

AT A GLANCE

## SUBMARINE CONTROL SOLUTIONS



**10+ platforms**

**30+ years experience**

**SSK and SSN**

**Multiple hull configurations**

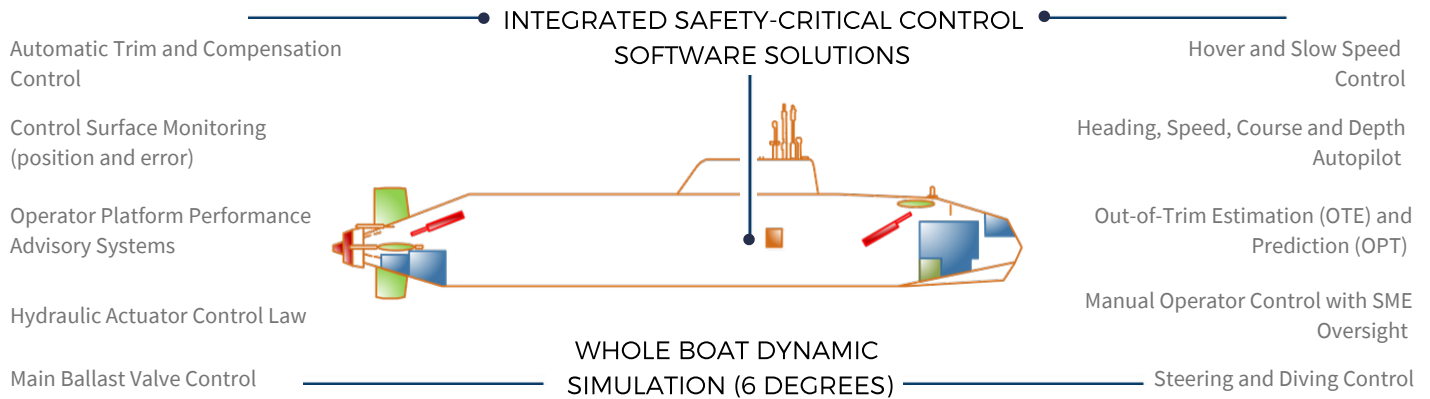
**Algorithms to solutions**

### CORE CAPABILITIES

- Class-leading autopilot and advanced control systems for SSK and SSN naval platforms.
- Shipyard independent provider of control algorithm design and realisation.
- 10+ navies worldwide depend on our deployed safety-critical software solutions.
- Unrivalled capabilities in submarine synthetic simulation, scale model/tank test and sea trials.
- Scalable solutions; algorithm development to full steering and diving console design.
- Experienced in all current hull forms; x-plane, cruciform, sailplane and bowplane.
- A unique blend of experience across diesel-electric, air-independent and nuclear propulsion.

# AT A GLANCE

## SUBMARINE CONTROL SYSTEMS



### DEPLOYED SAFE SYSTEMS

**Specialists in the development of safety-critical steering and diving control systems incorporating.**

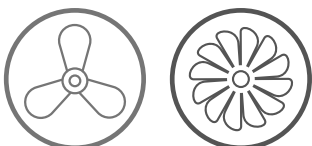
Stirling Dynamics' advanced steering, diving and hover solutions are active across a diverse range of platforms from diesel-electric and air-independent patrol types, to nuclear-powered fleet submarines.

Providing class-leading autopilots and hover systems to the most demanding of customers requires deep expertise in safety-critical engineering. Our high-integrity solutions are developed to conform to the rigours of IEC61508 and Do-178B/C.

### MODEL-BASED ENGINEERING

Stirling's advanced modelling and simulation capability allows us to evolve our understanding of naval architecture into synthetic vessel and environment models that underpin our safety assured software control solutions. Using "model as the master" we can replicate the vessel dynamics in a synthetic environment against which we design and generate the control solution.

Our model-driven solutions offer platform designers the opportunity to test current autopilot systems on new or modified hull forms without the need for costly trials and scale model evaluations.



Safety-Critical Systems (IEC61508/(DO-178B))

Platform Control Law Development

Trials Driven Performance Tuning

Reverse Engineering (Legacy Analysis)

Expert in Sensor Fusion & Filtering

Highly Proficient in State Estimation

System Identification (Control)

Model as the Master

Auto-Code Generation

Synthetic Modelling of Systems

Hardware/Processor in Loop (H/PiL)

**Stirling Dynamics Limited**  
 an expleo company

230 Bristol Business Park  
 Stoke Gifford  
 Bristol  
 BS16 1FJ

**Tel:** +44 (0)117 915 2500

**Email:** enquiries@stirling-dynamics.com