syncroness
innovative product development

INNOVATION = INCREASING SECURITY, RELIABILITY, AND SAFETY WITH AN INTEGRATED DESIGN

INNOVATION AT A GLANCE

Client:
Confidential

Industries served:
Aerospace

Syncroness services:
- Program management
- Mechanical engineering
- Electrical engineering
- Manufacturing, procurement, and assembly
- Testing and validation

Objectives:
- Create a cost-effective, reliable cockpit door control system
- Design to meet DO-254 DAL Level C for Aviation Hardware
- Meet two levels of requirements approval and pass EMI/EMC testing

Approach:
- Focus on the root cause and develop a hardware-based solution to minimize time to market, schedule, and avoid unnecessary certification reviews
- Utilize a multidisciplinary team to analyze the problem from various engineering perspectives
- Produce a design document for client approval early in the process, streamlining design and production time
- Replace unreliable software with an elegant hardware design
- Provide "proof of correctness" through exhaustive testing and analysis

RESULTS

Delivered an effective cockpit door control system that maintained the previous product's look and feel while greatly improving security, reliability, and safety. This led to increased industry credibility for the client.

In the aerospace industry there is no room for error. Systems must work correctly from their initial installation and throughout the life of the aircraft. When a client needed a better, safer cockpit door control system, they turned to Syncroness for help.

SECURE, SAFE, RELIABLE

Our customer's client was having trouble with reliability on a cockpit door control system that would unintentionally lock the cockpit door, at times resulting in the cockpit crew being locked out. Our team worked within a very aggressive schedule to develop a cost-effective cockpit door lock control panel and cabin crew control panel system that not only met Classification Standard DO-254 for Aviation Hardware, but also aligned with two levels of requirements; that of the client and the client's customer.

A multidisciplinary team that included mechanical and electrical engineers (with software engineer support) developed a system design document for early review and approval by the client's customer. The team maintained the controls' existing look and feel while significantly upgrading the functionality and reliability. Syncroness' elegant hardware design eliminated the errors that the existing software was causing in the field and avoided any additional certification testing required when changing software.

Completed units passed EMI/EMC testing, and the design satisfied strict electrical standards (including withstanding simulated lightning strikes) and the range of RF interference at the time of the initial test. Ultimately, the Syncroness design reduced overall cost to the customer by omitting the need for second round prototypes and moving directly to Red Label units. The new controller system reduced errors and increased the client's credibility in a highly competitive industry.

LET'S KEEP INNOVATING.

10875 Dover Street, Unit 200 | Westminster, CO 80021 | 303.429.5005 | 877.429.5005 | Fax: 303.429.5025 | www.syncroness.com