



## *nautilusVoice* – VoiceXML Application Platform

### The Challenge...

Universal acceptance of the World Wide Web has provided an excellent means of supplying information to end users. It provides a method for improving traditional customer service by allowing customers to interactively gather information, place orders, and check account status. The one difficulty with the Web is that it requires users to access it with a net-connected computer or PDA. VoiceXML provides a mechanism to voice-enable web pages so they can be accessed via the telephone...anywhere...anytime.

### What's wrong with traditional IVR?

Until now, there have been two choices when deploying interactive voice services. You could buy expensive, proprietary interactive voice response (IVR) units or you could pay usage-based charges to a commercial service provider. Neither of these solutions is well suited for small to medium sized businesses that want to find cost-effective solution scaled to their business needs. The *nautilusVoice*<sup>™</sup> can support these services in a small, cost-effective device that brings the power of VoiceXML to small businesses. Current configurations can support from 1 to 8 voice lines with larger configurations coming soon.

### What is VoiceXML?

VoiceXML is a markup language that allows web applications and content to be accessed by a telephone. To accomplish this, *nautilusVoice*<sup>™</sup> provides platform services to interact with the telephone line through a CTI (Computer Telephony Integration) card, and with VoiceXML documents, in which powerful applications are implemented. These platform services use the HTTP protocol (HyperText Transfer Protocol) to obtain documents from a Web Server. On the web server, documents may be stored as static files, or may be dynamically generated by any of a number of common web technologies like CGI, Servlets, JSP, ASP, etc. The resultant system has all of the capabilities of IVR systems, with the added advantage of integration with web-based systems.

### Why VoiceXML?

IVR systems based on VoiceXML add great flexibility and functionality to voice system implementations. VoiceXML offers significant advantages, including:

- **Open Standards** – VoiceXML is a documented and accepted standard based on proven Web technologies. Development and maintenance do not require knowledge and experience with proprietary systems or languages. An additional advantage is the availability of proven VoiceXML applications which will run on the *nautilusVoice*<sup>™</sup> platform.
- **Easy Integration** – VoiceXML is based on XML standards, which facilitates integration with existing enterprise applications, such as databases, CRM applications, websites, etc.
- **Advanced Functionality** – *nautilusVoice*<sup>™</sup> is designed with modular interfaces to voice synthesis, touchtone/speech engines, and CTI hardware, allowing the simple integration of new and improved technologies as they become available.
- **Reduced hardware and maintenance costs** – *nautilusVoice*<sup>™</sup> runs on commercially available server hardware, ensuring reasonable hardware costs, and is based on the Linux operating system, for low-cost software maintenance.
- **Portability** – Applications can be moved easily from one VoiceXML-standard platform to another – this portability does not exist with proprietary IVR platforms.

### *nautilusVoice*<sup>™</sup> Platform

The *nautilusVoice*<sup>™</sup> platform is based on an industrial PC chassis with processor, memory and disk, and hosting a CTI card (interface to the telephone network) and network card (interface to the internet). It is comprised of the following software elements:

- Ultra reliable Linux operating system.
- VoiceXML interpreter.
- Platform services to allow the interpreter to talk to the telephony interface.
- A TTS (Text-To-Speech) engine to convert dialog texts to audio.
- A speech recognition and/or DTMF detection engine to receive input from the telephone line.
- An HTTP client to talk to the web server, and a web server that provides the capability for both static and dynamic pages (e.g., through Servlets, JSP, CGI, PHP, etc.)

## Hardware Options

### Commercial Configuration

The Nautilus VXML server is available in a compact, freestanding configuration supporting up to 4 telephone lines.



### Industrial Configuration

The Nautilus VXML server is also available in a 2U rack mount configuration supporting up to 8 telephone lines.



## nautilusVoice™ Features

- **Voice Synthesis** – Voice synthesis is supported via built-in text-to-speech conversion. This provides the ability to read text aloud.
- **SSML Support** – Speech Synthesis Markup Language, allows optimization of spoken text.
- **Static Audio Content** – Prerecorded audio files (including wav and µlaw) can be used to provide prerecorded speech, sounds, or music.
- **Dynamic Voice Content** – e.g., with server-generated VoiceXML pages.
- **DTMF Detection** – DTMF is still the most effective method for user interaction over the telephone although speech recognition is getting better every year. DTMF detection is built into the server and can be incorporated into VXML documents to accept user input.
- **VXML 2.0 Support with built-in Grammars**
- **Call Origination and Transfer**
- **Simple Installation and Maintenance**

## VoiceXML Applications

The true power of VoiceXML lies in its capacity to support powerful and easily implemented voice telephony applications, integrated with web technologies. The following applications are part of the *nautilusVoice™* VoiceXML platform:

### Available Applications

#### Integrated Mail Application

Check and respond to email while on the road away from your computer.

- Configure up to 128 user accounts via web interface.
- Leave voice mails for users.
- Check voice mail & delete unwanted messages.
- Check email with option to review only new email.
- Read text and HTML and listen to audio attachments.
- Send a voice attachment to reply to emails.
- Customize accounts over the phone with unique greetings and passwords.

## Future Applications

### Auto Attendant

Give your business a professional appearance with powerful and flexible auto-attendant functionality. Using easily customizable greetings, menus, and integrated IVR functionality, *nautilusVoice™* allows customers and clients to access information, leave messages, orders and requests, or be routed directly to your staff, regardless of where they are. Staff may also be contacted via page, email or mobile phone.

### Critical Systems Monitor

Interface to devices monitoring critical systems via voice. Check status and control equipment via telephone without the need to have a computer terminal. This is a great solution for on-call staff who may not be near a terminal when they receive a critical system alert.

### Customized Applications

In addition to these “core” applications, customers will have the capability to address problems specific to their businesses, either by modifying these applications, or by developing entirely new ones using the large base of VoiceXML code already in existence. The following are a few examples of applications in which VoiceXML is typically used:

- **Voice Portals** – Like Web portals, voice portals can be used to provide personalized services and access to information such as stock quotes, weather, restaurant listings, news, etc.
- **Location-based services** – Users can receive targeted information specific to a given location. Applications use the calling party number to look up information.
- **Voice Alerts** (e.g., for advertising) – VoiceXML applications can send targeted alerts to users who subscribe for special alerts informing them of events.
- **Commerce** – VoiceXML applications can allow users to purchase over the telephone, by allowing users to communicate with web-based purchasing systems.

Customized applications meeting specific customer requirements can be easily adapted from existing VoiceXML code, or developed using the myriad of development tools available for this technology. Technical expertise is also readily available from trained consultants, including Nautilus Development's own capable staff. Contact Nautilus Development sales directly for inquiries.

*nautilusVoice™ is an element of Nautilus Development's Open Communications Architecture™ line of reasonably priced telecommunications solutions.*



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