



DOCAN
A CAN DO COMPANY

ENGINEERING CONSULTING SERVICES

for

ROTATING EQUIPMENT

2022

ABOUT US

WE ARE AN ADVANCED ENGINEERING CONSULTANCY AND CAE SOFTWARE DISTRIBUTION COMPANY.

WE PRIDE OURSELVES ON OUR CAN-DO APPROACH AND ABILITY TO OFFER CUTTING EDGE SOLUTIONS TO OUR CLIENTS.

We are run by experienced Professional Engineers, Designers and Consultants following an ISO9001:2015 BSI certified Quality Management System.

Our processes and QA system are aligned with providing design and assessment services for high integrity engineering products, and we have a growing track record of delivering on significant safety-critical projects.

OUR BUSINESS IS SPLIT INTO TWO DISCREET DIRECTORATES.

- Engineering Consultancy
- CAE Software Distribution

Our culture, setup and experience are tailored to working on high integrity systems within highly regulated industries, while having to deliver to challenging timescales and budgets. Our verification processes follow the requirements of our ISO 9001 QMS and are compatible with those companies which operate in highly regulated industries.



CONSULTING SERVICES

At DOCAN we have a wide range of skills, experience and people. At our core we are run by professional engineers with many years of experience in industries including Oil & Gas, Drilling (Onshore/Offshore), Renewables, Aerospace, Nuclear and Manufacturing.

The core services that we provide include; R&D, FEED studies, Detailed Design, Operational and Retrofit solutions, Reverse Engineering, and Root Cause, in many areas of Engineering including Rotating Equipment. With a wide range of experience of equipment, methods and techniques, DOCAN are ideally suited to solve your challenging problems. We utilize best in class technologies in all areas of computer aided engineering, enabling us to deal with transmissions, rotor-dynamics, impellers and blading, bearings (static/dynamic/rolling), seals, couplings, casings, lube oil and cooling, systems and more.

This is completed using a combination of codified methods (ANSI/API/ASME), Finite Elements, Computational Fluid Dynamics, CAD, and expert systems. We can even program custom-made methods using high level programming languages.

We promote a 'can-do' attitude within our highly integrated consulting teams. Our engineers are encouraged to approach problems from different angles, and also to explore new methods and technologies where these could deliver benefits.



OUR KEY AREAS OF EXPERTISE ARE:

- Engineering Design & Assessment
- Engineering Simulation & Analysis Expertise
- Training Services for Design & Simulation
- Term Contracting Supplier
- Expert and 3rd Party Reviews

We provide a service to solve our clients' engineering problems.

We work in a way which suits our clients. This could be as an independent engineering resource which provides high-level engineering design, analysis and assessment services, through to providing turnkey project solutions. Or we could work alongside your in-house engineers, providing support, technology transfer services and training to meet your requirements.

We are flexible in our approach and work to provide our clients a solution which works.

TYPICAL INDUSTRIES AND EXPERIENCE



Oil and Gas



Automotive



Nuclear



Aerospace



Defence



**Electronics
& High Tech**



**Renewable
& Green energy**



Structural Mechanics and Dynamics

DOCAN Technical Director – Richard Carroll has worked in the area of structural mechanics and dynamics in both consultancy and OEM from design, operational and fitness for service aspect – the full lifecycle.

Practical machine knowledge comes from working hands on as a Mechanical Fitter, with a large range of equipment including; engines, motors, alignment and balancing, steam and gas turbines, pumps, compressors, fans and blowers, transmission systems, seal systems, lubrication systems, bearing systems, condition monitoring.

Professional Engineering experience comes in the form of design and analysis of various types of systems and equipment ranging from static equipment, rotating equipment, mechanisms, structural systems and mechanical systems.

DOCAN Consultancy Manager – Simon Brocklehurst has worked in the area of Design and Simulation for several major consultancies and as OEM in a wide range of industries. He has expert knowledge in the application and usage of Structural Mechanics and Structural Dynamics, as well as Engineering Design and Engineering Design Management.

Some of our day-to-day tools used at DOCAN include: Solidworks, ABAQUS, ANSYS, Fluent/CFX, Flownex, NASTRAN, ADAMS, Dyrobes, Mathcad, Python and much more.



Subject Matter Experts

DOCAN have a team of Professional Engineers and Designer based at the Northwich Office. We also have several Associate Engineers at Principal and Subject Matter Expert level whom we use either from time to time, or on-going depending on the area of expertise and projects in the business.

As an example, one of DOCAN SME is in **Transmissions and Rotating Equipment** – he has held lead engineer role within bespoke gear design and manufacturing, focusing on:

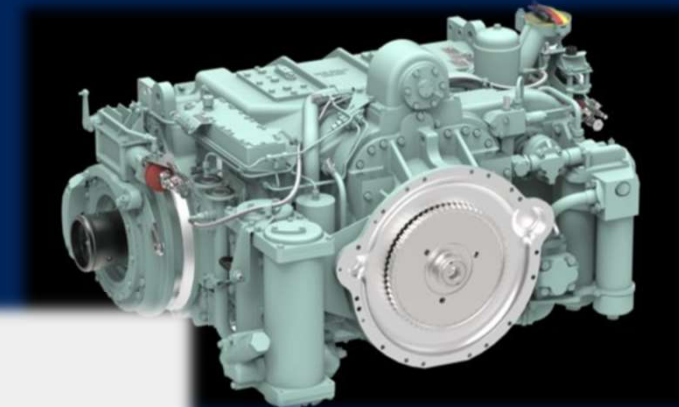
- Static and fatigue analysis.
- Casing design to Rotor-Dynamics
- Transient and pseudo-static shock (both analytical and FE based).
- NVH with design for low noise, component and assembly resonance (modal analysis) and vehicle performance.

Previous work has included design of:

- Shafts, gears, bearings, seals, couplings, casings, impellers and bladed systems, pipework and structures
- Hydraulic actuation and cooling systems.
- Wet and dry clutches and brakes.
- Hydrostatic units and track steer mechanisms.
- and more...



Naval Frigate



Challenger Tank



Industrial Reduction
Gearboxes

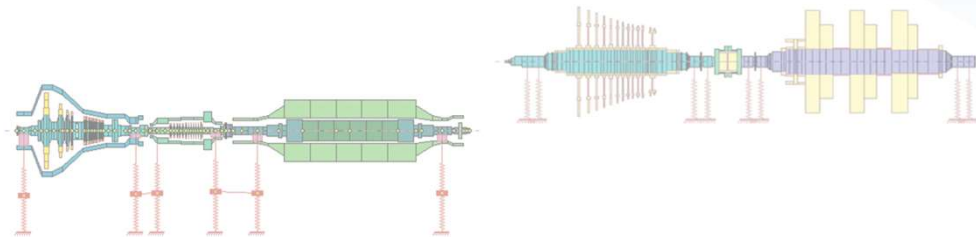


SOFTWARE

We employ a wide range of tools and software packages across our consultancy business.

ROTATING EQUIPMENT DESIGN AND ANALYSIS TOOLS WITH CAPABILITIES FOR:

- MULTILEVEL ROTOR MODELLING FROM SYSTEM TO DETAILED DESIGN – INCLUDING LATERAL AND TORSIONAL ANALYSIS, INC. WHIRLING AND CAMPBELL DIAGRAMS, STATIC AND DYNAMIC STRESS, FATIGUE LIFE, INC. WHIRLING AND OUT OF BALANCE.
- BEARING SELECTION, DESIGN AND ANALYSIS – IN HYDROSTATIC, HYDRODYNAMIC AND ROLLING USING FEA/CFD AS APPLICABLE
- SEAL SELECTION, DESIGN AND ANALYSIS (MECHANICAL/LABYRINTH) INCLUDING SYSTEM DESIGN
- IMPELLOR AND BLADING DESIGN AND ANALYSIS USING CFD METHODS
- CASING BOUNDARY ASSESSMENT FOR STRESS, DEFLECTION AND SERVICEABILITY
- FAULT FINDING – BACK FIT OF CONDITION MONITORING RESULTS (OIL/THERMAL/VIBRATION)
- STRUCTURAL DYNAMICS (AND STATICS) OF SUPPORTING STRUCTURES AND FOUNDATION (RESPONSE SPECTRUM, RANDOM VIBRATION/PSD, FULL TRANSIENT RESPONSE)
- FOR OIL AND GAS, RENEWABLES, NUCLEAR, AERO, DEFENSE AND MORE



OUR GENERAL-PURPOSE SIMULATION TOOLS INCLUDE:

COMPLETE SIMULATION & ANALYSIS

- MSC SOFTWARE (INC. NASTRAN, PATRAN, ADAMS, CAE FATIGUE, CRADLE CFD, ROMAX)
- ABAQUS (STANDARD & EXPLICIT)
- ANSYS MECHANICAL/ FLUENT/CFX

1D SYSTEMS ANALYSIS

- FLOWNEX
- DYROBES

PRESSURE SYSTEMS

- ROHR2 & CAESARII
- PV ELITE & CODE CALC

ENGINEERING MATHEMATICS & AUTOMATION

- MATHCAD
- FORTRAN, C++, PYTHON.

ENGINEERING DESIGN

- SOLIDWORKS, BRICSCAD, AUTOCAD, CADWORX

CAN'T SEE WHAT YOU'RE LOOKING FOR...?

CONTACT US TO ENQUIRE ABOUT YOUR SPECIFIC CONSULTANCY REQUIREMENTS WWW.DOCANCO.COM



CONTACT US

CALL - 01606 212330

EMAIL - INFO@DOCANCO.COM

WEBSITE - WWW.DOCANCO.COM

OR FOLLOW US ON LINKEDIN

WWW.LINKEDIN.COM/COMPANY/DOCAN/

