

Voice Guidance That Lets Your NCR ATMs Do the Talking

By March 2012, organizations in the US must comply with ADA regulations from the 2010 Standards for Accessible Design, including those requiring voice guidance and voice feedback (for example, text-to-speech [TTS] audio feedback). This article describes what voice guidance is and illustrates options for adding audio to screens-and-states-based NCR ATMs.

What is Voice Guidance?

Voice guidance is one term for the “spoken” audio feedback (whether provided using WAV files or synthesized text-to-speech) provided at the ATM. It is important to note that “speech-enabled” ATMs are only one aspect of the requirements for compliance with ADA regulations aimed at improving accessibility to ATM controls, which include other items, such as specifications regarding the physical structure that houses the ATM, the tactile symbols on the ATM keypad, and more. Audio is required for a number of types of information, including ATM operating instructions and an orientation to the available controls, transaction prompts, input verification, account balances, error messages and so forth. Audio can be made available either through a telephone-type handset or, more typically, an industry- standard headphone jack that accepts the customer’s own headphones.

Are Your ATMs Equipped for Voice Guidance?

Organizations must begin by evaluating their ATM networks and ensuring that ATMs are equipped with the hardware and software required for voice guidance. Terminal vendors can assist in determining the required changes for ATMs. In addition, organizations must verify that their host system software is capable of processing the message data related to voice guidance, for example, that the host system can send account information in command responses to the ATM. (Receipt information must be spoken to the customer.)

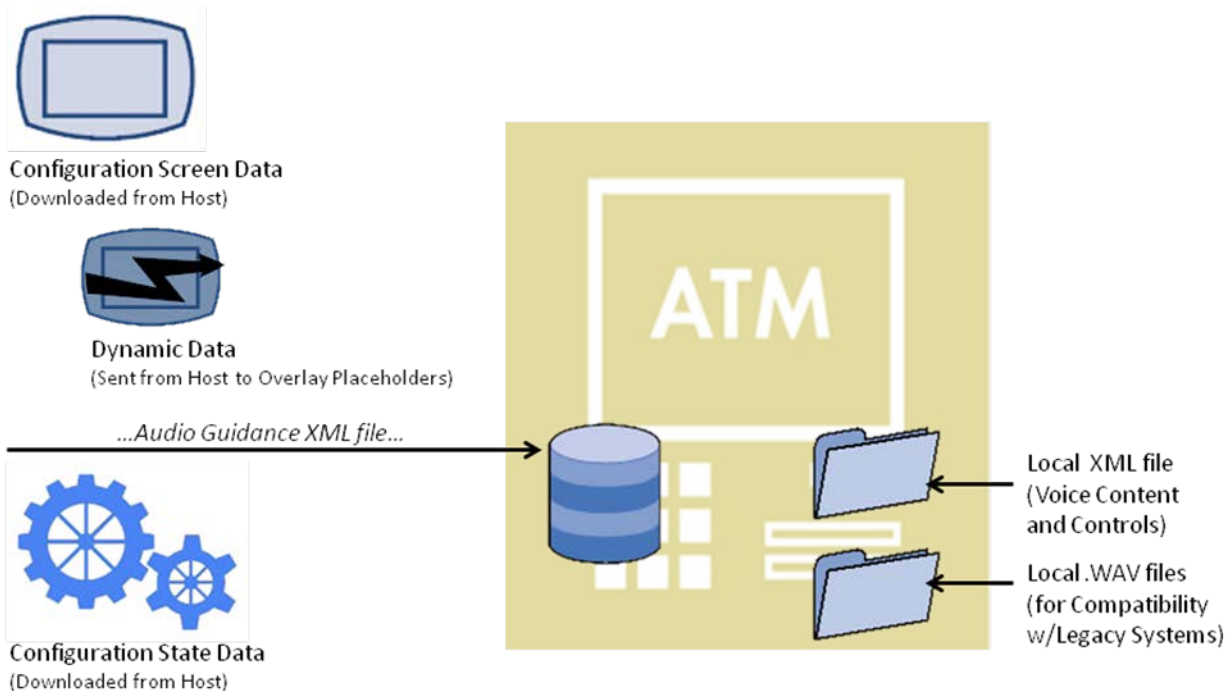
Voice engines and voices for the desired languages must be installed and tested on the ATM. Additionally, if ATM configurations containing voice guidance for speech-enabled ATMs will be built or tested using a simulator, a voice engine and voices must be installed on test PCs. The procedure for installing and configuring voice engines and voices will vary. Refer to the installation and configuration instructions provided for the voice engine and voices that your organization has chosen.

Adding Voice Guidance to an NCR ATM

An example of adding audio to an NCR ATM screens-and-states-based configuration follows. This example adds voice guidance to a sample customer lead-through. Before getting into specifics, you'll need to understand the basic voice support components for an NCR ATM, which are:

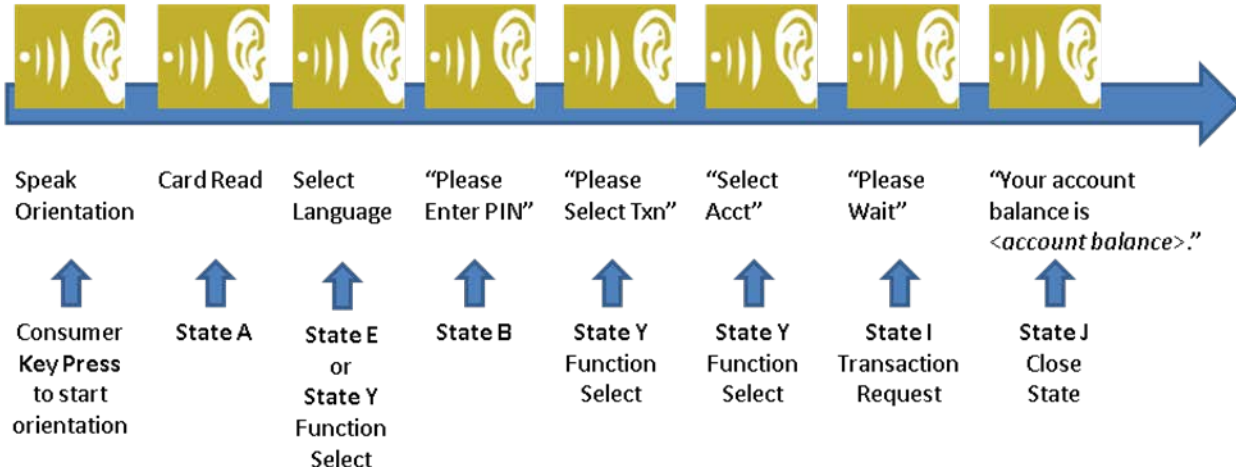
- Configuration screen data – This is data that controls the ATM screens displayed for customers. This data is downloaded to the ATM from your Host system. For some screens, the host may also send dynamic data (such as account balances), as defined in your AudioGuidance.XML file.
- Configuration state data – This is data that drives the flow of the customer's transaction at the ATM. This data is downloaded to the ATM from your Host system.
- XML file (stored locally on the ATM) – This is the **AudioGuidance.XML** file that is stored at the ATM and contains all of the screen and keyboard audio "spoken" to the customer.
- WAV files (stored locally on the ATM) – These WAV files, only available with older NCR models, contain audio data for screens. The WAV files are stored on these legacy ATMs.

Voice Support Components for an NCR ATM



An illustration of a sample customer lead-through follows. It includes the states and audio feedback that might be associated with a typical customer interaction.

Sample Customer Lead-Through on an NCR ATM



The customer begins by inserting the plug of a personal headset into the standard audio jack provided at the ATM and pressing a designated key to hear orientation (or insert a card) to start the transaction. Voice guidance at the ATM must provide an orientation to the controls on the ATM and some brief operating instructions.

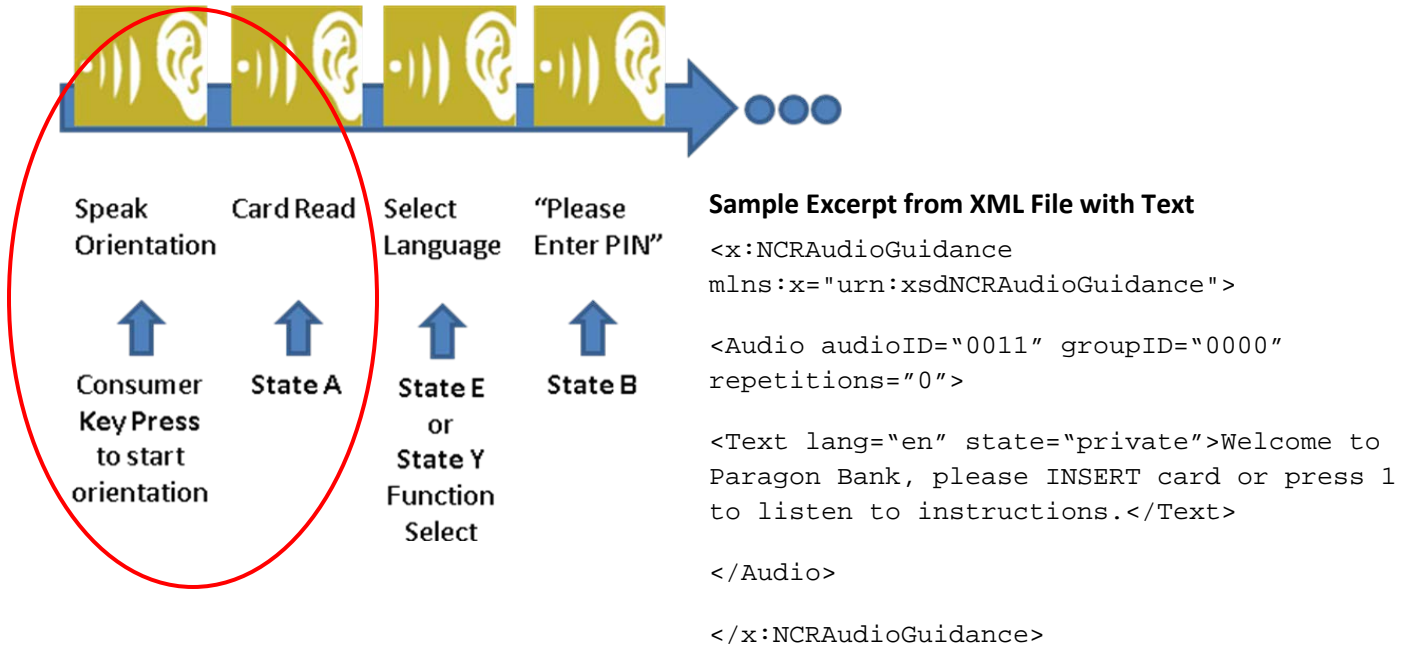
Voice guidance tells the customer to insert the card and, after the ATM reads the card, instructs the customer to enter the PIN, select the transaction, account, and so forth. During the course of the transaction, the ATM may also be required to provide spoken amounts or account selections.

The spoken text can come from one of two sources:

- An Audio Guidance XML file, or
- A WAV file referenced by escape sequences embedded in the screen data

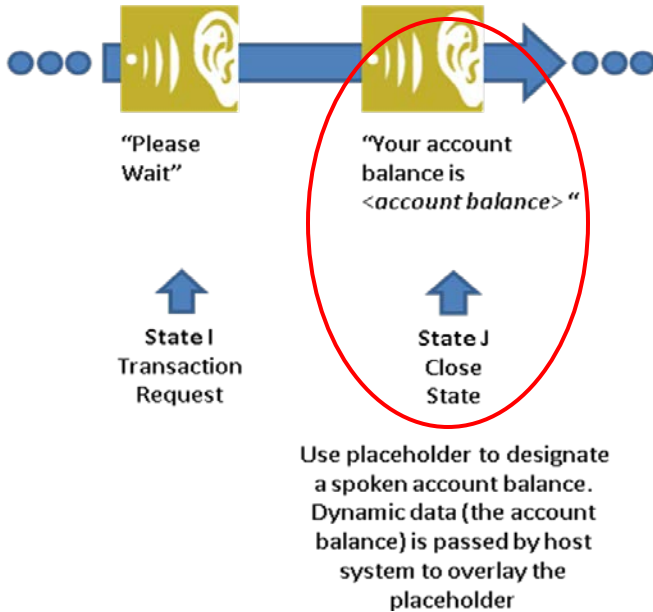
If you are using an XML file, the file must be formatted as outlined in the NCR documentation (**NCR Americas APTRA Advance NDC Voice Guidance User's Guide for the Americas**). The following illustration presents an excerpt from a sample AudioGuidance.XML file.

Using Text Provided in an NCR Audio Guidance XML File



The **lang** attribute indicates the language used for the voice; for example, **EN** for English or **SP** for Spanish. NCR ATMs use language banks to specify alternate languages. You designate a default voice for each language bank used in text-to-speech audio. For example, you could designate that "Tom," an English voice, is used to speak English text, and "Diego," a Spanish voice, is used to speak Spanish text, etc. (Obviously, voice designations in your ATM configurations must match the voices installed on your ATMs.)

Displaying Dynamic Data Passed by the Host (Via Placeholders in the AudioGuidance.XML File)



Sample Excerpt from XML File Using Dynamic Data

```
<x:NCRAudioGuidance
xmlns:x="urn:xsdNCRAudioGuidance">

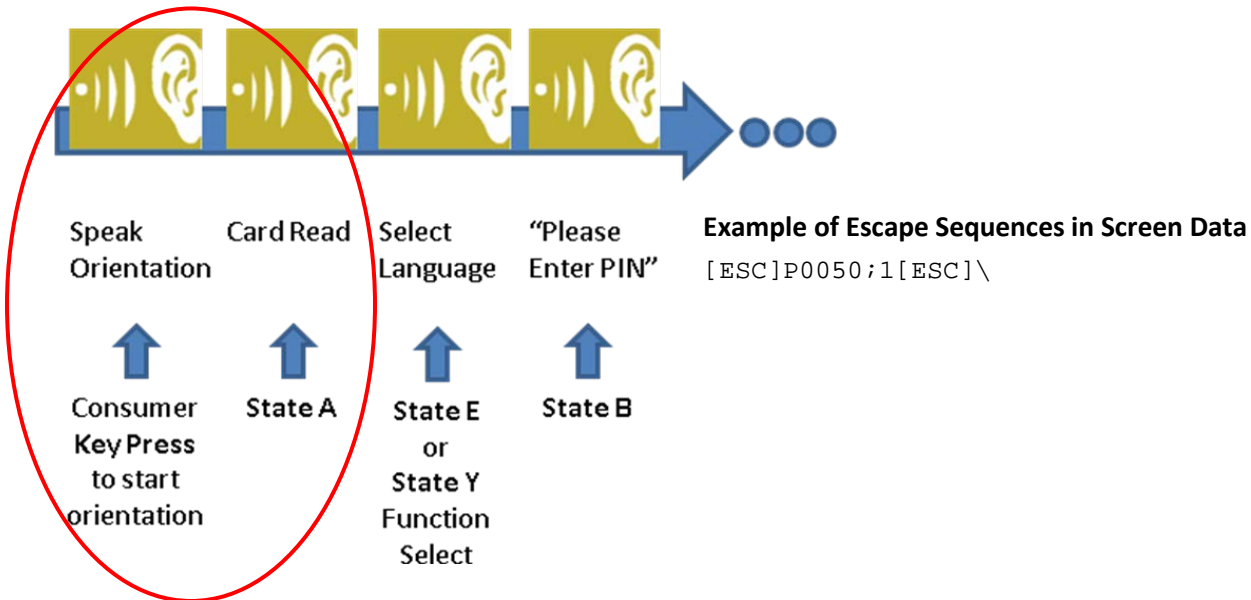
<Audio audioID="0034" groupID="0000" repetitions="0"
parmsourceID="0022">

<Text lang="en" state="private"> Your account balance is
<Placeholder/> </Text></Audio>

</x:NCRAudioGuidance>
```

In addition to the “static” text (provided as a text string in the XML file), the AudioGuidance.XML file can also be used to produce spoken *dynamic data* at the ATM. Dynamic data refers to information that changes during the transaction flow (such as account numbers, account balances, and so forth). The parmsourceID specifies the screen that contains the data to be spoken to the customer. The dynamic data is sent from the host system and populates the <Placeholder/> tag(s) in the AudioGuidance.XML file to generate the spoken text. Multiple placeholders enable the ATM to speak a phrase such as “The balance of account number <dynamic data with the account number from the source screen is spoken> is <dynamic data with the account balance from the source screen is spoken>”, for example, “The balance of account 9999111111111111 is three hundred dollars and seventeen cents.”

Referencing WAV File on NCR ATM Using Escape Sequences in Screen Data



In this example, a WAV file stored on the ATM is referenced by escape sequences embedded in the screen data. The WAV file includes a standard phrase, such as, “Please swipe card to begin,” for example.

Developing and Testing Voice Guidance in Your ATM Configurations

Paragon Application Systems provides solutions and experienced service professionals to assist you in creating and testing ATM configurations that include voice guidance. Contact us regarding your specific needs.

About the Authors

Cathy Gardner, Vice President, Professional Services

Cathy Gardner, with over 20 years of experience in the financial services industry, joined Paragon initially as Product Support Manager and currently serves as VP, Professional Services. Cathy has been instrumental in optimizing Paragon's Professional Services offerings. Cathy worked for Coastal Federal Credit Union for 19 years where she was the EFT/ATM support liaison which allowed her to work with a variety of network platforms and serve in support roles both for internal and external customers in operations, back-office, conversion project management, communications, mainframe and server environments. Before coming to Paragon, Ms. Gardner worked as a consultant for implementation and upgrades of EFT/ATM software at financial institutions within the U.S.

Bob Collins, Vice President, Technology and Services

Robert Collins is Vice President of Technology and Services and co-founder of Paragon Application Systems. Bob is responsible for ensuring successful customer deployment and continued customer satisfaction with Paragon Solutions. Bob has hands-on experience developing and using Paragon's solutions to test a wide variety of financial message formats, and has set the standard for providing exemplary technical support to Paragon's clients. Prior to co-founding Paragon, Bob worked with SDM International, Inc. (now part of ACI Worldwide) where he provided development, customization and on-site integration assistance of SDM's ATM/EFT products worldwide. Bob has over 20 years of ATM/EFT experience which he has used to help position Paragon as one of the industry's leaders in customer satisfaction and repeat business.

About Paragon Application Systems, Inc

Since 1994, Paragon Application Systems has provided software testing solutions to test the reliability and integrity of electronic payment systems. Today, Paragon is the leading global provider of ePayment simulation, configuration and testing solutions. Our customers drive more than 100,000 ATMs, connect to over 90 interchanges and process thousands of transactions per second. Paragon has more than 590 customers in 85 countries including financial institutions, leading software providers, merchant acquirers, processors, interchanges and credit unions.

Our Professional Services Specialists draw from extensive hands-on experience with a number of systems. This allows us to offer your organization a specialist who is uniquely qualified to meet your needs. Visit Paragon Application Systems at www.paragonedge.com or email info@paragonedge.com.