# Licensable Technologies

CartaBlanca

Applications:

- Aerospace engineering
- Animation and special effects
- Computational fluid dynamics
- Fluid/solid interactions
- Automotive design
- Weapon/target interactions
- Pharmaceutical processing
- Homeland defense

Benefits:

- Provides accurate, physics-based computer simulations in Java
- Provides faster and lower-cost development
- Allows for easy modification and integration of code
- Runs on most hardware platforms without modification, from single PCs and Macs to parallel-processing supercomputers
- Increases software developer productivity
- Allows state-of-the-art simulations for complex reactive flows

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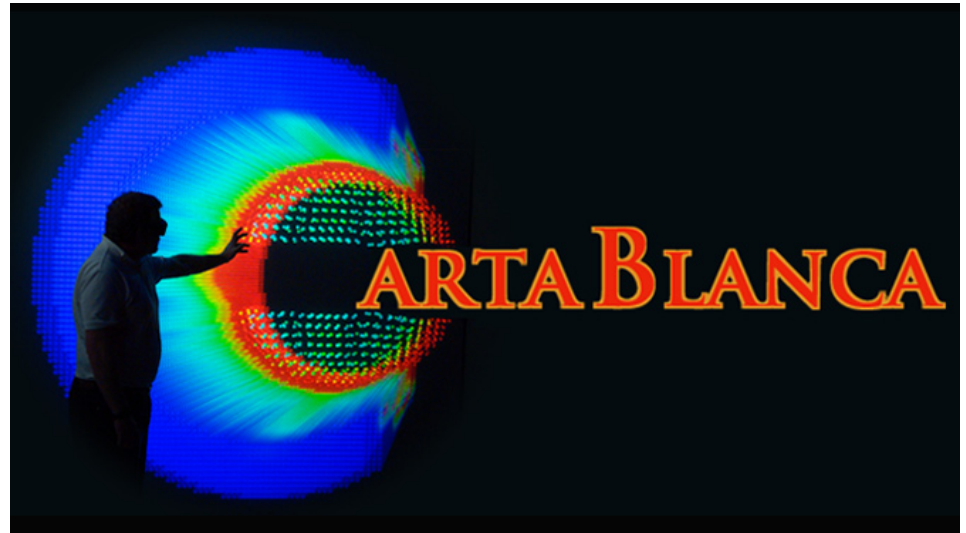
Summary:

CartaBlanca is a state-of-the-art, object-oriented simulation software package poised to offer next-generation modeling and simulation capabilities to scientists in a number of disciplines. Written in the developer-friendly Java language, it enables computer code developers to simulate complex nonlinear effects such as airflow through a turbo booster, blast effects on buildings, or heat transfer along a semiconductor. Because it is a Java-based software package, the code is much easier to use, manipulate, and modify than codes based on programming languages such as FORTRAN or C++. CartaBlanca takes advantage of the improved execution speed offered by the HotSpot™ compiler and opens up the field of physical modeling to a much broader set of programmers. CartaBlanca is modular and allows for rapid software application or simulation code prototyping; strong, extensive compiler checking; "plug-and-play" module insertion for modeling physical systems; solutions with consistent results; and integrated unit and regression testing.

Development Stage:

CartaBlanca is fully programmed in the easy-to-modify, object-oriented JavaTM computer language. CartaBlanca consists of a series of "plug-and-play" modules.

Together these modules
- Have a graphical user interface for easy programming;
- Utilize a variety of 2D and 3D unstructured grids for maximum realism; and
- Use as many different mesh elements (triangles, tetrahedra, etc.) as desired.
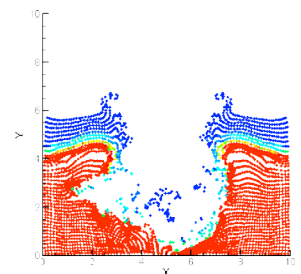
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