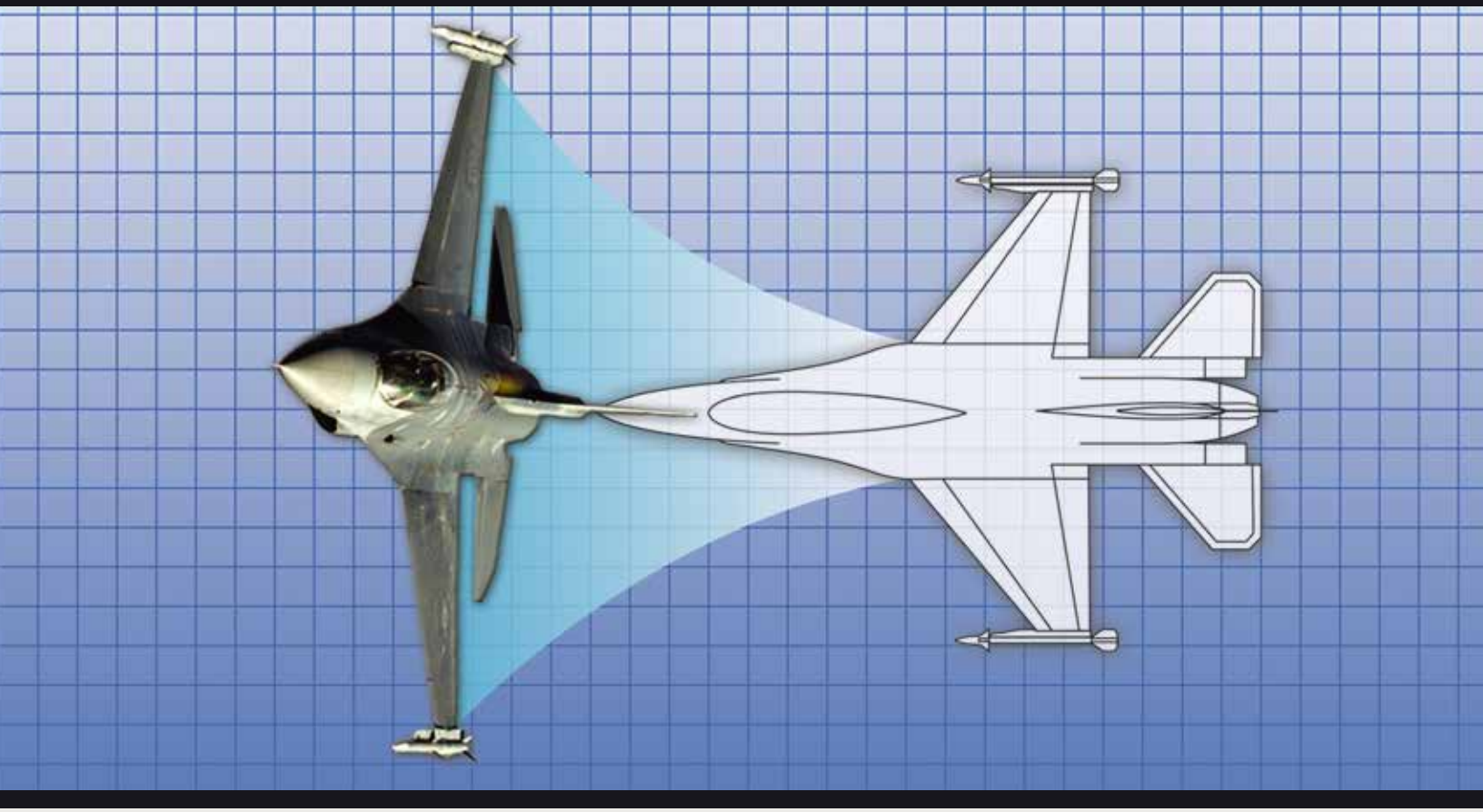
Bihrle
APPLIED RESEARCH INC

SIMGEN

Excellence in Aeronautics



SimGen™

Aerodynamic Prediction Software

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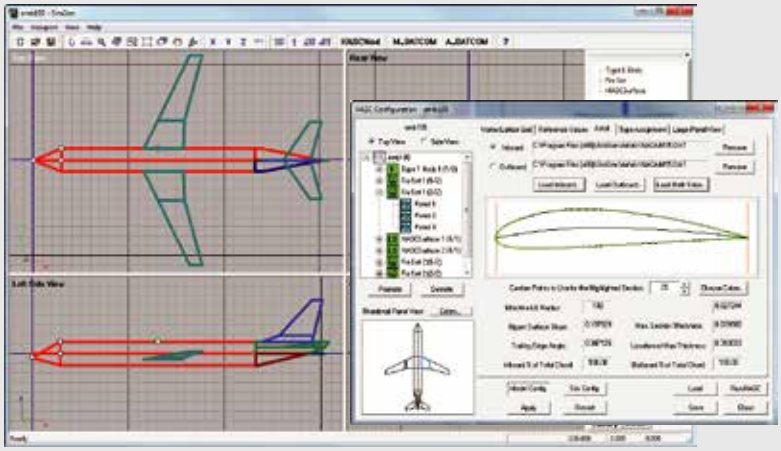
SimGen Aerodynamic Prediction Software



SimGen™ uses industry-validated computational and semi-empirical aerodynamic prediction and analysis codes to enable you to quickly compute aerodynamic data for use in flight models or design efforts.

Rapid Aerodynamics Models

SimGen features a two-dimensional drawing utility that enables you to trace three-view images of an aircraft. The resulting drawing is automatically processed into a geometry model suitable for use in the selected predictive methodology. You specify the extents and functionality of your aerodynamics database and SimGen auto-executes the prediction code and post-processes the data into simulation-ready data tables.

Rapid Propulsion Models

SimGen also provides a database of propulsion models. You specify the number, location, and type of engines on the aircraft and the sea level static thrust values of the engine. Using this information, SimGen auto-generates a propulsion database properly scaled for use in your aircraft simulation.

Industry-Validated Aero Prediction Methods

SimGen leverages decades of aerodynamics prediction method development by directly incorporating the industry-validated HASC2002 and Missile DATCOM methods. This approach eliminates the unknowns that can accompany proprietary (and often undocumented) predictive codes.

Standard Output Plus DSix-compatible Output

SimGen generates aerodynamic and propulsion data in tabular format using the ASCII character set, which is human-readable and readily used in a wide variety of desktop applications, analysis tools and simulation environments. SimGen can also automatically generate data tables and equation build-up that can be directly imported by Bihrle's DSix simulation environment, thereby providing a "Ready-to-Fly" simulation.

Designed for Expansion

The SimGen design incorporates a modular software architecture that provides for future expansion. The computational aerodynamics and propulsion model methods used by SimGen are plug-in modules, which allows the user to select the appropriate method for their particular application. SimGen currently includes the HASC2002 plug-in and the Missile DATCOM plug-in (U.S. version only) and will automatically support future predictive plug-ins.

HASC stands for High Angle-of-Attack Stability and Control and features a vortex lattice method coupled with a semi-empirical strake/wing vortex method. It has been successfully used to predict subsonic aerodynamic characteristics for a variety of configurations.

Missile DATCOM is a widely used semi-empirical datasheet component build-up method for the preliminary design and analysis of missile and high speed vehicle aerodynamics and performance. It has been continually supported and enhanced for over twenty years.

Common Uses

- o Easily perform aero and flight dynamics trade-offs in configuration design studies.
- o Generate predictive models for direct simulation application in trainers, constructive force models, adversary models, and entertainment applications.
- o Rapidly generate prototype vehicle aerodynamic database as basis for further development or augmentation with supplemental data.
- o Generate rapid predictions of configuration change effects such as store addition or surface loss.

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