AIG Aviation Technologically Advanced Aircraft Credit Requirements

- **Aircraft requirements**
  1. IFR-certified GPS
  2. Moving map display
  3. 2-axis autopilot

  plus, two of the following systems installed on-board and operational
     - Terrain awareness equipment such as TAWS, GPWS, or EGPWS
     - Traffic avoidance (TCAS)
     - Weather monitoring equipment such as stormscope, datalink, or radar.
     - Advanced fuel management system such as a Fuel Totalizer
     - RNP capability

- **Pilot requirements**
  1. Private or more advanced pilot certificate with an instrument rating
  2. Completion of an IPC (Instrument Proficiency Check) as described by part 61.57(d) of the Federal Aviation Regulations within the previous twelve (12) months and annually thereafter in the make and model aircraft to be operated.
  3. Attend/complete 1 of 5 ASF Courses in the preceding 12 calendar months related to:
     - Single Pilot IFR
     - Datalink
     - Thunderstorms
     - IFR GPS
     - Runway Safety

Agents, CSRs, and U/Ws:

In an effort to assist Agents, CSRs, and Underwriters in determining what each system encompasses, and what equipment may qualify an aircraft for the TAA discount, the following general descriptions are provided. Links to manufacturers' websites as well as pictures of commonly installed equipment, though not all-inclusive, are provided with each definition. Additionally, if you are unsure about a particular avionics unit, you can research various manufacturers and models by visiting www.globalair.com/directories and selecting Avionics Manufacturers. Also, it is important to understand that many of the functions and capabilities listed below that are required to qualify an aircraft for the rate credit are often integrated into a single avionics unit, rather than separately installed pieces of equipment. For example, the new G1000 Glass Cockpit from GARMIN (pictured below) includes an IFR-certified GPS, moving map display, autopilot, and TAWS, all integrated into one installation. It may also be interfaced to display weather monitoring and traffic avoidance information, though these are only capabilities and may not be functioning options of the installation. While many installations have the capabilities to interface and provide additional information, in order to qualify for the credit, the system must be installed on-board and operational.

IFR-certified GPS – a GPS receiver certified to serve as the primary instrument for navigation under the Federal Aviation Regulation's Instrument Flight Rules.

Links to common manufacturers of IFR-certified GPS receivers are listed below. Others may be researched at www.globalair.com/directories.
www.bendixking.com
www.garmin.com/aviation

Moving map display – a display capable of exhibiting, at a minimum, navigational orientation for the purposes of enhancing situational awareness.

Links to common manufacturers of moving-map displays are listed below. Others may be researched at www.globalair.com/directories.
www.avidyne.com
www.bendixking.com
www.garmin.com/aviation
www.cheltonflightsystems.com
www.aspenavionics.com

2-axis Autopilot – an autopilot capable of controlling aircraft roll and pitch along with course tracking and altitude hold.

Links to common manufacturers of Autopilots are listed below. Others may be researched at www.globalair.com/directories.
www.s-tec.com
www.centuryflight.com

TAWS – Terrain Awareness & Warning System – used to provide a warning of a possible terrain conflict with enough time for the pilot to take appropriate action. One variety of TAWS is **GPWS** (Ground Proximity Warning System) which continually monitors an aircraft's height above the ground as determined by a radar altimeter. The system will warn the pilot with audio messages if the aircraft is in a threatened flight situation or configuration. **EGPWS** (Enhanced Ground Proximity Warning System) is the same as GPWS, but with a display of a topographical terrain map; the terrain information is usually received from a coupled GPS system or an integrated glass cockpit installation.

Links to common manufacturers of avionics products "capable" of displaying terrain information are listed below. Others may be researched at www.globalair.com/directories.
www.sandel.com
www.avidyne.com
www.bendixking.com
www.garmin.com/aviation
www.cheltonflightsystems.com
www.aspenavionics.com

TCAS – Traffic alert and Collision Avoidance System - an onboard device which is designed to warn pilots of the presence of other aircraft which may present a threat of mid-air collision. Each TCAS-equipped aircraft "interrogates" all other aircraft in a determined range about their position, and all other aircraft reply to other interrogations. Through this interrogation-and-response communication, the TCAS builds a three dimensional map of aircraft in the airspace, incorporating their bearing, altitude and range.

Links to common manufacturers of avionics products "capable" of displaying traffic information are listed below. Others may be researched at www.globalair.com/directories.
www.sandel.com
www.avidyne.com
www.bendixking.com
www.garmin.com/aviation
www.cheltonflightsystems.com
www.aspenavionics.com

Wx Monitoring may be obtained by various types of installed equipment. **Stormscope** is an on-board lightening detection system that alerts the pilot of storm activity within the vicinity of the aircraft. A **Datalink** receiver is an installed device that delivers broadcast satellite weather graphics to various cockpit displays. Additionally, on-board **Radar** pertains to installed equipment capable of displaying actual reflective storm cell echos for the pilot.

Links to common manufacturers of avionics products "capable" of displaying weather information are listed below. Others may be researched at www.globalair.com/directories.
www.bendixking.com
www.garmin.com/aviation
www.cheltonflightsystems.com
www.aspenavionics.com
www.sandel.com
www.avidyne.com

Fuel Totalizer – a fuel management system designed to provide complete fuel management information under real flight conditions without any manual entry of data (after, of course, the entry of the initial fuel-on-board information). Fuel management systems and fuel totalizers draw information from the engine's fuel-flow transducer, and integrate it with groundspeed, distance, and estimated-time-enroute information drawn from a GPS, to display computed fuel management data to the pilot.

Links to common manufacturers of fuel management systems, including fuel totalizers, are listed below. Others may be researched at www.globalair.com/directories.
www.shadin.com
www.sterntech.com
www.advanced-flight-systems.com
www.garmin.com/aviation

Required Navigation Performance (RNP) – RNP is a measurement of the performance of the navigation equipment installed on-board the aircraft. Newer GPS and RNAV receivers are capable of monitoring their performance level, or position error. Different routes and procedures within the National Airspace System require different levels of performance or RNP. For example, a route within the terminal area of an airport would have a more stringent RNP than a route in a remote area. A defining characteristic of RNP operations is the ability of the aircraft navigation system to monitor the navigation performance it achieves and inform the crew if the requirement is not met during an operation. This onboard monitoring and alerting capability enhances the pilot's situational awareness and can enable reduced obstacle clearance or closer route spacing without intervention by air traffic control.