HEXTRAN® 9.0

Cast in the new SIM4ME™ user environment, setting new standards for openness and ease of use.

SIM4ME Overview

SIM4ME is the summit of 30 years of SIMSCI experience in providing simulation and optimization products and services to the process industries. SIM4ME's new, integrated solutions target reduced capital investment costs, improved process yields, and enhanced management decision support while leveraging your existing technology investments.

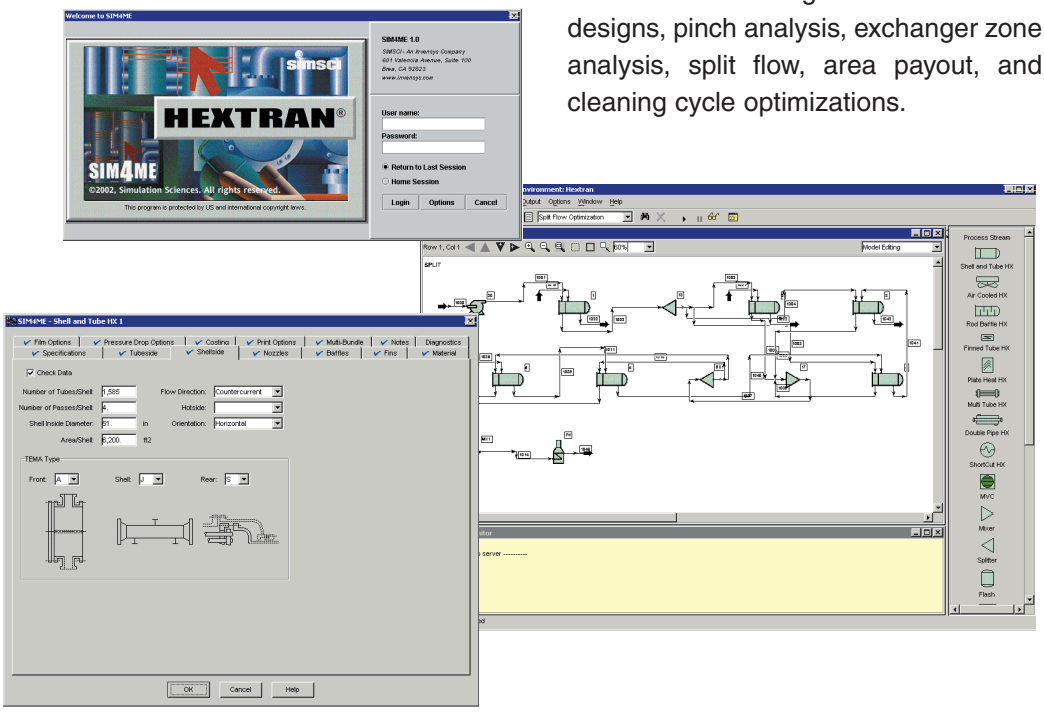
The new SIM4ME user environment is intuitive, friendly, and more functional than ever. Designed with a model centric approach, it will ultimately host SIMSCI's comprehensive solution offerings: design, operational analysis, dynamic simulation, operator training and on-line performance monitoring.

HEXTRAN Overview

HEXTRAN 9.0 is the first SIMSCI product cast in the new SIM4ME user environment, thereby becoming the core heat transfer technology for all of SIM4ME.

HEXTRAN users will instantly recognize the look-and-feel upgrades in version 9.0. The GUI is Java-based, and offers a built-in HTML help system. These characteristics enable the production of standard TEMA exchanger data sheets in both HTML and Excel formats. The new GUI also offers superior post-processing displays and plots of results from network targeting, grand composite curves, and zone analysis exercises.

HEXTRAN users will find version 9.0 provides new efficiencies in all types of design and operational analysis work: individual exchanger and network designs, pinch analysis, exchanger zone analysis, split flow, area payout, and cleaning cycle optimizations.



Invensys™ SIMSCI®

Your Tool for Greater Profitability

Using HEXTRAN to simulate actual performance can make the difference between profit or loss. HEXTRAN helps you achieve cost effective improvements such as:

- Increased energy efficiency and significantly reduced operating costs
- Improved process heat-transfer, product yield, and quality
- Increased plant flexibility and throughput
- Optimized cleaning schedule for exchangers
- Optimal antifoulant selection and usage
- Improved process designs and revamps

The HEXTRAN process heat-transfer simulator offers all the features that enable you to easily evaluate complex design, operational, and retrofit situations. You can design new systems for maximum efficiency and also identify problems, anywhere, before they happen.

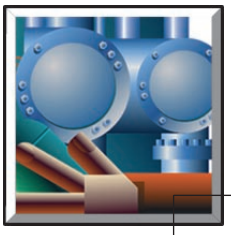
A Design Tool - HEXTRAN enables the design of both simple and complex heat-transfer systems, resulting in cost-effective, flexible processes.

A Retrofit Tool - HEXTRAN allows you to retrofit existing equipment and revamp heat exchanger networks to yield optimum performance.

An Operations Tool - HEXTRAN enables the identification of cleaning incentives and the prediction of future performance.

Easy Upgrade

HEXTRAN's Comprehensive, Robust, and Reliable Calculation Engine is Newly Modularized - Current HEXTRAN users will find all version 8.11 calculation features in the new version 9.0, including all links to third party software such as HTRI and HTFS programs.



HEXTRAN - Modeling for a Wide Array of Applications

UNIT OPERATIONS

Heat Exchangers

- Shell and tube
- Rod baffle
- Double pipe
- Multitube
- Finned tube
- Air cooler
- Plate-and-frame
- Shortcut
- Flue gas heater

Equipment

- Mixer
- Splitter
- Pipe and fittings
- Valve
- Flash drum
- Pump
- Compressor
- Desalter
- Decanter
- Fired heater
- Utility heater/cooler
- Multivariable controller

CALCULATION MODELS

PINCH TECHNOLOGY

Targeting

- Theoretical bounds
- Composite QT curves
- Process and utility Qs
- Minimum approach temperatures

Network Synthesis

- Optimal networks
- Stream splitting

REGRESSION

- Specs > variables
- Data reconciliation

INTEGRATED PROGRAMS*

HTRI

- XIST
- XACE

HTFS

- TASC3

*Members Only

SIMULATION

- Rating
- Design

OPTIMIZATION

- Area payout
- Utility minimization

CLEANING CASE STUDIES

- Cleaning cycle optimization
- Fouling versus time
- Spreadsheet interface

All of the targeting, synthesis, design, rating, and optimization technologies HEXTRAN users trust are included in version 9.0, along with the comprehensive thermodynamic and physical property data banks that have become industry standards. We have virtually eliminated prior limits on the number of components or pieces of equipment.

Clear Upgrade Path Brings All HEXTRAN Users Forward - Version 9.0 will automatically convert your version 8.11 keyword input files or GUI database files to take full advantage of the new SIM4ME environment.

New, Thin-Client Platform and Microsoft Sequel Server Offer Improved Access and Distribution Power - Our new architecture also allows for PC LAN, WAN, and stand-alone, collocated platforms supporting all security levels. This gives great flexibility in licensing and securing modules, using any of the FlexLM, ELAN, or Dallas security technologies.

Applications

- Exchanger Design
- Exchanger Operational Analysis
- Pinch Analysis
- Network Synthesis
- Optimization
- Exchanger Performance Monitoring
- Exchanger Cleaning Case Studies

Industries Served

- Petroleum Production Facilities
- Gas Processing
- Petroleum Refining
- Petrochemical Manufacture
- Fine and Specialty Chemical Manufacture
- Engineering and Construction

See HEXTRAN On-Line

Come and learn more about HEXTRAN at www.simsci.com/hextran. You can view an instructive video and take a free test drive on-line. You can even sign up for a one-month trial of HEXTRAN through the "Try and Buy" offer.

PHYSICAL PROPERTIES

COMPONENT DATABANKS

- 1,700+ pure component library
- DIPPR-based library
- Nonlibrary components
- Pseudocomponents and assay characterization
- User libraries
- Properties from structure
- Multiple assay blends
- Synfuels

BINARY DATABANKS

- Soave-Redlich-Kwong (SRK)
- Peng-Robinson (PR)
- Huron-Vidal mixing rule (for SRK & PR)
- Panagiotopoulos and Reid mixing rule (for SRK & PR)
- SIMSCI mixing rule (for SRK)
- BWRS
- UNIQUAC
- NRTL-8 coefficient form
- Henry's Law for non-condensibles
- Heats of mixing
- Hayden-O'Connell
- Hexamer

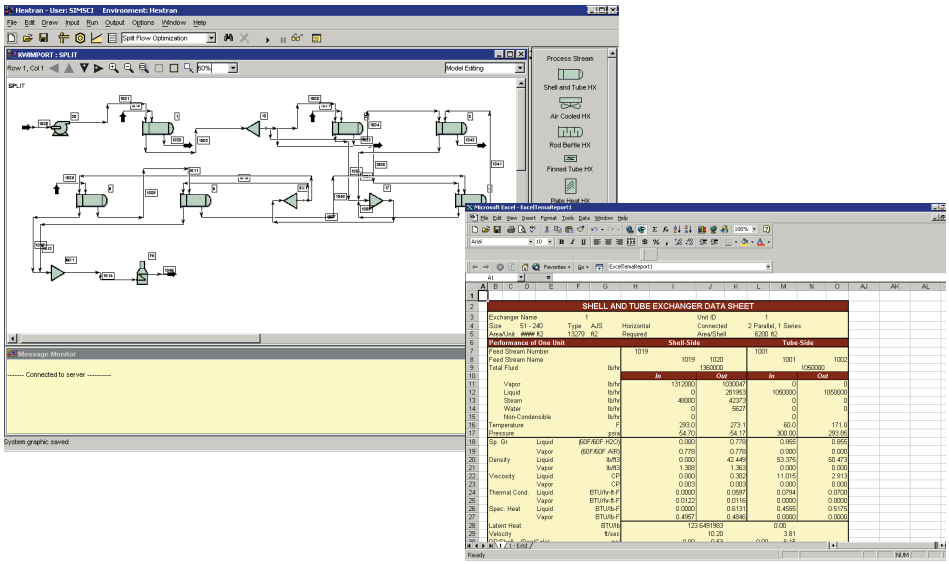
THERMODYNAMIC MODELS

Refining/Oil & Gas/Petrochemicals

- Soave-Redlich-Kwong (SRK)
- Peng-Robinson (PR)
- Huron-Vidal mixing rule (for SRK and PR)
- Kabadi-Danner mixing rule (for SRK)
- Panagiotopoulos and Reid mixing rule (for SRK and PR)
- SIMSCI mixing rule (for SRK)
- Temperature-dependent K_{ij}'s
- Lee-Kesler
- Lee-Kesler-Ploecker
- Grayson-Streed
- Braun K10
- Ideal library methods
- BWRS
- Chao-Seader
- Costald
- API density method
- Single and multifluid Rackett densities
- Steam tables
- Free-water decant

Petrochemicals/Chemicals

- UNIFAC (VLE, LLE, and VLLE)
- UNIFAC-FV (free volume)
- UNIWAALS
- UNIQUAC
- NRTL-8 coefficient form
- Wilson
- Van Laar
- Margules
- Regular solution model
- Acid dimerization
- Henry's Law for non-condensibles
- Henry's Law for dilute aqueous systems
- Three-phase equilibrium (VLLE)
- Heat of mixing
- Hayden-O'Connell



HEXTRAN v9.0 Requirements

Stand-alone/Client Platform:
Intel Pentium III 300 MHz
- 64 Mb of RAM
- 200 Mb of HDD
- Windows 98/NT 4.0/2000/Me

Server Platform:
Intel Pentium III 500 MHz
- 128 Mb RAM
- 200MB HDD
- Windows NT 4.0 server
- 2000 server

Process Engineering Suite

SIMSCI's Process Engineering Suite (PES) improves engineering productivity and increases plant profitability through process engineering design and operational analysis. PES, comprised of the PRO/II, HEXTRAN, DATACON, INPLANT, and VISUAL FLOW programs, offers a single integrated desktop solution. Unlike other simulation tools, this integrated software suite offers end users the flexibility to select applications on demand. SIMSCI has also applied industry standard OLE automation technology to integrate applications and provide links to other popular third-party software applications such as spreadsheets, word processors, and databases.

PRO/II® General-purpose process flowsheeting and optimization.
HEXTRAN® Comprehensive heat-transfer simulation and pinch analysis.
DATACON™ Complete plant gross error detection and data reconciliation.
INPLANT™ Multiphase, fluid flow simulation for plant piping networks.
VISUAL FLOW™ Design and modeling of safety systems and pressure relief networks.

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