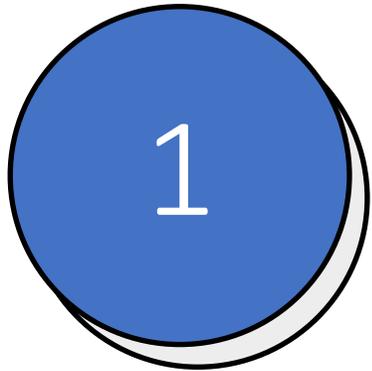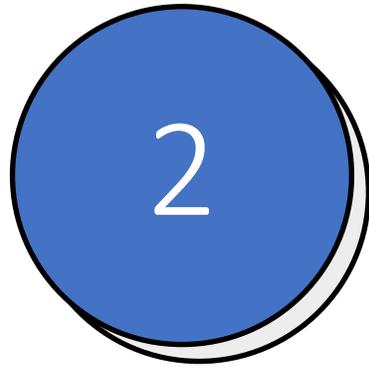# MORCOM INTERNATIONAL INC.

Twelfth Eastern Caribbean Network

Technical Group (E/CAR/NTG/12) and Tenth

Eastern Caribbean

Radar Data Sharing Ad hoc Group

(E/CAR/RD/10) Meetings
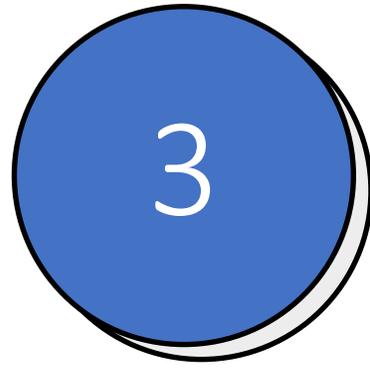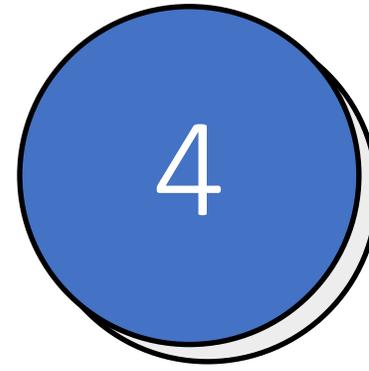
Miami, United States, 24 - 28 July, 2023

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3 MORCOM MANAGEMENT AND QUALITY ASSURANCE

4 MORCOM PARTNERS

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Introduction

Morcom was founded in **1984** to provide advanced solutions in communications and weather information systems for critical applications, and has global experience in developing projects in many countries with the highest quality, thus being highly recognized as an excellent supplier in the aeronautical industry.

MORCOM is a strong, stable, firm with highly capable management and professional staff.

The company goes beyond supplying products.

We provide services to support our products:
-            Systems design & development
-            Infrastructure planning
-            Systems integration
-            Installation & deployment
-            Commissioning
-            Training
-            After Sales Support

MORCOM INTERNATIONAL, INC.

3656 Centerview Dr. Unit # 1

Chantilly, VA 20151 USA

About MORCOM

MORCOM Staff

Our company is organized into functional areas:

- Engineering & Technical Services
- Administrative
- Sales & Business Development

MORCOM VALUES

- Our staff **prioritize customer service** as a means to ensure repeat business.
- We believe that a good customer experience is vital to any business.
- MORCOM brings fresh ideas and unique solutions about how the customer's organization can achieve the desired goals of the project in the most efficient and reliable fashion.
- MORCOM believes that its technicians and engineers must keeps abreast of new product developments and trends in global technologies, emerging telecommunications technology, and customer demand

MORCOM QUALITY MANAGEMENT AND QUALITY ASSURANCE

ABS Quality Evaluations, Inc.
Management System Certification

ANAB ACCREDITED
9904FC 0509
MANAGEMENT SYSTEMS CERTIFICATION BODY
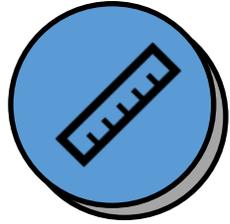
ISO 9001:2015

ISO CERTIFICATION
Morcom International, Inc. is certified to the latest ISO 9001:2015 standard through ABS Quality Evaluations, Inc.
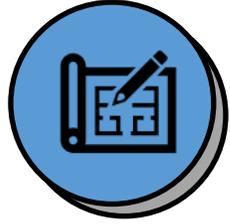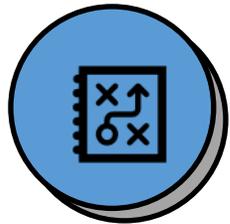
QUALITY ASSURANCE
Morcom's Quality Assurance Procedures provide all control processes that shall be adhered to in all phases of product development. These processes comply with ISO 9001:2015 certification.

QUALITY CONTROL
Inspection & Tests: All Incoming & Outgoing Products, Parts, and Assemblies are subjected to controlled inspection and test processes.

Configuration Management: All drawings and documentation are controlled and maintained as per ISO 9001:2015 compliance requirements.

PRODUCT WARRANTY
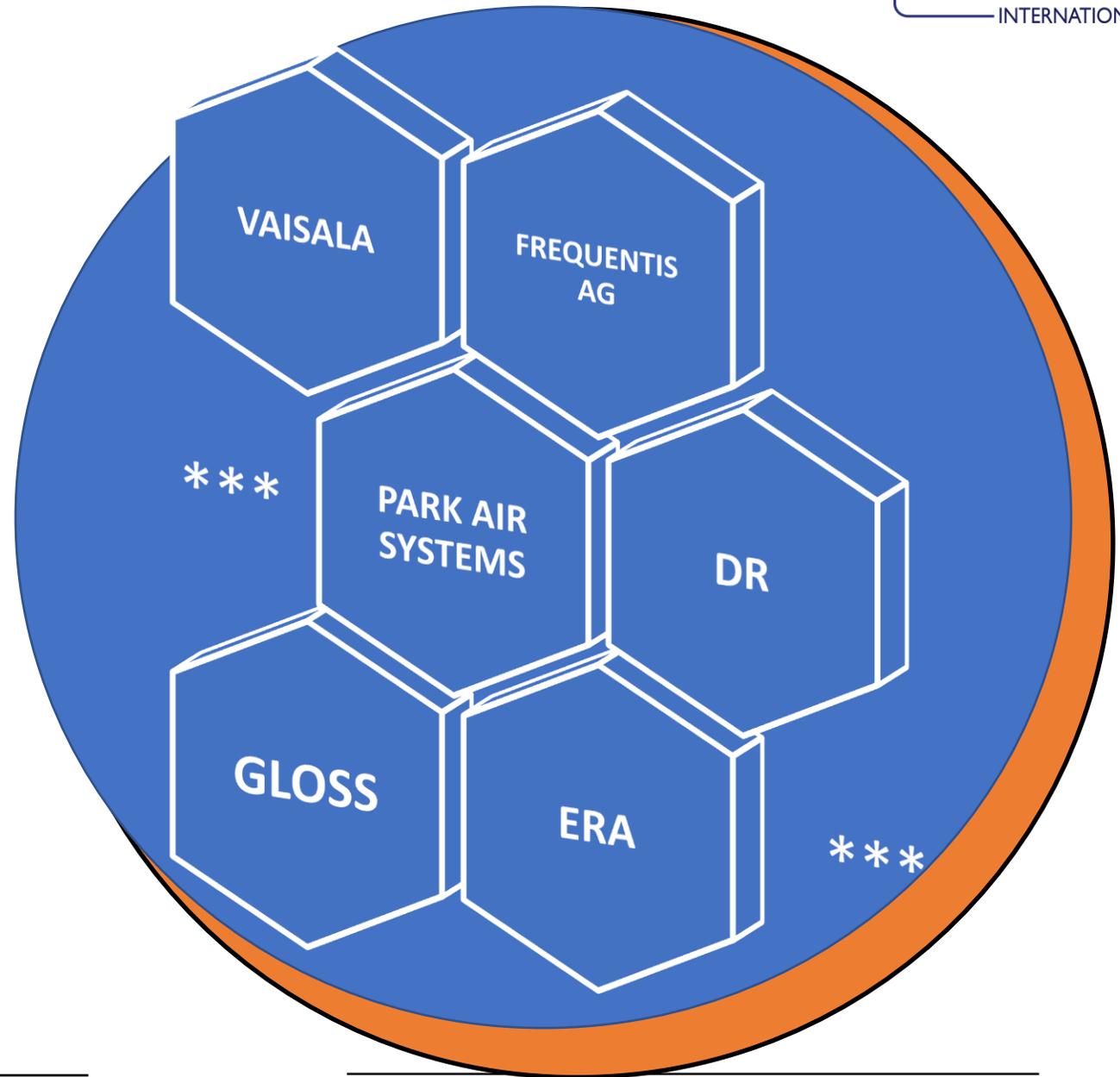One-Year Warranty is typical but Morcom is open to negotiate longer terms with customer.

MORCOM PARTNERS

Leading manufactures in Aviation industry

CNS SOLUTION PORTFOLIO

Ground-Air Communications

Remote Towers

Satellite Communication Systems

Departure Manager

Meteorology Systems

Airport Lighting Systems

Multilateration

Technical Furniture

FREQUENTIS AG

FREQUENTIS covers the full portfolio of Air Traffic Management Solutions (ATM) including:

- Voice Communications Systems (VCS)
- Aeronautical Information Management Systems (AIM)
- Aeronautical Message Handling Systems (AMHS)
- ATIS/VOLMET Systems
- Air Traffic Control Tower Automation (Digital Tower)
- Remote Towers
- Departure Manager
- Aeronautical Network Management
- Satellite Communication Systems

Successful Projects-FREQUENTIS AG   **Digital Tower**

Brazil Santa Cruz Airport – Digital tower
Mil ATC airport
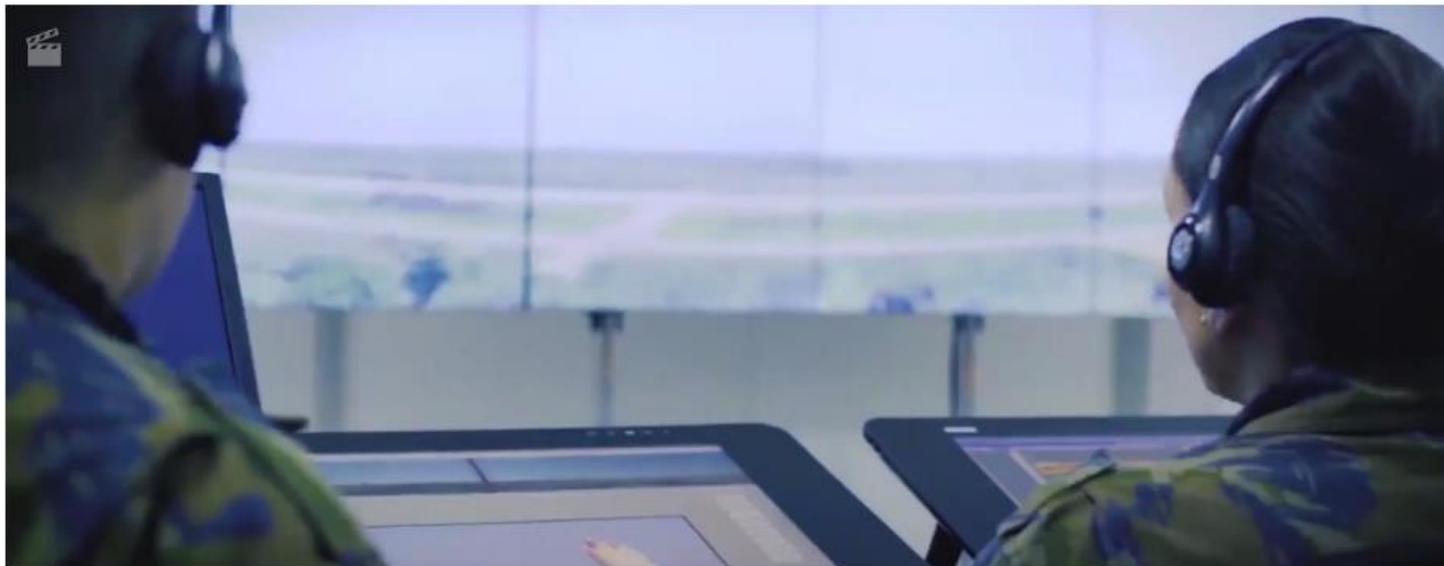
16screens
Videowall for unrivalled situational awareness

6months
delivery time

» Digital support tools like automatic object detection, surveillance labeling, image recognition and tracking are some of the major benefits of this solution that will support the safety-critical and high pressured work of controllers." **Major-Brigadeiro Engenheiro Fernando Cesar Pereira Santos, President of CISCEA**

Successful Projects-FREQUENTIS AG

Remote Digital Tower

Argentina – Ezeiza International Airport Buenos Aires
Improving situational awareness during airport expansion
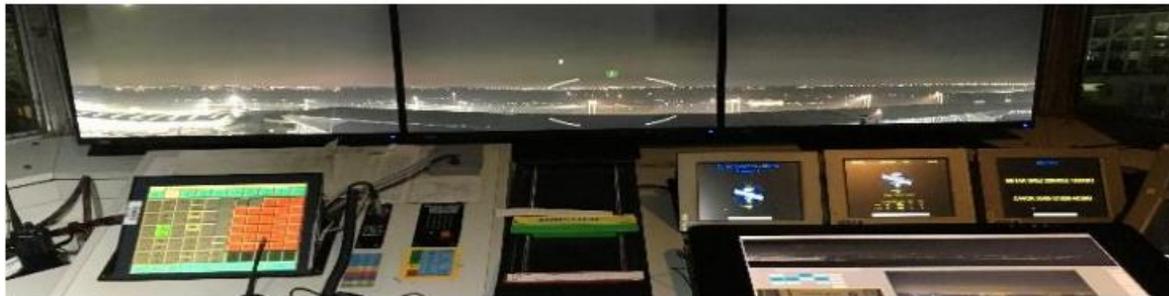
61k current movements p.a.

52 gates Up from currently 27

"Ezeiza International Airport aims to increase the airport capacity to meet air traffic demand. By digitalising tower services with us they ensure safe and efficient airport operations are maintained during and following construction works." - Hannu Juurakko, Vice President ATM, Frequentis

Successful Projects-FREQUENTIS AG

Remote Tower

DFS: Remote Tower Centre Leipzig to control 3 airports from remote

First approved remote tower solution managing airports with complex IFR/VFR traffic
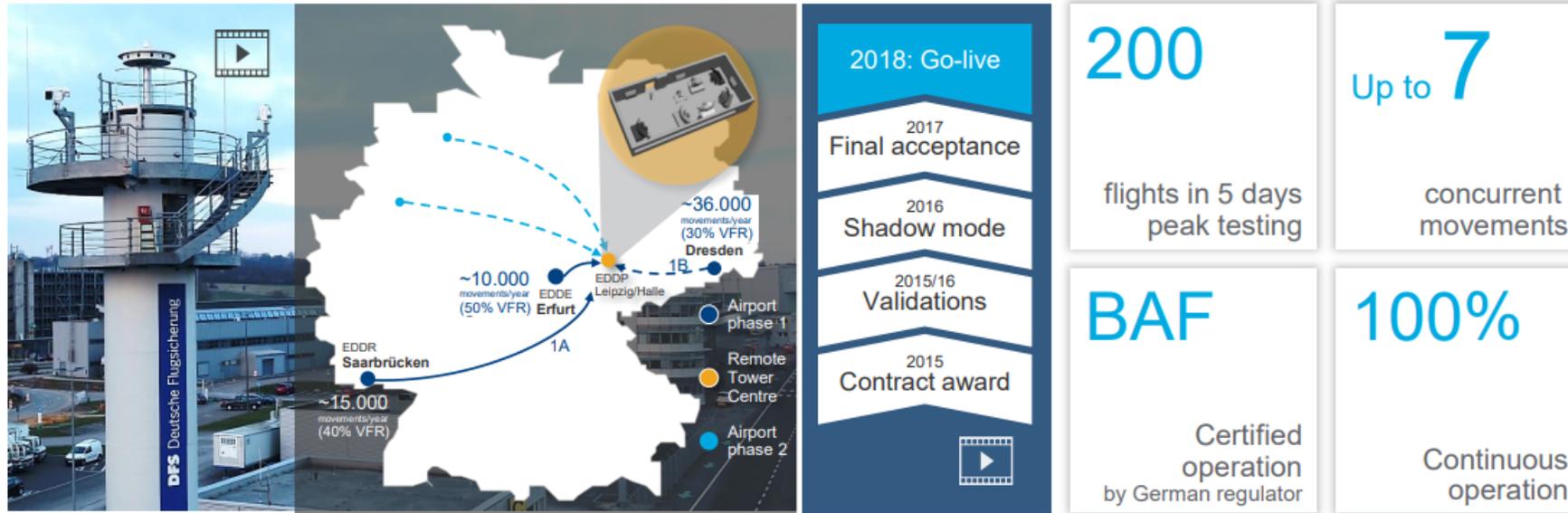
"Our remote tower concept is based on a unique technological and operational solution. Efficiency will be improved and costs reduced. Plus, the proficiency and know-how of air traffic controllers can more easily be maintained" - Klaus-Dieter Scheurle, CEO DFS

Successful Projects-FREQUENTIS AG

Remote Digital Tower & AMAN system

NAVIAIR

Combined Remote Digital Tower and Approach Center for Denmark

Managing surrounding air traffic for multiple airports and approach sectors

>50k flights @ Billund airport in 2019

up to 9 airports TWR & APP handled by ONE system

Test & Training Simulator based Trainings system for TWR & APP

iCWP APP functions Integrated with electronic strips (silent coordination)

» Naviair will establish the first combined remote tower & APP centre at Billund Airport, to manage surrounding air traffic for multiple airports and approach sectors
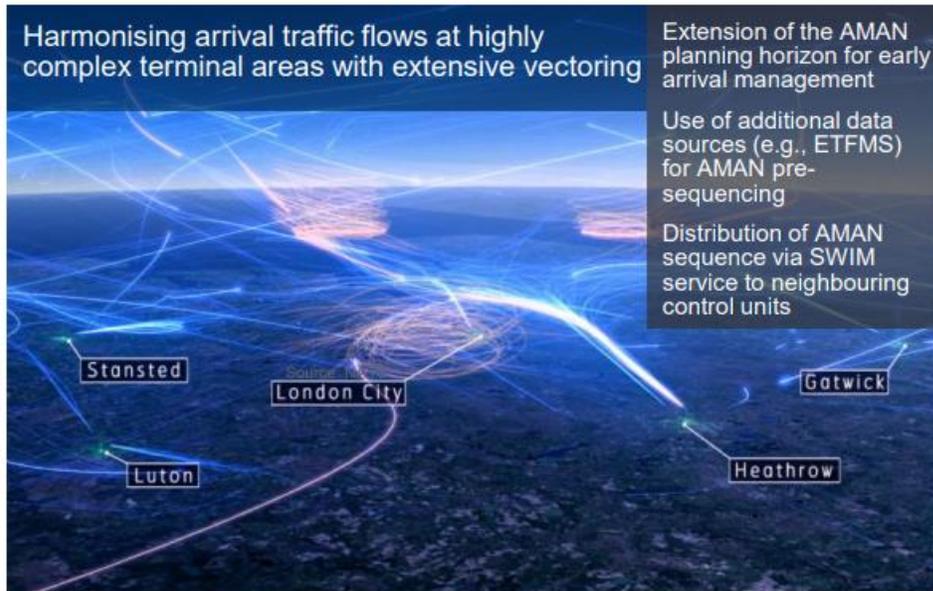
Successful Projects-FREQUENTIS AG

AMAN system

Extended and cross-border arrival management
A world's first

NATS

Harmonising arrival traffic flows at highly complex terminal areas with extensive vectoring

Extension of the AMAN planning horizon for early arrival management

Use of additional data sources (e.g., ETFMS) for AMAN pre-sequencing

Distribution of AMAN sequence via SWIM service to neighbouring control units

London E-AMAN & XMAN

Zurich FABEC XMAN

Toronto E-AMAN

Significant reductions of fuel, emissions and noise due to early delay absorption at higher altitudes

More balanced demand & capacity without impacting the overall duration of the flight

Efficiency gains and reduced controller workload due to the improved coordination of control centres

8000t CO_2

2,12M EUR in fuel

Stansted
London City
Luton
Gatwick
Heathrow

" "With early warning of XMAN, even flights that slow down by 0.03 of Mach could save several minutes in the stack. That reduction in speed reduces fuel as well."
Joe Baker, Project Lead at NATS

Successful Projects-FREQUENTIS AG

VOLATIS System

skyguide – VOLATIS: Cloud-based ATIS

Needed to centralise nationwide VOLMET and local ATIS messages from several airports

The system is connected to one centralised data link interface

Providing DATIS and DVOLMET services for all ATIS and VOLMET channels

Voice Broadcast distributed via a country wide radio network connected via E1 CAS line

12 Channels

8 ATIS
2 glider
2 VOLMET

All maintained

via a centralised facility in Geneva

3
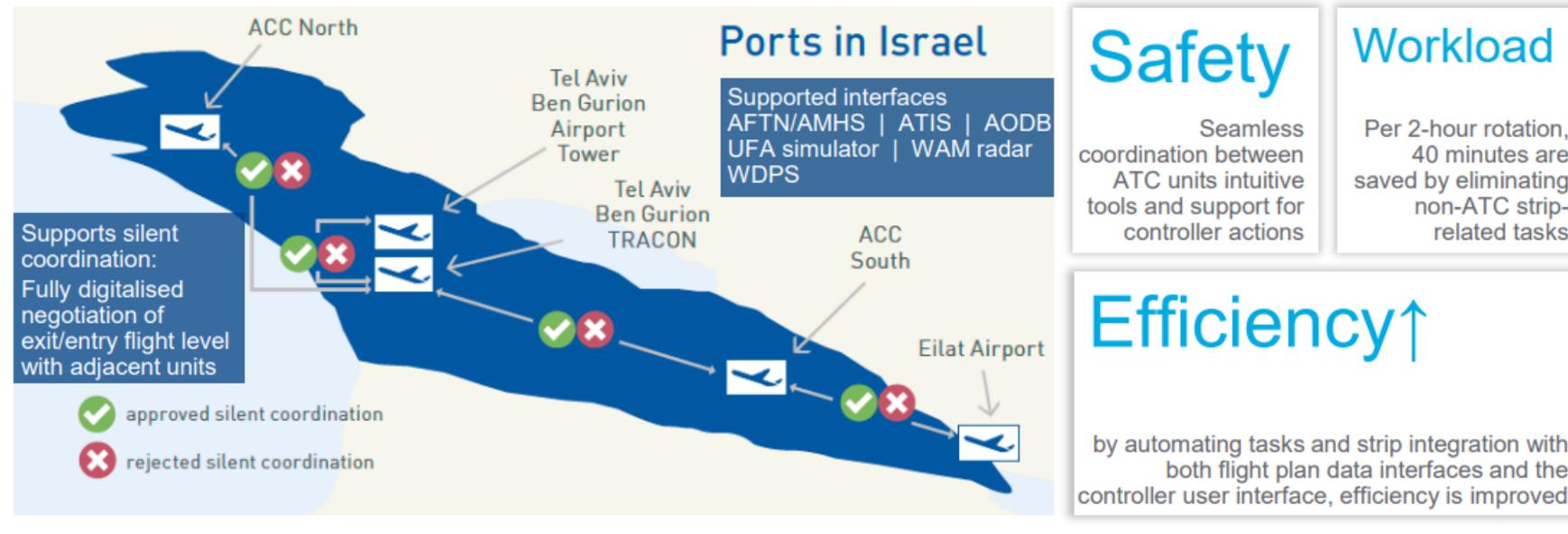
languages

Text-to-speech

English
German
French

» „Frequentis was selected out of several offers due to its future oriented technical solution providing highest availability." - Philippe Chappuis, Head of strategic sourcing and procurement

Successful Projects-FREQUENTIS AG

Smartools and Smartstrips system

IAA EFS/IODS – nationwide smartTOOLS and smartSTRIPS implementation
Need for harmonised ATC Information System and nationwide VOLMET and local ATIS

ACC North

Tel Aviv Ben Gurion Airport Tower

Tel Aviv Ben Gurion TRACON

Ports in Israel

Supported interfaces
AFTN/AMHS | ATIS | AODB
UFA simulator | WAM radar
WDPS

ACC South

Eilat Airport

Supports silent coordination:
Fully digitalised negotiation of exit/entry flight level with adjacent units

approved silent coordination

rejected silent coordination

Safety

Seamless coordination between ATC units intuitive tools and support for controller actions

Workload

Per 2-hour rotation, 40 minutes are saved by eliminating non-ATC strip-related tasks

Efficiency↑

by automating tasks and strip integration with both flight plan data interfaces and the controller user interface, efficiency is improved

"Efficiency is a lot better. Non-ATC tasks, such as putting strips into holders or verbal coordination with other units, have now been eliminated. The controllers have more time to do their actual work."

Successful Projects-FREQUENTIS AG

EFS system & Voice Communication

Hong Kong CAD – Long Term Partner

Rely on Frequentis EFS System and Voice Communication

Supports Jurisdiction management systems with silent coordination mechanisms to efficiently manage ground movements multiple controllers are involved in

Supported interfaces, EFS
FDPS (AT3) | ATIS | AMAN
AODB | DCL (ED-85A)
WDPS

Voice services
130 positions

Usability

Integrated solution replaces several legacy systems Designed by „ATCs for ATCs"

Cost

Flexibility / adaptability keeps cost of operating smartSTRIPS low

Efficiency↑

level of integration gives the controller better data, hence allows controllers to make better decisions and to maintain their situational awareness

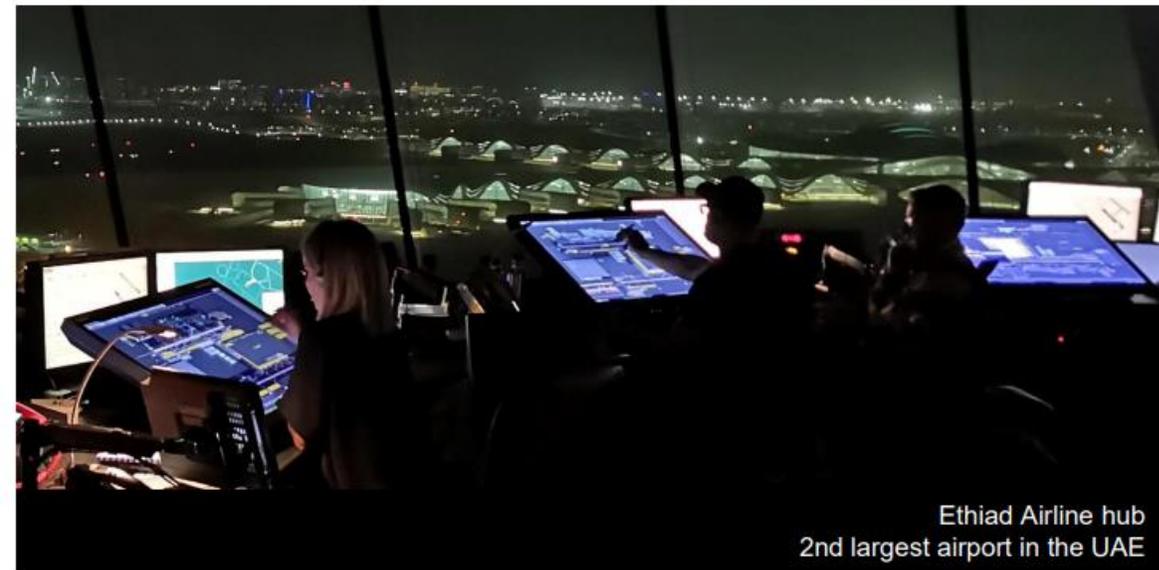### Voice Services

Voice Communication System Rollout

» "Operational feedback from controllers in various parts of the world indicated that the Frequentis systems provide a highly reliable and user-friendly experience, thereby enhancing safety and efficiency"

Successful Projects-FREQUENTIS AG

FREQUENTIS ATRICS-TOWER PAD

Abu Dhabi International Airport | Single screen ICWP
Surveillance, safety, routing and guidance

مطار أبوظبي
ABU DHABI AIRPORT

TowerPad
Integrated Controller Working Position (iCWP)

Safety Net feat. detection, prediction, prevention, protection, ATC conformance and conflict monitoring and alerting

Digital operations
incl. ATC role management, "Next Clearance" workflow

ALCMS
incl. semi-automatic routing, predefined static and dynamic guidance

Ethiad Airline hub
2nd largest airport in the UAE

» "At Abu Dhabi International Airport we are constantly setting new benchmarks in delivering a world-class traveler experience and a state-of-the-art airfield with faster turnaround, while remaining committed to safety," –
His Excellency Engineer Mohamed Mubarak Al Mazrouei, CEO, Abu Dhabi Airports

Successful Projects-FREQUENTIS COMSOFT
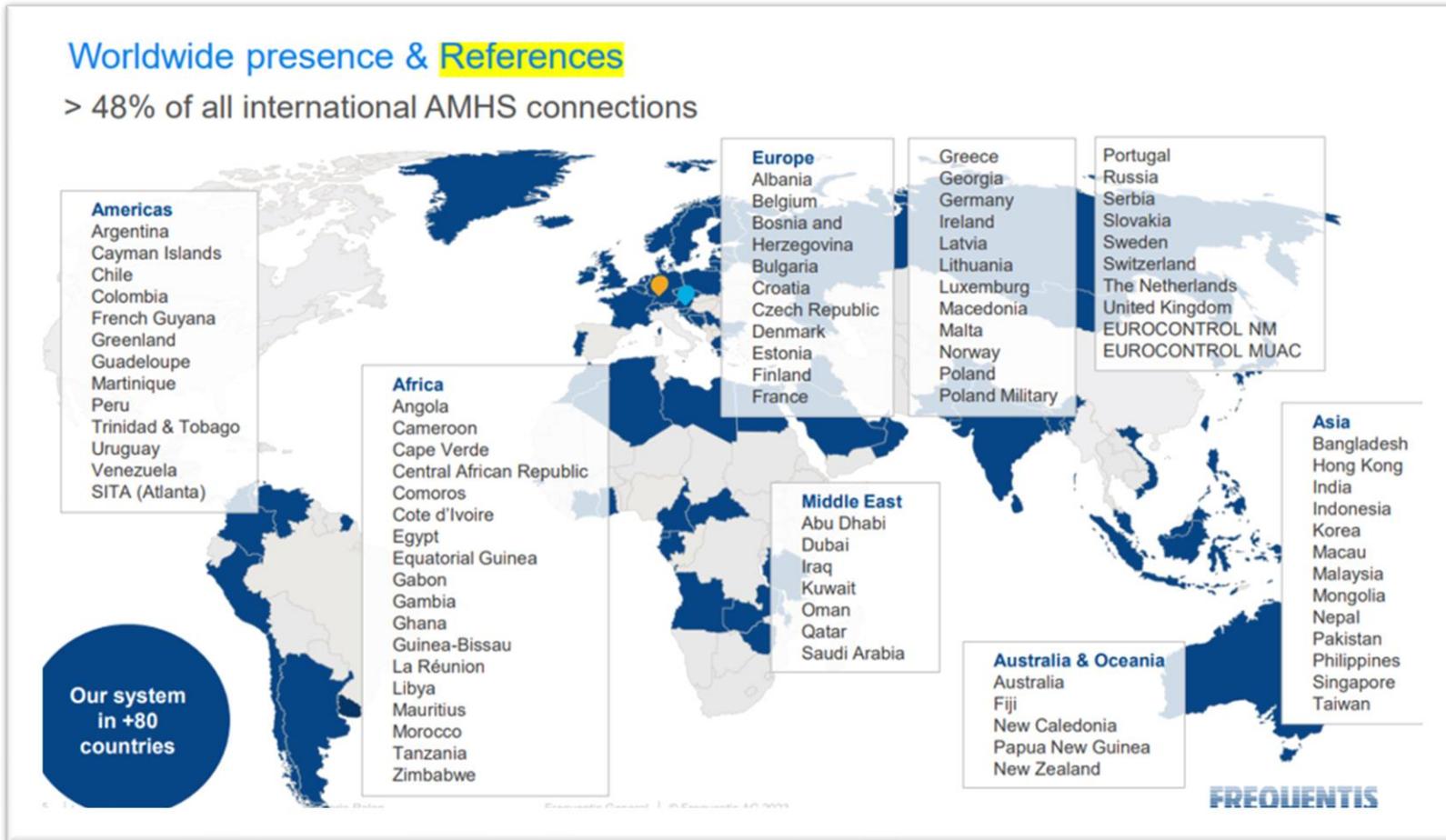
AMHS SYSTEM

Successful Projects-FREQUENTIS COMSOFT

AMHS SYSTEM

MHS Solution: Message Handling System
World´s most mature product portfolio

Integrated AFTN/AMHS message switch	ATN/EDS directory server	Client/server based AFTN/AMHS user terminal
AIDA-NG	CADIR	CADAS-ATS

#1 Market leader in MHS

100 + installed systems worldwide

> 48% of all internationally recognised MHS links comprise a Frequentis Comsoft system

+ 20 years expertise in message handling

SWIM SWIM Compliance Web Services Interfaces

> 50.000 test cases witnessed by FAT inspection teams since 2005

ATS MHS UA terminal system for ATS end user

Safety ED-153 conformant

Successful Projects-FREQUENTIS COMSOFT

AMHS SYSTEM

Argentina, EANA (Empresa Argentina de Navegación Aerea) 2021

Direct Contract

No competition, just technical clarifications

Premium

Maintenance package for 2 years

EANA | NAVEGACIÓN AÉREA ARGENTINA

Scope:

Operational redundant, Contingency redundant and single test.

10 Months to deliver the system

7 International connections

Location: Buenos Aires, Argentina.

» First contingency system in fully virtualized environment

Successful Projects-FREQUENTIS COMSOFT

AMHS SYSTEM

INAC, Venezuela

Interrregional Gateway to North America, the Carribbean and Europe

**INAC** — INSTITUTO NACIONAL DE AERONÁUTICA CIVIL VENEZUELA

AMHS central node
>200 AMHS national terminals
Deployment in the extremely short time frame of 6 months

Items

- Project: **VE-AMHS** Site: **Caracas Maiquetía**
- Solution consists of an **AMHS Messaging System**, AFTN switch, and AFTN/AMHS gateway
- A remote access router allows remote maintenance
- Quick and easy interconnection with Colombia and Perú in less than two weeks
- The Project was completed in a record time of 6 months from the award of the contract to the comissioning of the operational service.
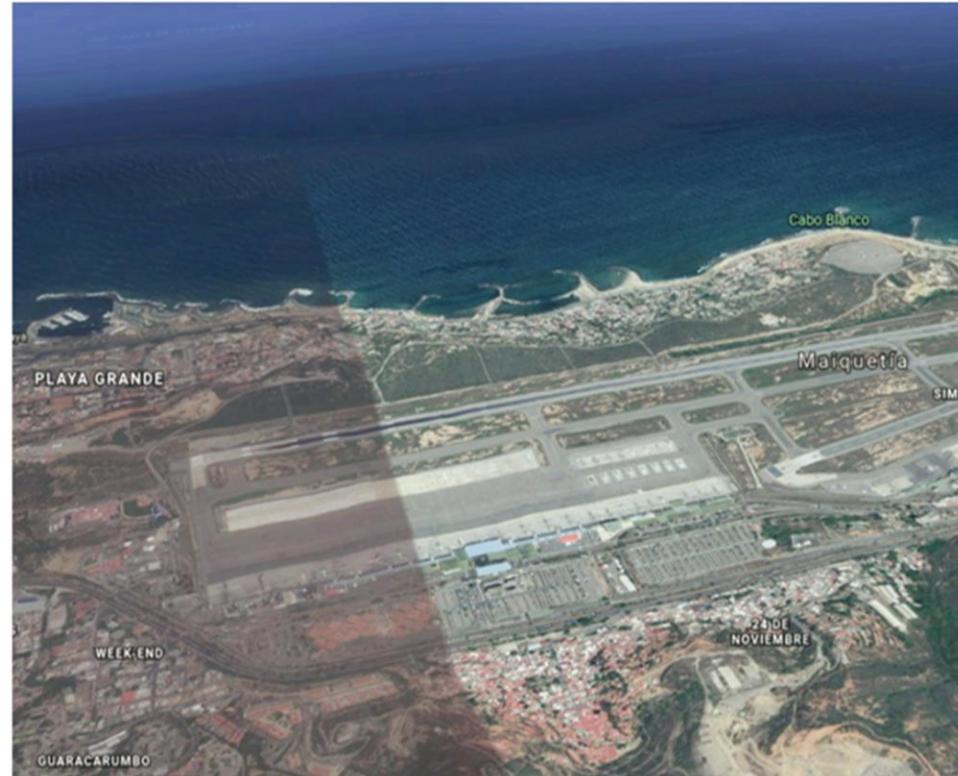
Successful Projects-FREQUENTIS COMSOFT

AMHS SYSTEM

DSNA, France & Skyguide, Switzerland

2 countries, 3 sites, 5 redundant systems
≈ 200 AMHS terminals
Identical MHS systems strengthen relationships
between partners, another step towards closer
international collaboration

dgac skyguide
DSNA

Ginebra

Items

- Project: MESANGE un joint Project of DSNA and skyguide

- Sites: Burdeos, Toulouse and Ginebra

- DSNA Configuartion: 3 redundant systems, 13 hubs at 10 remote sites, up to 150 CADAS user terminals.

- Skyguide configuration: 2 redundant systems , 1 single contingency system, up to 40 CADAS AMHS UA/AFTN user terminals

- Associated systems guarantee interoperability and facilitate the inmediate transfer of bilateral AMHS traffic

- AMHS Connections between the entre associated systems, most neighboring Eurepean contries and the CFMU in Brussels.

Toulouse

Burdeos

Successful Projects-FREQUENTIS COMSOFT

AMHS SYSTEM

DFS Germany

Operational in one of the areas with the highest density of European air traffic

DFS Deutsche Flugsicherung

First system world ECG according to Eurocontrol requirements

Items

- Project: ANDRA
- Sites: Langen and Karlsruhe
- Two redundant systems, one redundant test system
- DFS used AIDA-NG for the world's first AMHS operational connection with Spain in 2006
- DFS is the first user of the European Directory Service (EDS) provided by EUROCONTROL AMC

© DFS Deutsche Flugsicherung Gmb

PARK AIR SYSTEMS

Park Air specializes in the manufacture and supply of air to ground radio communications systems in VHF and UHF:

- VHF-AM Transmitters

- VHF-AM Receivers

- VHF-AM Transceivers

- UHF-AM Transmitters

- UHF-AM Receivers

- UHF-AM Transceivers

- VHF/UHF AM/FM Military Transceivers

DR REPRESENTATIONS

DR manufactures an extensive range of technical furniture and consoles which are highly adaptable to the characteristics of each project to meet the customer's every need. Their products are highly appreciated in air traffic control centers, air traffic control towers, 911 dispatch centers, all type of radio-communication control centers:

- Scout Console

- Alyssa Console

- Furniture for all types of Control Centers(including

  Chairs)

GLOSS

Gloss is specialized in lightning systems for airports. Specifically solar powered solutions:

- Airfield Ground Lights for Approach, Runway and Taxiway

- Plasma Flat Lamp

- LED Lighting systems for streets

- Tunnel LED lights

- Solar Lights for airport applications (runways/taxiways lights, PAPI, Signs)

- Solar lights for marine applications (lanterns, beacons, sector lights)

- Solar light solutions for roads, highways, parking areas

ERA

ERA (a member of OMNIPOL group) is a leading company in multilateration, multistatic surveillance, and reconnaissance technology. Unrivalled experience in passive surveillance sensor development provides ERA with unique know-how to deliver comprehensive solutions for global markets. It develops, manufacture and implement mission-critical systems for military and civil purposes:

- Multilateration (MLAT) Surveillance Systems for Airports
- Automatic Dependent Surveillance Systems - Broadcasting (ADS-B)
- Wide Area Multilateration (WAM)

MLAT
(Surface Surveillance)

"

AVIATION IS PROOF THAT GIVEN THE WILL,WE HAVE THE CAPACITY TO ACHIEVE THE IMPOSSIBLE.

"

Edward Vernon Richenbaucher

Thank you

Alejandra Bertrand

Business Development Manager

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E-mail: abertrand@morcom.net