

Re: DGPS standards? Pleaseeeeeeeeeee Help

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- *From:* designer <vittal.patil@xxxxxxxxxx>
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On Mar 6, 3:00 pm, Dominic Sexton <d-sep...@xxxxxxxxxxxxxxxxxxxxx> wrote:

In article

<6f5b6c98-db6e-468e-9455-b5a58ad98...@xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx>, designer <vittal.pa...@xxxxxxxxxx> writes

I have some more doubts , which are listed below. Waiting eagerly for the replies....

1>Is SBAS based receivers (like WAAS,GAGAN,EGNOS) only for Air navigation (Aircrafts...)???

i.e. Cant they be used for land navigation (like in mobile phones for navigation)...??????????

WAAS was implemented by the FAA for aviation but there's no reason it and any other SBAS can't be used for other applications. Garmin and other manufacturers for instance include it in many of their receivers for general use. So yes it can be used everywhere that can receive the signals and is in the area of applicability for a system.

2>I think SBAS is also a form of DGPS. i.e. SBAS employs differential corrections,which are broadcast thru Geo Stationary satellites..... Am I right ???????

It is a form of DGPS but it does not broadcast corrections like conventional DGPS. It broadcasts satellite clock & ephemeris corrections that can be used directly but the ionospheric corrections are broadcast as a grid over the area of applicability. The receiver collects this grid correction data and then interpolates the corrections for its current location.

In conventional DGPS the beacon transmits a single correction for each satellite in view at the beacon. This correction includes satellite clock, ephemeris and ionospheric corrections. The further the user is from the beacon the less effective the ionospheric correction is because the signal paths from the satellites to the user are increasingly

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different to those at the beacon.

3>I am confused about which protocols to implement in my Receiver, assuming that it is used for civil purposes (land,sea,air navigation..), with best possible accuracy,least delay in tracking, etc....
Please elaborate.
I have not got any clear document regarding the protocols The information I have got until now is all wide spread kind of i.e. confusing.

If you are actually implementing a receiver rather than using a kit from one of the big manufacturers you have a considerable task ahead of you. Tell us a bit more about your project and people here may be able to offer you more specific advice which would more use to you.

Thank You for the reply....

We are a team of 5 engineers involved in GPS development from Scratch. So before starting on with designing we are analysing the GPS literature
So that the GPS Rx we will be designing will find its place in the Navigation Segment(Receiver).We have already prepared a MATLAB Model of basic GPS.
Along side we are exploring GPS Addendums to keep up with the market. Your advice will be highly appreciated.

This page might give you a useful background on the subject:

<http://www.gpsinformation.org/dale/dgps.htm>

Dominic Sexton

Some more doubts regarding RTK. I got standard regarding WAAS.

1> To have a RTK System does one need to have his own Antenna(Base Station) other than the RTK Compatible GPS Receiver???????

i.e. Isn't it enough if We have only a RTK Compatible receiver?????????????

2> Does RTK belong to GBAS(Ground Based Augmentation System) or SBAS(Satellite Based ...) or is it totally different from DGPS concept??????

3> What is the standard (signal structure and message formats) to be referred to for RTK implementation in the GPS Receiver.

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Thanks,
Vittal