

## ENGINEERING ANALYSIS

### FLUID AND THERMAL ANALYSIS

Flow assurance  
Cooldown modelling  
Joule-Thompson cooling  
Hydrocarbon plume dispersion  
Sand erosion prediction  
Helicopter operability (CAP437)  
Hydrodynamics  
Heat exchanger analysis  
Fire and smoke modelling  
Fluid/Structure interaction  
Combustion  
Multi-Phase flow  
Slugging  
Computational fluid dynamics

### FLUENT

Flowmaster  
Turbomachinery codes  
Turbomachinery  
Turbines and compressors  
Secondary air systems  
Ventilation  
ATEX, DSEAR, COMAH compliance  
Gas turbine exhaust oscillations  
Experiment design  
Rig design  
Instrumentation

### SYSTEM DESIGN AND ANALYSIS

Control systems  
Electrical systems  
Vissim  
Bathfp  
Matlab/Simulink  
Hydraulic systems

### NAVAL ARCHITECTURE

Hull spectral fatigue analysis  
Hull life assessment  
Motions analysis  
Wave-in-deck analysis  
Strength modelling  
Wave slam  
Ship impact  
Hydrodynamics  
Ship-to-ship transfer

## FRAZER-NASH CONSULTANCY LTD

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Convenient & simple technical reach back into UK offices for access to additional resources for specialist technical disciplines and surge support.

Frazer-Nash is a Defence Support Services (DSS) and DST Group's ReSET Panellist.



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**LIST OF SKILLS AND SERVICES**  
**SYSTEMS & ENGINEERING TECHNOLOGY**

## SYSTEMS ENGINEERING

### REQUIREMENTS MANAGEMENT

Capability Audits  
Requirements Capture and Engineering  
Requirements Documents  
Equipment Specifications  
Assumptions Management  
Acceptance Strategy and Planning

### SYSTEM DESIGN AND MODELLING

Feasibility and Concept studies  
Technology Evaluation & Road Mapping  
System Simulation and Modelling  
Trade-off Studies & Option Assessment  
Decision Analysis and Support  
Product Development  
Human Factors Engineering

### DESIGN SERVICES

Schemes and Layouts  
Detailing  
CAD/CAM  
AUTOCAD  
UNIGRAPHICS  
CADD5  
ProEngineer  
Rapid Prototyping

### DESIGN AUDIT

Independent Technical Assessments  
Risk Reduction  
Design for Manufacture  
Compliance and Assurance

### RELIABILITY AND MAINTAINABILITY

R & M Strategy and Planning  
R & M Risk Identification and Reviews  
R & M Case Development  
R & M Modelling and Predictions  
Failure Analysis (FMECA/FTA)  
Reliability Centred Maintenance (RCM)  
PAS55 / ISO55000  
R & M Test Assessment Support

### SUPPORTABILITY

Supportability Management  
Support Strategy and Planning  
Supportability Task Tailoring  
Logistic Support Analysis  
Levels of Repair Analysis  
Spares Provisioning Analysis  
Logistic Demonstration Support

## SYSTEMS ASSURANCE

### SAFETY

Australian Defence, Navy and civilian standards  
Safety Management Systems  
Independent Safety Auditing  
Safety Case Development  
Safety Related/Safety Critical Software & Firmware Assessment  
Safety Integrity Level (SIL) Assessment/Allocation  
Safety Assessment Methodology Development  
Safety Standards Assessment & Development  
Safety Management and Software Safety Training  
Goal Structuring Notation/Claims-Argument-Evidence  
Competency Assessment of Safety Practitioners  
HIA/HAZOP/SWIFT FTA/FMEA/ETA

### ENVIRONMENTAL

Environmental Optioneering & BPEO Studies  
Clean Technology  
Environmental Cost Benefit Analysis  
Environmental Management Systems  
Environmental Auditing & Due Diligence  
Environmental Impact Assessment (EIA)  
Strategic Environmental Assessment (SEA)  
Environmental Risk Assessment  
Life Cycle Assessment (LCA)  
Noise Assessment

Regulatory Support (IPPC, Waste Licensing etc.)  
Sustainability Appraisal  
Sustainable Procurement  
Stakeholder Engagement  
Training

### PROJECT RISK MANAGEMENT

Project Risk Management Strategy & Planning  
Project Risk Assessments  
Risk Reduction Planning  
Risk Registers  
Schedule and Cost Risk Analysis  
Project Risk Audits

### THROUGH LIFE MANAGEMENT

Through Life Management Planning  
Whole Life Costing  
Information Security Accreditation

### ACQUISITION SUPPORT

Tender and Bid Support  
Procurement Option Assessments  
Business Case Development  
Investment Appraisal Support  
Supply Chain Audits

## ENGINEERING ANALYSIS

### STRUCTURAL INTEGRITY

Engineering criticality analysis  
Fracture mechanics  
Fatigue  
Cracked bodies - J integral  
Weld residual stress modelling  
Life prediction  
Pipeline reeling/laying  
Pressure components  
Composites  
Concrete/grout  
Rubber  
Failure analysis  
Non-Linear analysis  
Plastic collapse analysis  
Finite element analysis  
ABAQUS standard  
ANSYS  
Structural testing

### DYNAMICS

Vibration & Noise  
Pipework FIV analysis (EI)  
Modal analysis  
Shock  
Explosion modelling (FLACS)  
Blast effects  
Mounting system design  
Dynamic simulation  
Dynamic testing

### MATERIALS

Corrosion modelling  
CP System analysis  
Material model development

### SOFTWARE ENGINEERING

Mathematical modelling  
Full software life cycle development  
Software design methodologies  
Development of analysis software and user interfaces  
Databases  
Support of legacy software

### ELECTRICAL ENGINEERING

Electromagnetic compatibility (ENC 60945, IEC 6053)  
Discrimination studies  
Protection system hierarchy (IEC 61850)  
Power system simulation  
System integrity studies  
Resilience and security