AVIATION INFORMATION COMMUNICATION ENGINEERING

A-ICE

When you need IT simple

A-ICE Aviation Information Communication Engineering

a-ice.aero

When you need IT simple

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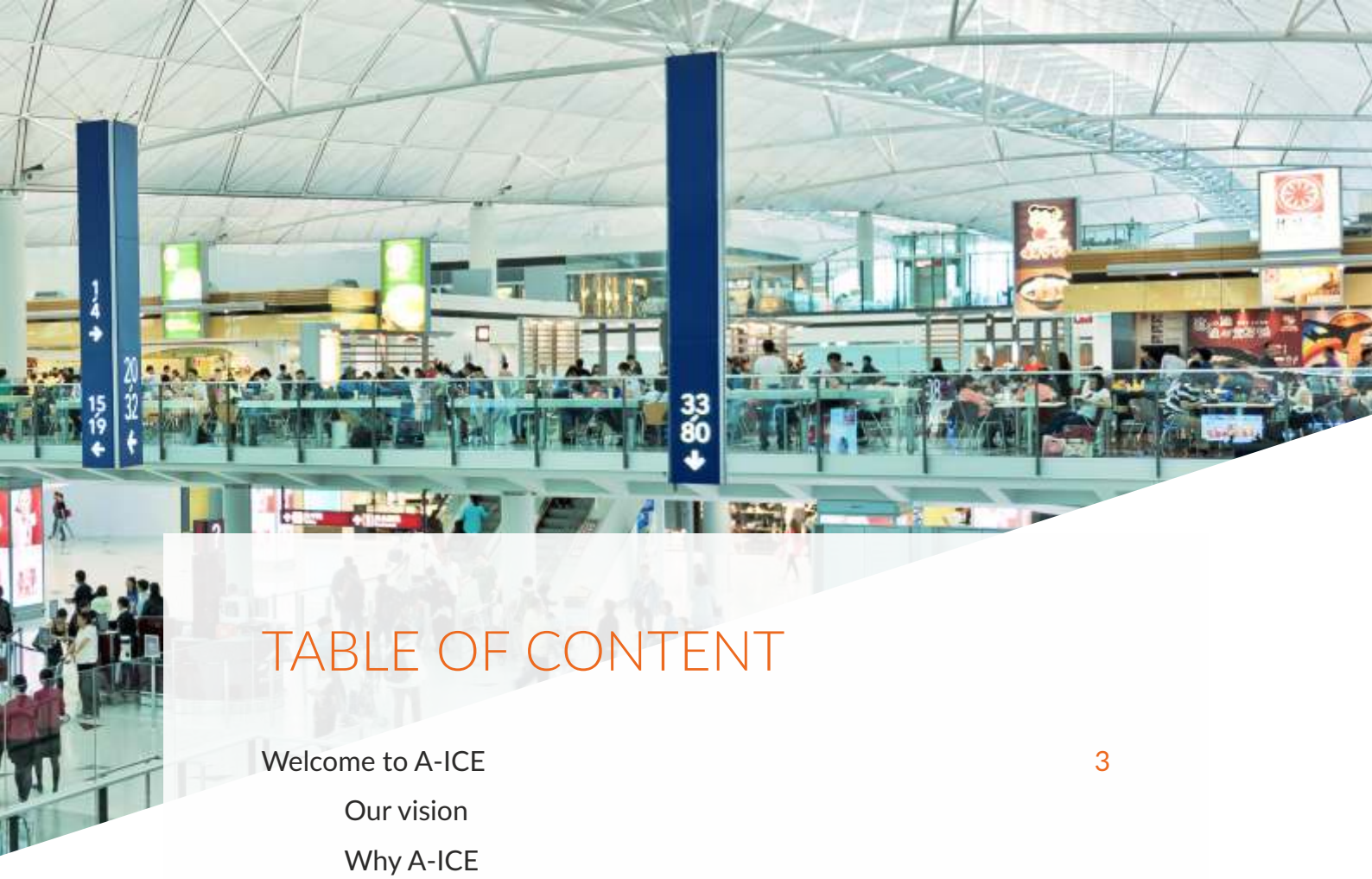
Servicing the aviation community since 2004

A-ICE provides value added IT solutions and integrated applications to the Aviation industry, with a specific experience in the implementation and support of mission critical systems. Our team consists of highly skilled professionals. It's a blend of software specialists in airlines, airports and ground handlers, as well as military experts.

From passenger and luggage management (A-DCS), aircraft monitoring (A-HDB), to airport display information systems (A-FIDS), messaging distribution, our solutions are easy to use, reducing start-up time and costs: plug it and go live.

A-ICE offers a consultative approach, which allows us to tailor solutions to each customer's individual requirements: after all each business is run differently.

So when you need IT simple, A-ICE can deliver.



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WELCOME TO A-ICE

OUR VISION

In this day and age when technology doesn't stand still, and passengers' demand pushes boundaries far and wide, our motto "When you need IT simple ..." brings clarity and reassurance to our customers. Our best asset is the people who work with us and A-ICE experts have over 25 years of experience in aviation and transportation field providing the most innovative software and IT solutions to satisfy customer requirements.

Our customers may use our solutions to navigate successfully on their business path, but for A-ICE they are that beacon of light which indicates what direction to take.

Our vision led A-ICE to be accredited in the Think-Tank for Information, Decision and Execution Superiority of NATO, where the military technological standards are defined, and where our ability has been concretized with CLOS (Collaborative Logistic Optimization System), recently translated to the civil market too.

WHY A-ICE?

A-ICE is always ahead proposing innovative solutions to optimize processes and investments, with a special focus on the economic savings

Our expert staff has a clear understanding of the processes involved in meeting challenging programme time-scales, demanding technical requirements and successful product deliveries within cost and schedule constraints.

Our successful system integration strategy will bring together a multi-disciplined team, working within a framework of sound policies, processes and plans to deliver quality products on time and within budget.

OUR VALUE PROPOSITION HAS MANY COMPONENTS

MAKING A-ICE YOUR PARTNER

Our philosophy is based on a few simple principles:

- A user-oriented approach, our goal is to deliver what the customer needs;
- We offer our solutions in a cloud-based architecture, lowering the start-up costs for the customers;
- Our user interface is simple, reducing training costs;
- Our solutions are always in line with the latest technologies; and
- Our price model is also simple, clear, with no hidden costs and surprises.

A-DCS: Departure Control Suite

A-ICE Departure Control System (A-DCS) is a comprehensive system with features that cover all aspects of passenger, baggage and aircraft handling. The system, designed for Airport Authorities and Handling Companies, is suitable for all airlines and compatible with all aircraft types.

BENEFITS:

- Fast and efficient check-in module;
- Improves customer service;
- Fast, accurate and secure;
- Extensive configuration options to meet client's requirements;
- Easy learning with reduced time of training;
- CUTE-less;
- Integrated reservation module; and
- Cost effective.

FEATURES:

- Fast Weight & Balance, easy load planning and distribution;
- Mail and Full Cargo flights management;
- Check-in, boarding and load control over all CUTE platforms;
- IATA 2D barcode handling;
- Dispatch of all IATA-standard messages via typeB/email;
- APIS support;
- TIMATIC;
- Kiosk application;
- IATA Resolution 753 compliant; and
- Security Check Point integration.

100+
Certified Airlines

6,500+
Aircrafts

2,000+
Seatmaps

1,000+
Aircraft Versions

A-WBS: Weight and Balance System

A-ICE Weight and Balance is a comprehensive system with features covering full load control and balance for passenger, mail and cargo flights. The A-ICE Weight and Balance is suitable for Airlines, Airport Authorities, Ground and Cargo Handling companies, and is compatible with all aircraft types. A-ICE's continuous improvements guarantees a state-of-the-art solution that will grow with you as the industry evolves.

BENEFITS:

- Fast, accurate and secure, pre-loading, loading and balancing process management;
- Improves customer service;
- Reduces training costs;
- Fast integration with third party DCS;
- Extensive options for configuring system to local requirements; and
- Fast integration with third party cargo management systems.

FEATURES:

- WEB load control applications available on CUTE or non-CUTE platforms;
- Centralized or on-site loading process;
- Use any Tablet or smart phone device with internet browser support, including iOS and Android (iPad, iPhone, Galaxy);
- Real-time monitoring of flight activity;
- Crew management;
- Pantry management;
- DOW/DOI Calculation and management;
- Dedicated application for cargo and mail office;
- Real time aircraft center of gravity monitor;
- Bulk, container and pallet distribution;
- ULD management;
- Automated or manual passenger distribution;
- Special load and dangerous goods management;
- PNL/ADL/SOM and LDM automatic processing;
- LIR and Loadsheet view, print, email and ACARS;
- Graphical distribution;
- Graphical LIR;
- Graphical balance chart with target best trim;
- Integrated typeB messaging system; and
- Full compliance with IATA standards.

A-HDB: Turnaround Management System

A comprehensive solution, which gathers all data on flights and services, to give Ground Handlers complete overview of operations throughout the ground process cycle. Several views and charts are available for monitoring real-time operations. Among them, apron view with flight status, task status, resources allocated and relevant positioning or a turnaround monitor with arrival and departure information at a glance and possibility to add or modify information quickly.

BENEFITS:

- Streamline operations with central database containing all real-time data;
- Early identification of potential delays and critical situations;
- Keep track of all available services and extra services requests along with time of important flight operations (pax disembarkation/embarkation, cargo/mail/baggage offloading /loading, refuelling start/end and etc...);
- Resources management to match SLAs; and
- Reduced training times with user friendly and intuitive interface.

FEATURES:

- Web based user interface for operations and back-office;
- Ramp Agent's PDA for keeping track of standard and extra services provided;
- Integration with A-ICE's and third-party Aviation Contract and Billing systems;

- Complete overview of all ongoing operations on Turn-Around Gantt Chart with clear indication of critical issues;
- Flight Gantt Chart with information on services and operations timings;
- All flight and service information available on the Ramp Agent's PDA with possibility to add notes and receive notifications from back-office;
- Task allocation view for dispatching and monitoring;
- Mobile application running on smart phones for interaction with resources (dispatching / feedback) as well as for services data collection;
- Secure access to data with groups and profiles allows choosing what type of information and on what flights is available to every single user of the system; and
- Historical database with consolidated data for past flights and data warehouse for easy Business Intelligence and Reporting.

A-CAB: Contract and Billing

- A-CAB is a complete package, from ground handling fees and charges up to the invoicing;
- Comprehensive WEB module for the management of freely definable fees and detailed published tariffs;
- Design of contracts in many levels of detail, with definition of price-influencing parameters;
- General price lists, airline-specific agreements or even flight-specific contracts, including any desired price adaptations;
- Invoicing: all applicable price-influencing factors resulting from both contract and actual flight data are taken into account automatically to calculate the invoice; and
- Standard (compliant with SGHA – IATA Standard Ground Handling Agreement).

CLOS: Volumetric Load Planning Tool

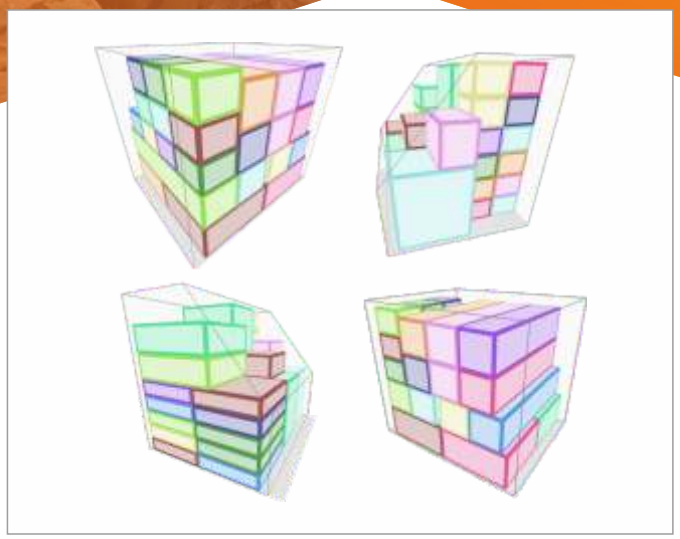
CLOS is a CDM software to support loading and transportation logistic processes.

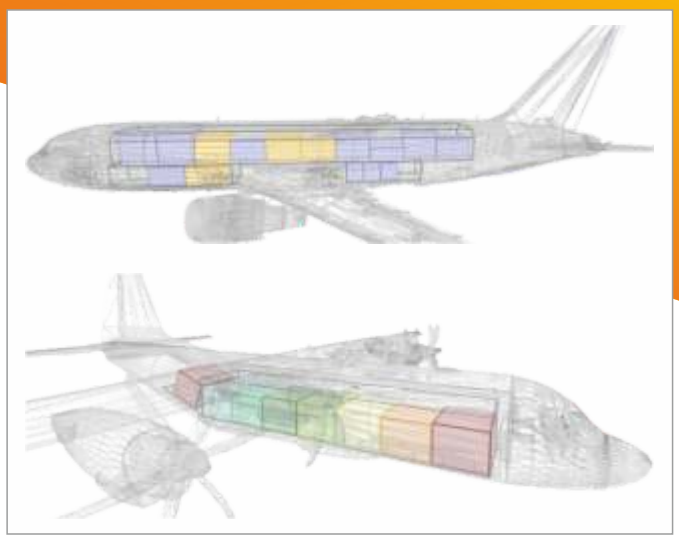
MAIN GOAL OF THE SYSTEM:

- Optimizing the information flow concerning goods to be carried;
- Supporting “make-up” of standard goods pallets;
- Management and distribution of DGs and oversized;
- Volumetric Planning to optimize the loading:
  - Reduce processing times of volumetric planning; and
  - Maximize volumes = costs reduction.
- Safety;
- Monitoring of loading process phases; and
- Integration with existing third-party cargo systems.

KEYS:

- Centralized goods data acquisition from existing systems (cargo management systems);
- Web portal for centralized entry of goods to transport;
- Supply of a visualization tool, within the portal, with appropriate filters for immediate exception handling (special DGs, oversize loads, ...), packaging status monitoring, alert systems for the management of timing and critical events;
- Verification of transport documentation according to the requirements;
- Tool for “make up”:
  - standard goods pallets (no DG or low criticality DG, no oversize);
  - pallets under the constraints of the transport mean (size of the pallet, maximum height, maximum weight); and
  - oversize items management (coupled pallets, pallets number actually used, overlapping).
- Load simulation tool of the DGs, standard pallets, oversize under constraints; and
- Weight and Balance and volumetric planning in one powerful tool.





OPTIMIZATION ALGORITHM

- Highly efficient and flexible pallet and aircraft loading algorithms based on state-of-the-art approaches;
- Equivalent to best available algorithms on 3D-loading literature benchmarks;
- Incorporates all practical constraints (and may be easily adapted to new ones);
- Capable of solving large problems in very small computing times;
- Much faster running times when used to just evaluate feasibility of a loading assignment (e.g., within mission planning contexts); and
- Incorporates machine learning mechanisms to guide and speedup the search.

PALLET LOADING OPTIMIZATION

Belongs to the 3D-packing optimization domain where 3D-items must be arranged into the minimum number of 3D-containers subject to geometric containment and non-overlap constraints:

- "Items" may be:
  - single boxes or other items;
  - traditional freight pallets; or
  - bulky and irregular items.
- "Pallets" are either the standardized platforms or shaped containers.

In addition, a large number of practical constraints must be considered:

- maximum size and weight of the pallets;
- orthogonal rotation of the items;
- stacking rules and items deformation;
- support: at least X% of the base of item is in contact with the layer below or with the pallet, the contact area contains the centre of gravity of the item;
- positioning: dangerous items must be on the side of the pallet, and a minimum distance is imposed according to the item types; and
- loading sequence.

AIRCRAFT LOADING

Loading of the "pallets" into one or more aircrafts, considering:

- weight and size limit for each aircraft;
- weight balance, both longitudinal and lateral (momentum admissible range); and
- incompatibility between items and aircraft or position with powerful dangerous goods management.

Other A-ICE Products

A-FIDS - FLIGHT INFORMATION DISPLAY SYSTEM

A-FIDS ensures that all relevant information is displayed at the right time and in the right place. A-FIDS supports external interfaces to web servers, to allow pages to be delivered quickly to wherever they are needed, increasing the audience and potentially reducing terminal congestion. Connected with any AODB, the system is designed to operate with minimal manual data entry.

A-MIS - MULTIMEDIA INFORMATION SYSTEM

A-MIS manages data and content of any type, to provide high quality information and services. The system employs an intelligent and sophisticated way to communicate with people and operators, using a single web based “control room” for all the systems in use.

A-BRS - BAGGAGE RECONCILIATION SYSTEM

A-BRS will keep track of every movement of every bag and container in the system. The system is highly efficient because it takes full advantage of host lines already in place for passenger departure control and uses BagLink® and BagMessage® gateways to send and receive baggage messages in standard IATA formats.

A-CUBE – MULTI CUTE CLIENT

A-CUBE is a unique aviation solution, which transparently transports web applications from/to any customer infrastructure, monitors remote workstation environment, controls remote workstation devices, reads and writes from/to remote devices. A-CUBE is totally transparent to the remote network configuration and it’s fully controllable from centralized datacenter. With A-CUBE solution, our clients not only can safely distribute any web applications on any private and public network, but also interact with the remote workstation environment such as desktop, printers and readers.

A-MDS - MESSAGE DISTRIBUTION SYSTEM

A-MDS is an easy, secure, and flexible way to integrate applications. It provides all communication protocol features and message-formatting functions needed for exchanging data. A-MDS acts as an orchestrator that sends and receives all messages, for example, standard Type B or emails.

Case Studies

ARKIA AIRLINES CHOOSES A-ICE'S DCS AND W&B

A-ICE's Departure Control System A-DCS and Weight and Balance A-WBS selected by Arkia Airlines.

Arkia Airlines is the leader charter carrier in Israel, and the second carrier in terms of scheduled flights. It has an aggressive plan on the market, with orders for two A321NEO LR and two A330NEO. The company, which already covers some western Europe destinations, has also recently opened new routes to India and Thailand.

In Arkia's plan of growing, they decided to implement their whole PSS systems with state-of-the-art solutions, and they chose A-ICE as a provider of Departure Control System and Weight and Balance. A-WBS is often used integrated with third party DCSs and A-DCS integrates with third party reservation systems.

The new suite of systems is operational since June 2018 in Tel Aviv Terminal 1 and Sde Dov Airport and, according to airport officials, in April 2019 will be fully operational in Elat Airport (a brand new airport in the south of Israel facing the Red Sea). Following the company's growth, the system started operations in Bangkok with just two weeks for the implementation.

A-ICE is proud of having been selected and of being a partner of this dynamic and determined airline. The level of quality and performance of our systems, together with the competitiveness on the market, were the key success factors.

We immediately found A-WBS very intuitive and easy-to-use, compared with other weight and balance software in the market" Philip Berman – operations director – says, "The flexibility of A-ICE's software and architecture confirmed that we made the right choice". Philip continues "we also decided to deploy A-ICE's DCS in Elat and in the near future also in the new upcoming destinations in Asia: the system is so fast and simple that it's impressively easy to deploy and rapid to be used at any station.

BOLZANO AIRPORT

Bolzano Airport is the first "airport-in-a-box", completely provided by A-ICE.

From flight scheduling to operations management, ground handling operations, turnaround management, baggage tracking, flight information display, check-in, boarding, flight control, security check point, resource management, messaging, load control, fuel management, contact management, aeronautical billing, SGHA, ground handling invoicing, statistics and reports, all the areas of a complete airport are digitalized through A-ICE's cloud based solutions.

Modular, flexible, configurable, easy to deploy, easy to learn, with high performance, it's the best solution you can find on the market for small-medium sized airports and ground handlers. With no infrastructural costs, It is the most cost-effective suite of products in the market, at the lowest TCO ever.

BZO AIRPORT SÜDTIROL ALTO ADIGE

We are very happy with the solution provided by A-ICE, as well as with their efficient support", Jessica Mucka – Post Holder and Security Manager- says, "Now all our departments are integrated. the complete information workflow is covered, with a high improvement of the overall efficiency of the management of all our operations". Jessica continues "we have full control of our costs, no more worries about infrastructure; we can focus on our core business, that is to provide high level services to our customers, passengers and airlines.

AIRPORT HANDLING

Ground Handling System for Airport Handling, the main ground handler in Milan Linate and Malpensa Airports.

Airport Handling

We were facing a real challenge in providing efficient services to our customers, in particular the flag carrier Alitalia in the Malpensa hub. We were using different applications, such as the AODB of the airport authority, a proprietary mainframe-based resource management system and an old-fashioned hand-held device. We were looking for a new centralized system to seamlessly manage, organize and control the turnaround operations."

A-ICE implemented A-HDB, a ground handling management system, looking at the future, using new web-based technologies, open platforms, and state-of-the-art frameworks. The system provides all features to manage the flight turnarounds operations, with real time alerts and communication with the ramp supervisors.

The system was in addition integrated with the existing ecosystem of the customer, to have real time updates from and to all the other systems.

"A-HDB was the solution to our needs. We now have a modern system, designed to manage efficiently our operations on the ground and providing better levels of service to our customers."

Peaks of **500** turnarounds per day

Workforce of **3,000** staff

More than **150** concurrent mobile users (ramp agents)

20 back-office concurrent users (supervisors)

References

A-ICE Aviation Information Communication Engineering

Addresses

Rome: Via dei Castelli Romani, 59
00071, Pomezia (Rome), ITALY

Milan: Viale Enrico Forlanini 23, 20134
Milano, ITALY

London: 22 Eastcheap, 2nd Floor, London
England, EC3M 1EU

Paris: 18 Rue Pasquier, 75008
Paris 8, FRANCE

Gaborone: P.O.Box AE 239 AEH. Gaborone
Plot: 5643, Nakedi Road, BOTSWANA

Phone

+39 06 90214421

Web

a-ice.aero
sales@a-ice.aero