

Inspector V1 Crawler presentation

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LIQUID
SUBSEA TECHNOLOGIES

“Liquid Subsea Technologies” is a small robotic company based in Riga capital of Latvia. Founded in 2021 by Eugene J. Gnedins, an ROV Superintendent that has been working for more than 18 years for major subsea operating companies such as Saipem, Boskalis, DeepOcean, Fugro, Rovop, Bluestream Offshore etc...

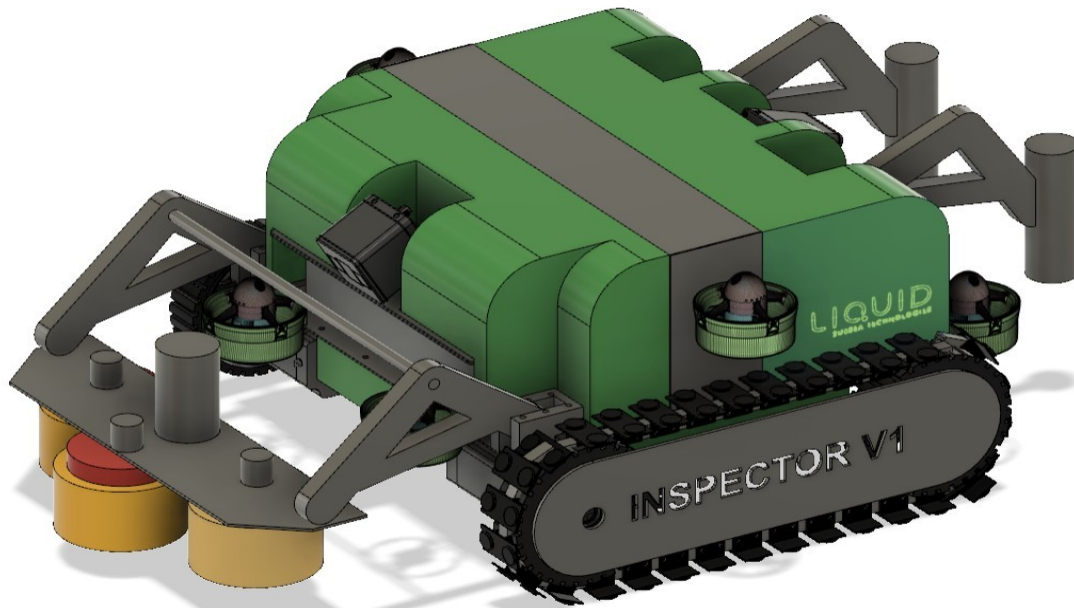
We have a small fleet of inspection ROV’s operating worldwide industries.

Windfarms – Marine Sector – Fish Farms – Renewables – Civil

Key aspects

- Safe remote operations
- Specific tooling designs and manufacturing
- Experienced in multiple tasks and industries worldwide
- Innovative cost cutting solutions

Inspector V1



Inspector V1

Is a crawler designed to perform high standard NDT inspections. Cutting the costs of preventative maintenance inspections on Windturbines, Ships, Dams and Watertanks.

How does it cut the costs?

Small team is needed to operate the vehicle.

Two operators for standard operations.

Additional CSWIP 3.4U ACFM level 2 inspector for certain operations.

No ROV support vessel is needed as all the operations
can be performed from the inside monopile it self.

Some of the operations can be performed from inside the monopile.

LOW mobilisation fees, the whole system comes in 4 pelicases, app. 1 pallet

Inspector V1 SPECIFICATIONS

- **Adhesion**
- **3 x 5kg directional thrusters**
- **2 x 10kg main thrusters**
- **Magnetic chain tracks**
- **(Rubber coated magnets)**
- **Weight in water app 15kg**
- **Total Adhesion 35 to 85kg**
- **(depending on surface)**
- **Propulsion**
- **2 x Nema 34 oil filled stepper motors**
- **12nm Nema 34 oil filled stepper motor for Brush tool**
- **1 x Nema 23 for tooling operation**
- ****Stepper motors are used to calculate**
- **the distance and measure with up to**
- **+ - 1mm precision**

Inspector V1 SPECIFICATIONS

- **Standard equipment**
- 2 x 6mp 720p Cameras
- 4 x 24v LED lights 5000k Lumen
- Cleaning brushes 350mm
- width, can be increased
- 600mm
- Measuring stick
- For marine growth measurements
- Lasers
- Depth sensor
- Compass
- Distance measurements encoder
- 125mm M14 Brass brushes
- 125mm M14 Steel brushes
- 125mm M14 Non abrasive
- Nylon brushes
- Variable buoyancy modules
- Depth rate 100m
- 100m heavy duty tether

Inspector V1 SPECIFICATIONS

- **Additional rented equipment**
 - CP – Cathodic probe
 - UT – Ultrasonic Thickness probe
 - ACFM
 - Alternated Current Field Probe
 - Digital EDGE DVR
 - Other specific sensors can be integrated
- ****Cleaning, GVI, Marine growth measurements, CP and UT operations**
- **can be performed at the same time.**

Inspector V1 Method of work outside the monopile

- Delivery of the equipment to WTG by CTV
- Setup Control Unit and DVR (220V) inside the WTG
- Connect Inspector V1 to the control unit
- Install the snatch lock on the WTG crane
- Lower the ROV with the crane
- Release the ROV with the snatch lock
- Recover the crane
- Lower the ROV past the transition piece if there is
- Clean the weld with wire brushes in the front and inspect in the AFT
- Clean the spot for UT and CP measurement / perform CP and UT
- Perform GVI and Marine growth measurements if required
- Perform additional cleaning operations if required
- Deploy Chasing M2 PRO ROV to complete CPS, anode, coating and Boat landing inspections if required
- Recover Chasing M2 PRO by the tether (8kg ROV)
- Recover Inspector V1 with crane and snatch lock

Inspector V1 Front view

Interchangeable Buoyancy
modules

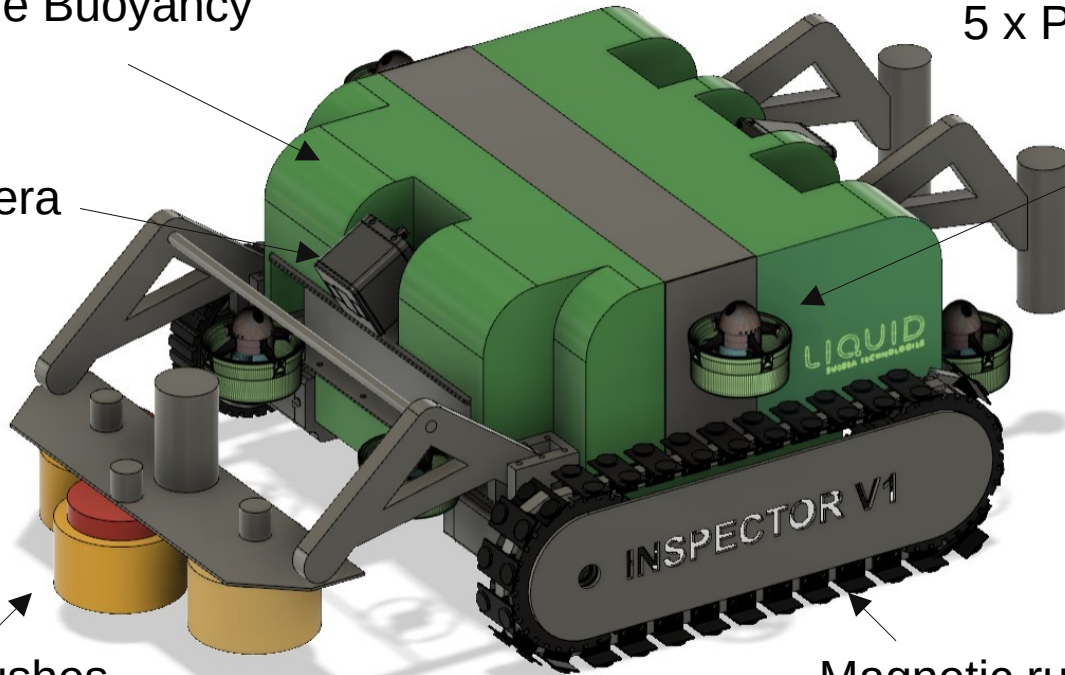
5 x Propulsion thrusters

720p Camera

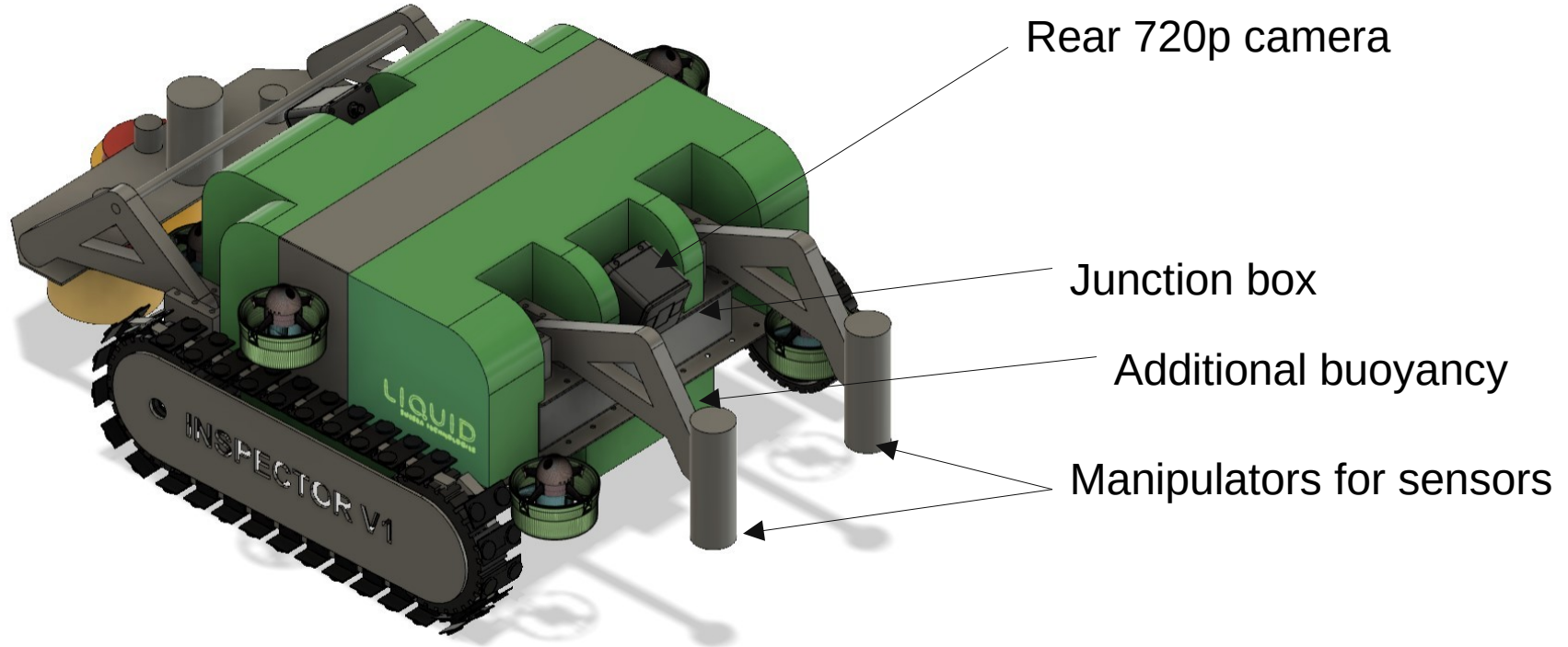
Max dimensions
90x60 cm

3 types of brushes

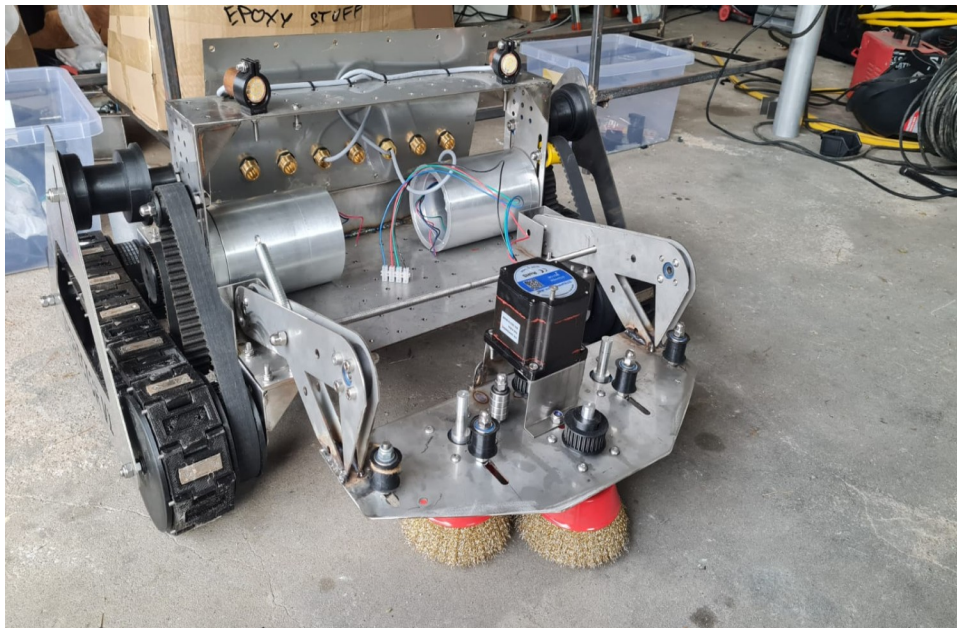
Magnetic rubber coated tracks



Inspector V1 Rear view



Current state of development



The system is at 70% completion and requires approximately another month for completion.

Currently trials on vessel hulls are ongoing and final R&D is performed.

No tests have been performed on windturbines so far.

Contacts

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