

Project Plan

Flight Management System Voice Interface

Team 05: GE Aviation
CSE 498, Collaborative Design

David Schwanky
Eric Partlo
Will Rogers-Snodgrass
Xulu Zhang

Department of Computer Science and Engineering
Michigan State University

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Functional Specifications

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- Interpret spoken commands from an air traffic controller.
- Convert to ATC command format
- Pass ATC Formatted Command to Existing ATC Message Builder for error checking and transmission
- User interacts through a GUI frontend and a microphone
- GUI will display command for user verification before sending the message



Design Specifications

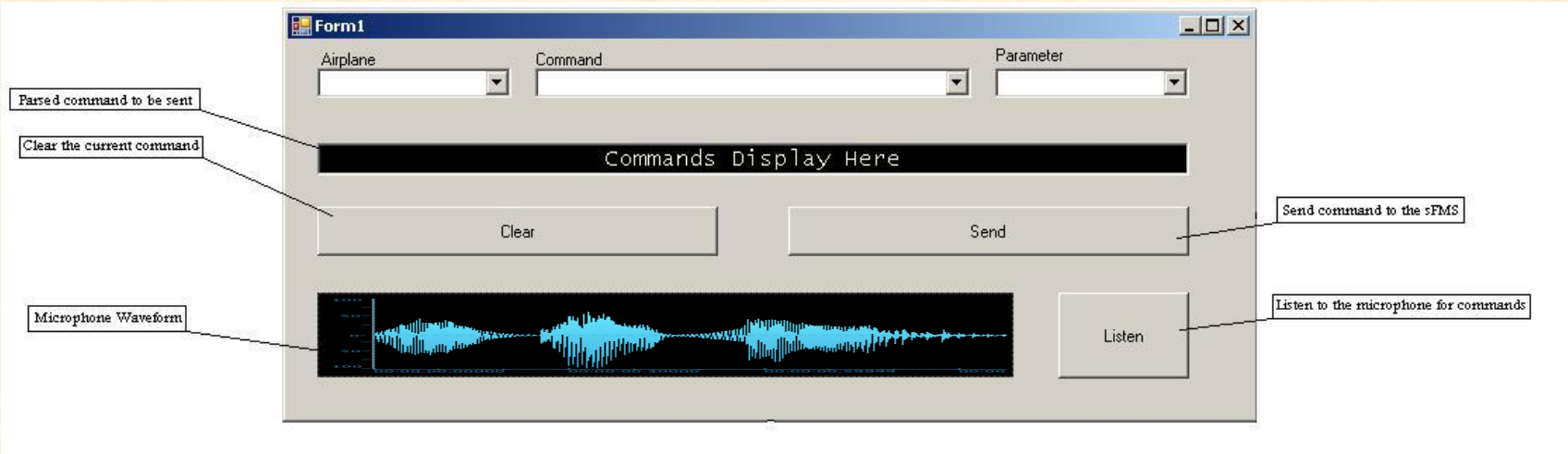
- Air traffic controller says command, command is processed and ATC Message is relayed to SFMS
- Frees air traffic controllers from strictly adhering to ATC formats
- Allows air traffic controllers to rapidly communicate to multiple airplanes
- Minimal training time is needed for the air traffic controller to learn the software due to simple GUI layout



Screen Mockups



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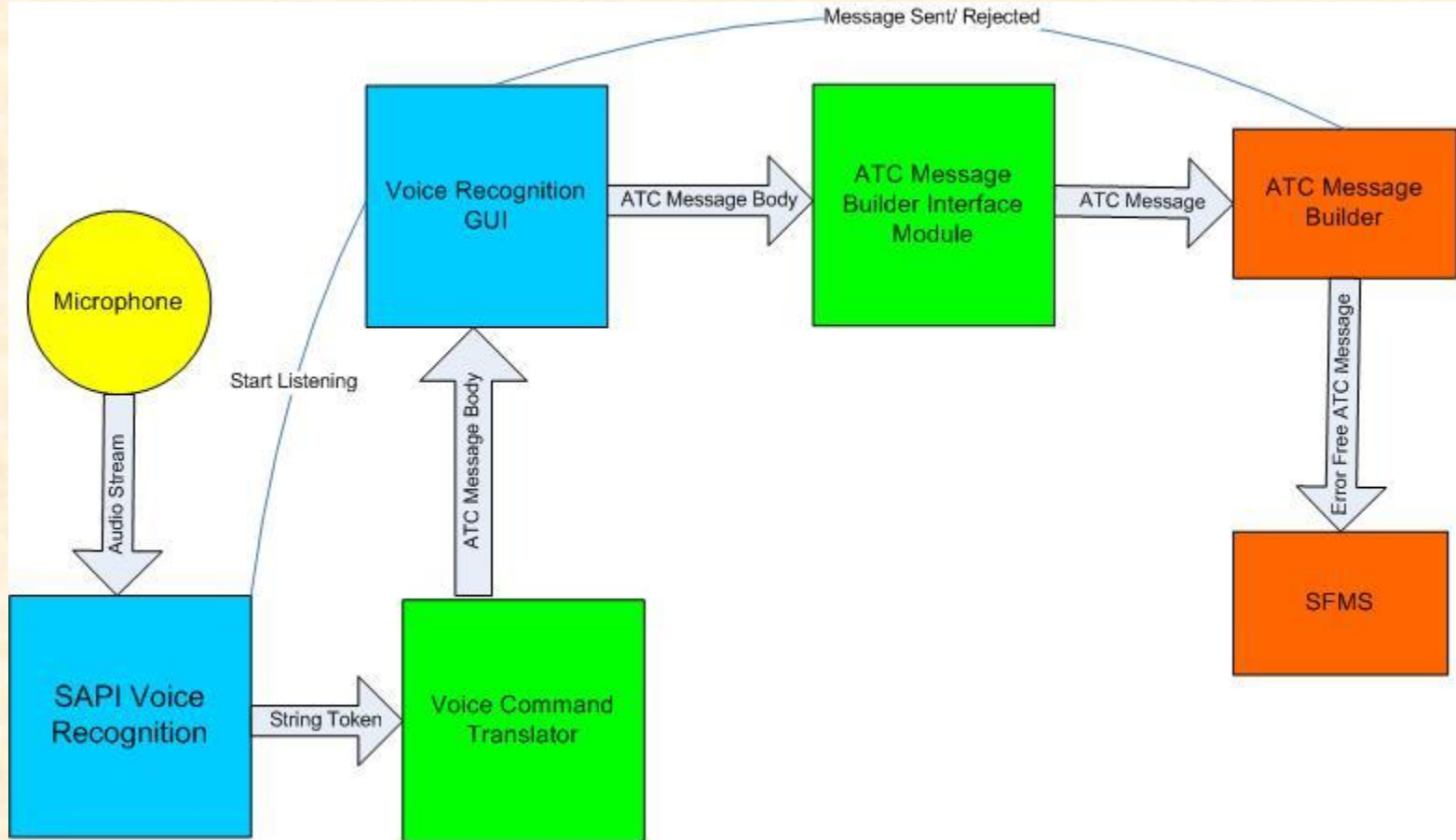




Technical Specifications

- VS2008, SAPI 5.1, C#/C++, Bison, Flex
- Listen for commands spoken into the microphone using Microsoft's SAPI 5.1
- Take the tokens picked up from Microsoft's SAPI 5.1 and translate/parse them into a valid ATC message body
- Take the message body from the translator and build a properly formatted ATC message.
- Message is sent to Existing ATC Message builder for verification & transmission

Architecture Illustrated





System Components

- Hardware Platforms
 - GE Simulated Flight Management System
- Software Platforms / Technologies
 - VS2008 C#/.NET 3.5 Framework
 - Microsoft SAPI 5.1
 - C++, Bison, Flex
 - GE Aviation sFMS Software
 - GE ATC Message Builder



Risks

- Voice Recognition Engine is not accurate enough
- C#/C++ Interfacing
- Interfacing with the Existing ATC Message Builder
- Overall all Optimization and Project Performance
- Allowing Grammar flexibility