

Request for Proposal (RFP) Fort Carson CBRS/LTE Network Audit Questions

March 22, 2022

The following questions were received in reference to the Proposal (RFP) Fort Carson CBRS/LTE Network Audit.

<https://www.us-ignite.org/news/request-for-proposal-rfp-fort-carson-cbrs-lte-network-audit/>

Paragraph 4 under Scope of Services (SOS) states that the selected Vendor will be expected to perform a "stationary test" for the five operating cells. Nothing in the RFP indicates anything about a test plan or what the expected deliverables or expectations are for the stationary tests. All that is listed are various KPIs that need to be collected and various post installation network performance measurements.

1. Will US Ignite be providing any kind of baseline data measurements, KPIs, and other system performance measurements that were taken at time of installation (pre and post measurement data)?

A. No baseline data measurement, KPIs, or other system performance measurements were taken at the time of installation. The audit will establish the current baseline and identify any functional issues with the equipment, design or installation of the network.

2. Will the vendor be provided an existing list of all equipment and locations of this equipment? Are there any restricted areas that will require additional coordination and approval?

A. Yes, an equipment list and locations will be provided. The network is located in the central cantonment area of Fort Carson, which is available to anyone with visitor access. US Ignite will assist with site access and coordination with base personnel.

3. Will the Vendor be required to collect RF Exposure (Maximum Permissible Emission {MPE}) data as required under OET65? Will a current copy of the RF exposure levels be provided to the Vendor?

A. MPE is not required. CBRS equipment is using CAT B.

4. OSHA and the FCC require that anyone accessing an area that has RF emissions have a full expectation of where levels exceed MPS Public and Occupational levels by providing maps and training. Will US Ignite be providing training and RF awareness as required by OSHA and the FCC? Can this training be conducted online, or will it need to be completed in person?

A. RF emissions and MPS are out of scope and not required.

5. Will the Vendor be provided a formal test plan with expected deliverables for all aspects of this project?

A. As per the RFP, the vendor has to provide the complete test plan with expected deliverables.

6. Will the link budget be provided that was used to perform the initial network system design?

A. Link budget data is not available.

7. What RF Engineering Software was used to design this network? Are those coverage and data maps (data) going to be provided to the Vendor?

A. Software information is not available. Coverage map (propagation) is available.

8. What Clutter and Terrain data was used for the network system design? Please include the level of detail of this data and source.

A. Geo data information is not available.

9. What are the minimum and maximum values required for the KPIs listed?

A. No minimum or maximum values. The vendor will provide those KPIs based on the field test.

10. What are the latency and data throughput requirements expected to be to meet network and overall system performance requirements?

A. The audit is intended to provide these values of system performance.

11. Will the Vendor be provided a Drive Test Plan or just the area of interest to collect the RF signal and data throughput data?

A. Yes. The vendor needs to give the drive test plan and template of the deliverables.

12. Will the Vendor have access to the network switch data or equivalent to review current health and function of the EPC and related functions?

A. Yes. The vendor will have/request access to EPC to perform the audit.

13. Is the uplink data measurements required for both the mobile and base station? If so for the mobile station will a test radio be provided that can interface into test equipment?

A. Yes. Uplink data is required for stationary and mobility tests. Vendor needs to provide the compatible test equipment with the network interface.

Section 1; i, under RAN Audit asks for conclusions and recommendations for improving or expanding the network.

14. Will the Vendor be provided information and data that shows existing coverage holes, unacceptable data rates, intermittent operation of the network, and a detailed explanation of what is meant by "expand the network?"

A. The vendor needs to identify coverage holes, unacceptable data rates, and intermittent operation of the network. The vendor is requested to support discussions regarding expanding the network to additional areas of interest. These may include serving buildings, entrance gates or larger coverage areas.

15. Based on the initial system network design, what was the expectation of expansion of coverage and service over a 5-year period? How many more nodes are expected to be added?

A. The network will serve as a wireless testbed that may include new coverage areas or use cases. The vendor has the opportunity to contribute to these ongoing discussions after conducting the audit.

16. Does the network need to provide indoor and outdoor service and if so what level of service for each since this is based on IoT type specifications?

A. The network was not intended to provide any indoor service coverage. An informal test of indoor coverage may be requested at 1-3 facilities to assess this option going forward.

17. Will the Vendor have unlimited (unescorted) access to the installation to perform the needed services or will there need to be prior coordination to have an escort?

A. The network is located in the central cantonment area of Fort Carson, which is available to anyone with visitor access. US Ignite will assist with site access and coordination with base personnel.

18. What are the days and hours that will be available for conducting the data collection and

audits specified in the RFP?

A. Onsite work to be completed during normal working hours, during the weekdays, unless there is a specific reason to work outside of those normal hours.

Page 6 – Map and Table - The system description on page 1 has 5 JMA XLAN nodes connected by Bridgewave Infrastructure (4 links are shown in orange).

19. Confirm that the Receive Antenna Height refers to JMA XLAN nodes using the MX0FIT365-01 antenna. If not, please clarify.

A. Correct. Antenna height refers to JMA Radio antenna.

20. Confirm that the PTP CL Heights refer to the Bridgewave? If not, please clarify.

A. Correct. PTP CL Heights refer to the Bridgewave Mmwave backhaul.

21. FCO1TT014A has two Bridgewave links. Are the PTP CL Heights the same in both directions? If not, please clarify.

A. The vendor/auditor needs to provide/confirm the installed hardware and configuration.

22. FC01TT003A has three Bridgewave links. Are the PTP CL Heights the same in all three directions? If not, please clarify.

A. The vendor/auditor needs to provide/confirm the installed hardware and configuration.

23. What mobile User Equipment (UE) is being used? Please provide a data sheet.

A. Four cameras are connected through ethernet via the PTP backhaul. iPhone 12 Pro has been used for the air interface testing. A Mobile Office unit is supported by a point to point link and wifi hotspot.

24. Can you provide a UE to interface with the drive test equipment or do we need to provide the UE.

A. The selected vendor needs to provide the UE + drive test tool.

25. Page 6 – Map – How is FC01TT009A connected to the EPC?

A. Cell 9 connected to MikroTik CRS109 and CCR1009, a network diagram will be provided with the details.

26. Page 6 – Map – How is the EPC connected to the ISP?

A. Optical fiber.

27. Is the system being used for data only or also VoLTE?

A. Correct, the network is being used for data only and there is no VoLTE.

28. Will you confirm that you will have JMA provide sufficient technical information (including detailed specification sheets, user manuals, and technical operation manuals) on their EPC's and their eNodeB's to complete the requested RAN and Core Audit?

A. Most of the documents, if not all, are available. Additional documents can be requested as needed from the original supplier of the equipment.

29. Will you provide existing network diagrams and as-built drawings for the system?

A. A network diagram is available. As-built drawing may not be representative of the final installed configuration.

30. Will you provide the original RFP with any amendments which provide the design requirements for the LTE network?

A. The original design intent documents are not available for review.

31. Please provide the performance specifications that the system was designed to meet.

A. The original performance objectives are no longer applicable and the audit will serve to baseline the current network performance.

32. Are there any requirements or standards for grounding, electrical or structural? If so, please provide them?

A. No specific requirements or standards for grounding, electrical or structural were requested. The vendor is encouraged to confirm best practices were used in the network installation with regard to these features.

33. Can a drone be used to take pictures of the structures, or will a tower crew be required?

A. Assume a tower crew is required. Flying drones on DoD facilities require special approval which is not likely available within the time allowed for this effort.

34. Can the network be taken down to do RFC2544 tests over the RF Links to measure actual performance?

A. Yes, a planned outage is allowed for performance testing as long as the schedule is of reasonable duration.

35. What future expansions are planned, and was this capability incorporated into the current design/build?

A. The CBRS Network is the foundation for a number of smart base initiatives. The areas of network expansion may include serving buildings, entrance gates or larger coverage areas. The vendor will be asked to participate in these discussions given the insight gained in auditing the network.