# LANE-LEVEL POSITIONING FOR AUTOMOTIVE PRODUCTION

Swift Navigation's solution makes it easy for OEMs to integrate precise positioning into their fleets. Designed for ADAS, cV2X, HD navigation and autonomy—and built to scale for automotive—Swift delivers absolute positioning, at lane-level accuracy, for safety-critical autonomous vehicle applications as a software-only solution with minimal or zero impact to hardware.

Swift was founded on the notion that GNSS positioning technology should be more accurate and affordable. Swift has accomplished just that and today Swift finds itself at a technology inflection point where all required enablers are available to make high-precision positioning for automotive applications a reality. The availability of data connectivity and low-cost, multi-constellation, multi-frequency GNSS chipsets—coupled with Swift's highly-accurate, receiver-agnostic, ASIL-developed and affordable Starling® positioning engine and Skylark™ cloud corrections service—makes Level 2-5 autonomy a reality. Skylark and Starling were designed with a complete end-to-end integrity chain to ensure the required trust in the position that autonomy demands to keep everyone safe.
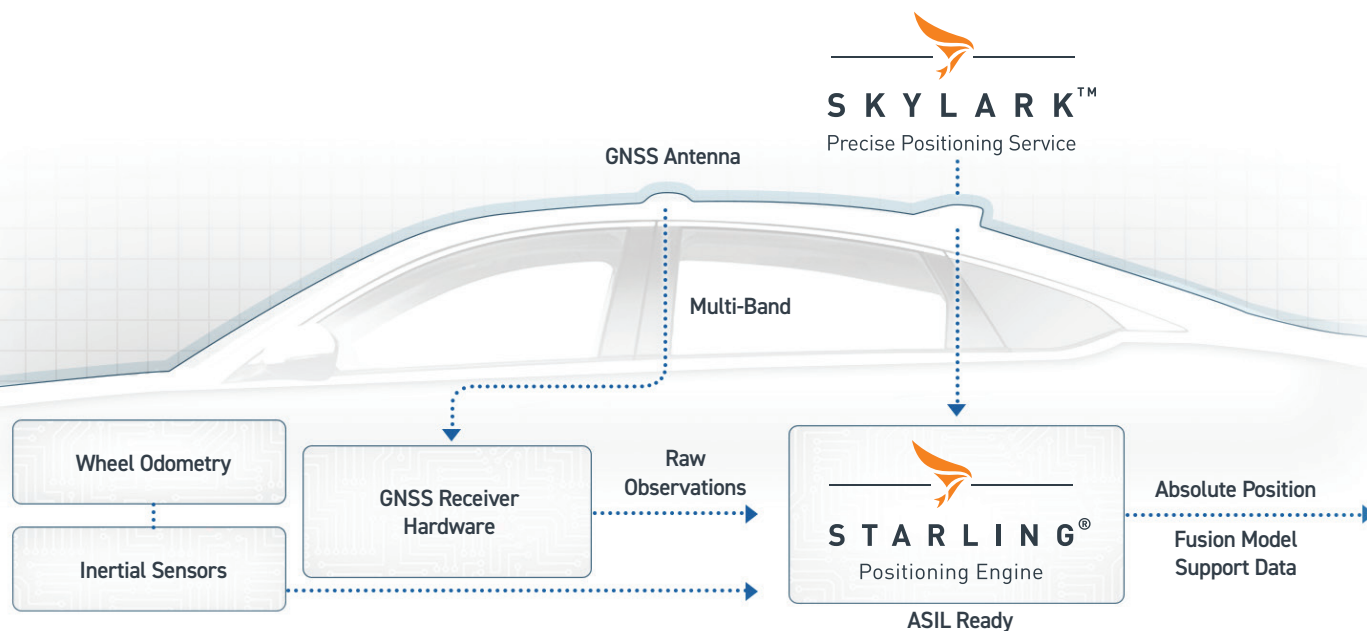
Starling GNSS Positioning Engine

Autonomy requires accuracy and Swift's Starling Positioning Engine is designed with your vehicles in mind. A receiver-agnostic platform, the Starling precision positioning engine easily integrates with GNSS chipsets, pulling corrections from Swift's Skylark cloud corrections service to deliver absolute positioning for safety-critical autonomous vehicle applications.

Starling offers automotive companies a choice in selecting the best components for their autonomous sensor suite, vehicle to everything (V2X) applications and Automated Driving Systems. Starling is engineered from the ground up to comply with the automotive industry functional-safety standard—ISO 26262 for Automotive Safety Integrity Level ASIL B(D) safety standards—and leverages Swift's Skylark Cloud Corrections Service to provide GNSS integrity.

GNSS Base Station

Starling
Positioning Software

GNSS Base Station

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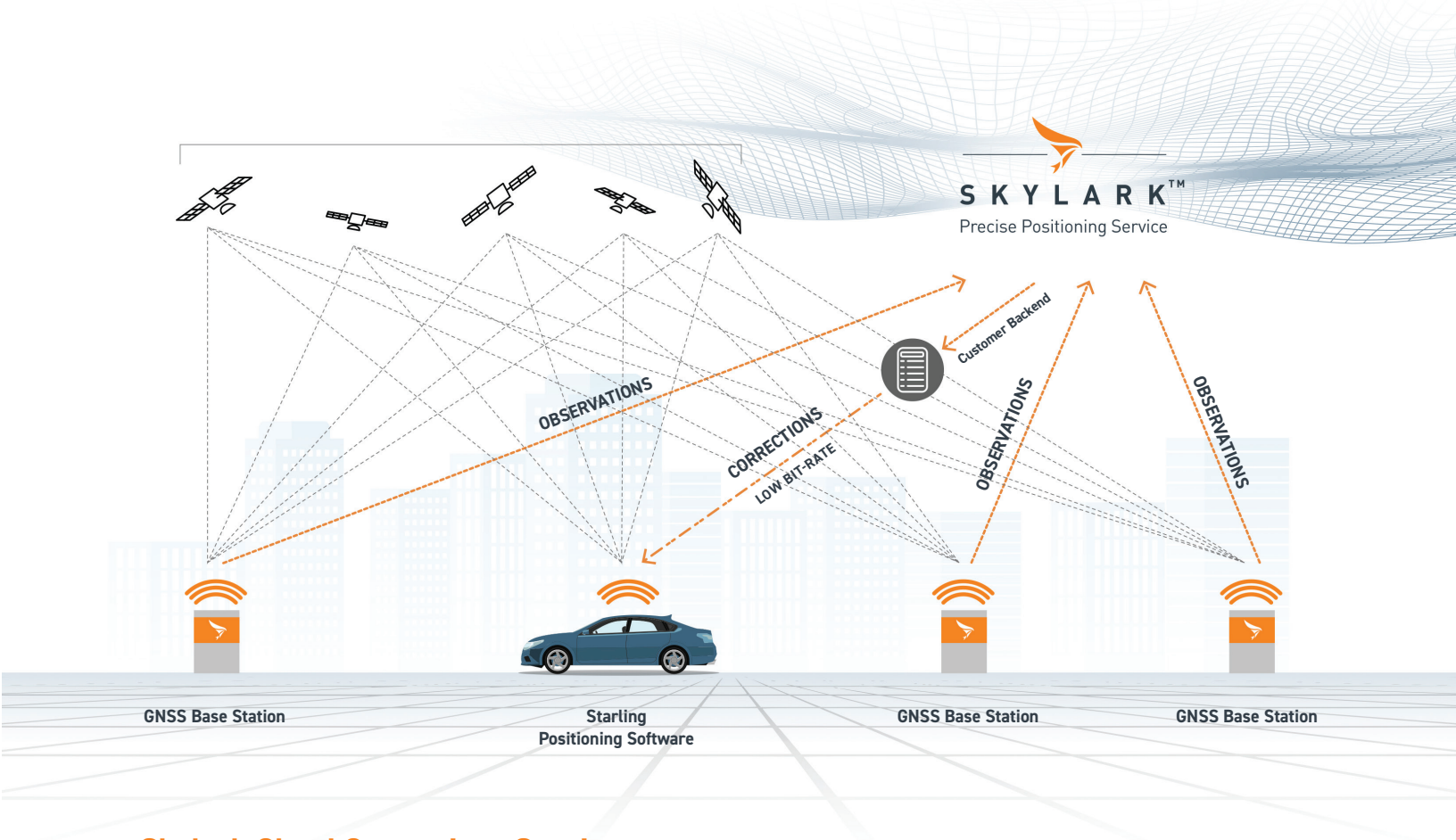
Skylark Cloud Corrections Service

Skylark is a one-of-a-kind, cloud-based GNSS corrections service with continental coverage across North America, Europe, Australia and large parts of Asia. Skylark delivers affordable, fast, centimeter-level accuracy, eliminating the complexity of integrating high-precision GNSS technology. Skylark was built from the ground up for scale, enabling high-precision positioning for mass-market automotive and autonomous applications while delivering quick and robust positioning data with high reliability and availability—even in challenging environments.

Skylark's integrity monitors look at all possible threats and feared events to the satellite constellation, ionosphere and troposphere. This integrity information is sent in the correction stream as error flags and bounding values to be used by a positioning engine such as Starling to calculate the Protection Levels needed for safe use of precise positioning. In Skylark, Swift has created a modern, flexible, scalable cloud-based platform for high-precision GNSS navigation of autonomous vehicles, via Internet connectivity.

In addition to the GNSS products you need, Swift has a knowledgeable and experienced applications engineering team available to support your company and integrations as they are tested, implemented and brought to market. Contact sales@swiftnav.com to get your pilot program started today!

HIGH INTEGRITY
Delivering a Protection Level down to 1.5m and a Target Integrity Risk (TIR) down to 10^{-7}

SAFETY
Developed to ASIL-B(D) standards

FAST CONVERGENCE
Delivering real-time, highly-accurate corrections with reduced convergence times

ABSOLUTE POSITIONING
Providing positioning in an Earth fixed datum delivering a common frame of reference

IMPROVE NAVIGATION
Lane-level accuracy enables more accurate driving instructions