orolia
DEFENSE & SECURITY

The Global Leader in
Resilient **PNT**

PANACEA

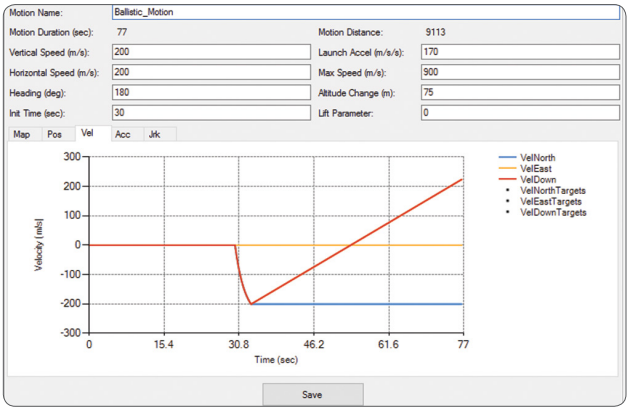
Autonomous PNT Performance and Vulnerability Test Suite

What is PANACEA?

- Autonomous GNSS performance and threat environment simulator system designed to control simulation hardware and collect data from up to 32 GNSS receivers simultaneously
- Paired with BroadSim, PANACEA can generate all multi-constellation, jamming, spoofing, and repeating signals
- Capable of producing complete simulated environments and time synchronized live sky environments
- Manages all receiver communications and then standardizes the output data into human readable .csv files
- Supports over 100 GNSS receivers and is compatible with many common receiver brands (see specs on next page)

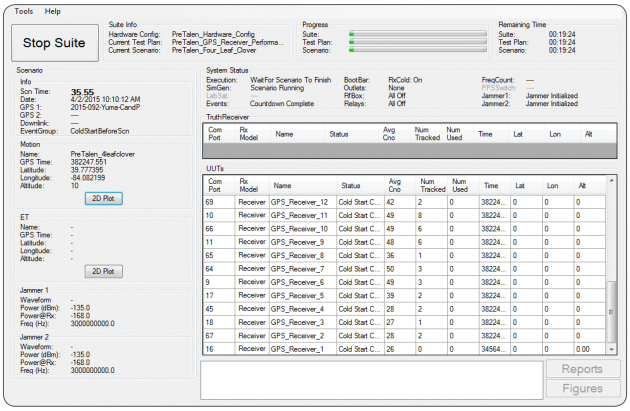
THE BUILDER (SOFTWARE TOOL)

Makes creating custom scenarios a breeze. Define scenarios to simulate jamming patterns, motions, power loss, delays and more.



THE RUNNER (SOFTWARE TOOL)

Simultaneously manages up to 32 UUT's (Units Under Test). Shows real-time UUT info and converts data into files for analysis.



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Specifications

Compatible Receiver Brands (commonly used)

• Collins Aero • Garmin • GPS Source	• L3T • NovAtel • Raytheon	• Trimble • Ublox • Many more...

Constellations

Import methods:
- Download from the internet
- Ublox constellation (real-time)

GPS Open Codes: L1C/A, L1C, L1P, L2P, L2C, L5

GPS Encrypted Codes: L1Y, L2Y, L1M, L2M; L1 MNSA, L2 MNSA (COMING SOON)

GLONASS: G1, G2	Galileo: E1, E5a, E5b
BeiDou: B1, B2	SBAS: L1, L5

Threats

Create jamming, spoofing, and repeatings scenarios.

Receive and Transmit Antenna
- Motion Profile, LLA Position, NED Offset

Set-Up: Control when the threat activates, and what the relative power is

Delay: Add delays to the threat (ns, ms, s)

Interference Waveforms

Custom Waveforms • Modulations • Power Levels • J/S Levels	• Center frequency • Bandwidth • Multiple signals • On/Off times

Frequency: All GNSS bands, including GPS L1 and L2

Motions

- Constant Velocity
- Race Track
- Ballistic
- Custom
- Import (via UMT file or GIANT route file)

Event Groups

Add events to your scenario to control every aspect from power cycling the receiver, to initializing position and time.

Cold/Warm/Hot Start	Key Rx
Initialize Time/Position	Live Sky On/Off
Power Cycle	More...

Other Scenario Parameters

SV Power • Control the power levels of satellites independently or as a whole, at various times throughout a scenario	SV Delays • Control the time delay of satellites independently or as a whole, to a specific value (nanoseconds),
LLA Position • Define custom locations by latitude, longitude and HAE altitude	NED Offsets • Define offsets by meters, and let PANACEA do the conversions for you
Data Override Sets • Create event markers and custom data sets	Start Times • Create any start time or choose to live sky time sync

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