

Docket Number: TC19-003  
Subject Matter: First Data Request  
Request to: NGA 911, LLC  
Request from: South Dakota Public Utilities Commission Staff  
Date of Request: February 25, 2019  
Responses Due: March 18, 2019

1-1. Pursuant to ARSD 20:10:24:02(2) and ARSD 20:10:32:03(2), provide a description of the organizational structure of the company.

**Response:** NGA 911, L.L.C. is a California limited liability company formed on May 17, 2016. NGA 911 has no parent company or affiliates and is privately-held. However, NGA 911, Inc. is the majority owner of NGA 911, L.L.C.

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1-2. Pursuant to ARSD 20:10:32:03(6), the company provided the dates and nature of state or federal authorizations to provide the certain telecommunications services. In addition, to fulfill the rest of the rule, provide a description of the applicant's experience providing any telecommunications services, including the types of services provided.

**Response:** NGA 911 has been granted authority to provide telecommunications services including 9-1-1 Emergency Services and NG 9-1-1 Emergency Services in California (07/26/2018), Georgia (3/5/2019), Louisiana (02/07/2019), Montana (01/29/2019), South Carolina (02/12/2019), Texas (10/1/2018), West Virginia (11/03/2018) and Wisconsin (2/27/2019).

NGA 911 has applications pending in, Illinois, Nevada, Utah, and Virginia.

Applicant seeks to provide services to state and municipal government agencies to support PSAP operations. As of March 11, 2019, NGA 911 deployed the Louisiana ESInet and its Next Generation Core Service (NGCS) platform, offering the state of Louisiana an unprecedented, cost effective, and practical pathway to the Next Generation of 9-1-1. In addition, Applicant is currently providing service in California, Louisiana, Texas and West Virginia through pilot programs. These pilot programs are tests of the NGA 911 system within the PSAP, not with live traffic.

Other than differences in the customer premise equipment, the proposed pilot programs are the same for all of the jurisdictions. A description of the pilot programs and network diagrams are included as Confidential Exhibit DR1-2.

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1-3. Pursuant to ARSD 20:10:32:03(8)(c), provide a description of all facilities that the applicant will utilize to furnish the proposed local exchange services, including any facilities of underlying carriers.

**Response:** Please see the Application at p. 4 and the attached Exhibit DR1-3.

NGA 911's core services, functions, features and products are deployed as virtual instances in a nationwide cloud architecture that is interconnected using Ethernet through fiber, wireless, and microwave connections. The virtual and cloud-based nature of the service enables NGA 911 to service, support, upgrade, troubleshoot and maintain the network from Applicant's Network Operations and Support Center.

To complete the circuits and serve Applicant's clients in South Dakota, NGA 911 will work with contractors that supply, support, and maintain its circuits in the State. Additionally, Applicant will lease interconnection facilities and data centers in the State. All associated service contracts for connections, facilities, and data centers will be supported by stringent SLA's in order to assure the service levels required by the customer and/or state and Federal regulations.

NGA 911's Next Generation Core Services in South Dakota will comply with and be certified under the provisions set forth in the FCC's Reliability Order. As such some circuits, depending on the availability of diverse routing, may be registered with the FCC under the Telecommunications Service Priority (TSP) program.

NGA 911 partners with and subcontracts with firms like Venture Technologies, Fujitsu, ACS Cloud Partners, and others to provide onsite technicians and project managers in each region Applicant operates. Additionally, when NGA 911 acquires circuits through third party interconnect agreements, it includes SLA's that cover the support and maintenance of the circuit equipment. The concentration and location of our service contractors is based on the Mean Time to Repair (MTTR) table provided to an end customer.

NGA 911's Network Operation Centers will be provided by Fujitsu USA (2801 Telecom Pkwy., Richardson, TX 75082) and a secondary Network Operation Center will be provided by Venture Technologies (8680 Concord Center Dr., Englewood, CO 80112).

NGA 911 utilizes AWS Direct Connect Facilities available nationwide. The locations of NGA 911's gateways will be in technically, economically, and geographically feasible and cost efficient.

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1-4. Related to ARSD 20:10:32:03(8), provide a diagram of the applicant's core services as it relates 9-1-1 services, from the cloud to PSAPs. Please include whether redundancy is built in the system.

**Response:** Please see the attached Exhibit DR1-3 for network diagrams.

Redundancy and Diversity The NGA 911 architecture takes extensive precautions to help ensure that it will remain fully operational, with no loss of service for all hosted applications. NGA 911 replicates critical system components across multiple Availability Zones ("AZs") to ensure high availability both under normal circumstances and during disasters such as fires, tornadoes, or floods. Availability Zones consist of one or more discrete data centers, each with redundant power, networking, and connectivity and housed in separate facilities. Each AWS Availability Zone runs on its own independent infrastructure, engineered to be highly reliable so that even extreme disasters or weather events should only affect a single Availability Zone. The data centers' electrical power systems are designed to be fully redundant and maintainable without impact to operations. Common points of failure, such as generators, UPS units, and air conditioning, are not shared across Availability Zones.

NGA 911's NGCS is designed, architected, implemented and operated to meet the standards for high availability, reliability, and resiliency. A public safety grade highly available system is generally considered to provide 99.999% availability in a year.

Reliability is related to availability and conveys the importance of consistency in performance. In other words, availability is not enough if the systems performance does not provide for sufficient fidelity for the media stream being delivered whether voice, text, video or other data type.

Resiliency speaks to the ability for a highly available system to continuously deliver a reliable media stream when subjected to stresses to one of more functional and/or network elements.

NGA 911 achieves all three: high availability, reliability, and resiliency; by adhering to a comprehensive and disciplined approach. One that not only accounts for the performance of individual components (i.e. functional and network elements) but rather the end to end system performance. NGA 911's design considers all of the following:

- Application Layer
- NGCS
- Location Services
- IP-PBX
- Functional Elements
- Servers
- Storage
- Network Elements
- Transport Media

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- Switching and Routing
- DNS
- BCF
- Physical Infrastructure
- Data Centers
- Aggregation Points
- Signaling Services
- SIP
- LNG
- LSGW
- Media Services
- Voice
- Text
- Video
- Data

NGA 911's NGCS and associated architecture is designed to exceed Public Safety Grade (PSG) standards for High Availability (HA) which is most commonly considered 99.999% availability. Our HA design considers network, functional element, and end to end communications performance of both the signaling and media paths.

NGA 911's NGCS HA deployment consists of the following building blocks:

- 2 NGCS per Availability Zone (AZ)
- 2 AZ and 4 NGCS per Region
- 2+ Regions and 8+ NGCS

A minimum of 8 NGCS support any one PSAP / 911 Authority that NGA 911 serves. But at a cost less than a single physical deployment of an NGCS by a 911 Authority, thus guaranteeing a level of reliability and resiliency that far exceeds a local deployment.

Finally, as mentioned in other parts of this document NGA 911 and its partners maintain compliance with the following standards which also pertain to data centers provided by our Cloud Partners such as AWS:

- Federal Risk and Authorization Management Program (FedRAMP)
- System and Organization Controls (SOC) 1, SOC 2, and SOC 3
- Payment Card Industry Data Security Standard (PCI DSS)
- International Organization for Standardization (ISO) 27001, 27017, 27018, and 9001
- Department of Defense (DoD) Security Requirements Guide (SRG) Impact Levels 2, 4, 5, and 6

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- Federal Information Security Management Act (FISMA)
- US Health Insurance Portability and Accountability Act (HIPAA)
- FBI Criminal Justice Information Services (CJIS)
- National Institute of Standards and Technology (NIST) 800-171
- International Traffic in Arms Regulations (ITAR)
- Federal Information Processing Standard (FIPS) 140-2
- Family Educational Rights and Privacy Act (FERPA)

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1-5. Refer to ARSD 20:10:32:03(10)(b): Provide information regarding policies, personnel, or arrangements made by the company which demonstrates the applicant's ability to perform facility and equipment maintenance necessary to ensure compliance with any commission quality of service requirements.

**Response:** NGA 911 has a highly-skilled management team with substantial expertise and experience in public safety communications, related engineering, and business management. It is an active member of a number of other professional committees and standards-making organizations, including National Emergency Number Association ("NENA"), i3, ICE, APCO, ATIS, and the Canada CRTC.

Don Ferguson, Founder and CEO of NGA 911 LLC, is a leading innovator in the adoption of Next Generation 9-1-1. Mr. Ferguson has over 25 years in Technology design, innovation, and leadership. He served as a member of President Barack Obama's technology and Innovation brainstorming team on modernizing public safety communications.

Mr. Ferguson has extensive technology management skills, including:

- Strategic Planning & Project Management
- Excellent Communication at all Levels of Stakeholders
- Technology Implementations, Business Process and Requirements Analysis
- Operations, Finance, and Budgeting of Technology Development & Deployment
- Deep Technology Knowledge
  - Architecture, Databases, and Operating Systems
  - Mobile & Cloud Infrastructure
  - SaaS and On premise solutions in enterprise environments
  - Security, Compliance, and Quality
  - Large Scale, Enterprise Systems

His technology skills include:

- Integration : RESTful, AWS, Nginx, Node.js, Apache, SOAP, SMS, VoIP client & server, Flowroute, Asterisk, Google Apps, Call Center Inbound/Outbound PBX, CRM, MailChimp, USAePay, eCommerce, Affiliate Pro, Quickbooks & Accounting, Security & PCI Compliance, Nest, NOAA, E911 Network Overlay, Facebook, Twitter, Peoplesoft, Oracle Financials, SAP.
- Mobile : iOS, Android, Blackberry, JavaScript, Xcode, HTML5, CSS, Responsive HTML, Bootstrap.
- Databases : PostgreSQL, Oracle, MS SQL, DB2, Sybase, MySQL, MongoDB, IBM AS/400, RDB, RMS
- Operating Systems : Unix variants, OpenVMS, Windows, OS400
- Other : IIS, PHP, ASP, XML, PERL, HTML5, CSS, Photoshop, Google Analytics, Power Director,
- Tools Methodology : General Software Development Life Cycle (SDLC), Waterfall, Spiral/Iterative, Confluence, Jira, Scrum, Agile development, Several Project Management Tools, Stress Testing.

Edmond S. Vea, NGA 911's Engineering Executive, Project Manager, and Technical Expert, has over 20 years' experience in owning, operating, managing, and consulting to businesses and government in Germany, Italy, Japan, and the United States. His experience includes Managing Sales and Engineering Teams; and serving clients including Deutsche Telekom, Ericsson, AirTouch, Vodafone, T-Mobile, Verizon Comcast, Accenture, McKinsey, the Departments of Justice and Homeland Security, and Bloomberg LP. Mr. Ve served as CEO of Detecon Inc and ClosedNetworks. He managed commercial cellular and public

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safety communications projects for DETECON as well as for Municipal Clients in Tennessee, North Carolina, Virginia, New Jersey and New York.

Darold Whitmer, NGA 911's Strategic Relationships Executive. He has extensive experience with telecommunications service providers having worked in public safety sales and marketing for AT&T, Verizon, CenturyLink and Frontier. Mr. Whitmer is a recognized expert and frequent speaker on topics such as Wireline 9-1-1, Wireless 9-1-1, Next Generation 9-1-1, Voice over IP 9-1-1, as well as 9-1-1 legacy and IP networks at national, regional and state public safety conferences.

Michelle Bland, NGA 911's Senior Vice President, Operations, was formerly the 9-1-1 Program Manager and Administrator of the C9-1-1 Program for the California Highway Patrol. Ms. Bland provides technical support. She analyzes IT/Telecommunications project documents to ensure effectiveness, and to consider feasible alternatives, and to weigh project merits.



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1-6. Refer to ARSD 20:10:24:02(9) and ARSD 20:10:32:03(12): provide the applicant's income statement and cash flow statement. In addition, are audited financial statements available?

**Response:** A copy of Applicant's most recent financial information is attached as Confidential Exhibit DR1-6. This financial information replaces the financial information provided as Confidential Exhibit E to the Application. Applicant respectfully requests confidential treatment of this material.

At this time, Applicant does not have a cash flow statement since Applicant has not yet begun providing service to customers. Therefore, to the extent necessary, Applicants requests a waiver of ARSD 20:10:24:02(9) and ARSD 20:10:32:03(12) only to the extent that a cash flow statement is required.

At this time, Applicant does not have audited financial statements.

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1-7. Refer to ARSD 20:10:24:02(10): Provide a description of how the applicant handles customer service matters.

**Response:** NGA 911 will maintain 24 hour 7 days a week emergency contact number available to customers. NGA 911 currently maintains (877) 899-8337 x2 as a 24x7x365 emergency contact number for our customers. Further details on NGA 911's planned customer support is provided below

Customer Support Services. All services and network connections are redundant and deployed as "mated pairs". This provides continuity of service and ensures full delivery of service in the event of a single element or connection failure.

NGA 911 is the "single point of contact" for service requirements. All providers associated with a response will share issues and resolutions through a unified help desk solution covering the following areas:

- Transition Network
- Service Elements
- Administrative Adds, Moves, and Changes

NGA 911 shares ticketing information and works to expeditiously resolve service issues across our subcontractors. Ownership of issues is clearly defined. And, members won't get stuck in the middle trying to determine the root cause of a problem.

Support services include:

- Service Desk - a 24x7x365 availability Help Desk.
- Access to Tier 1-3 support services.
- Service Desk accountability and coordination where all activities managed by a single entity.
- Monitoring, including:
  - SNMP monitoring for hardware failures
  - QoS and network performance monitoring
  - Application specific alerts to monitor software performance
- Notification - critical and major alerts will be provided, as well as regular updates.
- Web Portal - a real-time view of the network, with drill-down capability to a specific device.

Help Desk. 24x7x365 support is provided with multiple levels of the technicians and expertise in all elements. Front line support is backed up by three tiers up support to ensure timely resolution of all

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issues. Services are supported via email, chat, phone, and an online trouble ticketing system complete with incident history.

Incident Handling. Root Cause Analysis reports are always available for every incident. Every stakeholder of the incident has real-time visibility into the incident, and can receive updates via web, email, sms, or IM. When a production system is either impaired or down senior management is immediately and automatically notified and engaged.

In NGA 911's commitment to full transparency direct participation in incidents by our customers is always encouraged. Further, a complete timestamped audit log with audio recordings captured and shared to stakeholders.

Incidents are electronically processed and managed. Incidents are initiated by stakeholders via voice, web, SMS, or IM. Stakeholders have full visibility with real time updates via web, email, SMS or IM. Incidents are never noted as "resolved" until a full resolution has been reached.

Furthermore, comprehensive analysis of incidents is performed by management on a routine basis. Proactively, incident trends are reported to observe and report on any emerging trends.

NGA 911 designed its solutions to be robust, reliant, and maintaining business continuity.

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1-8. Related to ARSD 20:10:32:03(13)(c): As the company has not yet made any requests for interconnection in South Dakota, provide a copy of any request for interconnection made by the applicant in any of its jurisdictions where it does business similar to what it is requesting to do South Dakota.

**Response:** As a result of negotiations begun in February, NGA 911 is awaiting an executable interconnection agreement from CenturyLink that includes South Dakota. Although negotiations began earlier, NGA 911 submitted the CenturyLink interconnection request on February 21, 2019. A copy of the request form is provided as Confidential Exhibit DR1-8. To date, NGA 911 has not requested interconnection with any other local exchange carriers in South Dakota. In addition to the multiple agreements NGA 911 requested from CenturyLink, NGA 911 has executed or requested agreements from AT&T and Frontier/Citizens. Since ARSD 20:10:32:03(13)(c) only applies to interconnection with South Dakota local exchange carrier and NGA 911 has now requested interconnection with a South Dakota local exchange carrier, NGA 911 interconnection agreement requests for ILECs not serving South Dakota are not included with the information being provided here.

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1-9. Related to ARSD 20:10:32:03(14): The copies of the Applicants company brochures and marketing materials are blurry and difficult to read. Please resubmit.

**Response:** Please see attached CONFIDENTIAL Exhibit F.

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1-10. Refer to ARSD 20:10:32:03(15): If it is the applicant's intent, please submit a waiver of ARSD 20:10:32:15 pursuant to ARSD 20:10:32:18.

**Response:** Applicant respectfully requests a waiver from having to satisfy the eligible telecommunications service requirements as set forth in 47 U.S.C. § 214(e)(1) (September 10, 1998) and applicable federal regulations. Applicant's request for a waiver will not adversely impact universal service, will not affect quality of service, and such waiver is in the public interest because Applicant plans to provide emergency call routing and related services to state and local government agencies to support PSAP operations and will not provide traditional local exchange services to retail residential or business end users in any area of the state, including service areas of a rural telephone company. Applicant further does not seek status as an Eligible Telecommunications Carrier as described in ARSD § 20:10:32:15. If Applicant at a subsequent time seeks to provide local exchange service to retail residential and/or business end users, or seeks certification as an Eligible Telecommunications Carrier, it will seek permission from the Commission in a separate proceeding before providing such service, including before providing such service in the serving area of a rural telephone company. For these reasons, the grant of a waiver from ARSD § 20:10:32:15 is warranted and should be granted.

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1-11. Refer to ARSD 20:10:24:02(11) and ARSD 20:10:32:03(18): Will the company receive any money in advance of services rendered?

**Response:** Because Applicant does not plan to provide traditional local exchange and/or interexchange telecommunications services to residential and business end users it believes these provisions do not apply. Applicant intends to compete for the business of state and local government agencies in support of PSAP operations. Contracts for such services are typically awarded via a competitive bidding process after the relevant agency issues a Request for Proposal (RFP). The agency RFP will typically set forth the terms of payment, and it is possible that some awards may provide for payment before the NGA 911 solution is fully deployed and operational, but it is unclear at this preliminary juncture.

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- 1-12. Refer to ARSD 20:10:32:10: Please explain in writing why the company is unable to comply with 20:10:32:10(1)-(7). Please explain for each waiver, how:
- (1) The requirement is not necessary based on the type of service being provided to by the company;
  - (2) The waiver is not contrary to universal service, the public safety and welfare, and quality of service; and
  - (3) The waiver is in the public interest.

**Response:** Applicant respectfully requests a waiver from ARSD § 20:10:32:10(1)-(7) consistent with its Application at p. 13. NGA 911 is a technology company competing to provide Next Generation 911 services to state and local governments that administer the state's PSAPs. Applicant will not be providing standalone retail local exchange or interexchange telecommunications services to business or residential end users. Accordingly, Applicant respectfully requests a waiver of each of the provisions of 20:10:32:10 which do not appear relevant to NGA 911's planned service to emergency service agencies and their PSAP operations.

The requirements of ARSD § 20:10:32:10(1)-(7) are not necessary based on NGA 911's planned Next Generation 911 services. The requirements regarding access to the PSTN, directory assistance, operator services, nonpublished listings and access to interexchange services are not relevant to the Next Generation 911 system NGA 911 will offer to its state and local government customers.

Nor would a waiver of these provisions have any impact on universal service or quality of service. And NGA 911's Next Gen 911 service will enhance public safety by improving the accuracy of location data used in responding to 911 messages and providing the public with the ability to send other data besides voice, such as text and video to alert 911 authorities of their emergency.

With respect to the requested waiver from ARSD § 20:10:32:10(2), Applicant plans to provide emergency call routing, transport, and related functionalities to state and municipal governmental agencies to support PSAP operations for Next Gen 911. And NGA 911 will provide IP-based 9-1-1 services capable of also supporting traditional telephony-based 9-1-1 services and wireless 9-1-1 services with an eventual transition to Next Gen 9-1-1. Applicant, however, does not believe that its planned services to such agencies are covered by (2) because they do not directly provide an end user access to emergency services but rather will connect the end user's carrier to the PSAP.

Applicant's request for a waiver is also in the public interest as it will facilitate efforts by state and local government public safety agencies to transition to Next Gen 911 services for the benefit of the residents of the state.

Applicant's request for a waiver of subsection (5) regarding telecommunications relay services does not mean that NGA 911's emergency calling services will not accommodate emergency calls made through telecommunications relay or other similar services for the hearing and speech impaired communities. Such services are fully compatible with NGA 911's solution that will include the ability for traditional TDM calls – including relay calls – to continue to reach 911 and the appropriate PSAP. But Next Gen 911



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will enhance the ability of members of the hearing and speech impaired community to communicate with 911 and thus is in the public interest. The evolution to Next Gen 911 will allow the hearing and speech impaired communities to use other non-voice means of communication to reach emergency services, such as text messaging which will enhance the effectiveness of emergency services for such communities.

Applicant's request for a waiver is predicated on its current plan to provide service to state and local governments in support of their PSAP operations. If Applicant at a subsequent time seeks to provide traditional local exchange and/or interexchange service to retail residential and/or business end users, it will seek permission from the Commission in a separate proceeding before providing such service.

Granting this Application will promote the public interest by increasing competition in the provision of Next Gen 911 in South Dakota. For these reasons, the grant of a waiver from ARSD § 20:10:32:10(1)-(7) is warranted and should be granted.