

CONSULTING  
ENGINEERING  
EXPERT IN HIGH  
TECHNOLOGY



# ALPHA-CIM

LEADER IN AUTOMATION SYSTEMS INTEGRATION  
AND INDUSTRIAL IT

## THE COMPANY LA SOCIÉTÉ

### Leader in automation systems integration and industrial IT

Always attentive to your needs, ALPHA-CIM offers innovative and turnkey solutions including low-voltage electrical engineering, IT networks & cybersecurity, industrial automation and SCADA system.

To meet our clients' needs, we also manage peripheral and complementary activities such as 24/7 third-party maintenance, user trainings, consultancy and audit.

### Leader en intégration de systèmes d'automatisme et d'informatique industrielle

Toujours à l'écoute et ayant à cœur de répondre aux problématiques de votre projet, ALPHA-CIM offre des solutions innovantes et clés en main en intégrant tous les domaines techniques constituant l'ossature de votre projet d'automatisme et d'informatique industrielle : les courants faibles, les réseaux et la cybersécurité, l'automatisme, la supervision et l'informatique industrielle.

Pour répondre aux besoins de nos clients, nous intervenons dans toutes les activités périphériques à notre métier comme : la gestion de contrats de maintenance, la formation des utilisateurs, la délégation de compétences.

30

years of experience  
ans d'expérience

300

projects in 2018  
projets réalisés en 2018

20

countries over the world  
pays à travers le monde

ALPHA-CIM offers high added value solutions  
for your projects in :

ALPHA-CIM offre des solutions à haute valeur  
ajoutée pour vos projets dans :



**AIRPORT**  
L'AÉROPORTUAIRE



**BUILDING**  
LE BÂTIMENT



**INDUSTRY**  
L'INDUSTRIE



**DEFENCE**  
LA DÉFENSE



**ENVIRONMENT**  
L'ENVIRONNEMENT



## AIRFIELD LIGHTING

ALPHA-CIM ensures safety and fluidity of ground traffic.

Our airfield lighting control and monitoring systems are open, adaptable and meet the operational constraints of international CATIII Airports as well as regional airports.

Our architectures rely on PLC with an IT architecture based on client workstations and redundant servers.

All features are totally configurable to meet the needs of both the runways & taxiways controllers and the maintenance requirements.

### BALISAGE DE PISTE

Avec ALPHA-CIM, assurez la sécurité et la fluidité du trafic au sol.

Nos systèmes de contrôles commandes de balisage sont ouverts, adaptables et répondent aux contraintes d'exploitation des aéroports internationaux CATIII de type Hub comme des aéroports régionaux.

Les architectures proposées s'appuient sur des API avec une architecture informatique à base de postes opérateurs clients et de serveurs redondants. Les fonctionnalités sont paramétrables pour convenir aux besoins des contrôleurs de pistes ou de voies de circulation et de la maintenance.

## ISAC

ISAC is the individual Light Control & Monitoring System developed by ALPHA-CIM. The ISAC airfield system ensures ground traffic guidance and monitoring provided by «Follow the Green» solution. It also controls and monitors the stop bars and manages A-SMGCS. The ISAC technology is the most efficient solution on the market. The fibre optic is a preferred mean of transmission that allows:

- ▶ Ultra-high communication speed
- ▶ Immunity to electromagnetic interferences or from AGL primary cable ageing or change of airfield cabling

Our solutions rely on non-proprietary protocols to allow interoperability with the existing installation.

 ISAC received the 2019 interDATA price from the international airport community.

### ISAC

Pour la gestion individuelle des feux de balisage, ALPHA-CIM conçoit et déploie ISAC, Intelligent System of ALPHA-CIM. Le système ISAC assure les fonctionnalités de guidage au sol « Follow the Green » ainsi que de gestion des barres d'arrêt et d'A-SMGCS. La technologie ISAC est la plus performante du marché grâce au média de communication en fibre optique assurant :

- ▶ de très hauts débits,
- ▶ une immunité aux perturbations électromagnétiques, au vieillissement et aux variations du câblage existant.

Nos solutions sont basées sur les protocoles non propriétaires afin d'assurer l'interopérabilité avec les autres systèmes existants de l'aéroport.

 ISAC, lauréat 2019 du prix interDATA décerné par la communauté internationale aéroportuaire.



## BAGGAGE HANDLING

Our software package dedicated to baggage handling carries out baggage routing tasks with the highest reliability. The software package also supports any future expansion of the airport.

It includes:

- ▶ Control and Monitoring System of the baggage handling system
- ▶ Tracking of the sorting by destination
- ▶ Automated routing of baggage
- ▶ 100% Baggage screening management
- ▶ EDS Standard 3 Interface
- ▶ Multiple Human Machine Interfaces (computers, video wall, remote display, tablet)
- ▶ Baggage geo-tracking (arrivals and departures)
- ▶ Manuel reintroduction unit
- ▶ Integrated Electronic Data Management (EDM)
- ▶ Computerized Maintenance Management System (CMMS) Interface
- ▶ Reports, KPIs & database systems
- ▶ Video integration
- ▶ Replay function
- ▶ Energy & Lighting efficiency management

### TRI BAGAGE

Notre suite logicielle dédiée au tri bagage assure les missions d'acheminement des bagages avec la plus haute fiabilité en prenant en considération les extensions futures des plateformes aéroportuaires.

Elle inclut les modules suivants :

- ▶ Supervision et automatisme du système de tri
- ▶ Suivi de tri par destination
- ▶ Routage automatisé des bagages
- ▶ Gestion IFBS 100 %
- ▶ Interface EDS Standard 3
- ▶ Interfaces homme-machine multiples (ordinateur, mur vidéo, téléaffichage, tablette)
- ▶ Géolocalisation des bagages (départs et arrivées)
- ▶ Poste d'introduction manuel
- ▶ GED intégrée
- ▶ Interface GMAO
- ▶ Rapports, indicateurs de performance, système de base de données
- ▶ Intégration vidéo
- ▶ Fonction magnétoscope (rejeux)
- ▶ Gestion énergétique et éclairage



## PASSENGER BOARDING BRIDGES

ALPHA-CIM develops the automation and the centralized & local SCADA of airports' passengers boarding bridges.

Our software is independent from the boarding bridge manufacturer and allows the supervision of all your boarding bridges, no matter the manufacturer. The solution displays real-time status of the equipment and enables the operator to allocate PBB to aircrafts. The SCADA enables integration of video for better feedback, real time information of telescopic bridge, visual docking system, 400Hz converters, air conditioning systems...

Reporting tools provide analytical information to optimize operation & maintenance of the bridges.

The system displays the status of installations and prevents malfunctions. These functionalities considerably reduce boarding & disembarkation time.

### PASSERELLES

ALPHA-CIM développe l'automatisme et la supervision centralisée et locale des passerelles aéroportuaires. Notre solution logicielle est indépendante du constructeur de passerelle. Elle permet de superviser l'ensemble d'un parc multi-constructeurs, d'y intégrer de la vidéo, d'allouer les stands et de connaître en temps réel leur occupation.

La supervision permet d'avoir un retour d'état sur les passerelles télescopiques, les mires de guidage, les convertisseurs 400 Hz, les systèmes de conditionnement d'air... Les outils de rapports fournissent les informations d'analyse afin d'optimiser leur exploitation et leur maintenance.

Le système visualise l'état des installations, prévient des dysfonctionnements, ce qui réduit le temps d'embarquement et de débarquement.



## PASSENGER FLOW

Our passenger flow management systems ensure physical separation of passengers flows whether they are boarding or disembarking.

Automatic locking of doors to create the right pathway for passengers is done by the ground staff directly on their control panel. The system also manages the splitting between international and Schengen flights.

The user-friendly and ergonomic HMI considerably improves the operations efficiency.

### FLUX DES PASSAGERS

Assurer la séparation physique entre les flux de passagers lors des débarquements et embarquements grâce à nos systèmes de gestion de flux de passagers.

À partir des platines tactiles, le personnel au sol lance la séparation de flux par verrouillage automatique des issues. Le système gère aussi la séparation entre les vols internationaux et les vols Schengen.

L'IHM conviviale et ergonomique améliore grandement l'efficacité d'exploitation.

## AIRPORT INTEGRATION (APOC)

ALPHA-CIM offers Hypervision solutions to meet the need of APOC (Airport Operation Centre) allowing integration of all the Airport stakeholders.

All the integrations rely on secure & robust architectures. Interoperability and open systems are at the center of ALPHA-CIM APOC solutions. The hypervisor ALPHA-CIM offers relevant information for:

- ▶ Operation
- ▶ Interoperability
- ▶ Increasing efficiency of interventions
- ▶ Feedback thanks to data analysis
- ▶ Scheduling and predictive analysis of operations

### AIRPORT INTEGRATION - APOC

ALPHA-CIM propose des solutions d'hypervision afin de répondre au besoin d'APOC (Airport Operation Center) et d'intégration entre les spécialités.

L'ensemble des intégrations réalisées repose sur des architectures sécurisées et robustes. L'interopérabilité et l'ouverture sont au cœur du système ALPHA-CIM. L'hyperviseur ALPHA-CIM offre des informations pertinentes pour :

- ▶ L'exploitation
- ▶ L'interopérabilité
- ▶ La rapidité d'intervention
- ▶ Les retours d'expérience grâce aux analyses de données
- ▶ La planification et l'analyse prédictive des opérations

## BUILDING LE BÂTIMENT



## FIRE SAFETY

At ALPHA-CIM, we understand the challenges of fire safety for all type and size of infrastructures. That is why our fire SCADA system is designed to be the most efficient possible and to guide the operator in its surveillance mission.

Our system merges the data and interfaces collected from any constructor. Its ergonomic and intuitive interface will significantly ease the daily work of the user.

### ALPHACAD

ALPHACAD automatically generates fire SCADA making updates easier and pleasant. ALPHACAD is also much more reliable than manual installation.

Functionalities:

- ▶ 3D visualisation
- ▶ Schematics
- ▶ Video
- ▶ Mobility & safety
- ▶ Open and compatible with multi manufacturers' architectures
- ▶ Zoning (subdivision, smoke extraction)
- ▶ Securing
- ▶ Remote reset of the fire safety unit
- ▶ Safety guidelines
- ▶ Switch off/on and deactivation of equipment for tests
- ▶ Scenarios management
- ▶ Periodic testing
- ▶ Traceability
- ▶ Dynamic AUTOCAD plans & fire unit software importation
- ▶ Discrepancies and inconsistencies focus

### SÉCURITÉ INCENDIE

Chez ALPHA-CIM, nous comprenons à quel point la gestion des systèmes de sécurité incendie est critique pour tout type d'infrastructure. C'est pourquoi notre Unité d'Aide à l'Exploitation (UAE) a été conçue pour guider l'exploitant dans sa mission de surveillance quelle que soit l'étendue du site. Notre système fusionne les données et interfaces issues de constructeurs différents. Son interface ergonomique et intuitive simplifiera le travail quotidien de son utilisateur.

### ALPHACAD

Notre générateur automatique d'UAE rend les mises à jour simples et conviviales. ALPHACAD assurera une installation bien plus fiable qu'une installation manuelle.

Fonctionnalités :

- ▶ Visualisation 3D
- ▶ Schémathèque
- ▶ Vidéo
- ▶ Mobilité et sécurité
- ▶ Ouvert et compatible avec architecture multi-constructeurs
- ▶ Zoning (compartimentage, désenfumage)
- ▶ Mise en sécurité
- ▶ Réarmement des centrales incendie
- ▶ Consignes de sécurité
- ▶ Mises en/hors service ou essais avec permis feu
- ▶ Gestion des scénarios
- ▶ Essais périodiques
- ▶ Traçabilité
- ▶ Importation dynamique plans AUTOCAD & programmation centrales
- ▶ Aide à la levée des incohérences



## SECURITY

Since 2008, our Security Access Control Systems (PEXAS) meet the highest requirements of surveillance missions.

The PEXAS software enables a global view of the border allowing a very rapid intervention in case of breach of the border. Our IT solution gathers the data from different manufacturers of centralised emergency exit management unit and video systems.

PEXAS enables a unified & efficient view of all the sensitive access on one and unique application.

- ▶ Automated Incursion alarm
- ▶ Geo-tracking and rapid intervention
- ▶ Video incrustation (live & replay)
- ▶ Traceability of events & actions
- ▶ Analytics
- ▶ High availability of the system
- ▶ Automatic update via ALPHACAD

### SURETÉ

Depuis 2008, nos Postes Exploitation Accès Sureté (PEXAS) répondent aux problématiques de surveillance les plus pointues.

L'application PEXAS offre à l'opérateur en salle de contrôle une vision globale de la frontière et lui permet d'intervenir au plus vite en cas de violation de celle-ci, par détection d'intrusion. Notre solution informatique fédère les données des différents constructeurs d'UGCIS et vidéo.

PEXAS permet d'avoir une vision unifiée et efficace de l'ensemble des accès sensibles à surveiller sur une seule et même application :

- ▶ Calcul automatique d'alarme intrusion
- ▶ Localisation et rapidité d'intervention



- ▶ Incrustation vidéo (live et replay)
- ▶ Traçabilité des événements et actions
- ▶ Analytics
- ▶ Haute disponibilité du système
- ▶ Mise à jour automatique via ALPHACAD



## BUILDING MANAGEMENT

Our Building Management Systems are adaptable to all buildings' configuration such as tertiary sector, datacentres, industrial sites and airports.

ALPHA-CIM technical offer enables supervision and monitoring of all technological equipments of intelligent buildings that interfaces with:

- ▶ Heating, ventilation & air conditioning
- ▶ Lighting
- ▶ Energy
- ▶ High-voltage current
- ▶ Low-voltage current
- ▶ Plumbing

### GESTION DU BÂTIMENT

Nos systèmes de GTB/GTC sont adaptés à toutes les configurations de bâtiments, tels que le tertiaire, les datacenters, les sites industriels et les aéroports.

Notre offre technique permet de superviser et de contrôler l'ensemble des équipements technologiques d'un bâtiment intelligent qui s'interface avec :

- ▶ Chauffage, ventilation, climatisation (CVC)
- ▶ Éclairage
- ▶ Énergie
- ▶ Courant fort (CFO)
- ▶ Courant faible (CFA)
- ▶ Plomberie (PLB)

## INDUSTRY, DEFENCE & ENVIRONMENT L'INDUSTRIE, LA DÉFENSE & L'ENVIRONNEMENT



## INDUSTRY

ALPHA-CIM offers the most appropriate turnkey solutions to the industrial sector to accompany them in building a digital plant relying on automation and monitoring.

Our software rationalises the exchanges between equipments of production, IoT, operators and management software around one and unique tracking activity of production system.

The Key Performance Indicator linked with automation of processes ease and improve production by targeting crucial points and highlighting areas of improvement.

### INDUSTRIE

ALPHA-CIM offre aux industriels les solutions clés en main les plus appropriées pour la réalisation de leurs projets d'usine numérique à base d'automatisme et de supervision.

Nos outils logiciels rationalisent les échanges entre les équipements de production, les IOT, les opérateurs et l'informatique de gestion autour d'un seul et unique système de suivi des activités de production.

Les indicateurs et l'automatisation des processus facilitent et rentabilisent la production en ciblant les points critiques et en mettant en évidence les axes d'améliorations.



## DEFENCE

At ALPHA-CIM, we understand the specific requirements of our clients from the defence sector. We develop industrial test benches, automation on military bases and SCADA for data centres.

Our experts adapt to specific constraints linked to the defence sector.

### DÉFENSE

ALPHA-CIM réalise pour nos clients du secteur de la défense des bancs de tests et d'essais, des automatismes sur bases militaires, de la supervision de datacenters.

Nos experts s'adaptent aux contraintes spécifiques liées au secteur de la défense.

## SERVICES & TECHNOLOGIES LES SERVICES & TECHNOLOGIES



### ENVIRONMENT

ALPHA-CIM deploys automation & SCADA solutions for the environment (water treatment & sanitation).

Our experience guarantees the reliability of solutions brought, the continuity of operations, the management of servo regulation systems, traceability of data and its analysis.

ALPHA-CIM handles your projects including rehabilitation, revamping, updating or completely new projects.

### ENVIRONNEMENT

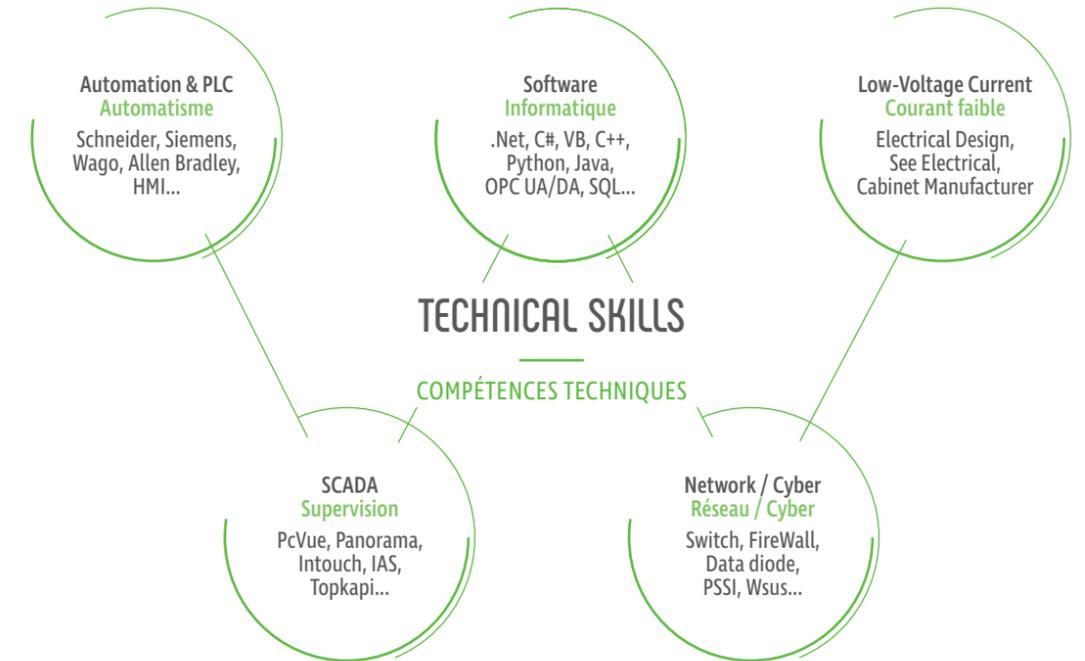
Nous déployons des solutions d'automatisme et de supervision dans le monde de l'environnement, du traitement de l'eau et de l'assainissement.

Notre expérience garantit la fiabilité des solutions apportées, la continuité d'exploitation, la gestion des asservissements d'automatisme, la traçabilité des données et leur exploitation.

ALPHA-CIM prend en charge vos nouveaux projets, des réhabilitations ou migrations avec toutes les contraintes d'exploitation associées.

ALPHA-CIM masters all those technologies and more in order to provide our customers with the best solution according to their projects.

ALPHA-CIM maîtrise l'ensemble de ces technologies afin de vous proposer la solution la plus pertinente.



### SERVICES

In addition to our main activities, ALPHA-CIM can handle:

- ▶ Third-party Application Maintenance
- ▶ Maintenance in operational condition
- ▶ On-call duty
- ▶ Remote maintenance
- ▶ On-site trainings
- ▶ Knowledge transfer
- ▶ Audit & feasibility study

### SERVICES

Afin d'offrir à nos clients les services complets autour de leurs projets, ALPHA-CIM intervient dans les missions connexes de notre expertise :

- ▶ Tierce Maintenance Applicative (TMA)
- ▶ Maintien en condition opérationnelle (MCO)
- ▶ Astreinte
- ▶ Télémaintenance
- ▶ Formation
- ▶ Délégation de compétences
- ▶ Audit et études de faisabilité

# FB TECHNOLOGY

WORLDWIDE LEADER IN AIRFIELD LIGHTING PHOTOMETRIC SYSTEMS

22

years of experience

3

patented innovative systems

135

systems installed worldwide

50

countries over the world

## THE COMPANY

FB Technology is a French expert in Airfield Ground Lights (AGL) products, all compliant with ICAO, FAA & STAC standards or recommendations.

With more than 22 years of experience, FB Technology has become an expert in photometric and maintenance systems for airfield lighting. Since its beginning, FB Technology has been leading the innovation Worldwide. Often imitated, never equaled, our state-of-the-art products are designed in consideration of upcoming airports' challenges.

From Photometric measurement to lights cleaning system we deliver high quality innovative products to our clients. Our highly-skilled experts provide you with turnkey & high added value solutions.

Customer relation is at the center of our values. That is why FB Technology offers to all its partners effective technical services with trainings, system installations and support all through the lifetime of the systems (20 years++).

FB Technology joined ALPHA-CIM for efficient collaboration on their respective developments.

All our products are :

- ▶ Compliant with ICAO, FAA & STNA standards or recommendations;
- ▶ Able to measure approach, taxiway & runway lights and AGL signs;
- ▶ User friendly & intuitive HMI;
- ▶ Highly accurate & repeatable.



### PAC<sup>2</sup> V5 (PHOTOMETRIC AIRFIELD CALIBRATION)

PAC<sup>2</sup> V5 is a breakthrough innovation in mobile light measurement of airfield lighting system. The bi-directional strip sensor enables to:

- ▶ Reduce measurement time by at least 50%
- ▶ Perform preventative maintenance
- ▶ Optimize personnel management and stocks
- ▶ Save money from operational work

This mobile system measures all inset and low elevated lights on approaches and runways and all inset lights on taxiways, displaying in real-time the iso-candela curves once a light beam has been measured.

It automatically and immediately generates reports with candela value of each light and identifies any defect requiring action to be taken. It also makes it possible to monitor lamp ageing from previous runs so that all the results for a runway/ approach or taxiway can be compared.

This enables the airfield lighting department to plan its operations and manage its stocks as efficiently as possible.

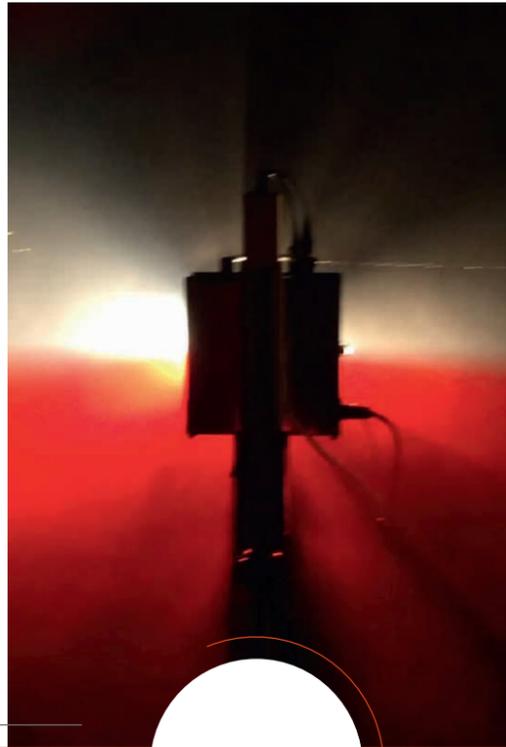
### PAC LAB II

Based on mobile measurement of the airfield fittings, lights that are not compliant need to be repaired and verified before installing them back on site. For this purpose a workshop photometry control unit is necessary.

FB Technology has therefore developed the PAC Lab II system as the complementary device of the PAC<sup>2</sup> V5. Installed in the airport workshop, the system provides fast measurements of the light output of the fitting and compares it with the ICAO specifications. The measurement is completed in few seconds and the software gives a detailed report sheet of the performances of the fitting. Light beams are measured automatically, even bi-directional fittings.

All AGL facilities can be measured:

- ▶ Inset and elevated lights on approaches and runways
- ▶ Inset lights on taxiways



### PACπ

PACπ measures the PAPI lights and provides the measurement results according to the requirements specified in Appendix 2 of Annex 14, 5<sup>th</sup> edition July 2009, of ICAO.

Using a high resolution camera, a spectro-photometer and lux sensors, PACπ provides all necessary information related to the aiming angles, the transition, the chromaticity and the isocandela diagram of the light beam.

### MARC ONE

A revolutionary robotic platform performing multiple autonomous maintenance tasks:

- ▶ Automatic measurement of AGL photometry to verify ICAO or FAA compliance with the PAC<sup>2</sup> V5 bi-directional sensors strip;
- ▶ Automatic verification of the torque value of the bolts/screws securing the inset light fixtures on their bases;
- ▶ Perform automatic cleaning of AGL lights;
- ▶ Measure and provides the iso-lux curves of Airport Aprons.

### PAXIGN

The airfield signs have to fulfill very precise light output criteria and must comply with ICAO requirements.

PAXign allows to easily, efficiently and very quickly measure lights and check for chromatic & luminance compliance.

It is based on a portable calibrated high precision camera enabling both airside and workshop measurement.

- ▶ Comparison table with traditional system: Time saving (10 seconds against 30 minutes) / Resource saving (1 operator against 2 or 3 operators);
- ▶ 10s data acquisition & real-time processing of the data;
- ▶ Instant reporting displayed on the tablet and instant creation of pdf reports.

### PAC APRON

PAC Apron is an embedded lighting measurement system that will allow airport to accurately measure the lux values of the apron floodlighting and verify the iso-lux requirements as defined by ICAO/ EASA & FAA.

Ensure safety of personnel and equipment on the aircraft parking areas by measuring aprons floodlighting.

The system can be installed on any vehicle. It provides immediate display of results and immediate creation of pdf reports. Results include GPS co-ordinates of the measurement on-site.

### SODICE

Safe and advanced equipment for cleaning lights with the greatest efficiency. Enabling rapid intervention (few seconds per light).

Environment friendly: Leave very few residual products on the runway.

Works under all weather conditions.

Using pressurized soda bicarbonate powder or vegetal powder.

Entirely dry, therefore it does not alter the prim's gaskets and no water can penetrate inside the fittings.

### m-TAC

A smart manual fastening system for tightening processes. This ultimate tool for manual control of the torque value of each screw and bolt tightening the inset fittings on their respective shallow base.

Measurement is done manually using the torque wrench. Each result will be stored in the airport database of AGL fittings. The torque wrench has an extension rod of 1 meter so that operator can undertake the measurement while standing.

Results are sent from the torque wrench to the laptop, computer or tablet using WiFi.



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