GDL 90 UAT Operational Description

The **GDL** 90 is a datalink radio that supports ADS-B, TIS-B, and FIS-B functions. The **GDL** 90 provides interfaces to an external display as well as to an optional control unit, an SL71, that provides for pilot interface.

The unit's primary function is to transmit ADS-B messages, receive ADS-B from other aircraft and receive Uplink messages from ground equipment. Received traffic information is furnished on a data bus for display in the flight deck (typically an MFD). This increases the flight crew's situational awareness.

For transmitting ADS-B messages, the **GDL** 90 must have information about the aircraft in which it is installed. Data includes position, velocity, time (PVT), altitude and heading. The **GDL** 90 may interface to several sources for altitude and heading, including a serial altitude encoder or an ADC. For PVT data the **GDL** 90 has two potential sources: an external 743A GPS position source or an internal GPS/WAAS receiver. In the first version only an internal source will be certified.
With an internal GPS/WAAS receiver, the **GDL** 90 has the secondary function of being a 743A GPS position/navigation source. The **GDL** 90 will be certified to be a TSO-C145A sensor that can be used as the source of PVT data for a TSO-C146A navigator.

A microcontroller subsystem tunes the RF transmitter/receiver to the proper frequency. It monitors the power levels of the receiver board and reports them to the main application.

The MicroAPM is a small microcontroller with an imbedded EEprom mounted in the aircraft's mounting bracket. It stores configuration information specific to the aircraft in which it is installed. If a GDL 90 is swapped out, the new unit gets the proper aircraft configuration information.