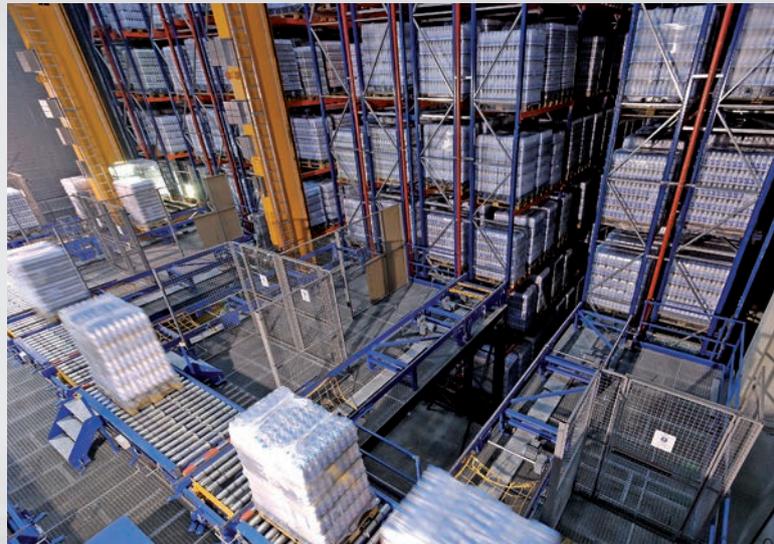


# ALstef

## Expert in materials handling



ALstef

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## The company

Since its creation in 1961, ALSTEF has built and developed its reputation on the automated handling market, first under the name CGMS, then CGP and ALSTOM Automation, before taking its current name in 2000.

During its 50 years' experience, ALSTEF has delivered several hundred installations in the logistics and airport sectors. It is currently the partner of many industrials (food-processing, cosmetics, etc.) and 3PL logistic company, with over 400 installations and over 30 airports throughout the world.

In 2018, Alstef and BA Robotic Systems Group announce their merger to create B2A Technology, new French leader in automated turnkey solutions for intralogistics, airports and robotics markets.

Based on an annual turnover of 100 million euros and a workforce of over 500 employees, B2A Technology will offer integrated solutions in France and abroad and will support its development on external growth. Its capital is divided between Future French Champions (CDC International Capital and Qatar Investment Authority) up to 32%, Pierre MAROL (Chairman of ALSTEF) 25%, Jean-Luc THOMÉ (Chairman of BA Robotic Systems Group) 17%, managers of both entities 14% and employees 12%.

## Delivery time and performance

ALSTEF designs and manufactures turnkey installations with commitment to results. The skills, experience and professionalism of its project teams combined with its precise definition of processes makes it possible to guarantee both deadlines and performance. Customer loyalty is the best testimony to the quality of its teams and services.

## Mastery of design

Through its internal design offices, ALSTEF benefits from the expertise of its own engineers and technicians for all aspects of design: system studies, simulation, mechanics, electrical systems, automation, supervision and information technology. Software emulation tests are systematically carried out before being integrated onsite.

The combined experience of its technical teams in the fields of automated handling enables ALSTEF to respond to the most challenging projects with precision and professionalism.



**€62 M**  
TURNOVER  
in 2016  
+73% vs 2014

**100%**  
AUTOMATED  
SYSTEMS

**35%**  
of TURNOVER  
from EXPORT

WORKFORCE  
of **260**  
employees

Including **80**  
in DESIGN  
OFFICES

## An industrial tool to ensure project quality

ALSTEF has developed a comprehensive range of handling system automation products for the logistics and airport sectors. All products are designed based on the same principles of modularity and maintainability. Three workshops covering a surface area of over 5,000 m<sup>2</sup>, make it possible to build prototypes, assemble the products and prepare deliveries according to the schedule and onsite assembly.

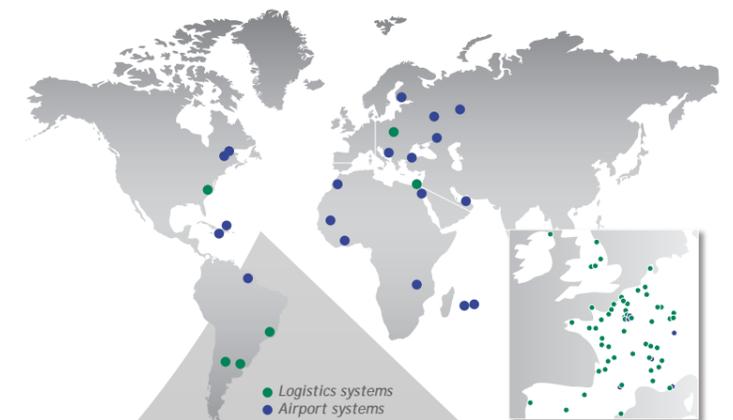
## Assembly, commissioning and beginning of operations

The assembly teams are coordinated onsite by experienced site managers in strict compliance with safety rules.

The electromechanical commissioning is carried out by the technicians who will then be in charge of maintaining the installation.

The engineers who developed the software ensure its integration onsite and trains the customer's operations teams.

## International development



International development is an important aspect for ALSTEF. Export represents close to 35% of its turnover. Already present in two-dozen countries, ALSTEF has also set up several subsidiaries enabling it to consolidate its export positioning and be closer to its customers. In Canada, Turkey, Russia and lately Croatia, ALSTEF's presence enables it to offer its customers qualified contacts and a reliable service both for operations and maintenance.

# ALstef Automated storage and order picking

## Optimised and scalable solutions

With its fifty years' experience and more than 1,000 stacker-cranes installed, ALSTEF has acquired unique expertise in logistics processes, and can offer its customers the best solutions to meet their present and future challenges.

The systems designed and implemented by ALSTEF make it possible to improve product traceability and inventory quality, reduce logistics costs and error rates in order picking. They help improving working conditions by offering user-friendly and intuitive workstations.

## A comprehensive range of products

ALSTEF has developed its own range of products in order to ensure the performance of its solutions.

The mechanical optimisation and standardisation of its conveyors ensures quick assembly and unfailing reliability.

Single and multi-level ProxiShuttles offer the speed and flexibility needed to supply workstations with pallets by ensuring high throughputs.

Elevators, diverter turntables, order-picking shafts, for each development, ALSTEF capitalises on its technical expertise gained over more than 50 years combined with its R&D programme.

From conveyor motorisation to control by WCS, along with sensor cells and positioning systems, ALSTEF offers reputed non-proprietary "open-source" components, marketed throughout the world.

ALSTEF integrates all the equipment necessary to optimize installations: AGVs, electro monorail, stacker-cranes, robots, bundlers, wrapping machines, labellers, stretch-hood machines, etc.

## Partners

In addition to its own range of products, ALSTEF builds partnerships with leading companies for complementary products, with always the same goal: offer cutting-edge technology to its customers.

ALSTEF has thus signed a partnership with the Italian company Eurofork for the distribution of Esmartshuttle, a fully automated shuttle system making it possible to achieve higher pallet throughputs than with a stacker crane, and manage multiple depths. ALSTEF also distributes the compact bin storage system Autostore®.



## Order picking

Through its automated solutions, ALSTEF enables its customers to meet the two major challenges that are the boom in pallet and parcel order-picking needs and the increased cost of picking operations due to the reinforcement of the legislation on musculoskeletal disorders. Alstef studies the requirements on a case by case basis for BtoB or BtoC solutions and offers systems adapted to parcel or layer order-picking.

### Examples of order-picking applications

- **Robotised order-picking.**

The principle consists in setting-up an automatic reserve stock which supplies a buffer stock of source pallets in interface with the layer deposit picking robot(s). The multi-reference pallets can then be conveyed towards a parcel preparation area – either manual or robotised – to be completed with references of which the number is less than a full layer.

- **Order-picking shafts.**

The operator is positioned on a platform on which the preparation shafts are installed. Three elevators supply the shafts and ensure the products to be picked are on the same level as the pallet to be stacked.

The ergonomics of the workstation has been carefully designed to facilitate the operator's handling operations by limiting load carrying. Screens located on either side indicate the operations to be carried out through an intuitive interface.

- **A compact and scalable system.**

ALSTEF distributes the "goods to person" Autostore® solution which makes it possible to optimise storage and order picking through its bin stacking system for maximum loads of 30 kg.

Especially adapted to e-commerce or spare parts industries, this compact system includes the structure, bins, storage robots and picking stations. The number of storage cells and bins can easily be increased along with the number of robots and operator stations.

ALSTEF also offers traditional picking solutions such as the "pick and put to light" order-picking system which uses light signals. Each customer specification is studied to provide the best solution.

# ALstef Hold-baggage handling systems

## Sustainable and reliable solutions

ALSTEF's solutions integrate all the functions from baggage check-in to baggage reclaim. The systems are designed to ensure a flexible operation, reduce maintenance costs, enable future developments and optimise the process time between check-in and loading bags into plane holds.

## Innovative products

Innovation is an integral part of processes. Standard products are specially designed to meet the latest environmental standards (noise, energy consumption, etc.).

In addition to designing and developing its own range of products, ALSTEF integrates all the technologies making it possible to improve the performance of its systems.

The latest ECAC regulations (European Civil aviation Conference) pertaining to the detection of explosives impose the integration of high speed Standard 3 tomography machines in baggage handling systems in order to check 100% of bags. Since 2013, ALSTEF has developed unique expertise in Europe in the integration of standard 3 machines, with successful implementations in different airports, including the newest Smiths Detection, L3COM, Rapiscan and Morpho Detection machines available on the market. In order to meet the growing needs for 100% traceable baggage in airports, especially in the framework of the IATA 753 resolution (International Air Transport Association), ALSTEF has developed several baggage tag identification systems: laser or optic reading of barcodes, optic cameras with character recognition or RFID tag reading.

ALSTEF has also developed BAGXenter, a baggage centring and repositioning systems in order to optimise bag presentation at the entrance of screening machines, continuous elevators or to be loaded onto shuttles.

## Energy efficiency

ALSTEF is constantly improving its equipment's energy efficiency. The implementation of the Wave Concept on our conveyors makes it possible to reduce up to 50% their energy consumption.

The whole range of BAGVeyor conveyors is optimised with different types of belts according to their function, which makes it possible to reduce the mechanical energy necessary for their operation.

ALSTEF also offers next-generation low-energy consumption engine specifications (IE4).



## A comprehensive range of products

### Check-in desks

Our solutions facilitate the journey of passengers by making their baggage check-in quick and easy by user-friendly processes.

Our range of conventional check-in desks is designed to meet the specific requirements of each airport and adapts to all types of architectural configurations (linear, islands, "walk through", etc.).

ALSTEF also offers a full range of automated drop-off points (self bag drop) going from simple drop-offs with manual tag reading to fully automated and secure machines with tag printing, automatic tag reading, security system, etc.

### Carousels

For baggage make up on departure or baggage reclaim on arrival, ALSTEF offers a full range of carousels developed by its design office ("flat" version or high capacity "inclined").

BAGClaim friction drive carousels combine reliability, durability, very low energy consumption and very low noise levels.

### Automated sorting systems

ALSTEF offers the best automated sorting solutions according to the baggage flows to be sorted, the building constraints and the airport's redundancy requirements.

For medium capacity sorting systems, ALSTEF offers sorting carousels with high speed pushers, an efficient, reliable and cost-effective solution, both as regards the investment and operating costs.

For high-capacity sorting systems, ALSTEF offers the best technologies on the market with both tilt tray and cross-belt sorting systems. ALSTEF was the first to implement the "cross belt" technology for baggages in France.

### Bag storage

Combining its experience in the fields of automated storage and automated baggage sorting, ALSTEF fully masters the design of automated bag storage systems. These systems make it possible to store bags for a few minutes (process storage), a few hours (EBS or Early Bag Storage), or a few days, before they are reintroduced in the sorting system. ALSTEF offers technologies adapted to each application:

BAGTote: mass storage with individual access to each bag using stacker cranes.

BAGShuttle: storage per slot or flight on conveyor lines served by high speed shuttles.

# ALstef Innovation and R&D | Information systems

## Innovation and R&D

Innovation is an essential aspect for ALSTEF as its business areas rely heavily on technology. The company is thus constantly innovating through its ambitious research and development programme.

ALSTEF provides solutions for the industry 4.0 and supports its customers in their digital transformation.

A significant investment was initiated over the past few years for the development of its own software programmes, thus offering its customers ever more user-friendliness and functionalities.

The after-sales service is not left aside with the development of 4.0 maintenance making it possible to optimise and improve the availability and performance of installations. Monitoring using mobile devices (tablets, PDAs, telephones, etc.) speeds up maintenance operations. Data collection and processing plays a vital role in the transformation of supply chain processes, as it enables quick decisions and saves precious time for production.

## 3D emulation

All the software and system programming configurations are tested before their integration on the customer's site though 3D emulation software. This operative part simulation enables the exhaustive verification of the automation system and the interfacing with our management software packages (Bagware® or Stockware®) with the possibility to integrate the customer's information system. This step ensures quick and efficient commissioning onsite and the system's immediate operation.

## Innovation and transmission of expertise

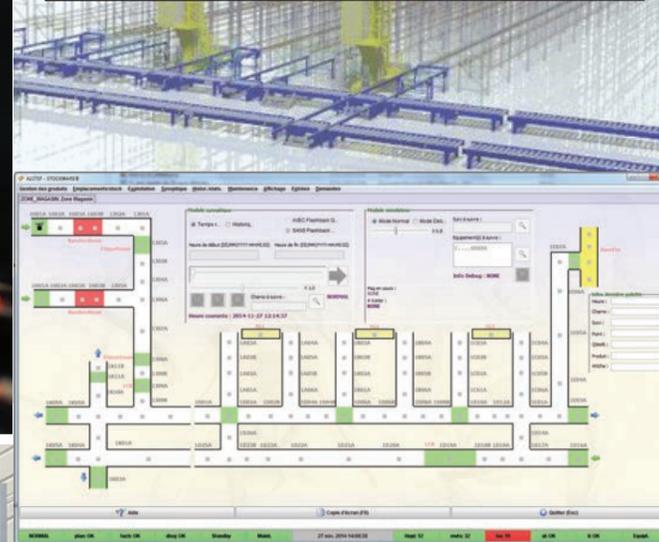
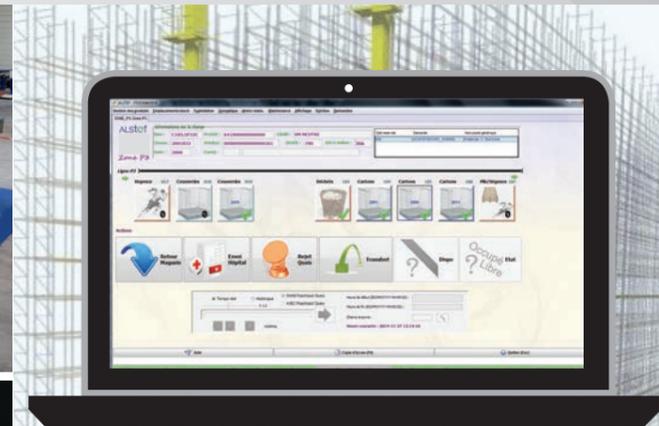
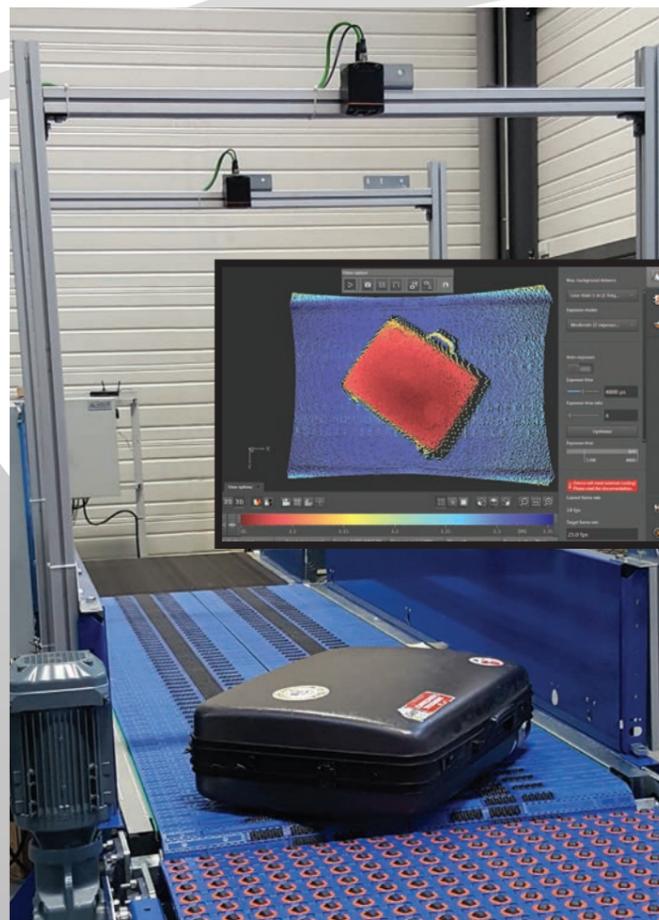
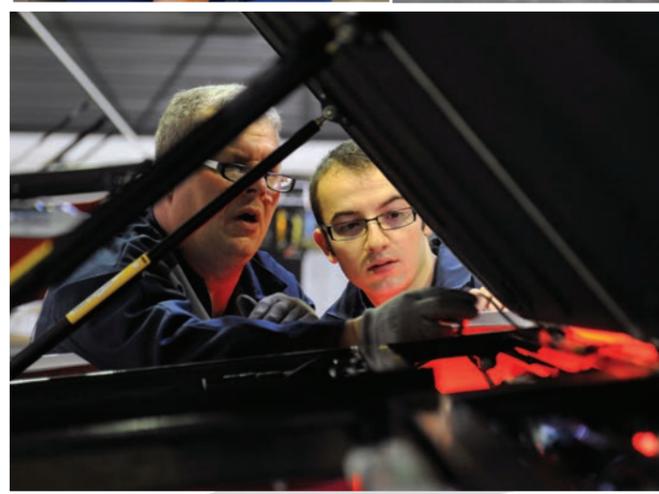
BAGXenter, a system enabling the dynamic centring and repositioning of bags, was recently developed in conjunction with POLYTECH, master engineering of the University of Orléans.

Exchanging, sharing and learning are key notions for the company which integrates many apprentices and young graduates, in order to perpetrate this transmission of expertise and the exchange of knowledge concerning new technologies.

## Information system safety

Information system safety is vital for the proper operation of industrial systems. Control-command systems connected to other company information systems are exposed to cyber threats.

ALSTEF is able to meet the specifications governed by the ANSSI (the French Information Security Agency) and supports its customers in the deployment and management of installation security.



## Management software packages

In order to offer the comprehensive and optimal management of its installations, ALSTEF has developed its own management software packages. Flexible and scalable, these adapt to any configuration's requirements.

### Stockware®

This software package is dedicated to the management and control of automated warehouses and order picking. It receives the lists of higher-level tasks to be performed (ERP, WMS, MES, etc.) : reception, order picking and shipping, and ensures the interfaces between the operators and the equipment control operations and stock monitoring processes, while optimising flows.

Its highly available architecture ensures maximum security through server redundancy, which enables switchovers during operation.

Stockware® can handle very complex equipment architectures. It integrates a statistics calculation module, overviews, operating counters and traceability tools.

### Bagware®

This software enables the automatic management of baggage systems.

It receives information on BMS baggage from SITA, ARINC or local DCS and on flight plans (FIMS of the airport)

It automatically directs bags to the appropriate chute(s), based on the allocations determined by the BAGWare Vol flight planning module.

Service continuity is addressed at all levels of the product, ensuring 100% baggage screening 24/7. Its highly available architecture enables the continuous operation of the system in the case of an incident.

The configuration of applicable rules available to the customer provides the operator with operation flexibility in order to optimise resources.

It exchanges information in real time with the BAGWare View monitoring system, which makes it possible to act on all equipment in the installation using animated screens.

## Monitoring

In addition to the management software, Alstef offers a graphic control and management aid system. This tool integrates synoptics, including the animation of all sensors, actuators & networks. The reporting functions (events, defects, flows), make it possible to create reports exportable to different office software programs.

# ALstef Maintenance and operation | Quality



## Customized contracts

### Engineering maintenance

ALSTEF's maintenance teams consist of approximately a dozen engineers and a hundred specialised technicians who have acquired over time specific expertise on automated handling systems. Based in the regional branches, they can respond quickly and ensure a high level of availability at the lowest cost.

ALSTEF offers a comprehensive range that adapts to each customer's specific requirements and organisations: integrated maintenance and operation on customer sites, preventive maintenance visits, hotline support, development and integration of maintenance aid tools (monitoring, CMMS, PDA, connected sensors), diagnoses, audits, spare parts, special maintenance and operation training.

ALSTEF's teams also support their customers throughout the life of the installations and offer adapted upgrade solutions to manage obsolescence. This is often an opportunity to upgrade the system to meet new requirements by carrying out time and space-saving operations, or improving performance through IT migration.

### Hotline

ALSTEF also offers remote support for the IT and automation aspects. This hotline service is ensured 24/7 by some thirty engineers based at the head office in Orléans, who have a perfect knowledge of the Bagware and Stockware software packages.

### Operation

Dedicated teams are deployed in the airports in order to operate and maintain the equipment. ALSTEF currently has 10 such platforms throughout the world.

This is for example the case for ADM (Montreal Airports) who appointed ALSTEF to the full maintenance and operation of the bag sorting system in the transborder terminal of the P.E. Trudeau airport in Montreal. This 20-year contract required the recruitment and training of a dedicated team of 85 people.



## A culture of Quality, Health, Safety and Environment

ALSTEF is strongly involved in the Quality / Health, Safety and Environment approach. The company obtained its first certification over 18 years ago. It demonstrates its strong involvement in these areas by obtaining a permanently renewing its 3 certificates: ISO 9001, ISO 14001 and OHSAS 18001.

ALSTEF customers are the focus of the company's efforts with the will to fulfil their commitments and satisfy them in permanence: this is one of the key values of ALSTEF's QSE policy.

Through its integrated management system, the company adopts a process-based approach, based on risks and opportunities management. This approach strengthens the company's efficiency and performance and enables ALSTEF to continuously adapt and improve. Keeping commitments, technical competence, energy recovering equipment, waste sorting, health and safety management on worksites are all examples of customer satisfaction criteria.

## Corporate Social Responsibility commitments (CSR)

ALSTEF is committed to economic, social and environmental aspects with its clients, partners, sub-contractors, suppliers, and personnel. The company wishes to communicate and demonstrate its CSR commitments.

People are at the heart of the company's success and sustainable development approach. ALSTEF supports its employees, from the moment they join the company and throughout their entire career.

The Human Resources and QSE (Quality Safety Environment) functions play a central role in training and supporting our employees in honouring our 8 commitments to the social aspect of sustainable development:

- 1- PROMOTING DIVERSITY
- 2- TRAINING
- 3- TRANSFERRING SKILLS TO YOUNGER GENERATIONS
- 4- MAINTAINING EMPLOYMENT
- 5- GIVING ACCESS TO SHARE CAPITAL
- 6- PROMOTING LEARNING
- 7- TAKING PART IN COMMUNITY LIFE
- 8- CONTRIBUTING TO SUSTAINABLE DEVELOPMENT

# ALstef

## HEAD OFFICE

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## REGIONAL BRANCHES

### Northern area

17 rue du Vertuquet  
59960 NEUVILLE EN FERRAIN | FRANCE

### South eastern area

7 rue du Colonel Chambonnet  
69500 BRON | FRANCE

### CDG Airport

14 rue de la grande borne  
77990 LE MESNIL AMELOT | FRANCE

### NICE Airport

Aéroport de Nice  
06200 NICE | FRANCE

### FDL Airport

Aéroport international Aimé Césaire  
Zone aéroportuaire  
Espace aéro-services  
97232 LE LAMENTIN | MARTINIQUE

## SUBSIDIARIES

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### ALSTEF | Croatia

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10 000 ZAGREB | CROATIA

### ALSTEF | Turkey

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