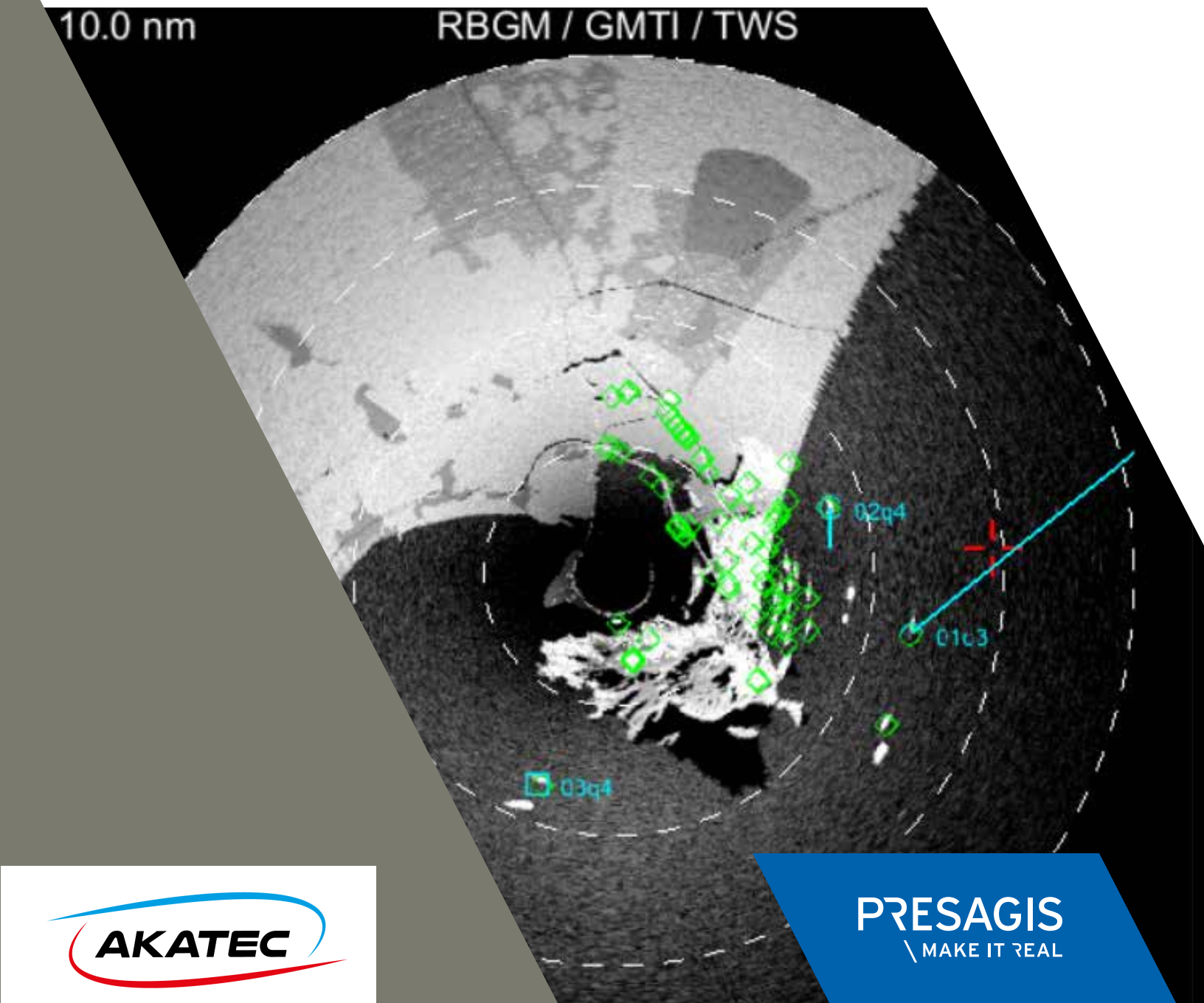
SIMULATION

ONDULUS RADAR

DEVELOP. EMULATE. SIMULATE

\ **Ondulus Radar** delivers the ability to add high-fidelity, high-performance, physics-based radar sensor simulation into a wide variety of research, design, and training applications.



AKATEC

PRESAGIS
\ MAKE IT REAL

BENEFITS

FULL CONTROL

Full control of every radar parameter (such as transmitter power, frequency, pulse width, etc.) means you can match operations to your requirements.

WIDE PERFORMANCE RANGE

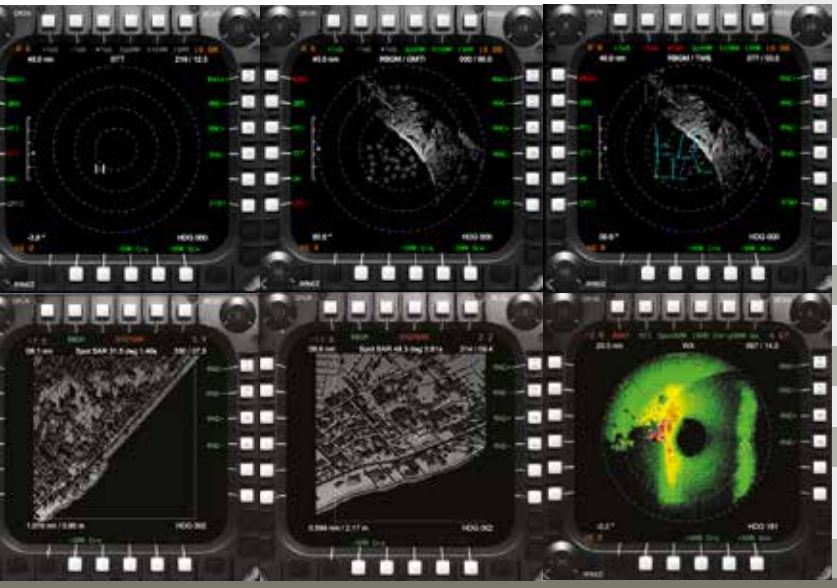
Impressive 64-bit computational performance permits use in very high-density scenes and scenarios.

SUPPORTS OGC CDB FORMAT

To maximize reusability interoperability, Ondulus Radar supports OGC CDB.

WIDE EXPORT CAPABILITIES

Developed in Canada, Ondulus Radar is a product that can be integrated in any solution, allowing it to be deployed and supported almost anywhere in the world.



ONDULUS RADAR **MODES INCLUDE**

- **RBGM:** Real Beam Ground Map
- **Weather**
- **MTI:** Moving Target Identification
- **Strip SAR:** Strip Synthetic Aperture Radar
- **Spot SAR:** Spot Synthetic Aperture Radar
- **ISAR:** Inverse Synthetic Aperture Radar
- **STT:** Single Target Track
- **TWS:** Track While Scan
- **DBS:** Doppler Beam Sharpening
- **GMTI:** Ground Moving Target Indication (supported in RBGM and SAR)
- **On/Off/Standby** (passive)

HOW ONDULUS RADAR **HELPS**

Ondulus Radar users can model and develop their own simulated radar simulations, performance settings, and behaviors associated to common types of manufactured radar.

Ondulus Radar is part of an end-to-end modeling and simulation framework that includes:

- Database and 3D modeling tools
- Terrain material classification tools
- Computer Generated Forces (CGF)
- Flight Dynamics and modeling

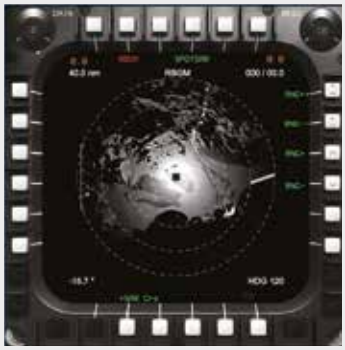
Part of the Presagis M&S Suite, Ondulus Radar can simulate the behavior of both ground-based radar at a given geographic location and radar onboard a simulated vehicle or aircraft. In a research or testing environment, this permits a greater understanding of how visibility, distance, mobility and speed affects your applications.

ONDULUS RADAR **FEATURES**

Fully Configurable Radar Parameters: Ondulus Radar offers Application Programming Interface (API) control of parameters such as transmitter power, frequency and pulse width as well as control of antenna pattern and gain to best match your specific operation and performance requirements under different atmospheric and marine conditions.

Track Entities and Chaffs: Track entities and chaff definitions can be manually created or automatically imported from STAGE. Definitions support DIS entity type, radar cross section and OpenFlight 3D geometry. Ondulus Radar also offers native network interoperability with most and simulation engines on the market allowing easy integration into larger federated systems

Combined with VAPS XT, Ondulus Radar can be packaged to bring maximum realism and provide the operation modes required for task training (e.g. environmental conditions), research and development test bench.



\ ONDULUS RADAR EFFECTS

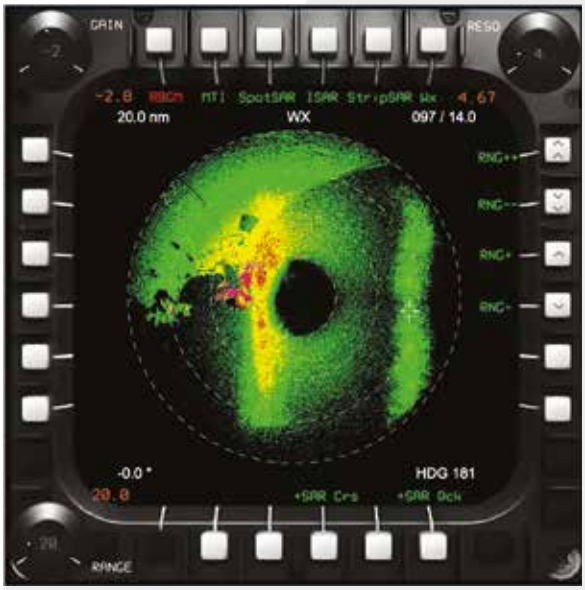
- Strong-Reflections
- Radar emission status
- Ownship altitude and altitude effects
- Range and atmospheric attenuation
- Antenna beam pattern
- Refraction and earth curvature effects
- Radar shadowing
- Terrain, feature and target masking
- Far shore brightening
- Wind sea state and precipitation
- Terrain, feature and targets aspect effects
- Sidelobe effects
- Surface material effects (reflectivity, directivity)
- Occulting effects
- Chaff effects

\ ONDULUS RADAR PARAMETER & SIGNAL EFFECTS

- Jammers management: Spot, Barrage, and Swept
- Antenna (scan rate, beam patterns, gimbal limits and turnaround)
- Radar Resolution
- Range Scales
- Pulse Length Effects
- Receiver Noise
- Scan Conversion Effects
- Geometric Distortion
- Frequency Band
- Receiver Gain
- Stabilization
- Receiver Detection

DEVELOPER **FEATURES**

- API Entities creation via network
- Increased access to transmitter and emission properties
- Make changes to radar configuration parameters in run-time
- API access to Engine Logger
- XML parameters tuning for:
  - Materials & Features
  - Entities & Chaffs
  - Sea Clutter
- New Extended Samples
- Improved Realism:
  - Strong reflection + vegetation
- Bipolar Radar Cross Section tables
- HLA Evolved / RPR FOM 2.0
- Wider area coverage (64 Bit-OS)



\ **Visual Studio 2015 (VC 14) Support:** API developers can now use a more recent version of Microsoft Visual Studio tools.

\ **Linux Support:** Developers now have access to the API, engine, and samples in the Linux operating system.

UK + 44 (0) 1793 441447

CANADA +1 514 341 3874

FRANCE +33 1 30 70 50 00

ITALY +39 02 46712 231

USA - Orlando +1 407 380 7229

AKATEC

Akatec Ingenieros SL
Telf/Phone: +34 918 287 247
email: comercial@akatec.es
www.akatec.es

PRESAGIS
\ MAKE IT REAL