Radar Environment/Target Simulator

Overview

The Kratos RT Logic Radar Environment and Target Simulator builds on an established line of propagation channel simulation products to realize an economical solution for simulating targets and channel effects in an RF environment. The system can be controlled via a standalone graphical user interface for simplified scenario applications, a dedicated real-time interface, or remotely via the Ethernet interface.

Features

- Support for L, S, C, X, and Ku radio frequency bands
- Frequency tuning and channel model updates within <300µs
- Amplitude and phase alignment between four RF channels
- Proven DRFM based architecture
- Scenario target update rates < 10ms
- Support for phased array beam steering emulation
- Supports multiple overlapping targets within a dwell
- Support for clutter and Swerling 0, I, II, III, and IV models
- Scenario input via GUI, Excel, MatLab, STK, or custom modeling tools

Applications

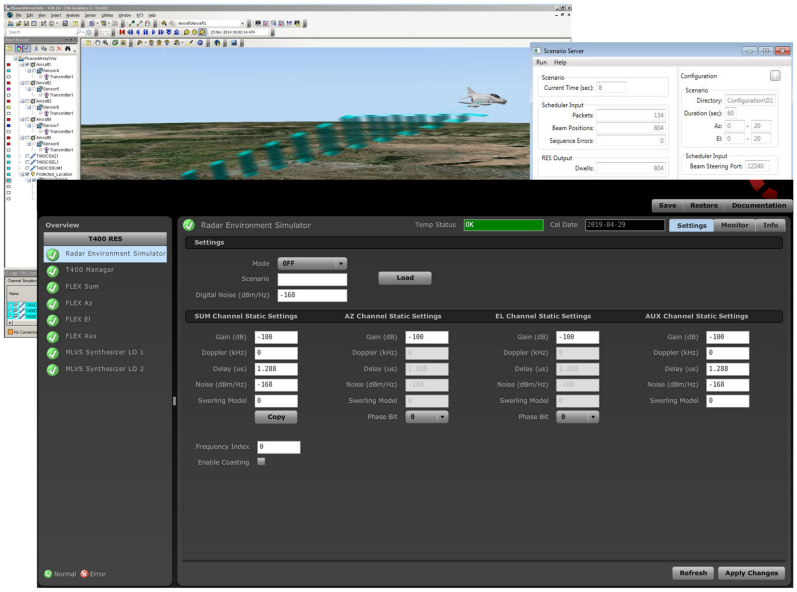
- Radar Environment and Flight Dynamics Simulation
- Monopulse Radar System Verification
- Multi-Channel Threat Generation
- RF Seeker Development and Verification
- Hardware In the Loop (HIL) Testing
- Acceptance, Production, and Field Testing

Key Features

- ***Flexible Architecture*** *supporting full turnkey systems or complementary subsystems*
- ***Customizable*** *with a wide range of HW and SW options*
- ***Scalable*** *allowing entry level systems to be upgraded to enhance capability*
- *Support for* ***legacy and next generation*** *platforms*
- *Robust TRL-9 solution*

Proven Benefits

- *Assured mission success*
- *Low risk with competitive cost*
- *Short lead time*
- *Extended lifecycle support*



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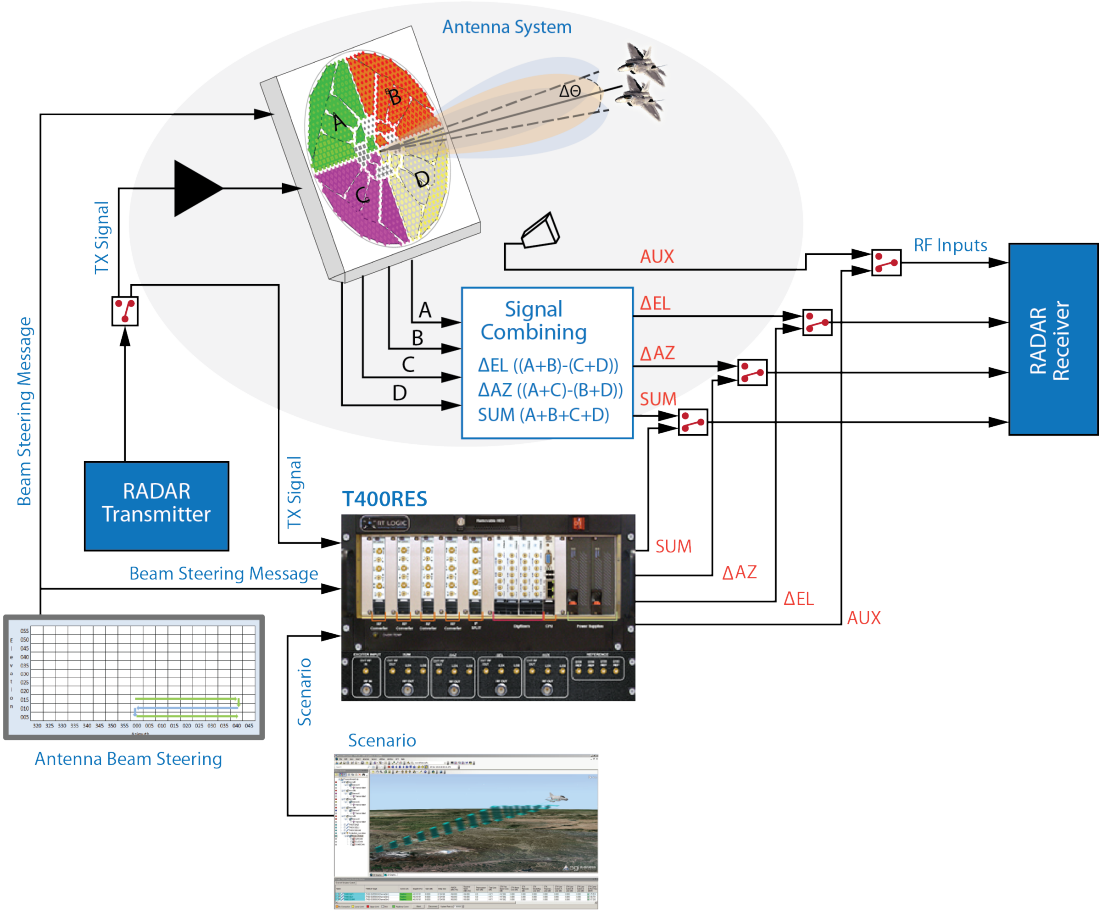
Mono-Pulse Radar Application Example



Specifications

Targets per Scenario	> 100
Targets per Dwell	Up to 4 with independent target models
Beam Steering Resolution	0.1 degrees
Scenario Target Update Rate	< 10 ms
Scenario Length	Expandable with disk space
Channel Model Update Rate	< 300 µs
RF Frequency Range	L, S, C, X, and Ku Bands
RF Channels	Up To 4 per System
Antenna Patterns	Driven by scenario
Instantaneous Bandwidth	> 100 MHz
Pulse Width	< 1 µs to 500 µs, Pulsed CW, LFM, or CW
Pulse Repetition Interval	< 1 µs to > 10 ms
In-Band Spurious	better than -50 dBc
Dynamic Range	> 100 dB
Amplitude Resolution	< 0.1 dB
Doppler Range	< +/- 5 MHz
Doppler Resolution	< 0.1 Hz
Range Delay	0.3 km to > 500 km
Range Resolution	< 1 m
Phase Range	0 - 360 degrees
Phase Resolution	< 0.1 degrees
Programmable AWGN Range	> 36 dB/Hz
AWGN Resolution	0.5 dB
ADC	12 bits
DAC	16 bits

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