

INNOVATIVE APPLICATIONS

With the combination of current and future GNSS there are growing possibilities for high-precision satellite navigation applications. Within the »GOOSE« project a platform for enabling new innovative applications will be developed, e.g. for the following areas:

- Building sector
- Agriculture and Forestry
- Surveying
- Mining
- Shipping
- Aviation
- Logistics
- Automotive
- Machine Steering

OUTCOMES & FUTURE PROSPECTS

Technology outputs

- 20 GNSS receiver development platforms
- 20 smart antennas (prototypes)
- Open software interface (API)
- Application software example for PVT/RTK

Be our partner – we offer

- Customized hardware layer
- Application-specific redesign and sensor adaption
- Customized algorithms and system software
- Product development
 - Integration of power supply and charge electronics
 - EMC adaptations and validation
 - Tests for production
 - Integration of a communication module
 - Design of housing
 - Operation and test of product prototypes

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FRAUNHOFER INSTITUTE FOR
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PROJECT »GOOSE«

GNSS RECEIVERS WITH OPEN SOFTWARE INTERFACE

Fraunhofer Institute for Integrated Circuits IIS

Director
Prof. Dr.-Ing. Albert Heuberger
Am Wolfsmantel 33
91058 Erlangen, Germany

Contact
Matthias Overbeck
Nordostpark 93
90411 Nuernberg, Germany

Phone +49 911 58061-6368
matthias.overbeck@iis.fraunhofer.de

www.iis.fraunhofer.de/goose



IN COOPERATION WITH



»GOOSE« – GNSS RECEIVERS WITH OPEN SOFTWARE INTERFACE

MOTIVATION

The global market for GNSS (Global Navigation Satellite System) receivers is dominated by a small number of big players. This oligopoly results in some limitations for customers. Firstly, the prices for precise receivers are considerably high, secondly these receivers don't allow customers to get deep access to software interfaces or relevant data neither to improve the positioning solution, nor to adapt it for their applications.

To pave the way for an open GNSS receiver market – especially for SMEs and R&D organizations – it is necessary to overcome these limitations.

The »GOOSE« project (German acronym for »GNSS-Empfänger mit offener Software-Schnittstelle«) tackles this challenge.

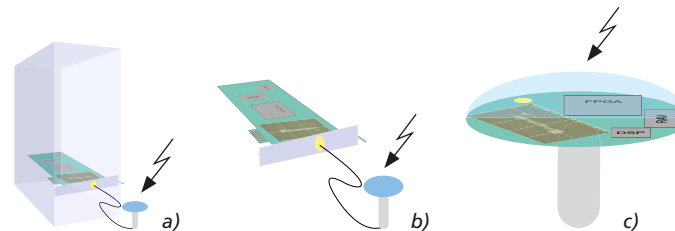
THE »GOOSE« PROJECT PAVES THE WAY FOR AN OPEN GNSS RECEIVER MARKET. IT OFFERS PLATFORMS FOR THE WHOLE DEVELOPMENT CHAIN FROM THE IDEA TO THE PRODUCT.

BOOSTING GNSS DEVELOPMENTS

»GOOSE« provides platforms for a complete development chain for professional GNSS receiver software. It addresses researchers, software developers and algorithm experts to build up new methods and applications in the GNSS area.

Main Benefits

- Improved development process for GNSS receiver firmware
- Application-specific software can be embedded in the receivers
- Access to all potentially relevant data for an improved position solution in an open white box approach
- Enables sensor data fusion, also ultratightly coupled
- High-precision, real-time positioning with high update rate
- From experimental platform to commercial receiver: one development chain



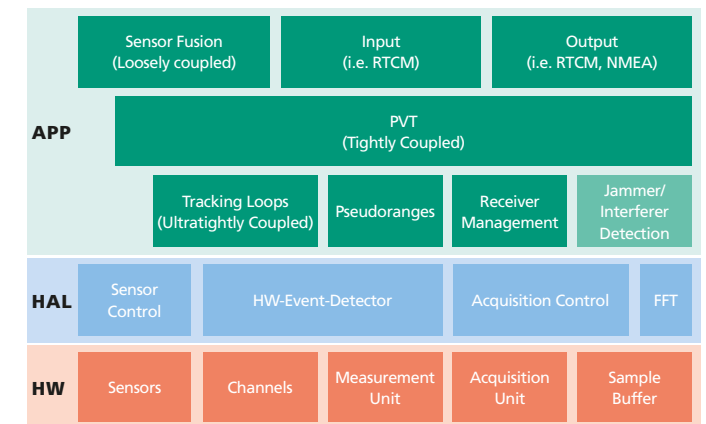
Three evolutionary steps:

- Hardware Platform with PC Software;
- embedded Hardware and Software;
- Hardware and Software within Antenna (Smart Antenna)

ONE DEVELOPMENT CHAIN ON ALL PLATFORMS

The experimental platform and embedded receivers accelerate the evolution from software receiver to smart antenna for researchers, software developers and algorithm experts during the complete development process.

- Testing of different positioning solutions or algorithms on the processor of the PC
- Transfer to the embedded processor of the GNSS hardware platform
- Field tests with smart antenna prototype



Layers of »GOOSE« architecture:

Every module of the Application Layer (APP) can be customized. The interface is open. Hardware Abstraction Layer (HAL) provides same interface on all platforms. Hardware (HW) modules accelerate GNSS algorithms.