CFD Computational Fluid Dynamics

Structured mesh (Cartesian and cylindrical coordinates)

STREAM

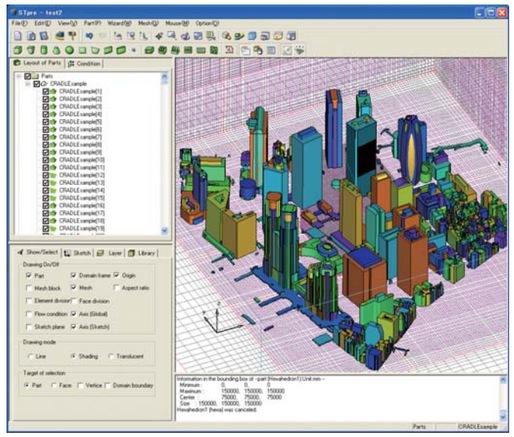
Windows and Linux

CRADLE

What is STREAM?

STREAM is thermal-fluid analysis software based on Cartesian mesh. Since its first release in 1984, STREAM has been developed into a user-friendly software with sophisticated usability and high speed computation to simulate the behaviors of thermal and fluid flows that are crucial in a product development in a variety of industries.

[Features]



❶Utilizing CAD data

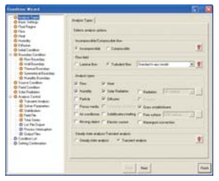
STREAM can drastically shorten the modeling time by importing Solid model from 3D CAD. It can also import SHAPE file from GIS (Geographic Information System) and Gerber data (for the wiring pattern of a printed circuit board) from ECAD. Furthermore, a list of material properties and conditions written in CSV format can be imported so that you can reduce the condition setting time.

❷Creating a part and Parts Library

STREAM is equipped with convenient models such as anemostat models for airflow simulation of a room, a fan model for considering a P-Q curve with swirl effect, duct models, and more in addition to basic primitives. For a frequently-used-part, you can register it in the Parts Library and reuse it to reduce the operation time.

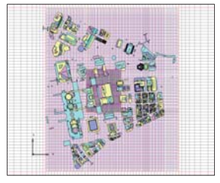
❸Physical fuctions and easy-to-use Navigation Wizard

STREAM can simulate many kinds of phenomenon such as diffusion, multi-phase flow, chemical reaction, particle tracking, solidification, and more. Those functions can be selected in the initial Wizard and the Navigation system will guide you only through necessary settings and help you complete the condition settings in a short time without any confusion.

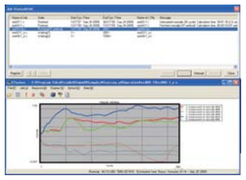


❹Multi-block and auto meshing

With the Multi-block method, a block of finer mesh can be applied to a specific part or location so that the total number of mesh memory consumption and computation time can be reduced. For example, an airflow inside a house surrounded by many other buildings can be simulated using a finer block applied to just the house. This approach is also useful for an electronic case in which the detailed design of a particular component needs to be precisely simulated.



❺Fast and robust solver



The advantages of the matrix solver based on Cartesian grids are its outstanding computation speed and robustness. Therefore, you can simulate many design ideas in the limited time. A JOB status & edit window allows you to check the calculation status and to execute the batch processing, interrupting and restarting the calculation.

❻Cutting edge visualization

Postprocessor enables you to visualize the simulated data as well as extracting predicted physical values. Since sharing simulation results with colleagues and customers is an important design process, it enables to create high quality images and animations. In addition, utility tools are equipped to handle extremely large files, to quickly visualize and to share your 3D data using a license-free viewer.

[Applications]

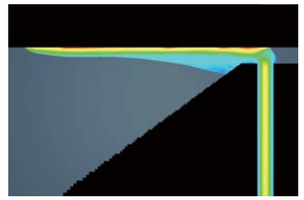
●Building, Environment and Facility
- Room ventilation
- Thermal analysis of the data center
- Air flow control in the clean room
- Thermal and flow analysis inside a factory
- Assessment of dew condensation on a wall surface

●Civil Engineering
- Air flow around buildings
- Analysis of a "heat island" phenomena.
- Verification of breakwater effect
- Analysis of air pollution
- Analysis of flooding

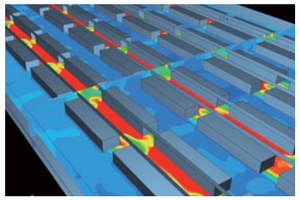
●Electronics and Electrical appliances
- Thermal design inside an LCD projector
- Thermal design of car electronics
- Thermal analysis of power devices

●Automotive
- Radiator ventilation analysis
- Analysis of engine compartment
- Flow Analysis of under floor
- Flow analysis of a painting booth

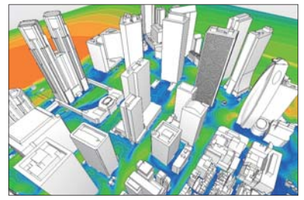
●Dye-coating



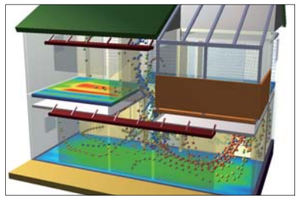
●Thermal analysis of the data center



●Air flow around the buildings

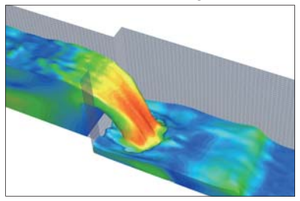


●Thermal design of household considering insolation

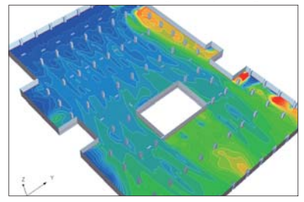


●Pouring water using free surface function

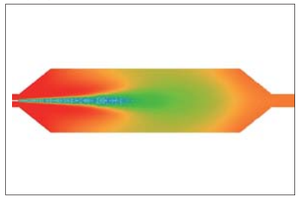
●Water overflow at the water gate



●Air ventilation of underground parking area



●Spray diffusion



*1) Interface for circuit design CAD
Zuken : CR5000/Board Designer
Cadence : ALLEGRO(RS274X only)

Utility Tools

●LFileView
Real-time graphical output of the values listed from Solver. Arithmetic operations are implemented for listed parameters.
Arithmetic operation is flexibly executed using any parameters listed from Solver.
●CradleViewer
Free results viewer

Items included in the Package

●STREAM Installation DVD
●User's Guide
- Basics of CFD Analysis
- Reference(Preprocessor / Solver / Postprocessor)
- Operation Manual • Exercise

System Requirements

●Windows
- XP Professional, XP Professional x64 Edition
  Vista Business, Vista Ultimate
  (Open GL compliant graphics board is recommended)
- Compatible with Intel

●Linux
- RedHat Linux Enterprise 4 and 5
- SuSE Linux Enterprise Server 9 and10

Please contact us for the supported machine information

●Required spec. for 1 million mesh analysis
512 MB or more memory
1GB or more available disc capacity

Products

Platforms \ Package	PRE/SOL/POST	SOL	PRE/POST
Windows (Standard)	○	○	○
Windows (HPC)	—	○	○
Linux (Standard / HPC)	—	○	—

●Contract Type: Rental / Lump Sum.
●License Type: Node Locked / Floating

Related product

●3D Thermal-fluid Analysis System specialized for electronics cooling
- HEAT Designer

STREAM is a SolidWorks Partner Product.