How can Digital Sky make aviation more efficient while reducing environmental impact?

White Paper

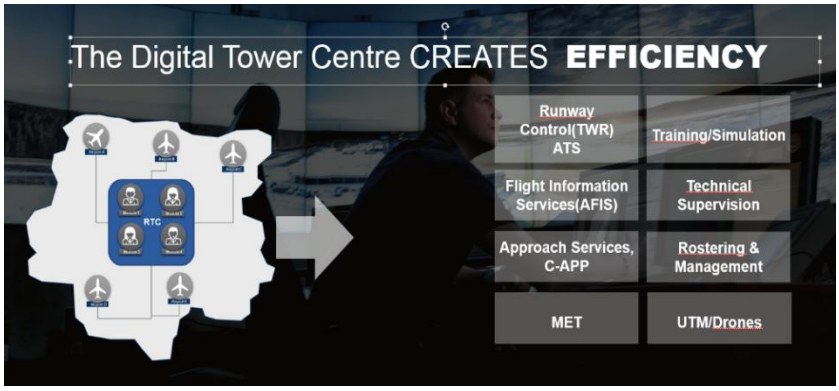
OCTOBER 2025; V1.1

PER AHL, MOVING ON AB
Saltsjöqvarns Kaj 35, 131 71 Nacka, Sweden

Challenge: For decades, aviation, airports, regulators, air traffic management, investors, and insurance companies have operated largely in isolation from each other. We all know it´s a very conservative industry and it takes a long time to get disruptive and new technologies into operation. But what should we do to introduce Digital Sky and Aviation 2.0 into operation - all stakeholders need to work together to become more cost efficient and environmentally friendly?

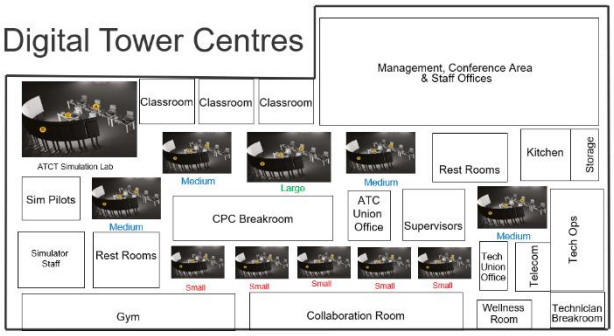
-:- -:- -:-

Digital control towers offer a modern and cost-effective solution for managing increased air traffic, impacts caused by staffing shortages, and aging infrastructure at small, medium and large/complex airports. By centralizing services in digital centres, multiple airports can be managed efficiently with shared resources and improved technology, providing operators and investors with greater resilience and capability.



- **Centralization reduces costs:** Digital towers enable coordination of multiple airports in one centre, creating economies of scale, reducing risks, and lowering operating costs by 20-30%. This allows small to medium sized airports to reduce costs and remove a significant regulatory burden and risk.
- **Flexible staff management:**
  Digital tower centres enable more efficient rotation and allocation of air traffic controllers. As stated above, just by centralizing the operation will reduce the costs by 20-30% and in the future, a single controller will be able to oversee multiple airports simultaneously during periods of low traffic. This could reduce staffing costs by an extra 10% creating a total cost savings of 40%. These centres offer a modern, high-tech working environment that attracts and retains the next generation of air traffic controllers, and fosters teamwork and collaboration. By integrating large, complex airports with small and medium-sized airports within the same centre, both controllers and engineers gain clear career development opportunities. This approach strengthens the entire organization and supports long-term growth.

- **Cost savings in new construction:** Choosing a digital tower instead of traditional brick and mortar construction can reduce investment costs by 50-75% by replacing complex buildings with a simpler mast of cameras. The physical footprint of both the airport site location and the air traffic working position at the centre. By adding offered investment support, the airport can move from Capex to Opex investment.
- **Reduced maintenance costs:** Shared technical support and standardized systems for all airports in the centre reduce inventory needs, simplify maintenance, and create greater efficiencies in training requirements - air traffic controllers will be trained at the centre, eliminating the need to send them elsewhere, reducing the environmental impact and becoming more efficient. It is estimated that simulator training at the airport where controllers will certify reduces training time by 27%.
- **New business models:** Digital towers enable services like "ATC On Demand" where airports can purchase air traffic control services as needed, reducing the need for fixed investments and operating costs. Centralized digital airport operations can reduce insurance premiums by facilitating technological advancements and implementation. Providing a full turnkey service and shifting from Capex to Opex investment can reduce 70% of airports' operational burden, allowing them to focus on core goals and growth.
- **Future services, possibilities and technologies:** Planned features include security monitoring, transfer of services between centres, cross-border services, integration of UTM/Drone ports, UAS services with USSP, and the use of AI and big data for increased safety. Digital towers support the electrification of aviation and power consumption to reduce environmental impact – Aviation 2.0.



Author: Per Ahl, CEO and owner of Moving On AB, has over 40 years of experience in the airline, airport, and air traffic management industries. In the last 17 years, he has focused on implementing digital tower centres globally.

With Moving On AB and its associates, they form a dedicated team that supports clients worldwide with expertise in all areas, from ideas and strategy to implementation and future concepts. Their experience highlights that success in the digital ATM/airport world involves not only technology but also managing change, political influences, unions, cybersecurity, organizations, training, strategy, data providers, cost-benefit analyses, investors, and insurance companies.