GENESYS
A E R O S Y S T E M S

3D SYNTHETIC VISION EFIS

HIGHWAY-IN-THE-SKY NAVIGATION

GRAPHICAL FLIGHT MANAGEMENT SYSTEM

STC'd ON OVER 740 AIRFRAMES

Integrated Display Units

IDU-680 and IDU-450: lightest and most comprehensive, integrated Electronic Flight Instrument Systems

IDU-680 and IDU-450

Superior situational awareness, reduced workload, and greater command and control

Integrated Display Units

The 3D Synthetic Vision EFIS from Genesys Aerosystems delivers the new standard in helicopter and fixed wing avionics. In one intuitive system, it integrates a number of breakthroughs:

- 3D Synthetic Vision
- Highway-In-The-Sky (HITS) navigation
- Geo-referenced Hover Vector
- TAWS / Helicopter TAWS (HTAWS)
- Graphical Flight Management System (FMS)
- And much more

Not only is the 3D Synthetic Vision EFIS from Genesys Aerosystems the world's lightest and most comprehensive integrated Electronic Flight Instrument System, it's the only one STC'd in four-classes of aircraft—Part 23, Part 25, Part 27, and Part 29—and the only one available as factory-standard on a production helicopter.

- Full-color, hi-res, sunlight-readable (1,000 nit) LCD screen with fully-adjustable brightness
- Dual, redundant backlight
- Input: AHRS, ADC, GPS receiver (all included)
- Integral HTAWS and FMS
- DO-178B, Level-A Software
- NVIS-A and NVIS-B Night Vision Goggle compatibility
- Digital flight performance recording of last five flights
- Redundant display/sensor architecture
- RNP 0.3/BRNAV/PRNAV-compliant
- Engine display and master caution system options
- Certified with most existing autopilots
- -55°C to +75°C operating range
- Non-ITAR

Fully Digital

100% digital, open architecture enables flexible, aircraft-independent installation in both fixed wing and rotorcraft airframes. It also delivers the ultimate in precision and increased reliability for higher dispatch rates and higher mission completion. Finally, reduced box count and lighter system weight means more payload capacity for passengers and/or cargo.

Future Proof

The 3D Synthetic Vision EFIS from Genesys Aerosystems is field-upgradeable so you can easily add new functionality and grow capabilities without replacing hardware components.


IDU-680 provides a 6" x 8" portrait display and weighs just 9.5 lbs. Screens above depict helicopter environment

IDU-450 provides a 5" x 4" landscape display and weighs just 4.5 lbs. Screens above depict fixed wing environment.

Conformal 3D Synthetic Vision

- The first FAA-certified avionics system to show 3-dimensional terrain, obstacles, and traffic in real time on Primary Flight Display (PFD)
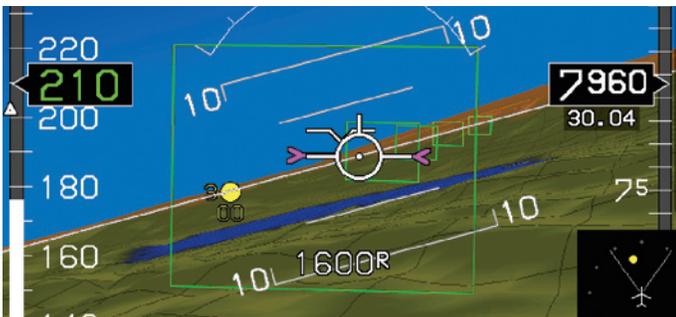
Hover Vector (Helicopter)

- When groundspeed drops below 30 knots, the Flight Path Marker on the Primary Flight Display converts to a "bull's-eye" ringed by concentric circles that delineate 15- and 30-knot ground speeds
- Enhances productivity and control during surveillance, long-line work, and other precision procedures
- Geo-referenced Hover Vector allows precision hover relative to designated targets

TAWS / HTAWS

- TSO-C151 TAWS
- TSO-C194 HTAWS and Enhanced HTAWS
- Visual/audio cues when terrain or obstacles present a hazard, configurable filters minimize nuisance alerts
- Forward-Looking Terrain Alerts
- Excessive Closure to Terrain
- Excessive Rate of Descent
- Sink Rate after Takeoff or on Missed Approach
- Flight Into Terrain When Not Properly Configured for Landing

Highway-In-The-Sky (HITS)

- Pilot flies through a series of green boxes superimposed over the flowing terrain of the 3D Synthetic Vision
- ILS precision to any point in the world

Graphical Flight Management System

- Integrated GPS with graphical mission planning, head-up implementation on the PFD
- Fully integrated into the EFIS to eliminate extra components—maximizing valuable panel space and conserving critical weight
- Supports all ARINC-424 leg types and VNAV planning, and enables user-definable approaches and special-use airspace

Map Planning

- Map planning available with software version 7.0E and later editions

Greater Productivity and Safety in Real-World Situations

Highway-In-The-Sky navigation allows pilots to fly with ILS precision to any point in the world. The HITS route appears on the PFD as a series of boxes superimposed over the flowing terrain of the 3D Synthetic Vision. The pilot simply flies through the boxes to follow the HITS route. The applications are endless. For example, an air ambulance crew can easily define a noise abatement pattern, and then precisely fly that corridor each and every mission—accurate to within less than one meter.
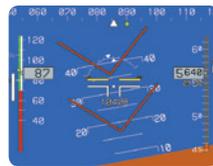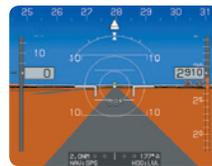
Primary Flight Display Modes

| PFD with Terrain | Basic PFD | Unusual Attitude Recovery | Hover Vector | Round Dials |

Multi-Function Display Modes

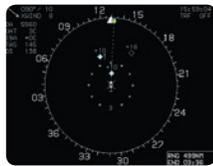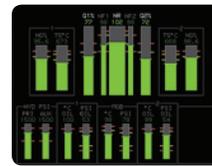| Moving Map with Terrain | Radar | Graphical Flight Planner | EHSI | FLIR | ARMS |

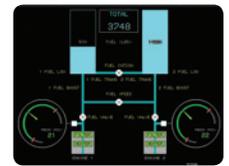| Datalink Weather, FIS-B | Traffic | Lightning | Geo-referenced Hover Vector | EICAS | Customizable Synoptics |

Integrated Display Unit (IDU)
- Full-color, high-resolution, sunlight-readable (1,000 nit) LCD screen with fully adjustable brightness
- Black-anodized machined 6061-T6 aluminum bezel
- Integrated voice warning system
- Illuminated controls with tactile differentiation
- Recursively redundant system architecture
- Digital flight performance recording for last 5 flights
- SmartMedia data card reader
- Line replaceable components
- Upgradeable and expandable
- Level-A software
- Ruggedized for demanding cockpit environments

ADAHRS (Air Data Computer & Attitude/Heading Reference Systems)
- Solid-state, strap-down AHRS
- 13,000 hours MTBF
- Non-tumbling, non-precessing
- Multiple AHRS configurations available
- Level-A Software
- Includes OAT probe
- Multiple ADC configurations available

GPS-WAAS Receiver
- 15-channel, parallel tracking
- RAIM and FDE

AIU-2 (Analog Interface Unit)
- Drives virtually any autopilot
- Roll-steering for virtually hands-free flying: DP's, STAR's approaches (including DME arcs, procedure turns, and teardrop and holding pattern course reversals) and missed approaches (including holding patterns with correct entries)
- Interfaces dual analog VOR/LOC/GS, MB, ADF, Radar Altimeter

Primary Flight Display (PFD)
- HUD symbology
- 3D Highway-In-The-Sky navigation
- Real-time 3D terrain modeling
- Real-time 3D traffic display
- Real-time 3D towers, antennas, and obstructions
- Full VNAV capability
- Zoom/wide-angle views
- Fully integrated FMS supports all ARINC-424 leg types
- Unusual Attitude Recovery mode
- Multiple declutter options
- ASI, ALT, VSI, AGL, CDI, trends, heading, timers, bugs, and more
- Radar Altitude display
- Turn indicator
- G-meter with tattletales

Multi-Function Display (MFD)
- Vector-based moving map with Jeppesen NavData
- Topographic terrain display
- Datalink weather display
- Class A / B / C Helicopter Terrain Awareness and Warning System (HTAWS)
- TCAS-I, -II, TAS, ADS-B display
- Winds aloft / crosswind component
- Density altitude display
- ISA/Temperature
- True airspeed, groundspeed, and OAT
- Conventional HSI/ILS/RMI/ADF display
- Towers, antennas, and obstructions
- Color- and altitude-coded airspace
- Horizontal Projected Path with "look-ahead" in turns
- Waypoint information
- Multiple display options
- Multiple declutter options
- Fuel range and duration
- Built-in, graphical Flight Management System (FMS) flight planner

Certification Basis
- STC'd on Part 27 and Part 29 helicopters
- STC'd on over 740 Part 23 and Part 25 fixed wing aircraft
- TSO-C2d, TSO-C4c, TSO-C6d, TSO-C8d, TSO-C10b, TSO-C106, TSO-C110a, TSO-C113, TSO-C145/146, TSO-C151b, TSO-C194, TSO-C34e, TSO-C35d, TSO-C36e, TSO-C40c, TSO-C41d, TSO-C52b, TSO-C87, RTCA/DO-160D, RTCA/DO-178B, Level-A

GENESYS
AEROSYSTEMS

genesys-aerosystems.com | **1-817-215-7600**

Genesys Aerosystems One S-TEC Way, Municipal Airport, Mineral Wells, TX 76067 USA