

Client: Provider of Simulation-based Training Systems
Location: USA

Client Description

The client, based in the USA, is a leading provider of simulation based training systems for the airline industry.

Business Need

For the airline industry, the client had a Flight Training Device (FTD) product comprising of four major components:

- Human Machine Interface
- Graphics
- I/O
- Simulation

Developing FTDs to suit the needs of various airlines primarily involved customizing the HMI, while other parameters were more or less static. As the current HMI design was not built with reusability in mind, this customization resulted in a considerable effort overhead as each modification requires changes to the code and complete retesting.

The client was looking for an appropriate company with the requisite skills to redesign this product.

Solution Offered

Blue Star Infotech's (BSI's) solution to this problem was to redesign and develop the HMI in such a way that future HMI's could be developed easily with the help of reusable controls.

This involved development of

- A set of ActiveX Controls (called HMI Controls)
These were designed such that they could also be used in scripting and non-C++ environments.
- An application (called HMI Infrastructure) that made use of these controls to build the HMI.

Further, BSI provided the capability to tune the HMI externally by incorporating file and registration based configuration mechanisms. The HMI and Simulation applications could communicate simulation data through shared memory.

OOAD concepts were utilized to provide the above features in addition to addressing key factors such as performance and usability. The results were documented using Unified Modeling Language (UML). HMI Controls were developed using COM Active Template Library (ATL) while HMI Infrastructure was developed using Microsoft Foundation Classes.

TECHNOLOGY

- Windows NT
- VC++, MFC 4.0, ATL 3.0
- Visual SourceSafe, Rational Rose

Benefits to Client

- By developing components and fitting it around a generic framework, the client saved considerable effort during FTD development
- Testing processes were also optimized due to a component-based approach resulting in shortened customization timeframes

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