

Garmin receives certification for G1000 synthetic vision system

22/05/08

Olathe, Kansas/April 7, 2008/PR Newswire — Garmin International Inc., a unit of Garmin Ltd. (NASDAQ: GRMN), the global leader in satellite navigation, announced today that it received FAA supplemental type certification (STC) for Garmin Synthetic Vision Technology (SVT™), which is designed to integrate with the acclaimed G1000 avionics suite. Garmin's SVT presents a 3D depiction of terrain, obstacles and traffic on the G1000's primary flight-display (PFD) so that the avionics panel replicates what pilots would see outside the cockpit on a clear day.

"Garmin's SVT brings an unprecedented level of integration and awareness to pilots of G1000-equipped aircraft," said Gary Kelley, Garmin's vice president of marketing. "SVT transforms the cockpit by accurately displaying synthetic terrain, flight hazards, flight path marker and highway-in-the-sky on the PFD so that the pilot maintains excellent airborne situational awareness even when flying in conditions of reduced visibility or darkness. This results in reduced pilot workload and safer flying."

Garmin's SVT seamlessly blends information about the aircraft's position with topographic databases to create and display real-time 3D images. The information is presented on the G1000's large flight displays with XGA (1,024x768-pixel) resolution, superior sunlight readability and wide viewing angles. SVT presents the necessary information in ways that are easy to understand so pilots feel at ease interpreting the information.

The foundation of SVT is the depiction of 3D terrain, which is displayed on the PFD(s). Land, water and sky are clearly differentiated with shading and textures that are similar to the topographical colors found on the multi-function display (MFD) moving map. SVT works seamlessly to alert pilots of potential ground hazards by displaying terrain and obstacles which pose a threat to the aircraft with appropriate TAWS alert coloring. Those flying with a TAWS-B enabled (optional) G1000 avionics suite also have the benefit of receiving voice alerts. Terrain warnings are also depicted on the MFD with a traditional, color-coded "X" symbol. If the aircraft does not have TAWS-B enabled, reduced capability AC 23-26 compliant terrain alerting is included with SVT.

Numerous other SVT features increase safety of flight and help pilots fly with greater precision:

- Obstacles: Intuitively enlarges obstacle(s) as aircraft approaches; TAWS based colors are used when the required obstacle clearance is not met or in the case of potential obstacle impact
- Traffic: TCAS traffic symbology represented in 3D that changes size relative to range
- Flight Path Marker: Displays projected path of the aircraft
- Zero Pitch Line: Clearly distinguishes aircraft's altitude in relation to nearby terrain
- Gridlines: Drawn on the terrain surface and enhances distance perception
- Runways: Runway designations and thresholds are superimposed on terrain data; Unique runway highlighting and enhancements improves runway visibility from a distance
- Airport Signs: Depicts identifier of nearby airports

Pilots will also appreciate SVT's pathways, or Highway-In-The-Sky (HITS) guidance. Depicted as 3D "flying rectangles", pathway guidance symbols help pilots stay on course when flying en route legs, VNAV legs, GPS/WAAS vertical approach procedures, ILS approach procedures, and arrival and departure procedures. When on an ILS approach, pilots will take advantage of Garmin's patent-pending system whereby SVT relies on ILS signals to position the pathway.

Therefore, when pilots fly through the SVT boxes on an ILS approach, they will automatically fly the precision glideslope. Pathways may be enabled or disabled via a PFD softkey.

“Garmin’s SVT is another example of our commitment to innovation,” said Kelley. “Because the G1000 is a truly integrated and expandable system, all major components are designed and manufactured by a single company so that they work together to give pilots the complete picture. SVT is a retrofitable system and we are working with OEMs to develop a process whereby customers will have the option of adding SVT to their aircraft with very little downtime.”

SVT also brings MFD enhancements. At the nose of the MFD’s aircraft graphic, pilots will see the field of view scan (45-degrees lateral scan) and flight path predictor that displays the aircraft’s anticipated flight path.

Garmin’s all-glass, fully-integrated G1000 avionics suite is a revolutionary design that has set a new standard for the aviation industry. The lightweight and modular design continue Garmin’s tradition of technology innovation. The system integrates all primary flight, navigation, communication, terrain, traffic, weather, engine instrumentation, and crew-alerting system data, and presents the composite information on various size large-format PFD(s) and MFD. The G1000 features the GFC 700, the first entirely new autopilot designed and certified for the 21st century. The GFC 700 is capable of using all data available to the G1000 including the ability to maintain airspeed references and to optimize performance over the entire airspeed envelope.

The G1000 avionics suite also integrates Garmin’s SafeTaxi[®], FliteCharts[®] and ChartView (optional), which simplify operation, enhance situational awareness, and increase safety during flight and when taxiing. Garmin ChartView is an electronic version of Jeppesen’s extensive library of charts and airport diagrams displayed directly on the G1000’s MFD. FliteCharts is an electronic version of the National Aeronautical Chart Office (NACO) U.S. Terminal Procedures Publication and lets pilots quickly find and view all NACO Departure Procedures (DP), Standard Terminal Arrival Routes (STARs), approach charts, and airport diagrams on the MFD. Garmin SafeTaxi helps pilots navigate unfamiliar airports while taxiing by identifying runways, taxiways, and hangars, as well as the aircraft’s exact location on the field.

SVT is expected to be available on G900X[™] equipped aircraft by July 2008 and on the G1000 King Air C90 retrofit in 2009. Integration of SVT into existing G1000 systems or yet-to-be-delivered G1000 equipped aircraft is being coordinated with each aircraft manufacturer. Contact the individual aircraft manufacturer for SVT price and availability. The G1000 and SVT are backed by Garmin’s standard warranty and award-winning product support team. Additional information is available at www.garmin.com/aviation.