

SmartControl

Airfield lighting control and
monitoring system





Designed with the future in mind

Air traffic has increased dramatically over the last decade and the skies are forecast to become even more congested. To prepare for this anticipated growth in traffic measure to increase airfield safety and efficient must be taken.

From a simple system controlling a single runway airstrip to the complex multi-runway operation of a major international airport, each and every atg airports airfield lighting control system is designed with the future in mind.

atg airports have years of experience working with airports around the world, and as a result we understand that the needs of an airport today will differ from those tomorrow or next year or the next decade. Our systems are designed specifically so that they develop as the airport develops, providing seamless improvement to the airfield lighting control system in line with airside infrastructure changes, installation of new airfield services or as part of an A-SMGCS. All atg airports control systems are manufactured to the highest specifications in terms of quality and reliability, ensuring that they continue to maintain effective and efficient operations. This maximises the potential profit to the airport by allowing the airport to be in full control of everything happening on the airfield, optimising the conditions for guiding aircraft using the safest and quickest routes maximising asset utilisation.



SmartControl

The SmartControl system provides a complete solution for the control and monitoring of airfield lighting services used to guide aircraft the safest and most efficient way around an airfield, resulting in increased traffic movements and increased profitability for the airport.

An airfield lighting control system that can cater for all airport requirements, from a simple CAT I system up to a CAT IIIB A-SMGCS, SmartControl is a modular control system that is infinitely versatile and expandable.



SmartControl design

SmartControl is a system, consisting of a number of standard elements, each of which is repeatable and can be 'plugged together' in various combinations. The system architecture can be designed to specifically meet the needs of the airport as well as any development plans of the future. By utilising a topology database to hold all of the airport specific information, the SmartControl system allows any airfield modifications to be carried out simply and safely by airport engineers without any need for costly software changes.

Why atg airports?

A market leader with experience in the manufacture of high quality AGL luminaries for over 75 years. ATG airports is also one of the largest supplier of advanced airfield control systems around the world.

Key Design Factors

Safety

Fully compliant with IEC 61508, the international safety standard for safety related control systems.

Reliability

atg airports' vast experience in industrial control, coupled with the use of proven hardware in a modular resilient configuration ensures high reliability.

Quality

Compliance with ISO 9001 ensures that the design process, manufacturing and testing regimes are rigorously observed and documented in all cases.

Performance

Reliable, high speed operation, including switching of field circuits via addressable Smart Switches in accordance with ICAO and EASA switching requirements.

Ease of use

Well engineered, reliable systems, with clear, easy to understand human interfaces means that SmartControl can quickly establish itself with air traffic control and maintenance teams.

Easy to install

The modular nature, coupled with flexibility, means it can easily be installed alongside existing systems, thus enabling a smooth and simple changeover.

Easy to upgrade

The use of a topological database means that modifications can be done simply, easily and safely by airport engineers without any need for costly software changes.

Compliance

Designed in compliance to the following international standards:

ICAO annex 14, IEC 61508, AESA 139/2014, UK CAA CAP 168, TP312

Standard features

Control operations

Touch screen or conventional desk operation with remote brilliancy selection and control, utilising standalone or Client / Server

Control & monitoring of Constant Current Regulators

Control and monitoring of any Constant Current Regulator via Multiwire, Dual Profibus, Dual Modbus TCP, J-Bus 485 or J-bus TCP

Switching and Monitoring

Switching and monitoring of LED & Tungsten Halogen fixtures

Runway Operations

Multiple runway simultaneous operations

Routing control

Provides full SMGCS routing, stopbar control and runway incursion detection

Interface with other systems

Communication with other systems for airfield information systems RVR, Radar

Remote support

Touch screen or conventional desk operation with remote brilliancy selection and control, standalone or Client / Server

System redundancy

System is configured to manage out infrastructure failures



Individual Lamp Control & Monitoring

What is ILCMS?

An Individual Lighting Control and Monitoring System (ILCMS) is used in airports to control and monitor airfield ground lighting. It enables selective control of individual lights or groups of lights on runways, taxiways, and aprons, enhancing visibility and safety for pilots during take-off, landing, and taxiing.

Discover the next generation of airfield lighting management with our advanced Individual Lighting Control and Monitoring System. This centralized platform offers real-time control and monitoring of airfield lighting fixtures, ensuring that any faults or maintenance needs are detected promptly. By delivering up-to-date status information to both airport maintenance teams and air traffic control, ILCMS not only enhances safety but also streamlines airside operations for maximum efficiency.

Our state-of-the-art SmartControl system further elevates performance by enabling individual lamp control with a dedicated communications cable; a radical improvement over traditional power line carrier systems. Experience reliable, precise, and scalable airfield lighting management designed to meet the demanding needs of modern airports.

- ▶ ILCMS will allow compliance with the ICAO / TP312 / EASA directives
- ▶ Separate cable communication system is compliant with international standards for speed and reliability
- ▶ Precise control of each segment of runways, taxiways, and stop bar lighting independently of the circuit layouts
- ▶ Flexible routing functionality and safe operation under all traffic and environmental conditions resulting in reduced ATC workload
- ▶ Real time monitoring with indication of failure location and also adjacent lamp failure
- ▶ Back indications from every light on a junction will determine if there are ever two routes illuminated through a junction in LVP OPS
- ▶ Supports low-cost installation and extension of ground lighting
- ▶ Robust and optimised transmission procedures ensure short response times
- ▶ All lights are configurable by software allowing any pattern to be illuminated on the airfield at any time
- ▶ Optimized planning of runway and taxiway maintenance downtimes
- ▶ Not susceptible to electromagnetic coupling of radio signals in space, inductive coupling of local magnetic fields, capacitive coupling of nearby electric fields unlike power communication carrier systems
- ▶ Offers flexibility to allow integration with different brands of AGL fixtures and CCR's
- ▶ Modular in design and easy future upgrades. Additional communications links can be added to existing CCR circuit easily without any rewiring of the primary circuit

Global remote support

Support does not end at the sale. Whether you work with us on a small project or major transition, we are always ready and willing to help you solve problems quickly, minimizing downtime to keep you moving.



Maintenance

SmartControl provides a user friendly colour graphical maintenance interface. This includes an overall airfield mimic with screen 'buttons' for selecting/deselecting services and a substation mimic for each substation showing the status of the PLC, CCRs and individual lights. Equipment is shown as green when healthy and red when in fault. Clicking on items of equipment (where appropriate), can reveal further information to identify the exact cause of a fault rapidly and intuitively.

Maintenance statistics

Comprehensive maintenance data and statistics are available from the maintenance workstation. The information accumulated can include:-

- Hours run
- Hours failed
- Brilliancy hours run (for each level)
- Number of switching operations

Since the information is logged into an SQL database, powerful relational database queries can be easily performed, such as:

'How many centreline segment's had an impaired fault over the last two weeks?'
'What is the average repair interval for a severe stopbar fault?'
'How many segments have exceeded 90% of their design life?'
'Number of hours equipment failed in the last month?'

Smart Hardware

The hardware used in SmartControl is a blend of proven, powerful workstations, PLCs with failsafe and standard I/O.

Control equipment

The SCADA workstations and PLCs are distributed around the lighting substations for enhanced security and are linked together by a highly reliable "self healing ring" of optical fibre.



atg airports ltd
Lowton Business Park | Newton Road
Lowton St. Mary's | Warrington
WA3 2AP UK
☎ +44 (0)1942 685555
✉ enquiries@atgairports.com

www.atgairports.com

