

Aurora Luminaria: Revolutionising Entertainment in Malta Through Drone Light Shows



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*In the world of start-ups, innovation thrives where creativity meets practicality. Enter **Aurora Luminaria**, a Malta-based start-up venture aiming to redefine evening entertainment with mesmerising drone light shows. By combining cutting-edge technology, a passion for engineering, and a sprinkle of entrepreneurial grit, the team behind Aurora Luminaria is poised to light up the skies – literally.*

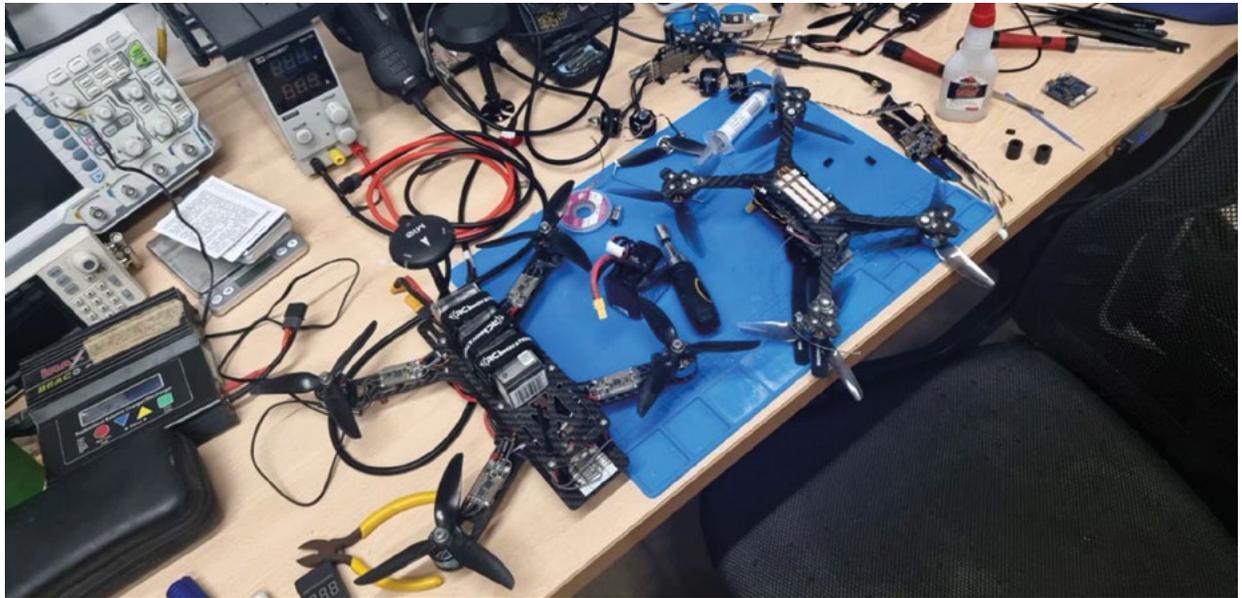
At a time when innovation continues to redefine entertainment, Aurora Luminaria, a Maltese start-up, is breaking new ground with synchronised drone light shows. Combining the latest technology with local ingenuity, this project promises to revolutionise how we experience events – from festivals to grand opening ceremonies. With prototypes under development and ambitious plans for the future, Aurora Luminaria is carving out a niche in Malta’s technological and creative landscape.

The team is currently made up of Christian Dalli and Zachary DeMarco, both of whom have an engineering background, but each is fluent in their own respective stream. Dalli, the project’s founder, specialises in printed circuit board design, electronic speed controller and motor design, and component selection. Meanwhile, DeMarco specialises in manufacturing techniques and 3D printing, computer-aided design and 3D modelling with generative design AI. The two collaborate well; although each person has their own dedicated roles, the knowledge and experience

of both team members overlap. This allows for double verification of the work conducted and for each to help the other when an obstacle arises.

INSPIRATION BEHIND AURORA LUMINARIA

Aurora Luminaria emerged from a blend of cinematic inspiration and technological potential. ‘The idea was born out of a fascination with swarm operations and synchronised drone technology,’ Dalli explains. ‘We were inspired by international start-ups and wanted to create something that would bring this technology to Malta. Our



Opposite: Aurora Luminaria as 1 of 7 start-ups at the DiHubMT inauguration, showcasing their research and development
Photo by Nathan Borg

Top: The first two drone prototypes
Photo by Christian Dalli

goal is to redefine local entertainment standards, making these light shows accessible and impactful.' Drawing from off-the-shelf hardware and innovative software design, the start-up aims to create a fully synchronised fleet of drones capable of breathtaking performances. The inspiration is as much about artistry as it is about showcasing Malta's technological capabilities.

The project's objectives are clear: develop a local fleet of drones for use in public events, festivals, and private functions, all while ensuring safety and accessibility. 'We want these drones to be available for public use, whether it's for a local feast or a corporate event,' says Dalli. The system is designed to be flexible, offering customisable shows tailored to client needs. From designing bespoke displays to managing permissions and logistics, Aurora Luminaria provides an all-inclusive solution.

'Our vision is to create an affordable and reliable service that eliminates the need to import these technologies from abroad,' the founder emphasises. By doing so, Aurora Luminaria hopes

to establish Malta as a hub for drone-based entertainment.

OVERCOMING CHALLENGES

Every start-up faces its fair share of challenges, and Aurora Luminaria is no exception. 'One of the biggest hurdles is navigating the legal landscape,' Dalli admits. The operation of multiple drones in synchronised flight requires special permissions and permits, and the local legal framework is still catching up to this emerging technology.

Technical challenges also abound. For example, the team recently switched to a new GPS system mid-way through the project, which required significant adjustments to both their hardware and software setup. Additionally, supply chain disruptions, such as delays in importing components, have posed difficulties and delayed their progress. 'We've faced setbacks, but each challenge has taught us valuable lessons and strengthened our resolve,' Dalli shares.

What sets Aurora Luminaria apart is its commitment to pushing the boundaries of drone technology.

'Our primary focus is extending flight times and enhancing synchronisation,' he explains. The current prototype can synchronise three to four drones, a number the team hopes to expand significantly in the near future.

Maintenance for these drones will be similar to that of single drones but scaled for larger fleets. Regular checks on propellers, batteries, and weather conditions are essential to ensure smooth operations. 'We're working hard to create a system that is both high-performing and user-friendly,' Dalli adds.

AFFORDABILITY AND ACCESSIBILITY

Aurora Luminaria aims to make its services as accessible as possible. Whether for public events or private functions, the team offers flexibility in pricing and operations. 'Clients can work with us to create a custom-designed light show with the flexibility of choosing the number of drones they want to employ, the show complexity, and its duration,' Dalli explains. This approach ensures that the service will be able to ➤



Left: The first prototype



Right: The second prototype, which is smaller and lighter than the first one

Photos by Christian Dalli



The first prototype with LED light module underneath

Photos by Christian Dalli



The third prototype with improved flight time



Building process of the third prototype

cater to a wide range of budgets and requirements.

Despite its relatively short journey so far, Aurora Luminaria has already achieved significant milestones. The project received a €25,000 grant through the TAKEOFF SeedFund Award (TOSFA), which has been instrumental in its development. Additionally, partnerships with organisations like DiHubMT have provided access to facilities, mentorship, and administrative support.

'We've successfully developed a proof of concept, demonstrating that our system works,' he says proudly. The prototype fleet can perform synchronised flights, showcasing the feasibility of the project. These achievements mark the first steps toward a full-scale launch.

LOOKING AHEAD

Aurora Luminaria has ambitious plans for the future. By the end of

the year, the team hopes to launch simple light shows to showcase their capabilities. 'Our ultimate goal is to participate in large-scale events by next year,' Dalli explains. Future developments will include expanding the fleet, improving synchronisation, and enhancing the drones' physical design to increase durability and flight times.

The team is also exploring additional funding opportunities to accelerate progress. 'We're committed to continuous improvement and innovation,' he states.

The impact of Aurora Luminaria's project on the local community could be transformative. 'Currently, there's nothing like this available locally,' Dalli explains. Event organisers often rely on foreign companies to provide drone light shows, a process that can be expensive and logistically complex. By offering these services locally, Aurora Luminaria aims to fill a significant gap in the market.

The founder also hopes the project will inspire other local entrepreneurs to explore innovative technologies: 'We want to show that Malta has the talent and resources to compete on a global stage.'

As a young entrepreneur, the founder of Aurora Luminaria understands the challenges of starting a new venture. His advice? 'The first step is the hardest. It's easy to have ideas, but taking that initial step – seeking advice, attending meetings, and making a plan – is what sets successful entrepreneurs apart. Once you start, things will gradually fall into place.'

Aurora Luminaria represents a bold step forward for Malta's entertainment and technology sectors. With a clear vision, innovative technology, and a dedicated team, the project has the potential to revolutionise how events are experienced in Malta and beyond. As Dalli aptly puts it: 'This is just the beginning. We're excited to see where this journey takes us.' 