

NAVSYS GPS Signal Architect™

navsys

Customized MATLAB-based tools for GPS signal generation

Harnessing the Capabilities of the NAVSYS GPS Signal Simulation Toolbox for Robust IQ Baseband and RF Signal Generation:

The NAVSYS GPS Signal Architect tool leverages the capabilities of the NAVSYS GPS Signal Simulation Toolbox to provide users with a MATLAB-based GPS signal generation capability at a much lower cost than currently available on the market. The GPS Signal Architect allows users to specify a trajectory and a complete set of simulation parameters, and then creates an IQ data file at baseband or IF. The data file can then be used for subsequent analysis within MATLAB or can be provided to RF signal generators to create a GPS signal suitable for playback into a GPS receiver. Since all signal processing is implemented in MATLAB, the user has complete flexibility to manipulate the signal at various stages of generation or post-generation to simulate GPS anomalies, interference, jamming, multipath, and integration with other simulations.

Commercial GPS Receiver Chipset

Simulation: Included with the GPS Signal Architect is a database of current and legacy GPS RF chipsets, whose parameters can be used to produce simulated data for users that want to model and develop for specific devices. This database is continually updated as new products come on the market, and is provided to customers free of charge.

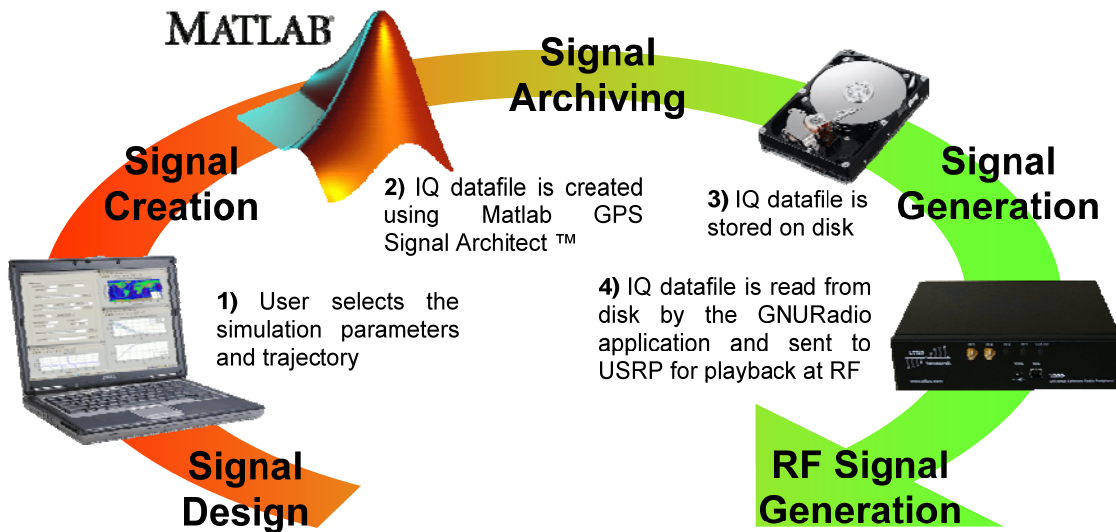
Compatibility with GNURadio USRP Hardware:

The data files produced by the NAVSYS GPS Signal Architect are compatible with the GNU Radio Software Defined Radio toolkit, which can use the ultra-low-cost Universal Serial Radio Peripheral (USRP) to produce a GPS signal at RF. The combination of the NAVSYS GPS Signal Architect, GNURadio, and the USRP makes for an extremely low cost, yet highly-flexible GPS signal generation capability. In addition to offering the GPS Signal Architect software application, NAVSYS is also a vendor for PCs with GNURadio already installed and configured for customers looking for a COTS solution.

Target Applications and Users:

The GPS Signal Architect is ideal for applications requiring:

- High degree of flexibility not found in other hardware-based signal generators
- The ability to make custom modifications to the simulator to support unique testing requirements
- Highly repetitive testing where consistency between test runs is critical
- An ability to incorporate arbitrary sources of interference, jamming, and other waveforms, and the ability to use MATLAB-based multipath models
- Low initial and support costs
- No vendor lock-in



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