swift NAVIGATION

STARLING™
Positioning Engine

Starling™
PRODUCT SUMMARY

Starling is an advanced GNSS RTK positioning engine designed for automotive and IoT autonomy applications.

Starling's software is GNSS receiver agnostic and works with a variety of automotive-grade and consumer-grade GNSS chips.

ABSOLUTE POSITION, VELOCITY AND TIME

Starling features multi-band, multi-constellation support to provide centimeter-level accuracy. It supports the calculation of integrity outputs to provide absolute position, velocity and time (PVT). When combined with inertial sensor measurements, wheel odometry and other sensor inputs, the Starling Positioning Engine can assist with vehicle localization, decision and control.

PLATFORM INDEPENDENT

Starling enhances the measurements for commercially-available GNSS receivers to provide true precision and integrity capabilities. Starling is capable of taking in raw GNSS observations from any measurement engine (ME).

GNSS RECEIVER AGNOSTIC

Starling works with multi-frequency, multi-constellation automotive and commercial-grade GNSS measurement engines. When combined with a high quality GNSS corrections service such as Skylark™, Starling significantly reduces the cost of centimeter-level accurate positioning for autonomous applications.

INTEROPERABLE WITH LEADING CHIPS

Starling easily interoperates not only with Swift's Piksi® Multi and Duro® receivers but with third-party chips, including STMicroelectronics' TeseoAPP and TeseoV automotive-grade GNSS chips and Broadcom's BCM47755 consumer-grade GNSS chip, among others.

ENGINEERED FOR AUTOMOTIVE SAFETY APPLICATIONS

Starling has being engineered from the ground up to comply with the automotive industry functional-safety standard – ISO 26262 for Automotive Safety Integrity Level (ASIL)-B safety standards.

CONSTELLATION CONFIGURABLE

Starling is capable of running in real time and in post processing, allowing customers the flexibility to configure Starling to suit their system level requirements from the number of constellations tracked to the output rate desired. Starling supports the following: GPS L1/L2/L5, GLONASS G1/G2, BeiDou B1/B2, Galileo E1/E5b/E5a and SBAS.

BENEFITS

- GNSS Receiver Agnostic
- Supports 3rd-Party GNSS Measurement Engines
- Built for Integrity
- ASIL Ready
- Centimeter-Level Performance

FEATURES

- Real-Time Processing Engine
- Highly Portable & Flexible Architecture
- Configurable to Suit Customer Processing Requirements
- Works with Multi-Constellation, Multi-Frequency GNSS Receivers
- Supports GPS L1/L2/L5, GLONASS G1/G2, BeiDou B1/B2, Galileo E1/E5b/E5a & SBAS
- Navigation Outputs: Swift Binary Protocol (SBP) & NMEA 0183
- Reference Inputs / Outputs: RTCM 3.1, 3.2

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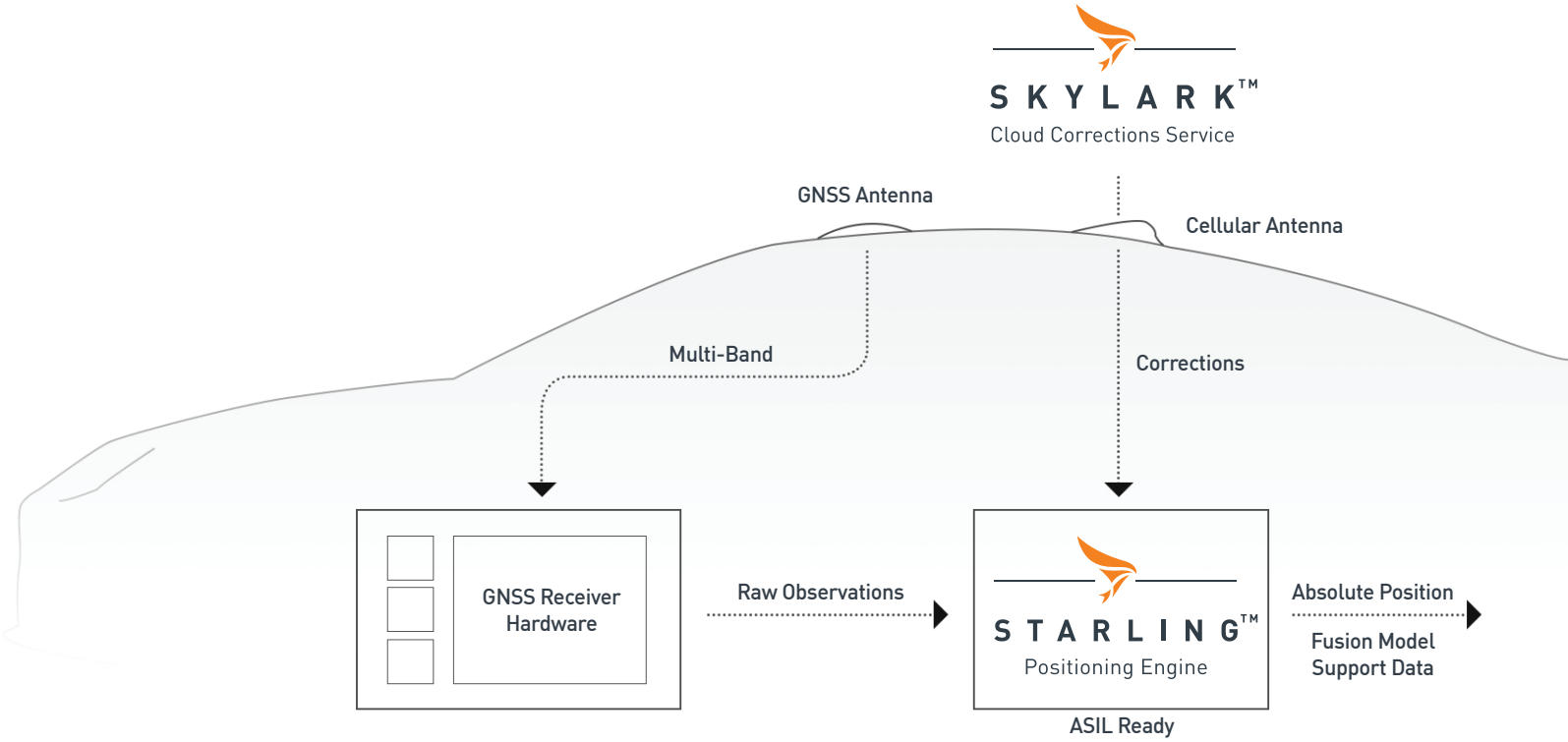
Precise Positioning Requirements for Automotive Safety Applications

Emerging automotive applications require improved position accuracies and integrity that cannot be met with the navigation positioning systems historically available.

Swift Navigation is engineering precise positioning solutions to deliver the accuracy and reliability required for tomorrow's automobiles. This includes combining the Starling Positioning Engine with automotive-grade GNSS chips from experienced and respected chip manufacturers and utilizing Skylark to stream corrections from the cloud to deliver high-precision positioning.

With this comprehensive approach, Swift successfully delivers the precise positioning required at fleet-friendly prices.



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