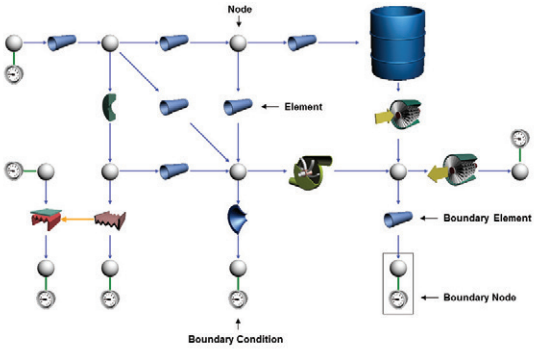
FLOWNEX®

SIMULATION ENVIRONMENT

Flownex® SE determines pressure drop [flow] and heat transfer [temperature] for the connected components of a complete system in steady state and transient, e.g. pumps or compressors, pipes, valves, tanks and heat exchangers.

SYSTEM LEVEL THERMAL-FLUID FLOW

SIMULATION SOFTWARE



TYPICAL USES

ANALYSIS

- Simulation.
- Performance assessment.
- Modification assessment.
- Fault root cause assessment.

DESIGN

- System sizing.
- Component sizing.
- Determining operating ranges.
- Flow, temperature, pressure, power consumption, etc.
- Testing of control philosophy.

TRAINING

- System behavior examination.
- Performing basic flow and heat transfer calculations.
- Thermohydraulic principles and properties referencing.

A FEW FLOWNEX® LICENSE HOLDERS

Steinmüller engineering services · SAMSUNG · SIEMENS · roketsan · AEROSUD innovation & training centre · GASCO · sasol · Weatherford · Solar Turbines A Caterpillar Company · HATCH · HYUNDAI heavy industries co.,ltd · AngloGold Ashanti · Anglo American · babcock · Rolls-Royce

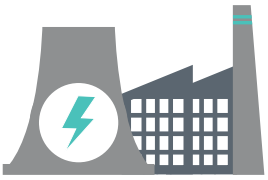
BRINGING NUCLEAR QUALITY AND STANDARDS TO SYSTEM SIMULATION

Flownex® is developed in an ISO 9001:2008 quality assurance system and NQA1 supplier approved environment.

INDUSTRIES

WATER RETICULATION

Water distribution, Pumping stations, Treatment plants, Network maintenance.



POWER GENERATION SYSTEMS

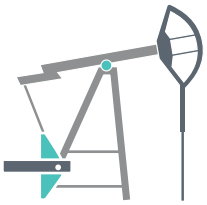
Renewable energy systems, Fossil fuel systems, Nuclear systems, Simulators.

RESEARCH & DEVELOPMENT

Innovative engineering, Proof of concept, Layout and integration, Control philosophy design.

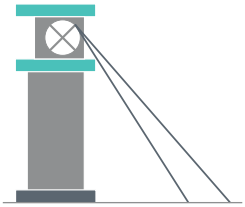
MILITARY, SHIPPING & AEROSPACE

Hydraulic, pneumatic, fuel and environmental control systems.



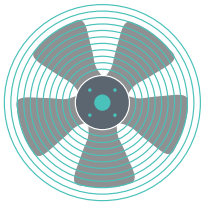
OIL & GAS SYSTEMS

Exploration, Production, Refining, Transportation.



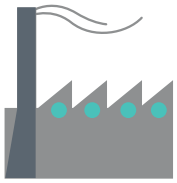
MINING SYSTEMS

Chilled water reticulation, Ventilation, Compressed air, Slurry distribution.



HVAC-R SYSTEMS

Refrigeration, Heating systems, Ventilation systems, Air-conditioning.



PROCESS SYSTEMS

Process design, Process control, Process operations.

ADVANTAGES

1. Simulates simple sub-systems to complete systems, anything from ventilation and reticulation networks, detail internal turbomachinery flows up to boilers and complete power generation cycles like Rankine and Brayton cycles.

2. Simulates integrated flow, heat transfer, mechanical and control systems gives you a complete system response. This includes liquid, gas, two-phase, mixtures, heat transfer, mechanical and control systems. Ensures robust controllable systems.

3. Rapidly runs 1000's of simulations – allowing for multiple scenario tests, operating modes and eliminates uncertainty around environmental conditions and manufacturing tolerances.

4. Users require only typical engineering design parameters to use the empirical and semi-empirical models in Flownex®, allowing for crucial design decisions in complex simulations to be made easily without a fluid systems specialist.

5. Integrated simulations with Excel, Fluent, Ansys Mechanical, Ansys Icepack, Matlab, Simulink, Labview, MathCad and an OPC link for commercial hardware control systems. Easily integrate existing proprietary correlations, software and data.

6. Fast configuration with all inclusive fluid thermal systems and plant components.

"Flownex gave new meaning to complex systems fluid flow analyses in our company."

Chris Coetzee // MBA, PrEng // Managing Director // Resonant

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