

WORLD'S SAFEST RUNWAY LIGHTING

CASE STUDIES SOLAR AND PORTABLE AIRFIELD LIGHTING







WE OPERATE ALL OVER THE WORLD

125 INSTALLATIONS IN 50 COUNTRIES





WORLD'S SAFEST **RUNWAY LIGHTING**

OPERATES 365 DAYS ON SOLAR



5-LEVEL PROTECTION AGAINST SYSTEM FAILURE



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CASE STUDY **ETHIOPIA JIJIGA AIRPORT**

PROJECT KEY FACTS

Airport: Jijiga Airport

Location: Ethiopia, Somali Region

Application: International airport

Runway: 2.400 m x 45 m

Solution: Complete Solar LED Airfield Lighting System

Products: Solar Runway Lights, Solar Threshold Lights, Solar Runway End Lights, Solar Taxiway Lights, Solar Approach Lights, UR-201 Control & Monitoring Unit, ALCMS Advanced Control & Monitoring System

Buyer: Ethiopian Airlines

Year of Installation: 2018





OVERVIEW

Jijiga Airport (Wilwal International Airport) is serving Jijiga - capital city of Somali Region in Ethiopia. By the 1990s, the airport was used by Ethiopian Air Force and until now the runway has not been illuminated with any airfield lights.

In recent years, the Ethiopian Government has been heavily investing in airports reconstruction including rehabilitation of a runway at Jijiga Airport.

CHALLENGE

For most African airports – and Jijiga is not an exception - it's always been a challenge to install systems that require stable power supply - would it be terminal, tower or airfield:

- Electrical power supply is unstable due to unreliable electrical grid
- Installation of a traditional hard-wired electrical system (including AGL) is economically inefficient due to limited budget
- The cost of electricity in Africa is one of the highest in the World.

As a result, A Tender for The Supply, Installation, and Commissioning of Solar Airfield Lighting System at Jijiga Wilwal Garad Airport has been issued.

SOLUTION

S4GA together with its partner Alpha Airport provided complete Solar LED airfield lighting system which:

- operates 365 days on solar energy
- · has 5-level protection against system failure
- designed for **non-precision airports** located in countries with high
- photovoltaic potential and unreliable electrical supply

CASE STUDY **ETHIOPIA JIJIGA AIRPORT**





SOLAR APPROACH LIGHT









WORLD'S SAFEST RUNWAY LIGHTING





SOLAR THRESHOLD LIGHT



SOLAR RUNWAY END LIGHT



SOLAR TAXIWAY LIGHT





UR-201 CONTROL & MONITORING UNIT



ALCMS ADVANCED









CASE STUDY GREECE **THESSALONIKI AIRPORT**

PROJECT KEY FACTS

Airport: Thessaloniki International Airport

Location: Greece

Application: The 3rd busiest international airport in Greece

Solution: Solar LED Runway Lighting System

Products: Solar Runway Lights, Solar Threshold End Lights, UR-201 Control & Monitoring Unit, ALCMS Basic Control & Monitoring System

Buyer: Fraport

Year of Installation: 2017





OVERVIEW

Thessaloniki Airport (officially Thessaloniki Airport "Makedonia") is the third largest international airport in Greece operated by Fraport. The airport has two runways equipped with ILS navigation systems.

Few years ago Greek government launched the upgrade program for Thessaloniki and few other airports and handed it over to Fraport Greece. For Thessaloniki, the project included extension of Runway 10-28 with the additional modernization of runway 16-34.

CHALLENGE

Despite the fact that both runways have been closed for reconstruction, the airport still had to continue flight operations: there are no similar airports nearby where flight operations from Makedonia Airport could be transferred to.

Fraport started looking for temporary runway lighting with strict requirements:

- certified and compliant with ICAO regulations
- AGL system should operate nonstop 24/7
- · Delivery within a month which is extremely short period for implementation of such project



S4GA offered solar LED runway lighting system which fully met Fraport's requirements:

- S4GA solar AGL is compliant with ICAO Annex 14 and certified by Intertek
- It operates 365 days on solar energy
- S4GA ALCMS Airfield Lighting Control and Monitoring System - allows control of solar runway lighting from Airport Tower
- the Company managed to manufacture and deliver the system within one month.

CASE STUDY GREECE **THESSALONIKI AIRPORT**

SOLAR RUNWAY EDGE LIGHT

APPLICATION PHOTOS







WORLD'S SAFEST RUNWAY LIGHTING





SOLAR RUNWAY THRESHOLD END LIGHT



UR-201 CONTROL & MONITORING UNIT



ALCMS BASIC



CASE STUDY **NORTH AFRICA MILITARY AIRBASE**

PROJECT KEY FACTS

Airport: Military Air Base

Location: North Africa

Application: Military airport located in African desert

Runway: two runways of 3.000 m

Solution: Solar LED Airfield Lighting System

Products: Solar Runway Lights, Solar Threshold End Lights, Solar Taxiway Lights, PAPI, WDI, Taxiway Retro Reflective Markers, Guidance Signs, UR-201 Control & Monitoring Unit

Year of Installation: 2015





OVERVIEW

In 2015 S4GA has been contacted by local African construction company planning to install airfield lighting at military airbase. Customer considered conventional lighting however has very little experience in area of airfield lighting.

Scope of work was: to illuminate 3.000 m runway and parallel taxiway that was used by air forces as secondary runway.

CHALLENGE

The airport was equipped with old airfield lighting system that was partially vandalized and did not work properly. Airbase power supply was unreliable and based 100% on power generator. The solution was to install new airfield ground lighting.

However, the main issue that made almost impossible to use hard-wired runway lighting was lack of main electrical power supply as airport is located in a desert.



Alternative solution for this airfield was either using diesel generator or solar airfield lighting.

S4GA offered solar LED airfield lighting system that requires neither electrical power supply nor building a complex power supply network (CCRs, transformers, cables, etc.). In North Africa where photovoltaic potential is one of the highest on the planet, S4GA solar AGL operates 365 days a year on solar energy.

Offered solar system requires minimum maintenance - End Customer is expected to exchange batteries once in 2-3 years - which is equal to less than 1% of AGL system total cost.

Installation and commissioning of a complete runway lighting has lasted less than 4 weeks. In case of traditional wired system, it would take few months at least.

NORTH AFRICA

CASE STUDY **MILITARY AIRBASE**



EDGE LIGHT



WIND DIRECTION INDICATOR

APPLICATION PHOTOS





WORLD'S SAFEST RUNWAY LIGHTING







SOLAR RUNWAY THRESHOLD END LIGHT



TAXIWAY EDGE RETRO REFLECTIVE MARKER



SOLAR TAXIWAY LIGHT



GUIDANCE SIGN



PAPI LIGHT



UR-201 CONTROL & MONITORING UNIT





CASE STUDY CANADA **ELLIOT LAKE AIRPORT**

PROJECT KEY FACTS

Airport: Elliot Lake Airport

Location: Canada

Application: Regional airport

Runway: 1.371 m x 30 m

Solution: Permanent Solar Runway Lighting

Products: Solar Runway Edge Lights, Solar Threshold End Lights, Solar Taxiway Lights, Solar Engine, UR-101 Handheld Controller, UR-201 Control & Monitoring Unit, ALCMS Basic Control & Monitoring System, UR-3 PAPI Controller, UR-1 WDI Controller

Buyer: Elliot Lake City Council

Year of Installation: 2021





OVERVIEW

Elliot Lake Airport is a municipal aerodrome offering passengers, cargo, and air ambulance services.

In 2020 City Council issued a tender for a new airfield lighting system. After careful consideration, S4GA solar lighting proved to be the best fit for the Canadian Airport.

Approach Navigation Systems (S4GA exclusive distributor in Canada) has won the tender and successfully installed the Solar Lighting and ALCMS.

CHALLENGE

Elliot Lake Airport struggled with almost 40 year's old wired RWY lighting consisting of 113 conventional lights connected by 3,000 meters of underground wires. The system has been showing its insufficiency with lights no longer working due to the underground cable splicing.

At that critical point, the Airport started looking for innovative, reliable, yet cost-efficient solutions, that would replace the faulty wired system. In 2020 City Council issued a tender for a new airfield lighting system. In choosing the tender's winner, the government considered many factors that concluded in indicating S4GA as the lonely company that can provide a permanent solar solution capable to operate 365 days in Canada.

SOLUTION

S4GA offered a solar airfield lighting system that proved to meet all the Airport's criteria:

- Fast and easy to install
- Simple to maintain
- Operating 365 days on solar energy
- Real-time Individual Light Status Monitoring
- Remote activation and control
- Suitable for the harsh Canadian environment (limited solar potential, negative temperatures)

Moreover, saving expenses on underground cables, transformers, and ground digging works covered the cost of LED solar lights batteries that would come with a full 5-year warranty.

CASE STUDY CANADA **ELLIOT LAKE** AIRPORT



UR-201 CONTROL & MONITORING UNIT

APPLICATION PHOTOS





WORLD'S SAFEST RUNWAY LIGHTING



SOLAR RUNWAY EDGE LIGHT





SOLAR RUNWAY THRESHOLD END LIGHT



SOLAR TAXIWAY LIGHT



SOLAR ENGINE



UR-101 HANDHELD CONTROLLER



ALCMS BASICS

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CASE STUDY **MALDIVES DHAALU AIRPORT**

PROJECT KEY FACTS

Airport: Dhaalu Airport

Location: Kudahuvadhoo Island. Maldives

Application: Regional airport located on remote island

Runway: 1.800 m x 30 m

Solution: Complete Solar LED Airfield Lighting System

Products: Solar Runway Lights, Solar Threshold End Lights, Solar Taxiway Lights, Solar PAPI, Solar engine for PAPI, UR-201 Control & Monitoring Unit, ALCMS Basic Control & Monitoring System

Year of Installation: 2016





OVERVIEW

Dhaalu Airport is a category 3C domestic airport located in Kudahuvadhoo Island. Airport is designed to accommodate DASH-8, ATR – 72 & 42 Aircraft and private jets.

The airport was developed by reclaiming land from the Dhaalu Kudahuvadhoo lagoon and according to local news sources, approximately USD 20 million were invested in the project.

CHALLENGE

Airport managing company has been working toward design of conventional lighting system with one of Maldivian engineering companies. After design phase has been accomplished it turned out that valuation of the system significantly exceeded airport budget planned for AGL. In order to find more affordable solution airport started looking for alternatives.

SOLUTION

S4GA company responded with an offer to supply a complete solar LED airfield lighting system to Dhaalu Airport. As a result

- Budget required for S4GA solar AGL system was lower than for conventional lighting.
- Airport is located in the area where electricity can only be produced by diesel generator which is expensive and not ecofriendly. S4GA solar lighting operates 365 days on solar energy.
- S4GA solar AGL has 5-level protection against system failure which minimizes the risk of total AGL breakdown; in case of any light(s) malfunction, airport personnel is immediately notified by SMS about the problem and which lamp has a problem.

The system is compliant with ICAO Annex 14, all required certificates and technical specifications were provided accordingly. S4GA solar AGL has been approved by Maldivian Civil Aviation Authority.

CASE STUDY **MALDIVES**

DHAALU AIRPORT





SOLAR ENGINE FOR PAPI

APPLICATION PHOTOS









WORLD'S SAFEST RUNWAY LIGHTING







SOLAR RUNWAY THRESHOLD END LIGHT



SOLAR TAXIWAY LIGHT



SOLAR PAPI LIGHT



UR-201 CONTROL & MONITORING UNIT



ALCMS BASIC





CASE STUDY **NORTH AFRICA REMOTE MILITARY AIRBASE**

PROJECT KEY FACTS

Airport: Military Airbase

Location: North Africa

Application: Military airport located in African desert

Solution: Solar LED Airfield Lighting System

Products: Solar Runway Lights, Solar Threshold End Lights, Solar Taxiway Lights, PAPI, UR-3 PAPI Controller-Converter, Solar Engine for PAPI, Solar WDI, Taxiway Retro Reflective Markers, UR-201 Control & Monitoring Unit, ALCMS Basic, OCT-401 Backup Chargers, Airfield Lighting Layout

Year of Delivery: 2019





OVERVIEW

S4GA supplied complete permanent solar airfield lighting system to military airbase located in African desert. This is the second project that S4GA did for the current Customer.

In 2015 S4GA delivered solar airfield lighting system to their another air base. The Customer was satisfied with S4GA products and, few years later, they requested S4GA for the second solar AGL system.

- CHALLENGE

According to Customer's requirements, airfield lighting system had to be delivered and installed within only 4-week time. Traditional hard-wired runway lighting is impossible to install in such short period of time. Thus, the Customer started looking for alternative solutions.

Another challenge was lack of reliable constant power supply in the region. For airport it means sudden interruptions in airfield lighting work and acquisition of additional power generators to secure such interruptions.

SOLUTION

S4GA solar airfield lighting system has been already recognized as the best solution for remote airfields among civil and military customers.

S4GA lighting does not require any electrical infrastructure - the system operates 365 days on solar energy. No cables, CCRs, transformers, or any other electrical network is needed which makes installation of S4GA system much faster and easier than traditional hard-wired lighting.

Airfield lights are equipped with built-in power banks providing high level of autonomy of the lights. Each light is also connected to individual optimally tilted solar panel. In this way, every lighting unit in S4GA system has its own distributed power source and is independent from the other units. Due to power balance between energy consumed by lamps and energy produced by solar panels, S4GA solar AGL does not require any additional power sources except the sun.

S4GA runway lighting was manufactured, delivered and installed at the airbase within 4-week time as required. Now airbase is ready for night flight operations.

NORTH AFRICA AIRBASE



CASE STUDY **REMOTE MILITARY**





UR-201 CONTROL & MONITORING UNIT

S4GA AIRFIELD LIGHTING LAYOUT



APPLICATION PHOTOS



WORLD'S SAFEST RUNWAY LIGHTING

S4GA PRODUCTS





ALCMS BASIC



OCT-401 BACKUP CHARGER





CASE STUDY **UZBEKISTAN MUYNAK AIRPORT**

PROJECT KEY FACTS

Location: Uzbekistan

Application: Domestic Airport

Solution: Solar Runway Lighting System

Products: Solar Approach Lights, Solar Runway Edge Lights, Solar Runway Threshold End Lights, Solar PAPI, Solar Engine, UR-101 Handheld Controller, OCT-401 Chargers

Year of Delivery: 2019



- OVERVIEW

Muynak Airport is a regional airport located in the north-west of Uzbekistan. It serves as a regional air transport hub for domestic flights.

In recent years the government decided to grow tourism in the region. Transport infrastructure development was the very first stage. Because of remote location, the fastest and the most suitable way to transfer people to the place is air transport. Thus, airport upgrade was on the first priority.

- CHALLENGE

The airport is located in a remote area without any access to electrical infrastructure. Thus, installation of wired runway lighting has not been even considered. Portable airfield lights also did not fit because airport was looking for a permanent AGL solution.

Another challenge was lack of electrical engineers available onsite 24/7. Thus, airport was looking for a solution that required minimum maintenance.

- SOLUTION

S4GA offered solar airfield lighting system which is easy in installation and requires minimum maintenance. The system does not require any electrical infrastructure - it operates 365 days a year on solar energy.

For remote activation and control of S4GA airfield lighting, a Handheld Controller was offered. Airport Operator did not require complete ALCMS with individual light monitoring. Therefore, a simple Handheld Controller fully meet Customer's requirements.

S4GA solar airfield lighting is used as a permanent runway illumination at Muynak Airport. Amount of solar energy in Uzbekistan is sufficient to keep the system fully operational for 365 days a year.

CASE STUDY **UZBEKISTAN MUYNAK AIRPORT**



SOLAR APPROACH LIGHT





APPLICATION PHOTOS





WORLD'S SAFEST RUNWAY LIGHTING





SOLAR RUNWAY EDGE LIGHT



SOLAR RUNWAY THRESHOLD END LIGHT



OCT-401 BACKUP CHARGER



UR-3 PAPI CONTROLLER CONVERTER



SE-302 SOLAR ENGINE FOR PAPI



UR-101 HANDHELD CONTROLLER



CASE STUDY FRANCE **CHARTRES AIRPORT**

PROJECT KEY FACTS

Airport: Chartres-Champol

Location: France

Application: Regional airport

Runway: 840 m x 25 m

Solution: Solar LED Airfield Lighting System

Products: Solar Threshold Lights, Solar Runway End Lights, UR-201 Control & Monitoring Unit, ALCMS Basic Control & Monitoring System

Year of Installation: 2017





OVERVIEW

S4GA supplied solar airfield ground lighting for French Airport – Aérodrome de Chartres – Champhol. The contract was executed by S4GA French partner - ALPHA-AIRPORT. It was the first solar AGL installation in France.

CHALLENGE

Chartres – Champhol Aerodrome is a regional airport located in north-central France. Equipped with a hard runway of 840 m x 25 m the aerodrome has been supporting general aviation since the nineteenth century. In 2017 Airport Authorities decided on the runway upgrade with a new airfield lighting system. Among many requirements, the new illumination solution had to ensure the highest reliability, be economically advantageous, and compliant with international aviation regulations.

S4GA was chosen as the only system that met all of the client's criteria.

- SOLUTION

S4GA offered a solar runway lighting system as the best solution for Chartres - Champhol Aerodrome. It does not require any electrical infrastructure, installation is fast, and maintenance is simple. Thus, aerodrome gets a bulk of advantages:

- No trenching works
- No electricity bills
- Only 3 months for complete project implementation
- Fully compliant with EASA
- System approved by DGAC (French Civil Aviation Authority)

Total investment in S4GA solar system is 30-50% lower compared to wired runway illumination. Operational costs are close to zero - the system operates on solar energy.

Simple maintenance makes S4GA system even more attractive solution for aerodromes: it's all about replacing batteries once in 2-3 years and cleaning solar panels once in a few weeks.

CASE STUDY FRANCE **CHARTRES** AIRPORT

SOLAR RUNWAY EDGE LIGHT

- APPLICATION PHOTOS







WORLD'S SAFEST RUNWAY LIGHTING







SOLAR RUNWAY THRESHOLD END LIGHT



UR-201 CONTROL & MONITORING UNIT



ALCMS BASICS







CASE STUDY LITHUANIA **KAUNAS AIRPORT**

PROJECT KEY FACTS

Location: Lithuania

Application: Domestic Airport

Solution: Solar Runway Lighting System

Products: Solar Runway Edge Lights, Solar Runway Threshold End Lights, Solar Taxiway and Apron Lights, UR-201 Control & Monitoring Unit, UR-101 Handheld Controller

Buyer: Kaunas Municipal Government

Year of Delivery: 2019





- OVERVIEW

S. Darius and S. Girenas Airport (or Aleksotas Airport) is a domestic Lithuanian aerodrome located near the city of Kaunas. This is a civil airport which is primarily used by local flight schools and air clubs.

In 2017, local government decided to renovate airport for business and general aviation. The renovation program included installation of airfield lighting system at an aerodrome. The aerodrome was never equipped with any AGL system before.

--- CHALLENGE

The main challenge for airport management was to find cost-effective, and ICAO certified high-quality airfield lighting system. Due to limited budget set by government for this project, all offers received from suppliers of traditional hard-wired runway lighting, have been rejected. Airport budget was not enough for traditional wired runway lighting.

In the meantime, portable airfield lights –which were much cheaper - did not fit airport needs. Portable lights are designed for temporary usage, they require recharging from time to time. Whereas Kaunas Airport was looking for permanent lighting system. Airport management started looking for alternative solutions. They approached S4GA - EU-based manufacturer of certified airfield lighting systems - and requested the offer.

- SOLUTION

S4GA offered permanent solar runway lighting system certified and compliant with ICAO regulations. The system is designed for permanent applications, it operates 365 days on solar energy. Control and monitoring of AGL is performed by UR-201 Unit installed in the ATC room. The Unit allows AGL control from the ground and from the air.

Installation of S4GA system was done by FIMA –one of the leading systems integrators working in Baltic Region. For this airport, FIMA engineers designed special mounting stakes for ground surface. It saved runway surface from drilling the holes for standard mounting plates.

The cost of S4GA solar airfield lighting was few times less than traditional cabled lighting. The Customer was satisfied with S4GA system in terms of both financial and technical outcome.

CASE STUDY LITHUANIA **KAUNAS AIRPORT**



SOLAR RUNWAY EDGE LIGHT



UR-101 HANDHELD CONTROLLER

APPLICATION PHOTOS





WORLD'S SAFEST RUNWAY LIGHTING







SOLAR RUNWAY THRESHOLD END LIGHT



SOLAR TAXIWAY LIGHT



UR-201 CONTROL & MONITORING UNIT







CASE STUDY **THAILAND PHETCHABUN** AIRPORT

PROJECT KEY FACTS

Airport: Phetchabun Airport

Location: Thailand

Application: Regional airport

Solution: Solar Taxiway Lighting

Products: Solar Taxiway Lights, UR-101 Handheld Controller

Buyer: Phetchabun Airport

Year of Installation: 2020





OVERVIEW

In 2020 S4GA supplied Phetchabun Airport in Thailand with solar taxiway lights. The lighting system is used as a permanent illumination of airport taxiways in bad weather and during night flight operations.

CHALLENGE

Phetchabun Airport is a regional airport in the Lom Sak District in Phetchabun Province in the northern region of Thailand. The airport is used both for private and military purposes.

In 2020 the Aiport Authority decided on the runway upgrade with taxiway lights and started looking for a reliable yet economically advantageous solution.

After careful consideration, S4GA solar TWY lighting was selected by the Airport Authority as a cost-effective and secure solution that meets all the requirements of international aviation regulations.

SOLUTION

Among key factors that identify S4GA as the leader of the advanced solar technology should be mentioned the operational time of taxiway lights up to 600 hours on a single charge and the ability of its remote activation and control from the ATC Tower.

Taxiway Lights Key Features:

- Operate 365 days a year on solar energy
- User-replaceable battery and optics
- Easy installation and maintenance
- Remote activation and control
- Compliant with ICAO, FAA, EASA, STANAG

S4GA taxiway lights are applicable for all types of taxiways at international, regional, and domestic airports.

CASE STUDY **THAILAND PHETCHABUN** AIRPORT





SOLAR TAXIWAY LIGHT

APPLICATION PHOTOS







WORLD'S SAFEST RUNWAY LIGHTING



UR-101 HANDHELD CONTROLLER









CASE STUDY **AFRICA IVORY COAST**

PROJECT KEY FACTS

Airport: Mine airstrip, Ivory Coast

Location: Africa

Application: Mine airstrip

Solution: Permanent Solar Runway Lighting

Products: Solar Runway Edge Lights, Solar Threshold End Lights, Solar PAPI Lights, Solar Engine, UR-201 Control & Monitoring Unit,

Buyer: Endeavour Mining

Year of Installation: 2019





OVERVIEW

S4GA solar runway lights have been supplied to a gold mine airstrip in Ivory Coast (Côte d'Ivoire), West Africa. The system is used as a permanent lighting solution for daytime and night flight operations.

CHALLENGE

Endeavour Mining is one of the top global gold producers that owns and operates the gold mines in Côte d'Ivoire, Burkina Faso, and Mali. Because of the specific location of the Côte d'Ivoire mine, the fastest and the most suitable way for transfer is air transport. Thus, airstrip upgrade was the priority for the Company.

Solutions presented to Endeavour Mining had to be compliant with international civil aviation regulations and the client's specific criteria. Every supplier who wanted to deal with the Company had to provide the highest quality products and full compliance with aviation standards.

SOLUTION

S4GA offered a solar airfield lighting system that proved to meet all the Airport's criteria:

- Independent from the electrical grid
- Operates 365 days a year on solar energy
- Pilot-controlled
- Fast and easy installation
- Minimum maintenance required
- Resistant to sands lights are IP-67 approved
- Resistant to the wind-lights can withstand wind loading and jet blast of 240 kph

All S4GA airfield lighting products have passed multiple environmental tests and can withstand the most extreme weather conditions – including Harmattan winds of West Africa.

CASE STUDY **AFRICA IVORY COAST**





SOLAR RUNWAY EDGE LIGHT



UR-201 CONTROL & MONITORING UNIT

APPLICATION PHOTOS











SOLAR RUNWAY THRESHOLD END LIGHT



SOLAR PAPI LIGHT



SOLAR ENGINE









CASE STUDIES PORTABLE AIRFIELD LIGHTING TRAILER

WORLD'S SAFEST RUNWAY LIGHTING







CASE STUDY **GERMAN AIR FORCES**

PROJECT KEY FACTS

Location: Germany

Application: Military Air Bases / Unpaved Runways

Solution: Military Airfield Lighting Trailer

Products: Portable Runway Edge Lights, Portable Runway Threshold End Lights, Portable Taxiway Lights, Portable Full PAPI System, Power Banks, Diesel Generators, UR-201 Control & Monitoring Unit, ALCMS Basic, UR-101 Handheld Controller, Trailer

Buyer: NATO Member State

Year of Delivery: 2020





OVERVIEW

The German Air Force is the branch of the Bundeswehr - the armed forces of Germany. It's the third largest air force in European Union. All acquisitions & procurements for Bundeswehr are regulated by NATO standards.

In recent years Chief Command invested in upgrade of military equipment for German Air Forces. One of the procurements was a portable emergency airfield lighting system to support night operations.

- CHALLENGE

German army is one of the most demanding military customers in the World. The highest quality and compliance with aviation and military standards is a must for every supplier who wants to deal with German military.

Portable airfield lighting products that German Army was using by that time, did not meet their expectations in terms of quality and performance. Thus, the challenge was to find a better alternative solution that would be more reliable, more long-lasting, certified and compliant with European aviation standards.

- SOLUTION

S4GA offered Military Airfield Lighting Trailer specifically designed for NATO operations. The Trailer accommodates a complete portable airfield lighting system able to illuminate up to 3 500 m runway in accordance Customer's requirements. It includes portable runway & taxiway lights, mobile full PAPI system, power banks and generator sets. All lights are controlled remotely via ALCMS integrated into the Trailer. ALCMS provides individual light status monitoring and automatic light failure reporting.

S4GA portable airfield lights are certified and fully compliant with ICAO, FAA, STANAG regulations. The lights have been tested in accredited independent laboratories, and are fully capable and compliant with NATO NVG operation requirements.

S4GA Military Trailer is the best solution for military air bases, temporary runways and humanitarian missions.

CASE STUDY **GERMAN AIR FORCES**







PORTABLE PAPI LIGHT



ALCMS BASIC









WORLD'S SAFEST RUNWAY LIGHTING



PORTABLE APPROACH LIGHT



PORTABLE RUNWAY EDGE LIGHT



PORTABLE RUNWAY THRESHOLD END LIGHT



PORTABLE TAXIWAY LIGHT





POWER BANK FOR PAPI



UR-201 CONTROL & MONITORING UNIT



DIESEL GENERATOR



UR-101 HANDHELD CONTROLLER



TRAILER











CASE STUDY **ARGENTINA MILITARY AIRBASE**

PROJECT KEY FACTS

Location: Argentina

Application: Military Air Base

Solution: Portable Airfield Lighting Trailer

Products: Portable Runway Edge Lights, Portable Runway Threshold End Lights, Portable Full PAPI, Power Bank for PAPI, Diesel Generator, UR-201 Control & Monitoring Unit, UR-101 Handheld Controller, Trailer

Year of Delivery: 2019







OVERVIEW

Argentine Air Force (Spanish: Fuerza Aérea Argentina, FAA) is aviation branch of the Armed Forces of the Argentine. There are few air bases around the country that belong to FAA and are used for military trainings.

In 2018, FAA requested for mobile airfield lighting system which army was going to use at its air bases. A Tender for supply and delivery of portable airfield lighting trailer was issued. S4GA received and official invitation to bid and won the tender.

---- CHALLENGE

Military Customer has put special technical requirements to the trailer design and airfield lights. Any standard solution available on the market would not fit:

- High operating time (autonomy) of the lights required
- The trailer had to accommodate two full mobile PAPI systems together with airfield lights
- Contactless charging of the lights
- All equipment to be made of durable materials to withstand extreme climate conditions of Argentina and to ensure long lifespan
- Non-standard trailer dimensions.

SOLUTION

S4GA offered portable airfield lighting system stored in a tailored trailer specifically designed for Argentine Air Force:

- 86 x portable airfield lights, remotely controlled from handheld controller and air-band radio, certified and compliant with ICAO requirements
- 2 x mobile full PAPI systems powered by diesel generators
- Power banks to ensure PAPI autonomous operations for at least 60 minutes
- · Automatic immediate light failure reporting system built in a Trailer
- S4GA Trailer is made of high-grade aluminum and designed to fit in a C-130, for transportation.

S4GA Trailer is the best solution for military air bases where high performance of the system and its compliance with industry standards is a must.

CASE STUDY **ARGENTINA MILITARY AIRBASE**

PORTABLE



UR-201 CONTROL & MONITORING UNIT

APPLICATION PHOTOS





WORLD'S SAFEST RUNWAY LIGHTING



RUNWAY EDGE LIGHT





RUNWAY THRESHOLD END LIGHT



UR-101 HANDHELD CONTROLLER



PORTABLE PAPI LIGHT



DIESEL GENERATOR



POWER BANK FOR PAPI



TRAILER







CASE STUDY NORTHEAST AFRICA **MILITARY AIR BASE**

PROJECT KEY FACTS

Location: Northeast Africa

Application: Military Air Base

Solution: Portable Airfield Lighting Trailer

Products: Portable Runway Edge Lights, Portable Runway Threshold End Lights, UR-101 Handheld Controller, Diesel Generator, Trailer

Year of Delivery: 2019







OVERVIEW

Undisclosed military air base located in Northeast Africa. To operate at night, air base should have illuminated runway.

S4GA has been awarded delivery of Portable Airfield Lighting Trailer by one of Africa's leading remote site service providers that serves UN agencies such as UNICEF, UNHCR; governmental organizations such as the UK MOD, the US State Department and the EU.

- CHALLENGE

The were two main challenges in regards to runway lighting system requested:

- Time: air base had to start night flights as soon as possible: delivery time was critical factor.
- Non-standard application: AGL system should be easily transportable to other locations. In the meantime, airfield lighting will be used as semi-permanent application, therefore constant power supply is a must.

SOLUTION

S4GA offered complete portable runway lighting system stored in a Trailer and fully compliant with international aviation regulations.

The AGL system is activated remotely via Handheld Controller. Light brightness, operating modes and light grouping are selectable via the Controller.

Stored in heavy duty Trailer, airfield lights can be safely transported to another location. Built-in charging system in a Trailer ensures the lights are ready-to-use at any time.

S4GA received a contract for Portable Airfield Lighting Trailer. One month after placing the order, AGL system has been delivered to the air base.

CASE STUDY **NORTHEAST AFRICA MILITARY AIR BASE**



PORTABLE RUNWAY EDGE LIGHT



TRAILER

APPLICATION PHOTOS







WORLD'S SAFEST RUNWAY LIGHTING







PORTABLE RUNWAY THRESHOLD END LIGHT



UR-101 HANDHELD CONTROLLER



DIESEL GENERATOR





CASE STUDY THAILAND **PHITSANULOK AIRPORT**

PROJECT KEY FACTS

Location: Thailand

Application: Domestic Airport

Solution: Emergency Runway Lighting in a Trailer

Products: Portable Runway Edge Lights, Portable Runway Threshold End Lights, Portable LED PAPI, Power Banks for PAPI, Diesel Generators, UR-201 Control & Monitoring Unit, TrailerControl & Monitoring Unit, Trailer

Year of Delivery: 2020





- OVERVIEW

Phitsanulok Airport (ICAO: VTPP) is a domestic airport in Thailand operated by DOA (Department of Airports of Thailand). The airport has 3 000 m paved runway equipped with a wired primary lighting system.

In recent years DOA decided to increase availability and safety of Phitsanulok Airport by investing in an emergency runway lighting. A public tender for the supply of Emergency Runway Lighting has been issued.

- CHALLENGE

The backup runway lighting system is required whenever the primary AGL is unavailable: during runway rehabilitation works, AGL maintenance, power failure or any other emergency situations. Thus, DOA was looking for a reliable backup solution compliant with ICAO regulations. High autonomy and mobility of the system was one of the key requirements.

- SOLUTION

S4GA offered an emergency runway lighting system in a trailer:

- certified and compliant with ICAO regulations
- remotely activated and pilot-controlled
- high mobility and high autonomy of the lights
- suitable trailer for storage and transportation of the lights.

The Trailer is equipped with AGL Control & Monitoring System allowing to control S4GA lights remotely from land and from the air. It also notifies airport technicians about lighting fixtures failures (e.g. low battery level, light is out of runway).

S4GA airfield lighting trailer has been selected as the best solution for Phitsanulok Airport. With S4GA emergency runway lights, airports are available and open for flight operations regardless of any malfunctions of the primary AGL.

CASE STUDY **THAILAND PHITSANULOK AIRPORT**





POWER BANK FOR PAPI

APPLICATION PHOTOS





WORLD'S SAFEST RUNWAY LIGHTING

S4GA PRODUCTS



PORTABLE RUNWAY EDGE

PORTABLE

RUNWAY

DIESEL GENERATOR

PORTABLE TAXIWAY LIGHT

UR-201 CONTROL & MONITORING UNIT

PORTABLE LED PAPI

TRAILER

Solutions4ga sp. z o. o 01-476 Sylwestra Kaliskiego 57 Warsaw, Polanc

www.solutions4ga.com +48 22 307 10 01 | office@solutions4ga.com

WORLD'S SAFEST RUNWAY LIGHTING