

FLOWNEX®

SIMULATION ENVIRONMENT **AEROSPACE**

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.

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

BRINGING NUCLEAR QUALITY AND STANDARDS TO SYSTEM SIMULATION

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



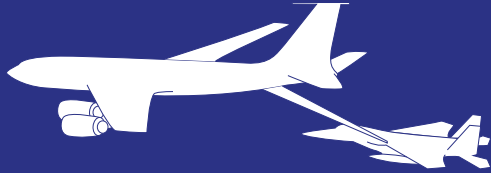
Flownex® enabled engineers to analyze the complete fuel system and its components in an efficient and accurate way, providing them with peace of mind that the final system design is safe, reliable and conforms to customer requirements.

Jaco Gouws
Aerosud



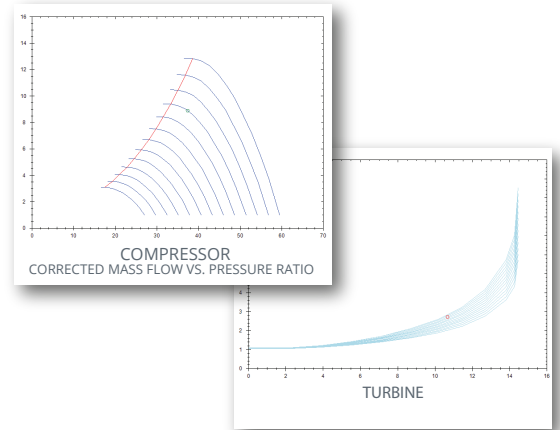
FUEL & REFUELING SYSTEMS

- Valve sizing for mid-air refueling
- Control system design for transient mid-air refueling
- Pump selection and pipe sizing
- Heat exchanger area calculation/sizing



GAS TURBINE ENGINE

- Turbine and compressor sizing
- Turbine and compressor power matching
- Compressor surge margin prediction
- Off-design performance prediction
- Transient system response



HYDRAULIC SYSTEMS

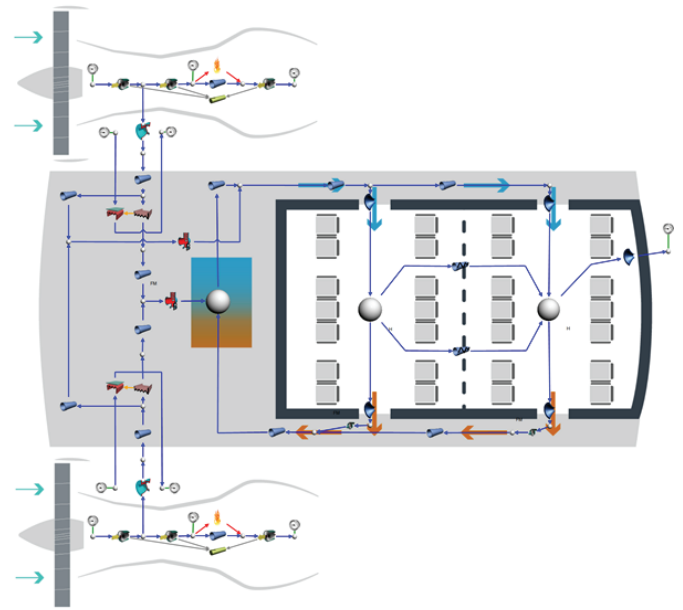
- Pump selection and pipe sizing
- Flow distribution

LIQUID FUELED ROCKETS

- Turbo-pump/combustion dynamics
- Control philosophy development testing
- Transient start-up analysis
- Blowdown calculations

ENVIRONMENTAL CONTROL & LIFE SUPPORT SYSTEMS

- Cabin temperature, pressure and flow control
- Air conditioning system flow & temperature distribution
- Humidity control of air-water vapour mixtures
- Coupled engine and ECS system simulation



PROPULSION SYSTEMS

- Nozzle thrust calculation.
- Nozzle over/under expansion prediction.
- Supersonic flow simulation capability.