

TDD/TTY	
1. Ability to support Baudot-format TDD/TTY dialogue from callers at every position.	C – Baudot is supported.
2. Ability to provide TDD/TTY detection and alerting at each call taker position.	C – Baudot is automatically detected after the call taker invokes the TDD utility.
3. Ability to capture and provide permanent record of TDD/TTY dialogue; vendor to describe approach to TDD/TTY call logging.	C – TDD calls are printed as a permanent record of the conversation.
Ability to support Instant Messaging (IM) and Short Messaging Service (SMS) and text messaging dialogue from public ‘callers.’	C – The IP-centric system supports text messaging; the manufacturer recently demonstrated an SMS gateway at the National NENA convention. The functionality will be fully implemented once standards are ratified.

COMPUTER AIDED DISPATCH AND MAPPING INTEGRATION	
1. System shall transfer all of the available ANI/ALI data into a CAD incident entry application, including location lat-long data.	C – ANI/ALI data is ported to the CAD server via a NENA-compliant CAD port in a NENA-compliant format.
2. System shall provide interface to third-party or vendor mapping application for real-time display of inbound call information. Integrated mapped ALI display is preferred.	C – ANI/ALI data is ported to third-party mapping servers via a NENA-compliant CAD port in a NENA-compliant format. Integrated mapped ALI is not proposed as part of the solution.
3. Ability to support integrated mapping application co-resident on Intelligent Workstation.	C – Third-party mapping applications can be installed on the positions. We recommend that this be tested in our System Verification Labs to determine whether there are any conflicts between the two applications, for example, port conflicts which could impact functionality. Any conflicts will be identified to CSI for resolution at CSI’s expense.
WARRANTY	
1. Vendor to describe warranty services included in the proposal.	C - A one year comprehensive (hardware and software) warranty is included as part of the proposed solution. It includes 7/24 telephone support and a parts replacement service.

LOGGING AND INSTANT RECALL RECORDERS

<p>1. Vendor to provide data logging system with capabilities to handle multi-media recording in the future.</p>	<p>C – A Digital Logging Recorder (DLR) is offered optionally. The DLR is sized to record telephony traffic only given the clarification provided September 7, 2010 which indicated that the radio interface module should be proposed optionally to allow individual PSAPs to determine their specific requirements.</p>
<p>2. Vendor to provide Instant Recall Recording and playback application software at each workstation position with the ability to integrate with existing analog voice logging recorder at each PSAP.</p>	<p>C – The Call Taker Interface includes a fully integrated Instant Recall Record application. Each position is provisioned with a PAC module which provides the interface to the analog voice logging recorder at each PSAP.</p>

MANAGEMENT INFORMATION SYSTEMS

<p>1. System to provide for a Management Information System (MIS) reporting of transaction volumes and system performance for overall system as well as significant components.</p>	<p>C – The proposed solution includes a fully integrated MIS application which allows administrators to analyze the operation of the PSAP or group of PSAPs.</p>
<p>a. MIS and reporting application to allow access all captured database elements.</p>	<p>C – All data fields can be accessed and reported on.</p>
<p>b. Detail of MIS reporting to provide for both individual PSAP and system-wide transaction volumes and call handling performance.</p>	<p>C - he proposed solution includes a fully integrated MIS application which allows administrators to analyze the operation of the PSAP or group of PSAPs.</p>
<p>c. MIS reporting to provide for time and day of week summary reporting in tabular and graphical formats.</p>	<p>C – Time periods for reports are configurable.</p>
<p>d. Reporting application to provide for selection of indexing and sorting keys by any formatted field.</p>	<p>C – The MIS application supports ad hoc reports.</p>
<p>e. MIS to capture and report System Availability, including alarms, error reports, and platform status.</p>	<p>D – As clarification, this functionality is provided by the systems diagnostic utility, not by the MIS application.</p>
<p>f. MIS to capture response time to PSAP ALI database inquiries and re-bids.</p>	<p>D – This functionality is not currently supported.</p>
<p>g. MIS shall be capable of capturing data from all circuits within the system, including inbound 9-1-1 trunks, administrative lines and dedicated ring down circuits, as well as outbound calling.</p>	<p>C – The MIS application reports on all calls.</p>

<p>2. Each data center shall be equipped with a management information system which tracks incoming calls and provides flexible real-time information and periodic reporting. Access to information shall be acquired remotely by permissions. Available information for a requested time period shall include at a minimum:</p> <ol style="list-style-type: none"> a. Number of total calls received b. Number of abandoned calls c. Number of calls on a per trunk/per circuit basis d. Number of calls on a call type (wire line, wireless, VOIP, etc.) basis e. Number of calls conference/transferred f. Calls conference/transferred by destination (e.g., secondary PSAPs) g. Number of calls on a log-on or per position basis h. Average time to answer i. Average length of call and average hold time 	<p>C - The system supports both ad hoc and preconfigured reports.</p>
<p>3. Each data center shall be equipped with a Call Detail Record (CDR) function that provides for capture, search and retrieval, display, and printing of information regarding each 9-1-1 call:</p> <ol style="list-style-type: none"> a. Date received b. Trunk seize/call appearance time c. Caller's telephone number d. ANI, ESRK or other routing identification e. Answer time f. Answering position identification g. Trunk/circuit identification h. Time call was released i. Time call was transferred j. Transfer destination k. Abandoned call indicator l. Ringing start time m. Time call was placed on hold and taken off hold and by what position n. All ALI data, including name, address, community, ESN, Class of Service, etc. <p>Data may be accessed remotely from the psaps with permissions.</p>	<p>C - The MIS application captures the data associated with 9-1-1 and admin calls.</p>
<p>4. Ability to direct MIS reports or Workstation printouts to any Local Area Network-attached printer.</p>	<p>C - Like other Windows based applications, print jobs can be directed to any printer on the network if permission is given by the system administrator.</p>
<p>5. Ability to export formatted detailed records or</p>	<p>C - Data is exported for further</p>

summary report tables for analysis with third-party applications (e.g., Microsoft Office).	evaluation.
6. MIS reporting to be fully initialized prior to operational use of system; this includes any procedures, routines and scripts for daily, monthly and annual periodic reporting.	C – Training is provided on the MIS application prior to cutover and the application is tested to ensure that it is collecting the requisite data.

SYSTEM ADMINISTRATION	
1. Ability for the customer to administer appropriate system features and configuration without voiding warranty or support agreements.	C – Reconfiguration activities are intuitive and fully supported by the system and the manufacturer.
2. Ability for customer to administer call queuing and call routing parameters.	C – Any configurable parameter can be reconfigured by authorized users.
3. Ability to support centralized and customer administered backup and recovery policies.	C – The customer is encouraged backup system data in a centralized location.
4. Ability to support on-line centralized backup	C - The customer is encouraged backup system data in a centralized location.
5. System to support use of generally available third-party platform protection products, such as anti-virus, spyware and Trojan protection applications. Vendor to specify responsibility for updates to applications and signature files.	C – The COTS based solution fully supports the use of industry standard programs and protection products.
6. Vendor to describe the implementation of end-to-end security and authentication in the proposed configuration.	C – Access to the system is password protected at each user interface. An audit trail is maintained of all access to the system.
7. Ability to automatically provide outbound pager and email notification to support personnel of system events and alarms.	C – The system supports email notification to a predetermined distribution list.
8. The system shall provide real-time call volume and call status information at remote locations, including: <ul style="list-style-type: none"> a. Positions Logged On/Ready/Available b. Positions Busy/Off Hook c. Positions Not Ready/Out of Queue d. Calls in Queue/Calls Pending e. Calls Holding/Calls Parked f. PSAP Status (e.g., system OK, connectivity good) 	C – The CTI includes a PSAP tenant status bar which provides the following information: <ul style="list-style-type: none"> * Number of Active Operators * Number of Active 911 calls * Number of 911 calls on hold * Number of 911 calls ringing The workstation/server status is displayed on the status bar. Both local and remote positions are connected to the system via IP

SYSTEM ADMINISTRATION	
	and have access to identical functionality and data.
9. Ability to provide a real-time display of system availability, call taker availability & calls in progress.	The customer is encouraged backup system data in a centralized location.

SYSTEM PERFORMANCE	
1. System to provide overall 99.999% availability, measured on a 24 hour per day, 7-day per week basis, accumulated over a one-year period. Vendor to clarify compliance and/or describe any exceptions.	C – The fault tolerant system is deployed with redundant vital modules to ensure that the failure of a module does not result in downtime. Circuits are distributed across multiple interface modules to ensure that the loss of a module does not result in the loss of system functionality, or downtime.
2. System to support automated, unassisted restoration from stoppages or outages, including significant network components and application software.	D – As clarification, manual intervention may be required in instances of module failure.
3. System to provide positive/affirmative alert to each call taker position of off-line status, error conditions or conditional events.	C – The workstation taskbar displays the workstation/server status at all times.
4. The system shall support localized supervision and reporting of ANI and ALI failures, network outages, etc.	C – ANI and ALI failures are captured by the MIS application and/or the systems diagnostic utility.
5. The system shall provide in each PSAP readily visible and (selectable) audible indicators of emergency and non-emergency calls pending.	C – Emergency and admin calls have unique; configurable, audible and visual alerts of incoming calls.
6. Vendor to describe their recommended approach to node and link redundancy to meet Availability Performance Requirements.	C – The system is deployed with redundant ALI links to ensure that the loss of a link does not result in the loss of ALI data to the PSAP.
7. Vendor to describe their system architecture as it relates to failover and fault tolerance. The scope of this discussion should include the	C – PSTN circuits are distributed across multiple gateways to ensure that the loss of a gateway does not

SYSTEM PERFORMANCE

PSTN entry, the gateway into the 9-1-1 IP network, traffic paths to the network endpoints, and any crucial devices within the scope of the relevant network fabric.

result in the loss of system functionality.

The 9-1-1 IP network relies on the TCP/IP protocols to ensure reliable delivery of calls to the system.

All vital modules are deployed redundantly to ensure that the loss of a module does not result in the loss of system functionality.

MAINTENANCE AND SUPPORT

1. Vendor to provide a fixed cost for annual tier 2/ tier 3 maintenance after the warranty period. Maintenance begins at the end of the Warranty period and is defined as the resolution of application software and configuration issues at no additional cost to the customer. Vendor to provide a proposed Maintenance and Support scope of services statement with proposal response. State your warranty period

C – Comprehensive warranty is offered for 12 months after date.

Comprehensive (hardware and software) support is offered for years 2 and 3. Comprehensive maintenance includes Return Material Authorization (RMA) service, 7/24 telephone support and replacement/repair of any defective equipment with the exception of equipment damage due to misuse or an Act of God.

2. Vendor to provide full and complete set of technical and maintenance documentation at each primary installation location.

C – Maintenance documentation is delivered during the training sessions; technical documentation, including as-builts is delivered as part of acceptance testing.

3. Vendor to maintain on-going trouble report tracking system and historical records of trouble reports and problem resolution.

C – Field Problem Reports (FPR) are opened at the manufacturer's Customer Support Center to track problems through to resolution. The FPRs are maintained on file for future reference and statistical analysis.

4. Vendor to recommend a complement of essential and recommended spare parts and component assemblies to be locally maintained; on-site secure storage will be made available at each PSAP. In no case shall any component in operational use be moved or utilized as a spare.

C – Recommended spares are included as part of the proposed solution – please refer to the Financial Proposal.

5. Vendor to utilize remote access for system and application diagnostics and maintenance. Vendor

C – The system is deployed with secure remote access ports to allow

MAINTENANCE AND SUPPORT

<p>to coordinate Virtual Private Network (VPN) or other secure access requirements with the CSI Information Technology staff.</p>	<p>technicians to access the system remotely via VPN. The VPN is configured in compliance with CSI IT policies.</p>
<p>6. As necessary to resolve Critical Issues, the vendor must anticipate the need for on-site, factory-trained staff, capable of diagnosing and supporting the installation of this platform.</p>	<p>C – If a critical problem cannot be resolved either by onsite staff or through remote access, technicians are dispatched to site.</p>
<p>7. Vendor to coordinate all maintenance activities with each PSAP. Vendor and PSAP to agree on migration checklist and notification schedule for any activities impacting operations.</p>	<p>C – We will collaborate with CSI to ensure that all maintenance activities are conducted in a timely fashion and in coordination with the appropriate staff.</p>

CONTRACT DOCUMENTS AND PROJECT DELIVERABLES

This section identifies the Contract Documentation and Project Deliverables to be provided by the Vendor. Contract Documents will be provided before the initiation of work by the successful vendor. Project Deliverables are to be provided by Vendor at key implementation milestones.

CONTRACT DOCUMENTS AND PROJECT DELIVERABLES

<p>1. Vendor-provided Contract Documentation to include:</p> <ul style="list-style-type: none"> a. All Software Licenses, Terms and Conditions, including third-party hardware and software. b. All Warranty Terms and Conditions specific to hardware, software and services. c. All Manufacturer or Vendor Maintenance and Support Terms and Conditions. d. Minimum specifications for customer and third-party provided equipment or facilities. 	<p>C – a. Software licenses, warranty and support terms and conditions are provided during the implementation.</p> <p>Hardware specifications are subject to change due to product line changes by COTS equipment manufacturers. Current specifications are provided below. As part of the contract negotiation process we will confirm that these are still valid or we will provide new specifications.</p> <p><u>Position PC:</u> Manufacturer: Dell Model: Vostro 430 Mini Tower H57 Memory: 4GB Dual Channel DDR3 SDRAM</p>
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CONTRACT DOCUMENTS AND PROJECT DELIVERABLES

	<p>1333 MHz – 4 DIMMs Vostro Processor: Pentium Dual Core, G6950 / 2.80GHz, 3M, Vostro Keyboard: Dell QuietKey Keyboard, 104, US Vostro Video Card: Nvidia G310, M114n, Vostro Hard Drive: 160GB Serial ATA Hard Drive (7200 RPM) w/DataBurst Cache Vostro OS: XP Pro, SP3 Vostro Mouse: Dell Optical USB Mouse Vostro CD-ROM: 16X (DVD +/- RW) Burner Drive Vostro Speakers: Dell AX210 USB Stereo Speakers Vostro Power: 125V AC</p> <p><u>Monitor:</u> Manufacturer: ELO Touchsystems Size: 19" Touchscreen Resolution: 1280 x 1024 Power: 125V A</p> <p><u>Fault Tolerant Server</u> Dell quad core Xeon Server 610 – further detail is not provided it planned to move away from this platform.</p>
<p>2. Vendor-provided Project Deliverables to include:</p> <p>a. <i>Project Management Plan</i>, provided at the initiation of the vendor’s work program. Project Management Plan to include identification of named individuals, their roles/responsibilities and contact information. Any required transmittal documents or approvals not identified in the Contract shall be identified and described in the Project Management Plan.</p> <p>b. Attach an Estimated Project Plan in Gantt Chart format with your proposal.</p>	<p>C – A detailed Project Management plan will be provided.</p> <p>An Estimated Project Plan is provided as an attachment to this proposal.</p>

CONTRACT DOCUMENTS AND PROJECT DELIVERABLES

<p>c. <i>Implementation Plan and Project Schedule</i> to be negotiated with CSI. Plan to include description of CSI, vendor and third party responsibilities, including facility preparation requirements; any required data conversion and system migration plans; and Project Schedule to identify critical path elements and target milestone dates.</p>	<p>C – Schedule will be developed in collaboration with CSI.</p>
<p>• <i>Training Plan, Syllabus, Training Materials and Training Schedule</i>; documentation to be provided in advance of training sessions. Training Plan to identify any pre-requisites, duration of sessions and objectives. Syllabus to provide agenda and topics to be covered during each training session. Training Materials includes any attendee hand-outs, reference sheets, tests, presentations or other instructor-utilized materials. The Training Schedule is the calendar of training sessions, identifying planned dates and times of training sessions to be provided by the Vendor. Sufficient printed copies of End User Instruction Manuals for all attendees.</p>	<p>C – The Training Plan will be developed in consultation with CSI.</p>
<p>d. <i>Periodic Project Status Reports</i>; written reports provided no less than monthly through the duration of installation project.</p>	<p>C – A dedicated project manager will be assigned to the project and will provide regular reports.</p>

INSTALLATION, TESTING AND TRAINING

<p>1. Physical installation work by vendor shall utilize best industry practices and adopted national standards.</p>	<p>C - Certified installers will be assigned to the project.</p>
<p>2. All cables and demarcation points are to be clearly labeled. All cables are to be bundled and secured to avoid disconnection during normal use and servicing access.</p>	<p>C – The structured cabling plant is installed to industry standards.</p>
<p>3. All cables installed in workstation furniture shall be provided in a length to accommodate the full range of workstation motion, as well as providing for access and removal for servicing.</p>	<p>C – The structured cabling plant is installed to industry standards.</p>
<p>4. All interface components (e.g., impedance or protocol matching boxes) shall be labeled and secured.</p>	<p>C – Interface modules are securely bolted in the Central Equipment Cabinet.</p>
<p>5. Vendor to coordinate all on-site activities to minimize disturbances to dispatch operations at each PSAP. Vendor to provide prompt and timely notice of any potentially public safety service-impacting activity.</p>	<p>C – A Project Manager will be assigned to the implementation and will ensure that coordination and communications are optimized.</p>
<p>6. Proposed training schedules to be coordinated and mutually agreed to with no less than two weeks notice.</p>	<p>C – We will collaborate with CSI to identify the optimal training schedule.</p>
<p>7. Vendor shall provide training to an initial cadre of system users and administrators. Vendors will</p>	<p>C – We will collaborate with CSI to identify the optimal training</p>

CONTRACT DOCUMENTS AND PROJECT DELIVERABLES

anticipate providing some training sessions outside normal hours to accommodate call taker schedules.	schedule.
8. The solution should allow for CSI's IT personnel to be trained to provide primary on-site Tier 1 support of the system.	C – Installation and Maintenance courses are included as part of the proposed solution to allow CSI's IT personnel to perform Tier 1 support for the system.
9. Vendor to include a brief description of the training courses that will be offered and which customer personnel should attend.	C – Training Syllabuses are provided as part of the Technical Narrative.
10. Vendor to describe Customer responsibilities for training.	C – The customer is responsible for ensuring that scheduled courses are not cancelled or postponed.

SYSTEM MONITORING

1. Proposed system to provide error logs and diagnostic information sufficient to support vendor troubleshooting. Vendor and/or Customer to provide any additional hardware components or application software required to diagnose reported Critical or Serious issues.	C – The system includes a fully integrated diagnostic utility which provides the detailed system information required to troubleshoot and maintain the system. No additional hardware or software is required or recommended.
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MASTER CLOCK SUBSYSTEM

1. Vendor to ensure that the master clock subsystem shall provide NTP (Network Time Protocol) and SNTP (Simple Network Time Protocol) time synchronization outputs for additional information systems, such as: a. Computer Aided Dispatch b. Database and Communications Servers c. Logging Recorders	C – A Master Clock is included as part of the proposed solution.
2. The master clock subsystem shall provide a time synchronization source to all PSAPs.	C – The Master Clock enables NTP time synchronization of networked elements.

INTEGRATED IP-BASED PBX (OPTIONAL)

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1. Must be software based. - Comply
2. Must enable seamless transfers between the 9-1-1 system and IP-PBX.
- Comply
3. Must have built-in failover to allow admin calls to be processed by 9-1-1 system if IP-PBX is unavailable. – Do Not Comply
4. Must include extensions (phone and mailbox) that can have multiple phones connect to it from the same extension number. - Comply
5. Minimum features must include: Auto Attendant ; Conference ; Hunt Group; Agent Group; Calling Card (DISA); Paging; Service Flag; and IVR Node - Comply
6. Must include as an option call recording to enable the recording of all calls on an extension at all times. Recording should take place for inbound calls from hunt group, agent group, all internal calls, all external calls or both internal and external calls. – Do Not Comply
7. Proposer must specify all associated costs including maintenance and support of the IP-PBX solution in the Price Proposal. These costs should be listed as a separate option for purchase.

A fully integrated IP-PBX which provides advanced call handling capabilities for administrative personnel is offered optionally. The IP-PBX offers the following functionality:

- Auto Attendant
- Paging Groups
- Dial by Name
- Password and PIN per extension
- Extension Dialing
- Call Forking to Cell phone
- Camp on from Cell phone
- Voice Mail
- Voice Mail notification through email
- Voice Mail call escalation
- DID routing
- Do Not Disturb
- Redial
- Call Transfer
 - Blind & consultative

- **Hot Desking**
- **Call Forward**
- **Call Hold**
- **Day/Night/Holiday modes**
- **Intercom through star code**
- **Music on Hold**
- **Caller ID**
- **Calling Card – DISA**
- **Fax Relay**
- **Agent Groups**
- **Instant Conference**
- **Multi Line Presence**
- **Call Park/Call Pick up**
- **Conference Rooms**
- **Auto Attendants**
- **Hunt Groups**
- **Three way calling**
- **Call barge, listen, teach**
- **Call recording**
- **Auto Call Distributor**
- **IVR nodes**
- **Plug and play for IP phones**
- **Paging**
- **Anonymous Call Intercept**
- **Intercom**

The fully integrated IP-PBX provides visibility of the admin lines to PSAP dispatchers on the Call Taker Interfaces (CTI) and allows 9-1-1 and admin calls to be transferred/conferenced between administrative offices and PSAP dispatchers.

OPTIONAL – GIS DATABASE MANAGEMENT SYSTEM
To follow are the requirements for a GIS data management solution.

Type & Section	Technical and Feature Requirement Question	Response Code	
General Features	1.1	Can edit the following GIS layers: Roads, Sites, Driveways, Landmarks, ESZ, ESA, Hydrology, Utility Lines, Railroads, Town boundaries	EX
	1.2	Application must automatically read wireless data from a standard wireless carrier file and build <i>or</i> update the tower point file and the sector coverage areas.	EX
	1.3	Provide for the import of the Telco MSAG and provide automatic matching with the GIS road data	EX
	1.4	Allow for the automated updates from other users of the software. The updates must be selectable by region or date. (E.g. import only the records after a particular date or in a particular region)	EX
	1.5	Allow export of a "Public Data Set" that excludes personal information	C
	1.6	Provides for the export of CAD Data and CAD "Geofiles"	EX
	1.7	Provides for the creation and export of a wireless ALI Database that may be used for spatially routing phase 2 wireless calls	EX
	1.8	Application must provide a set of evacuation tools	EX
	1.9	Create any number of evacuation zones (radius, custom, etc.)	EX
	1.10	Produce a dialing list for all TNs in any/all evacuation zones directly from the ALI database or a pre-processed ALI database	EX
	1.11	Application must allow export of data by date, region or manual selection	C
	1.12	Application must import/export Telco MSAG	EX
	1.13	Application must import/export ALI database	EX
	1.14	Application must link ALI records to sites	EX
	1.15	Application must link MSAG records to named road segments	EX
	1.16	Display the GPS point and line trace data of each driver in the field symbolized by driver and day in the field. GPS trace should also be symbolized to show differentially corrected points clearly from non-corrected points.	EX
	1.17	Build ESZ directly from Telco MSAG	EX
	1.18	Provide 1-click polygon merge/explode	EX
	1.19	Provide a selection control that allows one-by-one review of any selected set. The control must zoom to the location of each feature as it is selected for review.	EX
	1.20	Zoom In/Out, Zoom to Lat/Long, Zoom to any site, road, ESN, ESA, etc.	C
	1.21	Conflate attribute information between any two sets of road data or any two sets of polygon layers	EX
	1.22	Provide for an enhanced, quick method to capture sites and/or driveways from digital orthos or other imagery	C
	1.23	Application must provide a quality control system that assures proper assignment of road names to site addressing	C
	1.24	Application should provide a control for Pan & Zoom in a controlled manner for organized review of data	C

Type & Section	Technical and Feature Requirement Question	Response Code
	1.25 Image data (digital orthophotos) can be selected automatically without manual interpretation of image location	C
	1.26 Road naming, address labeling, town labeling, etc. is performed automatically with non-overlapping labels of all features from the attribute information of each layer.	C
	1.27 Manual labeling must be an option.	EX
	1.28 Find any address, site or named road quickly	C
	1.29 Application must provide a simple backup and restore function	EX
	1.30 Application provides an auto-geocoding function that will update the road centerline address ranges based on the actual site addresses adjacent to each road segment <i>or</i> minimum and maximum address range on each segment based on the addressing increment used on the road or the average increment along the road. The min/max function must not allow overlapping ranges between segments.	EX
	1.31 Application can display tax map data and any other layers	EX
	1.32 Show map units in Degrees-Minutes-Seconds or Projected Units	EX
	1.33 Automatically import new and verified data from the field including site pictures	EX
	1.34 Import/Export functions to move data to/from field for verification and collection.	C
	1.35 Automatically receive and setup up for the review of GIS discrepancies captured by call-takers	EX
	1.36 Developed on ESRI ArcGIS 9.3	C - ArcGIS 10
	1.37 Interfaces with ESRI ArcSDE (Enterprise, Workgroup, Personal, File)	C
	1.38 Manages data in personal geodatabase and enterprise Geodatabase	C
	1.39 Interfaces with Microsoft SQL Server 2005 and/or 2008	C
	1.40 Integrates with microDATA's map display software (ALI-Trakker or xTrakker) and data field collection software (x9Collector)	EX
Site Maintenance (address point data)	2.1 Edit site location & attributes: address, zip, resident, units, access, site type, picture, grand-father status, side-of-road, etc.	EX
	2.2 Addressing maintains new <i>and</i> old addresses	EX
	2.3 Auto-addressing of new/existing sites according to standard	EX
	2.4 Auto-addressing of an entire road or township with one mouse click	EX
	2.5 Synchronization with GIS addresses with ALI addresses	EX
	2.6 Maintains Emergency Service Zone for each site	EX
	2.7 Maintains Township for each site	EX
	2.8 Automatic notification for illogical or mis-numbered sites	EX
	2.9 Maintain pictures and/or floor plans	EX
	2.10 Maintains resident unit information for each site an each unit within the building or site	EX
	2.11 Maintains verification status of GPS field work at site	EX

Type & Section	Technical and Feature Requirement Question	Response Code	
	2.12	Provides addressing based on access point, building or driveway location	C
	2.13	1-click for address at any point, or picture of any site	C
	2.14	Adjust addresses on a single road by a given amount	C
	2.15	Reverse the addressing on a road	C
	2.16	Prepare completely automated notification letters	EX
	2.17	User-definable text for any number of letters	EX
	2.18	Auto merge from entered data	EX
	2.19	Each letter includes a map of addressed location	EX
	2.20	Each letter includes a picture of the building at that location	EX
	2.21	Maintains USPS Class file for easy update by USPS	EX
	2.22	Maintain links to USPS, Assessor, and Utilities	EX
	2.23	Unit data with name and matched TN and utility meter number	EX
	Road segment maintenance	3.1	Road naming and Segment Address Ranges
3.2		Road names managed from a single table	C
3.3		Maintain official name, 3 Aliases, and the ALI Name	C
3.4		Provide any standard addressing method, increment, rules	C
3.5		Synchronization with MSAG road names	EX
3.6		Connectivity Audits to assure that road segments connect	EX
3.7		Add, Edit, Move, Snap, Split while maintaining geocoding	EX
3.8		Can view by road direction or road class	C
3.9		Maintain Route #, Class, Address Range, Direction	C
3.10		Provide an auto-extend function to avoid manual splitting of intersecting roads when adding a new road	EX
3.11		Automatic field verification update	EX
Emergency Service Zone Maintenance	4.1	Reshape/Drag ESZ boundaries to change selective transfer	EX
	4.2	Auto-update of MSAG from ESZ	EX
	4.3	Add a new ESZ with/without new ESN definition	EX
	4.4	Maintain ESN definitions	EX
	4.5	Maintain Emergency Service Agency (ESA) information	EX
	4.6	View ESZ by PSAP, Law, Fire, EMS	C
	4.7	ESZ/Wireless sector viewing/analysis – Allow overlay of wireless sector coverage areas over ESZ jurisdictions to view or determine the likely ESZ. ESN determination must be available in a completely automated mode or with manual override.	EX
	4.8	ESZ, ESN, ESA, MSAG, completely integrated with sites and roads	EX

Type & Section	Technical and Feature Requirement Question	Response Code
Development tools	5.1 Automated structure checker for all databases used in the application. If the structure is incorrect, the application must automatically correct the structure. If the layer/file does not exist it must make a new empty file ready for input.	EX
	5.2 Has a concatenation function to join information from two or more fields into one field	EX
	5.3 Auditing – Application must provide the following audits:	EX
	5.4 Complete log of all changes including date and user	EX
	5.5 Unique road naming, duplicate ARC-ID check	EX
	5.6 Problem address report – Correct parity, In proper order, Duplicate addressing, Proper road name, etc.	C
	5.7 Site address assessment report	EX
	5.8 Sites with no address <i>or</i> roads with no address ranges	C
	5.9 Find Coincident sites	C
	5.10 Site addresses have correct road name, ESN, side-of-road, etc.	C
	5.11 Road segment connectivity	C
	5.12 Geocoding address range check	C
	5.13 Road, site, ESZ, landmark, etc. data have valid attributes	C
	5.14 ESZ has valid ESN; ESN has valid ESA; etc.	EX
Map Generation & Maintenance	6.1 Create atlas map books	EX
	6.2 Detailed road and site map books (atlases) production	EX
	6.3 Atlas sheet development, maintenance	EX
	6.4 Map book covers and street index production	EX
	6.5 ESN map books	EX
	6.6 Large scale regional map sheets (up to 36"x48")	EX
	6.7 Maintains standard address, average increment address and grand-fathered (previous) address. Choose any for ALI.	EX
Wireless Data Preparation	7.1 Automatic development of wireless layers	EX
	7.2 Automatic entry of wireless tower/sector data from standard	EX
	7.3 Entry of cell-site by form or map entry	EX
	7.4 Editing of cell-sector areas	EX
	7.5 Visibility analysis based on terrain	EX
	7.6 Assign PANI's or cell-sector ID's and notify carriers of such assignment	EX
	7.7 Maintenance of ALI wireless database	EX
	7.8 Display of all or filtered set of towers	EX
	7.9 Automatic determination of expected ESN	EX
	7.10 Select sector for editing from table or map	EX
	7.11 Select any set of sectors for simultaneous display	EX
	7.12 Handle CAS or NCAS ID assignment	EX
Collection and Maintenance	8.1 Provides an integrated GPS collection and verification program that provides the following features:	EX
	8.2 Standardized field display of 9-1-1 layers integrated with GPS	EX

Type & Section	Technical and Feature Requirement Question	Response Code		
	8.3	Display moves with GPS and shows current location and trace	EX	
	8.4	Display allows editing in real-time of captured data	EX	
	8.5	Automatic import/export of sites requiring verification	EX	
	8.6	View, auto-link with ALI, USPS, Utility and Assessor databases	EX	
	8.7	Sites are "thrown" based on laser range-finder bearing & distance	EX	
	8.8	Automatic linkage and storage of digital pictures	EX	
	8.9	Quality control check of side-of-road and road name	EX	
	8.10	Collection of sites, landmarks, roads and driveways.	EX	
	8.11	Verification of address, location, road name, type of use, picture, side-of-road, addressing point, etc.	EX	
	8.12	Stores location specific comments to be reviewed by GIS tech.	EX	
	8.13	Provide comments from GIS tech for field review	EX	
	8.14	All data entry, moves, adds, etc. logged for supervisor review	EX	
	8.15	One-button click for end-of-day file transfer to office GIS	EX	
	8.16	Form driven to capture all pertinent 9-1-1 information	EX	
	ALI-Synchronization	9.1	Import ALI, MSAG, Daily Service Orders (DSO), MSAG Change Orders	EX
		9.2	Uses GIS data maintained above as source for data to synchronize with ALI data	EX
9.3		Synchronize MSAG-Road names; ALI-Site address; ALI-Road segments; MSAG-road range; DSO-Site address; DSO-Road segment; MCO-road seg.	EX	
9.4		Maintains a local copy of ALI database from changes	EX	
9.5		Maintains TN-site link for evacuation	EX	
9.6		Audit reports of fall-out	EX	
9.7		Handles all NENA and Bell standard formats	EX	

Optional GIS DBMS System

As you can see we have responded with EX codes for nearly all of the requirements in the optional GIS Database Management System. Rather than to go through every requirement and provide individual explanations for each we felt that it would be more practical to provide CSI with a thorough explanation of our GIS data management strategies both in terms legacy and NG9-1-1.

First of all we recognize that the type of system that CSI is looking for is a fairly heavyweight program, most likely extending the abilities of a robust GIS editing platform to provide 911 specific data management tasks. While we have provided ArcView extensions to our customers in the past we chose to discontinue these tools once ESRI's ArcGIS suite was sufficiently able to handle most of these management processes out-of-the-box. There are very few requirements within the optional GIS DBMS list that cannot be met by an experienced GIS analyst either directly or through his or her application of models and scripts within ESRI's ArcGIS suite. This strategy was pursued to leverage ESRI's wealth of software, training, and consulting services to build more competent GIS analysts and, where necessary, allow for the flexibility of the customer to choose whichever GIS editing suite they feel most comfortable with. Lastly, this approach does not require the customer to be bound to a specific 911 GIS vendor for GIS data management software.

In the legacy world we have defined a GIS data format that we require for the operation of our mapped-ALI software. The customer need only provide data that meets or exceeds those requirements. They can choose

to do so through the out-of-the-box functionality of their GIS editing suite, they may choose to purchase a vendor's GIS data management solution and use the tools within to build and maintain the necessary layers or, they may wish to subscribe to our GIS data maintenance services in the event that they don't feel comfortable maintaining any GIS data. Whatever option our customers choose is fine by us so long as the data provided as input into the mapped-ALI program meets or exceeds the data requirements. Our mapped-ALI product will connect to this data regardless of whether it's in shapefile on the local machine or stored within an ArcSDE/ArcGIS Server somewhere on the network. That's our traditional approach for managing GIS data in today's world.

With the transition to NG9-1-1 we see a need to alter this strategy a bit. In NG9-1-1 GIS data is no longer an ancillary dataset used to turn ALI into a physical location on a map. It plays a critical role in the validation of 911/service addresses (replacing the MSAG as the address filtering mechanism) and in the routing of a call to the appropriate PSAP. For a cost-effective and efficient NG9-1-1 implementation we feel there is a need for the PSAPs (which have traditionally been islands of GIS information) to work together and manage their 911 layers from a centralized location. This approach offers two important benefits. First, the centralization of GIS data minimizes the number of ECRF/LVF servers and thus decreases cost. Second, since the data becomes centralized it allows PSAPs to create a seamless regional GIS dataset which can be used in all PSAPs.

As part of our NG9-1-1 data management strategy we are creating an online portal for the management of the core GIS layers specified by NENA's 08-003 "Detailed Functional and Interface Specification for the NENA i3 Solution - Stage 3" document for ECRF/LVF operation and NENA Standard 02-010 "NENA Standard Data Formats for ALI Data Exchange & GIS Mapping". This portal will serve as the front end for the input of GIS data. As customers update their data in the portal it will be provisioned to their ECRF/LVF systems and, to the customers subscribing to them, the servers providing web-mapping services back to the PSAPs and responders.

Through this portal customers will be able to manage their GIS data online or they may decide to manage data on their own and provide regular data updates to the portal. Either way, we will work with customers to ensure their data is properly loaded and integrated with their neighbor's GIS data in the portal. Certain GIS data editing capabilities (such as the insertion of a new PSAP service boundary) will be provided by our analysts in cooperation with the customer to ensure that the database is not compromised by unintended or incomplete entries (such as an overlap or gap in coverage). We will also be in charge of QA/QC of the GIS data layers and arbitrate with parties to resolve border disputes or mitigate other issues that could affect multiple parties. As the portal matures, more and more editing and QA/QC abilities will be provided to our customers. Finally, the portal will provide an extraction service for PSAPs to retrieve copies of their GIS data for local use with any software (CAD, Map, Emergency Notification, etc.) they wish. These extracts will be provided in a NENA standard exchange format.

Please accept this as response to the line items marked "EX" under the GIS DBMS section. Where we felt that the online portal will be able to provide requested functionality we marked those items with a "C". However, the web-based portal is not intended to be an end-to-end solution for managing every aspect of GIS maintenance. It's intent is to provide basic editing capabilities like those provided today for MSAG/ALI administration, import/export utilities, and to serve as a launching point for data distribution to the ECRF/LVF and other web-based services.

REDSKY ALI DATABASE MANAGEMENT RESPONSE
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ALI Database Management

1. Need to conform to current NENA standards and recommendations for database management (or better alternate), including:

- NENA 02-010: Recommended Formats & Protocols For ALI Data Exchange, ALI Response & GIS Mapping.

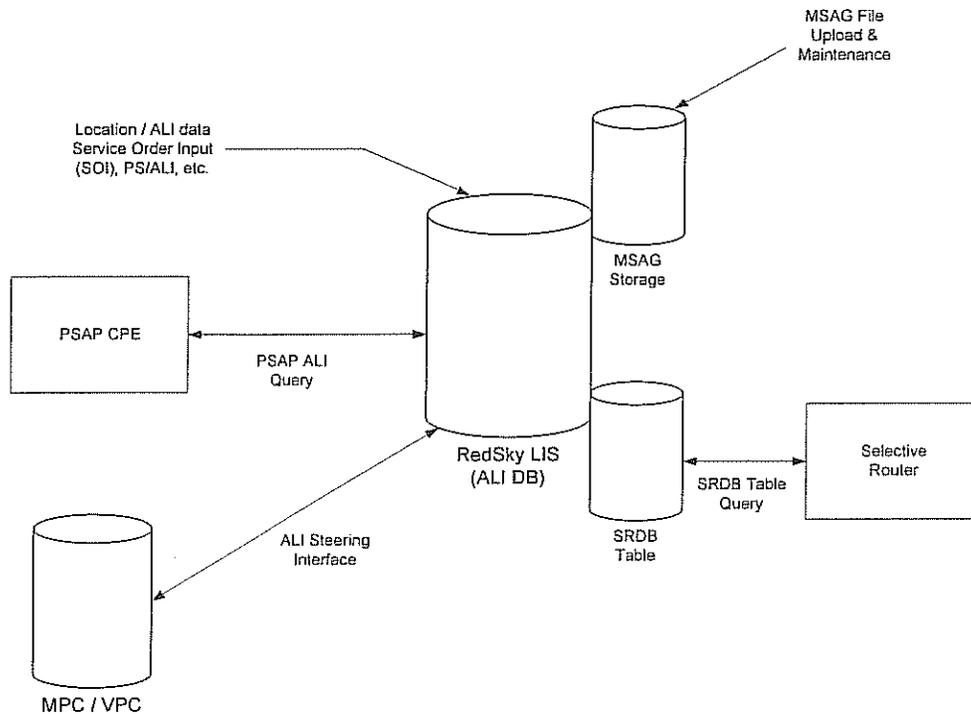
- NENA 02-011: Recommended Data Standards for Local Exchange Carriers, ALI Service Providers & 9-1-1 Jurisdictions.

- NENA 06-001: Recommended Standards for Local Service Provider Interconnection Information Sharing.

RedSky LIS conforms to this requirement.

RedSky's NENA i3 standards compliant Location Information Server (LIS) which also provides traditional Automatic Location information (ALI) database services, include service provider / private switch Service Order Input (SOI), Master Street Address Guide (MSAG) upload and maintenance, PSAP ALI Query and Selective Router Database (SRDB) functions, also complies with the specified NENA ALI data standards. The ALI functionality of the LIS implements ALI storage according to NENA's existing standards (as called out above) and will insure that CSI has an ALI solution that complies with all relevant standards.

The figure below gives a notional view of the RedSky LIS (ALI DB) interfaces and functions:



2. Need to provide systems and procedures for promptly updating subscriber information in ALI databases; “Customer” goal is one business day turn-around between entities (e.g., from carrier to aggregator)

COMPLY

The RedSky “LIS as ALI” includes all systems, and conforms to all procedures required, to allow carriers and other entities to enter subscriber information into ALI and turn around updating in the database within one (1) business day. The turnaround time, however, will be dependent on the accuracy of both jurisdiction-provided MSAG and carrier provided address information. The RedSky system, while containing NO barriers to prevent one (1) business day validation and update, has no role to play in determining the accuracy of the data uploaded into it.

3. Need to update ALI databases with carrier service order completion records within one business day; “Customer” goal is overnight processing of error-free records.

COMPLY. See answer for #2 above.

4. Need to provide database record integrity with multiple sources of information and multiple carriers when using Local Number Portability (LNP).

COMPLY. RedSky is cognizant of this requirement and the LIS platform proposed will provide mechanisms for ensuring database record integrity using multiples sources of information and when using information from multiple carriers, especially with regard to LNP.

5. Need to support comprehensive carrier ALI record transaction sets (e.g., record migrate, lock/unlock, etc.)