



OVERVIEW

AudioFinder for Defense

Mobilizing the power of phonetic search



The need to analyze time-sensitive data gathered from low-quality audio sources in multiple languages is mission-critical for many organizations around the world today. Nexidia's powerful audio analytics technology enables highly-accurate searches at more than a million times faster than real time, allowing users to identify and play back the key portions of their audio files immediately, while information is still relevant.

Nexidia AudioFinder works in more than 40 languages across a broad range of signals and acoustic qualities, including low quality telephony and radio traffic. It can scan multiple collected channels simultaneously, providing a fast and efficient means of identifying, collecting and analyzing information.

Designed to be deployed on a single system, this size-, weight- and power-(SWaP) conscious application successfully addresses the daunting task of processing large volumes of audio under challenging conditions. Thoroughly field tested, AudioFinder enables users to index and search audio content from remote locations lacking network access. It has been successfully deployed in numerous operations across multiple theaters.

AudioFinder provides users the flexibility to include or exclude topics based on relevance. With its sophisticated review tools, AudioFinder can start playback exactly where a word or phrase of interest

occurred, or earlier in the discussion, to enable users to fully understand the context. Direct import and export of files is also available to support collaboration.

HOW IT WORKS

Nexidia's award-winning phonetic search technology searches audio-video using phonemes, the smallest unit of human speech. Media files are phonetically indexed – broken down into phonemes – and searched for the most accurate, relevant results. This phonetic approach supports almost all available audio qualities and audio variances such as a speaker's language, accent, dialect, gender and age.

Nexidia's phonetic solution employs "automated listening," which systematically ingests and identifies recording content within seconds, enabling timely identification of threats and trends. This function allows users to efficiently sift through massive amounts of irrelevant audio to discover the information pertinent to their mission.

Nexidia's search function allows users to enter simple words or phrases and find them wherever they exist in the recordings. Users can include multiple search terms in a single query, apply Boolean operators (e.g. and, or, and not) and time-based proximity logic to queries, and perform nested searches.

SYSTEM REQUIREMENTS

AudioFinder quickly and easily installs on a standard MS Windows desktop or laptop computer with its intelligent installer. Minimum system requirements include any 64-bit version of Windows Vista, 7 or 8 with the latest service pack and a Core 2 Duo (at least 2 GHz) processor with 6 GB of RAM, or 8 GB if using the Language ID feature.

FEATURES

Smart MediaSets: Users can establish standing searches designed to run against any combination of recordings in the application, and collect all the results in a single place – allowing for rapid retrieval and review. Newly-added audio is automatically analyzed and anything matching the specified search criteria is added to the existing Smart MediaSets. Users can set up a Smart MediaSet and receive email alerts when new, matching audio is added to the system.

Term Sets: Users can upload lists of threat terms, cover terms and other search terms along with thresholds to be applied. When the "hit confidence" for any search term exceeds its specified threshold, AudioFinder presents the results organized by when each term appeared in the audio file. Users can quickly scan the results to get a sense of what occurred in the file. Term lists and search results can be annotated, exported (along with the media), or passed on to other personnel for a more detailed investigation.

Data Visualizations: AudioFinder can present data in graphic charts and word clouds to enable users to more easily comprehend and investigate search results.

Pronunciation Optimizer: Pronunciation Optimizer lets users test and improve the most relevant search results. This feature is used mainly with obscure or hard to pronounce words. Based on user feedback, the system will generate and then optimize search terms that more closely resemble what is being sought. The fully optimized search term can then be used to re-run the initial search (usually resulting in dramatic accuracy improvement), and can be saved and used in any future query. Nexidia AudioFinder can also search by example when users identify a specific segment of audio that contains the desired term they wish to match.

Language ID: This feature automates the process of identifying the languages and dialects contained in media files and grouping the files by language. These groups can be assigned to language-specific reviewers for further search or processing. All Language ID models are built and managed directly within the Nexidia AudioFinder application.

Speaker Identification: Nexidia AudioFinder allows users to take speech examples (a clip or an entire file) from a speaker of interest to create a model that can then be used to identify that speaker

in other files. Over time, users can refine the speaker models by continuing to add audio examples that contain that speaker, as well as examples that do not. This feature is particularly helpful when used as a filter to eliminate certain speakers from a target set of audio files.

Portability: AudioFinder is designed to co-exist and cooperate with other critical software sharing its hardware platform. If another application requires system resources, AudioFinder can drop its primary services into the background, limiting its resource consumption. As other applications release system resources, AudioFinder can return to normal processing.

Speak-to-Search: Users have the option to speak versus type the phrase for which they wish to search, allowing non-native speakers a fast and easy method to enter a search phrase. Prior to launching the search, the user can play back the audio phrase to confirm it was recorded correctly. Other features such as Pronunciation Optimization can also be applied to these spoken phrases to further improve search results.

Open Architecture Web API: AudioFinder contains an application programming interface (API) that enables other applications installed on the same computer to access and use AudioFinder's search and filter results in any manner desired.

Multiple File Types: Users can import media into the application in a wide variety of audio and video formats, including: .aif, .avi, .mp2, .mp3, .mp4, .mpeg, .mov, .wav, .wmv and many more.

Language Support: Nexidia AudioFinder supports the more than 40 languages currently available across the Nexidia product suite, with many more planned for development. New language packs are built from scratch and take weeks or months to create by collecting audio samples from many native speakers of a particular language. In addition, Nexidia offers a multilingual "universal" language pack that covers a much broader range of phonemes. Meant for specific use-cases, this powerful language pack can support indexing/searching of any language today.

Metadata Support: The system allows importing of metadata from various sources which can be used to view, categorize and sort recordings. Users can also create new categories for their media and easily assign values to any recording.

Powerful Computer-Based Training & Searchable Help: Nexidia AudioFinder contains a powerful, yet easy-to-use training module that instructs users on the application's primary functions and capabilities, enabling them to be fully utilizing the tool in a matter of hours. In addition, a searchable help function allows users to quickly find answers to specific questions about the product.

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