



AEROSPACE & MARINE ENGINEERING

# H11 ABYSSALIS™

Persistent deep-ocean science without a crewed pressure cabin.

|             |                                                        |
|-------------|--------------------------------------------------------|
| DOCUMENT ID | H11-TD-H11-ABYSSALIS-2026-01                           |
| PUBLICATION | Technical Publication Series - Edition 1.0 - July 2026 |
| STATUS      | Architecture and technical concept brief               |
| OWNERSHIP   | H11 Systems Enterprises                                |

CONFIDENTIALITY: Public technical overview. Detailed engineering parameters, manufacturing data, source code, and proprietary implementation records are not disclosed in this edition.

SECTION 01

# Executive System Overview

H11 ABYSSALIS combines streamlined pressure architecture, low-noise electric propulsion, wave-field navigation, and exchangeable payload sections for deep-ocean research missions.

|                   |                                                                                         |
|-------------------|-----------------------------------------------------------------------------------------|
| SYSTEM            | H11 ABYSSALIS™                                                                          |
| DOMAIN            | Aerospace & Marine Engineering                                                          |
| PRIMARY PURPOSE   | Autonomous abyssal survey submarine                                                     |
| TECHNICAL POSTURE | Architecture-stage system for structured evaluation, prototyping, and pilot development |

SECTION 02

# Operational Problem Statement

Work in deep-ocean habitat surveys and cable-route and seabed mapping requires a dependable way to follows planned survey corridors, adapts to measured terrain and current conditions, collects georeferenced acoustic and optical observations, and returns a complete mission record.. Conventional implementations can separate sensing, control, physical hardware, data handling, and operator decisions into disconnected layers. H11 ABYSSALIS™ addresses that integration problem through one defined architecture with explicit interfaces and review points.

## Operational need

ABYSSALIS is a quiet long-endurance autonomous submarine designed to map the seabed, document habitats, and survey remote ocean environments with traceable mission data.

## SECTION 03

## Intended System Function

It follows planned survey corridors, adapts to measured terrain and current conditions, collects georeferenced acoustic and optical observations, and returns a complete mission record.

### Confidentiality boundary

This public technical document intentionally excludes operating logic, internal architecture, subsystem relationships, control sequences, engineering parameters, source materials, manufacturing methods, and implementation details. Those materials remain confidential H11 intellectual property and may be reviewed only under an appropriate written agreement.

## SECTION 04

## Public Capability Profile

- Long-endurance autonomous survey
- Low-noise electric propulsion
- Seabed acoustic and optical mapping
- Modular science payload bay
- Mission health and data provenance

## SECTION 05

## Strategic and Engineering Advantages

- Purpose-built for unmanned endurance
- Real physical sensor and propulsion layout
- Designed for civilian science and survey work
- Combines the principal operating layers inside one traceable system architecture.
- Supports staged evaluation, subsystem testing, and controlled pilot development.

## SECTION 06

## Differentiation and Value Proposition

The distinctive value of H11 ABYSSALIS™ is the unified capability direction represented by purpose-built for unmanned endurance, real physical sensor and propulsion layout, designed for civilian science and survey work. Its differentiation is presented at a system level without disclosing confidential mechanisms, internal sequencing, control methods, subsystem relationships, or implementation architecture.

## SECTION 07

## Confidentiality and Protected Information

Detailed designs, equations, algorithms, operating logic, component specifications, tolerances, process conditions, control laws, software methods, diagrams, and engineering records are deliberately omitted. Publication of this overview does not grant a license or imply authorization to reproduce the system.

## SECTION 08

## Application Domains and Stakeholders

- Deep-ocean habitat surveys
- Cable-route and seabed mapping
- Geological observation
- Long-duration environmental monitoring

### Potential stakeholders

Government programs, industrial organizations, infrastructure operators, research institutions, technology partners, specialist manufacturers, and system integrators may evaluate the architecture according to their operating requirements.

## SECTION 09

## Development and Deployment Framework

- Architecture review and use-case definition
- Requirements, interfaces, and measurable success criteria
- Subsystem model or bench prototype
- Controlled integrated pilot
- Independent validation and documentation
- Deployment engineering, training, and lifecycle support

## SECTION 10

## Validation and Assurance Priorities

- Define measurable acceptance criteria for long-endurance autonomous survey.
- Validate subsystem interfaces before integrated operation.
- Record input conditions, configuration, outputs, anomalies, and operator interventions.
- Complete applicable safety, environmental, cybersecurity, and regulatory reviews.
- Use pilot evidence to revise the architecture before production or operational scaling.

## SECTION 11

## Maturity, Limitations, and Engineering Status

This publication defines an H11 system architecture and its intended capability direction. It is not a certification, test report, performance guarantee, procurement specification, or representation that every subsystem has completed prototype or field validation. Quantitative claims must be established through documented engineering analysis and controlled testing for the intended use case.

## SECTION 12

## Intellectual Property, Licensing, and Engagement

The H11 ABYSSALIS™ name, architecture, diagrams, operating logic, written description, and associated technical materials are proprietary to H11 Systems Enterprises except where third-party technologies are expressly identified. Licensing, customization, pilot programs, technology transfer, and engineering partnerships require a separate written agreement.

|                         |                                                                                       |
|-------------------------|---------------------------------------------------------------------------------------|
| <b>CONTACT</b>          | h11.mhaseeb@gmail.com   mhaseeb@h11.world                                             |
| <b>WEBSITE</b>          | <a href="https://h11.world">https://h11.world</a>                                     |
| <b>DOCUMENT CONTROL</b> | H11-TD-H11-ABYSSALIS-2026-01   Technical Publication Series - Edition 1.0 - July 2026 |
| <b>COPYRIGHT</b>        | © 2026 H11 Systems Enterprises. All rights reserved.                                  |