

Unifly: architect of the drone ecosystem

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From military air traffic controllers to pioneers in safe drone traffic

The drone ecosystem is growing fast. Drones are now used for inspections, logistics, surveillance, surveying and a wide range of other applications. But how do we ensure that all these devices can operate safely within the same airspace?

That’s the challenge that Unifly has been working on for over ten years. What began as an idea conceived by two military air traffic controllers has grown into an international tech company that supports governments, ports and aviation organisations in the safe management of drone operations. Together with partners such as Sirris, Unifly is working towards a future in which drones have a real place in our airspace.



Building a solution to a drone problem that didn’t yet exist

Unifly saw opportunities in the drone ecosystem before the market even existed

Unifly was founded in 2015 by Jürgen Verstaen and Andres Van Swalm, two former military air traffic controllers. *‘We could see that drones would be used in more and more applications, but there was no system in place to manage that growing traffic safely,’* explains co-founder Jürgen Verstaen.

That’s why they developed the first version of their software as early as 2013. It was immediately noticed in an international innovation competition, and the young team finished second, ahead of several established players in the aviation sector.

‘Eurocontrol told us, word for word: “You have something very valuable here. You’ve got to do something with it”,’ says Verstaen proudly. This recognition gave them the confidence to continue developing their idea. Two years later, they set up Unifly.

Creating a drone ecosystem

Nowadays, it seems self-evident that drone flights should be recorded, monitored and coordinated. Things were different ten years ago. ‘*There was no market, no comparable product and no frame of reference. We first had to explain why such a solution was needed before we could sell it.’*

Unifly therefore started talking to public authorities, businesses and aviation organisations to demonstrate the need for coordinated air traffic management for drones.

Those efforts bore fruit. The company emerged as a key discussion partner within the European drone ecosystem and even contributed to the development of European regulations through EASA, the European Aviation Safety Agency. It was also instrumental in setting up various pilot projects that now serve as benchmarks for other European countries.

It is partly thanks to Unifly that Belgium has played a pioneering role in this field. *‘Close collaboration between businesses, research institutions and public authorities has made our country one of the pioneers in the field of drone integration,’* says Verstaen.

What is a drone ecosystem?

A drone ecosystem encompasses all the technologies, organisations, and processes required for drones to operate together safely and efficiently. Various parties play a role in this:

- Drone manufacturers
- Software developers
- Telecom operators
- Aviation authorities
- Ports and industrial companies
- Cyber security specialists
- Research and innovation partners

The more drones are deployed, the more important that cooperation becomes, because a drone is much more than just a flying machine: behind every flight lies a complex network of technology, regulations and digital systems. For Unifly, this digital aviation infrastructure forms the core of its operations.

Why safe drone traffic requires a different approach

Air traffic control systems have been in use in conventional aviation for decades. However, drones present new challenges. They fly at lower altitudes, are much smaller and use different communication technologies.

As soon as multiple drones are operating simultaneously in a port, industrial environment, or urban area, there is a need for coordination. Questions such as:

- Who is flying where?
- What operations are permitted?
- What are the risks?
- How can you avoid conflicts?

lie at the heart of the challenge that Unifly addresses. It developed a platform for **Unmanned Traffic Management (UTM)**. Among other things, this platform supports:

- Flight planning
- Real-time monitoring of drone flights
- Conflict and risk detection
- Management of no-fly zones
- Communication with operators
- Integration with existing air traffic control systems

The aim is simple: to ensure that drones can operate safely alongside other airspace users.

The Port of Antwerp-Zeebrugge as a real-life example

One of the best-known applications is located in the port of Antwerp-Zeebrugge. There, Unifly's technology supports the management of numerous drone operations every year. *'Many people think there aren't that many drones flying around yet. But at the port, we're talking about thousands of operations a year, so you need transparency and coordination,'* says Verstaen.

How does that work in practice? Drone operators have to submit their flight plans electronically. The competent authorities can approve these applications. During the flight, air traffic is monitored and the parties involved can react immediately if circumstances change.

The system therefore ensures that everyone is aware of what operations are taking place, what drones are active and where any risks may arise. This is becoming increasingly important now that drones are being used more frequently for applications such as inspections, surveillance, infrastructure management and logistics.

New challenges within the drone ecosystem

The continued growth of the drone ecosystem also brings with it new challenges. Verstaen: *‘The more systems you connect to one another, the more potential access points are created. At that point, cyber security becomes a crucial factor.’*

For Unifly, these are not merely theoretical issues. The company has been investing in research and innovation for years to keep its platform secure, reliable and future-proof, working with a variety of research and innovation partners, including Sirris.

An example of this collaboration is the European innovation project Drobotize. As part of this project, various partners are looking at how logistics processes can be further automated using drones, autonomous systems, AI, and digital twins. This involves linking various technologies and software platforms together.

Within Drobotize, Sirris therefore supports Unifly in strengthening its platform’s cyber resilience. Aspects being considered include cyber security, risk assessment, and the secure integration of different systems.

‘*Sirris is working with us to explore how we can make our software even more secure when it is integrated with other systems. This is essential in an environment where more and more technologies are becoming interconnected,’* Verstaen explains.

In this way, the project is helping Unifly to develop its technology further and prepare for future applications within the drone ecosystem.

Innovation requires strong partners

According to co-founder Jürgen Verstaen, Sirris’s added value goes beyond technical expertise. *‘Sirris actively contributes ideas. It looks beyond today’s technology and helps us to think about what will be needed in five or ten years’ time.’*

In addition, Sirris plays an important role within the innovation ecosystem, bringing companies together, supporting the development of project proposals and helping to establish new partnerships.

Verstaen: *‘What I appreciate about Sirris is that they listen. We work together to develop proposals and explore new opportunities. That interaction works really well.’*

For a company such as Unifly, which combines commercial activities with research and product development, this support adds significant value.

The next phase of the drone ecosystem

Verstaen’s view is that the sector is still in the early stages of its development. Cargo drones, autonomous operations, defence applications, and new forms of air mobility will become increasingly important in the coming years. This growth requires not just technological innovations but also strong national and international partnerships between businesses, research institutions, and public authorities.

Today, Unifly supports customers in Europe and beyond. One of its most prominent customers is NAV Canada, which is responsible for Canadian airspace. Unifly, NAV Canada, and Transport Canada were recently joint recipients of an international award for their work on integrating drones into airspace.

'If you really believe in something, you have to go for it. That's what we did eleven years ago, and we're still doing it today,' concludes Verstaen.

From drone traffic to a fully-fledged ecosystem

Drones are already an integral part of numerous industrial applications today. This growth requires not just innovative technologies but also secure systems and strong partnerships. With its expertise in drone traffic management, Unifly is helping to build on that foundation. Together with partners such as Sirris, the company is working to ensure that drones can be deployed safely, efficiently, and on a large scale within our airspace.

Are you working on innovation within the drone ecosystem?

Do you develop drones, software, digital services, or other applications for autonomous systems? Sirris supports businesses with its expertise in cyber security, AI, digital innovation, and collaborative projects.

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