



WORLD'S SAFEST RUNWAY LIGHTING

# SOLAR AIRFIELD LIGHTING



## ABOUT S4GA

S4GA is an airfield lighting company that designs, manufactures, and supplies certified airfield lighting systems to civil and military customers Worldwide.

As of 2022, S4GA delivered over 125 applications to more than 50 countries. Airports in Africa, Southeast Asia, South America, Oceania and Europe are successfully using S4GA systems.

We offer solar, wired, and portable airfield lighting systems. All products are manufactured in Poland. S4GA holds ISO 9001-2015 Certificate.

### WE OPERATE GLOBALLY



## WE OFFER SOLAR AIRFIELD LIGHTING

For regional, domestic, and military airports located in remote areas. Looking for easy-to-maintain permanent airfield lighting. We offer complete solar system with control & monitoring. S4GA airfield lighting is compliant with ICAO, EASA, FAA, MOS, NATO STANAG.



APPROACH, RUNWAY, & TAXIWAY LIGHTING



LED PAPI



AIRFIELD LIGHTING CONTROL & MONITORING SYSTEM

#### FEASIBILITY STUDY



Testing of S4GA equipment to make sure it will operate on solar energy as long as airport requires.

#### AIRFIELD LIGHTING DESIGN



Airfield lighting design prepared together with certificates, manuals, and test reports required by the airport.

#### EQUIPMENT MANUFACTURING



All products are manufactured in Poland. S4GA holds ISO 9001\_2015 Certificate.

#### INSTALLATION & TRAINING



Installation takes one week. S4GA offers supervision of installation and provides training.

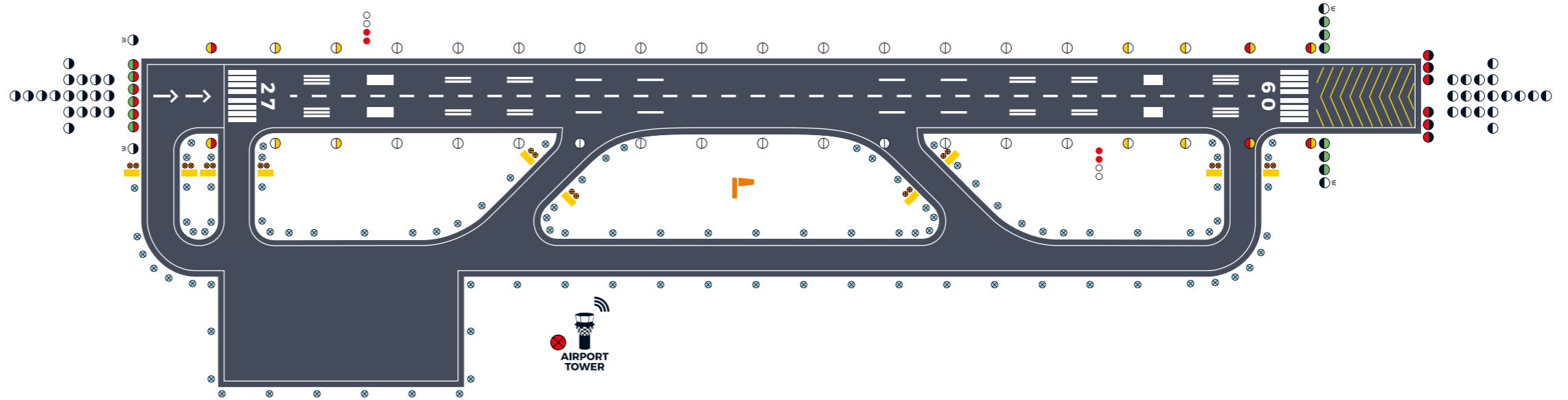
#### MAINTENANCE SUPPORT



99% of troubleshooting cases are successfully solved by S4GA managers remotely.

# PRECISION (CAT I) RUNWAY

APPROACH & PAPI	
<b>SP-401 SOLAR HIGH INTENSITY APPROACH LIGHT</b> High intensity White (clear) Remote control NVG-compatible 16 000 cd light output Operates 365 days on solar	<b>SP-401 SOLAR RUNWAY THRESHOLD IDENTIFICATION LIGHT</b> Medium intensity Flashing white 1 200 cd light output Remote control NVG-compatible Operates 365 days on solar
<b>LED PRECISION APPROACH PATH INDICATOR</b> LED multi-lamp type Remote control 10 km+ visibility NVG-compatible Power supply: 6.6 Amp, 110-230 VAC, 24 VDC	<b>SE-302 SOLAR ENGINE</b> 640 W solar panel 5 280 Wh power bank Applicable for LED PAPI



RUNWAY					
<b>SP-401 SOLAR HIGH INTENSITY RUNWAY EDGE LIGHT</b> High intensity White/white, white/yellow, yellow/red 16 000 cd light output Remote control NVG-compatible Operates 365 days on solar	<b>SP-401 SOLAR HIGH INTENSITY RUNWAY THRESHOLD LIGHT</b> High intensity Unidirectional green 11 400 cd light output Remote control NVG-compatible Operates 365 days on solar	<b>SP-401 SOLAR HIGH INTENSITY RUNWAY END LIGHT</b> High intensity Unidirectional red 2 700 cd light output Remote control NVG compatible Operates 365 days on solar	<b>SP-401 SOLAR TURNING PAD LIGHT</b> Omnidirectional blue 11 cd light output Remote control NVG-compatible Operates 365 days on solar	<b>SP-200 LIRE SOLAR LED INSET RUNWAY EDGE LIGHT</b> LED type High intensity White/white, white/yellow, yellow/red Remote control	<b>SP-200 LIRH SOLAR LED INSET THRESHOLD END LIGHT</b> LED type High intensity Red/green Remote control

AGL CONTROL & MONITORING				
<b>ALCMS ADVANCED</b> Custom airfield layout Individual light status display Grouping of lights: up to 150 circuits 6-step Light Intensity Setup (optionally 6-steps) Operating mode setup (Visible/NVG/Remote/Autonomous) Scenarios selection	<b>UR-201 CONTROL AND MONITORING UNIT</b> Airfield lighting control panel Automatic failure alarm via SMS Remote activation via VHF, GSM Remote airfield lighting diagnostics Obligatory part of ALCMS	<b>UR-101 HANDHELD CONTROLLER</b> Grouping of lights: up to 5 groups 3-step light intensity setup Operating mode setup (Visible/NVG/dusk-till-dawn)	<b>UR-1 WIRELESS CONTROLLER</b> Remote control of wired airfield infrastructure	<b>UR-4 WIRELESS CCR CONTROLLER</b> Applicable for Multi-Wire CCR Control Remote CCRs activation Remote CCRs control via ALCMS

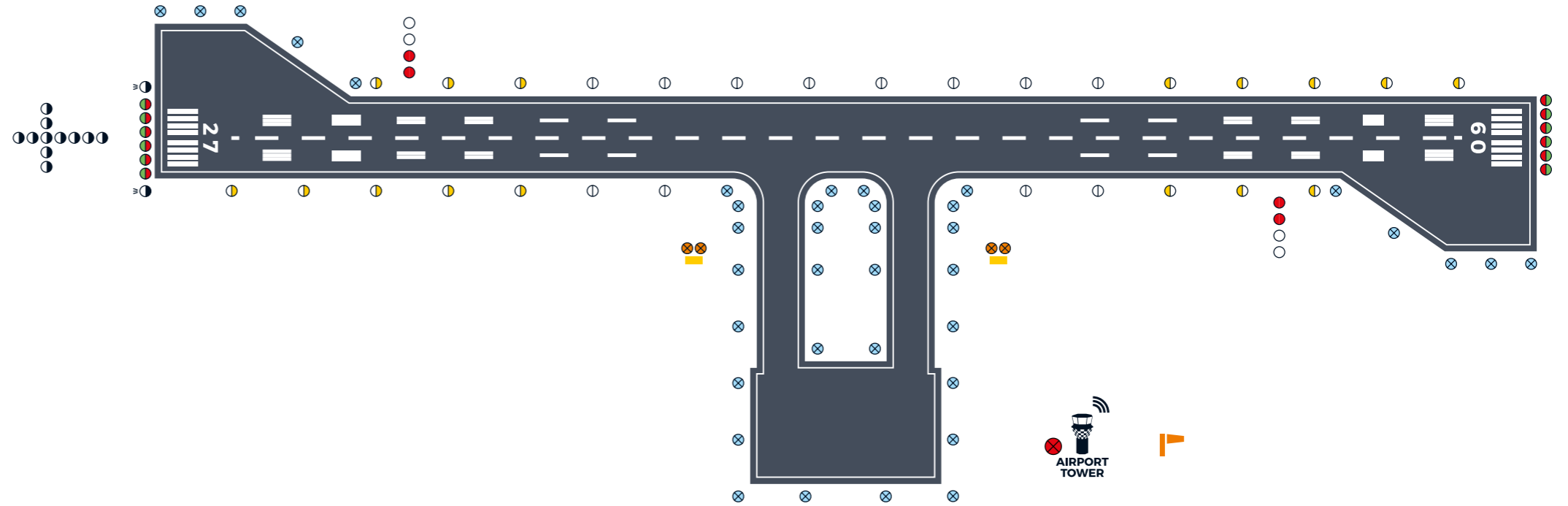
TAXIWAY & APRON			
<b>SP-401 SOLAR TAXIWAY EDGE LIGHT</b> Omnidirectional blue 11 cd light output Remote control NVG-compatible Operates 365 days on solar	<b>SP-401 SOLAR OBSTRUCTION LIGHT</b> Low intensity, type A Omnidirectional red 37 cd light output Remote control NVG-compatible Operates 365 days on solar	<b>SOLAR RUNWAY GUARD LIGHT</b> Flashing yellow 3 500 cd light output Remote control Operates 365 days on solar	<b>TAXIWAY RETROREFLECTIVE MARKER</b> Weather resistant Jet blast resistant Frangible Maintenance-free

WIND CONES & SIGNS		
<b>SOLAR WIND DIRECTION INDICATOR</b> Weather resistant Internally illuminated Solar-powered	<b>AIRPORT GUIDANCE SIGN</b> Weather resistant Internally illuminated Solar-powered	<b>SOLAR ENGINE COMPACT</b> 100 W solar panel 1200 Wh power bank Applicable for runway guard light, and guidance sign

ACCESSORIES			
<b>OCT-401 CHARGER FOR 10 X SP-401 AIRFIELD LIGHTS</b>	<b>OCT-1 CHARGER FOR 1 X SP-401 AIRFIELD LIGHT</b>	<b>MOUNTING FOR CONCRETE/ASPHALT</b> Galvanized steel Optionally: stainless steel	<b>RUBBER PAD FOR SP-401 SOLAR AIRFIELD LIGHT</b>

# NON-PRECISION OR VISUAL APPROACH RUNWAY

APPROACH & PAPI	
<b>SP-401 SOLAR APPROACH LIGHT</b> Medium intensity White (clear) Remote control NVG-compatible 1 800 cd light output Operates 365 days on solar	<b>SP-401 SOLAR RUNWAY THRESHOLD IDENTIFICATION LIGHT</b> Medium intensity Flashing white 1 200 cd light output Remote control NVG-compatible Operates 365 days on solar
<b>LED PRECISION APPROACH PATH INDICATOR</b> LED multi-lamp type Remote control 10 km+ visibility NVG-compatible Power supply: 6.6 Amp, 110-230 VAC, 24 VDC	<b>SE-302 SOLAR ENGINE</b> 640 W solar panel 5 280 Wh power bank Applicable for LED PAPI



RUNWAY		
<b>SP-401 SOLAR RUNWAY EDGE LIGHT</b> Medium intensity White/white, white/yellow, yellow/red 1 200 cd light output Remote control NVG-compatible Operates 365 days on solar	<b>SP-401 SOLAR RUNWAY THRESHOLD END LIGHT</b> Medium intensity Bidirectional red/green 320 / 450 cd light output Remote control NVG-compatible Operates 365 days on solar	<b>SP-401 SOLAR TURNING PAD LIGHT</b> Medium intensity Omnidirectional blue 11 cd light output Remote control NVG-compatible Operates 365 days on solar

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AGL CONTROL & MONITORING	
<b>ALCMS BASIC</b> Individual light status display 1-6 Groups/Circuits Control (optionally up to 12) 5-step light intensity setup (optionally 6-steps) Operating mode setup (Visible/NVG/remote/autonomous)	<b>UR-201 CONTROL AND MONITORING UNIT</b> Airfield lighting control panel Automatic failure alarm via SMS Remote activation via VHF, GSM Remote airfield lighting diagnostics Obligatory part of ALCMS
<b>UR-101 HANDHELD CONTROLLER</b> Grouping of lights: up to 5 groups 3-step light intensity setup Operating mode setup (Visible/NVG/dusk-till-down)	<b>MOBILE TOUCHSCREEN WITH ALCMS</b> Multi-touch screen 4200 mAh Li-ion smart battery Integrated GPS Vibration & 6ft drop resistant

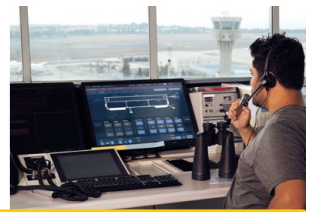
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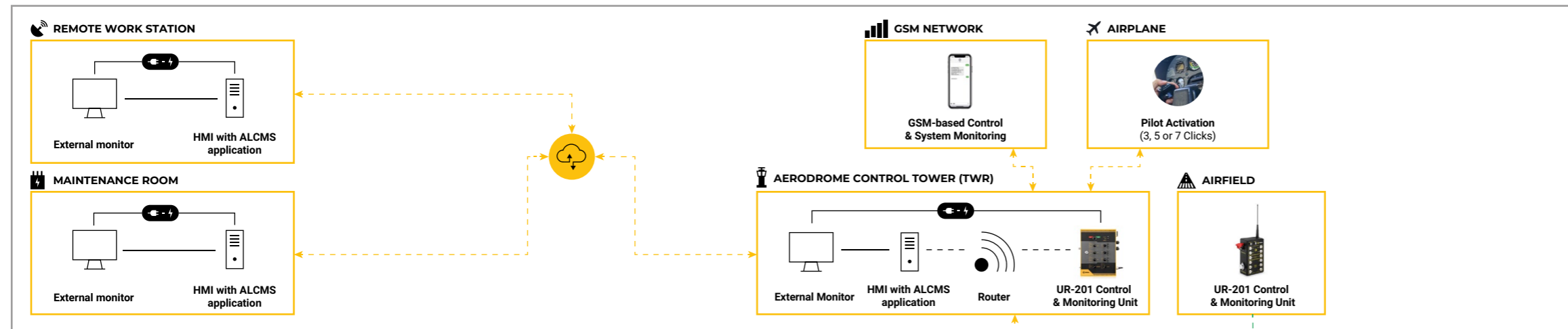
# ALCMS

## AIRFIELD LIGHTING CONTROL AND MONITORING SYSTEM

Provides remote control and Individual Light Status Monitoring of S4GA solar airfield lighting from the ATC Tower or maintenance center

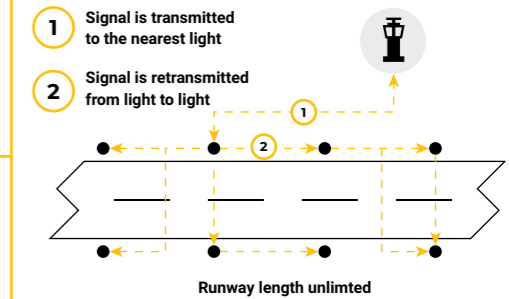


### CONTROL SYSTEM



### WIRELESS MESH NETWORK

EACH LIGHT IS A TRANSMITTER



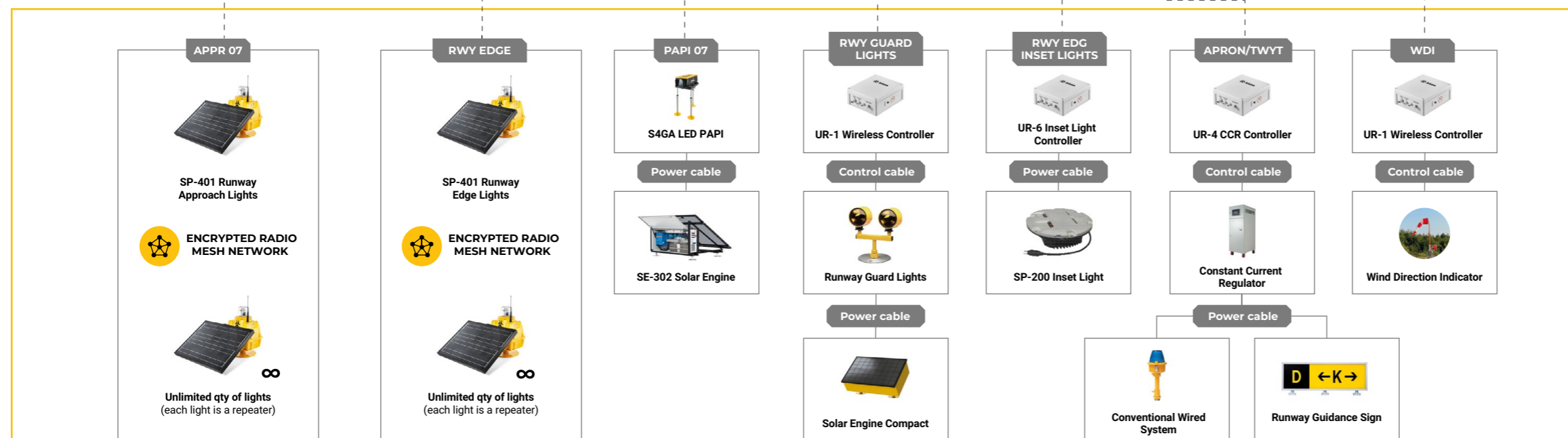
### OPERATING RANGE AND FREQUENCY

Control TWR to the nearest light		Up to 1.5 km 868 MHz, Mesh
Handheld Controller to the nearest light		Up to 1.5 km 868 MHz, Mesh
Communication between the lights		Up to 1.5 km 868 MHz, Mesh
Pilot Activation (3, 5 or 7 clicks)		Up to 20 km 118-136 MHz
GSM network		Unlimited 900/1800 MHz
Remote work station (WLAN)		Unlimited Internet Connection

### ENCRYPTED AUTHENTICATED

Control system communicates with the airfield lighting VIA encrypted and authenticated radio mesh network

### MONITORING SYSTEM



### MONITORING SYSTEM

#### MAIN FEATURES

- Real-time monitoring (27 parameters)
- Individual Light Status Monitoring
- System Performance Reporting
- Automatic failure notifications
- Automatic alarm emails
- Prioritization of warning information (critical failure on top)
- Predictive & preventive maintenance

### CONTROL SYSTEM

#### MAIN FEATURES

- Grouping of lights: up to 150 circuits
- Light intensity: up to 100 levels
- Customized airfield layout
- Operates in special modes
- NVG, Remote, Autonomous
- Pilot controlled activation
- Timer adjustment (15 - 120 minutes)

### CONTROL SYSTEM

Necessary System Updates can be performed remotely by the S4GA Support Team

## WHY IS S4GA BETTER?

S4GA SOLAR AIRFIELD LIGHT		OTHER SOLAR LIGHT	
	<b>AIRFIELD FIXTURE DESIGN</b>		<b>MARINE LANTERN DESIGN</b> Not suitable for airport use
	<b>COMPLIANT</b> Compliant with ICAO, FAA, MOS, EASA, NATO STANAG Entire unit frangibility certified 240 kph jet blast resistance certified 10+ km high visibility confirmed 50+ certificates available		<b>NON-COMPLIANT</b> Non-compliant with ICAO No certification on frangibility Not tested on jet blast resistance Hardly visible from far distance
	<b>PERMANENT</b> 20+ years system lifespan Solar collection covers 100% of energy needs 27.000 Wh generated by solar panel annually		<b>TEMPORARY</b> 7 years maximum system lifespan Not enough solar collection 11.000 Wh generated by solar panels annually
	<b>PROTECTED FROM BLACKOUT</b> Reliable wireless network Backup power source Backup control		<b>UNRELIABLE</b> Poor wireless connection No backup power source Limited control
	<b>ALCMS MONITORING</b> Individual light status monitoring Preventive maintenance diagnostics		<b>NO MONITORING</b> No data on the status of the system No data on individual light status No data on maintenance
	<b>EASY MAINTENANCE</b> All compartments are replaceable Low battery cost		<b>EXPENSIVE MAINTENANCE</b> Non-replaceable parts Expensive batteries required



## DESIGN SOLAR AIRFIELD LIGHTING IN 4 SIMPLE STEPS

WE WILL SUPPORT YOU WITH ALL PROJECT MATERIALS

### FEASIBILITY STUDY

Ask for solar feasibility study to validate that S4GA system will maintain daily operations according to airport requirements and without the risk of blackout

01

### COST COMPARISON SOLAR VS 6.6A SYSTEM

Request cost comparison of solar and 6.6 Amp (CCR-powered) system. Find out why solar system is cheaper in terms of CAPEX, OPEX, and maintenance cost

02

### SOLAR AIRFIELD LIGHTING DESIGN

Ask for free AGL design prepared by experienced airport designer and performed in compliance with ICAO/ EASA

03

### TECHNICAL / TENDER SPECIFICATIONS

Utilize purchase specifications available online for every S4GA product

04



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