D13 Digital Evidence Case Report: Data Conversion on Digital Audio.wav Files

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After attending this presentation, attendees will recognize and use methods to decipher corrupted .wav files and restore the files to be used as forensic evidence.

This presentation will impact the forensic community and/or humanity by demonstrating techniques for recovery and conversion of digital audio files are essential for examiners who work with digital audio evidence. Additional awareness of these safeguards helps to improve the quality of forensic exams of all examiners who use digital evidence.

Digital Evidence has been recognized as a forensic discipline by the American Society of Crime Laboratory Directors, Laboratory Accreditation Board (ASCLD/LAB). Since many forensic disciplines already use digital techniques for specific procedures unique to those disciplines, this designation of digital evidence as a separate discipline highlights the importance of safeguards needed when using digital evidence techniques. This case study reviews methods and procedures used to recover digital audio .wav files which were corrupted and unreadable. This type of audio file is prevalent in the industry and has started to frequently appear in case submissions.

Digital audio .wav files were received and were not readable using standard desktop computer applications. The digital files of this case were generated by a 911 communications logging system but were garbled and required audio enhancement, although the files could be played back on the originating 911 system. However, all attempts to playback the files in the FBI Audio Lab caused computer default errors. The techniques used to successfully recover the audio files and convert them to readable .wav files are reviewed.

With the pervasive nature of forensic digital evidence, there are general procedures and safeguards which may be taken to ensure that the evidence is handled properly. Several industry groups (for example, the Scientific Working Group on Digital Evidence) have published documents which are valuable resources for forensic examiners involved with digital evidence. This case report will also review techniques to recover, preserve and store digital audio evidence.

Data Conversion, Audio .wav Files, Digital Evidence

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