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ADDENDUM # 2

11/26/13
RFP #7513967

Title: Internet1, Internet2, NEREN and Ethernet WAN Services

Submission Deadline: NOTE CHANGE:

From: December 4, 2013 @ 11:00 AM (ET)

To: December 11, 2013 @ 2:30 PM (ET)

Per the issuance of ADDENDUM # 2 the following are noted:

- Pre-Bid Conference Attendance Sheet
- Pre-Bid & Submitted Questions
- Submission Deadline – **Please not change above**

Interested Parties should monitor this website on a regular basis, for any additional information that may be posted.

Gary P. Mosca
Senior Buyer



State of Rhode Island
 Division of Purchases
 One Capitol Hill
 Providence, RI 02908

"NON-MANDATORY" PRE-BID CONFERENCE SIGN IN SHEET

BID NUMBER: 7513967
 BID TITLE: Internet1, Internet2, NEREN and Ethernet WAN Services
 PRE-BID DATE AND TIME: 11/04/13 @ 9:00 AM (ET)

Purchasing Representative:
 Gary P. Mosca

Pre-bid START TIME:
 9:00 AM

Pre-bid END TIME:
 9:40 AM

COMPANY NAME	COMPANY REPRESENTATIVE	SIGNATURE	ADDRESS	CONTACT E-MAIL	CONTACT PHONE NUMBER AND CONTACT FAX NUMBER	PROPOSAL SUBMITTED (For Purchasing Use Only)
Level 3	JACK PARSONS	[Signature]	33 Pinecrest W. Bridgewater	JOHN PARSONS jparsons@level3.com	508-552-0223	
Cox Business	BRAD FRENCH	[Signature]	9 JF Humphrey Hwy W. W. RI 02893	BRAD FRENCH cox.com	401-615-1336	
Cox Business	Georgia Solitro	[Signature]	"	Georgia Solitro cox.com	401-615-5401	
Cox Business	Steve Hyphus	[Signature]	"	Steve.Hyphus@cox.com	401-615-1338	
Cox Business	Mike Calabro	[Signature]	"	MICHAEL CALABRO cox.com	401-615-1133	
OSYFEAN	RALPH FASANO	[Signature]	4846 Post Road	ralph.fasano@osyfean.com	401-489-5221	
OCRI	Manny Corrao	[Signature]	400 East Ave	Corrao@ocri.edu	401-825-1143	
OCRI	Barie Barrett	[Signature]	400 East Ave	bbarrett@ocri.edu	401-825-2466	
OCRI	Stephen A. Vieira	[Signature]	400 East Ave	svieira@ocri.edu	401-825-2004	
OCRI	Carole Walsh	[Signature]		carole.walsh@ocri.edu	401-574-8123	

11/26/13

RFP #7513967

Title: Internet1, Internet2, NEREN and Ethernet WAN Services

Pre-Bid & Submitted Questions: RFP #7513967 –

- 1) Can I submit it via flash CD, I mean a flash drive instead of a CD?

Response: Yes.

- 2) RFP calls for services to be integrated at a single system, there are a few distinct parts to it, right. You have the Private WAN, you have the Internet 1, Internet 2. Is there a scenario in which CCRI will consider multiple vendors supplying the distinct parts to this? Why does it have to be one unique vendor to supply all those when you have multiple vendors that can do and fulfill each part?

Response: CCRI requires an integrated network to ensure single source responsibility and centralized management. A single system ensures the automatic selection of the most efficient routing using Internet1, Internet2, NEREN or traffic within the existing peered private WAN network. This limits complexity, ensures minimal mean time to repair, accelerates innovative adoption of new technologies, provides network high availability, minimizes migration coordination between multiple vendors and mitigates risk. The College cannot incur a risk associated with the potential reconciliation of accountability among diverse vendors in the event of a failure that could directly impact the business operations of CCRI. Disruption in essential services could include various business requirements (e-mail, Internet access, all transactions (such as student enrollment and financial transactions with the College)) conducted at each campus. Additionally, connectivity to the state for purchasing and payroll activities and state and local police for law enforcement activities, access to on-line courses and learning management systems (Blackboard for faculty and students), on-line testing for high impact programs, video surveillance and card access systems at multiple campuses, the four CCRI bookstores conducting credit card business for customers, virtual desktop support in all computing labs, Library database access and use of the Banner system located at the Knight Data Center in Warwick could be impacted by prolonged negotiation of responsibility for any outage. This would be unacceptable and not meet the expectations of our students, faculty and staff.

Capability to provide backup data and systems in a disaster situation could adversely affect any single campus and the college as a whole. Almost 20,000 students would lose wireless mobile connectivity to other campuses and external networks while multiple vendors try to accomplish the task of problem resolution in a stressful and possibly contentious environment. Existing cloud based functionality for collection of tuition and fees could be inaccessible for prolonged periods of time impacting the enrollment and registration processes. A single vendor solution guarantees that the

college does not have to chase the resolution of problems when they occur. When systems are unavailable, prompt, single resource resolutions are always preferred to ensure rapid and responsible response.

A single source integrated network is more reliable, easier to maintain and upgrade, more secure, more efficient and quicker to repair/or make changes with a centralized provider that can be reached thru one call. Nonetheless, we encourage vendors who cannot provide a turnkey solution to serve as "prime contractor" and to find one or more subcontractors who can provide features and functionality which they themselves cannot provide.

- 3) The project management plan as part of your RFP is 25 points, but, yet, you don't provide your existing infrastructure in terms of a diagram and how it's laid out today, and, so, I don't know how I'm going to provide a project management plan if you don't lay out everything that you have today, all your equipment, all your, you know, configurations for all those. At 25 points, I really need that to supply something. And what is meant by the statement that you put in there, all existing peering will be maintained? And what is meant by the statement that you put in there, all existing peering will be maintained? So, the BGP peering sections would need to be changed in the event that a new internet provider service will be awarded service. So, again, what is the meant by the statement that all existing peering will be maintained?

Response: A logical WAN diagram has been attached showing the portion of the existing peered private WAN that is CCRI's component. Other organizations are members of this private WAN network. The Internet2, NOX and NEREN websites will identify all locations accessible via internal connections to this same peered network. Specific networking CCRI hardware that interfaces with this peered WAN is identified on the logical diagram. Details on this equipment can be found at the respective vendor web site.

It is the objective of CCRI to minimize Internet 1 traffic by routing to all members of the existing peered network without having to traverse the Internet. This is to minimize cost, prioritize traffic, maximize security and provide the college with the authority to configure its own virtual circuits within this peered network on an as needed basis in a timely fashion at no cost while allocating bandwidth as required. To mitigate risk within this peered private WAN there are multiple connections to different ISP's and complete redundancy within the mesh network that will automatically redirect traffic in the event of failure of any CCRI campus or any connection to the Internet.

- 4) Is there a specific reason that VPLS is required versus MPLS-TP or dedicated native Ethernet?

Response: VPLS technology is layer 2 so any technology that runs on a LAN can run on VPLS also. This allows CCRI to self-manage VLANs across the WAN from site to site on the peered network. No external carrier provided services are required as would be the case with MPLS. Any CCRI required application can be extended across these VLANs without carrier reconfiguration of any kind, such as SAN to SAN synchronization between multiple data centers. Layer2 extended VLAN technology is used frequently at CCRI. This "do it yourself" capability ensures that CCRI security standards will extend from the on premise networks through the WAN. It is not necessary for CCRI to share Layer 3 routing tables with a managed service carrier as would be required using MPLS.

VPLS is the latest networking technology that will support the virtual division and reallocation of bandwidth from a pool to other members within the peered WAN from an aggregate total based on demand. This technology is much more efficient and cost effective than incurring fixed costs for a fixed point to point amount of bandwidth for each member location. In addition, changes to bandwidth requirements to any location can be effected in a timely manner by CCRI staff at no additional cost or carrier intervention. One example of this is an astronomy research joint project between CCRI and Brown requiring 1G of bandwidth between the two schools that would be created using a virtual circuit with the existing peered network without having to traverse the Internet. With a .5G Internet1 connection this project could not be supported without purchasing additional Internet bandwidth and incurring time delays associated with such a project.

CCRI is now eligible for grants it could not apply for prior to this VPLS/Internet2 technology. Such capabilities promote critical research in addition to increasing economic development to the state in the form of externally funded grants. The use of VPLS provides flexibility to the college, enables rapid deployment of bandwidth where it is required using internal resources and allows the partitioning of overall bandwidth to the various campuses and the State Data Center for ongoing business continuity and replication/redundancy of essential services projects. Having the aggregated bandwidth and the capabilities of VPLS has permitted CCRI to plan for virtualization of the ERP system, the expansion of the virtual desktop environment and the strengthening of disaster recovery plans.

VPLS is a homogeneous Ethernet network that basically extends campus LAN technology throughout the WAN without requiring any changes at the WAN-LAN boundaries. It is CCRI's networking philosophy to extend its local networks to WANs and other global networks that are consistent with the standard Ethernet technology.

- 5) DWDM is also mentioned as part of the service provider network, and is this a definite requirement?

Response: DWDM is defined in terms of frequencies versus wavelengths. This supports more channels into a single fiber and is a more robust technology in terms of locations that can be supported. CCRI is a hub for this equipment for the existing carrier and anchor institution at the CCRI Warwick and Newport campuses. The location of equipment that supports multiple high bandwidth channels within CCRI negates the communications costs that would be required to access this same functionality at remote locations.

- 6) What is the CCRI network hardware that the vendor should be compatible with? So, that kind of falls in line with one of my first questions. It states that we must be compatible with your existing environment, so I would like to know what that environment is.

Response: Demarcation equipment with bandwidth capabilities has been shown on the enclosed WAN diagram. Refer to Section Four, Technology and Demarcation Locations on page 7 of RFP document for specific room locations at each campus.

- 7) Although this is not considered a construction project, would CCRI be willing to have an alternate vendor provide diverse ten gig circuits to provide the future redundancy of the Providence, Newport and Lincoln campuses?

Response: As noted previously in response to a very similar question CCRI is requiring single source provisioning with redundancy to ensure business continuity, security, reliability and efficiency. CCRI cannot be responsible for potential reconciliation among multiple vendors that would impact the business of the college in the event of a network failure. Multiple path capability to each campus is required to ensure continued operation in the event of the failure of any grid that each path may be on. This is analogous to having different power grids service a particular location or organization. There are "always on" expectations of the students, faculty and staff of the college that cannot be underestimated nor ignored. Reliability of essential services and the absolute requirement of the college for an Internet presence at all costs without failure dictates that CCRI have secondary Internet connections and that those are on different paths ensuing the elimination of single points of failure. This is an absolute and non-negotiable.

- 8) I'm sure multiple vendors will be providing proposal responses to this, so one of the questions is, what is the intent or advantage to CCRI having an instate NOC? So, there are some, like, Cox that incorporate instate as well as out-of-state NOCs, and some like Verizon and AT&T have national NOCs. So, what is the need for an instate NOC? What is the advantage of CCRI's bundle two different networks, the WAN and the internet?

Response: CCRI often collaborates directly with the NOC on problem resolution and the planning and implementation of new configurations. It is not unusual to have face to face meetings on such issues. In addition replacement equipment as may be available from such NOC can be physically acquired much quicker from a local NOC. This will minimize mean time to respond and mean time to repair any network problem that may occur. Local field technicians can respond efficiently to equipment and service problems. With a local NOC there is a single point of contact; the experience is a 1:1 customer interface, ensuring accountability and rapid problem escalation. With a local NOC proactive communications planning can be customized to fit CCRI needs, versus a one size fits all national model which may not be consistent with the College's environment (the next door neighbor versus Goliath telecom company approach). Ineffective IVR's and complex menu response systems as may be required for a regionalized NOC facility are reduced or even eliminated for a local facility. Multiple coordination steps as may be required between remote NOC's and local networking entities is minimized by the use of a local NOC communicating directly with any local entities that would comprise a component of the CCRI WAN.

- 9) You requested a meshed topology to all current and future points. Can you list all of the required addresses to those current and future points? And, can you explain the review period and award process. That seems there's a tight timeframe from your award to implementation or expected implementation. There are so many different parts to this, that we just see it as maybe a tight timeframe.

Response: As previously explained all existing members of the existing peered WAN can be found at the ISP provider. This would include all of RI higher education, K-12, the state of RI, hospitals etc. The CCRI component of the existing peered network is shown on the attached diagram with bandwidth capability requirements and specific interfacing networking hardware. CCRI is presently reviewing NET + services available via Internet2 that require Internet2 connectivity to access and would be new and innovative services offered to our constituents. NET + services and Internet2 connectivity can be found at their web site. In addition there exist several peering connections between CCRI and other institutions and their constituencies which would keep CCRI

traffic "on network" with no need to traverse Internet1. A peered connection to a hospital for example would support the high speed secure transmission of medical images between any members, and also to specific entities to which that hospital would peer (such as a separate radiology facility). The use of a peered network encourages and enhances the future possibilities of data and analysis sharing between federally identified "anchor institutions". The call for 2020 is to have this capability further explored and to have information sharing promoted to increase security awareness, encourage efficient resource utilization and stimulate the usage of the Internet of everything cross local, state and federal institutions.

- 10) I would like the deadline extended. Many of us are not able to begin the analysis until we get the sites and the bandwidth requirements and some of specifics that may not even be, you know, weren't provided with the bid, and probably, you know, given that, if it's going to be another week, it really doesn't give much time.

Response: The bid opening has been extended.

- 11) What are the locations with address, DEMARC locations and phone numbers for the services that are being requested? This information is required to complete the pricing. Will there be a Pricing Sheet that you want completed for the response?

Response: CCRI demarcation locations at the Warwick, Lincoln, Providence, and Newport campuses have been identified in the bid spec on Page 7 under Technology and Demarcation Locations. The State Data Center is at 50 Service Avenue, Warwick RI 02886.

There will be no pricing sheet included with these responses. Pricing requirements are provided in the bid specs, Section 6: Cost proposal, pages 9 & 10.

End Document