Upteko

Creating the future of drone systems

Vision

To radically improve the maritime sector
through innovative drone technology

Mission

To become the No.1 supplier, developer, and operator of drone systems for offshore operations, by adapting to the needs of our customers throughout every step of the process, with an agile approach

Uniqueness

What makes Upteko unique is our ability to develop software to solve a range of maritime challenges. By combing our knowledge of autonomous drones and the maritime sector, we are building the first autonomous drone system specifically for the maritime industry.

Experienced and dedicated team ready to execute

Mads Jørgensen
Director & Founder

- Global Business Engineer and MSc in Operations and Innovation Management
- Tech. Proj. Mgmt. experience from Siemens Wind Power and creating partnerships in Silicon Valley
- Now: Business development, partnerships, fundraising, finance, and business strategy.

Sebastian Duus
Director & Founder

- Founder and partner in sister startup Creative Sight since 2010
- Technical experience in custom building drones and creating hardware solutions
- Now: Lead on development of products, technical lead in partnerships and business strategy.

Benjamin Mejnertz
Director & Founder

- Founder and partner in sister startup Creative Sight since 2010
- Blacksmith and operational experience in running drone operations and organizing pilots. Drone consultant for maritime companies.
- Now: Sales and business development, networking, product management and business strategy.

Mogens Hess
Chairman of the Board

- Founder of several large international companies.
- Previous chairman of the board at CREADIS. Bringing them from 30 to over 600 people.
- Now: Lead the Upteko in the right direction, with a special focus on raising capital and increasing sales.

Per Breum
Robot System Engineer

Allan Fyhn Nielsen
Business Support

Vincent Klyverts Tofterup
Technical Project Engineer

Mathias Witten Madsen
Drone Engineer

Angshumita Deka
Business Developer

Gabriela Grabias
Project coordinator

Alex Feraru
Robotics Engineer

Frederik Nør Larsen
Robotics Engineer

Rune Meedom Cramer
Intern (Mechanical Engineer)

Nusrat Jahan Shaba
Intern (Legal)

Marcus Winberg
Intern (Project Assistant)

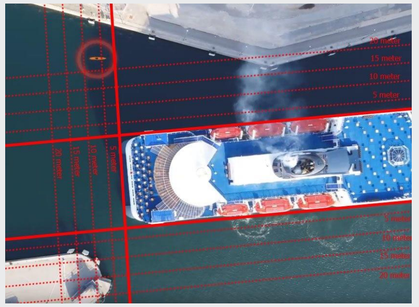
DIS
Access to 600 engineers through our investor DIS

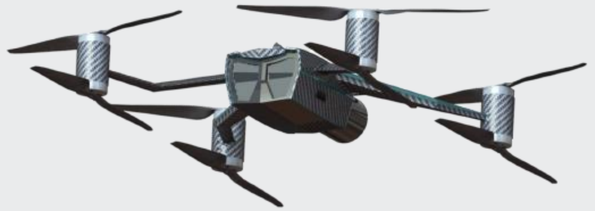
The Upteko drone system

- **Software/Applications.** The ambition is to build an ecosystem of possibilities, where the drone system can be used to build and implement applications across all industries. Through the system a crew on a vessel will be able to ask our drone to perform a variety of tasks, like inspections, assistance in docking or search and rescue missions.

- **The Drone.** There are no drone systems on the market today, that are custom made to serve the maritime industry. For this reason, Upteko is developing the first drone, focused on serving the maritime sector. The drone is safe, robust and built for the maritime environment and harsh weather, and customizable to include different payloads for different applications. The drone can operate in temperatures between -10 and +45 Celsius degrees.

- **Charging Station.** Is made for being installed in a harsh environment on large vessels or other suitable platforms across industries. The system can be installed on vessels without interfering with existing safety system and it allows the drone to autonomously dock itself for charging and storage when it is not performing its operations. All equipment will be internationally certified for the maritime industry.





EIC projects

OPAL: Operational Package Deliveries with Drones
In this project, the partners develop and test two helicopter drones to improve the freight and transfer of equipment to wind turbine engineers at sea. The prototype drone can carry 5-10 kg. The drones must either fly from a land-based warehouse to the offshore wind turbine or from the service ship that follows the technician. By using drones, the cost of servicing offshore wind turbines will be reduced.

Current status. Under development

OOD: Offshore Operating Drones
In this project, the partners will combine known sensor and drone technology that in a new way, can collect data that can give gas leak alerts. The finished product will be a drone that can be controlled by a drone operator from a ship to detect potential leaks on offshore platforms. Along the way, the partners will test the combined drone and sensor technology in blowing weather for up to 15 meters per second. The solution will later be developed so that the technology can be used in many other places in the offshore industry.

Current status. Under development

Partners. ENERGY INNOVATION CLUSTER, SIEMENS Gamesa RENEWABLE ENERGY, Ørsted, ESVAGT SAFETY & SUPPORT AT SEA, UPTEKO

OPAL

Challenge

Most service tasks in connection with offshore wind turbines are performed in the nacelle, which, among other things, houses the offshore wind turbine's generator, gearbox and braking mechanism. When service technicians work in the nacelle of the wind turbine, there may be a need for deliveries of additional equipment that the technician lacks. These can be, for example, bolts, nuts or special tools, which in some cases can be delivered from the service ship that follows the technician at sea. If the equipment is not on board, it must be picked up on land and it requires sailing time.

Idea for solution

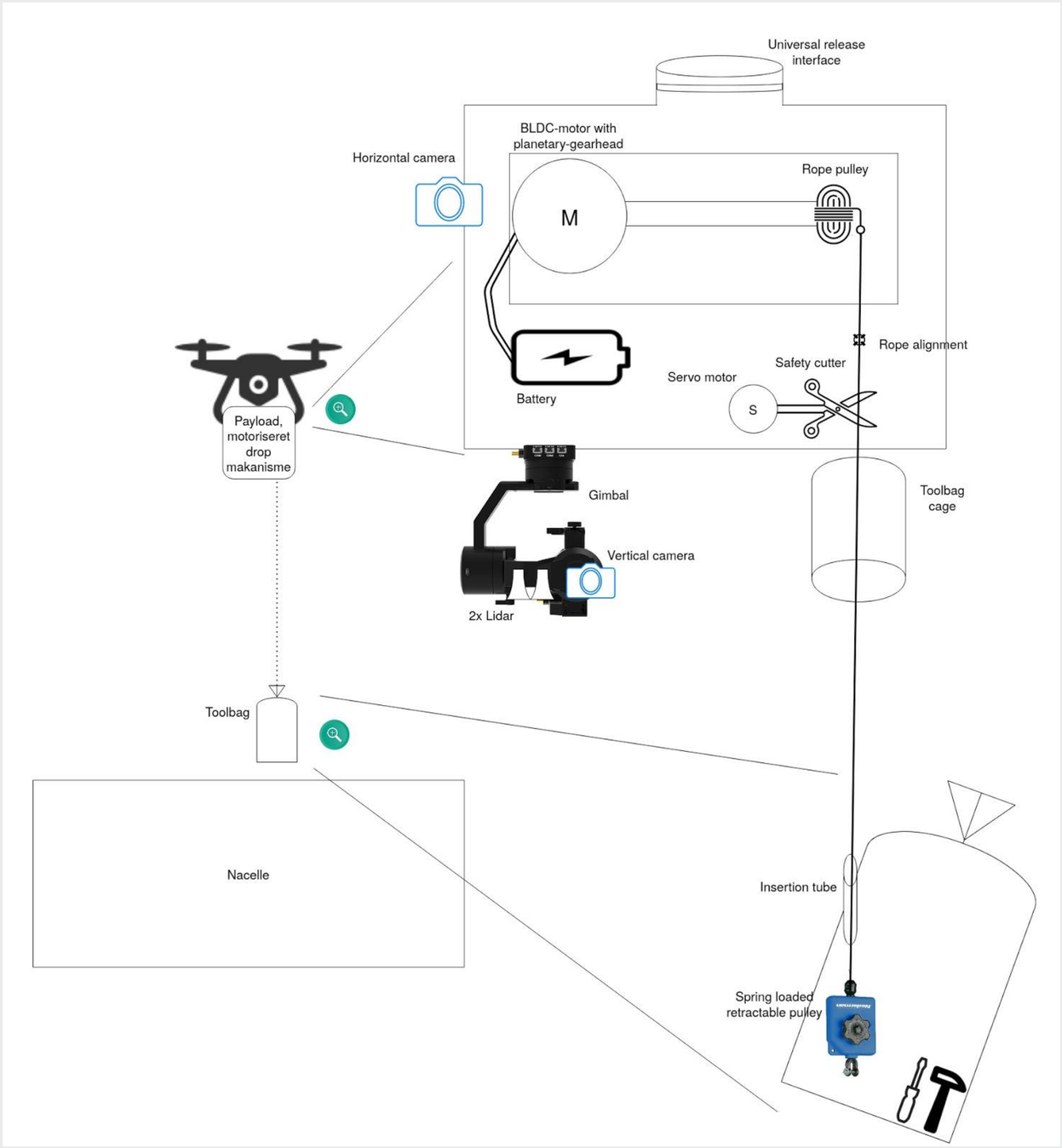
In the project *Operational package deliveries with drones* , the project partners develop and test two helicopter *drones* that will improve the freight and the transfer of equipment to offshore wind turbine technicians. One drone will be able to carry up to 30 kg - the other 5-10 kg. The drones must either fly from a land-based warehouse and out to the offshore wind turbine or from the service ship that follows the technician. By using packing drones, the cost of servicing offshore wind turbines will be reduced.

The Process

Duration: Ends December 2020 Output: Test flight off-shore, test drop onshore	Duration: 3 months Output: Demonstration flight where we deliver 2kg package from ship to turbine	Duration: 5 months. Output: Deliver package off-shore manually	Duration: 4 months Output: Deliver package off-shore autonomously	Output depends on Phase 1 to 3

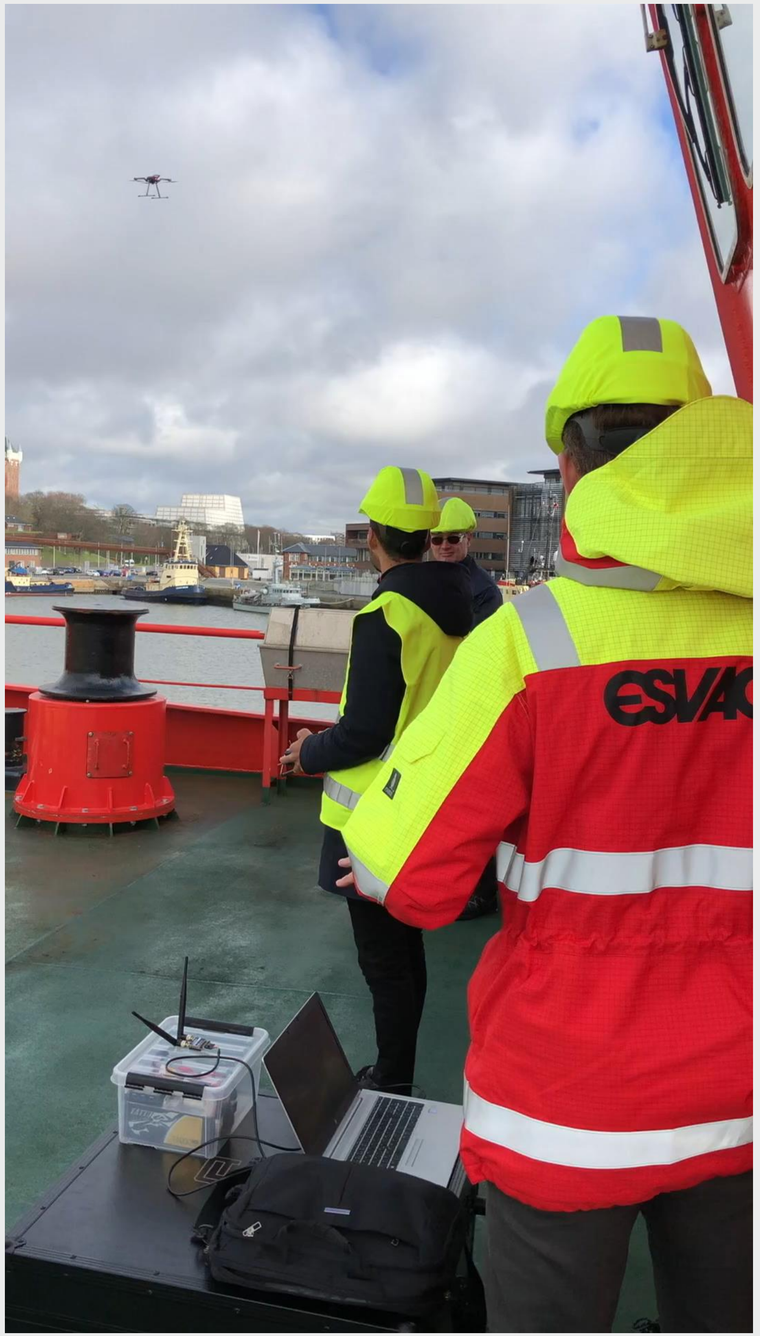
The goals for Upteko in OPAL is:

1. Manual take off and landing from ship. (Done)
2. Build and test Release mechanism for proof of concept. (Done)
3. Deliver packages from ground to top of a building. (Later this week)
4. Manual take off and landing offshore. (January)


Universal release interface
BLDC-motor with planetary-gearhead
Horizontal camera
Rope pulley
M
Rope alignment
Safety cutter
Servo motor
S
Battery
Payload, motoriseret drop makanisme
Gimbal
Toolbag cage
Vertical camera
2x Lidar
Toolbag
Nacelle
Insertion tube
Spring loaded retractable pulley

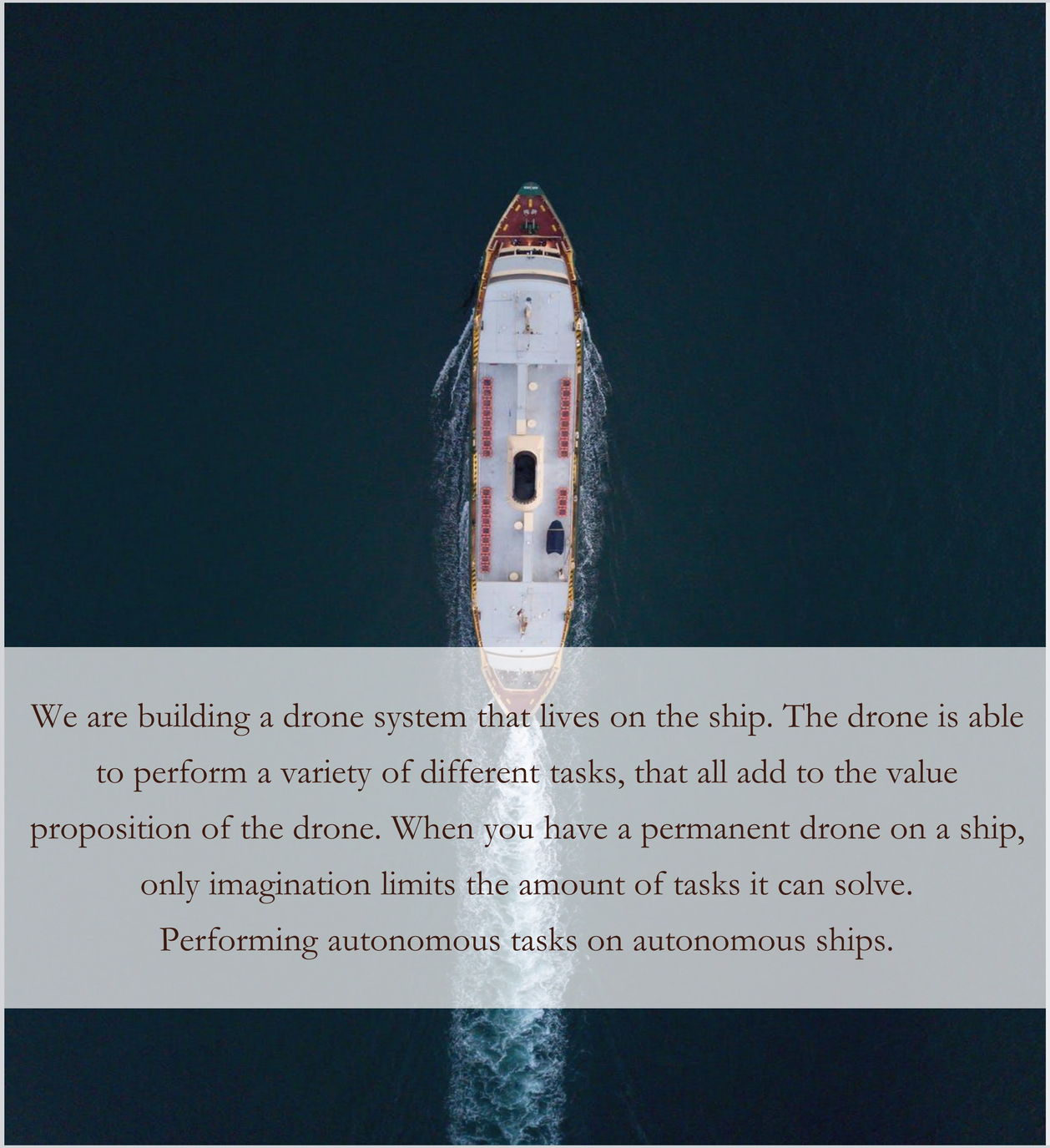
1. Manual take off and landing from ship.

Video



2. Build and test Release mechanism for proof of concept.

Video



We are building a drone system that lives on the ship. The drone is able to perform a variety of different tasks, that all add to the value proposition of the drone. When you have a permanent drone on a ship, only imagination limits the amount of tasks it can solve.

Performing autonomous tasks on autonomous ships.

Other Maritime Applications under development

Docking Helps to dock ships into ports in a fast, safe, and precise manner.

Search & Rescue Increases safety by using a thermographic camera which can detect people in open waters day or night.

Inspection Performs vessel inspections to safety equipment, cargo lashing or search for external damages

Focus for V1

Temperature detection Identifies fire hazards.

Pirate check Scans for potential pirate attacks.

Oil spills Locates and maps oil spills.

Cargo load Monitors cargo loading and unloading on a container ship.

Autonomy Performs autonomous tasks on autonomous ships.

Wind power - Inspections

Challenge. Today, Upteko already offers manual inspections that we fly with our own pilots. We have a decade of experience in using drones for inspections and use solutions from our software partners to process the images. We have already conducted inspections on wind turbines in Norway and are currently testing various solutions for offshore and onshore wind turbines. We are currently talking to the Danish company World Marine Offshore about conducting offshore inspections from their vessels for various clients in Europe.

Our Solution. We aim to deliver fully autonomous inspections of offshore wind parks by installing our autonomous drone system near offshore turbines. By using this solution, operations and maintenance (O&M) companies can perform routine inspections of their wind turbines without the cost of a crew vessel sailing to the offshore wind park and while taking advantage of downtime on turbines.

Current status. Under development

Expected finalization. Nov 2020

Partners. Vestas, World Marine Offshore

Value Proposition

- **Time saved:** Significant reduction in downtime by 66 % from 6 to 2 hours
- **Cost Saved**: Downtime-related savings per inspection per MWh = (6 hours * 216 euro) - (2 hours * 216 euro) = 864 euro
- Average turbine produces 4,4 MWh which means savings per inspection are allmost 4.000 Euro per inspection on average.
- Inspections are usually made twice or more per year on each turbine.

Thank you for your attention.

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