Network & shared Operations



NEXT GEN DIGITAL ACCESS RFI - CIN solution response

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1. Introduction

This appendix is for the vendors who wish to respond with a solution for CIN Network Elements.

Please provide descriptive answers to the question below. Please don’t send marketing material and adhere to the strict page/word count mentioned. Instructions provided along with each question will give you sufficient direction of how to answer them. If you don’t follow them, it's possible that we will not be able to consider your response. Please provide your responses to all CIN questions using a single document.

Please utilize the section at the end to highlight any other advantages or features of your solution that’s not covered by the questions. While, these are being evaluated independently, if you believe the solution has a distinct advantage because of its E2E nature, utilize the question at the end to describe the same.

Please read through *NEXT GEN DIGITAL ACCESS.docx* before answering the questions. It should give necessary information about

* Why we are doing this RFI, what is in scope
* What are the basic principles we want to adhere to as we move along
* Overall blueprint architecture and functional requirements for the solution
* Current landscape

At the RFI stage, the intention is not to provide every little detail and detailed architecture but if there are any questions regarding the basic understanding of the above, please provide these in written format before Q&A and we will try to answer it as best as we can

1. Vendor Responses
2. Describe how you would provide shared services (Mobile/Business/Residential) in the access and aggregation transport network?

Please respond with less than 500 words including the architectural diagram also describing various functional elements in your Network Topology to provide this

1. Describe how you would support our vision Access and Aggregation architecture based on SRv6 and how would you connect the SRv6 Access and Aggregation network with other non-SRv6 networks?

Please respond with less than 1000 words, including our vision architecture topology.

1. How many uncompressed SIDs could your platform support?

Please respond in less than 100 words.

1. Please describe how your solution will support and perform the Service Chain function (SFC) + TI-LFA without impacting the performance due to a large number of the segment list. Please also describe SRv6 SFC+IOAM+TI-LFA separately together.

Please restrict the answer to 1000 words.

1. Describe the proposed architecture/architectures you would support

Please respond with less than 250 words and include E2E architecture diagram(s) that is/are supported by your solution

1. Please describe the advantages and disadvantages of your solution from an architecture point of view?

Please respond in less than 500 words

Architecture options you should consider at minimum are 1. CUPS – On device/virtualized, 2. Virtualized Data Plane, 3.Chassis based 4. Whitebox based

In case you feel the architecture/delivery approach should be different for different functional elements of CIN, please state that clearly with the advantage of your approach

1. CIN will support multiple mobile xHaul scenarios including:

* Macro Cell Backhaul
* Fronthaul/Midhaul
* Small/Micro Cell

Please describe how your solution will support multiple mobile xhaul use case scenarios

Please respond in less than 500 words. Including diagrams where required

1. Please describe in your response how you realize the wholesale handover point including the transport mechanisms and required functionality

Please respond in less than 250 words including a network topology diagram

1. Please describe how your solution will support edge cloud/MEC with Flex-Algo and SR Policy use case together.

Please restrict the answer to 500 words.

1. Please describe how you propose a scalable multicasting BIERv6 with SRv6 solution within Next-Gen-Digital Access and Aggregation Architecture when the Core network is not ready to support BIERv6 and SRv6.

Please restrict the answer to 1000 words.

1. Please describe how you propose MVPN over BIERv6 with SRv6 solution within Next-Gen-Digital Access and Aggregation Architecture when the Core network is not ready to support MVPN over BIERv6 and SRv6.

Please restrict the answer to 1000 words.

1. Please describe how your solution support multicast functionalities, scalability and limitations of multicast transport and replication

Please respond in less than 250 words

1. Describe how your solution would scale both physically and logically from min to max capacity

Please respond in less than 100 words

1. List the protocols used by your solution for carrying out various data/control/management plane functionalities

Please respond in a tabular format with a map of functionality and realized by <> protocol

1. Provide details about support for streaming telemetry in your solution. Provide the details about the data model, encoding and application protocol for telemetry

Please respond in less than 250 words

1. It is assumed that all relevant performance metrics can be gathered using streaming telemetry in your solution. Please highlight if this is not possible and if any of the specific protocol support is required for performance management?

Please respond in less than 250 words

1. Describe any proprietary protocols, features or functions that would inhibit integration with 3rd party hardware and software

Please respond in less than 100 words

1. Describe what license models would be available, how they scale and what they would be applied to i.e., ports, features, hardware, etc.

Please respond in a tabular format with all the applicable licenses and models

1. Describe your views on SRv6 and maturity of your solution to support the same? Share your roadmap for the same

Please respond in less than 250 words along with your roadmap (table/picture)

1. If your solution is based on any other underlay technology than SRv6 (like SR-MPLS), please describe how to mitigate some of the challenges with a future move to SRv6:

* Cost for moving towards SRv6 at later stage
* Day-to-day operations complexity with multiple underlay technologies running parallel in the network
* Design complexity due to SRv6 interworking and service stitching

No need to respond to this question if your solution is based on SRv6. If not, please respond in less than 500 words and attach any diagrams if necessary

1. Describe your views on disaggregation of routers and maturity of white box solutions to address the needs of CIN?

Please respond in less than 500 words

1. Please provide details regarding the readiness of the proposed solution. If it's already in trials or in production, please provide at least two references. If not, please provide the roadmap

Please provide the roadmap of your solution in a diagrammatic fashion. If it's already in production, please provide at least 2 references

1. Please provide reference/example of where your CIN device can work with a 3rd party controller/manager (if applicable)

Please specify all the 3rd party controller/manager you have tested with. Please respond in less than 250 words. We might ask for a reference at a later stage

1. Please provide your view on FANS and compliance towards network slicing in access aggregation network as defined by BBF TR-370?

Please provide a brief explanation of how your solution will enable FANS and your compliance towards TR-370 or any other alternative approaches? Also provide some details on how your solution realise vAggN (Virtual Aggregation Node) and the deployment option for the same (On physical devices or on high volume servers). Please restrict your answer to 250 words

1. Please describe how you will provide the optimal combination of a mix of hard slicing and soft slicing in your solution

Please respond in less than 250 words.

1. How many network slices can your platform support without any impact on the control plane and data plane?

Please respond in less than 200 words.

1. How will your solution optimize or reduce the large number of network slice control plane overhead?

Please restrict the answer to 500 words.

1. How do you scale IGP to support a large number of slices?

Please restrict the answer to 500 words.

1. Please explain the hosting infrastructure requirements in case your solution has a virtualized component

Please respond in tabular fashion

1. Please provide any other features/highlights of your solution

Please highlight any other advantages here. Please restrict the answer to 500 words