

ATMOS™ GSIM - THE SIMULATOR ALL GAS PERSONNEL CAN USE

ATMOS SUITE - THE INTEGRATED SOLUTION

DESIGN GAS SIMULATION TOOLS FOR EASY USE BY PIPELINE OPERATORS, ENGINEERS AND MARKETERS



Simulation Packages Intuitive enough for Use by The Personnel Who Need Them. Specialist Simulation Engineers Not Required!

In today's competitive market, optimization of a gas network is an ever green function; every day is another chance to seize an advantage. Gas controllers and engineers need intuitive modeling software that they themselves can use in the control room to make rapid decisions on safety, operations and scheduling tasks such as load-forecasting, station operation optimization and survivability analysis. Gas marketers need powerful, configurable tools to plan future expansions and marketing strategies. Unfortunately, most models still linger in the hallowed world of the Simulation Engineers where normal engineers and controllers fear to tread. This no longer needs to be the case.

“Drag and Drop” Objects and Pull-down Menus Pre-Loaded with the Selections Needed to Swiftly Design New Configurations

Modern gas simulators should offer the convenience of a Windows environment with a generic structure that controllers and engineers can use intuitively, as easy as writing a Word document.

File formats should be tailored to facilitate the effortless creation and sharing of complex and extensive models between users.



A POWERFUL, STABLE ENGINE THAT DELIVERS RAPID AND ACCURATE RESULTS

A good simulation model should offer the entire range of equations of state and pipe-flow equations powered by a stable and accurate engine that can meet toughest modeling assignments

SPEED AND FLEXIBILITY OF A MODERN SOFTWARE PLATFORM

There are few intuitive gas simulators on the market today, even fewer written in MS compatible software. Demand fully integrated software, designed using the latest technology that does not crash or leak memory. Beware of modelling systems that comprise nothing more than software patches around ancient engines designed back in the seventies.

In today's competitive market place, Users need software designed to meet the Internet requirements of their company and their company's customers.

OPERATOR QUALIFICATION TRAINER

Simulator should offer a modular array of products that connect easily to a simple and intuitive training system that offers the “touch and feel” of a real pipeline for operator training and certification.

CUSTOMIZABLE TO YOUR NEEDS

Simulators for this new paradigm should have the flexibility to allow rapid customization for the specific needs of your company.

ADVANTAGES OF ATMOS™ GSIM GAS SIMULATION ONLINE & OFF-LINE SOFTWARE

- ✓ Uses the latest MS Net platform using C#/Vb.net.
The code is less likely to crash or have memory leaks as it has Automatic-Memory-Management. ATMOS™ GSIM is a true Windows based system.
- ✓ Simple Perfection of A Stable Engine with Remarkable Accuracy

- ✓ Extremely Easy to configure

ATMOS™ GSIM offers “drag and drop objects” and “drop-down” menus populated with all the properties needed to rapidly configure any gas network. Now, gas controllers and engineers can configure a system in hours that used to take Specialist Simulation Engineers days to design.

Pipe types, gas mixtures, compressors and numerous properties can be selected with the simple click of the mouse.

Comprehensive model tools include supply, demands, leak demand, pipe terminator, linking node, non-return valve, generic valve, compressor (centrifugal), reciprocating compressor, resistance element, heater/coolers etc.

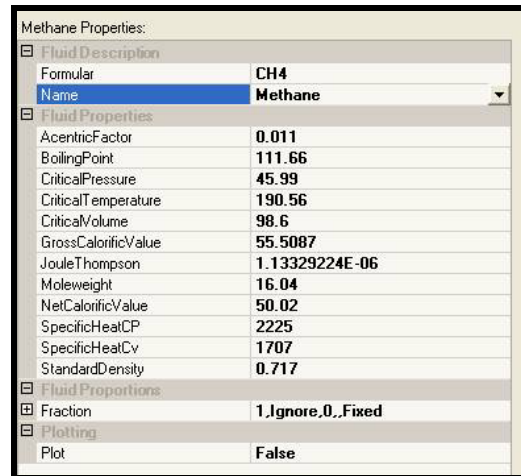


Figure 1. Loaded with helpful “Drop-down” Menus

- ✓ Comprehensive Enough For Specialist Simulation Engineers, Simple Enough for Gas Controllers, Pipeline Engineers and Marketers
ATMOS™ GSIM uses an effective network structure and Newton Raphson method. It provides all the features needed by pipeline simulation engineers yet is easy enough for gas controllers to understand and run. ATMOS™ GSIM is designed for Shell Pipelines to be easy and intuitive and requires minimal training to use effectively. Hence specialist simulation engineers are **NOT** required.
- ✓ Transient Real Time, Transient Look-ahead, Transient Predictive and Steady State
All modelling modes are captured in one fully integrated software package
- ✓ On line/Offline Gas Composition tracking/line pack/calorific value estimates/dew point pressure/temperature estimates.
The specific gas chromatography values can be read in real time or varied using profiled data.
- ✓ Model Constraints Can be Assigned from 3 Sources
All constraints can be assigned from fixed, real-time (SCADA/DCS/PLC) or a profiled wave form.
- ✓ Uses Same Software for Online and Off-line Applications
ATMOS™ GSIM use the same software for online and offline applications, a configuration tested off line can be put on line at any time as long as the online tag data exist.
- ✓ Generic OPC Interface to DCS/SCADA or PLC Tag Data
This assures quick and seamless interfacing with existing control systems.
- ✓ Graphical Representation of All Profile Sources

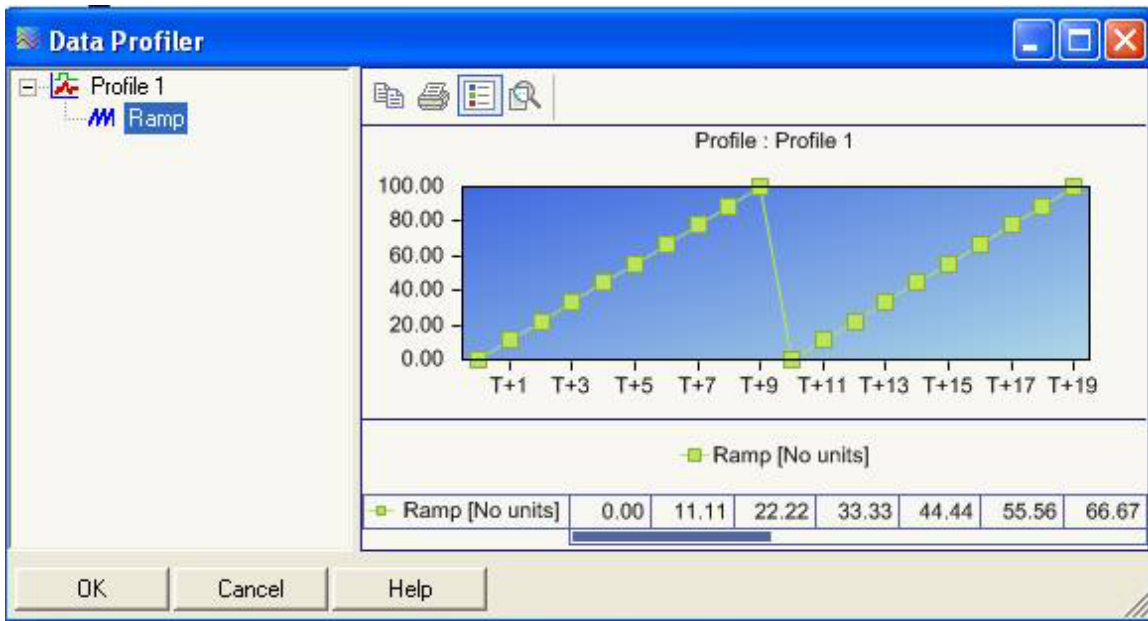


Figure 2. Loaded profiles include constant, square, ramp, sinusoidal, random, User drawn and data

- ✓ Powerful Centrifugal Compressor Curve Utility
Create and save curves that represent any compressor. Adjust the curve from the tables or simply “drag and drop” it.

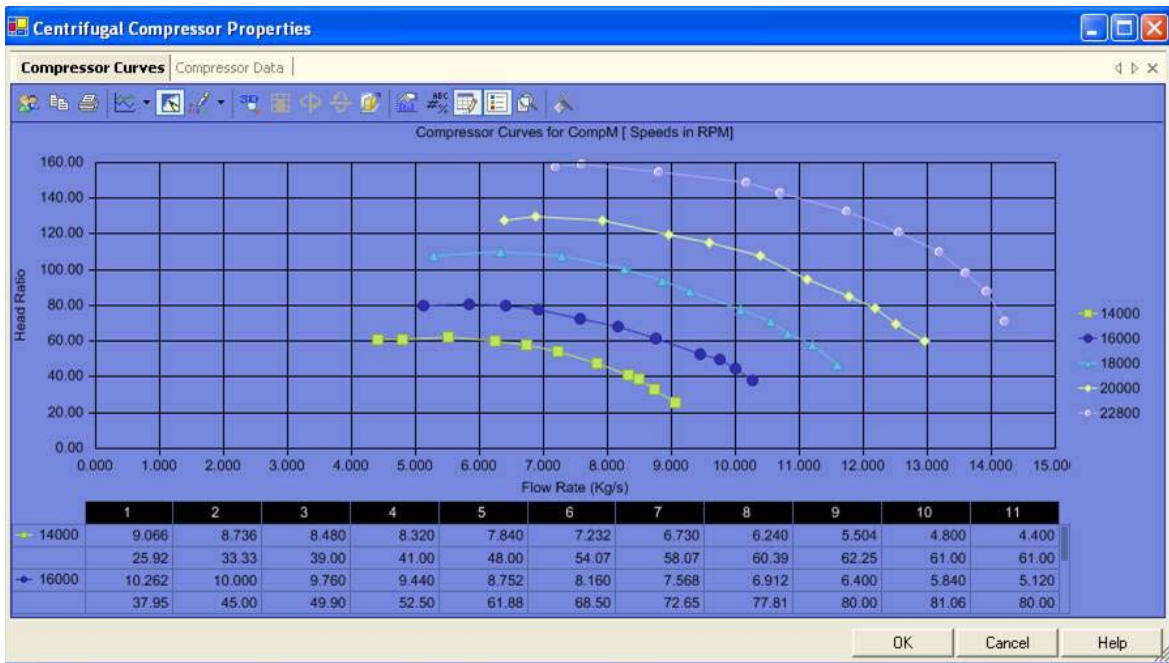


Figure 3. Completely interactive graphics allows you change the curves on the graphs

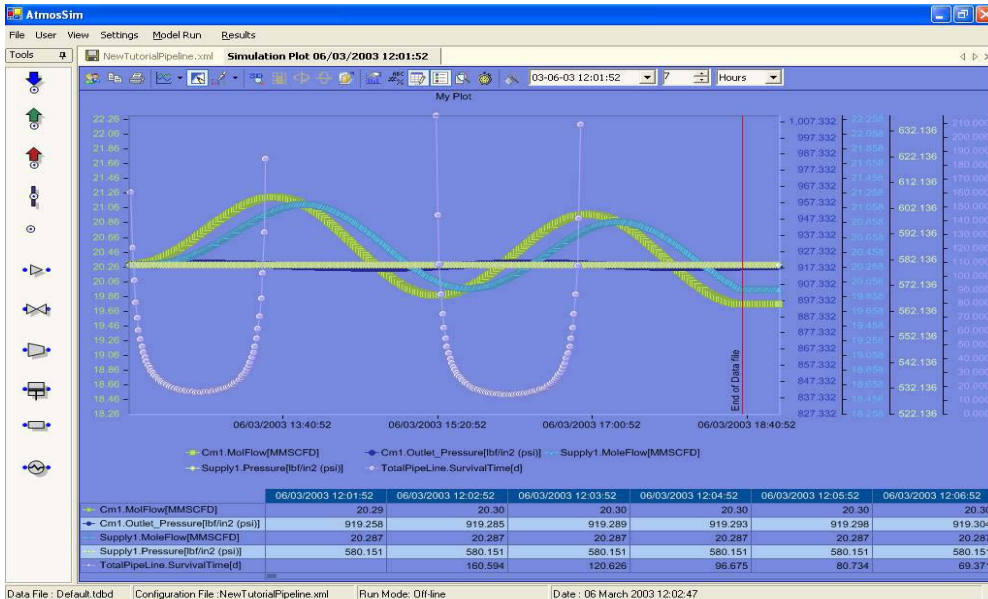


Figure 4. Results are graphed, real time in clear and comprehensive graphics.

✓ Customizable To Your Needs

ATMOS™ GSIM is written in house by RELI staff and can be customized with quick turn around time for customer specific requirements (i.e. specific customer equations of state).

