

Atlas® SmartLink™

Exclusive Agnostic Capability

Overview

This document provides a brief overview on Hemisphere GNSS' Atlas SmartLink technology.

What Is Atlas SmartLink?

Hemisphere's global GNSS correction service, Atlas, offers centimeter-level positioning anywhere on Earth by broadcasting corrections from a global network of GNSS reference stations directly to users. Existing providers restrict their proprietary correction services to brand specific GNSS receivers, offering little to no flexibility, which reduce competition and increase costs to the user.

With Hemisphere's SmartLink technology, this is no longer the case. SmartLink technology allows Atlas corrections to be used with any brand of GNSS receiver that is compliant with open communication standards (e.g., RTCM). This kind of innovation is unmatched by any other provider in the industry.

How Does It Work?

At the core of SmartLink is Hemisphere's Atlas technology. Atlas is a global GNSS correction service that meets or exceeds the performance of other industry-leading correction services. Atlas corrections are derived from over 200 reference stations worldwide and delivered via geostationary communication satellites to any location on Earth. Atlas can provide position accuracies down to 2 cm RMS depending on the application.

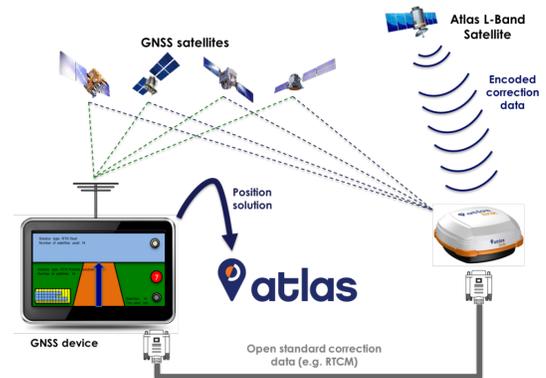


Figure 1 – The SmartLink System

In a SmartLink setup, an AtlasLink® receiver moves along with the user's existing hardware. The AtlasLink receiver takes corrections received via L-band satellites, computes precise differential corrections, and then feeds these into the existing user's hardware in an industry standard format. Even though the existing hardware has no knowledge of the Atlas system, it can still achieve the same performance as a dedicated Atlas device.

The SmartLink receiver is configured using the AtlasLink web UI (user interface). The interface is user friendly and is accessed via any web-enabled device—not limited to a particular operating system. On the SmartLink *Configuration* page, users can configure corrections to be output on two ports, and users simply need to choose the correction format and target accuracy of their application. Monitoring is performed via the *Position Information* page.



Figure 2 – AtlasLink web UI for configuring SmartLink

Once SmartLink is configured, the third-party receiver can operate just like in a normal RTK (real-time kinematic) scenario. The receiver takes as input the pre-selected correction source and generates position solutions. The plots in figure 3 show this in action for two common GNSS brands. As is normal with global GNSS correction services, an initial convergence phase is required to achieve full accuracy. This normally lasts between 10–40 minutes depending on the accuracy requirement.

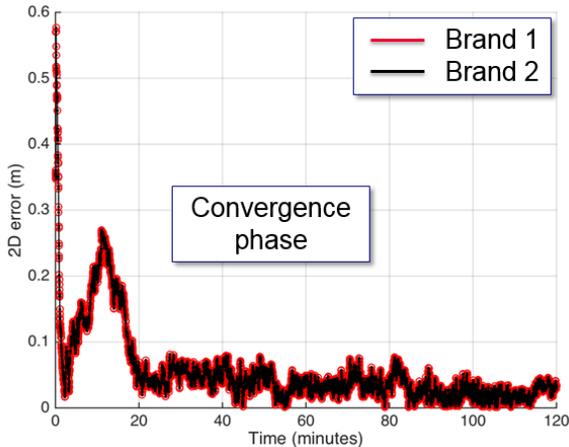


Figure 3 – SmartLink convergence with two third-party receivers in an open sky environment

Once the solution has converged, the result is a precise and stable solution without relying on any nearby reference station.

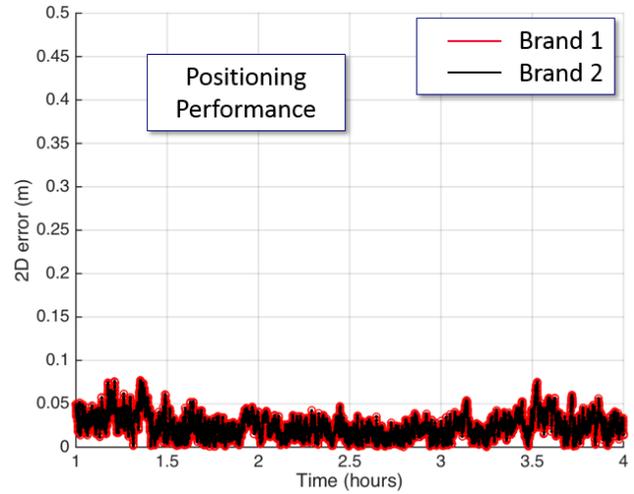


Figure 4 – SmartLink performance with two third-party receivers in an open sky environment

A summary of the various services, accuracies, and correction formats supported by SmartLink are shown in the table below.

Summary

SmartLink is an innovative technology developed by Hemisphere that provides unprecedented freedom and flexibility from a global GNSS correction service. The intuitive web UI makes configuration a breeze and allows for simple setup for a variety of service levels operable with many third-party rovers.

Performance Summary			
Service	H100	H30	H10
Accuracy	1.0 m 95% (50 cm RMS)	30 cm 95% (15 cm RMS)	8 cm 95% (4 cm RMS)
Typical Convergence Time (Minutes)	1 - 2	1 - 5	10 – 40
Output Correction Formats	RTCM2, RTCM3		
Supported Constellations	GPS, BeiDou, GLONASS		