

American Association of Electronic Reporters and Transcribers  
Government Relations Committee

**Analysis and Advantages of Digital Court Reporting  
and Recording in the Courts, Deposition, and  
Administrative Hearings Markets**

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## **1. Executive Summary**

The Government Relations Committee as part of the American Association of Electronic Reporters and Transcribers (AAERT) has written this paper to present the advantages of digital court reporting and recording used for the purposes of capturing and creating the official record of court, legal, government, and private proceedings.

Digital (electronic) court reporting has been successfully used for decades. A combination of technological advances, demographic changes, and budgetary considerations has accelerated the use of digital reporting in almost all venues.

The advantages of digital court reporting include:

- An accurate and verifiable record of the proceeding.
- Timely delivery and prompt access to the record.
- A plentiful and growing supply of trained and certified digital court reporters.
- A significant cost savings over older methods of making the record.

Digital court reporting is the use of advanced reporting/recording hardware and software by trained, professional personnel to capture the verbatim record of a proceeding. Digital court reporting is a proven and superior method for the creation and preservation of the official record for any and all types of proceedings.

## **2. Introduction**

The Government Relations Committee as part of the American Association of Electronic Reporters and Transcribers (AAERT) has written this paper to provide the courts, legislators, government agencies, and legal professionals with information pertaining to the digital court reporting profession and digital recording methodology. The factual information included herein is primarily from independent sources that have neither a relationship to nor been funded by the AAERT or AAERT's PAC.

For more than three decades there has been extensive national debate about the viability of using audio recording in the courtroom (and other government and legal venues) in place of stenographic court reporters to provide the official record and ultimately the verbatim transcript. During this time, digital reporting has proven itself in judicial, agency, legal, and private venues to be an accurate and cost effective method of producing the official record.

The topics that will be discussed here include the accuracy of and costs associated with creating the record, as well as the easy and expeditious access to the record provided by utilizing digital court reporting. Additional considerations for the courts, agencies and corporate users include education and certification of the digital court reporter. An important foundation to all of this is the best practices associated with preserving the record, providing a verbatim transcript, and the archiving of the record for future use. Lastly, we will examine the economic factors driving this discussion. Is the old methodology utilizing a stenographic court reporter as economically competitive as the newer digital recording technology?

This paper will reference studies supporting the viability of digital reporting and recording as a means of providing an accurate, timely, and cost effective verbatim record. All of these issues indicate that there is uncertainty in the market for court reporting, and this paper will demonstrate that change is necessary.

Digital recording has been used as an official method of capture by the courts since the 1980s and currently serves as the official record in different types of cases in every state of the United States, its territories, and around the world. Thousands of court installations and millions of hearing hours have been digitally recorded successfully, and its use continues to dramatically grow around the globe.

Ultimately, the conclusion of this paper will support the use of digital court reporting and recording for the creation, transcription, and preservation of the official record of all legal, government, and private proceedings.

### **3. What is Digital Court Reporting and Recording?**

Digital court reporting and recording is a method for the processes of capturing, producing, delivering, and storing the digital verbatim record of a proceeding. The different types of proceedings that are commonly found to be digitally recorded are court hearings, governmental administrative hearings and meetings, depositions, corporate meetings, or any kind of gathering where dialogue is needed to be preserved.

These above-mentioned processes are accomplished through the use of a digital court reporter, digital recording software and hardware, transcriber and transcription software, proofreaders, and backup media for the storage of the recordings and final transcripts.

The different processes of digital reporting/recording are as follows:

- Capturing the record – A digital court reporter performs the same duties and functions as a stenographic court reporter but applies his or her skills using digital recording software and hardware for capturing the verbatim record. A digital court reporter using best practices during the daily performance of his or her duties:
  - Checks and tests that all hardware (computer/laptop, microphones, mixer and, if used, video camera) and software (recording and log notes) are in working order prior to the commencement of the proceedings.
  - Gathers all case information pertaining to venue, case number, style, attorneys of record information, names of parties, witness names with spellings, etc. prior to the start of the proceeding. This information is essential to ensure accuracy in the transcription process.
  - Records everything (at the instruction of the presiding official) and makes detailed log notes (annotations) regarding party identification and/or change of speakers, new questions and answers, noted spellings, key words of interest, etc. during the proceedings. These log notes assist in any requested searches of the digital record during or after the proceedings. This process is similar to a stenographic or voice court reporter and allows a digital reporter to read/play

back a question or answer. Marks and notes exhibits when identified, introduced, and admitted. Detailed log notes assist court administration and judges to quickly review what occurred at a previous hearing. The log notes are also essential in the transcription process to ensure accuracy of the final transcript.

- Takes charge of the record and for each proceeding, manages individuals speaking at the same time, and gets accurate spellings of unusual names or terms. These are all the identical functions to those performed by a stenographic or voice court reporter while capturing the record.
- Follows best practices, for preparing the digitally recorded verbatim record for transcription and storage, once the proceedings are concluded.
- Transcript Production – If a transcript is requested of a digitally recorded proceeding, depending on applicable policies, either a digital court reporter, transcriber, stenographic court reporter, or voice court reporter will prepare the transcript. Transcripts are typically prepared using Word or WordPerfect and can easily be saved in other formats to accommodate electronic filing, litigation support systems, or other client database requirements.
  - For transcription preparation, a multi-channel recording is used for listening. This allows for the separation of speakers, if needed. An example of when to isolate channels would be when two or more participants speak simultaneously, or when an attorney begins to ask the next question before the witness has completed their answer. By isolating the recording to one channel at a time, the transcriptionist can listen to one speaker at a time to determine what was spoken and by whom.
  - The log notes produced by a digital court reporter are of benefit to the transcriber or court reporter for transcript preparation. The log notes provide all the case particulars: appearances, speaker identification, unique terms and phrases, and other information needed to produce a quality transcript.
  - Transcripts prepared from a digital recording contain all the content and formatting of a transcript prepared from stenographic notes or a voice court reporter's recording.
- Delivery – A transcript prepared from a digital recording can be delivered to the party ordering the transcript via digital or hard copy format.
- Storage – Digital/electronic recorded files and/or transcripts can be backed up/copied to any type of storage media, such as primary and backup servers, computer/laptop hard drives, CDs, DVDs, USB drives, or the cloud in accordance with recommended best practices for storage (see AAERT Best Practices Guide).<sup>1</sup>

Conclusion: When courts chose digital recording technology for capturing the record, it is important to utilize digital court reporters who incorporate best practices with policies and procedures in place. The digital recording model allows for an efficient and reliable use of

resources. Furthermore, this model reduces the demand on the judge, judicial staff, attorneys, and participants. This applies not only in the courtroom setting, but the deposition conference room, and other proceedings where digital recording is used.

#### **4. Venues where Digital Court Reporting/Recording are Used**

There are numerous proprietary court reporting systems available on the market today. These range from sophisticated recording systems provided by vendors that are specifically designed for use in a courtroom setting to smaller, portable court reporting systems, which can be utilized for depositions, as well as virtually any type of agency/firm proceeding. Below is a brief overview of the primary venues in which digital court reporting/recording is being used.

**COURTROOMS:** Digital court reporting/recording in a court setting can range from single, stand-alone units to multiple courthouse systems linking all courtrooms to one central or multiple servers. Each of these systems adheres to reliability, accuracy, and storage requirements directed by the courts.

A critical part of the installation and usage of digital court reporting/recording systems is for the courts to adopt standards for capturing the record and the production of an accurate and complete transcript. A comprehensive system of standards for equipment and policies and procedures for its operation will ensure the successful use of digital recording systems and the overall accuracy of the transcript.<sup>2</sup> Included in this are adequate safeguards that must be incorporated into each step of the process.

The predominant and most commonly used recording features of digital court recording systems in the court setting enable the digital court reporter to input relevant data into the recording file. These systems also enable the digital court reporter to “confidence monitor.” Confidence monitoring enables the reporter to listen to what is being recorded either to the hard drive, CD, or whatever is being used to capture and store the recording and not what the person is saying. This function ensures a viable recording is being made.

A digital court reporter using best practices adds to the audio/video record the case title or caption, venue, parties present, the case number, along with an accurate logging of all events. Log notes are synchronized to the recording. These time-coded log notes detail the chronological events of the proceeding and provide search capabilities. The details in these log notes also assist the transcriber during the transcription process.

The professional court recording systems of today incorporate all the features necessary to capture, monitor, playback, and archive court proceedings. An integral part of preserving a record is the establishment of standards, policies, and procedures governing this process.

**AGENCY/ADMINISTRATIVE:** These types of proceedings are more varied than either the court or deposition venues. They can range from large public hearings involving scores of people to small meetings of only a few people. In most of these cases, the digital court reporter will bring their own digital recording portable system. Like the digital court recording system used in a court setting, this portable system will allow for time-stamped log notes, a backup system, and confidence monitoring. Like the court systems, it allows for the production of a prompt and accurate record of the proceeding.

**DEPOSITIONS/LEGAL:** Digital court reporting is becoming much more common in the deposition market. As with agency/administrative proceedings, the digital court reporter will bring their own digital recording system to a deposition. In addition to the features discussed above, the digital recording system will also allow the digital court reporter to play back testimony at the attorney's request.

Advances in technology have made it possible for the digital court reporter to offer attorneys near-realtime delivery of the transcript. The ability to make the entire audio/video record with log notes quickly and securely accessible to the digital court reporter and transcribers means that an attorney can have a transcript available within hours of the conclusion of a deposition. Also, log notes, digital audio/video files, as well as the final verbatim transcript can be quickly and easily uploaded into the law firm's case management software.

In all of these venues, digital court reporting and recording provides accurate and timely access to the record.

## **5. The Official Record**

When referencing the preservation of legal proceedings, there are two components of the official record: 1) the case documentation and materials maintained by the jurisdiction's court clerk that consists of the case file, which contains all legal filings pertaining to that specific case; and 2) the verbatim record of proceedings of a court hearing or deposition. For the purposes of this section, the official verbatim record is addressed.

In the court system the determination of what constitutes the official verbatim record and the method of capture allowed for each type of case is set forth by either statutory law or a court rule promulgated by a state supreme court or the court having authority over a specific jurisdiction. With the advancement of digital recording in the courts, states have been addressing the applicable regulations and revising the language to include digital recording as an acceptable method for capturing the verbatim record in a court hearing or deposition.

The official verbatim record can be captured using different methodologies, including audio and/or video digital recording technology. The official record consists of the audio and/or video recording itself, along with any exhibits. Depending on statute or court rule, when a certified verbatim transcript is prepared of the digital recording and is filed with the court clerk along with the exhibits, then the certified transcript becomes the official record.

The retention period for the recordings, the designated format of the recording for storage, the location for the storage of the recordings, and who has responsibility for maintaining the official recordings for the different case types is governed by statute or by court rule.

While we have discussed above the use of the "official record" in a legal setting, when digital recording is used in other types of proceedings, *i.e.*, corporate, city council, agency hearings, or any type of proceeding, the digital recording file may sometimes also be considered the "official record" of that particular proceeding.



## 6. Technology

The rapid gains made by technology, even just in the last few years, have had the greatest positive impact on digital court recording. Digital court recording has been able to build on these technological advances to not only improve turnaround time on transcripts but in general to improve the overall accessibility of the record.

Today's digital recording systems can include both audio and video capture. These multi-channel recordings are recorded to proprietary recording formats, as well as the more commonly used WAV, WMA, MP3/4 and AVI formats. This open architecture capability enables recordings to be widely and easily used by judges, court administration, attorneys, litigants, as well as the public.

Audio and video files are typically much larger in size compared to document files, yet advancements in compression algorithms now make it possible to compress these audio/video files to more manageable sizes with little to no significant loss of audio quality. Smaller file sizes mean that the storage requirements for these files are not excessive. Audio files can be stored on court/agency/firm servers or in the cloud without requiring huge and expensive storage capacity. In addition, these smaller file sizes, when combined with ever increasing internet speeds, makes the transfer of these audio/video files fast and reliable. With compression rates and internet speed both continuing to improve, the accessibility to these files will also continue to improve.

The technological advancement from analog (or tape recorders) to digital and computerized recording has greatly enhanced the ability for courts to manage recordings. Included in this management are the identification of users with password and username access, restricted access to sensitive or confidential and sealed testimony, distribution based on security control levels to prevent unauthorized access, and management reports of relevant analytical and operational information, including storage capacity, audit logs and security access information.

Vendors for digital court recording systems now provide turn-key digital recording and management solutions for municipal, state and federal courts, and state and federal administrative agencies, as well as corporate users and freelance court reporters taking depositions. These software and hardware solutions capture, digitize, and compress audio and video data that is securely stored in multi-tiered systems and is easily searchable on an internal local area network (LAN).

Digital recording vendors, along with leading court case management vendors, such as Tyler, CourtView, Xerox, New Dawn, and others, have worked together to integrate the digital audio/video recordings and transcripts into case management systems for courts and government agencies. Law firms can also take advantage of the easy and fast transfer of digital audio, video, and transcript files into their own case/document management systems.

This digital recording technology is not limited to use in courts, but is also used by the armed forces, law enforcement agencies, legislatures, and government agencies that have a need for preserving the record. In addition, the private sector's deposition market is seeing an increased number of digital court reporters taking advantage of the benefits digital court recording technology provides. The use of digital court recording hardware and software has

recorded millions of hours of verbatim testimony and provided the record with millions of pages of verbatim transcripts. It is a technology that has been tested by time and proven to be accurate, reliable, and economical on a global scale.

Technology now also exists that allows near-realtime streaming of audio and/or video, along with the digital court reporter's log notes to a remote transcriber or court reporter that allows for rapid draft or final certified transcript turnaround.<sup>3</sup> With the advancement of this technology, digital reporting is now competitive with a stenographic or voice court reporter's realtime delivery of transcripts. If a draft or final certified transcript is needed for review or quoting purposes, the digital reporter can now fulfill this need for the legal community and other users.

## **7. Best Practices**

Digital reporting and recording is a frequent choice of decision-makers as a method for capturing and transcribing the verbatim record in courts and depositions throughout the world today. As with any professional practice or process in a work environment, best practices should always be used consistently to guarantee reliability and to achieve the desired results.

There are two references for digital court reporting and recording best practices that are available for review. AAERT approved and published in March of 2013 the *Best Practices Guide – Digital/Electronic Court Reporting and Transcription*. The guide addresses best practices for digital court reporting and transcription and addresses a wide range of tasks, responsibilities, and skills needed for a trained professional in the industry. The National Center for State Courts, NCSC's *Making the Record Utilizing Digital Electronic Recording*, covers the governance and management structures needed for digital court recording in a court environment.<sup>4</sup> NCSC recommends courtroom procedures and best practices, the management of transcript production, and the minimum standards for digital recording software and hardware for courts.

For years, there has been discussion regarding the best method for capturing the verbatim record. What must be considered and remembered is that for all court reporting methods: it is not the reporting system that is responsible for making the record; it is the person(s) operating the system to capture the spoken word and the person(s) producing the certified verbatim transcript who are responsible for the record. When digital court reporters use best practices and procedures in the capturing and making of the record, no matter the method, an accurate transcript will be produced.

## **8. Certification**

More and more courts and government agencies (both federal and state) are recognizing and often requiring certification of their digital court reporters and transcribers. This requirement protects the quality of the official record by making sure the court reporter/transcriber has the experience and skill level necessary to produce a highly accurate verbatim record. As more courts shift to more modern court reporting systems, they will be able to rely on the certification programs of AAERT to maintain the professional and quality standards they require.

Certification programs ensure that court reporters and transcribers have met and maintain a high standard of proficiency, accuracy and professionalism, which in turn ensures the quality of the final official record. AAERT provides a certification system for their members. The certifications are based on a combination of experience, formal training, tested levels of proficiency, and continuing education.

AAERT offers two standard certifications: Certified Electronic Court Reporter (CER<sup>®</sup>) and Certified Electronic Transcriber (CET<sup>®</sup>). The certification tests for the CER and the CET do not measure the speed that the court reporter records but are a measurement of the accuracy of the record as well as court reporting policies and procedures. In addition to required levels of education, the AAERT certification requires at least one year of actual work experience court reporting and/or transcribing. Awarding these certifications is based on passing both a written knowledge and, when completed, a practical test. Speed is not a criterion on the practical court reporting exam because the digital court recording captures everything spoken during a proceeding regardless of how fast it is voiced. Accuracy is the primary focus of AAERT certification, and in order to pass, the final transcript must be 98 percent accurate.

Digital court reporters can also be trained by qualified court reporting staff in the courts and/or by freelance court reporting agencies. The training process can range from several weeks to several months depending on the range and difficulty of the proceedings reported and if the court reporter will transcribe their own work.

## **9. Accuracy**

Electronic/digital court reporting has been a proven method of producing accurate transcripts since the 1980s. At that time the United States Federal Courts, through the Federal Judicial Center, conducted an exhaustive study on transcript accuracy.<sup>5</sup> The study thoroughly evaluated production of a stenographic-based record versus one that was audiotape recorded.

One of the major components of the study compared the accuracy of the transcript produced by a stenographic system versus an audio recording system. Due to the requirements of the law at the time that a stenographic record be made of all proceedings, the stenographic and audio records were made simultaneously. After a thorough and detailed analysis of comparing the two methods used in preparing transcripts, it was the Committee's finding that "Transcripts produced from records taken by the audio recording system were more accurate than the transcripts produced by the stenographic reporting method."<sup>6</sup>

More than 15 years later, in 2009, Iowa's *Digital Audio/Visual Recording Technology (DART) Committee's Final Report & Findings* stated similar results when comparing the accuracy of stenographic-based transcripts to audio-based.<sup>7</sup> The committee conducted a sample of five courtrooms with digital audio recording systems from different digital recording vendors and requested that a transcript be produced by the stenographic court reporter who was present in each courtroom. An outside transcription company was hired to transcribe the same proceedings from the digital audio recordings. Committee members then reviewed the transcripts and discussed the transcript evaluations. Minor errors were found in every transcript, but the errors would not have materially altered the essential meaning of the speaker, or the meaning was obvious in context.

The committee concluded that both transcripts were equally accurate and that there were no more errors in the transcripts produced by the transcription company than those produced by the stenographic court reporters.

It was the conclusion of the Committee's findings on the key issues that "Accurate transcripts of court proceedings can be obtained from digital recordings if a trained and certified CRM (court recording monitor) manages the system in the courtroom, and qualified, trained and certified transcribers produce the transcripts from the digital recordings."

These numerous studies all reach the same conclusion: audio-based recordings do produce an accurate transcript of court proceedings.

## **10. Accessibility and Timeliness of the Record**

Accessibility to court records has become a major focus of the courts, driven by public demand for access and for more transparency in the legal process. Specifically, the legal community and the public want faster and easier access to the verbatim record of hearings conducted in court. In the past, access was gained to the official verbatim record by ordering a transcript from the stenographic court reporter. Essentially, the stenographic court reporter had sole control over the access to the official verbatim record, and in courts today where stenographic court reporters are still employed, this practice continues and hampers access to the verbatim record by the courts, the parties, and the public. In addition, the courts do not necessarily control the safekeeping or ownership of the official record. The use of digital recording allows for easy and quick access to the verbatim record, and the court maintains and controls the official digital record.

Courts need to address the issues of accessibility and control of the official verbatim record through development of policies and procedures for making the official record, reviewing work processes and work flow for efficiency, and by regulations to ensure compliance by all. Court cases can take many years to adjudicate, along with a lengthy appellate process. So it is imperative that courts have access and control of all verbatim records of hearings to be available when needed, and digital recording meets that requirement.

With the adoption of digital court recording systems, many courts now consider that until a verbatim transcript is produced, the digital recording of a proceeding is the official record. Therefore, these courts must manage not only what is and is not part of the official record but who has access to it and how. "Digital recording enables the state or local court system to make it possible for persons to obtain recordings of court proceedings. The court should establish by rule or administrative order whether parties, attorneys, other case participants or the general public can have access to recordings of some or all court proceedings, and if so, how persons can request recordings and how the court can distribute them."<sup>8</sup>

A successful example of the benefits of this approach is PACER (Public Access to Court Electronic Records), which since 1988 has been making recordings (and transcripts) of federal appellate, district, and bankruptcy courts available to the public for nominal fees.

Access to the verbatim record of court proceedings affects the timeliness of judicial proceedings. The longer a judge or attorney needs to wait for a certified verbatim transcript in

order to prepare and file post-trial motions or in order to make decisions in court trials, the longer it takes to process a case. Digital recording and detailed log notes provide quick access to the proceedings for review purposes by judges and attorneys, and allows for easy transmittal of the recordings for transcription purposes, when needed. Allowing for quick and easy access to the proceedings results in the courts being able to reduce court delay. Court delay increases costs to all parties involved, including the court system.

In some states, cases appealed to the Supreme Court are placed on hold until the trial transcript is completed. Then, timelines kick in for completion of briefs and for appellate argument.

A digital recording system promotes the timely production of the verbatim transcript. Stenographic court reporting is built on a system of keyboard shortcuts to represent every word that was actually spoken. Each stenographic court reporter develops their own style of writing shortcuts, which means that those stenographic notes can only be read by the original stenographic reporter and his/her scopist and/or proofreader. The official record is therefore controlled completely by the stenographic court reporter. The format and structure of the digital recording and digital court reporter's log notes in plain English (as opposed to stenographic shorthand) means that any transcriber can produce the verbatim transcript of a proceeding.

The ability to shift the production of the official record to someone other than the original court reporter permits the courts to manage the work flow and produce the official record in a timely manner. Should the original court reporter not be able to complete the transcript for any reason, a verbatim transcript of the proceeding can still be produced, thus protecting the official record. Timely access to the official record is critical to the efficient operation of our judicial, legislative, and administrative systems.

The Federal Judicial Center's study, as discussed in Section 9, also produced a major finding with regard to transcript delivery: almost all audio-based transcripts were submitted within the Judicial Conference guidelines specified by the requesting party, including daily and hourly transcripts. All substantial delays in regular or expedited transcript deliveries were stenographic-based transcripts.<sup>9</sup>

Prompt and easy access to the official record not only supports an expeditious judicial process, but also helps to promote transparency in the judicial system. Through a combination of almost immediate access to digital recordings and the timely production of verbatim transcripts, digital recording systems offer many advantages to courts and agencies looking to promote efficiency and public transparency.

The need for timely delivery of and easy access to the verbatim transcript is not limited to the court system. Government agencies, deposition attorneys, and private industry also require the prompt delivery of accurate verbatim records of their proceedings. The advantages that digital court reporting and recording brings to court systems also apply to these groups. Each entity within these groups has their own deadlines and requirements for access to the record. The instant availability of audio/video recordings meets this requirement. The ability to manage the production of the verbatim transcript using a large resource of reporters and transcribers ensures a timely completion of the transcript.

“The Americans with Disabilities Act (ADA), passed July 26, 1990, is a comprehensive federal civil rights law that prohibits discrimination on the basis of disability.”<sup>10</sup> Digital reporting systems help ensure the official record of a proceeding is ADA compliant, if required. When discussing plans for selecting digital recording as the method of creating the record, it is important to know – depending on the vendor selected – if the vendor’s digital recording technology is compliant with the ADA.

If the vendor system is compliant, the record can be accessed by individuals who are blind. This is usually accomplished by the use of “JAWS” (Job Access With Speech) which is a computer screen reader program for Microsoft Windows that allows blind and visually impaired users to read the screen, either with a text-to-speech output or by a refreshable Braille display.<sup>11</sup> For individuals who are hearing impaired and may use a hearing aid or have a cochlear implant, assistive listening devices (ALDs) can be of benefit. “Essentially ALDs are amplifiers that bring sound directly into the ear.”<sup>12</sup> The devices work by separating the sounds, speech from background noise, and that allows the user to focus on the spoken word.

## **11. Cost/Efficiency**

In recent years, budgets in the legal marketplace have tightened considerably. This is true on the federal and state government level as well as in the private legal sector. This new economic landscape is forcing many jurisdictions and private firms to re-examine the cost-benefit numbers for producing the official record.

Numerous studies on the economic benefits of digital reporting have been conducted by Federal and State Courts over the years. These court studies have indicated that there is the potential to save millions of dollars by moving away from the stenographer-based court reporting staff and moving to digital-based recording and reporting systems and personnel. Our own current market research also supports this conclusion.

There are two primary cost components of every court reporting system: equipment (including software) and personnel. While digital reporting systems may have higher up-front costs for equipment, the savings in personnel costs will recoup the initial cost very quickly, and in the long run represent a substantial savings.

### **EQUIPMENT**

The cost to purchase and install audio/video recording systems in the courts varies according to the vendor and the size and complexity of the equipment installation. Detailed evaluations conducted in two states, Alaska and Iowa, provide similar cost estimates for per courtroom installations and the annual costs associated to maintain these systems. This DART committee study calculated the Mid-Level audio/video and High-End audio video costs per courtroom and included the annual maintenance cost (Tables 4 and 5 of the report). It determined that the Mid-Level system’s total first year cost was \$27,737 and the High-End system’s total first year cost was \$32,737. The Annual/Ongoing Maintenance Costs for each courtroom ranged from \$4,312 at the bottom of the Mid-Level A/V courtroom cost to \$7,181 for the High-End courtroom.<sup>13</sup>

The following conclusion was published in the Federal Judicial Center’s *A Comparative Evaluation of Stenographic and Audiotape Methods for United States District Court Reporting*<sup>14</sup>:

## Costs for Systems Operation

Installation and operation of the project audio recording systems were accomplished at costs to the federal government that compared favorably (lower initial, annual, and long-term expenditures) to federal government expenditures for stenographic reporting systems.

Cost analysis of the two types of reporting systems, based on the actual expenditures among the twelve experimental courts participating in the project, indicated that the average annual cost of a court-operated audio recording system is \$15,341 per system, compared to \$39,212 for a stenographic reporting system-an average difference of approximately \$24,000 (61 percent).

The projected average annual costs in 1984 (including personnel, equipment, supplies, and facility modification expenditures) in a United States District Court for the two types of reporting systems would be \$18,604 for an audio recording system, compared to \$40,514 for the stenographic reporting system-a difference of \$21,910 (54 percent). Over the course of a six-year period, the expenditures for an audio recording system would be almost \$125,000, compared to \$275,000 for a stenographic reporting system. (See Table 22, Appendix 3.)

Nationwide cost projections for the two methods, based on replacing 552 full-time salaried court reporters with audio equipment mentioned in this report working in the ninety-five United States district courts, suggest a cost difference between methods of approximately \$12 million annually. Since this study, advances have been made in digital recording systems' technology. Combined with this, courts utilizing best practices for their reporters and transcribers have increased the reliability and accuracy of the record. These two factors together have made digital reporting even more cost effective.

In a 2015 survey conducted by AAERT, nationally recognized vendors of court recording equipment were asked to provide their equipment costs. Each vendor was asked to provide their high and low estimates for the same recording packages. Below is an excerpt of the study showing the cost of a digital recording system in one courtroom (the complete Table is attached).<sup>15</sup>

<b>AUDIO/VIDEO CATEGORY DESCRIPTION</b>	<b>OVERALL AVERAGE COST</b>
ONE COURTROOM - AUDIO ONLY SYSTEM	\$6,673
ANNUAL SUPPORT (per courtroom or per portable)	
One Courtroom - Audio Only	\$989
INITIAL CUSTOMER TRAINING (per courtroom or per portable)	
One Courtroom - Audio Only	\$656
<b>TOTAL INITIAL COST</b>	<b>\$8,318</b>

To demonstrate, the overall average initial cost of recording equipment for an audio recording system for one courtroom is \$8,318. This includes an audio system for one courtroom, annual support licenses (5 years) and initial training for the courtroom recording system. The initial cost, plus the annual costs each year when amortized over five years, calculates to a yearly cost per courtroom of \$2,424.

It is also important to note that the costs reflected in this recent survey shows that compared with early studies, the cost of digital recording systems is going down. Advances in technology and increased market competition have led to this drop in costs. It is expected that this trend will continue, making the cost for digital reporting systems even more affordable.

## PERSONNEL/LABOR COSTS

The greatest cost benefit of digital recording is in the savings on labor costs. In producing an accurate and accessible record the personnel costs for digital reporters are significantly lower than for stenographers.

- In an article published in the Pew Charitable Trusts publication *Stateline*, Jeff Newman, deputy clerk for the New Jersey's Office of Reporting Services states, "Undoubtedly, digital recording saves money. For instance, a salaried New Jersey stenographer will cost a court between \$50,000 and \$60,000 per year as opposed to a \$5,000 per year cost to set up and maintain digital recording equipment."<sup>16</sup>
- Liisa Rajala wrote in an article published in USA Today, *More Courts Swear by Digital Technology*, "Although salaries can be higher or lower depending on the jurisdiction...[i]n New Hampshire, court reporters earn \$51,714 to \$72,325, while court technology monitors earn between \$31,983 to \$44,561."<sup>17</sup> This represents a very significant savings.
- In the Digital Audio/Visual Recording Technology (DART) Committee's "Final Report & Findings", December 30, 2009, Table 6, the average level of salary and benefits per full-time staff of three types of support staff in the Iowa District Courts (court reporters, judicial assistants and court attendant/clericals) are compared. The average annual salary for each was: Court Reporters \$90,074, Judicial Assistants, \$58,701 and Court Attendant/Clericals, \$54,938.<sup>18</sup>

As these three examples indicate, digital reporting personnel represent a substantial savings in labor costs.

Appendix Number 1 of this paper, identified as Table 1, contains the results of a 2015 study conducted by the AAERT of 21 state court systems utilizing both stenographers and electronic court monitors. The survey demonstrates a significant difference in compensation between the two methods of court reporting. There were 12 state courts for stenographers and 9 state courts for electronic reporting monitors in the survey. The totals in this survey include the average annual salaries, considering the high and low range, and adding in a 30% increase on annual salary to allow for government paid benefits. The national average total compensation for stenographers was \$84,283, while the digital recording personnel were paid an average of \$50,396. The difference in compensation is almost \$34,000 annually per courtroom.



Appendix Number 2 of the White Paper, identified as Table 2, contains the 2009 salaries for court reporters in many of the U.S. District Courts. Federal court reporters' salaries greatly exceed state court salaries. (See AAERT Table 2)

## DIGITAL COST SAVINGS

Combining the costs of digital reporting systems with the significantly lower labor costs of digital reporting personnel results in a very clear economic advantage in the use of digital systems over other methods. The annual amortized cost of electronic recording equipment (\$2,424) plus the annual average salary for the digital reporting personnel (\$50,396) is a total cost of \$52,820 per courtroom. This represents a savings of \$31,463 per courtroom by converting from stenography to digital reporting systems.

For the past three decades, courts have been evaluating the cost relationship between stenographic reporters and electronic court reporting utilizing courtroom monitors. The empirical data in every survey draws the same conclusion: The use of electronic recording systems in cooperation with a qualified court monitor is the most economical means of ensuring an accurate and complete record of proceedings.

## 12. Supply and Demand for Court Reporters

The demand for qualified court reporters continues to increase. The United States Department of Labor's Bureau of Labor Statistics' Occupational Outlook Handbook projects that between 2014 and 2024, court reporting jobs will increase by 2%.<sup>19</sup>

The more recent *2013-14 Court Reporting Industry Outlook Report - Executive Summary* created by Ducker Worldwide and sponsored by the National Court Reporters Association (NCRA), reports that there will be 5,500 stenographic court reporter job vacancies at the current rate of decline by 2018.<sup>20</sup>

Potentially undermining this positive projection of continued rising demand for court reporters is the fact that the supply of trained stenographic court reporters has been declining at a steady rate for many years. This trend shows no signs of abating. The National Court Reporters Association (NCRA) estimated that its total membership would drop by 26 percent between 2006 and 2016 to just over 16,000 members.<sup>21</sup> The most current membership data available shows the number of court reporter members to be 12,290 with 32,000 court reporters in the marketplace.

This downward trend is being pushed at both ends of the stenographic court reporter demographic. On the front end, there is a reduction in the number of schools for stenographic training.<sup>22</sup> In addition, low graduation rates for students successfully completing a certified stenographic court reporter training program is greatly reducing the number of new stenographic court reporters entering the field. According to the *Journal of Court Reporting* article, *Ensuring the Association Survives and Thrives in the Future*, March 2008, "the number of students at certified reporter training programs has decreased 51 percent since 1992 to 7,267". Additionally, NCRA estimated that "by 2011, it's estimated that the number of students at certified reporter training programs will drop by 19 percent".<sup>22</sup>

While there are fewer stenographic court reporters coming out of fewer schools, at the other

end of the demographic, the current corps of stenographic court reporters is decreasing due to retirement. Citing studies in Iowa and Wisconsin, the Conference of State Court Administrators (COSCA) report stated, "As the number of court reporting schools decreases and the dropout rates rise, the average age of the official court reporter is increasing."<sup>23</sup> NCRA statistics dated April 6, 2016 indicate the average age for stenographic court reporters is 53.<sup>25</sup>

In addition, many current stenographic court reporters are opting for careers in broadcast captioning or CART services. As COSCA states, "Even if a court is satisfied presently with the court reporter model for creating, preserving, and producing the court record, the rate of decline in the [stenographic court reporter] profession poses a serious threat to that way of [courts] conducting business in the coming years. Based on demographics alone, the question confronting courts is how the fundamental need to make the record will be fulfilled when the current [stenographic] method cannot be supported."<sup>26</sup>

As the *2013-2014 Court Reporting Industry Outlook Report - Executive Summary* states, "The demand for court reporters will exceed supply within five years. Increased legal activity and new opportunities will drive demand despite the steady transition of some courts to digital recording. Decreased enrollment and graduation rates for court reporters, combined with significant retirement rates, will create by 2018 a critical shortfall projected to represent nearly 5,500 court reporting positions."<sup>27</sup>

Digital court reporting provides the solution to bridging the widening gap between increasing demands for court reporters and decreasing availability of stenographic court reporters. The barriers to entry for digital court reporting, in terms of both time and cost, are less than for stenographic court reporting, which means a potentially larger pool of new digital court reporters. The training time required to become a digital court reporter is less than that of a stenographic court reporter, which means that a greater number of these court reporters can be brought online in a shorter amount of time.

Meanwhile, the inherent nature of the technology offers reliability and accuracy in creating the record. Certification requirements for court reporters and transcribers, along with the use of best practices, will ensure that digital court reporting is able to meet the quality levels for timeliness and accuracy required by the courts, administrative agencies, and the legal community at large.

### **13. Market Opportunities for Digital Recording and Transcription**

The court reporting industry provides verbatim court reporting and transcription services for three main markets in need of these services. The AAERT's Planning Task Force provided the following insight in the AAERT Strategic Plan 2012:<sup>28</sup>

- *The Freelance Market* (depositions) represents the largest segment of the total court reporting market. The segment is dominated by stenographic court reporters and represents as much as two-thirds of the total market.
- *Judicial Courtrooms* represent approximately 25% of the total court reporting market. This is the segment that has experienced, and continues to experience, the greatest turmoil.

- *Agency Hearing Room* court reporting represents the smallest of the defined segments. Audio recording is commonly used in agency hearings. The segment represents approximately 10% of the total market.

AAERT member survey data show that while AAERT members do work in all three segments, 87% work in or for the courts, with a large percentage working as independent contractors transcribing court proceedings. In contrast, the National Court Reporters Association Membership Statistics as of 12-31-2008 states that 65-70% of its members operate in the freelance market.

This large gap between digital court reporting and stenographic court reporting in the freelance deposition market can be attributed to two key factors: first, stenographic court reporters have been the primary method of court reporting over the past century; and, second, the promotion of realtime services provided by stenographic court reporters.

Digital court reporters are qualified to provide court reporting services in the courts as well as the deposition room. The statistics in this paper demonstrate that this method of court reporting is economical and accurate. In addition, there is an adequate supply of digital court reporters to meet the demand for deposition court reporting services.

The taking of a deposition by electronic means is allowed in the Federal Courts and most State Court jurisdictions. The *Federal Rules of Civil Procedure* (FRCP), as well as the majority of states' *Rules of Civil Procedure*, allow for the taking of depositions by electronic means. Specifically, Rule 30 (b)(3)(A) of the *Federal Rules of Civil Procedure* state "Method Stated in the Notice. The party who notices the deposition must state in the notice the method for recording the testimony. Unless the court orders otherwise, testimony may be recorded by audio, audiovisual, or stenographic means." Most state rules pattern themselves after the FRCP.

Taking these factors into consideration, a case can be made for digitally recorded depositions. When you consider the shrinking supply of stenographic court reporters and the low demand for realtime transcripts, digital court reporters have the opportunity to greatly increase their market share in the freelance deposition market.

#### **14. Value and Benefits**

A court/agency/attorney selecting digital recording as the method used for capturing the official verbatim record realizes its value and benefits in a variety of ways. Earlier in this paper we discussed digital recording's advantages. Now let's drill down even further and explore its value and the benefits of use.

- Judges, hearing officers, attorneys, prosecutors, and public defenders seek tools and business practices that enable them to efficiently increase their productivity – digital recording provides this value due to the quick and easy access to the record for review purposes to enable quick and easy decision making.
- Court administrators benefit by addressing the issue of access and control – digital recording provides ownership of the record to the court.
- Courts will realize a shortened adjudication process due to faster delivery of

transcripts from digital recordings, which will increase the court's performance measures.

- Court clerks benefit from having access to digital recording for review purposes when checking their docket or minute entries. The court clerk also experiences fewer complaints from the taxpayers, because digital recording provides efficiency and transparency of the judicial process.
- Litigants will benefit because they now have options for access to their trial proceedings. An official verbatim transcript can be costly to obtain, but a digital recording of the proceedings can be obtained at a reduced cost and received more quickly than a transcript.

## 15. Conclusion

Since the inception of electronic/digital court reporting, there has been an increasing shift to this new technology. Courts, agencies, and private users across the country have moved away from the older, less efficient methods of court reporting to state-of-the-art digital recording systems. In doing so, they are accomplishing several goals.

Courts of today are now maintaining greater control and accessibility to the record. Past practices required the stenographic court reporter to transcribe the record often causing delays and great expense. Digital recording of proceedings allows for quick and easy access to the proceedings. The end result: the courts are now able to process their caseloads at a higher rate of completion creating a savings for everyone involved in the adjudication process.

The issue of transcript accuracy has been a primary concern when considering the transition to digital court reporting and recording. The United States Federal Courts, through the Federal Judicial Center, and state courts, all have similar conclusions (as addressed in Section 9) that audio-based transcripts can produce an accurate transcript of court proceedings. It was a finding in the final report of Iowa's Digital Audio/Visual Recording Technology Committee that "Accurate transcripts of court proceedings can be obtained from digital recordings if a trained and certified CRM (court recording monitor) manages the system in the courtroom and qualified, trained, and certified transcribers produce the transcripts from the digital recordings."<sup>29</sup>

Numerous independent studies have concluded that moving from the stenography-based model for court reporting to the digital recording model save the courts money. In every case, the digital recording technology used with an electronic court reporter was demonstrated to be accurate and cost efficient.

Certification programs ensure that court reporters have met and maintain a high standard of proficiency, accuracy and professionalism, which in turn ensures the quality of the final official record. Each of the three associations, AAERT, NCRA, and NVRA, provides a certification system for their members. Each of these is based on some combination of experience, formal training, tested levels of proficiency, and continuing education. It is important for the courts to require a certification as well as continuing education requirements for all court reporters and transcribers.

Digital court reporting provides the solution to bridging the widening gap between increasing demand for court reporters and decreasing availability of trained stenographic court reporters. It is anticipated that there will be a shortfall of 5,500 court reporters by 2018. The barriers to entry for digital court reporting, in terms of both time and cost, are less than for stenographic court reporting, which means a potentially larger pool of new court reporters. The training time required to become a digital court reporter is less than that of a stenographic court reporter, which means that a greater number of these court reporters can be brought online in a shorter amount of time.

Meanwhile, the inherent nature of the technology used and the certification requirements for digital court reporters and transcribers will ensure that digital court reporting is able to meet the quality levels for timeliness and accuracy required by the courts and agencies.

The reality is that with current digital court recording technology and its capabilities, a digital court reporter can perform all the necessary and required duties of a stenographic court reporter, assist judges and judicial staff with their daily needs, and provide the requested court reporting services to the legal industry, which results in an efficient judicial system and of cost benefit to its community.

Advances in technology have caused dramatic changes in the industry for generations. The courts have conducted exhaustive studies into the efficacy of digital court reporting and recording systems and found them to be accurate, reliable and economical when used with best practices in place. Digital reporting systems and personnel now represent the most cost effective approach to creating, managing, and protecting the official record.

## AAERT Table 1

### Courtroom Monitor/Stenographer Cost Data April 2015

State/Court	Stenographer/Digital Reporter	Annual Salary*	Benefits @30%	Total
Arizona/Yavapai	Stenographer	\$49,795	\$14,939	\$64,734
Kansas/Topeka	Stenographer	\$42,126	\$12,638	\$54,764
Texas/Travis County	Stenographer	\$73,184	\$21,955	\$95,139
New York	Stenographer	\$74,463	\$22,339	\$96,802
Illinois, Cook County	Stenographer	\$49,266	\$14,780	\$64,046
Georgia/Fulton County	Stenographer	\$53,014	\$15,904	\$68,918
Iowa	Stenographer	\$65,000	\$19,500	\$84,500
North Dakota	Stenographer	\$61,086	\$18,326	\$79,412
Minnesota	Stenographer & Digital Reporter	\$54,466	\$16,340	\$70,806
Florida	Stenographer II	\$79,034	\$23,710	\$102,744
New Jersey	Stenographer	\$88,979	\$26,694	\$115,673
California/Alameda	Stenographer	\$84,366	\$25,310	\$109,676
<b>Total Average Stenographer</b>		<b>\$64,565</b>	<b>\$19,369</b>	<b>\$83,934</b>
Florida	Digital Court Reporter	\$47,718	\$14,315	\$62,033
Minnesota	Digital Reporter & Stenographer	\$54,466	\$16,340	\$70,806
New Mexico	Court Monitor	\$32,760	\$9,828	\$42,588
Florida/Lee county	Digital Court Monitor	\$31,664	\$9,499	\$41,163
California/Kern	Electronic Recording Monitor	\$36,739	\$11,022	\$47,761
Arizona/Phoenix	Court Recording Monitor Electronic Court Recorder	\$28,745	\$8,624	\$37,369
Alaska/US District Court	Operator	\$36,901	\$11,070	\$47,971
New Jersey	Courtroom Recording Monitor	\$53,251	\$15,975	\$69,226
Florida/West Palm	Electronic Transcriber/Recorder	\$26,658	\$7,997	\$34,655
<b>Total Average Digital Reporter</b>		<b>\$38,767</b>	<b>\$11,630</b>	<b>\$50,397</b>
<b>Average Stenographer Compensation</b>		<b>\$83,934</b>		
<b>Average Digital Reporter Compensation</b>		<b><u>\$50,397</u></b>		
<b>Difference</b>		<b>\$33,537</b>		

\*Actual Salary or Average of High & Low

**AAERT Table 2**

**Stenographic Court Reporters' Rates of Pay**

Effective January 11, 2016

(This Table applies to Court Reporters Hired On or After October 11, 2009)

<b>Locality Pay Area</b>	<b>Level 1</b>	<b>Level 2</b>	<b>Level 3</b>	<b>Level 4</b>
Base Rate of Pay	<b>\$66,226</b>	<b>\$69,537</b>	<b>\$72,849</b>	<b>\$76,160</b>
Alaska	\$82,888	\$87,033	\$91,178	\$95,322
Albany-Schenectady, NY	\$75,822	\$79,613	\$83,405	\$87,196
Albuquerque-Santa Fe-Las Vegas, NM	\$75,743	\$79,529	\$83,317	\$87,104
Atlanta-Athens-Clarke County-Sandy Springs, GA-AL	\$79,193	\$83,152	\$87,113	\$91,072
Austin-Round Rock, TX	\$75,835	\$79,627	\$83,419	\$87,211
Boston-Worcester-Providence, MA-NH-RI-ME	\$82,908	\$87,053	\$91,200	\$95,345
Buffalo-Cheektowaga, NY	\$77,690	\$81,574	\$85,459	\$89,343
Charlotte-Concord, NC-SC	\$75,789	\$79,578	\$83,368	\$87,158
Chicago-Naperville, IL-IN-WI	\$83,074	\$87,227	\$91,382	\$95,535
Cincinnati-Wilmington-Maysville, OH-KY-IN	\$78,650	\$82,582	\$86,515	\$90,448
Cleveland-Akron-Canton, OH	\$78,723	\$82,659	\$86,596	\$90,531
Colorado Springs, CO	\$75,842	\$79,634	\$83,427	\$87,218
Columbus-Marion-Zanesville, OH	\$77,756	\$81,643	\$85,532	\$89,419
Dallas-Fort Worth, TX-OK	\$80,160	\$84,168	\$88,176	\$92,184
Davenport-Moline, IA-IL	\$75,782	\$79,571	\$83,361	\$87,150
Dayton-Springfield-Sidney, OH	\$77,153	\$81,011	\$84,869	\$88,726
Denver-Aurora, CO	\$81,412	\$85,482	\$89,553	\$93,623
Detroit-Warren-Ann Arbor, MI	\$82,385	\$86,504	\$90,624	\$94,743
Harrisburg-Lebanon, PA	\$75,809	\$79,599	\$83,390	\$87,180
Hartford-West Hartford, CT-MA	\$83,577	\$87,756	\$91,935	\$96,114
Hawaii	\$77,359	\$81,226	\$85,095	\$88,962
Houston-The Woodlands, TX	\$85,504	\$89,779	\$94,055	\$98,330
Huntsville-Decatur-Albertville, AL	\$77,067	\$80,920	\$84,774	\$88,627
Indianapolis-Carmel-Muncie, IN	\$76,107	\$79,912	\$83,718	\$87,523
Kansas City-Overland Park-Kansas City, MO-KS	\$75,822	\$79,613	\$83,405	\$87,196
Laredo, TX	\$75,888	\$79,682	\$83,478	\$87,272
Las Vegas-Henderson, NV-AZ	\$75,862	\$79,655	\$83,449	\$87,241
Los Angeles-Long Beach, CA	\$84,537	\$88,764	\$92,992	\$97,218
Miami-Fort Lauderdale-Port St. Lucie, FL	\$80,167	\$84,175	\$88,184	\$92,192
Milwaukee-Racine-Waukesha, WI	\$78,405	\$82,325	\$86,246	\$90,166
Minneapolis-St. Paul, MN-WI	\$80,332	\$84,348	\$88,366	\$92,382
New York-Newark, NY-NJ-CT-PA	\$85,562	\$89,842	\$94,121	\$98,399
Palm Bay-Melbourne-Titusville, FL	\$75,776	\$79,564	\$83,354	\$87,142
Philadelphia-Reading-Camden, PA-NJ-DE-MD	\$80,941	\$84,988	\$89,036	\$93,083
Phoenix-Mesa-Scottsdale, AZ	\$77,564	\$81,442	\$85,321	\$89,199
Pittsburgh-New Castle-Weirton, PA	\$77,272	\$81,136	\$85,000	\$88,863
Portland-Vancouver-Salem, OR-WA	\$79,928	\$83,924	\$87,921	\$91,918
Raleigh-Durham-Chapel Hill, NC	\$78,107	\$82,012	\$85,918	\$89,823
Rest of the United States	\$75,729	\$79,516	\$83,303	\$87,089
Richmond, VA	\$77,325	\$81,191	\$85,058	\$88,924
Sacramento-Roseville, CA-NV	\$81,200	\$85,259	\$89,320	\$93,380
San Diego-Carlsbad, CA	\$82,604	\$86,734	\$90,865	\$94,994
San Jose-San Francisco-Oakland, CA	\$89,902	\$94,396	\$98,893	\$103,387
Seattle-Tacoma, WA	\$80,968	\$85,016	\$89,065	\$93,113
St. Louis-St. Charles-Farmington, MO-IL	\$75,822	\$79,613	\$83,405	\$87,196
Tucson-Nogales, AZ	\$75,835	\$79,627	\$83,419	\$87,211
Washington-Baltimore-Arlington, DC-MD-VA-WV-PA	\$82,637	\$86,768	\$90,901	\$95,032
<b>Average Rate per Level</b>	<b>\$79,158</b>	<b>\$83,115</b>	<b>\$87,074</b>	<b>\$91,032</b>

**Level 1:** Starting Salary

**Level 2:** Starting Salary plus 5%

(Requires merit certification.)

**Level 3:** Starting Salary plus 10%

(Requires realtime certification.)

**Level 4:** Starting Salary plus 15%

(Requires realtime certification and merit certification.)

Merit Certification: Registered merit reporter certificate from the National Court Reporters Association (NCRA).

Realtime Certification: Successful completion of a certified realtime examination by NCRA or equivalent exam.



## COST SURVEY OF DIGITAL AUDIO/VIDEO COURTROOM AND PORTABLE SYSTEMS

Audio/Video Category Description	AVERAGE LOW COST	AVERAGE HIGH COST	OVERALL AVERAGE COST
<b>EQUIPMENT COST</b> (per courtroom or per portable)			
ONE COURTROOM - AUDIO ONLY	\$5,673.80	\$7,673.80	\$6,673.80
ONE COURTROOM - AUDIO & VIDEO	\$8,042.09	\$11,942.09	\$9,992.09
CENTRAL MONITORING SOLUTION - AUDIO ONLY (per courtroom)	\$9,756.11	\$12,256.11	\$11,006.11
CENTRAL MONITORING SOLUTION - AUDIO & VIDEO (per courtroom)	\$10,989.86	\$15,864.86	\$13,427.36
PORTABLE SYSTEM - AUDIO ONLY	\$3,588.80	\$4,088.80	\$3,838.80
PORTABLE SYSTEM - AUDIO & VIDEO	\$3,783.75	\$4,408.75	\$4,096.25
PORTABLE SYSTEM - AUDIO & VIDEO – Annual software subscription	\$537.00	\$837.00	\$687.00
<b>ANNUAL SUPPORT</b> (per courtroom or per portable)			
a) One Courtroom - Audio Only	\$474.60	\$1,504.60	\$989.60
b) One Courtroom - Audio & Video	\$805.80	\$2,217.80	\$1,511.80
c) Central Monitoring Solution - Audio Only (Per Courtroom)	\$916.25	\$1,941.25	\$1,428.75
d) Central Monitoring Solution - Audio & Video (Per Courtroom)	\$966.25	\$2,731.25	\$1,848.75
e) Portable System - Audio Only	\$386.60	\$722.60	\$554.60
f) Portable System - Audio & Video	\$364.75	\$522.25	\$443.50
<b>INITIAL CUSTOMER TRAINING</b> (per courtroom or per portable)			
a) One Courtroom - Audio Only	\$575.00	\$737.50	\$656.25
b) One Courtroom - Audio & Video	\$575.00	\$787.50	\$681.25
c) Central Monitoring Solution - Audio Only (Per Courtroom)	\$500.00	\$783.33	\$641.67
d) Central Monitoring Solution - Audio & Video (Per Courtroom)	\$500.00	\$783.33	\$641.67
e) Portable System - Audio Only	\$325.00	\$487.50	\$406.25
f) Portable System - Audio & Video	\$433.33	\$433.33	\$433.33

This industry Cost Survey was conducted in 2015 by AAERT. Surveys were sent to the seven leading vendors of digital audio/video recording systems and six surveys were returned. Each vendor was asked to provide their high and low estimates for the same recording package.

## GLOSSARY

**AAERT** – The American Association of Electronic Reporters and Transcribers provides education and certification for professionals engaged in digital court reporting, transcribing, and associated roles. AAERT offers networking opportunities for its members and promotes public awareness about the value of digital reporting. (Founded 1995)

**ADA** – “[The Americans with Disabilities Act \(ADA\)](http://www.dol.gov/dol/topic/disability/ada.htm) (1990) prohibits discrimination against people with disabilities in employment, transportation, public accommodation, communications, and governmental activities. The ADA also establishes requirements for telecommunications relay services.” (Source: <http://www.dol.gov/dol/topic/disability/ada.htm> US Department of Labor)

**CART** – ““Computer-aided transcription services” has since become known as “real-time captioning” or Communication Access Realtime Translation (CART) services, a professional service that can be delivered on location or remotely.

**COSCA** – Conference of State Court Administrators (Founded 1955)

**Log Notes** – The annotations made by the digital reporter indicating speaker identification, proper nouns, terms, etc. which are used in conjunction with the audio/video recording to create the verbatim transcript. Log notes are often time-stamped and synched with the digital recording.

**Multi-Channel Recording** – The recording of more than two separate channels of audio at once on the same computer and synchronized to each other. This requires the use of appropriate hardware and drivers, with recording software that can work with that hardware/drivers combination.

**NCRA** – National Court Reporters Association (Founded 1899)

**NCSC** – “The National Center for State Courts is the organization courts turn to for authoritative knowledge and information, because its efforts are directed by collaborative work with the Conference of Chief Justices, the Conference of State Court Administrators, and other associations of judicial leaders.”<sup>30</sup>

**NVRA** – National Verbatim Reporters Association (Founded 1967)

**Scopist** – “A scopist is a professional transcript editor for stenographic court reporters who is able to read the reporter’s shorthand notes.”

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*Federal Rules of Civil Procedure*

## END NOTES

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- <sup>1</sup> *Best Practices Guide – Digital/Electronic Court Reporting and Transcription*, AAERT, March 2013
- <sup>2</sup> See Section 7, Best Practices.
- <sup>3</sup> Systems providing streaming include FTR's *Court.fm*, CourtSmart's mobile system
- <sup>4</sup> *Making the Record Utilizing Digital Electronic Recording*, National Center for State Courts, September 2013
- <sup>5</sup> J.M. Greenwood et al, *A Comparative Evaluation of Stenographic and Audiotape Methods for United States District Court Reporting* (Federal Judicial Center 1983).
- <sup>6</sup> J.M. Greenwood et al, *A Comparative Evaluation of Stenographic and Audiotape Methods for United States District Court Reporting* (Federal Judicial Center 1983), p. 77.
- <sup>7</sup> *Digital Audio/Visual Recording Technology (DART) Committee Final Report & Findings*, submitted to the Iowa Judicial Council, December 30, 2009.
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<sup>30</sup> <http://www.ncsc.org/About-us.aspx#>