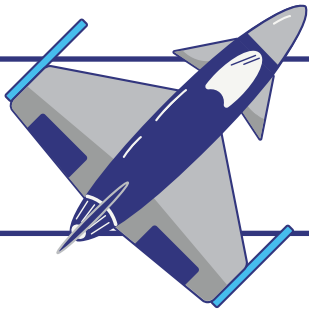


# AEROSPACE

Bringing nuclear quality and standards to system simulation.

**FLOWNEX<sup>®</sup>**  
SIMULATION ENVIRONMENT



*Flownex<sup>®</sup> SE determines pressure drop (flow) and heat transfer (temperature) for the connected components of a complete system in steady state and transient.*

## TYPICAL USES

### ANALYSIS

- System simulation
- Performance prediction
- Assess modifications
- Fault root cause analyses

### DESIGN

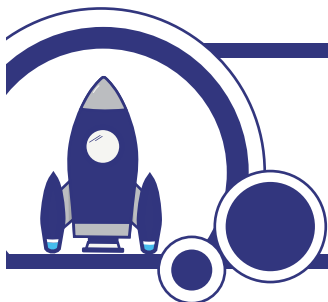
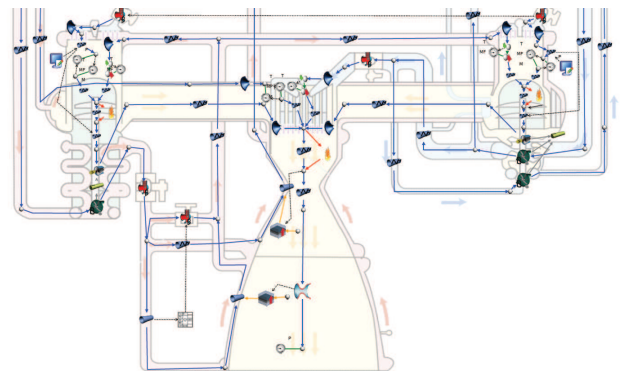
- System integration
- Component sizing
- Determine operating ranges
- Flow, temperature, pressure, and power results
- Testing control philosophy

### OPTIMIZATION

- Basic flow and heat transfer calculation
- System performance
- Thermohydraulic process and properties referencing

## ROCKET ENGINES

- Turbopump sizing
- Power matching of pump and turbine
- Convective and radiation heat transfer
- Combustion process modelling
- Thrust calculation using nozzle
- Control system integration
- Transient behaviour and flight mission simulation



BLUE ORIGIN

FOOSUNG

AEROSUD



[www.padtinc.com/flownex](http://www.padtinc.com/flownex)  
[productinfo@padtinc.com](mailto:productinfo@padtinc.com)

Find us on:

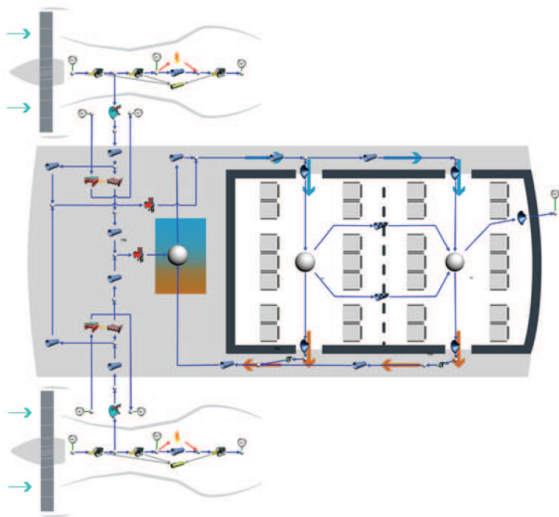


## ENVIRONMENTAL CONTROL & LIFE SUPPORT SYSTEMS

- Cabin temperature and flow control
- Air conditioning system flow & pressure distribution
- Humidity control of psychrometric mixtures
- Coupled engine and ECS system simulation

## PROPULSION SYSTEMS

- Supersonic flow simulation capability
- Nozzle thrust calculation
- Over or under expansion prediction



## FUEL & REFUELING SYSTEMS

- Control system design for transient mid-air refueling
- Pump selection, pipe and valve sizing
- Heat exchanger area requirements

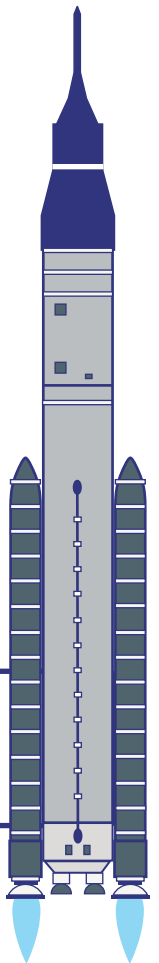
## HYDRAULIC SYSTEMS

- Pump selection and pipe sizing
- Balancing flow distribution

## LIQUID FUELED ROCKETS

- Turbopump performance
- Combustion dynamics
- Control philosophy testing
- Nozzle sizing
- Transient analyses

*Flownex® is developed within an ISO 9001:2015 quality management system that is also ASME NQA-1 compliant.*



### TESTIMONIAL

**AEROSUD**  
Jaco Gouws



*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.*