



Forensic Audio Analysis System

**FAAS follows the NIST SP 800-86 guidelines for examination, analysis and reporting. All embedded methods are scientifically valid and the entire workflow is automatically documented.**

**FAAS** is a user-friendly software package developed from scientific research offering forensic audio analysis and authentication tools in an easy-to-use environment. Today, audio manipulation has become much more subtle, easy, and widespread with the advent of software audio editing capabilities such as removing content and recompressing signals. Whether the audio has been manipulated for publishing reasons or to obfuscate information, FAAS is the one-stop solution for the toughest audio authentication challenges.

**FAAS** provides forensic tools for global, local, and comparison analysis:

**STRUCTURE** performs file structure analysis, decodes OLYMPUS and SONY digital audio files, detects inconsistencies left by audio editors

**FORMAT** reports the evidence file technical characteristics, usually known as the audio format

**Stereo Delay & Phase** investigates the delay between channels and stereo phase

**QL/Bit Depth** computes the audio signal's real Quantization Levels (Bit Depth) and detects traces of local interpolation

**Zeros** counts and reports the consecutive zero level samples from the beginning and end of the audio signal

**Power & Energy** analysis

**DC Offset** computes and displays the DC offset mean and standard deviation trajectories

**Butt-Splice Edits** searches for traces of *butt-splice* in the audio signal; no reference recording is requested by this function

**Butt-Splice Edits vs Reference** searches for traces of *butt-splice* in the audio signal, by using a reference original recording to train/calibrate the algorithm

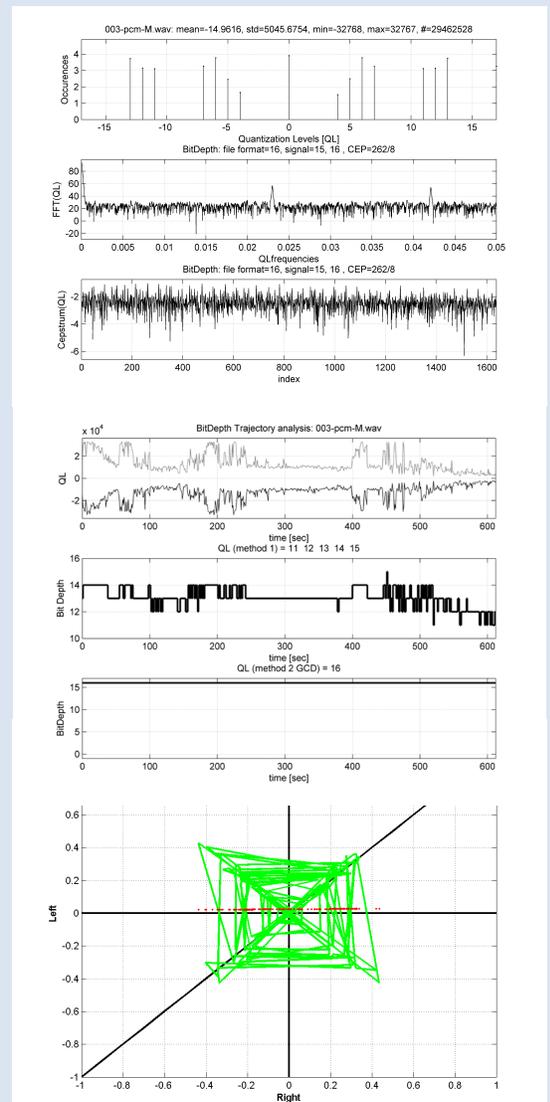
**Copy-Insert/Clone** detects identical and almost identical fragments due to copy/insert selections inside the same signal; no reference samples are requested by this function

**Copy-Insert/Clone vs Reference** searches for identical fragments between evidence and a reference recording

**PSD** computes and displays the Power Spectral Density of the audio signal

**LTAS** computes and displays the Long Term Average Spectrum of the audio signal

**LTASS** computes and displays the Long Term Average Sorted Spectrum of the audio signal



**LCF** computes and displays the Low Cut Filter characteristics

**ACL** computes and displays the audio compression level

**MDCT** computes and displays the Modified Discrete Cosine Transform map

**Lossy Compression Verification/Identification** analyzes traces of previous lossy compression (AAC, GSM, MP3, OGG, WMA) left by different recorders/phones, systems and software (e.g. iOS, Android, HTC, Huawei, Apple, LAME, LG, Olympus, Panasonic, Samsung, Sony, etc.). The comparison results are reported as Likelihood Ratios, compression algorithm, sampling frequency, bit rate, channels, make, model and app (e.g. Apple iPhone, iOS, Voice Memo)

**ENF** computes and displays the CC and MQD of the evidence vs. a reference Electric Network Frequency database

**Format & Structure Comparison vs Reference** compares the evidence structure and format against a reference recording

**Format & Structure Comparison vs Database** compares the evidence structure and format against a reference database

**LTASS Comparison vs Reference** computes and displays the mathematical correlation and mean quadratic difference between evidence and a reference recording

**ACL Comparison vs Reference** analyzes the CLA, computes and displays the mathematical correlation and mean quadratic difference between evidence and a reference recording

**MDCT Comparison vs Reference** computes and displays the MDCT of evidence and a reference recording

**CHANNEL BATCH** allows user to batch process a channel

**FOLDER BATCH** allows user to batch process a folder containing audio and video files

**ARCHIVE CASE** saves all the results and reports in a ZIP file archive along with a HASH report; automatically deployed during File Batch session

**REPORT FOLDER** runs a fast format analysis on all the audio files from a folder

**FAAS** is available for Law Enforcement only and uses **peer reviewed published methods** and unique functions developed by our team. **FAAS** is a forensic system that protects your files and casework according to the best practices for digital evidence labs, so no Internet connection, activation or other online services are requested or allowed.

**FAAS** was successfully tested and installed on 64bit Windows 7, 8, 8.1, and 10. The minimum recommended configuration is i7 processor, 64GB RAM, 2 TB SSD HDD. Contact us for more details.

