

Customer Profile

Winbond Electronics Corporation America, www.winbond.com

Our Solution

The WINBOND SR-ADT development tool will allow the user to build and define his speech recognition system in a fully graphical environment.

Methodology

We developed the Software using the VC++ and Object Oriented Methodology.

Benefits

The tool enables the user to "Voice Simulate" his design in the PC environment before downloading it to the embedded system. With this the tool enables the user to test and define the VUI even before starting on his hardware design or in parallel to it

Introduction

The WINBOND SR-ADT is a sophisticated development tool used to generate code and Data files for voice user interfaces on embedded systems. This tool can be used with the client's SRXXXX series of chips in embedded voice recognition systems.

Situation

To develop Voice User Interfaces (VUI) requires a lot of effort for writing, debugging and testing the software because every time we have to burn the EPROM for testing the embedded system. Our tool makes the life of the developer easier by providing an environment where VUI can be designed and implemented in a much easier fashion.

Features

WINBOND SR-ADT Software mainly contains the following modules.

- Graphical User Interface
- Topic Compiler
- Simulator
- IVS Module
- Flashit Module
- Code generation module

Graphical User Interface module: This allows the user to create the state machine representation using the building blocks provided by the tool.

Topic Compiler: This compiles the state machine design and generates the list of errors if any.

Simulator: The Simulator is used to simulate and test the design before downloading it into the actual embedded system.

IVS Module: This module allows the user to create and edit word tables. It compresses all the word tables, sentence tables and the voice data files and creates a binary file to be downloaded to the chip.

Flashit module: This module sends all the output files generated by the tool to the Speech recognition Chip based on a memory map file.

Code generation module: This module automatically generates the C Program based on the state machine design prepared by the user that can be compiled into 8051 code and downloaded to the embedded system. This is an excellent feature that will save a lot of effort for VUI system developers who currently have to write the code manually.

Tools and Technologies

Windows NT, VC++ and some executables, dlls/libraries etc. given by the client. Visual Source Safe for version control. Rational Rose for Design. Rational Robot for testing.

Our Process

The steps involved in Generating the Code and Data for SRXXXX series of chips are shown below :

- Creating the project with State machine representation
- Creating the Word tables and Sentence tables using the IVS Module
- Compiling the project
- Voice Simulation and Testing
- Building the IVS Vocabulary
- Generating the 'C' code using the Code generation module
- Sending the data files to the SRXXXX series of chips

We played a considerable role in identifying the requirements for the project. We added many features creatively so that it will be really useful to the developer.

Conclusion

Winbond SR-ADT reduces the efforts required for developing the embedded voice recognition systems to a great extent and makes the life of the developer much easier.