiliates.

10.0 EVALUATION PROCESS.

The FLR representatives will evaluate and provide a consensus opinion of all initial responses. Up to three responses with the best responsiveness and best price offer will be asked to participate in a final negotiation of the best price offer. After all negotiations are complete, FLR will award to the offeror(s)/respondent(s) whose negotiated response(s) best meet the needs of the Requestor.

Requestor reserves the right to reject any or all Proposals submitted. The Requestor also reserves the right to make multiple awards.

11.0 POSTING OF ITN SHORT LIST AND FINAL AWARD.

The consensus opinion for a recommended Short List of network solution Respondents will be posted for review by interested parties at https://www.flrnet.org/solicitations-and-notices/.

Final award decisions will remain posted for a period of seventy-two (72) hours at https://www.flrnet.org/solicitations-and-notices/.

12.0 EMPLOYMENT OF ALIENS STATEMENT.
The employment of unauthorized aliens by any respondent is considered a violation of Section 274A (e) of the Immigration and Nationality Act. If the respondent knowingly employs unauthorized aliens, such violation shall be cause for unilateral cancellation of any and all purchase order/contracts resulting from this solicitation.

13.0 SPECIAL ACCOMMODATIONS.
Any person requiring a special accommodation, because of a disability, should call 850-385-1250 least 3 workdays prior to any activity in conjunction with this solicitation.

14.0 COMPLIANCE WITH LAWS AND REGULATIONS.
In performing their obligations under this Agreement, the parties shall abide by all laws, statutes, ordinances, rules and regulations pertaining to or regulating the performance required by this Agreement. Any violation of such laws, statutes, ordinances, rules or regulations shall constitute a material breach of this Agreement and shall entitle the non-violating party to terminate this Agreement immediately upon delivery of written notice of termination to the violating party, provided that a written notice of violation and a reasonable opportunity to cure has been first given.

15.0 MODIFICATIONS.
The Respondent's response to the ITN solicitation may only be modified in the form of a written notice received prior to the time and date set for opening. Telegraphic/telephonic or facsimile modifications will not be considered.

16.0 COMMUNICATION PROCEDURES.
Only those communications that are in writing (including email) from the FLR designated sole point of contact may be considered as a duly authorized expression on behalf of the Requestor. Also, only written communications (including email) from participating Respondent will be recognized by the Requestor as duly authorized expressions on behalf of said Respondent.

17.0 REVIEW.
The responses will be first reviewed by the FLR Representatives to verify if they conform to ITN instructions contained in the submittal paragraph (Paragraphs 3.0 & 26.0). Responses that do not conform to said instructions may be rejected and not reviewed further.

18.0 TERM OF AGREEMENT.
Unless sooner terminated as provided herein below, the term of any agreement resulting from this ITN shall be for a period of five (5) years. The terms of this Agreement may be extended for one (1) successive extension term of five (5) years each as long as both

parties are not in default under this Agreement, at the time the extended term commences.

19.0 TERMINATION.
In the event of a breach of this agreement by either party that is not remedied within 30 calendar days after delivery of written notice of such breach, the aggrieved party may terminate this agreement by written notice to the other party. FLR shall be liable only for payment for commodities/services rendered prior to the effective date of termination.

20.0 FORCE MAJEURE.
Neither party shall be in default if any failure to perform is caused by anything beyond the control of such party.

21.0 LIABILITY.
No party shall be liable or responsible for indirect, special, incidental, punitive or consequential damages suffered as a result of this agreement, except to the extent such damages arise from the gross negligence or willful misconduct of a party.

22.0 LAW, VENUE AND LITIGATION.
This ITN is governed and construed pursuant to the law of Florida, with venue being in Leon County, Florida. In case of dispute each party shall be liable and responsible for its own legal costs, expenses and attorney fees.

23.0 DISQUALIFICATION OF RESPONDENT.
Only one ITN from an individual, firm, partnership, corporation or association under the same or different names will be considered. Reasonable grounds for believing that a Respondent is involved in more than one ITN for the same item will be cause for rejection of the highest priced ITN in which such Respondents are believed to be involved. Any or all proposals will be rejected if there is reason to believe that collusion exists between Respondents. ITNs in which the prices obviously are unbalanced will be subject to rejection.

24.0 EQUAL OPPORTUNITY EMPLOYER.
The nondiscrimination clause contained in Section 202, Executive Order 11246 as amended by Executive Order 11375 and Executive Order 13672, relative to Equal Employment Opportunity for all persons without regard to race, color, religion, gender, national origin, or sexual orientation/identity and the implementing rules and regulations prescribed by the Secretary of Labor are incorporated herein.

25.0 ADDITIONAL TERMS AND CONDITIONS.
No additional terms and conditions included with the ITN response shall be evaluated or considered and any and all such additional terms and conditions shall have no force and effect and are inapplicable to this ITN. If submitted either purposely through intent or design or inadvertently appearing separately in transmittal letters, specifications, literature, price lists or warranties, it is understood and agreed the general and special

conditions in this ITN solicitation are the only conditions applicable to this ITN and the Respondent's authorized signature affixed to the Acknowledgment Form attests to this.

26.0 PREPARATION AND ELECTRONIC SUBMITTAL INSTRUCTIONS.
Proposals shall be electronically formatted and submitted to conform to letter-size (8 ½ by 11) paper. Responses to this ITN must be submitted via the following link https://www.flrnet.org/2021-itn-network-services/. **Submissions by any other means than this website will not be considered.**

27.0 FORMATTING

a. Response Format

1. Questions and requests for information may not be rearranged, regrouped, or divided in any way.

2. Information submitted that is not requested by FLR may be considered to be supplemental, not subject to evaluation by the committee members.

3. If there is any information or required submittals which due to size or binding cannot be incorporated following the proper tab, the Respondent must provide information following the numbered tab, telling the evaluation committee where the information can be found in the response.

b. Tabular Format

Proposals should include a Table of Contents with page number references. The Table of Contents should contain sufficient detail and may be organized according to the same format as presented in this ITN, to facilitate easy reference to the sections of the proposal as well as to any separate attachments which should be identified in the main Table of Contents. If a Respondent includes supplemental information or non-required attachments with its proposal, this material should be clearly identified in the Table of Contents and organized as a separate section of the proposal. The following is an outline that may be followed.

Tab 1: Completed and signed ITN Acknowledgement Form
Tab 2 Cover Letter/Executive Summary.
Tab 3: Company Experience/References
Tab 4: Overview of network solutions and Price Offer*.
Tab 5 An estimated project timeline including but not limited to:
- Equipment delivery (after receipt of order)
- Equipment testing (after equipment delivery)

Tab 6: Terms of Payment and Payment Schedule.
Tab 7: Marketing, supplemental or non-required materials.

*Note: Effective Period of Proposals. Under this ITN, Respondent's pricing shall remain firm for a period of no less than one hundred and twenty (120) days following the closing date, in order to allow time for evaluation, approval, and award of the contract. Any Respondent who does not agree to this condition shall specifically communicate in its proposal such disagreement to FLR, along with any proposed alternatives. FLR may accept or reject such proposed alternatives without further notification or explanation.

28.0 NEGOTIATION PROCESS.

Negotiations will be done by at least three (3) FLR Representatives. Contact made with individuals outside of these Representatives may result in the disqualification of the respondent from participation in this ITN.

29.0 SELECTION.

The successful proposal(s) will be submitted in response to this ITN on or before the submittal deadline that is/are the most advantageous to FLR. FLR representatives will evaluate proposals and reach a consensus opinion of the best solution(s) and price offer(s). The evaluation of proposals and the selection of the successful proposal(s) will be based solely on the information provided by Respondents in their proposals and in any and all subsequent negotiation sessions.

CALENDAR OF EVENTS*
Invitation to Negotiate

Procurement of Network Equipment, Optical Transport, and Related Software and Services

A. April 19, 2021
Invitation to Negotiate Issued and Advertised.

B. May 3, 2021 – 12:00 Noon (all times are Eastern Daylight Time unless otherwise noted) Last day for respondents to submit written questions to FLR. Submit questions via email to ITN@flrnet.org.

C. May 17, 2021 – 10:00 a.m. Pre-Negotiation Conference. Conference will be held via Videoconference utilizing a tool of FLR's choice.

D. May 31, 2021 – 5:00 pm
FLR will respond to written questions and questions not answered at the pre-ITN conference. Response will be an addendum to the ITN.

E. June 14, 2021 – 2:00 pm
Respondent proposals due in FLR as outlined in the ITN.

F. June 21, 2021 5:00 pm
Short list of respondents selected for further negotiations posting period. (If needed)

G. June 28-29, 2021
Short List Negotiation Sessions (If needed).

H. July 7, 2021
Best and Final Offers due (If needed).

I. July 14, 2021
72 Hour posting of final award(s)

* Requestor reserves the right to adjust these dates as necessary.