



Subject: Additional information in relation to the SURFnet Request for Information Document for a SURFnet8 Industry Partner

Date: September 14, 2015

Dear Madam/Sir,

Please find herewith the answers of general interest to all questions received, so far, concerning the above-mentioned Request for Information Document. This information is given to all companies that have shown interest during the market consultation phase. Insofar this note contains modification and/or additions to the Request for Information Document and/or previous Q&A documents, the text in this note prevails.

Please take note of this document in preparing your response.

Kind regards,
Jac Kloots
SURFnet

#	Question	Answer
1.	Does the surfnet8 rebuilt the core and metro site optical layer of Surfnet7?	SURFnet does not exclude rebuilding the transport core and metro sites as a part of SURFnet8. It is up to the suppliers to provide their vision and solution, taking into account the overall objectives outlined in the RFI documentation. Rebuilding does not automatically mean copying the existing (filtered DWDM) implementation.
2.	How to deploy the alien wavelength? Such as, does the alien wavelength of Surfnet7 re-use in the Surfnet8, or must the alien wavelength of the Surfnet8 be deployed in the optical layer of Surfnet7?	SURFnet's niche Alien Waves are characterized by the fact that the DWDM interfaces are outside SURFnet's domain. This is not the case of the SURFnet7 production network. SURFnet does not have a preference to whether DWDM interfaces are implemented on the Service Platforms and are not part of a transponder system, OTN system or other light system. Alien waves that are transported over SURFnet7 photonic systems are to be supported over SURFnet8 photonic system. Some Alien waves may use direct detection (10Gbps ASK), some are coherently detected (100Gbps PM-QPSK).

<p>3.</p> <p>With regards to questions #30-32, can we get some clarification from SURFnet on your current SURFnet7 solution, either what solution and which model is used today, or answers to what their scale requirements are around #prefixes, #subnets, and #VRFs needed by these routers?</p>	<p>SURFnet currently uses only two routers for all their IP connectivity. Both routers are part of the default free zone and carry a full routing table for both IPv6 (~26000 prefixes) and IPv4 (~560000 prefixes). SURFnet7 uses 2 additional VRFs, one for the Management network (~200 prefixes) and one for a DDoS mitigation system (~2000 prefixes).</p> <p>IP connectivity to the outside world is delivered only using BGP. Both routers have an identical setup for this with connections to 4 Internet Exchanges and some private interconnections. The total amount of BGP sessions for external connectivity is ~300 sessions for IPv4 and ~200 sessions for IPv6 per router.</p> <p>IP connectivity for customers is delivered in two ways. 1. Using BGP between customer router(s) and the both routers. SURFnet announces a default route and the customer announces their network prefixes (1~5 prefixes). 2. Using static routing and VRRP between the both Core routers. SURFnet sets static routes for customer networks and customers sets default gateway towards VRRP IP address.</p> <p>For all customer BGP and VRRP sessions a subnet is defined, ~140 subnets for VRRP, ~150 for BGP per router. There are ~200 BGP sessions per router for BGP customers (IPv4 + IPv6).</p>
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