

Re: Garmin GPS-18 with prn 42 and 50, no DGPS.

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- *From:* Jon <[jon@xxxxxxxxxxxxxxxxxxxxxxxxxxxxx](mailto:jon@xxxxxxxxxxxxxxxxxxxxxxxxxxxxx)>
  - *Date:* Fri, 26 Oct 2007 07:29:11 -0700
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On Oct 26, 3:23 am, Doug Gray <[d...@xxxxxxxxxxxxxxxxxxxxxxxxxxxxx](mailto:d...@xxxxxxxxxxxxxxxxxxxxxxxxxxxxx)> wrote:

On Thu, 25 Oct 2007 18:24:32 -0700, Jon wrote:

On Oct 24, 5:54 pm, Doug Gray <[d...@xxxxxxxxxxxxxxxxxxxxxxxxxxxxx](mailto:d...@xxxxxxxxxxxxxxxxxxxxxxxxxxxxx)> wrote:

On Wed, 24 Oct 2007 19:35:14 +0000, Sam Wormley wrote:

The "reference receiver" is a network of ground stations. The WAAS differential corrections, based on that reference network, are valid for a WAAS (SBAS) enabled GPS receivers that is within or spatially close to the associated reference network.

Agreed, Australia does not have the network of ground stations to compile the corrections data nor does our aviation administrator or government have the desire to put this in place. Goodness knows why!

<http://astra.aero/faq.aspx>very unimpressive! Our problem though.

While it is true that there's no intention of putting SBAS in place, there is other work going on in the area of GPS augmentation. Airservices Australia (AsA) has begun deploying GBAS and are also planning to deploy GRAS (Ground Based Regional Augmentation System).  
...some snipped  
.. My guess as to why they are primarily targeting the aviation mode at this time, is that it currently makes the most sense from a business perspective (AsA is a semi-privatized organization).

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So why has the SBAS solution been abandoned?

Is there a technical reason or is it simply that AsA is so self serving.

I don't work for them (I'm in the U.S.) so you might be better asking them.

The first "A" in AsA does stand for "Air", though ;) So one could expect that they'd be self-serving to their own mode of transportation.

Recall that the primary application of WAAS is to support the Approach phase-of-flight. So, one technical reason I can think of is that there's simply no justification for a Wide Area since the airports are located around the perimeter of the continent. Over the "middle" (once you get ~100MN inland?) of the continent, most/all flights in the airspace are going to be in the EnRoute phase-of-flight. Standalone GPS is sufficient to provide the required performance for that phase.

I'll bet not one single aircraft leaves the ground that does not have a GPS of one form or another on the flight deck, and very soon most of these will be SBAS enabled. Yet AsA has decreed that they're not worthy of consideration.

I'm not sure of the actual equipage statistics, but SBAS isn't a slam dunk for the big airlines due to cost. The cost of equipage of just one plane is not trivial:

- plane is taken out of service for the install/certify so there's lost revenue
- certified avionics receiver for is typically 5 figures minimum
- the certify of the install can be expensive depending upon what else is being done

Ok, so figure something on the order of possibly 6 figures to upgrade \*one\* plane.

Now, consider there are craft in the fleet that already have something that gives them equivalent or better performance, e.g. ILS, and you can see why the airlines simply aren't flocking to upgrade all that quickly.

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It would not be at all difficult to roll out sufficient ground reference sites networked back to the satellite ground station to up-link correction data. They could be located at airfields (zero cost to AsA there), surveyed accurately and equipped with a high resolution GPS and modest processing power.

Locating reference stations at an airfield pretty much amounts to GBAS.

GRAS is a nice happy medium, I think, and they've done a fair amount of research over several years to make a good business case and of course be able to prove it's safe. It puts the ground network in where it's going to benefit the most. That said, once they start to gain operational experience with it, they may find that expanding the network is a Good Thing and more area of the continent will be supported.

Am I oversimplifying this? I think we could ignore tectonic plate movement so there is no need to over kill.

The rest of the infrastructure is already there thanks of course to the US and Japanese.

Hmm.. election time – which minister do I need to talk to?

Dunno, mate ;)

Every time I see the word 'minister' , I always think of Monty Python's "Ministry of silly walks"

:D

Doug

Regards,  
Jon

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