

ISO 21384-3:

The Path to Sustainable Growth in Our Industry



By Steve Priestley, COO, Altomaxx Technologies Inc.

The drone services industry is experiencing exponential growth. That said, however, this rapid expansion has revealed a critical issue: the lack of consistent operational safety standards.

While drones promise improved efficiency and cost savings, their widespread use introduces new risks – mid-air collisions, data breaches, and equipment failures – that demand proactive rather than reactive awareness. Without clear safety benchmarks, businesses face regulatory hurdles, insurance challenges, and operational inefficiencies, and public distrust limiting the industry's potential.

In 2019, the International Standards Organization (ISO) took an important step forward by introducing *ISO 21384-3 – Unmanned Aircraft Systems*. This was the first globally recognized set of standards specifically designed to ensure the safe operation of modern drones. The new *ISO 21384-3* standard set a high bar, encompassing guidelines for both consumer and enterprise-grade drones, covering essential safety protocols

and best practices for operators and manufacturers alike.

With industries relying more heavily on drones for inspections, urban environment missions, surveys, and environmental monitoring, the introduction of *ISO 21384-3* has established a foundation for growth and sustainability. This standard not only reduces risk but also helps businesses scale operations confidently, knowing they adhere to proven safety frameworks.

Drone solution

However, there was one significant challenge: despite the release of these standards, there were no certification bodies available to validate compliance. Without third-party verification, many businesses struggled to demonstrate adherence to safety protocols, leaving gaps in accountability and limiting the adoption of drones in regulated industries.

In 2020, when the demand for drone inspections slowed during the COVID-19 pandemic, Altomaxx pivoted towards becoming a certification body and seized the opportunity to fill a critical need within the industry. This strategic move positioned Altomaxx as the first and only accredited

body capable of certifying compliance with *ISO 21384-3*.

ISO 21384-3 represents a groundbreaking standard designed to address these challenges by establishing a framework for safe and reliable drone operations. An ISO standard focused on remotely piloted aircraft system (RPAS) operations for the first time this standard outlines best practices for:

- Operational procedures
- Maintenance protocols
- Risk assessment methodologies
- Data security measures

ISO 21384-3 provides organizations with a clear roadmap to achieve operational excellence and compliance, mitigating risks while unlocking new opportunities for growth.

By offering detailed guidelines, the standard ensures that operators can implement uniform protocols, reducing errors and improving reliability. It also helps businesses meet regulatory requirements, facilitating easier approvals for commercial drone use and building trust with stakeholders.

For example, an RPAS service provider can apply *ISO 21384-3* principles

across diverse applications, from visual inspections of bridges and coastlines to confined space inspections and fugitive emissions methane detection. This demonstrates how the standard enables advanced, high-risk operations while maintaining safety and consistency.

The benefits of ISO 21384-3 compliance

There are a variety of benefits for RPAS service providers in ISO 21384-3 compliance, such as:

- **Streamlined operations:** Achieving ISO 21384-3 accreditation streamlines operations by standardizing procedures and maintenance protocols. Companies adopting the standard report fewer maintenance issues and reduced downtime, resulting in more efficient workflows. RPAS-based inspections, including LiDAR surveys and photogrammetry, highlight how consistent methodologies reduce errors, improve data accuracy, and speed up project completion timelines.
- **Enhanced safety measures:** Standardized safety protocols minimize human error and equipment failure. For instance, RPAS-based confined space inspections rely heavily on ISO-mandated checklists and pre-flight verifications, ensuring reliability in hazardous environments where human entry is dangerous or impossible. By following ISO 21384-3 guidelines, drones reduce the need for manual labor in risky conditions, improving worker safety and lowering incident rates.
- **Financial advantages:** Consistency and reliability lead to greater customer satisfaction and repeat business. Companies that adhere to ISO 21384-3 often see improved reputation and operational efficiency.
- **Environmental benefits:** ISO-compliant operations often emphasize sustainable practices. By replacing traditional inspection methods that rely on heavy machinery, RPAS services help reduce fuel consumption and emissions. Applications like bathymetry surveys provide accurate data without disturbing ecosystems, aligning with modern sustainability goals.

While the benefits of ISO 21384-3 are clear, widespread adoption depends on certification bodies to ensure compliance. As the first certification body for this standard, Altomaxx plays a pivotal role in setting the benchmark for drone safety on a global scale. By providing rigorous



assessments and certifications, Altomaxx helps businesses align with global safety standards, reducing liability and boosting credibility.

The value of ISO compliance extends beyond individual businesses. It builds trust across entire industries, encouraging regulators, insurers, and investors to support drone technologies. The ISO approach illustrates how standardized practices open new opportunities while maintaining focus on safety, corporate responsibility and continuous improvement.

Canada has emerged as a global leader in drone safety and compliance, setting a high standard for the industry. Altomaxx, a Canadian company, is the first and only certification body for ISO 21384-3, demonstrating the nation's commitment to advancing drone operations through rigorous certification processes.

Similarly, AVSS, another Canadian organization, became the first company worldwide to achieve ISO 21384-3 certification, further solidifying Canada's position at the forefront of innovation and safety in unmanned aerial systems. This collective effort highlights Canada's role in shaping the future of drone technology, ensuring that safety, efficiency, and reliability remain central as the industry continues to grow.

Conclusion

The adoption of ISO 21384-3 marks a turning point for the drone services

industry. As more businesses prioritize compliance, we can expect:

- Broader acceptance of drones in regulated industries such as energy and transportation.
- Expanded insurance options and reduced premiums for certified operators.
- Greater public trust in drone technology, opening doors for urban air mobility and delivery services.

ISO 21384-3 is more than just a safety standard; it's a blueprint for sustainable growth in the drone industry. By addressing operational risks and enabling scalable solutions, it paves the way for safer skies and more profitable operations. As pioneers in accreditation, organizations like Altomaxx are leading this transformation, ensuring that innovation and safety go hand in hand.



Steve Priestley has 24 years in the environmental and innovation sector as well more than 10 years of C-level management experience. He has worked with municipalities and Indigenous communities across Canada, assisting communities with their water and wastewater needs prior to cofounding Altomaxx in 2018.

Steve loves the travel and education that comes along with this career and learning from first-hand experience in the field. He is passionate about his work, and loyal and dedicated to his employees, customers and external stakeholders.