AGI

STK 12.1 is stuffed with over 60 new features and improvements, including enhanced glTF support for 3D visualization, expanded hypersonic modeling capabilities for STK Aviator, and a direct integration of the VOACAP High Frequency model for STK Communications and STK Radar.

New visualization enhancements

STK 12.1 adds **support for complex glTF 3D model animations**, including glTF animations authored in software tools like Blender. You can now orchestrate a series of articulations of individual moving parts in glTF models. A single articulation value is enough to drive the entire animation. For example, you could animate the deployment of an array of satellite solar panels with a single cue.

STK 12.1 also introduces **support for glTF skinning,** which enables you to model organic, life-like motions for humanoid characters and other objects with "skin and bones." From a running soldier to a solar sail unfurling in space, the ability to deform 3D model elements, rather than reposition them, creates thrilling new possibilities for storytelling.

And, STK 12.1 adds a new Water Surface option that supports realistic visualizations of maritime scenarios, including waves that move along a ship's hull.

New hypersonic thermal load analysis feature

STK Aviator 12.1 introduces support for plugin thermal performance models that employ a variety of standard techniques to determine heat flux, heat load, and wall temperatures for any Aviator trajectory (including external ephemeris from a VGTPoint procedure). This kind of modeling is essential for both vehicle design and the analysis of offensive and defensive systems and tactics, since aerodynamic heating plays a significant role in a vehicle's signature. Aviator provides a standard model based on NASA TFAWS work. You can override the coefficients of this model to match it to a CFD model, so that you can apply the CFD model rapidly across a full trajectory.

Ability to create STK objects from Aviator objects

With **STK Aviator 12.1**, you can now generate STK static objects (targets, facilities, etc.) from airports, runways, NAVAIDs and helipads. The objects that you create in this way support analysis just like objects that you create by any other method. This makes it easy to model and analyze locations and facilities derived from the hundreds of thousands of worldwide aeronautical data points available from DAFIF and ARINC datasets.

Enhanced Astrogator-ODTK integration

STK Astrogator 12.1 contains new models for high-fidelity orbit propagation including the N-plate atmospheric drag model to match the solar radiation pressure model from release 11.7. This reflects our ongoing efforts to expand the capabilities of our flight dynamics tools and make interactions between them as seamless as possible.

VOACAP HF capability

STK 12.1 now models HF propagation with a direct integration of the VOACAP model. The VOACAP model in STK computes the transmission loss encountered from sky-wave propagation, which is the tendency of the ionosphere to "bend," or refract, HF transmissions back down to the ground across very long distances. VOACAP accounts for the variations in this effect that result from the 11-year solar cycle, seasonal fluctuations, and other modifiers, enabling you to determine the best frequency to use at any point in time. The VOACAP model also accounts for antenna directionality, providing you with ideal transmission and reception angles. You can use the VOACAP model with **STK Communications** and **STK Radar,** and STK's reporting and graphing, and analysis tools.

Refreshed STK QualNet interface

STK 12.1 adds native support for Scalable Network's Exata network emulator. The *QualNet Interface* has consequently been renamed as the *Scalable Networks Simulation Interface*. You can now leverage both QualNet and Exata directly within STK.

Additional new features

Direct support for **9-digit SSC numbers**.

Updated TIREM functionality to the latest version.

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