



STATE-OF-THE-ART, AVIATION INDUSTRY SPEECH RECOGNITION SYSTEM



Lexix is a speech recognition software developed for air traffic control and command & control applications. A high-accuracy recognizer, the system follows the World Wide Web Consortium (W3C) standards and was designed to meet aviation industry's stringent performance requirements.

LEXIX COMPETITIVE ADVANTAGES

User-customizable speech recognition solution:

Lexix allows the end users to customize the software with recognizable phrases related to their specific operation. Our customers can easily modify the system's phraseology with local terminology and spoken names, including aircraft callsigns, navigation beacons, and geographical locations. The customization functionality delivers remarkable flexibility, enabling our customers to swiftly maximize the use of the system and obtain the best possible value in return.



Supports non-native English accents. English is the international language of aviation. Yet, most operators in the aviation industry are not native English speakers and they speak the language with varying degrees of accents. Lexix easily supports non-native English accents. The benefits? Superior training in the international language of aviation, ability to coach everyone, regardless of their native language, and less investment in training software.

Situational awareness: Lexix is more accurate than radio communication between pilots and controllers. Even with non-native speakers, Lexix reached an extraordinary 95%+ accuracy. Yet, what counts most, is how agile the system is at interpreting spoken words in the context of situational awareness, to ensure the output is reasonable and appropriate.



LEXIX COMPETITIVE ADVANTAGES

Stability and peace of mind: Lexix was built on Adacel's over 20-year experience with speech recognition software and simulation. You buy your software from one of the world's leading simulation technology developers with extensive experience and deep heritage in the aviation industry.



LEXIX IMPLEMENTATION

Adacel's Lexix speech recognition system can be implemented through the Lexix Software Development Kit (SDK), which consists of:

Lexix Automatic Speech Recognition (ASR) engine:

Lexix ASR is a high-accuracy recognizer that facilitates a voice user-machine interface in simulation and control and command environments. The ASR executes the actual voice recognition task. It easily handles the enormous mission of processing the voice commands and correctly interpreting them in context, drawing from its extensive database of words, phrases, and grammar rules. Its intelligent design swiftly handles non-native English accents, out-of-grammar phrases, and unique pronunciations. This highly effective speech recognition system processes the commands in the context of situational awareness – all with the goal of reducing or eliminating errors before generating the text-to-speech response.



LEXIX IMPLEMENTATION

- **Lexix Dialog Editor:** Our customers love this feature, for good reason. Lexix empowers its end users to directly customize it. Without any software changes, users can tailor Lexix with unique words and names, phrases, vehicle callsigns, pronunciations, geographical locations, multiple variations of a supported command or phonetic spellings, etc. With Lexix, you don't need to go back to the original developers asking to add or remove specific phrases from the database; you can make changes on the fly, in less than a minute, offline or while a scenario is running.
- **Application Programming Interface (API)** to quickly and easily access Lexix's application resources for a smooth integration process.
- **Lexix Command Audio (LCA):** this powerful optional system automatically optimizes audio input to enhance Lexix Automatic Speech Recognition (ASR) engine performance. The system is particularly effective with processing soft, low-volume voices in noisy environments, less-than-ideal voice frequencies, and poor push-to-talk techniques. It is also very successful at compensating for the weak input signal when the microphones are not optimally placed. As a result, you can avoid the dreaded "Say again" or "I am sorry, I did not get that," or worse, generating a false positive, when the system falsely recognizes and implements the wrong command, a highly undesirable occurrence in a command and control environment.
- **Integration assistance:** Samples (Unity 3D application, grammar catalog, code, Visual Studio Solution) and integration guide to aid you during the implementation, launch and optimization of your new Lexix speech recognition system.

WHY LEXIX?

Intelligent. High-precision performance. Empowering. Lexix speech recognition technology allows users to customize its phraseology on the go. This agile and smart system can be continuously optimized to deliver the best possible value considering the ever-changing operational and training needs.

We are here to help. Contact us: info@adacel.com

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