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KUARadSim

Ensure your sensor operators are mission ready.

Realism ensures training that fully prepares your personnel for radar operations as well as management and interpretation of radar data and scenarios they will experience on real systems. When your trainees can go smoothly from training mode to handling the tasks and challenges of their real-world roles, you'll know you've done training right.

KUASOFT radar simulation solutions gives you everything you need for your most effective training for radar operators.
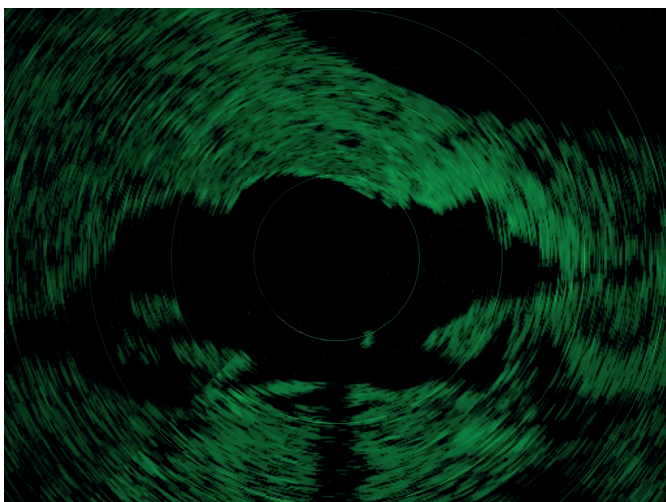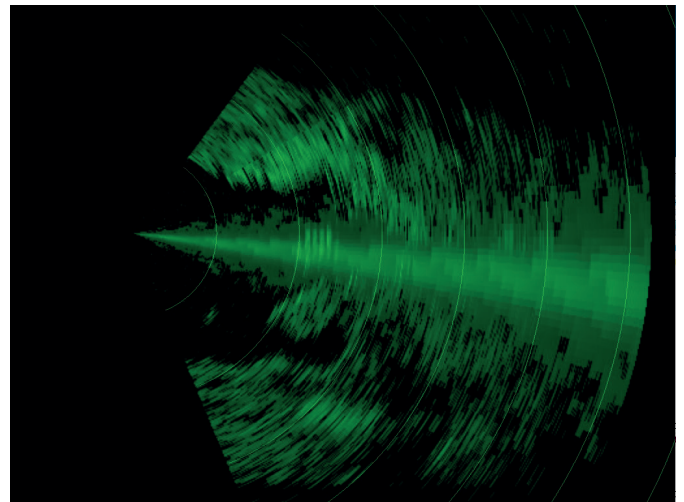
KUARadSim

As a configurable and realistic simulation system, KUARadSim is easily modified to meet specific requirements of radar training professionals.

The entire system is based on a relational database containing the targets, jammers, chaffs and environmental data (geographical conditions, weather conditions, sea state, etc.) that comprise each training scenario. Graphical, simple-to use interfaces allow instructors to modify or create new data in any of these categories, making almost any scenario not only possible, but easy to create.

Modern Technology

Expensive, proprietary systems are no longer necessary to provide first-class training. KUARadSim uses modern technologies to achieve both an affordable price and an ease of maintenance unheard of with previous-generation radar simulators.

Modes

KUARadSim implements different modes of the system like,
• Stand-By
• Search (continuous scan, sector scan)
• Weather

Physical Radar Model

KUARadSim implements a real physical model for radar modelling. The system can support any .dt1 or .dt2 formatted geographical data for radar modelling. Physical Radar Modelling, includes the specifications like,
• STC (Sensitivity Time Constant)
• FA (Frequency Agility)
• AGC (Automatic Gain Control)
• SCAN INTG (Scan Integration)

Tactical Objects

KUARadSim supports tactical objects like targets, chaffs and jammers. All echo reflected by these objects are calculated by the real physical model.

Some features of these objects are,
• Target dimensions, rcs (radar cross section) and rcs fluctuation models, surface type.
• Chaff dimensions, rcs, life time, blooming time.
• Jammer types (range obscuration, angle deception), effective radiated power, jammer frequency and bandwidth.

Configuration

KUARadSim can be configured according to the customer's requirements easily using user friendly GUI's. The system can be integrated in a full-flight simulator or can be used as a standalone trainer. KUARadSim makes use of a high fidelity realistic physical radar model engine in order to simulate radar echoes and radar effects.

Weather Mode

KUARadSim implements a weather model for any given operator selected weather conditions like clouds, rain, fog and snow. The system detects the thunderstorms and easily shows the safe way on the route.
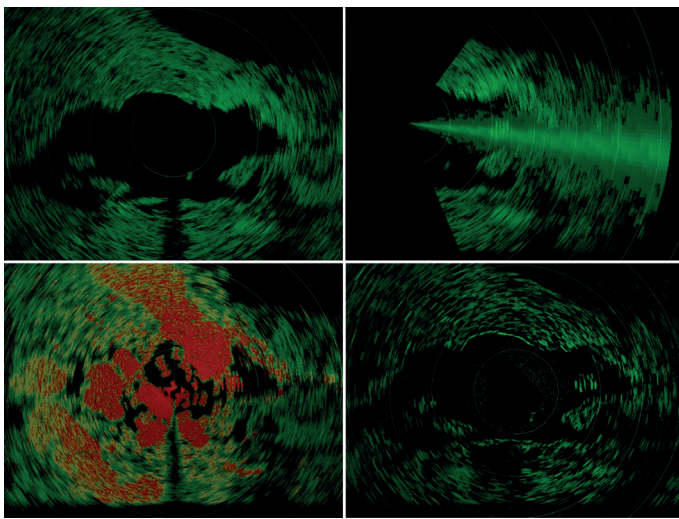
Features, effects and parameters simulated include:

• Platform altitude, attitude and stabilization
• Range and atmospheric attenuation
• Antenna gain, scan rate, beam width, beam pattern and side lobes
• Surface material effects (reflectivity, directivity)
• Atmospheric refraction and earth curvature
• Aspect and masking (terrain, features, targets)
• Occultation and radar shadowing
• Far shore brightening
• Sea state
• Receiver sensitivity and gain
• Weather, chaff and jamming effects
• Sensitivity Time Control (STC), Automatic Gain Control (AGC)
• Noise (receiver, atmospheric, background)
• Transmitter power, frequency band
• Pulse width, PRF, PRI and pulse length effects
• Receiver detection and post detection integration
• Log compression
• Radar resolution and multiple range scales
• Weather Mode
• TWS (Track While Scan), ATT (Auto Target Tracking)
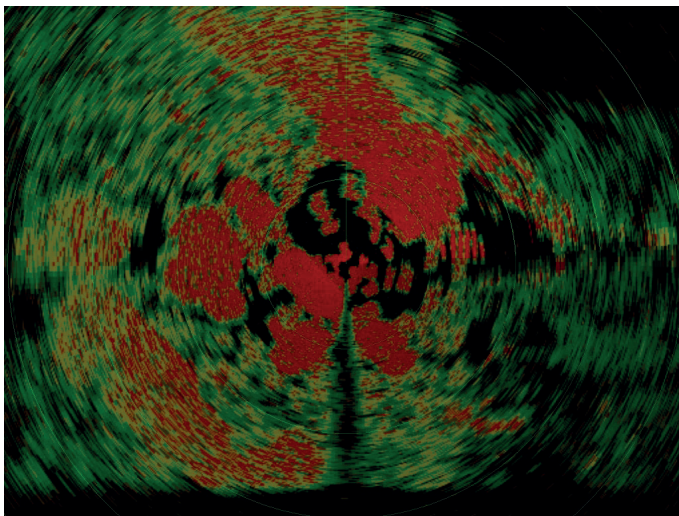
Custom Sensor Simulation Software Development

When commercial sensor simulation software packages do not cover all your complex training requirements and performance needs of your training environment, KUASOFT is ready to help you to build your custom sensor simulation software to fulfill your requirements.

Our experienced engineers will use their problem-solving creativity to deliver custom sensor software development initiatives that power and support sustainable simulation solutions.

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