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Component 1: AMI FAN

1. Provide an overview of the solution. Discuss highlights, key features, and unique distinguishing points of the service offering. The Proposer may also highlight technical or process innovations that have been used successfully on other engagements that will be used in this Project.
2. Indicate the number of years the proposed product has been on the market.
3. Affirm if the proposed system is designed to communicate with every meter in the service area. If not, describe the options available to communicate with those meters.
4. Discuss system redundancy based on the propagation study.
 - a. For point-to-multipoint RF-based AMI solutions, include a discussion on how many endpoints communicate with one collector/routers, two collectors/routers, etc.
 - b. For mesh RF-based networks, provide statistics on hop count, minimum latency, and how quickly the mesh would resolve itself if a participating meter or collector/repeater lost power.
 - c. For cellular networks, provide a discussion on future-proofing against 5G and future cellular standards. Also, identify the network provider(s) used.
5. Specify the number of collectors/routers/repeaters on utility-owned assets. Specify the number of collectors/routers/repeaters on third-party assets.
6. Describe an estimated level of time (FTE estimate) utility staff will need to provide to maintain the network collectors/routers/repeaters, under the proposed services/support structure, and what this maintenance work will entail.
7. Identify if collectors/routers/repeaters can be used in a test environment and migrated to a production environment, and any special procedures needed to do so.
8. Describe how collectors/routers/repeaters can be accessed by field personnel for troubleshooting. Describe both hardware (e.g., laptop, tablet, handheld, etc.) and communication method (e.g., Bluetooth, optical port, etc.).
9. Describe what field software applications are provided for troubleshooting of collectors/routers/repeaters.
10. Describe if the production capacity for AMI collectors/routers/repeaters will satisfy the number and timeline identified in this RFP.
11. Describe if the production capacity for AMI endpoints will satisfy the number and timeline for unit replacements identified in this RFP.
12. Describe the length of the warranty and support provided for all proposed endpoints (and distinguish between full vs. prorated), and when the warranty period will start in the project schedule (e.g., at shipment, at install, etc.).
13. For the proposed endpoints, detail any formal product recalls or advisories that have been issued within the past five (5) years.

14. Identify if the endpoint is pre-configured in the factory, programmed in the field upon product installation, batch-programmed remotely after installation, or other. For field-programmed endpoints, describe how the endpoint is configured (e.g., using a handheld with an IR port).
15. Specify the types of connectors used to interface with a meter for the proposed endpoints.
16. Specify the available mounting configurations (e.g., under-lid, through-the-lid, external, etc.) for the proposed endpoints, and identify if these mounting configurations affect the read rate service level agreements for the AMI network.
17. Identify how many days of hourly interval data the endpoint can store. How many days of hourly interval data can be recovered remotely across the AMI networks?
18. Indicate the default configuration of the following: the interval length of the endpoint (e.g., reads are taken every 15 minutes, 1 hour, etc.), the transmission interval of the endpoint (e.g., reads are transmitted every 4 hours, 6 hours, etc.), and the backfill volume of the endpoint (e.g., for each transmission, the previous 24 hours are sent, the previous 24 reads are sent, etc.).
19. Indicate if the the interval length, transmission interval, and backfill volume of the endpoint can be changed. Indicate the highest and lowest frequencies for each of these metrics, and discuss their effects on warranty.
20. Provide a complete list of events and alarms supported by the proposed endpoints and AMI headend.
21. Identify reporting available from the AMI headend to monitor system and communications health, as well as reports to track read delivery by endpoints (for both interval and register reads).
22. Describe the product development roadmap outlining the vision and strategy for the future of the proposed system, including a description of any upgrades and/or enhancements that are in the planning or design stage.
23. For the solution being proposed, provide total number of systems and endpoints supplied in the last 12 months.
24. For the solution being proposed, provide total number of systems and endpoints completed to date.
25. For the solution being proposed, provide total number of systems and endpoints in operation for 3 years or longer.
26. Identify if alternative reading methods (e.g., drive-by) can be used, and any processes (such as reprogramming the meter) or hardware needed to do so.
27. Provide a statement on forward compatibility to ensure continuity of the product line, including a description of how routine obsolescence of critical electronic components may be handled. Describe the current technology plan and procedures for refreshing existing AMI networks and endpoints, and implementing enhancements over the operating life of the system.
28. Provide a description of your ability to offer hosted, SaaS, and/or managed services for the AMI headend in terms of all monitoring, maintenance, and upgrades to the system. Describe what is

included in each service model available, and explicitly reference which service model is being proposed.

29. Is the proposed Software is hosted at a vendor data center or on a third-party cloud computing platform (Microsoft Azure, Amazon Web Services, etc.)? If a vendor data center is being used, specify the name and location of the primary data center, and the name(s) and location(s) of any backup/redundant data center(s). If a cloud computing platform is being used, specify which platform.
30. Identify what interface mechanisms are available to facilitate integration with utility enterprise systems such as CIS, MDMS, etc. (e.g., CMEP files, Multispeak, REST API, web services, etc.).
31. Provide a list and description of the integrations the Proposer expects to provide between the AMI headend and utility enterprise systems. Include the integration method for each.
32. Provide a list and description of the integrations the Proposer expects the utility to build between any of its enterprise systems and the AMI headend, given the requirements in this RFP. Include the integration method for each of these integrations.
33. Describe your system integration implementation experience between the proposed AMI headend and the utility's enterprise systems.
34. Provide a list of proposed training sessions on the solution, hours for each session, and suggested participants, that the Proposer would hold if selected.
35. Does the vendor have a user's group that meets regularly? How long has it been in operation? Are utility representatives running the group?
36. Describe your standard support services, hours of operation and escalation policies and procedures for problem resolution.

Component 2: Installation Services

1. Provide an overview of the services. Discuss highlights, key features, and unique distinguishing points of the service offering.
2. Describe the process used to determine the optimum strategy to deploy/program water meters and endpoints.
3. Describe all site preparation activities and timing (include site prep lead time) related to deployment. Provide detail on all equipment (i.e. vehicles, uniforms, tools, forklifts, recycle bins, etc.) and facilities (office, warehouse, etc.) required during deployment.
4. Describe inventory control procedures.
5. Identify the required amount of equipment stock required needed for deployment at any given time (e.g., 2 months' supply of meters, 3 months' supply of endpoints, etc.).
6. Describe the customer communications process, including how appointments are scheduled, what credentials employees carry, and how employees are dressed. Provide sample pictures of vendor credentials, uniforms and vehicles.

7. Provide detailed, step-by-step procedures for an installer, including the duties/activities performed at the staging site upon arrival, duties/activities performed at the customer site, and duties/activities performed upon return to the staging site.
8. Identify any assumptions made about the level of effort in exchanging meters, including dirt levels, box size, and similar, as well as what conditions may incur additional surcharge to the utility.
9. Outline and describe any incidents that could warrant a Return to Utility (RTU), Unable to Complete (UTC), or similar, including but not limited to: due diligence, customer refusal/opt-out, meter obstruction that prevents access to meter, unsafe situation, etc.
10. Identify if the utility is expected to pay for RTUs and UTCs or similar.
11. After equipment has been installed, describe verification processes to confirm the installation, that equipment is working correctly, and that the customer's property is as it was before installation. What is the process for resolving installation-related issues during deployment, discovered after the installer has left the site, including troubleshooting root cause (device, network, or installation error)? Identify utility expectations for involvement in resolving these issues.
12. Describe the method the installer will use to record data and information from each installation. Describe all data and information that can be collected by Contractor installers. Can the kind of data collected be customized, and what are the limitations?
13. Describe audit practices. What percentage of field installations are audited in the field—both initially for new installers and ongoing throughout deployment?
14. Describe quality assurance practices, including if quality checks are performed on photos.
15. For the installer, provide total number of AMI deployments in the last 12 months.
16. For the installer, provide total number of endpoints and meters installed in the last 12 months.
17. For the installer, provide total number of endpoints and meters installed over the life of the company.
18. Specify the WOMS software vendor and version being proposed.
19. Describe prior methodology in importing utility customer data to populate work orders and what data formats completed work order information can be exported into.
20. Can the WOMs track equipment inventory?
21. Provide a discussion on reporting from the WOMS. Specify KPIs and dashboards of interest to a meter/endpoint install project. Specify all applicable WOMS reports that will be used during deployment as part of the project management and progress tracking.
22. Will RTUs/UTCs be available for inspection on the WOMS?
23. Can RTUs/UTCs work orders be exported into an Excel, .csv, or similar file?

Component 3: Water Metering

1. In a table, matrix, or similar, identify the following for each meter proposed by size: make, model, metrology, finest resolution encoded and transferred to the AMI endpoint, pressure operating range, thread material, body material, and order lead time.
2. In a table, matrix, or similar, identify the following for each meter proposed by size: accuracy warranty timeframe, material/workmanship warranty timeframe, and when the warranty starts for each (e.g., at shipment, upon install, etc.).
3. Specify the types of connectors used to interface with an endpoint for the proposed meters.
4. Indicate the number of years the proposed product has been on the market.
5. Describe the RMA and warranty process, including providing requirements (both to be performed by the utility and by the manufacturer, if necessary) for returned materials. Describe logistics related to lead time, shipping, associated costs.

Component 4: MDMS

1. Provide an overview of the solution. Discuss highlights, key features, and unique distinguishing points of the service offering.
2. If the proposed solution is a standalone MDMS, provide a description of the system's relative value and advantages over using an AMI headend for data retention, reporting, and analysis. Conversely, if the AMI headend system is being proposed to accomplish the role of an MDMS, provide a description of its relative value and advantages over a standalone MDMS.
3. Indicate the number of years the proposed product has been on the market.
4. Provide a concise list and description of all operational reports (e.g., system monitoring, meter status, VEE exceptions, etc.) and analytics (e.g., historical use trends, revenue forecasting, leak detection, etc.) offered in the solution as proposed.
5. Describe individual user ability to establish user-defined alarms based on user-defined thresholds for operational reports and virtual metering.
6. Provide a concise list and description of all operational reports (e.g., system monitoring, meter status, VEE exceptions, etc.) and analytics (e.g., historical use trends, revenue forecasting, leak detection, etc.) offered in the solution as proposed.
7. For the solution being proposed, provide total number of systems supplied in the last 12 months.
8. For the solution being proposed, provide total number of systems implemented to date.
9. For the solution being proposed, provide total number of systems in operation for 3 years or longer.
10. Provide a description of your ability to offer hosted, SaaS, and/or managed services for the MDMS in terms of all monitoring, maintenance, and upgrades to the system.

11. Is the proposed Software is hosted at a vendor data center or on a third-party cloud computing platform (Microsoft Azure, Amazon Web Services, etc.)? If a vendor data center is being used, specify the name and location of the primary data center, and the name(s) and location(s) of any backup/redundant data center(s). If a cloud computing platform is being used, specify which platform.
12. Describe any limitations (e.g., age, type, etc.) around what data is available is available to be used within the system actively (e.g., metering data available for analytics or reporting) and what data is available only through cold storage retention/archival.
13. Describe the basic process for archiving meter data (e.g., daily, weekly, monthly, etc.) and how long the data would be archived for retrieval.
14. Identify what interface mechanisms are available to facilitate integration with utility enterprise systems such as CIS, etc. (e.g., CMEP files, Multispeak, REST API, web services, etc.).
15. Provide a list and description of the integrations the Proposer expects to provide between the MDMS and utility enterprise systems. Include the integration method for each.
16. Provide a list and description of the integrations the Proposer expects the utility to build between any of its enterprise systems and the MDMS, given the requirements in this RFP. Include the integration method for each of these integrations.
17. Describe your system integration implementation experience between the MDMS and the utility's enterprise systems.
18. Provide a list of proposed training sessions on the solution, hours for each session, and suggested participants, that the Proposer would hold if selected.

Component 5: Customer Portal

1. Provide an overview of the solution. Discuss highlights, key features, and unique distinguishing points of the service offering.
2. Indicate the number of years the proposed product has been on the market.
3. Provide metrics on the rate of customer adoptions of the platform at other utilities.
4. For the solution being proposed, provide total number of systems supplied in the last 12 months.
5. For the solution being proposed, provide total number of systems implemented to date.
6. For the solution being proposed, provide total number of systems in operation for 3 years or longer.
7. Provide a description of your ability to offer hosted, SaaS, and/or managed services for the Customer Portal in terms of all monitoring, maintenance, and upgrades to the system.
8. Is the proposed Software hosted at a vendor data center or on a third-party cloud computing platform (Microsoft Azure, Amazon Web Services, etc.)? If a vendor data center is being used, specify the name and location of the primary data center, and the name(s) and location(s) of any

backup/redundant data center(s). If a cloud computing platform is being used, specify which platform.

9. Identify what interface mechanisms are available to facilitate integration with utility enterprise systems such as CIS, MDMS, etc. (e.g., CMEP files, Multispeak, REST API, web services, etc.).
10. Provide a list and description of the integrations the Proposer expects to provide between the Customer Portal and utility enterprise systems. Include the integration method for each.
11. Provide a list and description of the integrations the Proposer expects the utility to build between any of its enterprise systems and the Customer Portal, given the requirements in this RFP. Include the integration method for each of these integrations.
12. Describe your system integration implementation experience Customer Portal and the utility's enterprise systems.
13. Provide a list of proposed training sessions on the solution, hours for each session, and suggested participants, that the Proposer would hold if selected.