



DIAMOND VISIONICS

GenesisRTX DYNAMIC CONSTRUCTION

GenesisRTX dynamically constructs and renders 3D terrain using the same GIS data files and formats as mapping, planning, and operational systems. No simulation-specific formats or duplicate GIS data are needed.

Dynamic Construction is not real time publishing (RTP) or real time terrain composing (RTC) since those methods involve costly offline tools and significant data processing to produce 3D scenes. Dynamic Construction is making the entire 3D scene in real time on the machine viewing the scenes.

With other technologies, the real-time construction stops at draping imagery over gridded terrain with point models placed on top.

GenesisRTX Dynamic Construction goes further by:

- Selecting the best data for every pixel and elevation post from many overlapping source files
- Filtering, converting, and expanding the vector data
- Modifying the elevation data using the vector files (linear, areal, and point)
- Including clipping, feathering, contrast and brightness enhancement, and modifying geo-specific imagery in real time using vectors
- Synthesizing multi-spectral imagery into geogeneric high resolution imagery and model representation
- Constructing parametric models, roads, airports, animated lights, and bridges
- Calculating flood lights on terrain and 3D terrain models
- Calculating material codes for sensor simulation in real-time based GIS data and imagery (requires JRM Option)



Diamond Visionics® RTX
GENESIS
Virtual Worlds in Real Time



Diamond Visionics® RTX
GENESIS IG
Image Generation

GenesisIG (Image Generator)

Whole Earth, 60Hz, Day/Night/Sensor multiple channel visualization software for flight, maritime, and ground simulation.

Available as 32/64 bit Windows and Linux.

Diamond Visionics® RTX
GENESIS SN
Physics Based Sensors

GenesisSN (Sensors)

Integrate JRM Technologies' SigSim and SenSim with GenesisIG to get advanced signature synthesis and atmospheric propagation simulation for radiometrically correct sensors simulations and stimulations.

EO, NVG and FLIR.

Diamond Visionics® RTX
GENESIS SDK
Embedded Visual Power

GenesisSDK (Extend)

APIs and Source code examples to integrate GenesisRTX inside your custom application and make custom extensions and assemblers.

Create image generation, synthetic visualization, Semi-Automated Forces (SAF), and mission planning applications with complex dynamic 3D scenes.



GenesisRTX - Lower Cost and Correlated by Design

- No more expensive and hard-to-use simulation terrain tools.
- No more simulation-specific terrain formats or servers.
- See your Imagery, Vector, Model, and Elevation changes instantly.
- GenesisRTX takes your GIS data, applies patented Dynamic Construction technology to create 3D scenes in real time (60Hz).
- 3D scenes that support Dynamic Terrain anywhere and correlate with all your operational, training, and applications that use GIS.
- 3D scenes that have more content and performance, optimized for today's multiple core CPU and GPU systems.

GenesisRTX Features

Formats Supported	<ul style="list-style-type: none"> • Elevation: DTED, GeoTiff, GridFloat, JpegzK • Imagery: ECW, JPEGzK, NITF • Vectors: ESRI Shape • Models: OpenFlight • Misc GDAL supported formats 	
60Hz Dynamic Construction	<ul style="list-style-type: none"> • Elevation: Gridding and real-time modification • Imagery: Filter, select, clip, feather, contrast • Vectors: Filter, construct, attribution translation • Models: Scaling, construction and sprite generation • Lights: Size, attributes, light pools • 3D particles: Smoke, explosions, fires, wakes, rotor wash, contrails, chaff, flares • Features: Pitched and slanted roofs on extruded buildings 	
Visualization Features	<ul style="list-style-type: none"> • Faster loading of model textures • More efficient model rendering • Text billboards • WMS/WFS Streaming • Improved maritime simulation • CIGI 3.x and API interface • Whole Earth Viewer (WGS-84 Geoid based) • Physics weather (2D/3D clouds, fog, visibility) • Uniform and regional weather • Time of day (stars, moon, sun) • 3D oceans and 3D lakes with sky reflections 	<ul style="list-style-type: none"> • Line-of-sight, collision, height above terrain • AVDAFIF, shapefile parametric airports with host control • OpenFlight moving models 6-DOF position and rate control; articulations and animations • OpenFlight airport models with LOD and lights • Feature transition independent of the terrain • Multiple sub-windows per channel • Offset zoom for all windows • Stereo displays • Correlation via native source rendering
3rd Party Plug-Ins	JRM Physics based E/O, IR, and NVG module, BDI Di- Guy™, Mersive, Scalable Displays, RPA, Calytrix LVC Game™ DIS/HLA, Camber's Radar Toolkit®, Cognitics Spawn™, DiSTI GLStudio™, RSC SimHDR/ SimHDR-EO™. Interfaces to VT Mak VRForces™ and Ternion FLAMES™.	
Operating Systems	<ul style="list-style-type: none"> • Windows 32/64 Bit • Linux 64 Bit 	
License	<ul style="list-style-type: none"> • Per machine versus per channel • License includes IG, SDK, and non-physics SN 	



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