OmniSTAR Worldwide Differential & High Performance (HP) GPS Services

About OmniSTAR

OmniSTAR is World leader in providing high accuracy DGPS correction data via satellite channels.

OmniSTAR is a member of the Fugro Group with offices in the Netherlands, the US and Australia. A world-wide services and consultancy company with 160 offices in over 40 countries, the Fugro Group provides surveying, positioning and geotechnical solutions in both on and offshore applications.

OmniSTAR provides commercial satellite DGPS services worldwide and is leader in the design and development of Differential GPS positioning technology.

OmniSTAR VBS and 'High Performance' (HP) solutions have been specifically developed to satisfy the requirement for high accuracy positioning systems and services in land based applications.

With worldwide satellite coverage, approximately 100 reference stations, 3 satellite uplinks and 2 global Network Control Centres, OmniSTAR provide consistent and highly reliable positioning services world-wide, 24 hours a day, 365 days a year.

Both OmniSTAR 'VBS' & 'HP' data services are broadcast by L-Band satellite transmissions from a network of geo-stationery satellites and are accessible for use by subscription. The services are unique in that they automatically provide the optimum position solution at the users location by means of a process known as Virtual Base Station. This method of deriving differential corrections is more accurate than competing systems dependant on data from single reference stations in fixed positions.

How it works

OmniSTAR uses a network of reference stations (or base stations) to measure the errors induced into the GPS signal by atmospheric, timing and orbital effects. This reference data is gathered at Network Control Centres where it is checked for integrity and reliability and is then up-linked to a chain of geo-stationary satellites, which broadcast the data over their coverage area. This procedure ensures that all reference data generated for a given area is quickly available to the users receiver. The receiver processes the data from all available reference stations to provide the optimum position solution.

Because all data generated at OmniSTAR reference stations is available to your equipment, it is possible to use all this information simultaneously, taking into account the distance between your position and the location of each of our reference stations.

This is done by mathematically weighing each reference station as a function of its relative position. The result is one set of corrections, optimised for your location, which becomes a Virtual Base Station. These optimised corrections are calculated every time reference information is received from the satellite. This makes OmniSTAR ideally suited to both static and dynamic applications.

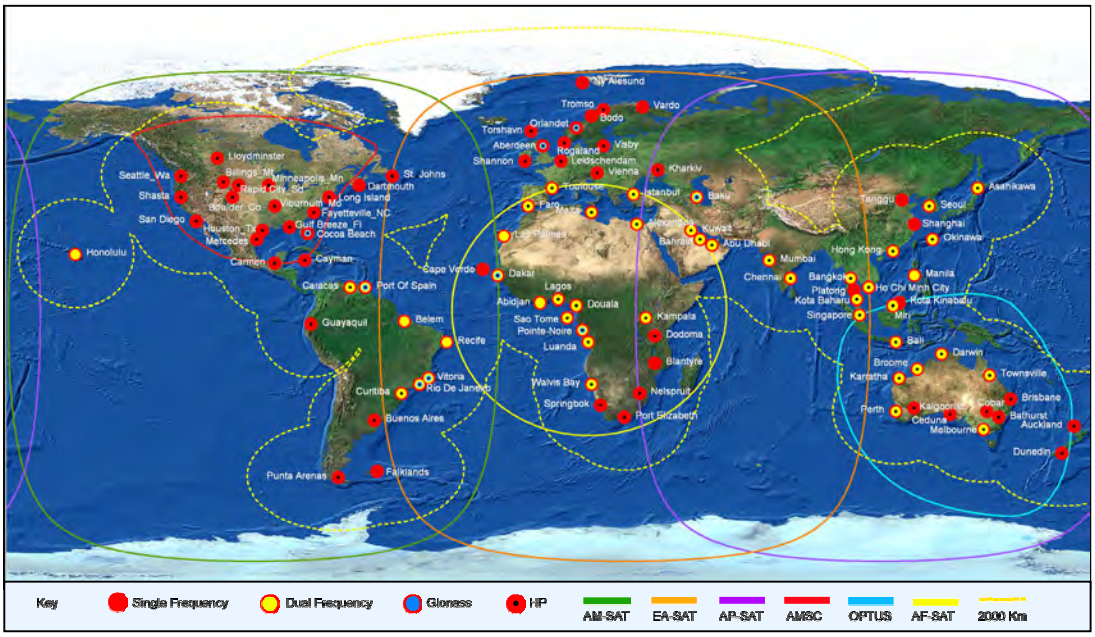
OmniSTAR VBS subscription options:

- Sub-meter Differential corrections
- VBS Continental: Signal service available across an entire continent e.g. Europe.
- VBS Regional: Service available across a defined region or country
- Farm-License: Specific to agricultural users, a VBS cell is provided around the users stated location.

OmniSTAR HP Subscription Service:

OmniSTAR-HP is the latest dual frequency GPS augmentation service in the OmniSTAR family of network GPS solutions. HP provides a robust and reliable decimetre level GPS service. By using dual frequency GPS receivers we can measure the true ionosphere at the reference and user locations, eliminating this error. When we use this ionosphere free measurement with information contained in the receiver carrier phase data in an intelligent way, we are able to create wide area positioning results of unmatched accuracy and performance. OmniSTAR-HP accuracies have been demonstrated as better than 10cm 95% (X/Y axis) and 20cm (Z) (2 Sigma).

OmniSTAR
The Global Positioning System



OmniSTAR reference stations and satellite coverage – October 2004

The advantages of VBS and HP:

- Both services provide consistent accuracy over a large area.
- OmniSTAR services are highly reliable (not dependent on any single reference station).
- No position jumps due to switching from one reference station to another.

World-wide coverage

The OmniSTAR VBS and HP service is derived from several satellite footprints. This means that user equipment, capable of decoding the OmniSTAR signal, can be used globally.

Flexible subscription service

OmniSTAR users can buy subscriptions annually or for multiple years.

VBS user can also purchase subscription on a seasonal basis (minimum 3 months).

Reliability

In addition to the implicit reliability generated by our Virtual Base Station technology:

- All reference stations are dual linked to their respective NCC. The primary connection is by a leased line, backed up by a dial up line.
- A primary and a secondary satellite service cover the most populated areas in the world. OmniSTAR compatible units are capable of locking onto the secondary service automatically in the unlikely event of a drop out in the primary service being detected.
- OmniSTAR corrections are not dependent on any one reference station, but are weighted by the VBS algorithm. Therefore, a non-functioning reference station has only a minor influence on overall accuracy.
- The European and African continents are covered by several satellite services. Automatic switching between these services is optional.
- Thunderstorms or electrical fields do not affect the OmniSTAR signal.

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OmniSTAR B.V. is a member of the Fugro Group, with offices throughout the world.