

PointPerfect



GNSS augmentation service

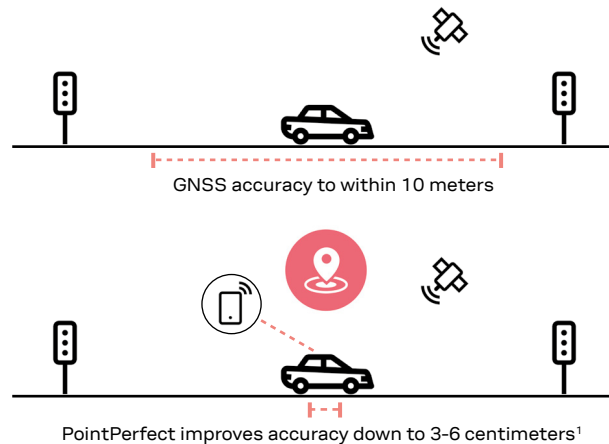
3-6 cm¹ accuracy and convergence within seconds

- Uniform coverage on a continental scale
- 99.9% uptime availability over internet and L-band satellite
- Lower bandwidth to reduce user data costs
- Easy to manage huge device fleets with ZTP and flexible price plans
- Pre-integrated with u-blox F9 and D9 high precision GNSS modules



The challenges of stand-alone GNSS

Global navigation satellite systems (GNSS) have transformed our world and enable anyone to pinpoint their location anywhere on the planet quickly and easily. GNSS provides location accuracy down to several meters, which is more than satisfactory for most applications. However, certain emerging use cases, such as autonomous vehicles, precision agriculture, or robotic lawn mowers require far higher accuracy. To achieve this, GNSS correction data is provided over mobile internet and L-band satellite signals to account for satellite clock and orbit errors and signal biases, as well as ionospheric and tropospheric influences. This, combined with the primary GNSS signal, makes it possible to improve accuracy to within centimeters.



PointPerfect overview and key benefits

Reach the mass market with your precise positioning solutions using PointPerfect. Precise, reliable, and easy to use, PointPerfect is a PPP-RTK GNSS augmentation data service that delivers centimeter-level accuracy in seconds on a continental scale. With 99.9% uptime availability via both internet and L-band satellite, you can rely on PointPerfect for mission-critical applications. Reduce your data cost significantly with the efficient SPARTN open data format and the scalable, simple-to-integrate MQTT messaging protocol. Zero Touch Provisioning makes it easy to deploy huge device fleets, eliminating the headaches of managing digital certificates. Our flexible price plans are tailored to suit your needs. PointPerfect is ready to use because it is pre-integrated with u-blox F9 and D9 high precision GNSS modules. Non-native SPARTN receivers are supported by the PointPerfect SDK.

With mass-market scalability in mind, PointPerfect is ideally suited to the needs of industrial application areas including autonomous vehicles, such as unmanned aerial vehicles (UAV) and service robots, machinery automation, micro mobility, and other advanced navigation applications. Emerging automotive applications include lane-accurate navigation and telematics.

Features / details

Technology	Advanced PPP-RTK (SSR)
Horizontal accuracy ¹ (2-sigma 95%)	3-6 cm
Startup time ²	< 30 s
Coverage	Europe, contiguous United States, Canada, South Korea, and Australia regions
Broadcast data format	SPARTN 2.0 - open industry format, SSR based
Data rate	Continental: 2400 bps (with reduced bandwidth options)
Standard correction rate	Satellite clock: 5 s Satellite orbits, bias, atmosphere: 30 s
Reference frame	ITRF2014 current epoch
GNSS signal support	GPS: L1 C/A, L2P, L2C, L5 GLONASS: L1 C/A, L2 C/A Galileo: E1, E5A/B
Communication methods	Mobile internet: MQTT Satellite: L-band EU and US

- 1: Horizontal accuracy: Typically, 3-6 cm with a compatible receiver. All accuracy results are based on:
 - a) error-free GNSS observation data
 - b) receiving complete and uninterrupted correction data
 - c) ambiguity-fixed position results
- 2: The maximum time for transmitting all data needed by the receiver to start positioning.
- 3: For L-band, 99.0% guaranteed and 99.9% target, on annual basis



High accuracy and fast convergence

PointPerfect is a PPP-RTK GNSS augmentation data service that delivers 3 to 6 centimeter positioning accuracy with a convergence of just seconds.



Lower bandwidth to reduce user data costs

PointPerfect adopts the industry-driven SPARTN data format. SPARTN enables the highly efficient transfer of GNSS correction data. It is transparent and open to any integration partner. This, combined with the lightweight, scalable, and simple-to-integrate MQTT protocol, results in a real-time, bandwidth-optimized solution that reduces user data costs and is ideally suited for mass-market applications.



Intuitive platform and flexible price plans

PointPerfect is delivered via our enterprise-grade cloud platform, utilizes auto-scaling technology, and is proven to support billions of messages. The intuitive, self-serve interface gives users autonomy to manage IoT device fleets, manage billing, monitor events, and have complete API control of functionality.

In addition to a traditional subscription-based approach, we offer flexible pay-as-you-go service plans to address various customers, use cases, and applications. PointPerfect eliminates complexities and allows users to engage more efficiently and reduce time-to-market.



Continental coverage. High reliability, availability

PointPerfect is delivered via mobile internet or L-band satellite signals to any number of end-devices. The broadcast provides uniform coverage on a continental scale in Europe, the contiguous USA, Canada, South Korea, and Australia regions, including up to 12 nautical miles (roughly 22 kilometers) off coastlines. With 99.9% uptime availability, you can rely on PointPerfect 24/7 for your most critical applications. The service is backed by our full warranty and expert support team.



Easy to use. Seamless integration

PointPerfect is ready to use because it is already pre-integrated with u-blox F9 and D9 high precision GNSS modules. Our industry-leading high precision multi-band GNSS receiver modules and connectivity hardware can now work seamlessly in combination with our PPP-RTK GNSS augmentation services to provide a one-stop-shop solution from silicon-to-cloud. Non-native SPARTN receivers are supported by the PointPerfect SDK.

Without an automated mechanism, the provisioning process involves installing the device credentials at manufacturing. This process is tedious and can slow down the production line, increasing manufacturing costs. Zero Touch Provisioning (ZTP) makes it easy to deploy huge device fleets, eliminating the headaches of managing digital certificates. ZTP enables devices to provision themselves automatically in the field, the first time they access PointPerfect.

u-blox products supporting PointPerfect

ZED-F9R high precision dead reckoning modules

ZED-F9P high precision GNSS module

ZED-F9K high precision dead reckoning with IMU sensor

NEO-D9S correction receiver

XPLR-HPG-1 High precision GNSS explorer kit

XPLR-HPG-2 High precision GNSS explorer kit

Further information

For contact information, see www.u-blox.com/contact-u-blox.

For more details, see www.u-blox.com/iot-location-service.

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