High Fidelity Display Systems

SMOOTH AND FLUID OPEN-GL DISPLAYS FOR PRECISION FLYING

Sim-Avionics ‘Flight deck Avionics’ are designed to simulate the avionics and systems of a modern glass cockpit aircraft and currently available in three type specific versions: B777, B737 and B737Max.

The avionics applications can be run on single or multiple windows computer setups, across a network using a TCP/IP/UDP Protocol.

The software suite is a fully integrated addon for Multi Simulator Platforms including FSX, P3D, (X-Plane in development) or data from other external aero models.

All Autopilot, Navigation, Warnings and System functions are handled within the applications to provide a fully immersive simulation experience.

This makes the system extremely versatile and can be used in a conventional flight deck setup utilizing physical hardware interfaced to the software, or the possibility to run the cockpit on touch screen monitors.

COMPLETE SIMULATOR SOLUTIONS

• Accurate Type Specific Modeling
• Smooth, Fluid Display Systems
• Autopilot, FMS, Systems Modeled
• Touch screen or Hardware Integration
• Detailed Sound Modeling
• Instructor Station with Failure Models
• Full Setup and Maintenance Support

flexible solutions for your project

LICENSING

The software is available under three separate license schemes:

Professional Revenue
Professional Non-Revenue
Private-User.

Please contact Sim-Avionics sales for any form of professional usage or application

CONTACT US

Please contact us if you require any further information about the software and how Sim-Avionics can help you.

Email: support@sim-avionics.com

All pictures in this document are generated from screenshots of the software.
Integration Options

HARDWARE / SOFTWARE INTEGRATION

There are several ways to interface with the software:

- Software Graphical User Interface Control
- Hardware Interface Control
- Custom Integration

SOFTWARE GRAPHICAL USER INTERFACE

These GUI’s allow the aircraft systems to be controlled on screen by clicking on the graphical buttons. This solution is ideal for simulators without physical hardware or for use in touch screen applications.

ACCURATE SYSTEMS MODELLING

Simulated B777 and B737 Systems Including:

- Electrical
- Hydraulics
- Fuel
- Pneumatics
- Pressurization
- IRS / ADIRU
- Flight Management System
- Autopilot / LNAV / VNAV
- Terrain and Weather Radar
System Detail

ADDITIONAL SYSTEMS INCLUDE

777 MFD Synoptic Examples

TCAS Advisory and Resolution
Integrated Terrain and Weather Radar

777 Integrated Checklist

SAMPLE SCREENSHOTS FROM THE 777 NORMAL AND NON-NORMAL CHECKLIST
737Max Displays
SAMPLE SCREENSHOTS FROM THE 737MAX
777 Displays

SAMPLE SCREENSHOTS FROM THE 777
CDU / FMC

CDU B777
GRAPHICAL USER INTERFACE

SIMULATOR MENU
<br/>&lt;START&gt; AUTOBRAKE >
<br/>&lt;LOAD PAYLOAD &gt;
<br/>&lt;GND ACTIONS &gt;
<br/>&lt;LOAD FUEL &gt;
<br/>&lt;APU / ADIRU &gt;
<br/>&lt;MENU &gt;

POSITION A/C
<br/>ICAO
<br/>EGLL
<br/>RUNWAY 27L
<br/>&lt;APPROACH &gt; 5 NM >
<br/>&lt;TAKEOFF &gt; 10 NM >
<br/>&lt;LINEUP &gt; 15 NM L >
<br/>&lt;CUSTOM POSITION &gt; 15 NM R >
<br/&lt;START &gt; 0 FT 0.0 NM >

SOME SAMPLE SCREENSHOTS SHOWING VARIOUS CDU SCREENS

INIT / REF INDEX
<br/&lt;IDENT &gt; NAV DATA &gt;
<br/&lt;POS &gt; ALTN &gt;
<br/&lt;PERF &gt; NAV RAD &gt;
<br/&lt;THRUST LIMIT &gt;
<br/&lt;TAKEOFF &gt;
<br/&lt;APPROACH &gt; MAINT &gt;

FIX INFO
<br/&lt;MCT &gt; 326/99.3
<br/&lt;BRG &gt; 326/25
<br/&lt;ETA &gt; 1645 74.3
<br/&lt;DIS FR &gt; ----/15 1646 84.3

ACT RTE 1
<br/&lt;ETA &gt; 1696Z
<br/&lt;WPT &gt; WOBUN 10.0 &gt;
<br/&lt;FUEL &gt; 8.3 &gt;
<br/&lt;WIND &gt; 8.3 &gt;
<br/&lt;DATA &gt; PURGE &gt;
<br/&lt;WOBUN &gt; 333°
<br/&lt;TNT &gt; 70.9 NM
<br/&lt;D312E &gt; 199758
<br/&lt;DAYNE &gt; 12.0 NM
<br/&lt;MCT-10 &gt; 1.0 NM
<br/&lt;WIND DATA &gt; CLEAR &gt;
Web Instructor Station

BASIC INSTRUCTOR STATION – IDEAL TO RUN ON AN IPAD OR SIMILAR TABLET

Features CONTAINING

• Save and Recall Preset Scenarios
• Ancillary Control
  EXT PWR / GND Air
  ADIRU / IRS Rapid Align

• System Setup
  Fuel Loading
  Door Control
  Pushback Control

• Aircraft Position Set
  via specified ICAO
  Takeoff, Approach, Circuits, Airborne, Gate

• Environment Controls
  Weather Presets
  Wind / Visibility Layers
  Time of Day
Additional Software Modules

ADDITIONAL SOFTWARE INCLUDED WITH SIM-AVIONICS TO COMPLETE YOUR SIMULATION

Main Server

CONTAINING

• Full Autopilot Logic
• Overhead / Systems Logic
• Integrated FSUIPC I/O Interfacing
• TCAS / GPWS / RAAS logic
• Look Ahead Terrain
• Huge number of avionics options

Simulated Avionics Gauges

CONSISTING OF

• PFD / ND
• EICAS / MFD
• 777/737 Standby GAUGES: ISFD / Attitude / Altitude / Airspeed / RMI
• CDU
• Clocks, Flaps, Compass, Analogue Trim Indicator

Other Modules

CONSISTING OF

• Sound Module – Generating detailed cockpit sounds
• MCP / EFIS Panel Graphical User Interface
• Overhead Panel Graphical User Interface
• Dispatch Console – Basic Instructor Station Controller
• Web based basic Instructor Station Controller
• Editable Performance Database
• Monthly navigation database updates available via www.navigrAPH.com
# Detailed Specification

## AVIONICS DISPLAYS

Open GL Graphics  
Position / Resize over multiple monitors  
Works over a Single or Multi PC network  
Frame smoothing algorithms for fluid graphics  
Run multiple clients simultaneously

### PFD

- Pitch, Bank, Altitude, Airspeed, Mach, HDG TRU/MAG TRK  
- Slip Ind, Radio Altitude, Angle of attack  
- MTRS, FPV, Nav Aid Info  
- Full systems integrated FMA’s  
- MCP Altitude, Airspeed, HDG bugs  
- Flap Retraction Bugs  
- TCAS Resolution Indications  
- Flight Directors  
- RNP / ANP Indicators  
- Baro INs / HPA / STD  
- Minimums

### ND

- Map / Plan / VOR / APP modes  
- Centered mode  
- Turn Trend Indicator  
- ARPT, WPT, STA, Data, Terr, WXR  
- Integrated EGPWS Terrain display  
- Integrated WXR radar simulation  
- FMC Route Display  
- VNAV Descent Profile Indicator  
- HDG / TRK modes and indications  
- Wind Indication  
- Tuned NAV Radio indication  
- Tuned Radio Needles  
- TCAS Display  
- ADIRU Alignment mode  
- MFD Active  
- Vertical Situation Display

## EICAS

777 GE90/RR display option  
Secondary Engine Instruments:  
  - N2, FF, Oil Temp, Oil Press, Vib  
  - Analogue / Digital Fuel Displays  
  - Air Synoptic  
  - Gear Indication / Stuck Gear Indication  
  - Flaps Indication  
  - Integrated EICAS System Messaging  
  - Cancel / Recall  
  - FMC Thrust Reference  
  - Throttle Position Indicator  
  - 737 ALTN Engine Display
**MFD**

777 System Integrated Synoptics

- ELEC
- FUEL
- HYD
- AIR
- ENG
- STAT
- GEAR
- DOOR
- FLCTL
- NAV
- CHK
- CAM

System Integrated 777 Electronic Checklist with Normal and Non-Normal Menus

737 System Integrated Synoptics

- ELEC
- SYS
- INFO
- MAINT

**CDU / FMC**

All Primary CDU Pages Including:

- RTE
- LEGS
- HOLD
- DEP/ARR
- PROG
- POS
- IDENT
- NAV
- RAD
- PERF
- THRUST LIM
- TAKEOFF
- VNAV
- MENU
- APPROACH
- FIX

Fully Integrated LNAV / VNAV

Additional Simulator Setup Controls via CDU Menu Pages

Full screen enabled for Hardware Integration

Visual CDU Graphic for Touch screen Operation

ACARS UPLINKS via Sim-Brief Flight Plans or from Instructor Station

**INTEGRATED MCP FUNCTIONALITY**

Fully Function Autopilot as per aircraft type

A/T SPD and Thrust Ref Modes

HDG/TRK SEL + HOLD, ALT HOLD, V/S, FPA, Flight Level Change

LNAV / VNAV FMC Integration

Bank Angle Limiter

LOC / APP Modes

Full Autoland Capability

Rudder Auto-Coordination

777 Thrust Asym Compensation

777 A/T Stall Protection

737 Control Wheel Steering Modes

**SOUND MODULE**

Adds Flight Deck : Ambient Aural and Warning Sounds

Allows for implementing Multiple Sound Sources
**TERRAIN AND WEATHER RADAR**

- Worldwide Terrain Radar based on real world elevation data
- Look-Ahead Terrain display showing predicted terrain incursions
- Weather Radar images based on the current simulator weather conditions
- Active Sky weather radar integration

**MCP AND OVERHEAD GUI’S**

- Fully resizable Open GL Graphics
- 777 and 737 versions
- Allows for full control of MCP and Overhead systems

**DISPATCH CONSOLE**

- Simple Instructor Station
- Save and Recall Preset Scenarios
- Aircraft Positioning and System Setup
- Control EXT PWR, GND Air, Doors, Pushback
- Basic Weather, Cabin Calls, Re-Fuelling
- IRS Quick Align

**INTEGRATED CORE SYSTEMS**

- FSX / P3D Compatible via FSUIPC
- TCPIP / UDP Client/Server setup
- Scalable to fit any PC Network
- B777, B737NG, B737Max Type Specific Variants
- Separate Captain and FO displays supporting full dual seat devices
- Full DU Display switching
- Individual Display Dimming
- Fully integrated Overhead System Logic
- EGPWS / TCAS
- Custom Autopilot Control Algorithms
- Individual customizable avionics option files
- Full scenario saving
- Integrated Pushback Functions
- 737 and 777 Performance Databases
- Monthly Nav Data AIRAC’s available for purchase via www.navigraph.com
HARDWARE COMPATIBILITY

The software is fully compatible with FSUIPC and all simulator functions can be mapped to FSUIPC offsets for complete I/O integration and flexibility.

In addition, the software is compatible with many commercially available products.

Current hardware compatibility includes:
- **Flight Deck Solutions**: All products
- **CPFlight**: MCP Pro + EFIS + Radio + Xpndr + MIP
- **Open Cockpit**: Modules via FSUIPC Assignments
- **Goflight**: MCP/EFIS Pro
- **CockpitforYou**: 737 TQ
- **FSC**: 737 TQ
- **Flight Illusion Gauges**: 737 Overhead/Main Instrument Panel (Not analogue Standbys)
- **Polulo Servo Card**: For panel gauges
- **Any FSUIPC Compatible Interface**
Sample Portfolio Pictures
QUALITY DESIGN INTEGRATION AND SUPPORT

Sim-Avionics was first release in 2008 and during that time the avionics has grown from a home use product into a extensive commercial software package used in projects such as:

- Flight Experience Centers
- Fear of Flying Sessions
- TV and Movies
- Research Laboratories
- Product Demonstrators
- Flight Training

We specialize in custom projects and our aircraft avionics portfolio is expanding, so don’t hesitate to contact us to discuss any custom requirement your project requires.

support@sim-avionics.com

CUSTOM SOLUTIONS
Sim-Avionics has partnered with many leading aerospace companies, to develop customized avionics solutions for various demonstration, research and training projects on time and on budget.

REMOTE SETUP AND TRAINING SOLUTIONS
Using remote access we are able to offer quick setup and maintenance assistance via an internet connection.

This provides you with piece of mind that there will always be someone available to help you. No matter where you are located.

SUPPORT SOLUTIONS
After choosing Sim-Avionics you are not alone. Many questions are answered by visiting our support forum with friendly feedback provided by our support team and our growing user community.

email us at:
support@sim-avionics.com

WEBSITE: www.sim-avionics.com

EMAIL: support@sim-avionics.com