

PIPENET

LEADING THE WAY IN FLUID FLOW ANALYSIS

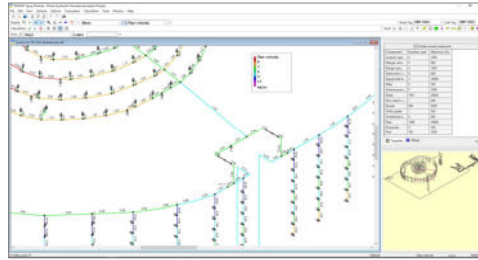
PIPENET is the leader software for rapid fluid flow analysis of pipe and duct networks. Three software modules ensure that, no matter how extensive or complex your network, pipe flow simulation in PIPENET will be performed fast and accurately. Pipenet is a Sunrise Sys. software.

Each of the three PIPENET software modules has been expertly developed for a different type of fluid flow analysis and a vast range of applications, taking input from our customers. The result is the three world leading modules of PIPENET. Each is independent, so PIPENET modules can be licensed separately or in any combination.



PIPENET Transient Module

A versatile, user friendly and extremely powerful software tool for modelling transient state phenomena, and calculating the resultant hydraulic transient forces. PIPENET Transient Module is widely used for surge analysis, water hammer and steam hammer analysis of cooling water systems, fire water systems, hydrocarbon loading and unloading systems.



PIPENET Spray/Sprinkler Module

Specifically intended for the design of fire protection systems. PIPENET Spray/Sprinkler complies with the NFPA13, NFPA15 and NFPA16 rules. This module can be used for designing a wide range of fire protection systems: sprinkler systems, deluge systems, ringmain systems, and foam solution systems.



PIPENET Standard Module

A steady state fluid flow analysis software for compressible as well as incompressible flow. PIPENET Standard Module has a number of applications such as air, water, steam utility systems design, and ventilation (HVAC) systems design.

Industry Sectors

PIPENET has been in use across the globe for over 35 years, by companies large and small, including many multinationals, in the oil and gas, LNG, power generation, process, shipbuilding and fire protection industries. More and more of the companies that have discovered the quality and cutting edge expert technology PIPENET offers are standardising the use of PIPENET through their own companies and subcontractors.

PIPENET is the standard fluid flow analysis software for many **Oil and Gas companies** and extensively used in upstream, midstream and downstream sectors.

The **Power industry** has the responsibility of keeping the wheels of industry turning. 100% reliability is essential of the tools used by the power industry. PIPENET is easy to use, extensively powerful and inordinately reliable.

The **LNG industry** is one of the most dynamic and fastest growing industries in the oil and gas sector, with PIPENET being used extensively on the largest LNG projects worldwide.

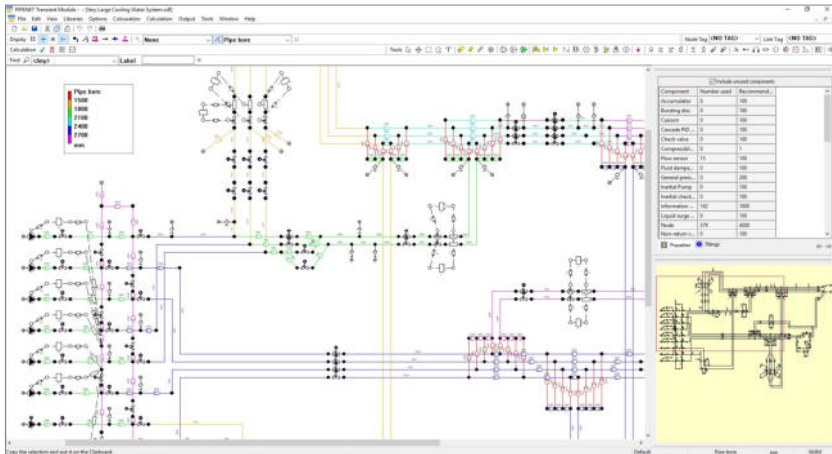
The **Shipbuilding industry** has found all three modules of PIPENET essential to its multi-faceted work which covers so many trades and industries. Each PIPENET module brings its own specialised quality to any project, valued immensely by this highly skilled industry.

PIPENET is the first and the best choice for the **Process industry**. The three modules of PIPENET have been found extremely useful in meeting engineering challenges of the largest refineries and petrochemical plants across the globe.

When lives and expensive equipment are at stake, the best technology is essential to ensure that the risk is reduced to the lowest possible level. Safety is the ultimate priority. PIPENET Spray/Sprinkler is the choice because it leads the way in the **Fire Protection industry** standards.

PIPENET Transient Module

PIPENET Transient Module is a powerful software tool for rigorous dynamic flow analysis that pinpoints problem areas and potential solutions.



PIPENET Transient Module Features

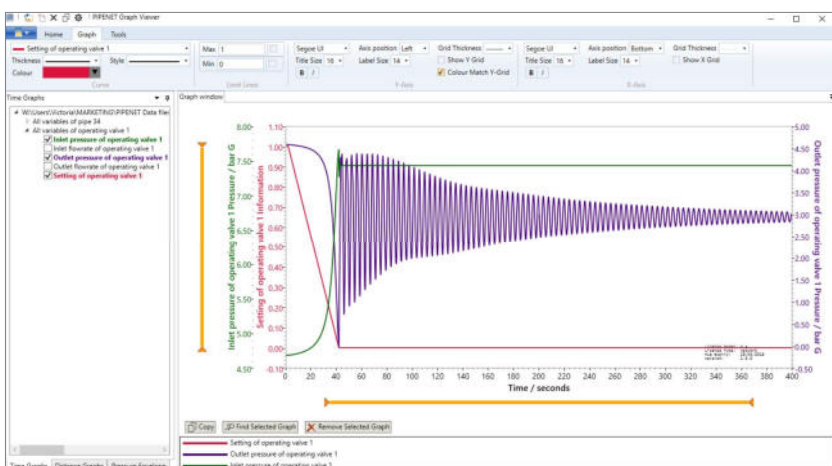
- Output – graphical, tabular and forces output, snapshot, dynamic movie, min/max tables, pressure envelopes, hydraulic grade lines
- Initial state – steady state, user-defined, run-in time, final steady state
- Cavitation modelling – simple cavitation, cavity separation with elevation effect
- Time step – fixed/variable, software/user-defined
- Force-time history neutral file output for reading by pipe stress analysis and finite element programs
- PIPENET Transient Module professionally performs dynamic analysis with ease and accuracy.

Applications of PIPENET Transient Module

- Pressure surge, water hammer, steam hammer analysis
- Calculating discharge time of firewater systems
- Hydraulic transient forces for pipe stress analysis, force-time history
- Water injection systems - dynamic flow analysis
- Transient analysis of subsea & cross country pipelines - hydrocarbons
- Cooling water systems and fire water systems - pressure surge, water hammer and steam hammer analysis

PIPENET Transient Module is the perfect tool for modelling networks

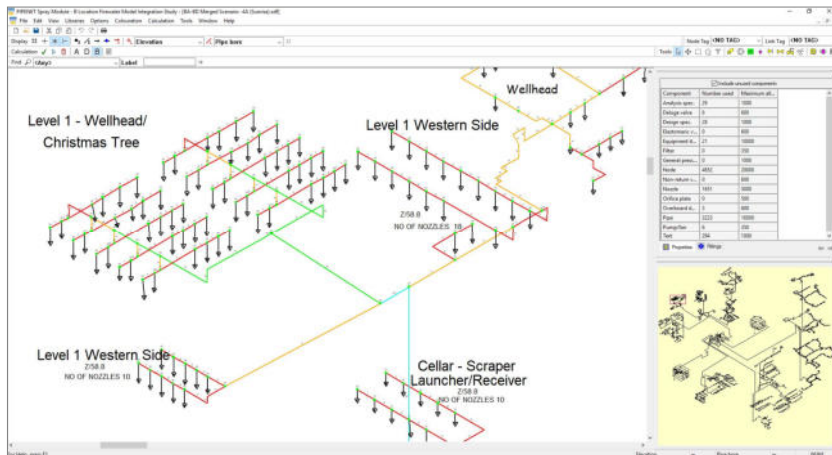
- Pipes – rigorous and short, mile post data
- Valves – operating, surge relief, control, non-return, swing check, regulating, bursting disk, inertial check
- Pumps – simple and turbo
- Tanks – simple, accumulator, surge, receiving vessel
- Vacuum breakers – with or without hysteresis
- Control systems – pressure, flow, differential pressure sensors, PID control, transfer functions, switches
- Caissons – partially filled pipes
- Specifications – extensive range of boundary conditions
- Hydraulic transient forces – dynamic/total, unbalanced/complex forces



PIPENET Spray / Sprinkler Module

PIPENET Spray/Sprinkler Module is the global leader and standard software for hydraulic analysis of firewater systems in compliance with NFPA13, NFPA15 and NFPA16 rules.

This module addresses the hydraulic analysis requirements of virtually all national and international standards. Ideal for the design of systems used in critical applications such as offshore platforms, FPSO's, petrochemical plants, power plants, refineries, ships, and airport hangars.



Applications of PIPENET Spray/Sprinkler Module

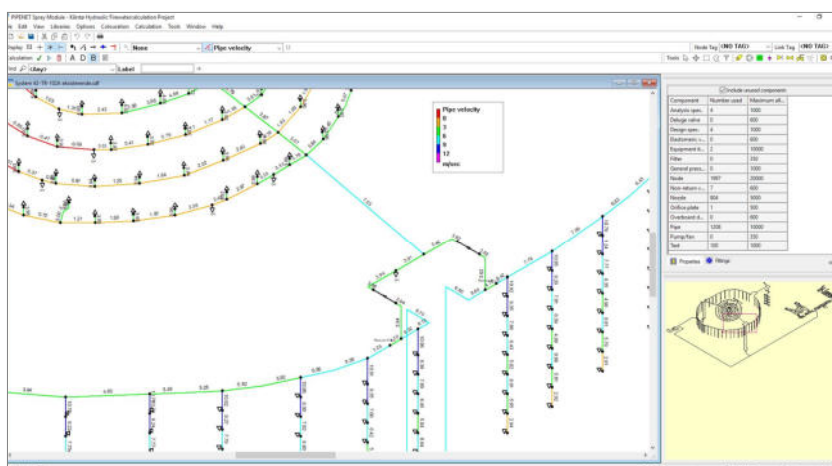
- Deluge systems
- Firewater ringmain systems
- Sprinkler systems
- Foam solution systems
- Foam concentrate systems
- Spray mist system

PIPENET Spray/Sprinkler is the ideal modelling tool for pipes, nozzles, fittings, overboard dump valves, non-return valves, orifice plates, and equipment items.

PIPENET Spray / Sprinkler Module Features

- Input – isometric or orthogonal schematic input & tabular input
- Copy and paste from spreadsheets
- Underlay – import of drawings for use as underlays for schematic drawings
- Output – easy, readable output as tables, or display of data and results on the schematic
- Choice of calculation modes – hydraulically most remote nozzle, inlet pressure/flowrate
- Orifice plates – diameter to be calculated or specified

- Multiple fire scenarios
- Block/Break of pipes to simulate closed valves and burst pipes
- Pumps – sizing of pumps or user-defined vendor's pump curves
- Pipe schedules – built-in and user-defined pipe schedules, lined pipes, multiple pipe schedules in one system
- Overboard dump and minimum flow valves
- User defined libraries of pipe schedules, nozzles, deluge valves and linings
- Choice of Hazen-Williams and Darcy-Weisbach equations
- Choice of pipe or node elevations
- Multiple pump scenarios

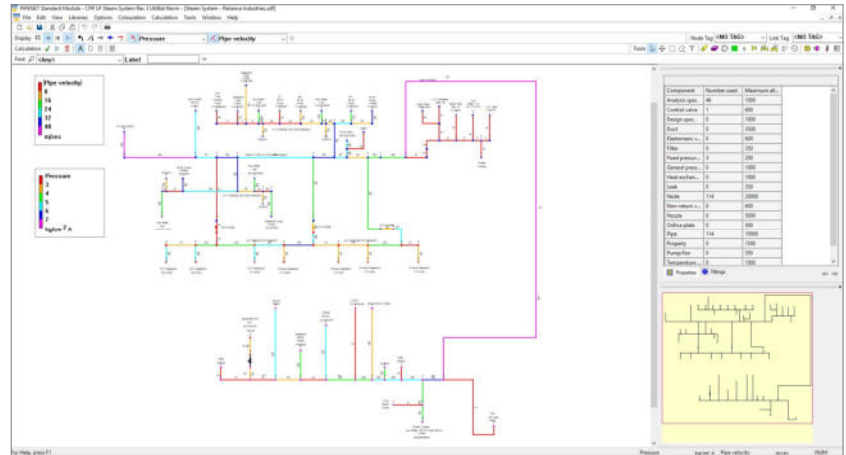


PIPENET Standard Module

PIPENET Standard Module is an ideal software tool for steady state flow analysis of pipe networks with compressible and incompressible fluids – liquids, gases and steam, including piping, HVAC and ducting systems.

PIPENET Standard Module Features

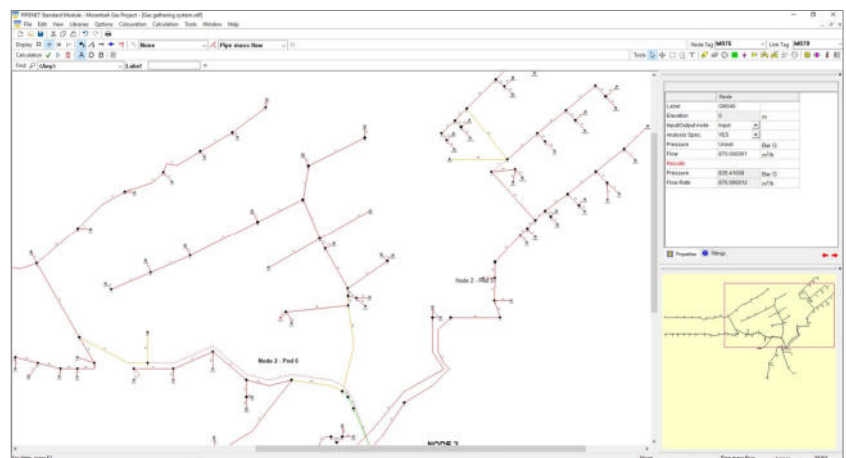
- Input – isometric or orthogonal schematic input, tabular input including copy and paste from spreadsheets
- Underlay – import of drawings for use as underlays for schematic drawings
- Output – easy, readable output as tables, or display of data and results on the schematic
- Extensive library of fittings and user-defined fittings, using Crane data
- Powerful pipe sizing capability
- Orifice plates – diameter to be calculated or specified
- Multiple pump scenarios
- Block/Break of pipes to simulate closed valves and burst pipes
- Pumps – sizing of pumps or user-defined vendor's pump curves
- Pipe schedules – extensive built-in and user-defined pipe schedules
- Checking for cavitation, correction for ambient pressure decrease with height, calculation of hydraulic gradients and modelling of leaks
- Control valves – pressure, flow, differential and set position
- Variable properties and temperatures
- Choice of pipe or node elevations



Applications of PIPENET Standard Module

- Cooling water systems
- Steam distribution systems
- Ventilation systems
- Water distribution systems
- Fuel gas systems
- Chilled water systems

PIPENET Standard Module models pipes, ducts, fittings, pumps, fans, check valves, control valves, nozzles, filters, orifice plates, fixed pressure drops.



Cosmos Italia Srl

Via Giovanni Lonati 8, 26100 Cremona - Italy

Tel. +39 0372 436072 Fax +39 0372 36049

info@cosmositalia.it

www.cosmositalia.it

