REVCORD
Revolutionizing Voice Recording

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Digital Voice and Multimedia Logging Recorder NG9-1-1 Specifications For The Revcord MCS Version 10

The voice and multimedia logging recorder system (the "System") shall be fully compliant with all legacy and NENA NG9-1-1 logging standards. It shall be completely self-contained in an industrial high reliability 19" 4U rack mount chassis with the ability to record all audio, or other media as specified herein, in a digital format 24 hours a day and is intended for many years of continuous service. The System will utilize Microsoft's Windows 7 Pro or Windows Server 2012 Server operating system and be browser based allowing multi-level password protected access at the workstation via the local area network ("LAN") or the Internet if placed on an external IP address. An unlimited number of playback and instant recall clients shall be included. The System shall include dual hot swap 1 TB hard drives configured as RAID 1 and dual hot swappable power supplies. RAID 5 and other RAID levels hard drives shall be optionally available. The System shall include the ability to automatically archive or backup to USB hard drives or network attached storage (NAS). The System must have the capability of upgrading to as many as 192 channels (analog, digital TDM, digital trunk and passive or active VoIP including SIP Invite, RoIP, and SIPREC). Multiple Systems may be connected together in a Universal View virtual centralized recorder for synchronized functions and playback from any channel(s) of any recorder(s). The System must be manufactured in the United States.

The system must be NG9-1-1 multimedia compatible in accordance with the most current NENA i3 specification.

Initial recording capability shall be:

_____ Channels of analog
_____ Channels of _____ (PBX brand & model) digital handsets (brand & model)
_____ ISDN PRI/T1 digital trunks
_____ VoIP channels for SIP/H.323/SCCP (select one)
_____ Fully compliant NG9-1-1 recording (SIPREC)
_____ Trunked Radio Talkgroups _____manufacturer _____ model/type
_____ Trunked Radio frequencies _____manufacturer _____ model/type

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System Hardware Configuration

a) **Chassis**. The System shall be fully self-contained as a "stand alone" networkable server in an industrial high reliability 4U Rack Mount 19" Chassis. Full redundancy shall be available.

b) **Hard Drives & RAID Configuration**. The System shall have dual hot swap RAID 1 1 TB hard drives (RAID 5 and other RAID levels optionally available).

c) **Power Supplies**. The System shall have dual hot swap power supplies.

d) **Automatic Backup Options**. The System shall include the capability of backup/archive to a separately supplied USB hard drive and/or network attached storage (NAS).

e) **Capture Cards**. The System will be capable of connectivity using analog and/or digital capture cards and will be expandable within the same chassis up to 192 analog, digital TDM, digital trunk and/or passive or active VoIP channels. VoIP recording shall only be accomplished by software requiring no additional capture cards or other hardware.

f) **Other hardware considerations**. The System shall include a dual core high speed CPU and 4 gigabytes of RAM. Components shall be "industry standard" and all components shall be "Commercial-Off-the-Shelf" (COTS). N+1 capability shall be supported.

System Software Functionality

a) **Browser Based Technology**. The System shall provide access from the server or from the users' PC workstations with their browser that must be HTML5 compliant via the Local Area Network (LAN) or the Internet if connected to an external IP address. Depending upon the access levels assigned, individual users can access the total System's functionality (including "live" monitoring, Search, QA Evaluation, Reports and Instant Recall) or be limited to only the functionality assigned by the Administrator. The Administrator has the ability to assign as many users as desired with no "seat license" or other user fees. Likewise, any number of instant recall clients shall be included with no "seat license". Browser Plug-ins should not be required for playback of audio and video.

b) **Enterprise Capability**. Any number of systems may be connected together via LAN/WAN/VPN such that one main recorder will become a virtual universal view system from where any call(s) may be viewed, played, copied, exported, emailed and otherwise controlled as if all recorders were a single physical recorder. Each individual recording system will maintain control of the recordings locally stored.

c) **Password Protection and Access Rights**. The System Administrator shall have the ability to assign as many user rights to as many users as required and no "seat license" or other user fees will be associated. The System shall have multiple levels of security with the Administrator being capable of assigning or withdrawing User ID and Passwords and assigning access rights relative to channels and functionality of Search, Monitor, Evaluation, Statistics and Settings functions.

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d) **Recording Triggering Criteria**. Legacy recording settings shall be based on individual channels with recording triggers allowing for VOX (activity), loop start (voltage detection), on hook/off hook, D-channel events, continuous recording, and CDR/SMDR The System will have an internal clock with the ability to synchronize via NTP. VoIP call recording shall be initiated by either IP or MAC address identification or SIP Call ID.

e) **Bookmarking**. The System must include the capability of providing "bookmarks" with comprehensive comments. The bookmarks must be searchable criteria based on alphanumeric content.

f) **Standard Search Capabilities**.

i) The Search interface shall allow for global search and search by channel name or number, date, time, duration, names of users, by month and consecutive days within the month, and time of the day, dialed number, ANI/ALI, comments/tags (minimum 5), direction and DTMF digits. Optional search criteria include radio ID and talk group ID.

ii) The interface shall also allow for search across consecutive months (for example April 15th to May 15th) and for search within two consecutive days (for example 10:00 PM to 2:00 AM).

iii) The System shall include the ability to search by dialed number and by Caller ID if available.

iv) Call Tag Search. The System shall allow users to "tag" calls with a multiple reference codes or comments. At least five custom searchable tags shall also be available plus a general comments field.

v) A global search function shall be included such that a single alphanumeric entry will find all relevant calls without the need for wild cards.

vi) Search results may be exported in Excel format or printed as desired.

g) **Playback Criteria**.

i. **Instant Recall**. The System shall display recordings with the last recording shown at the top of the list, thereby allowing the user to instantly replay a recent recording. Active call control allows for rewind and playback of a call in progress. In addition, there should be an option to see Instant Recall on live and recorded calls.

ii. **Multi-Channel Simultaneous Playback**. The System allows for any number of channels of multi-channel simultaneous playback.

iii. **Scenario Reconstruction**. Full featured scenario reconstruction shall be included with multi-channel playback. Scenario reconstruction must allow for multimedia call recreation along with import of third party files. A completed scenario reconstruction may be exported to any media player equipped PC without the need for a separate client. Scenario reconstruction must be both "real time" and chronological and must support the ability to add files (documents, videos, images) to be included with the scenario recordings. Exported scenarios must optionally include watermarking by way of SHA256 or better.

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iv. **Talking Clock.** The System allows for a verbal time and date stamp commonly referred to as a "talking clock".

v. **Playback Controls.** Recordings can be played by clicking of the line displaying recording information or by using standard "Play, Pause, Stop" controls. The System will allow for playback of multiple recordings one after the other in the order selected. Sections of recordings can be bracketed for "looped replay" Playback controls include variable speed with pitch correction.

h) **Save & Copy**. The System can save calls, or segments of calls, in a .WAV, .WMA or .DSF format on the selected drive. Once the recordings are saved to the selected format the System allows the user to easily attach the recording(s) to an e-mail and/or burn a copy to a disk.

i) **Redact**. The user may redact portions of copies of calls with silence, delete or "white noise".

j) **Call Copy Filtering**. High pass, low pass, Band pass and Notch filtering must be provided for analysis and investigation purposes.

k) **Annotation**. Voice annotation must be provided in overdubbing or separate channel formats.

l) **Live Monitoring Capability**. The Administrator has the ability to assign monitoring rights for any specific channels - or all channels - to multiple users and monitoring can be from the server or remotely via a browser. Live monitoring shall be in a "dashboard format so that the administrator can easily see which agents are busy or idle. Live monitoring shall include the capability to tag and "rewind" in process calls. At least five customer tagging fields plus call comments tags must be included. Privileges may be assigned for silence insertion and to email the monitored call. The live monitoring display shall include an inactivity alarm that can set to any period desired.

m) **Reports**. The System shall include robust reporting capabilities in Excel or graphical formats with the ability to review such reporting by channel or channel grouping, time periods, number of recordings within the time period, length of recordings and average duration of recordings. Reports must be exportable to excel and by email.

n) **Map Reports.** Map reports displaying geo-location of calls that include GPS type data must be available. Call map locations indicated should be interactive such that clicking on the location indicator will commence call playback.

o) **Administrator's Settings Abilities**. The System shall allow the Administrator the ability to easily assign and modify User ID, User Passwords, and User rights by channel or grouping of channels. Assignable User Rights include the ability to search, monitor, view statistics, perform or view Quality Monitoring evaluations and manage rights within a prescribed grouping of channels. The Administrator has the ability to assign Users the right to Privacy On Demand or Record On Demand. The Administrator has the ability to limit the Users' rights to search to within a specific time period (for example limited to 12 hours in arrears).

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p) **Remote System Monitoring**. The System includes Remote Monitoring Software which can be loaded on a selected Client for purposes of monitoring the Systems' and applications' operating status, CPU usage, hard drive usage and capacities, and status of backup devices and their remaining capacities. If error conditions occur the Remote Monitoring System must raise alerts by email and other alarm methods through either a Cloud based monitor or a local monitor.

q) **Quality Monitoring Agent Evaluation**. The System must include a robust quality monitoring and agent evaluation capability that includes the ability to create custom evaluation forms.

r) **Screen Recording**. The System includes the capability to record multiple screens that are associated with a voice recording such as the CAD and GIS screens.

s) **NG9**-1-1. The System includes the capability to operate in the Next Generation 9-1-1 or similar IP environment. Recording and playback of multimedia sources such as voice, video, text, telematics shall be provided as specified by NENA document 08-003. Call processing events (LogEvents) must also be recorded in accordance with NG9-1-1 standards.

t) **Dashboard Page.** A Dashboard which contains all real-time information providing real-time data of all the major modules of the system. As an example, Today's Total Audio Calls, Videos, Text, Social, Emails and Today Recorded Screens, Active/Inactive Channels, Active Users/Deleted Users, Total Playlists, Exported Playlists, Published/Unpublished QA Forms, QA Evaluations by Status (Schedule, In-Progress, Completed, Closed, Rejected), Shared/Unshared Evaluations, Total Number of Recorders.

u) **Editing a Call Copy (Redaction).** The ability to enhance, modify, redact, etc. is a powerful tool in dealing with confidentiality, HIPAA, and PCI type situations. In addition to the ability to mute, insert white noise or delete sections of a copy of the call, high pass, low pass, notch and band pass filtering can be done on a section of the call or the entire call to eliminate background noise or to isolate a sound of interest. Ability to add spoken annotation to a copy of a call either within the same file (overdubbing) or on a completely separate channel. The call copy that is edited cannot affect the actual call in the database.

v) **Cloud Based Recording.** The option to stream VoIP and analog signaling to the cloud to be recorded. Recordings and call data should be stored in the cloud and everything is accessed in the cloud. The cloud based solution should include all of the features and functionality as a local system.

w) **Cloud Based Syncing.** Ability to provide a redundant real-time copy of your exact multimedia Revcord system.

x) **Role Based Access Rights.** The establishment of access rights based on User's roles in the organization. The permissions to perform certain operations are assigned to specific roles. Permissions will not be assigned directly to user. Users will be managed using their role instead of permissions. Existing user manager uses permissions, which will be eliminated and new role based definitions will be added.

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y) **Save and Load User Searches.** Ability to cache search settings are set in the Browser for same session. In addition, Users can save search settings for later use.

z) **WebUI Logging Module.** All the core operations performed by the User will be logged on the server. This logging module contains error logs and other operational logs which were performed by the User during their session. Reports relative to the User sessions are available in the reports module.