



Standard OPS-013

Aircraft GPS / GNSS

The National Aerial Firefighting Centre or NAFC is a business unit of the
Australasian Fire and Emergency Service Authorities Council Limited (ACN 060 049 327).
The Members are the States and Territories of Australia

The purpose of this standard is to outline the requirements for GPS / GNSS on aircraft utilised by NAFC and the Members for fire and emergency operations

In this standard the terms GPS and GPS / GNSS are used interchangeably as common terms to describe GNSS systems that include GPS receivers.

Fire and emergency operations require that aircraft can readily navigate to a set of known coordinates not associated with any existing aviation waypoint.

Some fire and emergency operations also require that a pilot or agency person is able use an on-board GPS to fix the location of a point below the ground in both geographic and UTM coordinate systems.

Where this standard requires one GPS to be able to operate independently of the aircraft power supply this is for two main reasons. There may be times when agency personnel need to enter or retrieve data stored in a GPS pre or post flight and this allows the GPS to operate without the aircraft avionics buss being powered for extended periods. There may also be times when an independently powered GPS will allow the aircraft to continue to provide a service, or navigate safely to a suitable landing place, in the event of a partial failure of electrical systems or other GPS equipment.

Mobile telephone based GPS are not normally considered acceptable to meet these requirements as they often rely on some data from the telephone network to establish and maintain position fixes.

Contracts for aircraft services that require precise positioning or the ability to fly predefined patterns such as infrared mapping services may require that aircraft are fitted with GPS equipment with additional features. These additional requirements would be detailed in the contract.

When a contract refers to this standard the term “operator” in this standard also includes the “Contractor” as defined in the contract.

Document Control

Version	Author	Amendment	Approved
010	NAFC	Initial draft	
011	NAFC	Update to refer to AFAC and Members	Sept 18

Standard OPS-013 Aircraft GPS / GNSS

Operators providing aircraft services must ensure that aircraft provided meet the requirements of this standard.

Requirements of any contract take precedence over requirements of this standard. Any exceptions to this standard will be made at the absolute discretion of NAFC or a Member.

GPS / GNSS equipment fitted to aircraft must meet the requirements of the Australian civil aviation legislation and regulations. GPS / GNSS equipment must be operated in accordance with legislation and regulations at all times.

Aircraft must be equipped with at least two high quality GPS receivers as detailed below:

Both GPS receivers:

- must be capable of being powered from aircraft electrical power;
- must be capable of fixing the aircraft position in three dimensions to a precision of 0.1 nautical miles;
- must be capable of providing continuous real time readout in latitude and longitude on a visual display;
- must be capable of storing at least one hundred user defined waypoints.

One GPS receiver:

- must be fully installed in the aircraft, with an external aerial suitably positioned to provide good signal reception.

One GPS receiver:

- must be capable of operating independently of aircraft electrical power for at least eight hours and enough fresh or fully charged batteries are available to operate this GPS for at least eight hours

Where the aircraft is equipped with co-pilot seating that is occupied by a second pilot or other person who is participating in delivering the service, one GPS receiver:

- must be ergonomically operable from the co-pilot position;
- must be equipped with a large visual display, that is readable under typical operational conditions, including bright sunlight.
- must be capable of providing continuous real time readout in Universal Transverse Mercator format using GDA94 datum;

Some aircraft performing specific services may be required to be fitted with GPS equipment with additional features.