How To Guide: Understanding 911 Recording Jargon

Thank you for taking the time to look at the "How To Guide: Understanding 911 recording jargon." It is our goal to help you understand the intricacies of the recording market without all the blood shot eyes and techno-babble. Some of these concepts will be techy but we will do our best to put real world value on these features from your point of view.

When reading these questions we want you to think – "Why is this important to me?" That is our goal in answering all of these questions.

1. What is a 911 recording system?

The 911 recording system is a system that records telephone and radio traffic into and out of your center. These systems started with the big "Open Reel" tapes and are now computer based Most 911 centers use the system for liability purposes as well as training of their dispatchers.

2. What is a recording channel?

Each phone or radio position takes up a "channel" in the recording system. A channel can be a phone device, a trunk or a radio frequency, or a radio talk group.

3. What is 911 trunk side recording?

Trunk side recording is where the recording system records all activity on the trunks before the calls hit the phone system. This is great for getting additional information. The benefit to the agency is that you get the on-hold activity as well as the pre-answer activity. What this means, is that you can hear what the caller is saying BEFORE the dispatcher picks up the phone. Very beneficial! Some of our customers have prosecuted bad guys because of this configuration.

4. What is station/position recording?

The station/position recording is when "phone 2222" is on channel one in the recording system. This makes it very easy to search the recording system because you know what position took the call. With 911 trunk side recording you do NOT have this advantage because a call may come in on trunk 1 then the next call comes in on trunk 32.

Equature℠ - Features and Benefits

Next Generation 911 recording system

Enterprise Search capabilities

Dashboard, Analytics and reporting capabilities

Record radio, telephone, VoIP, Email, Chat

Flexible licenses for all Capture modules

All content is full text searchable with relevance ranking

Auditing / Encryption / Digital DataPrint

Relevance based search results

Unlimited User licensing for all search capabilities

Unified Communications Intelligence

5. Is it better to use just station side recording and NOT trunk side recording?

This is a great question that our industry has done a good job in confusing our customers. The correct answer is: you should use a combination of the two on your 911 lines Example: You configure the recording of the 911 trunks on a separate "channel card" in the recorder. This allows you to get all the on hold talk activity as well as all the pre-answer talk activity. You also configure the 911 positions on a different "channel card" in the recorder. This makes it very easy to search for 911 calls by position. Thus you get the best of both worlds! You also get added redundancy because you are recording the 911 calls on two separate cards in the recording system. This is definitely the way to go and it should not cost much to do it this way. If budgets are really tight then you should record station side only. This makes it easier to search your calls and saves time.

6. What is a conventional radio system?

A conventional radio system is not trunked, so a conversation doesn't jump from frequency to frequency – there are not talk groups. Two people have to be tuned to same frequency to talk to eachother. From a recording stand point, the radio system gives us one audio output per frequency, which we connect to a recorder channel.

7. What is a trunked radio system?

Trunked radio systems use talk groups to utilize your frequencies more efficiently. When you press the button to talk, the radio controller temporarily assigns you afrequency, and then releases it when you release the button. Anyone monitoring that talk group will hear you because all radios on that group will jump to that frequency. Since a conversation will jump from frequency to frequency, the recorder must follow the conversation by capturing the controller messages. This also allows you to search by RadioID, TalkGroup, or Alias (radio or talk group name). In the past, Motorola would provide LORI/LOMI cards to give the recorder one output per talk group, so capturing controller messages wasn't necessary. But this was very expensive: you might have only 10 frequencies, but 60 talk groups, so this method would require 60 recorder channels, plus the cost of the LORI/LOMI cards. Today, we record either the 10 frequencies, or the consoles, or selected talk groups, then use the controller messages to follow the conversation and supply the additional search data. This is much more effective.

8. What is a P25 radio system?

Project 25 (P25 or APCO-25) refer to a suite of standard s for digital radio communications for use by federal, state/province and local public safety agencies in North America to enable them to communicate with other agencies and mutual aid response teams in emergencies. The standard requires equipment from different manufacturers to be interoperable. In this regard, P25 fills the same role as the European Tetra protocol, although not interoperable with it. Modern recording systems must be P25 compliant because this is where the entire industry is going.

9. What is Next Generation 911 (NG9-1-1)?

For a great reference please see: http://www.its.dot.gov/ng911/index.htm
In general NG9-1-1 will allow the 911 centers to receive Voice, Text andVideo from many devices. It is important that the recording system be able to capture these data today. There is positive and negative feels regarding NG9-1-1 because of the extra burden put on the agencies. 911 agencies today are already taxed with doing more with less.

10. Why should we record voice , email and instant messaging?

This is a great question. The reason is that as NG9-1-1 becomes more prevalent you will need to be able to record these other communication types. A person may send a text message, perhaps with video, but there are actually several formats used to deliver that to you, including email. They may do this because they're hearing impaired, or maybe there's been a shooting, and they're hiding – unable to speak for fear of being discovered. If you are investing in a system now, you do NOT want to buy a platform that does not support NG9-1-1. The benefit to the agency is that you will get the full picture of what is going on in your center, and you will not need additional, possibly non-compatible products when you are required to capture all this content.

11. How do we find calls quickly?

Agencies are taxed with doing more with less, thus it is imperative to be able to search and save calls ASAP. At a minimum you should be able to search by Time/Date, Channel, User, CLID, DTMF, ANI/ALI. With the advanced systems you can search by CLID Name, Radio ID Talk Group, phrase search (in the call) or any combination based on relevance.

- CLID – Caller line Identification
- CLID Name – Caller line identification name
- DTMF – Dual tone multi-frequency (The phone number dialed out.)
- ANI/ALI – Automatic Number Identification/Automatic Location Identification
- RadioID – the numeric identifier of a specific radio on a trunked radio system
- Talk Group – a "virtual" group on which multiple radio users speak to each other on a trunked radio system.

12. What is relevance search?

Enterprise Search engines like Google/Microsoft Live rank their searches based on relevance. Each search result is given a relevance score from highest to lowest. This is more beneficial because it allows the agencies to find their calls quicker and build more relevant searches.

13. Can I save my recordings and share them?

Yes – This is one of the biggest reasons to have the recording system. You should be able to save single recordings, multiple recordings, multiple recordings as a single file and multiple recordings with all the data associated with them.

14. What is spoke time/date?

This is a feature of the recording system that allows you to put a voice that speaks the time and date of each call at the beginning of the calls. This is very beneficial if you need to take the call to court.

15. What is FOIA?

FOIA - Freedom Of Information Act legislation, also described as open records or (especially in the United States) sunshine laws, are laws which set rules on access to information or records held by government bodies. In general, such laws define a legal process by which government information is required to be available to the public. These requests take a lot of time to fill for agencies so the recording system must allow for easy use and quick search to save time. This is also referred as PITA (Pain in the Asterisk) by some agencies.   These FOIA requests are time sensitive so it is imperative to find the information quickly. All or most of the content delivered in the NG9-1-1 environment is expected to also be subject to FOIA.

16. What is Enterprise Search?

Enterprise Search is similar to Google and Microsoft Live Search. It utilizes the same advanced search technologies like relevance, operators, search builders and browser technology to bring powerful results to end users. Recorders based on this model are ideal because of the ease of use and limited training required for agency staff.

17. What is screen recording?

Screen recording or Screen Data Capture as it is known is the method of recording the dispatcher's computer screens and aligning them with the voice calls. This is very beneficial to verify data entry, identify training areas and monitor overall quality of the dispatch center.

18. What are Digital Signature / Digital DataPrint?

The Digital DataPrint is a software technique that authenticates and verifies the recordings have not been tampered with. This is very important to agencies that need to share the data in court.

19. What is Redaction?

Redaction is the method of "blacking out" certain portions of the recording. This is a very useful feature because you can "black out" privileged information before sending the recording to the FOIA requester. Example: There is HIPPA information in the recording that can NOT be shared. You would simply redact the call and save it then send it. Old recording systems do not have this feature and require you to use a third party application. Newer systems have the redaction capabilities built right into the application.

Note: HIPPA - The Health Insurance Portability and Accountability Act (HIPAA) was enacted by the U.S. Congress in 1996. According to the Centers for Medicare and Medicaid Services (CMS) website, Title I of HIPAA protects health insurance coverage for workers and their families when they change or lose their jobs. Title II of HIPAA, known as the Administrative Simplification (AS) provisions, requires the establishment of national standards for electronic health care transactions and national identifiers for providers, health insurance plans and employers.

The Administration Simplification provisions also address the security and privacy of health data. The standards are meant to improve the efficiency and effectiveness of the nation's health care system by encouraging the widespread use of electronic data interchange in the US health care system

20. What is live monitor?

Live Monitor is a feature where you can listen to calls "as they happen" in your office. You can monitor one channel or multiple channels. This is very beneficial if you have newer dispatchers and you want to monitor them for training.

21. What is Instant Recall?

Instant Recall is a feature where a dispatcher can pull back X minutes of audio instantly to verify information. This saves lives – the recorder protects your ASSets.

22. What is multi-channel playback?

Multi-channel playback is the method of playing multiple recordings from multiple channels simultaneously. It is used to give an accurate description of what was happening at a point in time.

23. What is Scenario Reconstruction?

Scenario Reconstruction is multi-channel playback on steroids. It gives you a graphical display of related calls and allows you to play them all back or some of them back based on your needs. You can also download the scenarios and email them. All of the call information can be viewed on the graph as well. Scenario Reconstruction is the quickest way to produce related calls and data in response to an official request. It's also the best way to get the whole picture of an incident for the purpose of review or post-incident assessment.

24. What is bookmarking?

Bookmarking is a feature that allows the end user to save their searches and group the recordings based on their needs. Thus you can save a group of recordings in the CASE 33434 file. This is very similar to the Favorites settings in your Internet Explorer browser.

25. What is tagging?

Tagging allows end users to attach data that is relevant to the recordings. This can be a date/time, incident/case number, call type or adescription. Tags are searchable and displayed in columns for ease of use. A recording system should allow you to create your own tag fields, and not limit the type or number of them that can be created.

26. What is Sequential playback?

Sequential playback allows the end user to select calls and play them back in sequential order. This helps if you just want to listen to calls exactly as they happened without having to hit the play button each time.

27. What is DVD/Tape archive?

The old recording systems archived the recordings to DVD/Tape. As each storage medium improved then you typically needed to buy a new recording system to take advantage of it. The fundamental problem with this old method is that it takes time for the agencies to manage the archive media. Example: Sunday morning at 3:00am an alarm goes off because Side 2 of DVD 284 is full . Now the dispatcher has to call the supervisor to see if they can change the disk. This causes a lot of waste. Also, when disks are lost the data is gone as well. The newer recording systems eliminate these entire house keeping measures while keeping your data safe and secure.

28. What is a Dashboard?

State of the art recording systems have Dashboards.Dashboards are a landing page in the recording system that can be customized base on your job. It makes it easier for agency personnel to do their work. Dashboards can have parts that only help you with your daily functions.

Techno-Babble made easy – Don't let these terms scare you!!!!!!!!!!!!!!!!!

29. What is SAN/NAS storage?

SAN stands for Storage Area Network and NAS stands for Network Attached Storage. Both storage formats provide agencies with more storage and allows you to keep more data without the hassle of tape or DVD's.

30. What is RAID storage?

RAID stands for Redundant Array of Inexpensive Disks. There are several RAID types like RAID 1, 5, 10, 50 etc. The point of this is that it provides redundancy to your data. Typically you will want RAID 1 or 10. I would stay away from RAID 0 and RAID 5.

31. What is AD (Active Directory)?

Active Directory (AD) is the directory services that Microsoft uses to manage your users and devices on the network. AD handles users, groups, devices, login/logo ut, password rules and security over the network. The main point of this is that the recording system needs to support Active Directory. The benefit to the user is that you do not have to remember another user name and password for the system. You can simply use your Windows login account. It is also much more secure than sending username and password data to the recorder across your network.

32. What is Browser based?

This simply means that the recording system uses Internet Explorer or Mozilla FireFox as the entry into the system. This is very beneficial and saves a ton of time because you do NOT have to install any software at the computers you want to access the recording system with. Also, this does NOT mean that your recorder is on the Internet. Some end users confuse browser based with being on the internet and that is not the case.

33. Can the recorder be accessed from anywhere?

Recording systems purchased today definitely should have the capabilities to be accessed from anywhere around the world SECURELY with no added software. With the newer platforms this is easy to do. The question is more of an agency procedure process and not so much a technical question. The simple tech answer is yes but the agency may not want to allow it. You can use two techniques to accomplish this SSL and VPN.

34. What are SSL and VPN?

SSL stands for Secure Socket Layer. This is an encryption mechanism that allows for secure encrypted communications. If you look at your checking account online and see the little lock icon in the bottom right corner then it is using SSL to secure your session. This is one way to access the recording system from anywhere. VPN stands for Virtual Private Network. This is a technique that allows you to securely be on the network from anywhere. It provides secure, remote access into the enterprise network.

35. What is an SQL database?

Older recording systems used "proprietary databases" to function. The problems with this are numerous. Let's look at a few of them like scalability, security, and interoperability with other technology. The old systems did not allow for any of this. SQL (Structured Query Language) is an industry standard that most best of breed products use. Microsoft, IBM and Oracle are premier database manufactures with thousands of engineers that develop this software. It is much safer to use an industry standard instead of a "proprietary database."

36. Why is an SQL database   important to our agency?

SQL databases allow for easy data sharing among applications. Thus if you want to run reports from CAD and the recorder to see what is going on then it is easy to do with an SQL database. Also, if you ever wanted to leave the recorder you purchased for a new one it will be easy to import the data when the database is NOT proprietary. The big benefit for the agency is freedom of choice.

37. What is CAD?

CAD stands for Computer Aided Dispatch.

38. What is VoIP?

VoIP stands for Voice over Internet Protocol. This is big because all major vendors Cisco, Microsoft, Positron, Motorola, etc. and all have a VoIP offering in their newer equipment.

39. Can recorders record Analog, Digital, Radi o, T1 and VoIP within the same system?

The short answer is yes. All newer applications can do this An agency should not invest in something that will need to be replaced simply because you've migrated from analog to digital or to VoIP from either.

40. What sort of security exis ts in best of breed recorders?

Best of breed recorders need to be compliant with Active Directory and support single sign-on. Also, recordings need to be secured so only the authorized people can search and replay recordings. They also should support data encryption to prevent unauthorized access, and digital dataprints on all recordings to verify the integrity of the data.

41. What are Network Shares?

Network shares are storage drives that are viewable on the network. Think of your\Fdrive on the network. That is a network share. Recorders must not use these because of the security concerns. You do not want your users to be able to browse the network and delete recordings. If the recorder you are looking at uses this architecture – RUN!

42. What is Dispatch Assessment?

Dispatch Assessment is a module in recording systems that allow agencies to grade their dispatchers for quality. Forms can be setup and results can be reportedon and trended over time. This is designed so the agency can improve their quality and reduce dispatcher turnover as well as identify training opportunities.

43. Why is assessment creation important?

Being a dispatcher is a high pressure profession. The goal of assessments is to make everybody better and be able to share training data that is relevant for that goal. The more quality training for the dispatchers, the easier the job becomes over time.This could potentially save lives.

44. What do you recommend for creating assessments?

Assessment creation is a mix of art ad science. In a nutshell, the assessments should be objective and not subjective. Yes / No answers are recommended because they are not subjective.

45. Do you provide examples of assessments?

Yes – We will be providing a free download of assessment templates for the agencies that are concerned about quality improvement. We configure the assessment templates for our customers as well.

46. Why is it beneficial to use non-proprietary equipment?

Using non-proprietary equipment gives the agency flexibility if they want to add storage or change certain things with regard to the recorder. If you are locked in then you typically will spend 10-20 times the cost for certain equipment. An example is a DVD drive that cost $80 from CompUSA will cost you $1,500 to fix from a proprietary vendor. This model is dead todaybut some companies still do business this way.

47. Do the recording systems have alarms in case they have a problem?

The short answer is YES. The typical alarms are: Recording/Not Recording, Running/Not Running, Channel Activity, Storage Low and system restarted. There are additional alarm conditions that can be configured but these are the basics.

48. What is proactive alarming?

This simply means that your service provider is aware of an alarm condition when it happens. This provides for better support and can avoid major errors when minor errors are caught and fixed.

49. What constitutes good support?

This is a judgment call and differs by agency. The typically industry standards are 4 hour on-site response time, one hour response for initial diagnosis and proactive alarming with remote support.

50. What is free-seating?

Free Seating is the concept that dispatchers can sit anywhere in the center at any time. Thus John may sit at position 1 today and sit at position 2 tomorrow.

51. What are some of the challenges of free-seating?

In the old days, free-seating was a challenge for Dispatch Assessment and finding calls. Typically you would have to listen to the call and then know it is Judy and do a manual assessment. The problem is you can NOT do any trend quality reporting for any random searches on Judy's calls unless you know where she sat every day. This wastes a lot of time in the dispatch center.

52. Can we solve our free-seating challenges?

Yes – newer systems provide several ways to assign users and positions on the fly for free seating. The simplest way is to have the dispatcher login to an app to identify them which associates the user to a position. If the dispatchers login with unique logins already then the recording system needs to be smart enough to know who is sitting where based on login. Both of these capabilities should be free.

53. Are there other free-seating solutions?

Yes – If there are third party data streams with user/seating information then the recorder can use that information and assign seating automatically. Typically there is a charge for this type of free-seating integration.

54. Can you search by CAD incident number?

Yes – Just as long as that data is available then the recorder can use it to associate the incident number to the call. This saves the agencies a lot of time because typically they search the CAD system for a time and date of the incident and then search the recorder. This is a two step process which is very time consuming.

55. What is the NENA NG9-1-1 Partner Program?

This is a program where vendors work to provide interoperability to NG9-1-1 communications. As NG9-1-1 matures you will want to make sure that the recording solution you invest in is NG9-1-1 compliant.

56. How does the recorder connect to my digital telephones?

Typically your phone vendor will break out each audio pair to a 66 block or 110 block 5 feet from the recording system. Then the audio pairs are cross-connected to the 66 or 110 block provided by the recording vendor. Thus if there are ever any audio problems then it is much easier to trouble shoot if the problem is with the recorder or the phones.

57. What is a 66 block?

A 66 block (also M-Block) is a type of punch down block used to connect sets of wires in a telephone system. 66 blocks are designed to terminate 22 through 26 AWG solid copper wire. The 25-pair standard non-split 66 Block contains 50 rows; each row has four columns of clips that are electrically bonded.

The 25-pair "Split 50" 66 Block is the industry standard for easy termination of voice cabling and is a standard network termination by telephone companies–generally on commercial properties. Each row contains four clips, but the left two clips are electrically isolated from the right two clips. 66 blocks pre-assembled with an RJ-21 female connector are available that accept a quick connection to a 25-pair cable with a male end. These connections are typically made between the block and the CPE (customer premise equipment).

58. What is a 110 block?

A 110 block is a type of punch block used to connect sets of wires in a structured cabling system. 110 is also used to describe a type of Insulation-displacement connector used to terminate twisted-pair cables which uses the same punch down tool as the 110 block. Usually 110 blocks are used in larger channel count installations.

59. How does the recorder connect to my analog telephone and radio lines?

Typically your phone / radio vendor will break out the lines that need to be recorded to a 66 or 110 block 5 feet from the recording system. This method is called half tapping. Then the recorder is hooked to the block that is half tapped.

60. What is half tapping?

Half-tapping is the action of making analog trunks appear in two places for simultaneous service. Half-tapping refers to the duplication of service on the customer's side of the demarcation point. It's basically a "Y" connection, to be simple. A demarcation point is the interconnection between the telephone company communications facilities and the terminal equipment or wiring at a customers premise.

61. What is the benefit of passively conne cting to my telephone / radio equipment?

The main benefit of a passive connection is that if something happens to the recording equipment you do NOT take down the telephone, 911 or radio systems. In contrast, things that connect in series often do NOT protect you this way. Thus if there is a failure with a device in series then all the devices are affected. You want to make sure that the recording system you purchase is a "passive system."

62. How does the recorder connect to my T1 or PRI?

Typically your phone vendor will provide a T Tap box that the recorder plugs directly into. This is a simple RJ45 cable that goes from the recorder to the T Tap box. It is important that this tap not bring down your circuit because of a recorder failure.

63. What is a T1?

A T1 is a digital transmission link that provides 24 voice channels. Each channel provides 64Kbps and the whole T1 provides 1.544Mbps of transmission capabilities. Agencies use T1's instead of analog lines because they are easier to work with and provide more channels in less space.

64. What is a PRI?

PRI stands for Primary Rate Interface and is the ISDN equivalent to a T-1 circuit. The PRI provides 23B+D channels (B=Bearer channel, D=Data Channel). In easy terms this means that all the voice travels over 23 channels and all the signaling data travels on the D channel.

65. How does the recorder connect to record VoIP?

The phone recorder connects to a "Span or Mirror Port" on the network where the VoIP traffic exists. The connection utilizes a RJ45 cable. This is a standard network cable similar to the one your computer uses.

66. What is a Span or Mirror Port?

Port mirroring is used on a network switch to send a copy of all network packets seen on one switch port (or an entire VLAN) to a network monitoring connection on another switch port. This is commonly used for network appliances that require monitoring of network traffic, such as an intrusion-detection system or voice recorders. A VLAN (virtual LAN), is a group of hosts with a common set of requirements that communicate as if they were attached to the Broadcast domain, regardless of their physical location. A VLAN has the same attributes as a physical LAN, but it allows for endstations to be grouped together even if they are not located on the same network switch. Network reconfiguration can be done through software instead of physically relocating devices.

Call to Action

If you are interested in more information regarding 911 recording please call or email me us PSAP@dss-corp.com or 866-dss-corp to speak with one of our Industry Specialists.