

Letter From DAD

September 2007

Welcome!

Greetings from Team ENCO.

We hope your summer is going well. As always we've been busy at ENCO.

DAD 5.2c is being released this week. While there are a few necessary additions, the focus of 5.2c has been corrections and optimization. We've dramatically reduced the I/O required to process Library interaction. The plans for 5.2d will include reductions in I/O for Playlist processing and performance improvements to the new Buttons we added in 5.1a.

The importance of metadata continues to grow and along with it comes the specification for more data fields to be carried with audio files. We have added new fields to DAD's library and will continue to do as the industry requires. Where this will end (eye color, birthday, favorite movie, etc., etc.) we cannot predict. While the argument can be made to keep things simple and limit growth in DAD's data, we are also driven by the march of technology and market demand. Content is changing dramatically and constantly being re-purposed in ways never conceived when we developed DAD. We need to make sure your DAD does not leave you stranded should you have a need for information in the future. That said, we are working on things that will minimize performance impact for those of you that are managing ever growing databases.

A number of requests have been made for more flexibility in setting up timed recordings. We created two "pre-roll" features to send switcher commands in advance of actual start times to facilitate proper recordings when slow devices are unable to respond quickly and to pre-load the record machine early which allows more precise timing of record events.

Cut number generation has been enhanced to allow control by DAD's Library Group parameters which better meets the needs of those recording several network programs for time shifted broadcasts. Alternatively, cut number generation can be suppressed forcing operator assignment of the cut number.

A handy utility (ReclListGen) is now available to create cuts and a record list suitable for logging daily (24 one hour cuts) or weekly (168 one hour cuts) programming.

We have improved the Phonetica interface to support simultaneous searches from multiple workstations. Phonetica adds a powerful audio search capability for DAD's library. This could be valuable

to those of you with long format programming that have the need to find "what do I have that contains someone saying..." within your archived audio programs. Phonetica incorporates a new speech recognition engine and is now more affordable than ever. Contact Sales for more information.

DAD 5.2c adds a service called DADminAgent that will feed data to the soon to be announced utility called "DADmin" - the DAD Administrator. More on this next time... or contact me on-line.

Although we strive to keep DAD very efficient, the demands of our code grows over time. Many customers started with DAD on 486 class DOS machines or perhaps P2 200MHz systems. With growth in operating system demands and DAD's increasing feature set, users with older systems should be planning for their future. It's simple: faster machines with more memory will give you better performance. Our current *recommendation* in our CheckDAD utility is for machines running Windows XP Pro/ Service Pack 2, with 2 Ghz processors and 512MB RAM. The *minimum* requirement to run DAD has not changed, meaning DAD will run. But this does not mean it will run well in your specific configuration. For example: here at ENCO our MusicOnHold system (DAD based of course) is a very old 300MHz machine with 128MB RAM running Win2k - it runs great as a walk away automation system but the user interface leaves much to be desired. We have DAD users ranging from the simplest single PC playout system to clusters of stations running dozens of DADs on busy networks. If you are considering upgrades to aging hardware, check with your ENCO sales rep for our latest recommendations taking into consideration your configuration needs.

See you online!
Gene



StreamLine

In our inaugural edition of the newsletter we introduced StreamLine, an integrated product combining DAD automation with music scheduling from Powergold and traffic management from Wicks Visual Traffic. StreamLine is very popular in emerging markets, like India, where new stations are being licensed and complete studio systems are being implemented from scratch. Almost all of our business in these markets consists of integrated StreamLine systems. We thought it time to revisit StreamLine for those that have an interest in strengthening the integration between their scheduling and automation functions. StreamLine was developed with a goal of seamless integration between products and eliminates the need for file handling or conversions between scheduling and playout tasks. Streamline's Powergold music scheduler provides a very robust schedule rule making capability that can be

Networking and DAD

Most broadcast automation systems rely on computer networks. The network architecture and how it is implemented can play a crucial role in how your automation system performs.

Choosing a Network Architecture

The most common network architectures found in broadcast are peer to peer, audio server and dedicated file server configurations. Peer to peer configurations are common and provide a simple and inexpensive way to link two or more workstations at

StreamLine

easily implemented in a "virtual workbench." Combining extensive scheduling and library management functions with unsurpassed rule creation and analysis, make quality playlist creation a snap.

As your music director prepares schedules, cuts that reside in DAD's library can be auditioned directly from Powergold. Once merged with traffic and accepted, complete playlist information is automatically ingested or updated within DAD. There are no file transfers or path definitions to worry about. If DAD library modifications, such as new cart-chunk data entries, are made in DAD workstations, the changes are automatically reflected in the scheduling system library. Asplayed information is synchronized at the end of each cut without any operator interaction. Daily traffic logs are also updated without any operator interaction. All in all

StreamLine is proving to be a solid, complete integrated studio solution that has greatly reduced the efforts needed to maintain coordinated music schedules and traffic logs for accurate billing.

If you have these scheduling systems and are looking for improved integration, StreamLine's integration tools are available separately. Of course, if you're looking for a step up from RCS's Selector™, StreamLine can offer you broader capability at an affordable price point.

Detailed information about Streamline's music scheduling and traffic management features can be found in the Products section of our WEB site.



the file system level. Since these configurations share each other's disk contents, there is potential for performance issues created by trying to "serve" large files like audio while simultaneously playing out on-air. The current generation of high performance PCs, disks and 1000 Mbps LAN hardware have made peer to peer configurations

very workable; however, they are limited in the number of connections. Typically we only recommend peer to peer configurations for five or fewer workstations.

Audio server based networks were common in early automation configurations and consisted of one or more workstations communicating with a centralized server which also housed all audio processing and storage hardware. This simplified file management, but introduced physical limits to the number of audio channels supported as well as added complexity to the physical plant layout and wiring.

Networking and DAD cont'd.

Dedicated file server based networks have evolved as the preferable choice to support configurations with more connections than recommended for peer to peer networks. A dedicated file server consists of one or more workstations linked to a high performance, non proprietary computer running a standard network operating system like Windows Server 2003. With proper server design, any number of workstations/audio channels can be supported making this type of network very scalable. Without the limitations associated with audio server technology, and with simpler physical implementation and better redundancy, file server networks are the best choice for broadcast automation.

Network Topology

How the workstations and server are all connected is defined by the Network topology. This consists of the physical topology (where the cables run) and the logical topology (how the signals are routed). Physical topologies can consist of: all workstations residing on a common bus, point to point for each or mesh, a ring connecting one to the next, or a star utilizing a central hub which connects all. With network performance being critical to broadcast applications that place high demand on the network, a physical star connected network with a "smart" switched Ethernet hub has become the preferred approach. Switched Ethernet requires a sophisticated switching device that can decode the addressing of each packet of data and route it to its specific destination without loading other parts of the network. It is important to

select a high performance switch that minimizes system latency; the time required to transmit a packet to its final destination. It is important to note that even high



quality switches with low latency specifications can degrade system performance if not configured optimally. We recommend using a managed switch that provides additional control and the ability to tune the switch settings for the application. It is also important that the management interface provide event logging and performance monitoring features to confirm proper operation and to help diagnose any network related issues that may arise.

Cabling

Network problems often are found in the most overlooked portion of the physical configuration, the network cabling. High quality cable with a specification suitable for the network data rate is essential for



reliable performance. Properly installed connectors matched to the specific cable type are equally important. CAT5 wiring is adequate for 100Mbps (100Base-TX) connections, but CAT5E or

CAT 6 is required for 1 Gbps (1000Base-T) connections. Since most new computer hardware currently available contains Gigabit network interfaces, it is

very important that any existing network cabling be tested for 1000 Mbps capability before installing new devices. If there is any question of cable quality, cabling should be replaced or the switch ports and NICs should have their link speed negotiation throttled back to 100 Mbps, otherwise communication errors can induce poor performance and erratic system behavior. For new installations or rewiring, CAT6 or CAT6A which supports the newest 10 Gigabit data rates should be considered.

For a detailed description of networking technologies and its application in broadcast automation see Chapter 3.6 of the 2007 NAB Engineering Handbook written by ENCO's Dave Turner. This chapter is also available on our WEB site at <http://www.enco.com/new/WhitePaper/NAB-03-06.pdf>

"640K Ought to be enough for anybody....." Bill Gates 1981

128,000K XP Pro Minimum Memory Requirement 2007

1,500,000K XP Pro Minimum Disk Space Requirement 2007

DAD Utility Programs

As facilities change over time their requirements of DAD and its associated utilities may also change. Things which they would not have considered important years ago may become mission critical as their needs evolve. So towards that end, let's take a look at some of the more popular DAD add-ons.

DropBox is an automatic file conversion and ingestion tool that allows stations to use virtually any third party editor and have the finished production automatically converted to the correct file format, compression scheme (if any), sample rate, etc. without user intervention! All the person producing the cut has to do is save the finished production into a directory on the network that DropBox can see. Then, checking at regular intervals, DropBox sees the new item, and based on settings established during setup, it brings the file into DAD doing any conversion needed along the way. It can even parse file names so that a spot saved as Don's Ford_buy a Ford_55055.wav is imported into cut number 55055 as Don's Ford with an outcue of 'buy a Ford'. DropBox can handle ProTools files, and even 5.1 surround files for TV.

Gateway is ENCO's smart file transfer utility. It is a rule-based, multi-level prioritizing program that can do a number of important tasks. You can use Gateway to keep two file servers synchronized, to keep a complete set, subset or playlist based set of audio on a local machine to be used in the case of a network failure, or to automatically transfer files over a LAN or WAN for almost any purpose. Gateway can address multiple locations at the same time, giving higher priorities to certain locations and/or file types...and handling it all in the background. Gateway can also incorporate audio file conversion into the transfer process!

Another popular DAD utility is **CoolDAD**, our interface to Adobe Audition that allows users to essentially integrate Audition (or its' CoolEdit predecessors) into DAD as a multi-track editor. Of course you can use any editor with DAD that can create a .wav file, but CoolDAD makes the bidirectional transfer of the embedded metadata seamless. In fact, the save dialog that CoolDAD creates within Audition looks just like the same window within DAD, fields and all. CoolDAD improves workflow and eliminates errors while adding productivity...a nice combination!

CutServer and **CutClient** are options designed to improve performance in very large databases and/



or very high turnover in audio material. It provides a middle ground between the traditional DAD database structure and the more enterprise based SQL solution. Determining the need for CutServer is something that should be discussed with ENCO Technical Support or ENCO Sales.

There are a lot of advancements being made in the world of

consoles these days with many manufacturers producing consoles that are almost more sophisticated audio routing systems than mere mixers. With the power of these consoles comes a degree of complexity that often makes implementation a challenge and training even more difficult. That's why we have developed powerful interfaces to some of the most popular digital IP-based consoles on the market. Our **IP Console** and **IP Router** interfaces make it easy to integrate your DAD system with these console systems to give you the power and flexibility you want without the complexity in operation that you don't want. The Universal Translator option makes it possible to integrate DAD with almost any system or consoles, routers, mixers, switchers, etc. The list of IP-based consoles that we support is always on the grow, but currently we support offerings from Logitek, Wheatstone, Harris, SAS and Axia. If a console that you are interested in is not on the list, let us know!

Along with IP-based console control, another recent development is IP-Audio, and that is another option available to DAD users. ENCO was the first automation/playout manufacturer to support and supply the Axia IP-Audio driver and we were the first to support the IP-Audio driver from Wheatstone. IP-Audio drivers can replace the sound card(s) in your digital system allowing a very tight integration between the console/router and the DAD system. There are performance and cost advantages to IP-Audio and ENCO is proud to be working with the two leaders in IP-based audio! Other DAD utilities and add-ons include our Universal Translator, WebLib and WebServer, 16Play, CAP, Remote Client and Server, PADapult, Scheduling Wizard, Multiple Libraries and SQL. We'll cover them in the second installment of this article next time. In the meantime, if you have questions about any of these options, be sure and contact us and we'll be happy to provide any information you might need.



DAD Implementation and Guidance

We have found that getting off to a good start with automation takes a well thought out plan and implementation strategy. With this in mind, we have developed a structured on-site service to help customers implement new DAD systems. ENCO's DAD Implementation and Guidance Program (DI&G) is a service offering that provides a marriage of DAD's deep feature set matched to customer goals and requirements. It is designed to ensure optimized implementation of ENCO technology such that underlying customer goals are achieved quickly and efficiently. DI&G sits

between basic training/ set-up and customer support, focusing on tying DAD implementation, to an overall customer objective. ENCO engineers step into the shoes of the customer engineer to systematically define the implementation and ensure that defined goals are achieved. This effort includes tailoring, converting data and basically bringing up the operation as planned. While each implementation may be a little different, DI&G provides a consistent, measurable approach, ensuring that



customer value is achieved. To learn more about this new ENCO service give us a call!

ENCO is Expanding in the UK

ENCO is expanding and to cope with the demand have taken on Iain Young as EMEA Business Manager (Europe,

Middle East and Africa). Iain will look after the sales and new business development for the market. Iain joins ENCO from a technical background in the live audio arena with a firm base in television and radio. On joining the team Iain says, "Its great to be part of a team that is so dedicated to the support of the customer and a company that continually proves to be at the forefront of technology. I'm looking forward to meeting our current client base and new customers." If you have not already heard from or met with Iain and the UK team, call the office now on +44 1243 389 222 for an informal chat and introduction.

Upcoming Events!

- NAB Radio Show – Charlotte, NC – Booth # 508 – 9/26-9/28/2007
- Public Radio Program Director's Conference, Minneapolis, MN, 9/26-9/29/2007
- AES – Javits Center, New York – Booth # 1139 – 10/5-10/8/2007
- Wisconsin Broadcasters Clinic, Madison, WI 10/9-10/11/2007
- SBE 20 Expo, Monroeville (Pittsburgh), PA – Booth # 111 – 10/11/2007
- Ohio Broadcasters Conference, Columbus, OH 11/29/2007
- KBP, Oxford Hotel, Clark Field, Pampanga, Philippines - 11/15-11/17/2007

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