STAGE
AI.IMPLANT
SIM ONENET
TERRA VISTA
VAPS XT
VEGA PRIME
LYRA
SENSOR PRODUCTS

BUILD, CUSTOMIZE AND INTEGRATE ADVANCED SIMULATIONS
USE THIS ARTIFICIAL INTELLIGENCE MIDDLEWARE FOR HUMAN AND VEHICLE BEHAVIOR SIMULATION
CONNECT, BRIDGE, AND INTEROPERATE DISPARATE SIMULATION APPLICATIONS
DEVELOP, CUSTOMIZE AND INTEGRATE ADVANCED SIMULATIONS
RAPIDLY CONFIGURE, CREATE AND DEPLOY ADVANCED 3D SIMULATION APPLICATIONS
CONNECT AND VISUALIZE YOUR SIMULATION DIRECTLY OUT-OF-THE-BOX
GENERATE CORRELATED AND ACCURATE IR AND NVG SCENES

EASILY CREATE DETAILED 3D MODELS FOR REAL-TIME SIMULATION
QUICKLY AND EASILY DEVELOP TERRAIN FOR ANY MODELING AND SIMULATION APPLICATION
DEVELOP INTERACTIVE, REAL-TIME GRAPHICAL HUMAN-MACHINE INTERFACES
CONNECT, BRIDGE, AND INTEROPERATE DISPARATE SIMULATION APPLICATIONS
GENERATE CORRELATED AND ACCURATE IR AND NVG SCENES
PRESAGIS WOULD LIKE TO THANK ALL THOSE WHO PARTICIPATED. HERE ARE SOME HONORABLE MENTIONS:

ADACEL INC.
PRODUCTS USED
CREATOR
CREATOR PRO
WWW.ADACEL.COM

AEGIS
PRODUCTS USED
CREATOR PRO
TERRA VISTA DART
TERRA VISTA PROBUILDER
WWW.AEGISTG.COM

CHANGAN FORD MAZDA AUTOMOTIVE CO., LTD
PRODUCTS USED
VAPS XT
WWW.FORD.COM.CN

GENERAL DYNAMICS UK
PRODUCTS USED
VAPS XT
WWW.GENERALDYNAMICS.UK.COM

METAGRAPHICAL
PRODUCTS USED
CREATOR
WWW.METAGRAPHICAL.COM

MS5 SOLUTIONS
PRODUCTS USED
CREATOR
VEGA PRIME
WWW.MS5SOLUTIONS.COM

THE SEAMEN'S CHURCH INSTITUTE
PRODUCTS USED
CREATOR PRO
WWW.SEAMENSCHURCH.ORG

STARCENTER
PRODUCTS USED
CREATOR
WWW.STAR-CENTER.COM

VIRTUAL MARINE TECHNOLOGY
PRODUCTS USED
CREATOR
VEGA PRIME
WWW.VMTECHNOLOGY.CA
Working extensively with Creator and Terra Vista Probuilder, RSI Visual Systems created this FAA JAA Level D qualified full-flight database.

RSI Visual Systems provides complete solutions for commercial and military visual simulation applications.

Their goal on this project was to demonstrate several new and innovative solutions designed to enhance visual environmental cues required for advanced flight training.

While using Creator in almost every phase of their database production pipeline, fully integrated with the latest developments in the RSI Raster XT real-time Image Generator software, the team at RSI Visual Systems was able to provide a variety of advanced features, including animated raindrops, particle based clouds, dynamic shadows, and surface reflections.

This collaboration of products allows for a full featured immersive environment for today's demanding training requirements.

The result is a Level D full-flight database that includes dynamic and highly detailed scene content.

Scene 1: Evening shot of the entire airfield.
Scene 2: Afternoon shot facing the Innsbruck’s main terminal.
Scene 3: Semi-aerial shot of the Innsbruck Terminal.
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**New Year’s Day**

**Martin Luther King, Jr. Day (U.S.)**

*JANUARY 2011*
The University of Iowa’s National Advanced Driving Simulator team uses Creator Pro to populate a wide variety of databases.

The National Advanced Driving Simulator (NADS) has a long history of creating compelling simulation environments. Realistic environments are critical to evaluate driver performance across a spectrum of transportation research. Simulation provides a safe, repeatable laboratory to investigate situations where control and safety are required, such as distraction detection and mitigation, developing algorithms to detect impairment based on driving performance, and vehicle safety systems.

Creator Pro is used by the NADS team to construct terrains, roadways and models to populate geo-typical and geo-specific environments. One recent database project consists of several blocks of downtown Iowa City.

For the team at NADS, Creator Pro allows them to create visual and correlated virtual databases quickly and accurately. Creator’s toolset, including directional fence marquee, save/restore eye points and tracking planes, texture mapping, flow, and UV modification, ensures that fine-tuning adjustments to their environments can be easily achieved.
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Creator Pro helped cantaloupe|3D develop building and vehicle models for Krauss-Maffei-Wegmann’s driver training simulation.

cantaloupe|3D specializes in creating models and complex real-time applications. For this project, they developed building and vehicle models for Krauss-Maffei-Wegmann to employ in their Deutsche Bundewehr driver training database. The goal for the project was to create highly detailed models of the buildings and vehicles.

Working with Creator Pro, the team at cantaloupe|3D created 80 buildings in various states. All of these buildings reflect the architectural style of Northern Germany and feature doors and window that open and close.

For the vehicles, the team used blueprints and vehicle photos along with Creator Pro to build full-featured game-style models. These highly realistic vehicle models include doors that open, functioning wipers, non-skid chains, and dashboard panel details for the driver.
March 2011

- 13: Daylight Saving Time Begins (N.A.)
- 17: AVIONICS
  St. Patrick’s Day
To develop this large scale model of the Exposition Park/Figueroa Corridor area of Los Angeles, the Urban Simulation Team at UCLA employed Creator and a variety of source material.

The Urban Simulation Team at UCLA built this model for the Community Redevelopment Agency of Los Angeles and the Exposition Metro Line Construction Authority of the Los Angeles County Metropolitan Transportation Authority. In addition, the model will also be used by other stakeholders within the project’s boundaries.

The main goal for the project was to build an existing-condition virtual model of the Exposition Park/Figueroa Corridor area that would include planned improvements in order to help stakeholders visualize redevelopment projects. This portion of the model, combined with numerous other team-completed areas of Los Angeles, covers over 30 square kilometers of dense urban environment.

Working with Creator, the Urban Simulation Team developed the model using aerial imagery, MrSid coordinate information, and digital photography, as well as their own texture and culture libraries. Creator’s real-time texture mapping tools and scene graph controls were important in that they allowed the team to efficiently map their large databases.

The result is a detailed and large scale virtual model that can be used to demonstrate and evaluate new housing and light rail transit proposals for the area.
Using Terra Vista and Creator, Cassidian, a division of EADS, created a geo-specific database of the 2010 Celtic Manor Ryder Cup.

Cassidian provides global security solutions and systems to civil and military end-users around the globe. For this project, a team at Cassidian’s System Design Centre developed a very high resolution, geo-specific database of the Celtic Manor Ryder Cup 2010 golf course to be used by Gwent Police.

The goal was to develop a database of the area that the Police could use for situation awareness and asset tracking of officers. This was achieved by taking the GPS feeds from Police issue radios and displaying them in real-time within the synthetic environment.
The UK’s HR Wallingford Ltd. used Creator and Vega Prime Marine to create this flexible realistic environment for port design and training scenarios.

Working with site photographs, CAD data, library textures, and their own modeling expertise, the team at HR Wallingford used Creator to model a port and a variety of ships, as well as a proposed new bridge.

They used Vega Prime Marine both to display the out-of-the-window views from the bridge that allows pilots to navigate ships in and out of the port and to integrate realistic waves in order to test the feasibility of a new breakwater. For the proposed bridge, HR Wallingford used Vega Prime to help pilots test the impact of the bridge on maneuvering ships in the area.

In addition, one of the challenges on this project was to realistically model night time scenarios. The team used Vega Prime and its ability to allow a number of light sources in a scene to improve realism to recreate the realistic night scene.

HR Wallingford’s environment can be used by ship pilots, captains, tug masters, harbour masters, and engineers to assess the viability of proposed port developments and to train in a safe realistic environment.
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- **1 June 2011**: Father’s Day
- **24 June 2011**: Summer Solstice
- **24 June 2011**: St-Jean Baptiste (QC)
Creator Pro and Vega Prime helped the FAA create this model of a future integrated airport passenger security screening sequence for the U.S. Department of Homeland Security.

The FAA Technology Center in New Jersey builds virtual models of future civilian air traffic control facilities and equipment. This model was commissioned by the Department of Homeland Security and depicts a future Integrated Airport Passenger Security screening sequence.

Working with Creator Pro and Vega Prime, the FAA illustrated two stages of the facility. The first stage is a near term apparatus of independent scanners. It includes X-ray carry on baggage scanners and metal detectors, a personal 3D body scanner, and an electronic sniffer to measure any trace particle elements on passengers. The second stage is the tunnel where all the scanners are integrated into one seamless unit similar to the “ExpressTram” at the Detroit Metropolitan Airport (DTW).

The FAA used Creator Pro to build the geometry and apply textures to the models and used Vega Prime to render the scene. The final model will include a video built from a screen capture of a fly-through of the model in Vega Prime utilizing glffmpeg.
Using Creator and Vega Prime, JC Group Ltd. created a virtual Mars mission that includes a landing, an exploration of the planet’s surface, and a return to Earth.

This simulated manned flight to Mars was created by the joint team of JC Group Ltd. and Information Meta Systems Co. for the State Scientific Center of the Russian Federation—Institute for Biomedical Problems of the Russian Academy of Sciences. It is designed to provide immersive research and training opportunities.

For this Mars project, the team at JC Group built an immersive application that offers full interaction between users and 3D models. This application allows the end-user to carry out trainings and exploration of the Martian surface inside a virtual environment.

In the simulation, the virtual flight to Mars includes both the landing and exploration of the Martian surface and a simulated return to Earth. Working with images of the Martian surface, including those taken from the Opportunity rover, the team used Creator and Vega Prime to build the interplanetary spacecraft, lander, Martian terrain, rovers, and astronauts as well as a variety of infrastructure objects. They also employed the Vega Prime Effects module to create realistic dust storms for the landing and takeoff of the spacecraft.
Working with Creator, the team at Real DB Inc. built highly realistic and detailed 3D models of a military base and Unmanned Aerial Vehicles.

Real DB Inc. provides custom modeling services of real-time products for industrial and military training. They have the largest worldwide modern military 3D photo specific models library that is ready to use with distributed interoperability simulations.

Their goal for this military base project was to reproduce a model base that included a high level of realism and a large variety of elements that would combine to create total immersion and visual recognition of the specified area. On the UAV project, they wanted to create a more realistic model with a plug-and-play solution that allowed for great performance on the Vega Prime visual system.

For both the military base and the UAV models, the team at Real DB worked with the extended materials palette in Creator. They worked to provide new shaders specifically targeted to each element. With the base model, the shaders allowed them to improve the reflection of light from any surface, which resulted in increased realism for the scene. And, for the UAV, they were able to create high definition textures and provide reflection of the light from all surfaces.
Lockheed Martin employed Creator and AI.implant to help them test and evaluate the features and capabilities of their SAGE Image Generator.

The Global Training and Logistics (GTL) unit at Lockheed Martin provides training and logistics support around the world. One of GTL’s latest visual solutions for ground based training is SAGE. This high fidelity Image Generator is currently being deployed in training systems from Advanced Gunnery Training Systems and Combat Convoy System to the UK’s Combined Arms Tactics Trainer.

The real-time environment pictured here is an integral part of the testing of SAGE’s functionality and capabilities. The database is complete with building interiors, outdoor markets, battle-damaged buildings, blowing dust, and debris. These elements are crucial components when developing realistic environments for ground based applications, such as Vehicle or Dismounted Infantry training.

Using Creator, the team at GTL developed this highly detailed 3D environment from a combination of new and existing props, buildings, and textures.

Then they used AI implant, an integral component in their SIMI automated force generation system, to inject life-like characters and behaviors into their test scenarios.
Rontal Applications Ltd. employs Creator, Creator Terrain Studio, and Vega Prime for its SimGuard physical site security and public safety management system.

Rontal Applications’ SimGuard management system is designed to assist, simplify, and improve the overall security and safety for a variety of activities. The system can be used for operational planning, training, and real-time incident management within large sites and complexes, including power plants, airports, safe cities projects, and other critical facilities.

The development team at Rontal Applications uses Creator Terrain Studio to create the base terrain and clipmap for each scenario, Creator to build the complex models, and Vega Prime to develop and coordinate the GIS layers and to run the simulation in real-time on their Vega Prime engine.

Scene 1: European Railroad Terminal
Scene 2: US Government Office Facility
Scene 3: European Power Plant Station

“I have been working in the simulation industry for 10 years, and I have found that Presagis tools are by far the most suitable for the job.”

- Yaron Avraham, Rontal Applications Inc.
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- **November 2011**
  - Daylight Saving Time Ends (N.A.)
  - Remembrance Day (CAN)
  - Veterans Day (US)
  - Thanksgiving (U.S.)
Using Terra Vista Probuilder and Creator, B-Design3D created this highly detailed visual database of Swiss terrain.

B-Design3D built this visual database for Bagira Systems Ltd. It covers more than 8,000 square kilometers of a specific Swiss terrain at ultra high resolutions, includes both forest and dense urban areas, and allows trainees to switch between TV to IR modes. Working with 25m DTM and satellite imagery, as well as vector data of roads, buildings, and vegetation, the team was able to create this large and highly detailed visual database using Terra Vista Probuilder and Creator.

The requirements for this database were highly specific. In particular, all of the buildings in the terrain had to be modeled and textured accurately. Working with Creator, the team at B-Design3D built this highly complex database that contains more than 500,000 accurate 3D residential, industrial, administrative, and historical buildings. Many of these have sloped roofs, chimneys, and cellular antennas.

In addition to the highly detailed urban areas, the team also modeled all of the 3D forests in Creator. The forests include more than half a million trees of various types that were added at real locations. B-Design3D also cut and leveled roads through forests in mountainous areas.