



Administered by
UNIVERSITY OF MAINE SYSTEM
Office of Strategic Procurement

REQUEST FOR PROPOSALS

OPTICAL NETWORKING EQUIPMENT
University of Maine System

RFP # 04-08

ISSUE DATE:
November 2, 2007

OPTIONAL PRE-PROPOSAL CONFERENCE
November 16, 2007

PROPOSALS MUST BE RECEIVED BY:
December 14, 2007

DELIVER PROPOSALS TO:

University of Maine System
Office of Strategic Procurement
Attn: Anne-Marie Nadeau
16 Central Street
Bangor, ME 04401

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Attachment A – Network Maps and Diagrams

Attachment B – Technical Questions

1.0 GENERAL INFORMATION

- 1.1 Purpose: The University of Maine System (UMS) is seeking proposals for the provision of optical networking equipment, including installation, training, and maintenance / technical support.

This Request for Proposals (RFP) states the instructions for submitting proposals, the procedure and criteria by which a Bidder may be selected and the contractual terms by which the University intends to govern the relationship between it and the selected Bidder.

The following Attachments are provided as part of this RFP:

- A – Network Maps and Diagrams
- B – Technical Questions

- 1.2 Definition of Parties: The University of Maine System will hereinafter be referred to as the "University." The network infrastructure will be referred to as "NetworkMaine" or "The System." Respondents to the RFP shall be referred to as "Bidders." The Bidder to whom the contract is awarded shall be referred to as the "Contractor."

- 1.3 Background: The University of Maine System is comprised of seven geographically dispersed institutions of higher education; 11 University College outreach centers that offer on- and off-site access to System-wide courses and programs; a Board of Trustees and Chancellor, who together determine the nature, purpose, and direction of the universities and their respective programs, services, missions and budgets; and a System Office that performs a wide variety of policy and administrative support services for the 34,000 students and 5,000 employees of the University of Maine System.

The University also provides network connectivity to educational and research institutions throughout the state. NetworkMaine will serve institutions focused on research and education, removing historical barriers and allowing for improved collaboration in the region.

The University intends to build a dark-fiber based network that will assure Maine's research and education community has the infrastructure to compete with peers throughout the United States and the world. This activity is critical not only to our institutions' ability to recruit top research faculty, but also as an important component in Maine's ability to retain high-technology research that depends on high-performance, carrier-independent dedicated access to similar national and international networks. This RFP is intended to allow the University to complete a fair and comprehensive evaluation and purchase of optical networking equipment solutions proposed by all Bidders who have responded. From among the responses the University intends to analyze and select the best option(s) for completion of all stated objectives.

- 1.4 Scope: The University will approach the Bidder community as a single entity on behalf of the institutions of research and higher education in Maine.

This RFP defines the technical requirements necessary for a Bidder to commit not-to exceed costs to provide the equipment for a DWDM based network. Bidders must also propose installation services, technical support, and network management capabilities, to complete a fully operational network as specified. Additionally, Bidders must prove a willingness to align with the University to provide access to technical resources as well as education and research services to institutions in the North East.

The initial topology will be a linear path (the 'WESTERN' path) within Maine with future goals of completing an in-state ring and expanding connectivity as depicted in the

accompanying diagrams. This RFP seeks Bidders with the ability to develop a relationship, including some level of price protected costing, in an effort to maintain operational cohesiveness of the network as it grows. Various diagrams, including expected services per node are outlined later in this RFP. The diagrams include future paths and services to express to Bidders our intentions for the network. **This RFP is intended to acquire initial services and equipment and to assess the ability of the Bidder to provide options for NetworkMaine as it expands.** (Reference Attachment A-1, Geographic Topology).

The equipment will be located in University controlled or owned space on IRU Fiber or University owned routes. The University has already acquired the IRU fiber for the WESTERN path and expects to light it with this equipment. The University will build a DWDM based network as an immediate outcome of this RFP award.

1.5 Evaluation Criteria: Proposals will be evaluated on many criteria deemed to be in the University's best interests, including, but not limited to:

- Equipment capabilities, including the evaluation of demonstration equipment. (See section 4.3)
- Costs of the solution, including:
 - Non-recurring and recurring costs.
 - Future costs (pricing and/or discount schedules).
 - Commitment to provide services at or below commercial rates.
- Completeness of the solution, including:
 - Ease for future expansion.
 - Ease of non-service-impacting reconfiguration.
 - Ease of continual operation and maintenance of the system.
 - Ability to transport Ethernet frames transparently.
 - On-site spares, ongoing maintenance and/or remote service capability.
 - Level of installation provided.
 - Level of training provided.
- Commitment to develop long term alliance.
- Delivery timeline.
- Financial stability and viability of equipment manufacturer and Bidder.
- References - level of expertise and proven abilities, including commitment to build alliances with customers.
- Bidder's demonstrated commitment to remain leaders in this field while remaining competitive in the marketplace.

1.6 Communication with the University: It is the responsibility of the Bidder to inquire about any requirement of this RFP that is not understood. Responses to inquiries, if they change or clarify the RFP in a substantial manner, will be forwarded by addenda to all parties that have received a copy of the RFP. The University will not be bound by oral responses to inquiries or written responses other than addenda.

Inquiries must be made to: Anne-Marie Nadeau
Office of Strategic Procurement
University of Maine System
16 Central Street
Bangor, Maine 04401
(207) 973-3308

- 1.7 Award of Proposal: Presentations may be requested of two or more Bidders deemed by the University to be the best suited among those submitting proposals on the basis of the selection criteria. After presentations have been conducted, the University may select the Bidder which, in its opinion, has made the proposal that is the most responsive and most responsible and may award the contract to that Bidder. The University reserves the right to waive minor irregularities. Scholarships, donations, or gifts to the University will not be considered in the evaluation of proposals. The University reserves the right to cancel this RFP or reject any or all proposals in whole or in part, and is not necessarily bound to accept the lowest cost proposal if that proposal is contrary to the best interests of the University. Should the University determine in its sole discretion that only one Bidder is fully qualified, or that one Bidder is clearly more qualified than any other under consideration, a contract may be awarded to that Bidder without further action.
- 1.8 Award Protest: Bidders may appeal the award decision by submitting a written protest to the Director of Strategic Procurement within five (5) business days of the date of the award notice, with a copy to the successful Bidder. The protest must contain a statement of the basis for the challenge.
- 1.9 Confidentiality: Information contained in proposals submitted for the University's consideration will be held in confidence until all evaluations are concluded and an award made. At that time, the winning proposal will be available for public inspection. Pricing and other information that is an integral part of the offer cannot be considered confidential after an award has been made. The University will honor requests for confidentiality for information of a proprietary nature to the extent allowed by law. Clearly mark any information considered proprietary.
- 1.10 Costs of Preparation: Bidder assumes all costs of preparation of the proposal and any presentations necessary to the proposal process.
- 1.11 Debarment: Submission of a signed proposal in response to this solicitation is certification that your firm (or any subcontractor) is not currently debarred, suspended, proposed for debarment, declared ineligible or voluntarily excluded from participation in this transaction by any State or Federal department or agency. Submission is also agreement that the University will be notified of any change in this status.
- 1.12 Proposal Understanding: By submitting a proposal, the Bidder agrees and assures that the specifications are adequate, and the Bidder accepts the terms and conditions herein. Any exceptions should be noted in your response.
- 1.13 Proposal Validity: Unless specified otherwise, all proposals shall be valid for 90 days from the due date of the proposal.
- 1.14 Pre-Proposal Conference: A pre-proposal conference will be held on Friday, November 16, 2007 at 9:00 a.m. local time at Neville Hall, University of Maine, Orono, ME. The purpose of this conference is to answer questions and provide further clarification as may be required. Please hold all questions until this meeting.
- Attendance by all prospective Bidders is *optional*. Firms planning to attend this pre-proposal conference should contact Erin Tapley at 207-973-3313 no later than 5:00 p.m. local time on Thursday, November 15, 2007, with the names and titles of the individuals who will attend.
- 1.15 Proposal Submission: A SIGNED ORIGINAL and six (6) copies of the proposal must be submitted to the Office of Strategic Procurement, University of Maine System, 16 Central Street, Bangor, Maine 04401, in a sealed envelope by close of business on Friday,

December 14, 2007, to be date stamped in order to be considered. Normal business hours are 8:00 a.m. to 5:00 p.m., Monday through Friday. Proposals received after the due date will be returned unopened. There will be no public opening of proposals (see Confidentiality clause, section 1.9). Bidders are strongly encouraged to submit proposals in advance of the due date to avoid the possibility of missing the due date because of unforeseen circumstances. Bidders assume the risk of the methods of dispatch chosen. The University assumes no responsibility for delays caused by any package or mail delivery service. Postmarking by the due date WILL NOT substitute for receipt of proposal. In the event that the University is closed due to inclement weather on the day that a proposal is due, proposals will be accepted on the next day that the University is open. Bidders may wish to call 207-973-3298 if the weather is bad, to learn if the University has closed. Additional time will not be granted to any single Bidder, however, additional time may be granted to all Bidders when the University determines that circumstances require it.

FAXED OR E-MAIL PROPOSALS WILL NOT BE ACCEPTED.

Proposals must be submitted in a sealed envelope clearly marked with the RFP number and due date on the outside as follows:

Name of Bidder
Address of Bidder
Due Date
RFP #

Bidders shall ensure that all information required herein be submitted with the proposal. All information provided should be verifiable by documentation requested by the University. Failure to provide all information, inaccuracy or misstatement may be sufficient cause for rejection of the proposal or rescission of an award. Bidders are encouraged to provide any additional information describing operational abilities. Responses to each requirement should be marked with the section number to which they respond. All sections in the RFP should be responded to in detail as part of the Bidder's response. **Bidders must respond to items in bold type throughout this RFP.**

1.16 Anticipated Timeline:

Request for Proposals issued: November 2, 2007
Pre-Proposal Meeting: November 16, 2007
RFP Response Due Date: December 14, 2007
Bidder Presentation(s): 1st & 2nd week of January, 2008
Contract Completion and Award: January 30, 2008 (desired)
Equipment delivery (on-site): To be determined
Field Implementation Begins: March, 2008 (desired)

2.0 GENERAL TERMS AND CONDITIONS

- 2.1 Contract Documents: Draft contract documents must be included with the RFP response.
- 2.2 Contract Modification and Amendment: The parties may adjust the specific terms of this contract (except for pricing) where circumstances beyond the control of either party require modification or amendment. Any modification or amendment proposed by the Contractor must be in writing to the Office of Strategic Procurement. Any agreed upon modification or amendment must be in writing and signed by both parties.
- 2.3 Contract Validity: In the event one or more clauses of the contract are declared invalid, void, unenforceable or illegal, that shall not affect the validity of the remaining portions of the contract.
- 2.4 Cancellation/Termination: If the Contractor defaults in its agreement to provide personnel or equipment to the University's satisfaction, or in any other way fails to provide service in accordance with the contract terms, the University shall promptly notify the Contractor of such default and if adequate correction is not made within five (5) calendar days, the University may take whatever action it deems necessary to provide alternate services and may, at its option, immediately cancel this contract with written notice. Cancellation does not release the Contractor from its obligation to provide goods or services per the terms of the contract during the notification period.
- 2.5 Clarification of Responsibilities: If the Contractor needs clarification of, or deviation from, the terms of the contract, it is the Contractor's responsibility to obtain written clarification or approval from the Office of Strategic Procurement.
- 2.6 Litigation: This contract and the rights and obligations of the parties hereunder shall be governed by and construed in accordance with the laws of the State of Maine without reference to its conflicts of laws provisions. The Contractor agrees that any litigation; action or proceeding arising out of this contract shall be instituted in state court located in the State of Maine.
- 2.7 Assignment: Neither party of the contract shall assign the contract without the prior written consent of the other, nor shall the Contractor assign any money due or to become due without the prior written consent of the University.
- 2.8 Equal Opportunity: In the execution of the contract, the Contractor and all subcontractors agree, consistent with University of Maine System policy, not to discriminate on the grounds of race, color, religion, sex, sexual orientation, including transgender status or gender expression, national origin or citizenship status, age, disability or veteran status and to provide reasonable accommodations to qualified individuals with disabilities upon request.
- 2.9 Independent Contractor: Whether the Contractor is a corporation, alliance, other legal entity, or an individual, the Contractor is an independent contractor. If the Contractor is an individual, the Contractor's duties will be performed with the understanding that the Contractor is a self-employed person, has special expertise as to the services which the Contractor is to perform and is customarily engaged in the independent performance of the same or similar services for others. The manner in which the services are performed shall be controlled by the Contractor; however, the nature of the services and the results to be achieved shall be specified by the University. The Contractor is not to be deemed an employee or agent of the University and has no authority to make any binding commitments or obligations on behalf of the University except as expressly provided

herein. The University has prepared specific guidelines to be used for contractual agreements with individuals (not corporations or alliances) who are not considered employees of the System.

- 2.10 Indemnification: The Contractor agrees to be responsible for, and to protect, save harmless, and indemnify the University and its employees from and against all loss, damage, cost and expense (including attorney's fees) suffered or sustained by the University or for which the University may be held or become liable by reason of injury (including death) to persons or property or other causes whatsoever, in connection with the operations of the Contractor or any subcontractor under this agreement.

3.0 PERFORMANCE TERMS AND CONDITIONS

- 3.1 Contract Administration: The Associate Director for Communications and Network Services shall be the University's authorized representative in all matters pertaining to the administration of this contract.
- 3.2 Payments: Payment will be upon submittal of an invoice to UMS-ITS Network Services, Computing Center, 5752 Neville Hall, Orono, ME 04469 by the Contractor on a Net 30 basis unless discount terms are offered. Invoices must include a purchase order number.
- 3.3 Employees: The Contractor shall employ only competent and satisfactory personnel and shall provide a sufficient number of employees to perform the required services efficiently and in a manner satisfactory to the University. If the Contract Administrator or designee, notifies the Contractor in writing that any person employed on this contract is incompetent, disorderly, or otherwise unsatisfactory, such person shall not again be employed in the execution of this contract without the written consent of the Contract Administrator.
- 3.4 Deadline: Equipment must be in place and tested to the University's satisfaction within ninety (90) days of contract execution. The deadline may be adjusted as required and mutually agreed upon.

4.0 SPECIFICATIONS AND PROPOSAL REQUIREMENTS

4.1 Overview of Equipment Specifications and Proposal Requirements:

The University intends to purchase equipment to operate a network that will connect Ellsworth through Bangor, Pittsfield, Waterville, Augusta, and Lewiston to Portland, ME. Additionally, the University has future plans, to complete an instate ring from Portland back to Ellsworth, as well as adding a segment from Portland to the Boston, MA area. (Reference Attachment A-1, Geographic Topology). **The optical nodes requested in this RFP refer to the WESTERN PATH only.**

Bidders must, using the information provided in this RFP, design a DWDM system solution proposal fulfilling the required capabilities and the initial services plan. (Reference Attachment A-3, Initial Envisioned Client Services). This proposal should meet or exceed as many desired and additional DWDM system capabilities as possible.

From an installation perspective, bidders must detail any pre-installation, staging, or installation services that they are able to provide. We envision use of these services and a gradual migration to the University staff handling maintenance and installation of future nodes.

Bidder's response must include:

- **Equipment and maintenance proposal with pricing.**
- **Logical network diagram(s) for the proposed solution.**
- **Diagram of each unique node hardware layout in a rack and components in the rack (labeling each diagram to identify node depicted).**
- **A wiring map depicting interconnected components at each node.**
- **Hardware proposed (part numbers and description of part function) for each node.**
- **Technical characteristics, current feature capabilities, and limitations of the proposed design.**
- **Description of the capabilities and architecture of the proposed solution.**
- **Competitive advantages of the proposed solution.**
- **A plan including estimation of downtime or reconfiguration of existing hardware to add additional nodes/functionality as noted by planned future paths.**
- **Operating system software (including software release).**
- **Assumptions used to develop the DWDM system proposal (if any).**
- **Description of pre-installation, staging, and installation services provided.**
- **Description of the support relationship your organization would anticipate establishing with the University.**
- **Explain how the proposed DWDM system meets our identified required, desired, and additional capabilities. Indicate your ability to support the required and desired capabilities, providing as much detail as possible for each point. Equipment specifications may be attached to the response; pointers to online equipment manuals, configuration examples, sample designs, white papers, etc. are also welcome.**

In addition to the required and desired DWDM system capabilities, we encourage you to share any additional features, capabilities and functionality you believe differentiates your DWDM system and fits the University's needs.

In addition to its immediate need to light the Western Route, the University plans to implement additional sections of NetworkMaine within the next few years (as additional fiber becomes available). As such, the University is seeking stability in pricing for these future purchases. **Bidders must provide detailed information, including pricing schedules if applicable, for price protection on future purchases.** Proposals that provide for significant and sustainable value to the University are preferred.

4.2 Optical Node Requirements:

4.2.1 DWDM Capabilities

The University prefers agile capabilities using technologies allowing for growth, service velocity, dynamic optimization, and remote reconfiguration of the network.

- The system must be capable of operating in the optical C-band with a maximum 100 GHz spacing using wavelengths defined by the ITU-T G.694.1 spectral grid. **Bidder should specify if the system is 50GHz spacing capable.**
- The system must provide an end-to-end bit error rate (BER) on each optical wavelength of less than 10^{-12} .
- The system must be able to transport 30 or more 10G DWDM wavelengths at each node simultaneously.
- The system must be able to add or drop any wavelength at each of the access nodes.
- All wavelengths must be simultaneously functional in each direction on all fiber segments.
- The system must facilitate "hitless" or uninterruptible wavelength provisioning such that active wavelengths are uninterrupted by the addition or deletion of wavelengths or hot insertion of DWDM system components necessary to provision wavelengths (e.g. transponders).
- The system should have the ability to increase wavelength count beyond the above requirement either through increased channel density (decreased spectral grid spacing) or the addition of a new band, or both.
- The system should have support for 40 Gbps or 100Gbps transport when available. **Bidders should describe their applicable 40/100Gbps wavelength transport roadmap.**
- The system should have a form of ROADM capability. **Bidders should describe the ROADM architecture and capabilities.**

4.2.2 Optical Power Management/Dispersion Compensation

The system should manage optical power levels between its nodes with some level of automation assuring integrity of the signals in the event of channel reloading and fiber characteristic changes over time.

- **Bidders must describe how optical power is handled and monitored by the nodes and the EMS.**
- **Bidders must describe how the proposed system implements dispersion compensation for CD and if possible, for PMD.**

4.2.3 Multi-degree Capability

The ability to move ITU wavelengths from one ring/spur to another dynamically

will be increasingly important.

The sites desired to meet a 3-degree minimum capability for future expansion are the Bangor, Augusta, and Portland nodes.
(Reference Attachment A-2, Optical Node Topology).

- The system should support multi-degree capability.
- **Bidders should describe their multi-degree capabilities and describe what additional equipment, powering, management infrastructure, transponder capabilities; etc would be required to support multi-degree capabilities within this network.**
- **Bidders should describe what would be required to change a node's role to a multi-degree node.**
(ex. terminal→ 2 degree, 2 degree→ 3 degree, 3 degree→ 4 degree)

4.2.4 Client Interfaces/Transponders

Bidders must:

- **List all client supported interfaces.**
- **Specifically describe what client protection options would be available for wavelength provisioning (we understand the initial topology is linear, this is for future reference).**
- **Fully describe the platform's capabilities and roadmap relevant to supporting pluggable optics. Provide details regarding supported form factors, the ability to provide these optics, and at what cost.**
- **Bidders must describe the benefits and weaknesses of using pluggable optics with the proposed equipment.**
- The University prefers agile service multiplexing technologies allowing for efficient use of wavelengths (ex. G.709 OTN multiplexing).
 - **Bidders should describe any such capabilities of the proposed solution.**
- **Bidders should describe any support for ITU-T G.709 FEC and/or EFEC and must do so if used within their solution.**
- **Bidders must detail support for proposed tunable transponders noting their advantages/cost difference compared to fixed wavelength transponders.**

4.2.5 Ethernet Transport

Bidders must:

- **Describe the capabilities of your Ethernet interfaces and any blocking or service quality impacting issues that will not allow complete transparency of the Ethernet service at full bandwidth across the infrastructure.**
- The University is primarily interested in transporting Ethernet services.

The following capabilities must exist at all locations by the proposed equipment that has interaction at Layer 2 with the provided service. **Bidders must detail any functions interacting with provisioned services above Layer 1.**

Capabilities:

- Transparent support for the maximum Ethernet frame size supported without fragmentation.
 - **Bidders must indicate the maximum Ethernet frame size supported.**
- Transparent support of 802.1Q, 802.1P, 802.1ad.

- Transparent support of Ethernet multicast frames.
- If the proposed system utilizes Ethernet switching, **Bidders must describe the equipment's capabilities and roadmap with regard to IEEE 802.1ah, 802.1Qay, 802.1ag and ITU-T Y.1731**

4.2.6 Service Management

- **Bidders must describe how services are provisioned.**
- **Bidders should describe any support for G.709 OA&M capabilities.**
- **To the extent Bidders have present or planned capabilities to introduce signaling between Layer 3 devices and the proposed system using GMPLS or other technologies, the current status and future roadmap for these technologies should be included in the response.**
- **Describe all service protection options available.**
 - Given the eventual ring topology, any service should be capable of being provisioned in a resilient manner.

4.2.7 Alien Wavelengths (client DWDM signals)

The system should support ITU-T G.694.1 wavelengths from client optics.

- **Bidders should detail the support for alien wavelengths on the proposed equipment and any relevant engineering concerns compared to using fixed/tunable transponders.**

4.2.8 Network Management

- The system must be remotely configurable and manageable.
Bidders must describe their management solution(s).
- **Bidders must describe the physical interfaces, control methods, and protocols available at each node for management of the devices.**
- Nodes must have in-band (between nodes) and out-of-band (ex. serial port RS-232) signaling and management capabilities
 - Devices with Ethernet management capabilities on each node in addition to serial or craft port access are desired.
- The system must be remotely manageable via the Internet Protocol.
 - **Bidders must indicate which IP versions are supported for management operations.**
 - **Bidders must indicate if multiple shelves are manageable through a single address.**
- The system should support Simple Network Management Protocol (SNMP) on each individual node.
 - **Bidders must detail their system's capabilities related to SNMP providing a list of supported MIBs.**
- **Bidders must describe the EMS system's capabilities regarding the following:**
 - The system should have multiple access-level security for different operation roles (i.e. monitoring, provisioning).
 - The system should sustain continuous operation without impacting wavelength transmissions even while technicians are upgrading or replacing system components such as power supplies, fan trays and system management components.
 - The system should have the ability to continue passing optical traffic in the event of a failure of both redundant control modules/processors.
 - The system should be manageable via both a provided lightweight client for direct management of elemental components of the system as well as an optional Enterprise Management System (EMS).

Access to the EMS should be possible via a lightweight client; either separate or preferably the same as the client accessing individual DWDM system nodes. Clients should operate in low-bandwidth and high-bandwidth environments. The EMS should be capable of supporting the following generic functions: optical channel up/down monitoring, fault and incident management with categorization of events (e.g. critical, major, minor), system performance monitoring, optical layer control, troubleshooting tools, DWDM Network topology display, DWDM Network resources to ensure capacity is available when and where needed before provisioning, browser capability for active and historical alarms and logs, graphic view of Network nodes components and provisioned links, centralized software distribution and updates, in-band and out-of-band management capabilities, "point and click" circuit provisioning and accounting management and traffic detail reports.

- **For a proprietary management system, bidders must detail recommended solution, including recommending a platform to operate the system on, if necessary, and costs for the network management system.**

4.2.9 Network Resiliency

The University desires a network with the most resiliency and redundancy possible to assure high reliability of the services provided.

- The system must have dual, redundant power inputs.
- The system must have dual, redundant control modules/processors.
- **Bidders must specifically describe any components in the proposed design that do not offer full redundancy within a given node.**
- **Bidders must describe how the design aims to mitigate potential failures.**

4.2.10 Storage Area Transport

Bidders should briefly describe their ability to transport Storage Area Network traffic or alliances with other companies who support those capabilities.

4.2.11 Physical Attributes

- Each node must have physical compatibility with our allocated PoP rack space which will have an equipment rack with the following dimensions along the WESTERN path: (Reference Attachment A-4, Rack and Power Environments)
- 19" or 23" rack rail width (19" preferred)
- Depth of 32"
- Height of 22RU

Bidders must indicate the physical attributes for each PoP as described in the proposed solution(s).

4.2.12 Power Requirements

- The proposed system must have fully redundant power supplies that are capable of individually and sufficiently powering the proposed system.
- The University will be placing its equipment in facilities that have either 120 VAC or ~48 VDC capabilities for this equipment.

- **Bidders should propose power supply options to appropriately power the equipment as required in the site specifications provided (Reference Attachment A-4, Rack and Power Environments’). If the Bidder’s equipment can only natively support $\bar{48VDC}$, the Bidder should provide a recommended rectification system to be used at sites where $\bar{48 VDC}$ is not provided.**

4.3 Equipment Testing and Hands-On Experience:

During evaluation of proposed equipment, the University may request the opportunity to test equipment features and capabilities, and/or gain hands-on experience with the equipment. This may involve test or demonstration equipment being sent to the University or sending one or more University staff engineers to a Bidder’s location.

- **Bidders must include descriptions of suitable lab locations, if available and indicate how quickly these testing/demonstrations can be scheduled and completed.**

If requested by the University, Bidder must provide for demonstration at a customer site similarly configured to the specifications in this RFP. Customer site must have been in operation for at least one year.

4.4 Training:

The University will be interested in contracting for initial training for our staff on the operations and maintenance of the equipment. Bidders should provide information on the curriculum, location, available dates, and cost.

5.0 MAINTENANCE AND TECHNICAL SUPPORT SPECIFICATION

The University will be looking for a low cost maintenance plan on the infrastructure itself and it is very likely that the University will use its own existing staff resources for maintenance at the sites.

The University is interested in creative service and support proposals that would provide the greatest economies for its members while also assuring the highest level of services through its network.

Bidders must provide:

- **A maintenance and technical support proposal for the proposed DWDM system and for the proposed EMS software that includes all DWDM system components, EMS and DWDM software and firmware as well as all major and minor software releases for the next five (5) years.** We seek primary maintenance and technical support from the proposed DWDM system and EMS OEM. We would consider additional options from 3rd party value-added integrators or OEM channel partners (where appropriate) over and above (and separate from) options offered by the OEM.
- A 7x24 technical support help desk service and next business day parts replacement services. **Bidders should propose any other services they feel would be applicable.**
- **From an installation perspective, bidders should detail any pre-installation, staging or installation support that can be provided.**

If there are components that the Bidder believes the University should maintain as spares, Bidders must propose a spare equipment package as an option in their cost proposal.

Bidders must describe how the proposal meets or exceeds the following, including any limitations.

- **Access to all major and minor software upgrades for the proposed DWDM system, EMS and design tool(s).**
- **Advance, next business day repair or preferably replacement of hardware component failure options.**
 - **Similarly for a same day parts replacement option.**
- **Expedient warranty service with immediate replacement of failed components with new, identical or better components.**
- **Annual Product updates/roadmaps of strategic future product direction.**
- **Reasonable access to testing or proof of concept labs in North America.**
- **Access to hardware and software beta or early field trial opportunities.**
- **24x7 online, telephone and/or in person technical support and an escalation process for immediate advanced engineering support.**

6.0 MISCELLANEOUS PROPOSAL CONTENT REQUIREMENTS

Bidders must provide detailed information for the following:

6.1 Opportunity For Contractor Alliance:

The University is interested in alliances that would fully engage the Bidder's technical resources. We would like to understand how our designated senior technical staff could actively engage Bidder's technical resources, product roadmaps and related materials. The University would be interested in what opportunities exist to align with Bidder's company to increase access to technical resources for these senior level engineers. The University would also be interested in other ways it could align with Bidders to provide education and research services to institutions in the North East.

6.2 Pricing Models:

In operating as a research and education network, the University has the unique financial position of attempting to provide the most cutting edge technical solutions to its members, with the flexibility to offer services before they may be commercially viable while also provisioning service at or below market costs.

While having the flexibility to provision advanced services is critical, the need to provide basic transport services at or below commercial rates is also critical. Meeting both goals may also reduce the refresh cycle for University equipment below typical commercial deployments.

These factors put extreme pressure on the University in terms of both one-time capital equipment expenses and ongoing maintenance and operating expenses. In this regard, the University asks Bidders to contemplate initial and ongoing pricing models that provide the University with initial and ongoing flexibility to install, grow, and refresh the network.

The University is interested in the Bidders long-term discount structure that allows the University to leverage this initial implementation for future DWDM, and related network procurements.

6.3 Business Profile:

At this time, we are not requesting the information listed in section 6.3, however, we may ask you to provide this information prior to award.

6.3.1 Financial

If requested, Bidders need only supply one copy of the following.

Public Companies

- annual reports for the last three years
- history and description of the company
- recent reports from securities analysts
- published reports about the company

Private Companies

- audited financial statements or tax forms from three years
- history and description of the company
- published reports about the company, if any

6.3.2 Credit rating/report, letter from bank, suppliers

- 6.4 References: A list of at least three references must be submitted with your proposal. These references should be agencies your firm has done business with in the past year on projects with a similar scope to this one.
- 6.5 Pricing: Bidders must document all one-time and recurring operating costs associated with the work described in this RFP. All work related to the University, which would be charged to the University or its contractors by the Bidder should be included.
- 6.6 Technical Questions – Reference Attachment B. Bidders must respond to all technical questions contained in Attachment B.

7.0 SIGNATURE

COMPANY NAME _____

By: _____
(Signature)

(Print Name)

(Title)

(Date)