

INTELLIGENT  
AIRFIELD



**Arlanda deploys intelligent airfield  
technology to safely boost capacity  
and cut costs**

**ADB**   
**SAFEGATE**

Arlanda airport is moving towards adopting the intelligent airfield to help it meet rising demand, increasing its capacity while maintaining the highest levels of safety. Intelligent lighting control is a key part of the approach.



The largest airport in Sweden and the third largest in the Nordic countries, Stockholm Arlanda welcomed close to 27 million passengers in 2017. With three runways, Arlanda handles around 230,000 movements every year.

With traffic rising steadily year-on-year, Arlanda, like many airports, was interested in the potential of an intelligent airfield approach based on sophisticated Individual Light Control and Management Systems (ILCMS). By controlling individual airfield lighting units, substantial improvements in efficiency, capacity and energy use can be achieved while enhancing all-important safety.



The move to an intelligent airfield follows Arlanda's long-held focus on improving its energy saving and environmental impact, while cutting costs and reducing maintenance. It had already achieved significant success by becoming the first European airport to be awarded the highest ACA certification of Neutrality, achieved by imposing strict CO2 limits on all aspects of its operations, both ground and air. Through these efforts, Arlanda has reduced its electricity consumption by 30%.

## How ILCMS supports the intelligent airfield



With ILCMS, 'Follow the Greens' can be implemented as floating guidance, where only the lights immediately in front of the aircraft are illuminated. The pilot gets correct guidance through the airfield lighting (AGL) and not just the traditional approach of AGL and voice communications with ATC (Air Traffic Control). More efficient aircraft movements reduce taxiing time, while advanced and automated control provides ATC with comprehensive situational awareness that greatly reduces the risk of runway incursions. This promises Arlanda the capability to handle more aircraft with greater safety to increase its capacity.



Supported by surveillance systems, the intelligent airfield can help maintain maximum movements in all weather conditions. Safety is also improved as the integration of several systems means that much of the safety logic takes place in the background between systems, with no need for ATC to get involved.



IQ Inset family: Taxiway Centre Line or Stop Bar Light



Runway Threshold/End Light

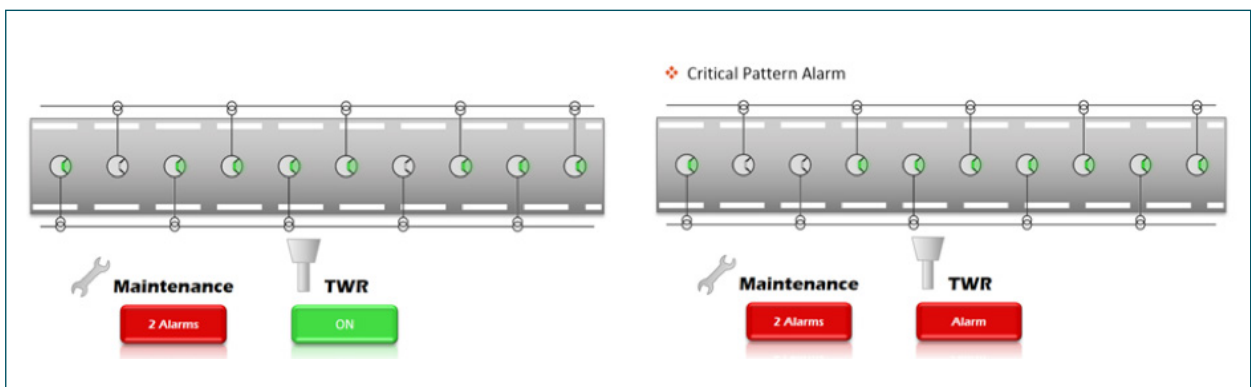


Approach light

## More data, lower costs

To help it achieve its intelligent airfield ambitions, Arlanda has adopted ADB SAFEGATE's ILCMS together with its IQ LED lights.

IQ lights are designed for airports looking for maximum energy and CO<sub>2</sub> savings, routing capabilities and as a step toward an Advanced Surface Movement Guidance and Control System (A-SMGCS). Standard operations such as detecting adjacent lamp failure and combining lamp functions can now be solved easily.



IQ lights can use an airport's existing airfield infrastructure and offers adjacent lamp failure detection. In addition, IQ can control light intensity through software rather than through the power supply, giving large savings in power consumption while benefitting the environment.

With 2A operation and combined lamp functions, airports can save even more energy. Using 3,200 IQ lights operating at 2A, Arlanda now saves € 72,000 a year on energy costs, with intensity of most of its lights set at between three and ten percent.

Of its 14,000 airfield fixtures, 5,000 are LED light fixtures. The move from halogen lighting, which typically has a 1,500 hour lifetime to LED lights that can offer around 50,000 hours, results in less maintenance - only nine people in the entire maintenance team are needed due to the extensive preventive maintenance that the ILCMS makes possible.



Using the ILCMS, Arlanda can gather data on the lights including light measurements, lamp operating hours, current level, power consumption and error logs.

Arlanda can gain further benefits by taking a closer look at the service intervals, using systems to help analyse the data, improving system integration and finding the correct level of maintenance.

Together with ADB SAFEGATE, Arlanda is deploying the intelligent airfield approach to achieve a safer, more efficient future.



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