

Q&A Addendum #6

Arkansas Research and Education Optical Network ARE-ON Optical Equipment Refresh RFP 666832

This document provides question and answer information pertaining to the above captioned RFP.

REMINDER: It is the Respondent's responsibility to thoroughly examine and read the entire RFP document and any appendices and addenda to this RFP.

Posted February 27, 2018

Questions Asked During Pre-Proposal Meeting, February 22, 2018

Question 64: Will we be able to use the terms and conditions from our existing contract with ARE-ON for this RFP?

Answer: No. A new contract will be negotiated.

Question 65: For the 10G services in the current system, are the optics tunable? What is the channel spacing? Is FlexGrid supported?

Answer: All line side (wave) optics in ARE-ON's current system are tunable DWDM. The ROADMs and filters all have 100 GHz spacing supporting 40 wavelengths in the C-band. A list of the channels, complete with frequencies and wavelengths, is provided in Appendix II Table 2, ADVA Supported ITU Grid Channels. The current ROADMs do not support FlexGrid.

Question 66: Will ARE-ON be providing the 19" and 23" racks.

Answer: Yes. In every case, ARE-ON will be providing rack space from its currently installed racks or cabinets at its POPs and colocation sites. Vendors should note that some sites only have 19" racks, which would pose a problem for any vendor equipment requiring 23" racks. Please refer to Question #48 in Q&A Addendum #3 for additional information.

Question 67: Can the training specified in Section 5.12 be remote or local?

Answer: The vendor can host training at a remote training location or conduct it locally at an ARE-ON location, or both.

Question 68: Is all equipment to be shipped to Fayetteville to be deployed for distribution by ARE-ON?

Answer: Yes. All equipment will be shipped to Fayetteville first for inventory, possible staging, testing, and/or configuration, and then deployed to each site by ARE-ON. Please refer to Question # 37 in Q&A Addendum #2 for additional information.

Question 69: Will ARE-ON provide internal patch cables?

Answer: No. The vendor's proposed system must come complete with all necessary patch cabling. Per Section 5.3.3, vendors must provide bend insensitive fiber optic patch cables for all single-mode fiber patch cables. See Question #8 in Q&A Addendum #2 for additional information.

Question 70: Please clarify the support and maintenance need as 3 years and 5 years and advance replacement.

Answer: Per Section 6.1.4 vendors are to provide pricing for 3 years and for 5 years of maintenance for all hardware and software included in the proposed system, including all spares. Per Section 5.11.12, the pricing shall include Next Business Day Advance Replacement delivery of all parts covered by the plan, including spares.

Question 71: In regards to the migration from the old network to the new network, for routes with circuits that overlap multiple routes, such as Fort Smith to UAMS that runs over two routes, will weekend maintenance windows be allowed? Is there a preferred circuit cut list? Is there protection over the ARE-ON northern route for circuits? Are there additional fiber pairs available for cutover?

Answer: ARE-ON does not currently use protected waves, so there is no protect path for any single wave in the scope of this RFP. However, ARE-ON provides protection for its member universities and colleges using eastbound and westbound waves, each with its own connection into the member's CPE router. Part of the challenge is to design an implementation plan that can accommodate cutover without taking a member down, or to minimize the duration of any single outage that a member will see if an outage is unavoidable. ARE-ON will work with the winning vendor on a detailed cutover plan that takes into consideration all these factors.

ARE-ON anticipates that the full migration will be done in 5-7 or more segments (where a route as defined in Section 5.1.2 may have to be split into multiple segments for implementation purposes). At this point there is no preferred circuit cut list; this will be determined by the detailed implementation planning process with ARE-ON.

There are no additional fiber pairs available to implement a parallel network. The vendor's proposed system will utilize the existing single network fiber pair that comprise each route.

Regarding maintenance windows, ARE-ON's standard windows begin at midnight on weekdays, but some weekend maintenance windows may be possible. Vendors should understand that while ARE-ON engineers will be engaged at every stage of the implementation, they also have to operate the network and support our users. Physically, it will be a challenge and likely impossible to do the implementation with a full, non-stop sweep of the routes and segments.

Requirements for escort into ARE-ON POPs and into member data or network centers where ARE-ON's equipment is located will also affect the number of sites that can be worked at any one time.

Question 72: We have a question about how the ADVA RE2 and R7 equipment integrates. If a RE2 provides the amps, and a R7 provides the services, are the R7 waves carried as alien waves? If replacing an RE2 at a site that has R7 ROADMs, such as at Morrilton, how would we handle the ROADMs?

Answer: The base requirement is that the vendor's proposed system replaces all RE2 equipment, which may have post amps and/or preamps, and at six locations have 2-degree RE2 ROADMs. At locations with RE2 amps and R7 services, the R7 services are carried as alien waves on the RE2 system. At locations where there are R7 ROADMs (Morrilton, Malvern, Hope, Atlanta, North Little Rock, Monticello, and Alma) it is not a requirement that the R7 ROADMs be replaced if the function can be integrated into the vendor's proposed system. Otherwise, the vendor may replace the R7 ROADMs.

Question 73: On Appendix I Diagram 4, there is an optional new service from Fayetteville to UAMS labeled as 25/40/50/100G, but the RFP only specifies 100G. Please clarify.

Answer: Per Section 5.14.4, the vendor is only asked to provide pricing for 100G waves. Per Question #58 in Q&A Addendum #5 (which came out after the Pre-Proposal Meeting), vendors should price 100G client side optics.

Question 74: Section 5.4.6 requests the total amount of rack space in Rack Units (or RUs) for each site in the proposed system. What if it is necessary to spread out to multiple racks or spaces, do you still just want the total amount of rack space?

Answer: Yes, vendors are to provide the total number of Rack Units for each site for their proposed system in Appendix III. This will help ARE-ON understand whether there may be concerns about fitting the equipment into a site with limited amount of rack space, whether we will have to acquire additional rack space, or if work might be needed to move equipment to accommodate the vendor's needs.

Question 75: Can ARE-ON provide information on where we have space limitations?

Answer: In general, the colocation sites where ARE-ON leases space are where we have the most space limitations. Of greatest concern to ARE-ON are the Muskogee and Sallisaw POP sites, operated by the fiber provider, where we currently are limited to 20 RUs. Of less concern are Tulsa, Ozark, Atlanta, Newsome, Edgewood, and Dallas Equinix where we generally have full racks, some with more equipment in them than others. Of the sites on our member campuses where ARE-ON has collocated its DWDM equipment, UALR has the most limited amount of space.

Question 76: Regarding providing power requirements, Section 5.4.6 requests the total expected and maximum loads for each site. Can you clarify what this means?



Answer: The vendor must provide two power values for each site in Appendix III. Column E, labeled “Expected Power Requirements (Watts)” should be the best estimate of power drain for the proposed configuration at the site. Column F, labeled “Maximum Power Requirement (Watts)” should be the best engineering estimate for fully loaded shelves.

Question 77: For circuits that will be carried as alien waves, can you provide details on the optics driving the waves from the R7 equipment to the RE2 equipment, such as the launch power on all alien waves?

Answer: We cannot provide an accurate response prior to bid award. We will provide launch power during detailed planning sessions with the winning vendor. After conferring with ADVA, we should be able to provide dispersion data as well. Also see Question 80 below.

Question 78: Will there be an extension if addendums are posted after March 1st?

Answer: Vendors are not allowed to submit questions after February 28th, ARE-ON will not issue addendums after March 1st. There will be no extension of the submission deadline. However, ARE-ON reserves the right to change this in a situation where a critical flaw in the RFP or specifications is revealed between March 1st and the proposal submission deadline of March 8th, in which case an extension may be considered.

Additional Questions from Vendors February 23, 2018

Question 79: In the meeting on 22nd Feb 2018 you mentioned that the R7 ROADMs are 100Ghz spaced. On the filters you mentioned that they are 40 channels filters with the flexibility to do 80 channels in-service since there are interleavers in place. Does that mean that the R7 ROADMs support both 50Ghz and 100Ghz spacing?

Answer: Yes. ADVA’s R7 ROADMs will support both 50GHz and 100GHz spacing. The spacing is a configurable option and one or the other must be selected. ARE-ON does not currently have interleavers in the network, and for that reason the current ROADMs only support 100GHz spacing.

Question 80: For the 10G services that will be transported as alien waves, you mentioned in one of the answers that the current power budget and OSNR will be provided at the detailed planning phase with the winning vendor. For now should we assume same optical performance as the services that will be replaced (that is the winning vendor 10G channel performance)?

Answer: Yes.

Additional Questions from Vendors February 26, 2018

Question 81: In section 5.14.1 and 5.14.4 both these optional 100G will be carried on the proposed equipment as an alien wave. Does that mean we do not need to quote the transponder module and optics? And we need to quote only the common equipment?



Answer: Vendors may disregard Section 5.14.1 (please see Question #47 in Q&A Addendum #3). The vendor should propose transponders, optics, and any other equipment necessary to establish a new service from and to the end points stated in section 5.14.4. The vendor may assume that the existing FSP3000 R7 common equipment in the span from Alma to Fayetteville will carry the new 100G service as an alien wave. Please refer to Question #58 in Q&A Addendum #5 for additional information.

Question 82: Just to confirm, apart from the “solid red” and “green” (only) services that will need new vendor’s optics and transponders, the rest of the services will only need common equipment to support them as alien waves, correct?

Answer: On Appendix I Diagram 3, the solid red lines show services where equipment that currently supports those services must be replaced. The solid green lines (Monticello to Crossett) are new services where no equipment currently exists. The dashed blue lines indicate services where one or both ends are supported by transponders outside the scope of this RFP. Transponders outside the scope of this RFP will not be replaced. The dashed black lines indicate services where both ends are supported by transponders within the scope of this RFP. The vendor’s proposal must provide for the continuation of all of the service shown in this diagram. The method of continuation of these services is up to the vendor.

Question 83: Is AREON planning to keep the Ramans? Or can they be replaced by EDFAs?

Answer: The only FSP3000 R7 based RAMAN amplifiers in the scope of this RFP are in the span between Hope and Atlanta. The equipment on this span may be optionally replaced at the vendor discretion. If the vendor chooses to replace the pre-amplification (EDFAs) on this span, it is expected that the vendor will also replace or eliminate the RAMAN amplifier based on their design. The existing RAMAN amplifiers will not be used if the vendor replaces the existing FSP3000 R7 based EDFA amplification in this span.