Applications

- Optimization, test, and verification of acquisition and tracking algorithms
- Evaluation of baseband-receiver hardware or positioning algorithms
- Designing multipath and interference mitigation strategies and algorithms
- GNSS signals for laboratory use
- And many others

Benefits

- Flexible and modular design, open for special user requirements
- 100% reproducible digital data (sample-, chip-, and bit-wise)
- User-defined scenarios using GIPSIE® software-based signal generation and digital IF samples data play-back
- User-friendly graphical interface
- Numerous parameter settings
- Various bandwidths and resolutions possible
- Record and play-back of live data with optional RF front-end and antenna
- Reporting tool

Digital Signal Generator

Specify a navigation satellite system, define the influencing error sources, select a static or dynamic user scenario, choose the signal frequency and modulation scheme, specify the RF front-end and filter characteristics, and select the bit-stream parameters - the Digital Signal Generator will stream the in software generated, fully reproducible digital signals or recorded data into your baseband receiver for development, test, and verification.

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GNSS multisystem performance simulation environment

gipsie® DSG

Digital Signal Generator

www.teleconsult-austria.at

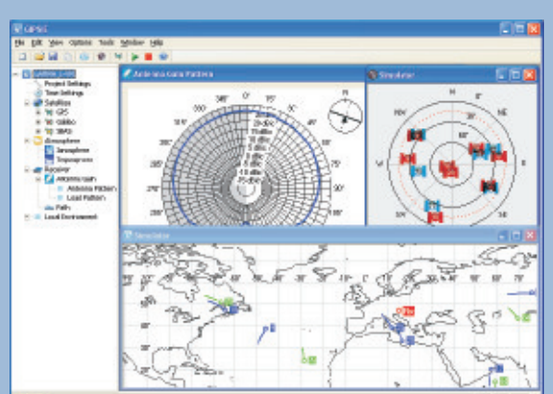
Software

GIPSIE®-SCS

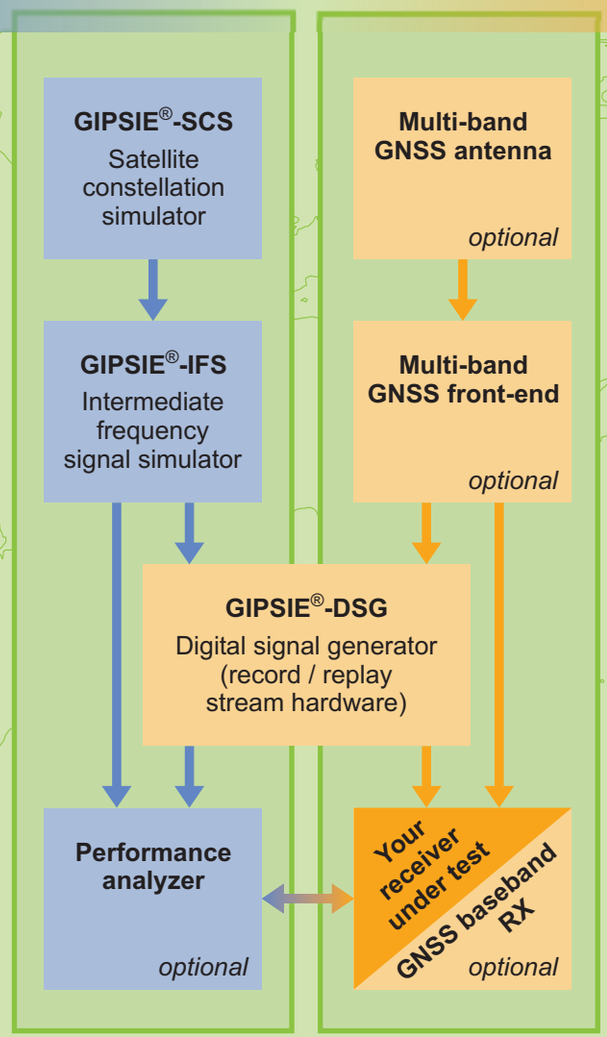
- Orbit simulation of existing and future satellite systems by a sophisticated orbit integrator
- Simulation of static user positions and dynamic user trajectories
- Modelling of environmental parameters and error sources

GIPSIE®-IFS

- Software-based digital intermediate frequency signal generation of GPS, Galileo, and other signals
- IF parameters fully user selectable
- RF front-end configurable to your needs
- Digital IF output samples stored in file or streamed to hardware



GIPSIE® System Architecture



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Hardware

GIPSIE®-DSG

- Flexible and modular signal generator hardware architecture
- Stream hardware: Record and replay hardware for digital IF data streaming with up to 400 MBit/s I/O rate
- Custom receiver hardware (e.g. receiver under test) can be inserted

- (*optional*) Active multi-band GNSS-antenna for all GNSS-bands
- (*optional*) User customizable RF front-end to receive and record all presently known and future GNSS-signals
- (*optional*) GNSS baseband receiver: Xilinx Virtex 5 FPGA prototyping platform for custom receiver design and receiver baseband processing