GA-ASI’s MQ-9B SkyGuardian
Developed to become the most advanced RPAS in the world

MQ-9B SkyGuardian is the latest technological advancement from General Atomics Aeronautical Systems, Inc. (GA-ASI). The Remotely Piloted Aircraft System (RPAS) will become the world’s most advanced unmanned system when it is delivered to the Royal Air Force (RAF) as the PROTECTOR RG Mk1 in the early 2020s.

The RAF has operated RPAS for 10% of its existence with 2017 marking 10 years of partnership with GA-ASI and the MQ-9 Reaper® delivering more than 100,000 hours of operational missions. MQ-9 will continue to support RAF operations until they are replaced by PROTECTOR. “PROTECTOR will be a step change for us in terms of capability,” said RAF Group Captain Lyndon Jones. “The new aircraft will offer greater range and endurance, greater weapon capabilities and will be certified to fly in UK airspace.”

Airworthiness certification
SkyGuardian was first conceived as a development program by GA-ASI using Internal Research and Development (IRAD) funding. One of the driving principles was to deliver a RPAS that would become the first unmanned system to achieve airworthiness approval to fly in civilian airspace.

“We took a clean-sheet approach to the design of SkyGuardian,” said Linden Blue, CEO, GA-ASI. “In order to achieve our objective of developing an aircraft certified to fly in civil airspace, the airframe had to conform to strict requirements, many of which are the same as traditional passenger aircraft.”

SkyGuardian’s airframe is designed to meet lightning strike, damage-tolerance, and turbulence-induced stress requirements specified by the NATO airworthiness standards (STANAG-4671). The aircraft is ready to be fitted with an integrated Detect and Avoid (DDA) system that features an anti-collision radar system. The DDA system that GA-ASI has developed for the aircraft is comprised of an air-to-air radar, Traffic Collision Avoidance System (TCAS), Automatic Dependent Surveillance-Broadcast (ADS-B), and the ability to blend that surveillance onboard in support of alerting and providing maneuvering guidance for the pilot in the Ground Control Station (GCS). DAA has gone through considerable initial testing on MQ-9 aircraft being operated by NASA and the U.S. Department of Homeland Security (DHS)/Customs and Border Protection (CBP) as well as the GA-ASI MQ-9B development aircraft.

Multi-mission flexibility
SkyGuardian is a multi-mission aircraft with nine hardpoints to provide unmatched configurability to meet a wide array of mission requirements. In 2017, the MQ-9B development aircraft set a new endurance record for GA-ASI aircraft when it flew for more than 48 consecutive hours with a clean airframe. This unprecedented level of endurance enables MQ-9B to provide persistent Intelligence, Surveillance, and Reconnaissance (ISR) at a significantly lower cost than is possible when the aircraft operates with an onboard crew.

MQ-9B SkyGuardian will become the world’s most advanced RPAS when it is delivered to the RAF as the Protector in the early 2020s.