

**CASE STUDY:
SAATS
(Small Aerodrome Air
Traffic System)**

Remote tower technologies provide huge advantages for Air Navigation Service Providers (ANSP) as they seek to efficiently deploy their resources. However, these concepts could also drastically change the face of tertiary airfields.

In less developed areas, the upgrade of an airfield to make it suitable for commercial traffic can provide real benefits to the local community and economy.

Concepts to reality

Remote tower concepts can enable airfield upgrades with a minimum of cost and environmental impact on the local site.

By removing the need for a physical control tower, the civil works required for an airfield upgrade can be minimised to the surfacing of runways, installation of masts and single storey buildings.

Park Air Systems Limited has released a customisable system that supports these upgrades by supplying VHF communication and basic meteorology systems in cabinets suitable for outdoor installation. The basic system, known as SAATS (Small Aerodrome Air

Traffic System), is expandable with local and remote-control interfaces, renewable backup power systems and mast mounted cameras and sensors.



Minimal impact

Most remote and digital tower concepts revolve around IP systems, leading to an opportunity for integrators to virtualise multiple systems onto a small number of physical servers.

The minimisation of the number of physical units required to build up a system allows for all of the control systems required for a small aerodrome to fit into one or two standard racks. Not only is this a saving on space, but also on the power consumption and thermal efficiency of the system. As the thermal efficiency of the system improves, it also decreases

the air-cooling requirement, further reducing infrastructure and running costs.

One of the greatest advantages of reducing the energy consumption of systems for small airfields is that it makes the use of local renewable energy systems for operations a real possibility, unlike a traditional airport set up, where solar or wind power can only realistically supply a backup power supply with the required level of redundancy.



If systems are consolidated onto servers designed for low power consumption, it is now possible for critical airfield systems to reliably run from renewable energy sources. Not only does this drastically improve the environmental performance of airfields, it also frees those in the most remote areas from reliance on potentially unreliable power networks.

The logical continuation for the consolidation of systems and minimisation of external infrastructure requirements is to ask why a building is required at all for these systems installations.

Many other industries, by necessity, already house critical control systems in robust outdoor cabinets with their

own independent power sources. If the aviation industry were to follow this lead, the requirements for a high-quality domestic airfield could be as simple as having enough space and the availability of a telecommunications backhaul to a control centre.



Everything else could be supplied as an integrated system with minimal ground works, outdoor cabinets, masts and sensors.

Summary

The Park Air SAATS solution offers significant potential in delivering remote ATC systems whilst reducing infrastructure investment, opening up opportunities to upgrade and operate from airfields that would have been previously economically unviable. In countries with many small remote communities, the benefits of this improvement in infrastructure are seen in better access to education, medical and social care. Additional benefits can be realised in local business growth in these remote regions and consequential revenue increases for the operators of the airport services.