

# DESIGN AND DEVELOPMENT



The **Engineering Solutions Division** is made up of talented design engineers in a variety of disciplines including mechanical, ocean, coastal, electrical, and production engineering, and naval architecture. Half of our engineers hold advanced degrees in their field. They provide a full range of engineering services from requirements analyses, concept through detail design, prototyping, technical documentation development, and engineering analyses. They turn good ideas into reality, meeting the needs of today's sailors and soldiers. Some of the services we provide include:

## **RAPID PROTOTYPING**

- ▶ Mechanical Systems
- ▶ Undersea Vehicles
- ▶ Countermine Systems
- ▶ Electronic Systems

## **MECHANICAL ENGINEERING**

- ▶ Mechanical Design and Analysis
- ▶ Structural Analyses including Finite Element Analysis
- ▶ Fluid Flow Analyses
- ▶ Kinematics Analysis
- ▶ 3D Modeling
- ▶ Drawing Package Development and Documentation
- ▶ Requirements Analyses

## **ELECTRICAL ENGINEERING**

- ▶ Circuit Design
- ▶ Robotics Design
- ▶ ROVs
- ▶ Camera Systems
- ▶ Cables
- ▶ Control Systems
- ▶ Power Distribution System Design and Analyses
- ▶ Communication Systems

## **HUMAN SYSTEMS INTEGRATION**

- ▶ Habitability
- ▶ Human Factor Engineering
- ▶ Mockup Development and Operator Testing
- ▶ Task Analysis

## **NAVAL ARCHITECTURE AND OCEAN ENGINEERING**

- ▶ Undersea Vehicle Design
- ▶ Ship and Small Boat Design
- ▶ Hydrodynamic Analyses
- ▶ Intact and Damage Stability
- ▶ Acoustics Analyses
- ▶ Signature Reduction

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