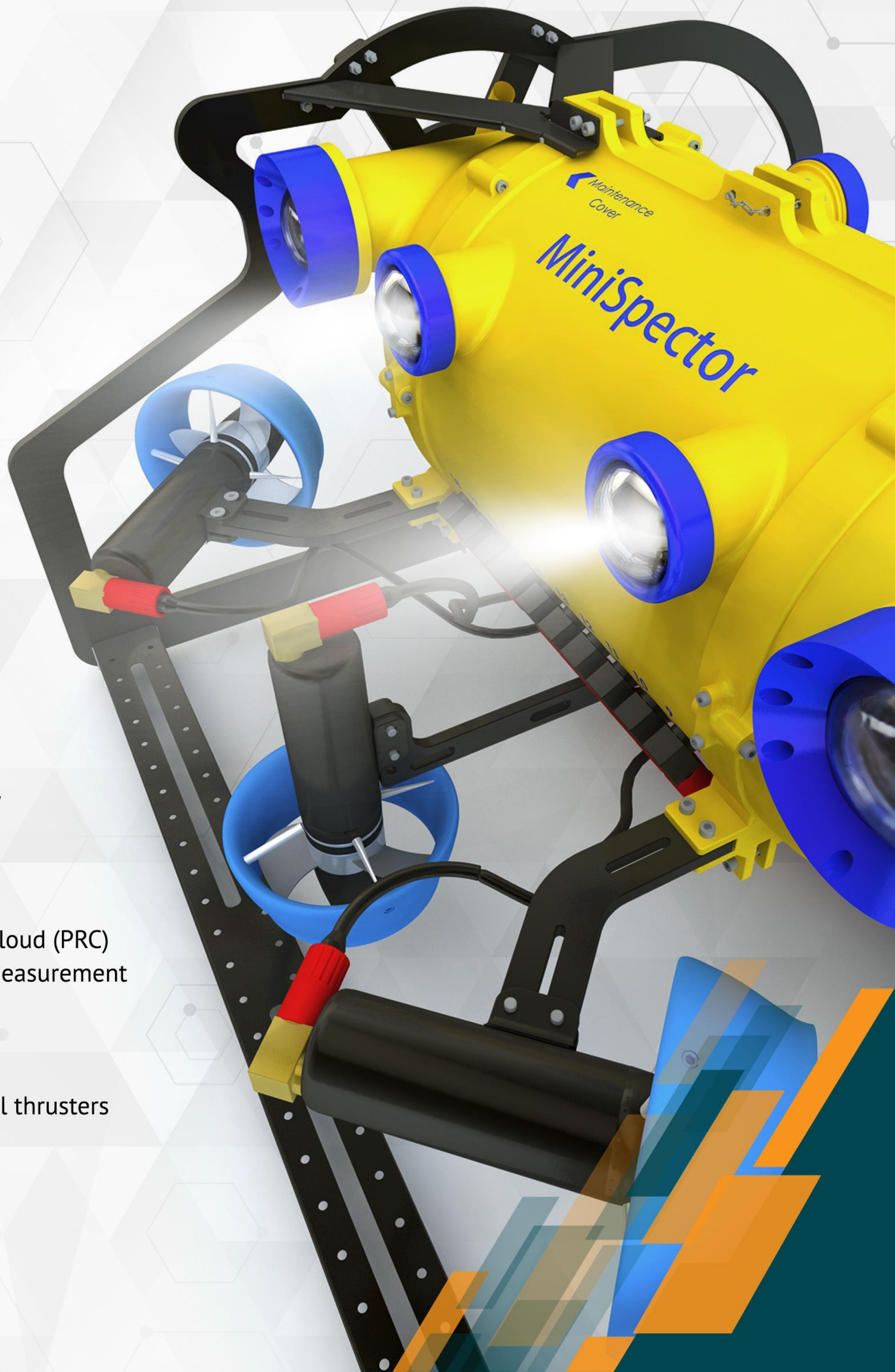


MINISPECTOR®

TECHNICAL SPECIFICATION



MOBILE

Easy to transport and deploy



ACCURATE

Built-in 3D Photo Realistic Cloud (PRC)
for highly accurate subsea measurement



STABLE

Seven horizontal and vertical thrusters



Part of the MCS Group
mcsoil.com

OVERVIEW

Our **MiniSpector®** mini ROV has been developed and built in-house to provide a small, nimble underwater inspection and metrology drone. Its ability to withstand higher currents than other similar systems on the market means it can deliver tasks normally carried out by larger inspection ROVs.

In-built 3D Photo Realistic Cloud (PRC) technology means the MiniSpector® provides highly accurate measurements to the nearest millimeter and degree.

OUR APPROACH

MiniSpector® applies the latest hardware, software and vehicle control to perform a wide range of inspection tasks. It can be launched from a platform or small vessel and has significantly lower power requirements than a larger ROV.

FEATURES AND CAPABILITIES

- Foam-less design.
- Dual direction inspection.
- Umbilical fiber optic.
- Payload up to 14Kg.
- Embedded PRC System.
- Forward speed up to 3kts.
- Auto depth control.
- Auto heading control.
- Pitch hold and Roll hold controls.
- Embedded Cathodic Protection System.

BENEFITS

- It's easy to transport, deploy and power resulting in a flexible solution which saves money.
- High levels of accuracy and 3D technology gathers precise information for planning, construction and maintenance.
- Seven vertical and horizontal thrusters provide full control, stability and maneuverability.

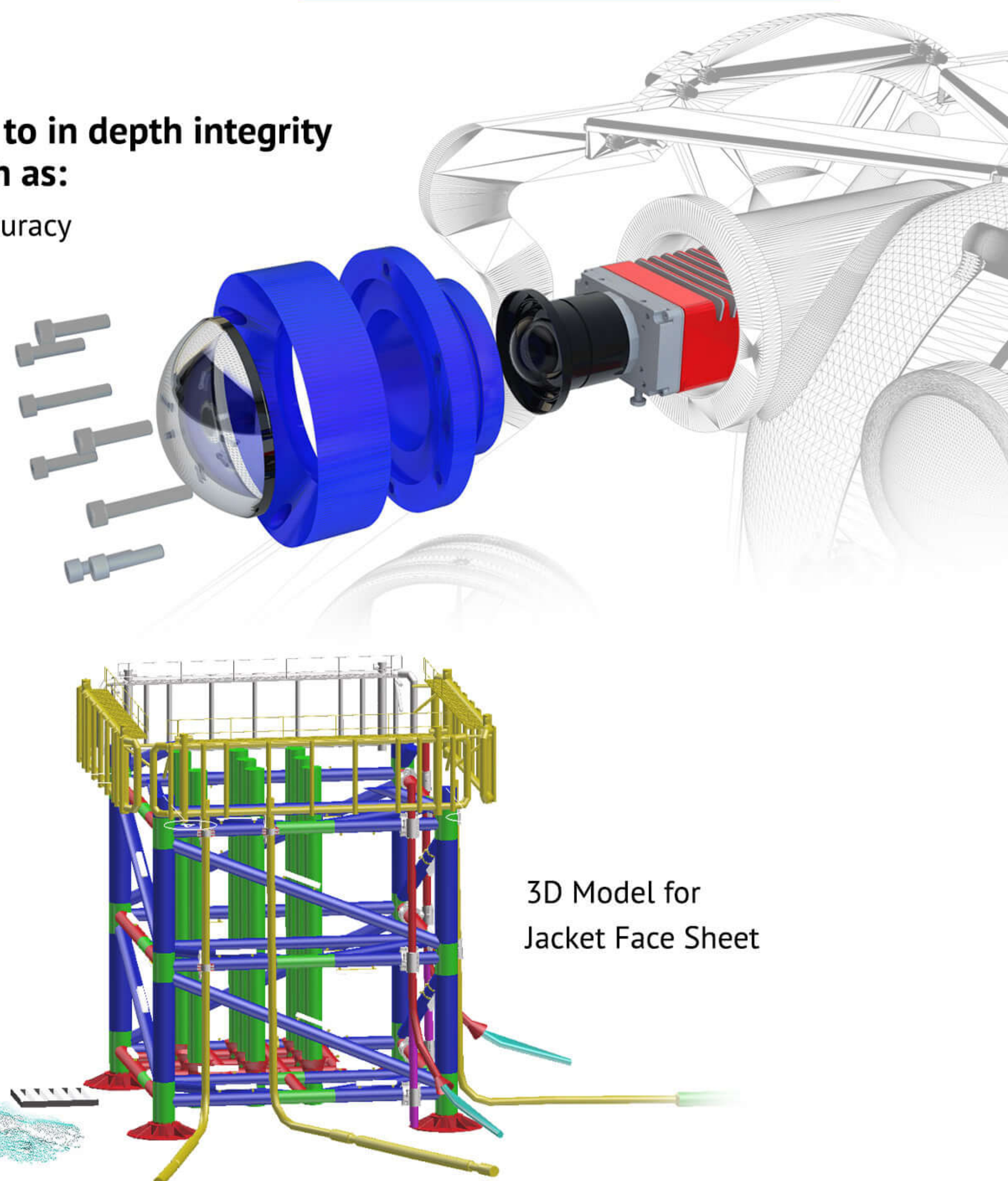
TO PERFORM THE INSPECTION TASKS:

- HD GVI / CVI.
- 3D Photo Realistic Cloud (PRC).
- Contact / Proximity CP.
- UT (Ultrasonic thickness reading).
- Cleaning to bare metal.
- Marine growth removal.

MiniSpector® provides a level of inspection data leading to in depth integrity assessment and lifetime extension of existing assets such as:

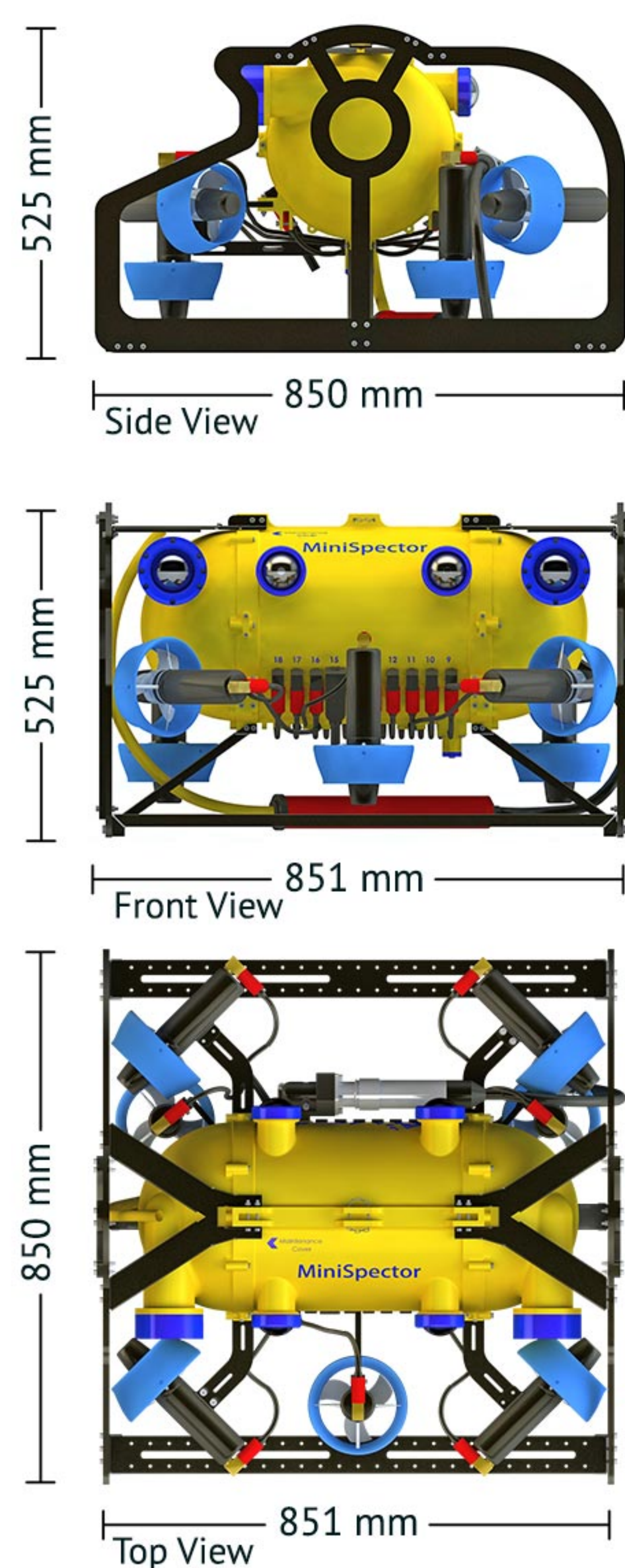
Producing design drawings for subsea structures up to fabrication accuracy and creating as-built models of its current condition.

It uses a platform approach to gather precise 3D reference for dimensions and features including position and orientation for all future construction and maintenance.



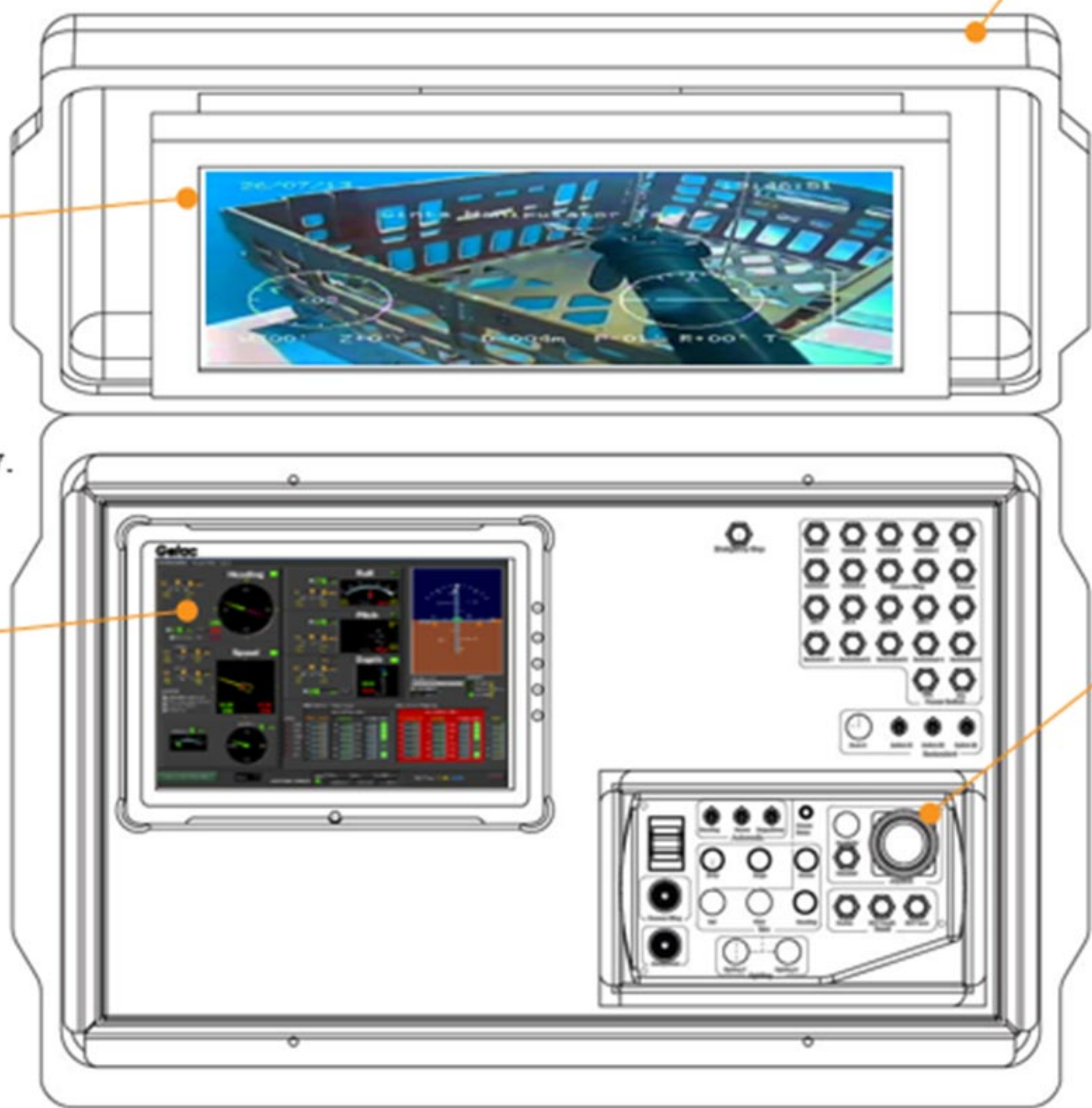
3D Point Cloud Model

3D Model for Jacket Face Sheet

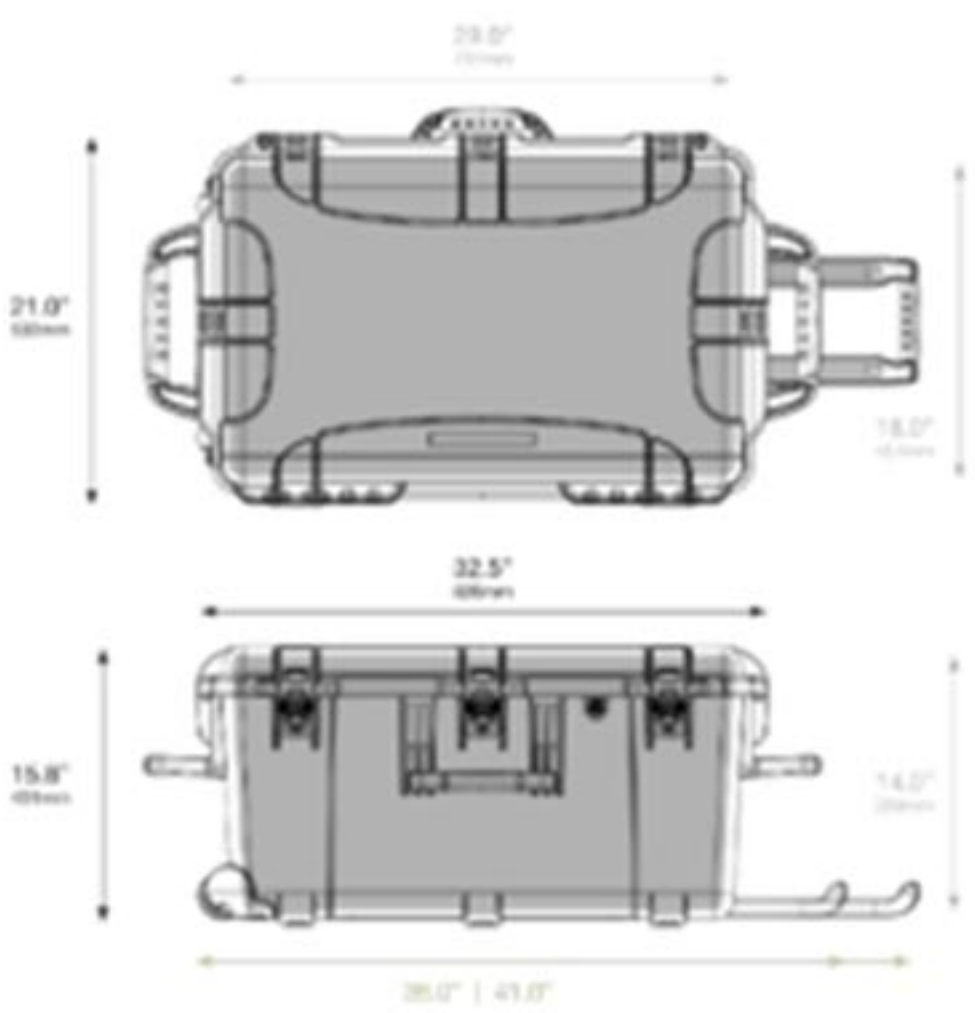


Control Console case

- **Display**
 - 24" FHD
 - 1600 nits, sunlight readable
 - Rugged, IP66
 - Camera View, Video Overlay.
 - Weight: ~10 Kg
- **Tablet**
 - 12.5" FHD
 - 1200 nits, sunlight readable
 - Rugged, IP65
 - Pilot software
 - 329.5 × 238 × 24 mm
 - Weight: 1.8 Kg



- **Case**
 - Dimensions: 32.5" × 21" × 15.8"
 - Weight: 11.36 Kg
 - Wheeled, Rugged, IP67



- **Hand Control Unit**
 - Dimensions: 263 × 147 × 110 mm
 - Weight: ~1 Kg
 - IP65
 - Full control 6 DOF
 - Camera Tilt/PAN
 - Manipulator control



VEHICLE DIMENSIONS

Length	850 mm
Height	525 mm
Width	851 mm
Weight	45 kg
Payload	14 kg

DEPTH

Depth	300 msw
Tether Length	300 m

POWER

Propulsion	8 KW
Max. Surge, heavy and sway velocity	3 kts for each
Max. bollard thrust	Surge ±38 kg f Sway ±38 kg f Heave -30 -> 50 kg f
Maneuverability	6 D.O. F
Power Source	220 VAC - Single Phase - 50/60 HZ

PAYLOAD

- Outland MP-100 Manipulator
- Cathodic Protection Probe.
- Ultrasonic Thickness Reading (UT)
- 3D Blue View Sonar
- 2D Imaging Sonar
- Z-T Caviblaster Gun
- Brush Cleaning Tool
- Flooded Member Detection

CAMERA

Camera 1	Colored camera, detachable PAN/Tilt/Zoom (FHD)
Camera 2	Colored Camera, Fixed (HD)
3D Image Scan <i>Precise Subsea Measurements</i>	- 2 x Embedded HD Cameras MCS Solution Photo Realistic 3D Cloud (PRC) - MCS Computer Vision

THRUSTERS

- 7 Tecnadyne thrusters providing full control on 6 D.O.F
 - 4 Horizontal thrusters for surge, sway, and yaw
 - 3 Vertical thrusters increasing vehicle maneuverability, stability, and payload capabilities

SENSORS

- All angel depth sensor
- Advanced AHRS providing Heading, Pitch & Roll
- Doppler velocity log (DVL) Sensor

AUTO FUNCTION

- Auto heading, auto depth, pitch hold and roll hold
- AI, Collision Avoidance

OPERATION

- MINISPECTOR ON-Deck station
- Vehicle launch and recovery system
- Tether management system



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