# 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

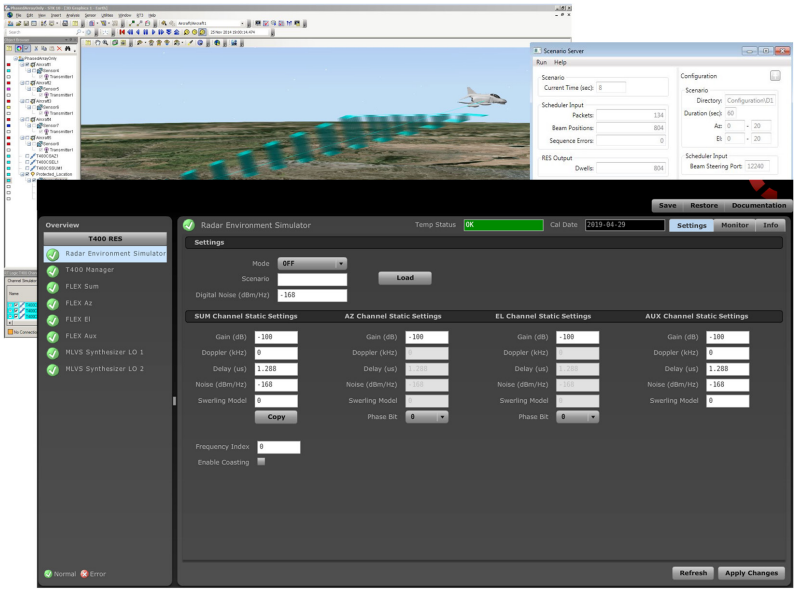
- Radar Environment and Flight Dynamics Simulation
- Monopulse Radar System Verification
- Multi-Channel Threat Generation
- RF Seeker Development and Verification
- Hardware In the Loop (HIL) Testing
- Acceptance, Production, and Field Testing

## 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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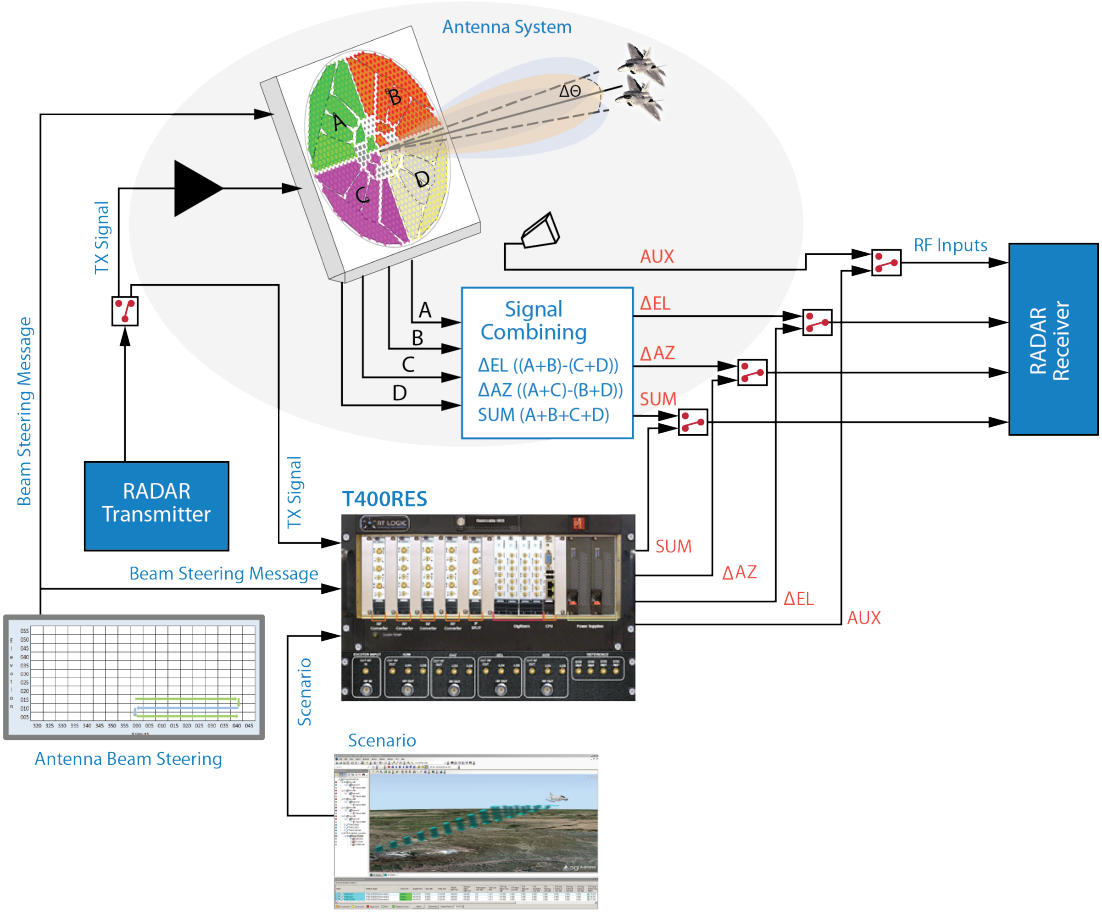
## Mono-Pulse Radar Application Example




## 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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