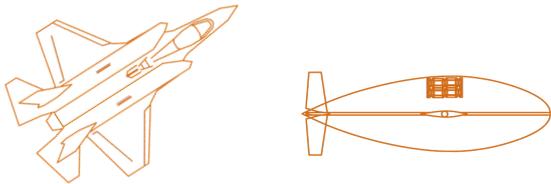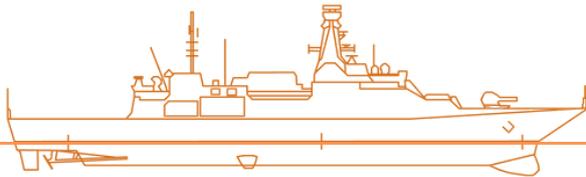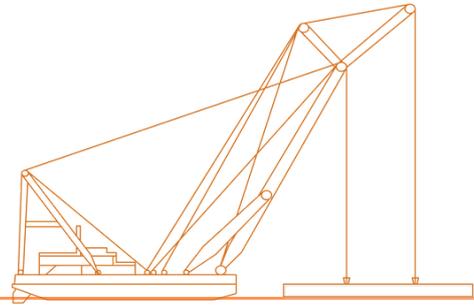## AT A GLANCE

DYNAMIC SYSTEMS MODELLING
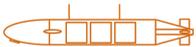

Air Platforms (Civil and Military)

Surface Vessels

Floating Platforms
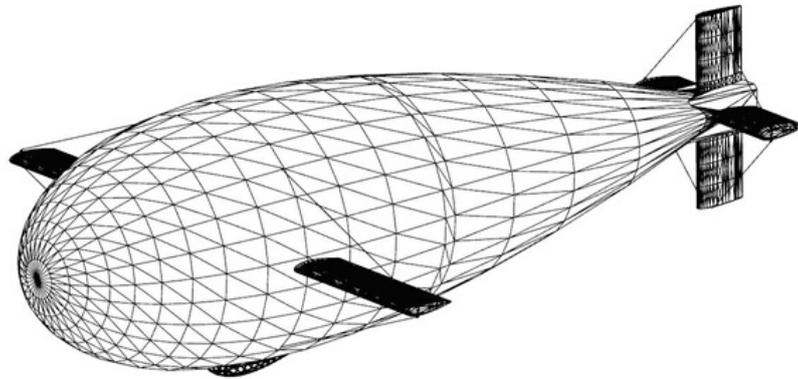
UUVs/SDVs

Towed Bodies

SSK, SSN and SSBN Types

CORE CAPABILITIES

- Multi-phase analysis including cavitation effects.
- Co-simulation of multi-body dynamic systems.
- From cable and pulley-based systems to hydro-mechanical and electro-actuated agile systems.
- Data capture leading to model construction from 1st principles.
- Control law design of platform and sub-system dynamic equipment.
- Platform stability modelling.
- Sea state effects on surface and submerged bodies (and towed bodies).
- Reverse engineering dynamic body performance for modification analysis.

Stirling Dynamics was a partner in the Phoenix UAS Aerospace Technology Institute (ATI) and Innovate UK project providing the flight control system.

SYSTEM OF SYSTEMS

Modelling and analysis for a range of air, surface and submerged bodies.

Stirling Dynamics is skilled in modelling multi-disciplinary systems and multi-body system motion dynamics. This includes the co-simulation of sub-system behaviour within an overall platform model. Our expertise has been applied to dynamic modelling for air, surface and sub-surface domains.

We offer a wide range of analytical services to platform design authorities and equipment manufacturers across the aero and hydro domains, and in the sub-system analysis of connected hydraulic, pneumatic and actuated systems.

| Rigid & Flexible Bodies |
| Hydrostatics & Hydrodynamics |
| Aerodynamics |
| Hydraulic Systems |
| Pneumatic Systems |
| Actuated Systems (E/EE) |

ADVANCED MODELLING ENVIRONMENTS

Our engineering capability is built on expert use of commercial enterprise-level simulation and modelling environments. Also, Stirling is highly skilled in developing synthetic simulators of control systems that can support hardware-in-loop (HIL) test benches for client programmes.
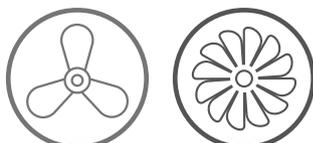
| MathWorks MATLAB®/Simulink® |
| MSC Software Adams |
| Orcina OrcaFlex |
| ANSYS Product Family |
| Simcenter Amesim™ |

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