Product summary

CloudLocate

Positioning in the cloud

Extend the life of energy-constrained IoT applications

- Up to 10 times energy savings compared to stand-alone GNSS power savings approach
- Expanded market reach with enterprise solutions that leverage CloudLocate
- Globally available and backed by our warranty and support
- End-to-end solution that works with any connectivity technology
- Increased device lifetime in the field and lowered operational burdens

The challenges of stand-alone GNSS

Continuous position tracking on IoT devices can be an operationally expensive undertaking. Designers of IoT applications must balance competing objectives of battery life, position accuracy, and update rate with the other considerations of network data cost, bandwidth, and even hardware materials cost.

With stand-alone GNSS, assistance services are typically needed to shorten time to first fix (TTFF) to a few seconds. That means the connectivity network must support a capable downlink and a data package of several kB. And if the device is in an area without network coverage, then the TTFF will always be long and unpredictable.

Energy-constrained IoT applications need large power autonomy of months or even years as well as Internet connectivity to do their job. Lengthy or repeated attempts at data download can quickly drain power and affect operations. For IoT applications such as asset tracking, a reasonable position accuracy with a few location updates per day or even less will suffice, particularly under these constraints. Location attributes are captured on the device, but are not necessarily used on the device itself, but rather by a cloud service. It makes sense to offload the measurement calculations to that cloud service where location and assistance information can be reliably delivered and globally available.

CloudLocate service description

CloudLocate is u-blox's location service that uses IoT device measurements to calculate a position and deliver it to the cloud enterprise. CloudLocate provides positioning in the cloud to extend the life of energy-constrained IoT applications, resulting in up to 10 times energy savings compared to the stand-alone GNSS power savings approach. Only the uplink connectivity is needed, because location resolution is done in the cloud and works with data packets as small as 12-50 bytes. The end-to-end solution works with any connectivity technology, including limited bandwidth networks having no suitable downlink.

CloudLocate is ideally suited for IoT asset tracking applications that require large power autonomy, a few position updates per day, reasonable position accuracy, and for which location is needed in the cloud.
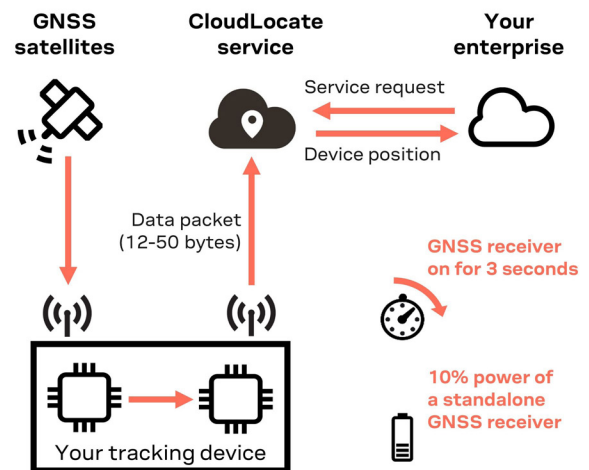
CloudLocate

Power autonomy

The innovative technology underlying CloudLocate vastly increases the power autonomy of IoT devices, saving up to 90% of power consumption and acquisition time compared to a standalone GNSS receiver that needs at least 30 s for a cold start. The uplink connection is configurable from once per hour to as infrequently as needed, allowing the best trade-off between performance and energy consumed. It provides a position accuracy comparable to that of a stand-alone receiver operating in the same visibility conditions. In most cases the accuracy will be under 5 meters, which is appropriate for most IoT asset tracking applications.

Business enabling

Many Industrial IoT solutions use LPWA connectivity, which prevents the use of traditional approaches to GNSS power saving and A-GNSS due to data costs constraints or bandwidth limitations. Others may lack GNSS entirely because it is too costly and power hungry. Certain markets may go unserved because positioning alternatives do not provide sufficient accuracy. For example, a 500-meter accuracy level is not acceptable to track a cargo container at a freight terminal. Limited or no network signal means no coverage, and no position.

CloudLocate, available globally with reliable coverage and warranted support, extends the market reach beyond these and other restrictions. Build new cloud services, grow your business, expand to new markets, and enable your enterprise: all by leveraging the advantages of CloudLocate.

Increase device lifetime and lower operational burdens

IoT asset-tracking applications that spend more time performing actively in the field will increase operating efficiency and lower costs. The great reduction in required power results in saving costs, interventions, and downtime. Changing dead batteries, installing a fresh IoT device after the previous one dies, or managing the maintenance team who does all of this will all become infrequent tasks. A more power-autonomous IoT device increases the device lifecycle and lowers operational burdens, allowing you to focus on growing your business.

Assured service availability

CloudLocate, like all u-blox services, is delivered by the Thingstream IoT service delivery platform. Thingstream is a cloud-based delivery platform and administration interface for enterprise IoT services. The Thingstream platform comprises IoT connectivity, security, an enterprise-grade MQTT broker, visual programming, simple enterprise integration, and support for u blox positioning chips and modules.

We stand behind our services with the highest levels of availability and delivery quality by providing full warranty, support, and with premium service levels available, tailored to suite your specific needs. The technology building blocks are developed in-house where we have full ownership without the external dependencies that can be barriers to responsiveness.

CloudLocate works with any connectivity technology: LPWA, Cat 1, Bluetooth Low Energy, Wi-Fi, or proprietary technologies. The service is also available as a premium extension with u-blox IoT communication service MQTT Anywhere: providing predictable, low cost, and global connectivity.

u-blox products supporting CloudLocate

u-blox 8/M8 GNSS receivers
u-blox M9/F9 GNSS receivers
u-blox M10 GNSS receivers

Further information

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

For more product details and ordering information, see the product data sheet.