



Elia Group tests long-range drones for inspecting power lines

A drone helicopter has been used for the first time for long-range inspections of power lines near Trois-Ponts. These BVLOS (beyond visual line of sight) drones may ultimately replace inspections using helicopters. This not only reduces the associated risks, but also reduces our ecological footprint while increasing the efficiency of these necessary inspections. The many changes being brought about by the energy transition are prompting Elia Group to develop innovative solutions and techniques – be it in terms of system operation, grid development, infrastructure or maintenance.

- Elia Group has 19,000 kilometres of high-voltage lines in Belgium and Germany.
- Lines are checked regularly to ensure security of supply.
- Using drones can make this work safer, more environmentally friendly and more efficient.
- An autonomous drone weighs up to 85kg and has a range of 100 kilometres.

This is the first time Elia Group is testing a BVLOS drone in Belgium for the long-range inspection of power lines. A BVLOS drone has a range of around 100 kilometres. By law, drones must always remain within sight of the pilot. A special permit was obtained for this test. The aim is to replace some conventional inspections with drone inspections by 2023. A conventional inspection involves viewing masts and lines from the ground, climbing masts or flying a helicopter over the lines. That is time-consuming and generates CO2 emissions – and not without its risks. The use of BVLOS drones could address these issues. Long-range drones can also offer added value for quick response work in the event of outages.



European regulations recently made long-range drone flights possible. Within Elia Group, we want to get started quickly and test the technology on a small scale first. While BVLOS drones fly independently, a lot of advance preparation is needed, such as radio communication, landing sites and mapping out all possible risks on the ground. This test phase allows us to learn a lot and hopefully expand the possibilities step by step.

Michiel Uwaerts – Programme Manager Innovation Implementation



If we want to achieve our ambitions for a carbon-neutral society by 2050, our power grid must be in top condition and we must minimise our carbon footprint as much as possible. This is where innovative technology can play a crucial role. In both Germany and Belgium we are testing the maturity of digitalising our powerline inspections by using drones for data capturing and AI for data analytics. We want to work in



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a more targeted, safer and secure way and thus be able to inspect and maintain our assets as efficient as possible to provide a stable, sustainable and affordable power supply.

Arya Fazilat - Project Leader Innovation

During the test phase, we are working with various partners to share experience and knowledge. The test flight in Trois-Ponts was carried out in conjunction with main contractor Vansteelandt BV with operational partners EuroUSC, SwissDrones, YellowScan and Skeydrone. An earlier BVLOS flight took place in Germany this past winter. Small drones are already being used in Belgium to inspect pylons. Artificial intelligence is then used for both applications to gain an accurate and up-to-date view of the state of our high-voltage grid.



Over Elia Group

One of Europe's top five players

Elia Group is active in electricity transmission. We ensure that generation and consumption are balanced around the clock, supplying 30 million end users with electricity. With subsidiaries in Belgium (Elia) and north-east Germany (50Hertz), we operate 19,271 km of high-voltage connections. As such, our group is one of Europe's top 5. With a reliability level of 99.999%, we give society a robust power grid, which is important for socio-economic prosperity. We also aspire to be a catalyst for a successful energy transition towards a reliable, sustainable and affordable energy system.

We make the energy transition happen

By expanding international high-voltage connections and integrating ever-increasing amounts of renewable energy generation, Elia Group promotes both the integration of the European energy market and the decarbonisation of our society. At the same time, Elia Group is innovating its operational systems and developing market products so that new technologies and market parties can access our grid, thus making the energy transition happen.

In the interest of society

As a key player in the energy system, Elia Group is committed to working in the interest of society. We respond to the rapidly changing energy mix, i.e. the increase in renewable energy, and constantly adapt our transmission grid. We also ensure that investments are made on time and within budget, with a maximum focus on safety. When we carry out our projects, we manage stakeholders proactively by establishing two-way communication with all affected parties very early on in the development process. We also offer our expertise to our sector and relevant authorities to build the energy system of the future.

International focus

In addition to its activities as a transmission system operator, Elia Group provides various consulting services to international customers through its subsidiary Elia Grid International (EGI). Elia is also part of the Nemo Link consortium that operates the first sub-sea electrical interconnector between Belgium and the UK.

Elia Group is a listed holding company whose core shareholder is the municipal holding company Publi-T.

More information: eliagroup.eu

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