

Re: Galileo paranoia?

Source: <http://sci.tech-archive.net/Archive/sci.geo.satellite-nav/2006-02/msg00321.html>

- *From:* optional@xxxxxxxx
 - *Date:* Thu, 09 Feb 2006 11:28:55 -0700
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On Thu, 09 Feb 2006 16:36:03 GMT, Sam Wormley <swormley1@xxxxxxxx> wrote:

Ron Lee wrote:

Sam Wormley <swormley1@xxxxxxxx> wrote:

RoJ wrote:

I found this whilst looking for Galileo proposed accuracy, below.

Is it just my nasty suspicious mind, but are we being told –
No matter whether Galileo satellites have greater accuracy or not, they will be 'competitive' – ie no better than – existing gps?
Are we still going to be stuck with +/- 15–20 m accuracy?

The GNSS state-of-the-art is just under a meter using two frequency signals without augmentation. That will be true for all three implementations: Galileo, GPS and Glonass.

Sam, please clarify your "meter" value. I believe you are referring to the output navigation signal error and not end user position accuracy.

Ron Lee

Re: Galileo paranoia?

The article in InsideGNSS (see: <http://www.insidegnss.com>) indicates sub meter horizontal position accuracy without any augmentation. These figures were bases of expected dual frequency Galileo and GPS signals that are currently not available to us...

However, professional equipment currently realizes these kinds of accuracies, and much better, using just the GPS L1 C/A signal with differential corrections.

We are currently using dual–frequency GPS/GLONASS receivers. Out of interest piqued by this thread, I looked at the autonomous position computed by those receivers versus the results of the network adjustment of post–processed carrier phase baselines.

Over three days (just looked through one project), the largest error was 2m horiz, 1.5m vert. This is not scientific, or indicative of anything more than that the conditions (propagation, multipath at site) were quite good on those three days. But this may give you people an idea of what might be expected if consumer–grade receivers begin to incorporate multiple frequencies, and multiple signals in space.

I will do some more comparisons once our field crews begin to come back with more GLONASS data. We just replaced some of our fleet of Trimble 4000s with Topcons. For comparison, the 4000s (dual frequency, GPS only) were seldom more than 4 metres out either. Our Garmins (the guys typically get a position on each new control point) were out about 10 metres, with the odd zinger...

steve

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