

ALTOMAXX

CASE STUDY

DRONE-INTEGRATED PUMPING SYSTEM FOR OFFSHORE OIL PLATFORM INSTALLATION

As part of the West White Rose Project, Cenovus Energy was facing a challenge during the offshore installation of topsides. The platform's concrete gravity structure (CGS) was towed to site over 400 km into the North Atlantic and put into site for well over a week prior to topsides installation. During this period, there was concern that seawater could accumulate in the four casting rings (the contact points where the CGS and topside would ultimately be mated), making it difficult for welders to complete installation safely.

Ensuring the casting rings were dry was essential to avoid any undue safety risk, and delays to project. Traditional solutions would have required personnel to physically access the rings in offshore conditions—an approach that carried both logistical and safety challenges.

"A drone solution for dewatering the CGS casting rings was a novel and effective way to ensure a safer topsides installation. The collaborative effort between Cenovus and Altomaxx exemplifies the innovative thinking we encourage to prioritize personnel safety."

*– Chris LaPorte, Cenovus Energy Senior Engineer
Offshore Hook-up & Commissioning*

CHALLENGE FROM CENOVUS

Develop an innovative solution that is drone based, that can be flown from a keeling supply ship, 400km in the North Atlantic, in the middle of the night in up to 60km/hr winds, pumping multiple casting rings at once and be able to discharge up to 1200 L of water in under 60 minutes.

Doing so would:

- Ensure the safety of installation crew not requiring them to be on the structure.
- Allow welders a safe environment to complete installation while reducing risk.
- Prove out a new concept on an innovative approach to safety.

"Upon initial conversations with Chris LaPorte when he came to Altomaxx with the idea, we felt it was viable; however the ask list was extensive and we had never seen that application before. Being offshore Newfoundland, it's the perfect harsh environment to develop and beta test true simulations"

– Steve Priestley, Altomaxx Chief Operating Officer

ALTOMAXX TAILORED SOLUTION

Over the course of months, Altomaxx designed, built, and tested multiple payloads, pumping systems and flight path techniques to qualify the concept.

The solution consisted of:

- Testing multiple lightweight water pumps engineered to be carried and powered by an external power source from the drone.
- Addition of an FPV (first-person view) camera mounted on the bottom of the drone to allow operators to align the pump precisely with the casting ring.
- Custom integration to ensure the full system remained within the maximum take off weight (MTOW) of the drone.
- Enhanced communications for potential loss of signal and to not interfere with onboard marine vessel systems.
- Building of a full-scale wooden replica of a casting ring for training, testing weather limits, night operations and optimize flight path approach.



"With the support of the Cenovus WWR Engineering and Safety teams, Altomaxx was able to solve a critical problem, while minimizing risk using an outside the box innovative method."

*– Steve Priestley, Altomaxx
Chief Operating Officer*

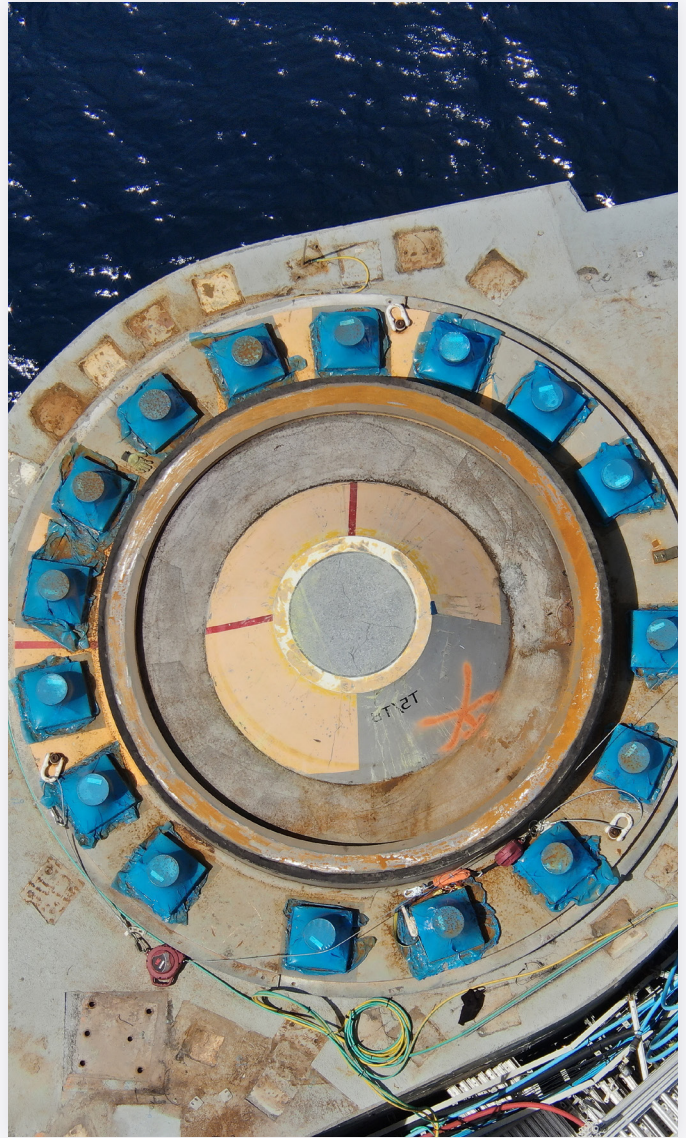
RESULTS / IMPACT

The solution was successfully deployed to site with multiple Altomaxx crews on the supply ship Skandi Mover the day before the mating operation. Altomaxx gained the ability to deploy multiple drones at once displacing water from a casting ring with a potential maximum volume of 300L to under 1 cup in less than 10 minutes from a distance of 200 metres away.

Key outcomes included:

- **Leadership:** The Cenovus Engineering team demonstrated leadership in unique problem-solving standing behind Altomaxx while they tested and optimized a drone based solution in the harshest of conditions.
- **Enhanced Safety:** No personnel were required to access the structure directly while still obtaining optimal results, significantly reducing time and risk.
- **Proof of Concept for Future Applications:** Altomaxx and the project demonstrated the feasibility of drone-integrated solutions for unique offshore and offshore challenges, opening opportunities for wider adoption.





"Our client was looking for an innovative solution to a complex engineering problem, and this project is a prime example of that. By using a unique drone application, we were able to successfully dewater the casting rings without putting personnel in harm's way, setting a new standard for safety and efficiency."

– Steve Priestley, Altomaxx Chief Operating Officer

LOOKING AHEAD

By proving that drones can perform precision tasks in the harsh offshore environment of Newfoundland and Labrador, Altomaxx and Cenovus have set a new benchmark for safety and innovation in energy projects. This pioneering solution has applications well beyond West White Rose, from offshore platforms to other large-scale marine and industrial installations where human access is limited or unsafe.

ABOUT ALTOMAXX TECHNOLOGIES

Founded in 2018 in Newfoundland and Labrador, Altomaxx Technologies is a global leader in offshore and unique drone services. Altomaxx is DNV, Lloyds Registry and ABS certified for Remote Inspection Techniques of Maritime Vessels and Floating Platforms. Altomaxx has a number of drone pilots and crews trained, certified, and with offshore operations experience allowing the energy sector to thrive safely with the latest of inspection techniques. As well Accredited by the Standards Council of Canada (SCC) for ISO 17065:2012, Altomaxx is the only certification body worldwide for ISO 21384-3 – Unmanned Flight. These unique credentials and certifications have allowed Altomaxx to grow to four offices across Canada as well an office in Dublin IR, Odense DK, and Abu Dhabi UAE. Altomaxx operates projects globally on an annual basis.



1-833-258-6629



inquiries@altomaxx.com



altomaxx.com