GE Aviation
Super Synoptics

Trying to decipher the vast array of dials, gauges, switches, and indicators on a modern aircraft flight deck is a challenging task even in ideal conditions. Compound the problem with flashing lights and warning buzzers from an emergency situation, and it's easy to see why in-flight problems present difficult and potentially serious challenges for pilots.

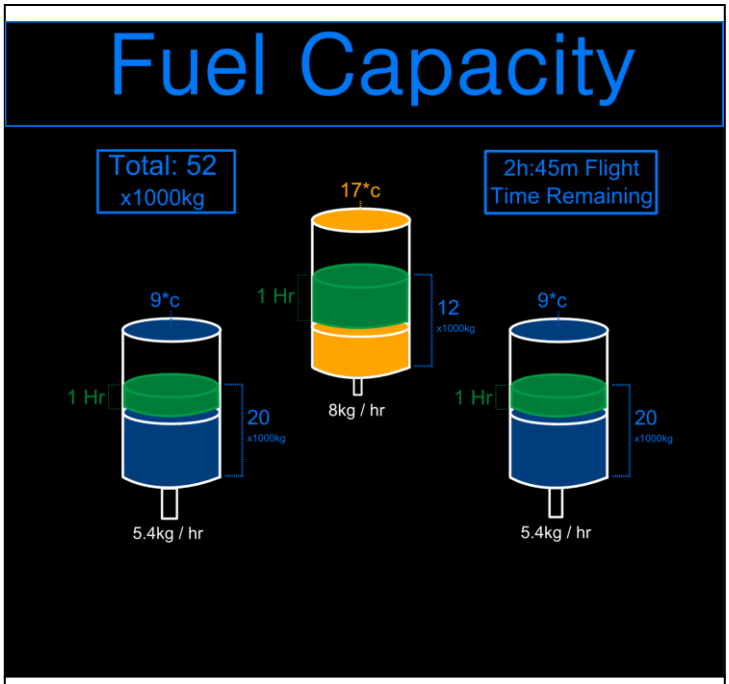
Working with GE Aviation, we have designed and built Super Synoptics, a new display which will help pilots better manage an aircraft, particularly during emergency situations.

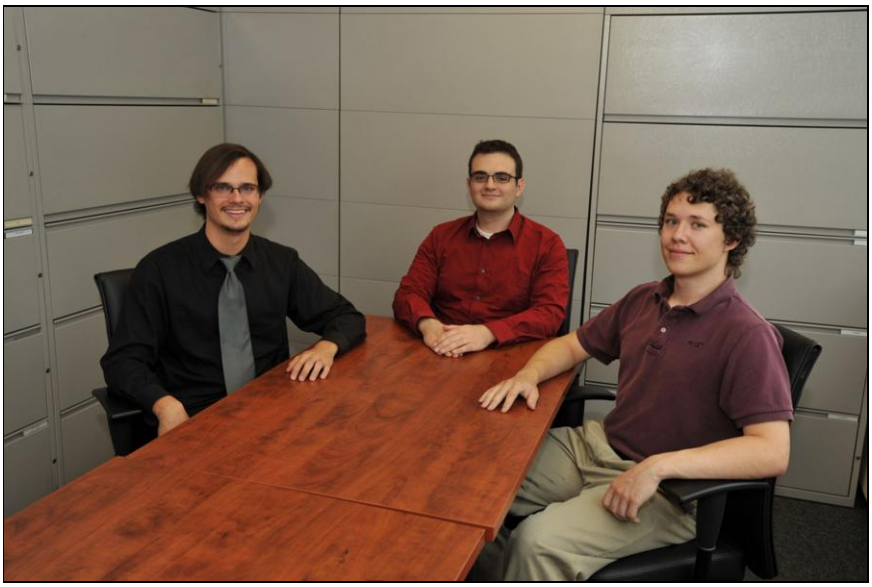
Super Synoptics provides superior, intuitive instrumentation displays, along with summaries and solutions to current, emerging, and potential aircraft system failures.

Our design streamlines the flight crew's decision making process, by presenting them with situation-applicable information without overwhelming them with system information that is not currently relevant.

Super Synoptics is designed with a simple, clean, cursor-free screen navigation scheme, which is important in turbulent and emergency situations where cursors, whether via mouse or touch-pad, are unreliable and impractical.

The Super Synoptics system is comprised of the Super Synoptics Display, built with OpenGL, and is interfaced with the X-Plane flight simulator, which is used to simulate an aircraft and demonstrate the use of our system. The two applications communicate via a data plugin and TCP sockets.





Michigan State University

Team Members (left to right)

Shawn Henry Adams
Brighton, Michigan

Adam Breece
Pinckney, Michigan

Nick Rafalski
Troy, Michigan

GE Aviation

Corporate Sponsors

Timothy Burns
Grand Rapids, Michigan

Aaron Gannon
Grand Rapids, Michigan

Dashiell Kolbe
Grand Rapids, Michigan