

Happy Thanksgiving



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This month's featured article is a combined effort from Craig Campbell of Cepstral and Terry Rogers of Ohio Data Transfer.

### Text to Speech Adds New Possibilities of How You May use the ODT VISION Voice Response Unit

*In the beginning, there were synthetic voices and the technology wasn't good.* In the late 80's our firm focused on client server types of applications and the ODT VISION VRU development came from the previous experience of PC to host connectivity. At that point, the product was built around the Netsoft Router performing APPC type connection and allowing Hllapi screen scraping on a DOS PC. In the original design, our development team looked at synthetic voices and they were all of poor quality and made any application robotic and not very amicable. A decision was made to use recorded voice files of the actual clients' employees to both make the unit's applications sound better and be friendly to the user. ["If MaryAnn always has taken the orders via phone, we want to use Mary Ann's voice in the new Automated Attendant's Order entry application."](#) Users like this approach.

Today we live in an information society and if we want access to that vast pool of information via a phone, then it simply isn't feasible to have a human record every last piece of it. For years we have been following synthetic speech technology. Text-to-Speech, or TTS is undergoing a second coming of sorts. TTS is a technology to provide computer generated speech. The significance of this is the ability to convert any variable string to speech. It is important to review What is TTS, How does the ODT VISION VRU use it, and Where is it going in the future.

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#### Historical Overview of TTS



The last generation of TTS systems was based on 'diphone' technology, while the newer systems employ Unit Selection. The primary difference is unit selection voices contain much bigger databases of phoneme candidates. That is, the 'Oh' in Ontario is very different to the engine than the 'oh' in cannon. The ability for the engine to make a determination from thousands of candidates, produces a more human and intelligible sounding voice.

["If MaryAnn always has taken the orders via phone, we want to use Mary Ann's voice in the new Automated Attendant's Order entry application."](#)



Watch for new announcements from Cepstral on future generations of their voices. Visit their web site [www.cepstral.com](http://www.cepstral.com).

One of the first Unit Selections engines, Festival, was released in the 90s as open source and is still used by research institutions around the globe. Festival was authored by Dr. Alan Black who continues to perform research and teach at Carnegie Mellon University located in Pittsburgh, PA.

### How the ODT VISION VRU Uses TTS

As the technology of TTS and quality of the voices improved, it was integrated into the ODT VISION VRU. Rather than being one vendor specific, we chose to support and comply with Microsoft's SAPI 5.1. SAPI defines the Microsoft Speech API which is a layer that allows applications access to any voice on a system. This allowed our product to support voices from any vendor which embraces the Microsoft standards. Our clients for the most part still use the recorded digital voice files but can blend those recordings with the optional TTS computer generated voices. TTS is great to speak names, address, product descriptions, or any variable string. Not all applications need TTS but this option can enhance many.



**Craig Campbell**

Cepstral is 100% focused on TTS technology and our high quality voices are steadily improving."

### Why Cepstral

In early 2000, Dr. Black co-founded a speech company with another CMU speech guru, Kevin Lenzo. The company, Cepstral, was created with the goal to build high quality TTS voices and to make an engine capable of meeting the rugged demands of the telephony industry. Cepstral's TTS engine and voices are standards-based and support Microsoft SAPI, and SSML. SSML (Speech

Mark-up Language) is a subset of VoiceXML, and a very helpful control protocol. These standards allow clients to make changes to the voice on their own. To assist their clients, Cepstral also offers professional services and can tune their voices for a client's specific needs whether it be drug names or any proper name, or several hundred prompts that need to be 'exact.'

### We recommend Cepstral TTS Voices :

- As they fully support Microsoft SAPI 5.1
- As they are very affordable
- As they are easy to load and support
- As they are tested and performed well under stress tests
- As they support multiple foreign languages

### In addition:

- Cepstral is committed to R & D with the quality of its voice files constantly improving as technology becomes available
- Cepstral's voices require a smaller amount of system resources than some of their competitors but are still fast and flexible comparatively
- Cepstral offers lifetime license instead of annual license requiring yearly payments
- Cepstral offers voices for specific verticals such as medical, government, weather, industrial, and others

Cepstral offers voices in US and UK English, as well as American Spanish, Canadian French, German, and Italian. One of their unique capabilities is voice building and customization. Cepstral recently served as one of the primary TTS vendors to the US military and has built Iraqi Arabic and Afghani Pashto voices for use in advanced speech-to-speech translation devices—but we'll leave that for another newsletter.

The nature of speech synthesis makes it an evolutionary process, and quality is on a



continuum. There are actually 3 components at work during speech synthesis; the voice database, the synthesis engine, and the lexical front-end, or part that is responsible for making sense of the incoming text (i.e., is "st." meant to be 'Saint' or 'Street'.) Given this triad, it becomes easy to see why frequent updates are released- a single change to any piece can raise the overall quality. Cepstral believes this organic improvement process should be shared with their clients. We are pleased with their model to offer lifetime licenses rather than worrying about annual licensing fees.

Whether you are looking to completely automate your telephone prompts using TTS, or if you would like to experiment and simply mix in TTS with traditional human speech to handle just the dynamic content, our newest line of ODT VISION equipment can meet your needs. Our latest hardware is designed to work with Cepstral's TTS engine. DTT will make source examples and SSML examples available, and through our partnership, we can also help clients take full advantage of Cepstral's professional voice tuning services. We have focused on Cepstral because their product is one of the best TTS solutions in the marketplace today. They are truly dedicated to making their voices the best available today and we like the affordability and ease of use. Please go to their web site as [www.cepstral.com](http://www.cepstral.com) for free download and demonstrations. How will you use TTS in your current and future applications? **Are you in the need of a voice lift?.**

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## Gulf Data Systems Helps Hurricane

One of the ODT VISION VARs is Gulf Data Systems of Mobile, Alabama. When this IBM Business Partner sells a new host and their software solution to a credit union, GDS just adds one of our units to it. We have always enjoyed this professional relationship and thought of them as a good business partner. We were pleased to hear that they suffered no damage in the recent storms other than the loss of power but were up due to an in-house generator which surprisingly is powered by gas supplied by Blossman Gas, an account that has worked with the ODT VISION VRU.

Gulf Data Systems of Mobile, Alabama is devoting personnel and services to provide free support in the affected areas until normalcy is restored. Credit unions which may sustain disruptions in service, loss of staff, or damage to their buildings are offered free support in an effort to return critical services to their hard-hit communities. "We learned an important lesson from Hurricane Katrina," says Leo Vaulin, CEO and owner of GDS. "Once the storm has struck, it's too late. Phone service, including cell phones, got disrupted. Folks were in the dark without power and communications. Vital links to the Internet were disrupted. Credit unions were unable to process drafts, ACH, and debit cards." He adds, "Even worse, they were unable to take calls from their members, to provide the much-needed assurance that their deposits were safe, and that funds were available to start re-building." GDS rode out Katrina in a secure DataCenter in Mobile, equipped with an underground fiber optic link to a Internet "backbone" which provided both phone and web access throughout the storm, and a built-in generator which supplied power to their servers. *None of GDS's customers experienced any interruption in back-office operations.* Drafts, ACH, debit cards, and shared branching transactions were processed at the DataCenter even while the storm raged outside.

Owner Leo Vaulin made the call to provide services for free until the credit unions could resume their normal operations. "No strings," Vaulin says. "We've been part of the credit union community for almost thirty years and it is the least we could do for people we really care about." Credit unions who would like to take GDS up on the offer to restore services as quickly as possible are asked to contact the following people, or visit the website at [www.gulfdata.org](http://www.gulfdata.org) for complete information and assistance. ■

**Help Desk (Toll Free): 800-293-7554 Ext. 229**  
**Leo Vaulin ,Jeanne Croom, Bernie Desrosiers**

Ohio Data Transfer  
200 East Campusview Blvd. 200  
Columbus, Ohio 43235  
3434323543235

Phone: 614-985-3814  
Email: sales@ODTVISION.com



### THINKING OUTSIDE THE BOX Get Your Own Demo Today

Go to [www.ODTVISION.com](http://www.ODTVISION.com) to get your own demonstration of the ODT VISION Voice Response Unit which will run on any Windows based PC of Windows 98 or later with sound card and speakers. This is a simplistic order entry and shipment status system which is running off a Microsoft Access database. The demo is in the test mode and you will be using the "Test Phone" feature of the ODT VISION VRU to simulate a phone call to the data. Manuals and case studies are also available on the web site.

#### Improving Customer Service Affordability

Get free project analysis regarding your telephony application or submit technical questions at:  
[TechSupport@ODTVISION.com](mailto:TechSupport@ODTVISION.com)  
Or Call: 614-985-3814

#### HOW DO THEY DO THAT? Work with TTS Voices

#### Changing TTS Voice

You have the ability to change which voice you want to use within application. For example, You may want to use a specific voice for a vertical or a user during this call may requires a different foreign language.

#### VoiceName = "Cepstral David"

Changes the default voice used for text-to-speech. Examples of Voice Names are "Cepstral David" and "Cepstral Diane." Use the Text-to-Speech test program, or the Speech control panel option to determine what voices are available.

#### The ODT VISION VRU TTS Speech Manager is ODT VISION TTS Speech Manager

superior to the Microsoft Windows control TTS Manager Utility as it allows you to test XML commands, send a TTS voice string to a saved file, play with volume commands, speed, set the default voice, and use your TTS voice to create system voice files.

#### Input:

Text to speak

Type the text to speak here

Insert XML

```
<context ID = "date_mdym">12/21/1999</context>
<context ID = "date_dmy">21-12-1999</context>
<context ID = "date_ymd">1999.12.21</context>
```

#### Voice:

Voice

Cepstral Frank (CURRENT)  
Cepstral Emily

Rate: 0 Volume: 100

Set Voice

#### Output:

Audio Output

Crystal WDM Audio (CURRENT)

Voice File Output

c:\laptop\c

eight.WAV  
five.WAV  
four.WAV  
global.wav

Exit

Volume Control

Text to Speech

Text to Voice File

System Voice Files

Play WAV File