Forensic enhancement of digital audio recordings

A protocol is described to improve the voice intelligibility of investigative and other forensic audio recordings collected via digital recording systems, whether audio only or audio/video units. Sections are included on the differences between analog and digital recordings used in the forensic field, appropriate laboratory space, applicable equipment and software, enhancement examination procedures, enhancement examples, evidence handling, and expert testimony.

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The Audio Engineering Society’s mission is to promote the science and practice of audio by bringing leading people and ideas together.
Digital audio recorders aren't the only equipment that record audio evidence. CCTV surveillance systems, as well as most other digital video recorders, will include both audio and video in the recordings. As an Audio and Video Forensic Expert, I often work with both the video and audio from these recordings. When I receive digital media evidence that includes sight and sound, I analyze both audio and video using separate forensic processes. For a forensic expert to authenticate a piece of audio evidence, the expert must prove beyond any doubt that the recording is in its original form and has not undergone any tampering. If a piece of evidence is not authentic, it should not be used in court because it may be incomplete or altered to purport events that did not occur. Conducted forensic examinations of audio and video media (analog and digital) and digital images, including authentication of recordings/images, intelligibility/visual enhancement, identification/classification of non-voice signals, voice comparison, digital data retrieval/analysis, metadata analysis, and other related examinations. September 1996 – June 2003 Federal Bureau of Investigation (FBI), Quantico, Virginia. Electronics Engineer / Forensic Examiner. Conducted examinations of audio recordings produced or collected by federal, state, local, and foreign law enforcement and judicial agencies.