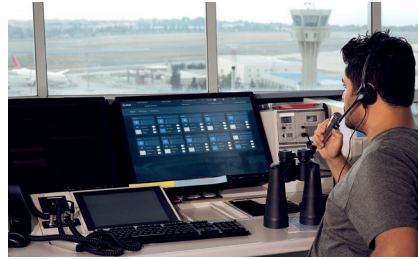


ALCMS BASIC

AIRFIELD LIGHTING CONTROL & MONITORING SYSTEM



+ HARDWARE

SYSTEM OVERVIEW

S4GA ALCMS is an Airfield Lighting Control and Monitoring System designed to provide full remote control and monitoring of solar LED runway lighting from the TWR or maintenance center. S4GA ALCMS consists of Computer Interface integrated with UR-201 Control and Monitoring Unit. It features open interface for integrating with existing conventional AGL control system.

FEATURES

- Individual Light Status Display
- 1-6 Groups/Circuits Control (optionally up to 12)
- Up to 5-step Light Intensity Setup (optionally 6-steps)
- Operating Mode Setup (Visible/NVG/Remote/Autonomous)

CONTROL

- Grouping of entire airfield lighting in up to 12 major groups
- Control of entire lighting system and groups of lights
- 5-step intensity level setup for a particular group of runway lights and PAPI
- Operating modes setup (Visible, NVG, Remote, Autonomous)
- Timer setup (for VHF-activated and GSM-activated modes)

ALCMS Basic is designed for airports with simple runway lighting system configuration. ALCMS Basic allows to control entire system and groups of lights separately (e.g. runway, threshold and taxiway lights) as well as report about individual light statuses.

	ALCMS Basic	ALCMS Advanced
Real-time monitoring	YES	YES
Automatic failure alarm	YES	YES
Operating mode setup	YES	YES
Individual light status indication	YES	YES
Grouping of airfield lights	up to 12	up to 50
Light intensity, steps	up to 6	up to 6
Separate taxiways control	YES	YES
Airfield layout	N/A	YES

For airports with more advanced AGL system (including few taxiways, approach lighting, temporarily closed areas), S4GA offers **ALCMS Advanced**.

The screenshot displays the ALCMS software interface with the following components:

- Monitoring Control Notifications** (Top navigation tabs)
- GENERAL STATE INDICATORS** (Right side)
- INTENSITY CONTROL BUTTONS** (Left side, for RWY EDG, TWY, PAPI)
- EQUIPMENT MONITORING** (Bottom center, showing Time to discharge and Illuminating Time)
- OPERATING MODES** (Bottom right, showing Night vision, Dusk Till Down, and Flashing)
- TABS** (Bottom left, showing Monitoring, Control, and Notifications)

MONITORING KEY FEATURES

- Individual light Status Monitoring - includes such parameters of light as: battery level, charging speed, temperature, operating status, etc.
- Monitoring of UR-201 Control unit status
- Preventive Maintenance function - allows for planning maintenance works for individual equipment items (ie. battery replacement, solar panel cleaning etc.)
- Asset Management Tool - sorts and filters information provided by the system for efficient data management

Monitoring Tab makes it possible to monitor all airfield lighting devices. The information provided allows to obtain data not only about the current condition of devices, but also about maintenance requirements. This way end user can pro-actively supervise entire system and its components. Key features of the monitoring system:

The screenshot displays the S4GA monitoring dashboard. At the top, it shows system status: UR-201 Connect: ●, Control by: ALCMS, Total Solar Efficiency: 0%, Night mode: ●, and Military Airbase. Below this, there are sections for CONNECTION STATUS and SOLAR EFFICIENCY. The main area features an Equipment List table with columns for Name/ID, Status, Battery Level, and Charging Source. A callout box labeled 'GROUP OF LIGHTS' highlights a group of lights (Lamp 1 to Lamp 6) under the Rwy EDG group. A detailed 'INDIVIDUAL LIGHT STATUS' pop-up is shown for Lamp 1, listing various parameters like Status (Online), Battery Level (92%), Mode (On), and Ops. Time Left (641h 35m). A 'More Detail' link is visible for each row in the table.

This screenshot shows the S4GA monitoring interface with a focus on asset management and warning prioritization. The top navigation bar includes Monitoring, Control, and Notifications. The Equipment List table is visible, with a callout box labeled 'PRIORITIZATION OF WARNING INFORMATION' highlighting the Rwy EDG group. A 'More Detail' link is shown for the first row. A 'ASSET MANAGEMENT TOOLS' panel is open, displaying a list of filters and columns that can be applied to the data. The 'Columns' dropdown is set to 'Status, Battery Level, Charging Source, ...'. The table shows columns for Name/ID, Status, Battery Level, Charging Source, Solar Efficiency, Ops. Time Left, Max. Cycle Limit, and Last Update. A row for Lamp 1 is highlighted, showing its current status and various operational metrics.

NOTIFICATIONS KEY FEATURES

- Automatic Failure reporting via email
- Customization of reporting thresholds

Notification Tab provides user with quick overview of all critical issues. Whether light is not working or it has low battery - user will have immediate feedback stored in Notification Tab. Moreover user can customize level of threshold that triggers particular notification (e.g.battery level is lower than x%). Key features of the notification system:

CRITICAL NOTIFICATIONS

21.04.2021 13:53:22
Lamp(s) with high temperature more then 13 celsius : WDI

10.04.2021 17:16:42
Lamp(s) with high temperature more then 13 celsius : APAPI1 Lamp21 Lamp28 Lamp26 Lamp43 Lamp52 Lamp69 Lamp109 Lamp35 Lamp36 Lamp3 Lamp51 Lamp62 Lamp114 Lamp60 Lamp53 Lamp94 Lamp57 Lamp65 WDI Lamp113 Lamp11 Lamp80 Lamp95 Lamp72 Lamp37 Lamp24 Lamp48 Lamp71 Lamp105 Lamp76 Lamp76 Lamp46 Lamp110 Lamp96 Lamp33 Lamp45 Lamp98 Lamp115 Lamp39 Lamp68 Lamp10 Lamp90 Lamp92 Lamp2 Lamp4 Lamp17 Lamp9 Lamp111 Lamp15 Lamp34 Lamp27 Lamp97 Lamp100 Lamp82 Lamp12 Lamp108 Lamp93 Lamp59 Lamp81 Lamp116 Lamp25 Lamp19 Lamp99 Lamp84 Lamp79 Lamp70 Lamp7 Lamp101 Lamp73 Lamp13 Lamp23 Lamp68 Lamp55 Lamp56 Lamp38 Lamp104 Lamp66 Lamp32 Lamp77 Lamp58 Lamp64 Lamp44 Lamp31 Lamp47 Lamp49 Lamp117 Lamp14

10.04.2021 17:16:41
Lamp(s) with low battery level less then 30% : Lamp21 Lamp28 Lamp26 Lamp52 Lamp69 Lamp63 Lamp83 Lamp62 Lamp60 Lamp57 Lamp37 Lamp59 Lamp84 Lamp70 Lamp23 Lamp29 Lamp41 Lamp22 Lamp61 Lamp38 Lamp66 Lamp32 Lamp56 Lamp64 Lamp31

10.04.2021 16:53:19
Online Devices less than 99%

10.04.2021 16:53:16
Emergency mode activation

10.04.2021 16:53:15
Lamp(s) with low battery level less then 30% : Lamp21 Lamp28 Lamp26 Lamp52 Lamp69 Lamp63 Lamp83 Lamp62 Lamp60 Lamp57 Lamp37 Lamp59 Lamp84 Lamp70 Lamp23 Lamp29 Lamp41 Lamp22 Lamp61 Lamp38 Lamp66 Lamp32 Lamp58 Lamp64 Lamp31

10.04.2021 16:53:53

Notification Settings

- Online Devices less than [%] 30
- Battery cycles used more than [cycles qty] 1
- Temperature higher than [°C] 13
- Days to replace battery less than [days qty] 700
- Group Battery Level less than [%] 80
- Solar charging efficiency less than [%] 3
- Last update more than [min] 7
- Operation time left less than [h] 150
- Battery level less than [%] 30
- Emergency mode activation [ON/OFF]
- Notification on System Check [ON/OFF]
- UR-201 Connect [ON/OFF]
- No internet connection [ON/OFF]
- VHF Failure [ON/OFF]
- Individual Device Offline [ON/OFF]
- CMS Unit Back-up Battery State [ON/OFF]
- CMS Main Power Supply State [ON/OFF]

CUSTOMIZATION OF AUTOMATIC REPORTING BY USER

COMPLIANCE

Compliance of Computer Interface



Compliance	
ICAO Aerodrome Design Manual	Part 5 Electrical Systems / Chapter 10, clauses 10.1 - 10.12 & clause 10.14
ICAO Annex 14, Volume I	Electrical Systems Chapter 8, clauses 8.3.1 - 8.3.5
EASA CS ADR-DSN.S.890	CS ADR-DSN.S.890 Monitoring, clauses (a), (b) & (d)
FAA AC 150/5345-56B	Specification for L-890 Airport Lighting Control and Monitoring System (ALCMS), clauses 3-7 & 9

Compliance of ALCMS Hardware - UR-201 Control & Monitoring Unit



Compliance	
RED Directive	RED DIRECTIVE 2014/53/EU on the harmonization of the laws of the Member States relating to the making available on the market of radio equipment and repealing Directive 1999/5/EC, clauses 3.1a, 3.1b & 3.2
RoHS Directive	ROHS DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment, clause 4.1
FAA AC 150/5345-56B	Par. 4.3 Hardware Requirements, clauses 4.3.1 & 4.3.2

ACCESSORIES INCLUDED



24' TV Monitor for TWR



Wireless set: keyboard + mouse



Power cable LAN cables



HMI Computer



LAN Router



Tablet PC (optional)



+ HARDWARE

ALCMS BASIC OBLIGATORY REQUIRES UR-201 TO BE SUPPLIED

AND HMI COMPUTER

SHIPPING DATA

Item	Dimensions of Package (LxWxH)	Gross Weight
ALCMS Set (24' screen, cables, keyboard, mouse)	600 mm x 400 mm x 360 mm	10 kg