Searidge Technologies

Remote Digital Tower Overview for SG/24

ICAO UNITING AVIATION
A UNITED NATIONS SPECIALIZED AGENCY

Presented by: **Pat Urbanek**
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Presenter

Pat Urbanek Key Account Executive, Searidge Technologies

Pat has over 10 years of experience in the ATM industry, initially involved in product management and industry associations. Today, as the Key Account Executive at Searidge Technologies, Pat works in close collaboration with airports and Air Navigation Service Providers (ANSPs) to support their long-term surface management goals through the deployment of advanced video applications and unique software solutions.

Get In Touch Today!

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Company Overview

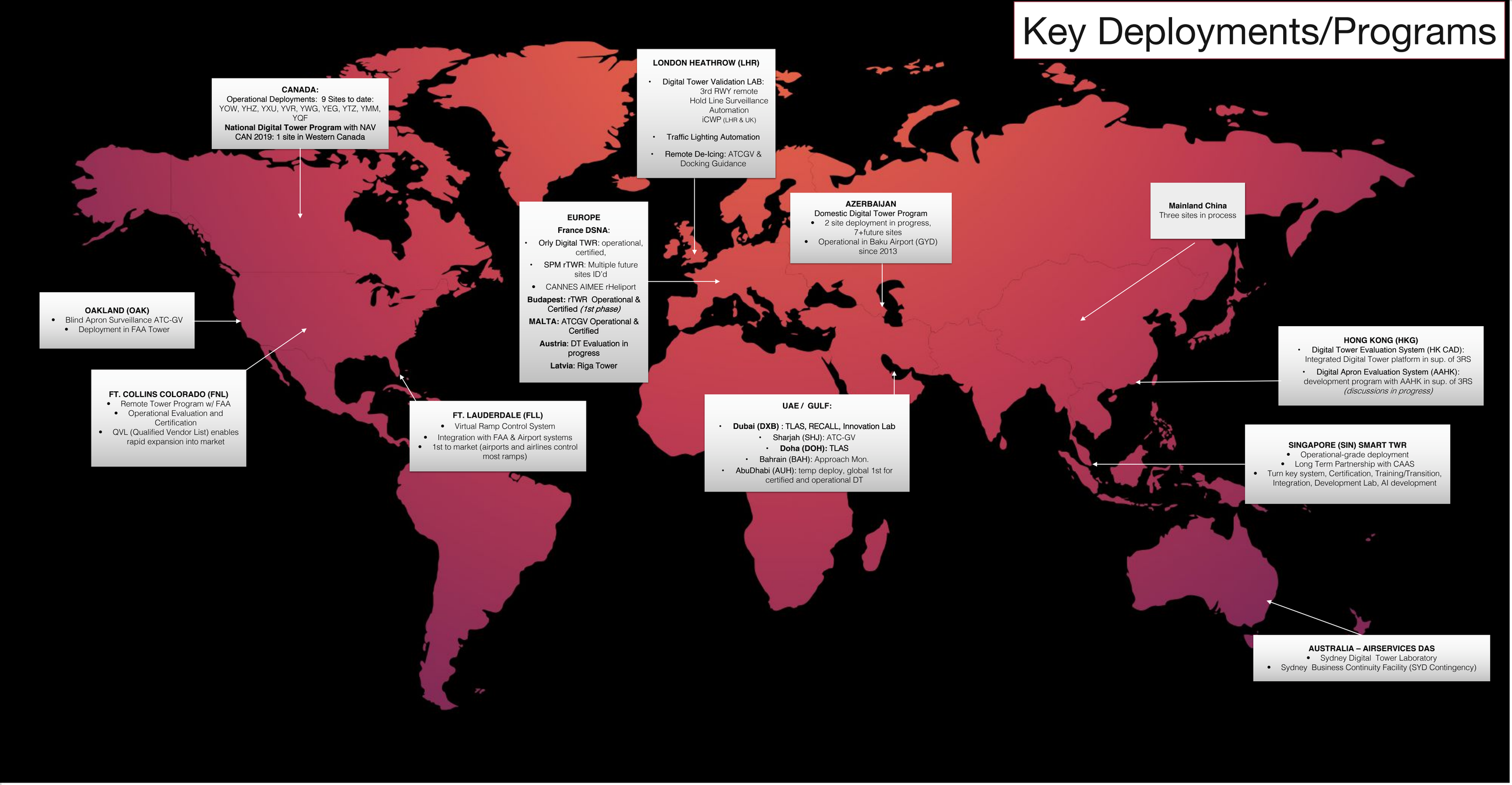
- Private company, HQ in Ottawa, Canada - founded 2006
- Staff located in Canada, Singapore, Germany, UK, UAE
- 40+ deployments globally
- Owned by NAV CANADA & NATS
- Global leader of Digital Tower and Surface Optimization Solutions
  - **1st** Video Platform for ATM
  - **1st** AI Platform for ATM
  - **1st** operational virtual ramp control system
  - **1st** operational med-lg remote tower

- In May 2017, Searidge became jointly owned by two tier one ANSPs, NAV CANADA and NATS (UK).

- Our shareholders are global leaders in Air Traffic Management, Searidge is entrenched and focused on supporting airport and air traffic management.

- Searidge continues to operate as an independent business – Structure allows us to better service our customers, expand our reach into key markets and help drive innovation in an operational environment.

Key Deployments/Programs



CANADA:
Operational Deployments: 9 Sites to date: YOW, YHZ, YXU, YVR, YWG, YEG, YTZ, YMM, YQF
National Digital Tower Program with NAV CAN 2019: 1 site in Western Canada

LONDON HEATHROW (LHR)

- Digital Tower Validation LAB: 3rd RWY remote Hold Line Surveillance Automation iCWP (LHR & UK)
- Traffic Lighting Automation
- Remote De-Icing: ATCGV & Docking Guidance

EUROPE

France DSNA:

- Orly Digital TWR: operational, certified,
- SPM rTWR: Multiple future sites ID'd
- CANNES AIMEE rHeliport

Budapest: rTWR Operational & Certified *(1st phase)*
MALTA: ATCGV Operational & Certified
Austria: DT Evaluation in progress
Latvia: Riga Tower

AZERBAIJAN
Domestic Digital Tower Program

- 2 site deployment in progress, 7+future sites
- Operational in Baku Airport (GYD) since 2013

Mainland China
Three sites in process

OAKLAND (OAK)

- Blind Apron Surveillance ATC-GV
- Deployment in FAA Tower

FT. COLLINS COLORADO (FNL)

- Remote Tower Program w/ FAA
- Operational Evaluation and Certification
- QVL (Qualified Vendor List) enables rapid expansion into market

FT. LAUDERDALE (FLL)

- Virtual Ramp Control System
- Integration with FAA & Airport systems
- 1st to market (airports and airlines control most ramps)

UAE / GULF:

- **Dubai (DXB)** : TLAS, RECALL, Innovation Lab
- Sharjah (SHJ): ATC-GV
- **Doha (DOH):** TLAS
- Bahrain (BAH): Approach Mon.
- AbuDhabi (AUH): temp deploy, global 1st for certified and operational DT

HONG KONG (HKG)

- Digital Tower Evaluation System (HK CAD): Integrated Digital Tower platform in sup. of 3RS
- Digital Apron Evaluation System (AAHK): development program with AAHK in sup. of 3RS *(discussions in progress)*

SINGAPORE (SIN) SMART TWR

- Operational-grade deployment
- Long Term Partnership with CAAS
- Turn key system, Certification, Training/Transition, Integration, Development Lab, AI development

AUSTRALIA – AIRSERVICES DAS

- Sydney Digital Tower Laboratory
- Sydney Business Continuity Facility (SYD Contingency)

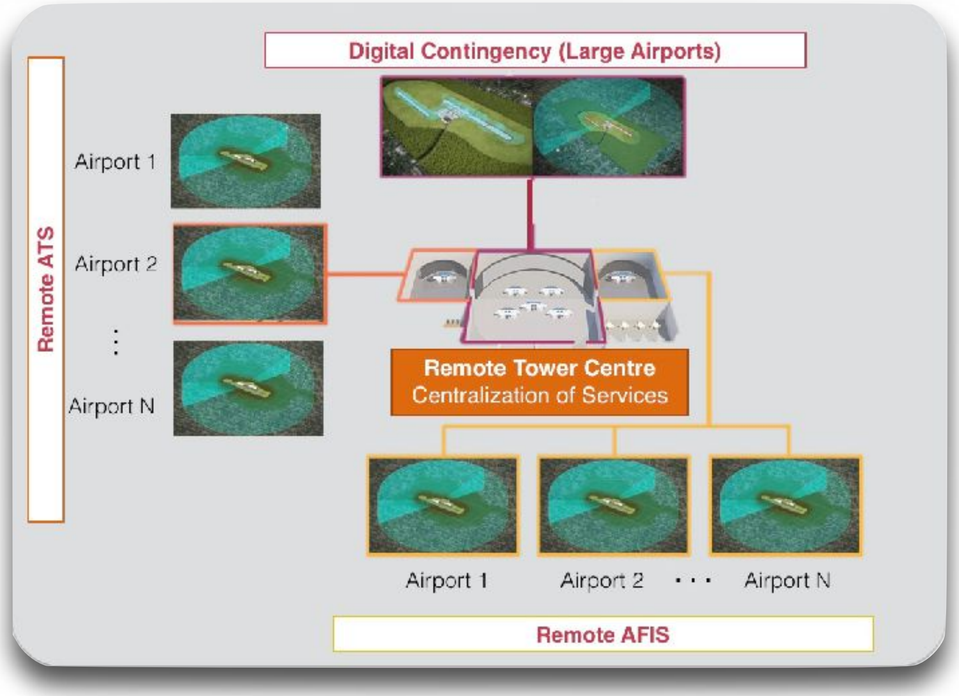
Brick and Mortar vs Digital/Remote ATC Tower

Traditional ATC Tower

Digital / Remote ATC Tower

Remote Towers

- AENA FERRONATS, SPAIN
- FT. COLLINS - USA
- NAV CANADA DOMESTIC, CANADA
- GABALA - AZERBAIJAN
- CHILOV HELIPORT - AZERBAIJAN
- CANNES HELIPORT, FRANCE
- ST. PIERRE MIQUELON, FRANCE
- ENAV PROGRAM – ITALY
- CHONGQING LONGXING– PR CHINA



- Centralization of ATC Service provision via regional centres
- **Business Case:**
- Eliminate brick & mortar facilities & Centralize ATCO workforce, systems, tech support
- Key Enabler: “remoting” large amounts of video data
- Infrastructure-type Projects: communications, construction, domestic maintenance programs

Commercial-in-Confidence

COLORADO
Remote Tower
PROJECT

COLORADO Remote Tower PROJECT TIMELINE

Camera installation begins

AUG 2018

Cameras installed & control facility remodling begins

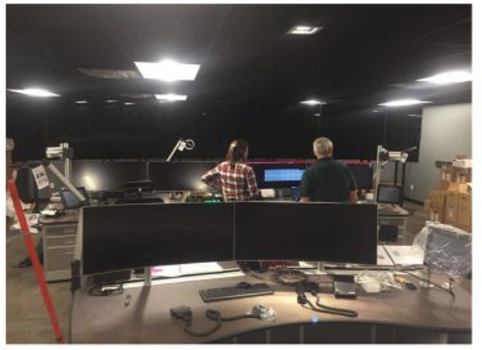
SEPT 2018

Phase 0 (a)
Preliminary installation & evaluation and testing

OCT-DEC 2018

Phase 0 (a) Completed
Installation & layout review

DEC 2018



Phase 0 (b)
FAA site acceptance testing & final system optimization

MAR-JUN 2019

Phase 1
Airspace is controlled by mobile air traffic control tower & system testing begins

JUN-DEC 2019

Phase 2
Airspace is controlled by Remote Tower

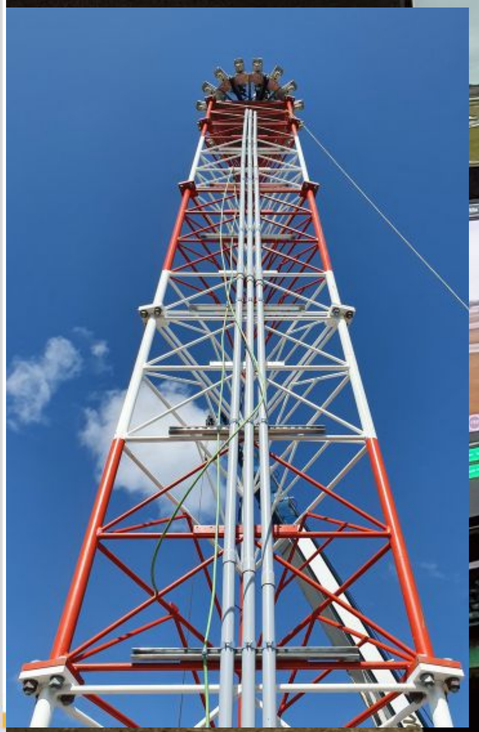
DEC 2019-AUG 2020

Phase 3
FAA Certification

SEPT 2020-JAN 2021

FEDERAL AVIATION ADMINISTRATION

YOW Digital Remote Tower Development and Validation Facility



Red Deer Digital Remote Tower System

Digital AFIS Facility - > Greenfield RTS

Saint John –>Fredericton International Airports

Live Trails with Canadian Regulator

ferroNATS

aena
Aeropuerto de Pamplona

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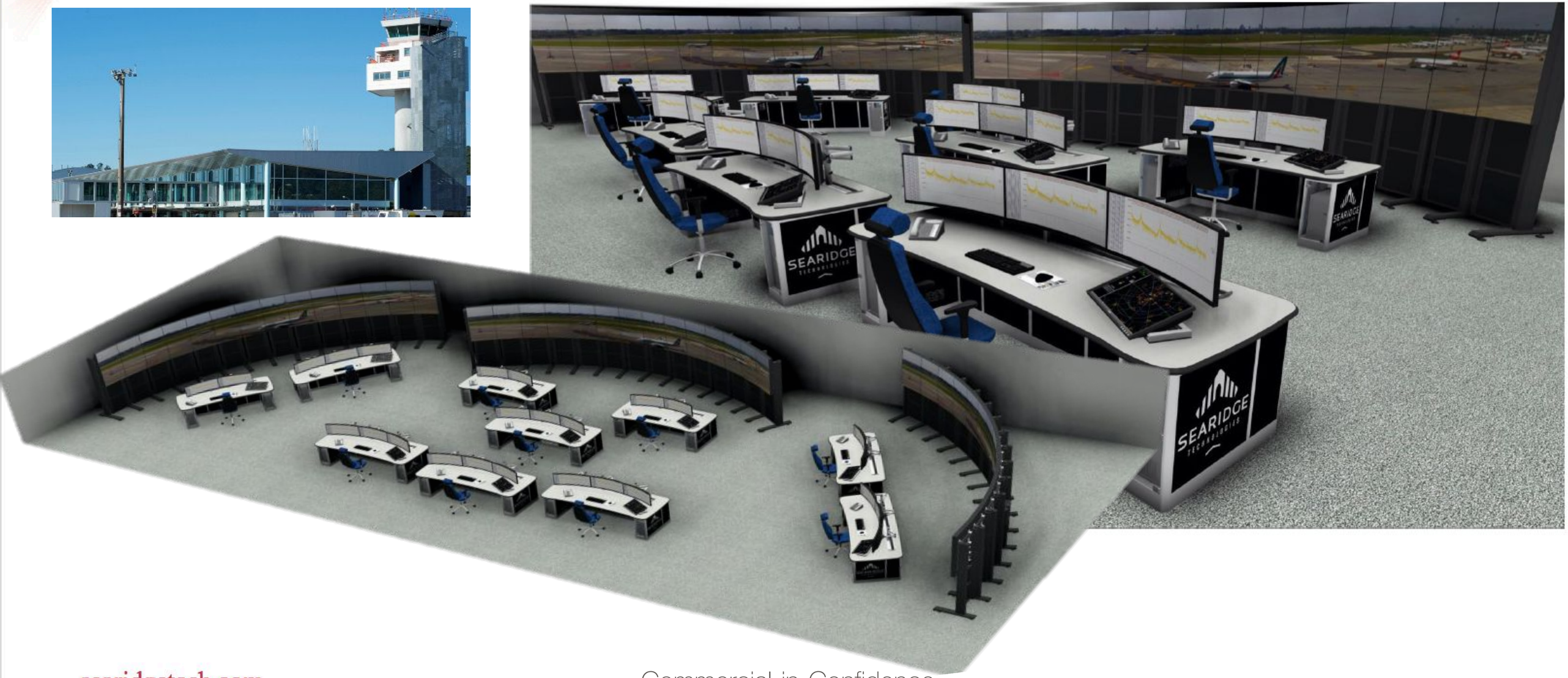

建聯集團有限公司
CHINNEY ALLIANCE GROUP LTD.

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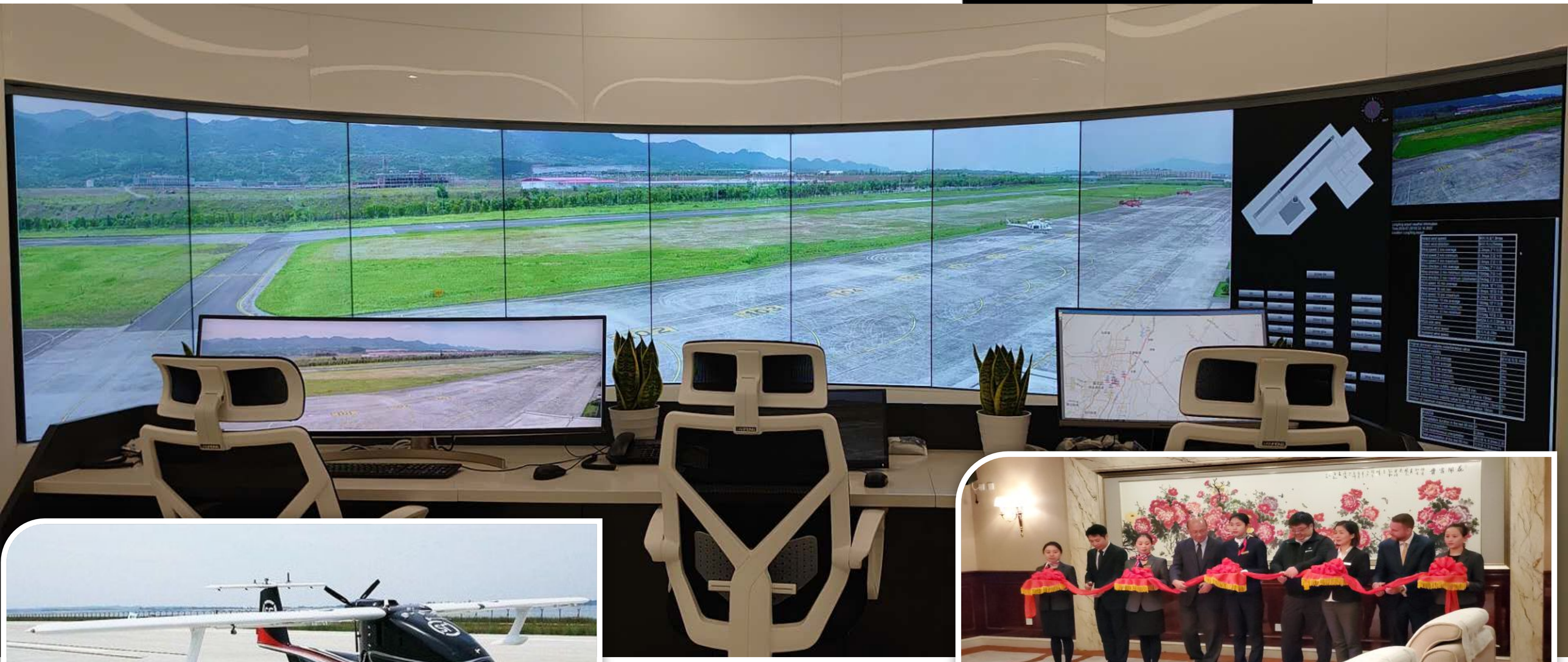
TECHNOLOGIES

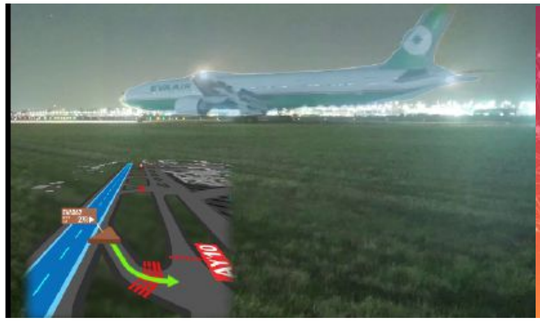
SF EXPRESS 顺丰速运

alhua
TECHNOLOGY



Digital Tower

- SINGAPORE
- HONG KONG
- HEATHROW
- BUDAPEST
- DUBAI
- SYDNEY



AIMEE

- Typically adopted by Large & HIRO Airports
- Complex Operation and/or Complex Integration
- “Digitization” of ATM systems & processes (integration!)
- Business Case:
  - Operational Performance/Throughput
  - Resiliency
  - Airport Expansions (ATC unit consolidation/flexibility)
  - Advanced ATC tools & enhanced workflow (automation/AI)

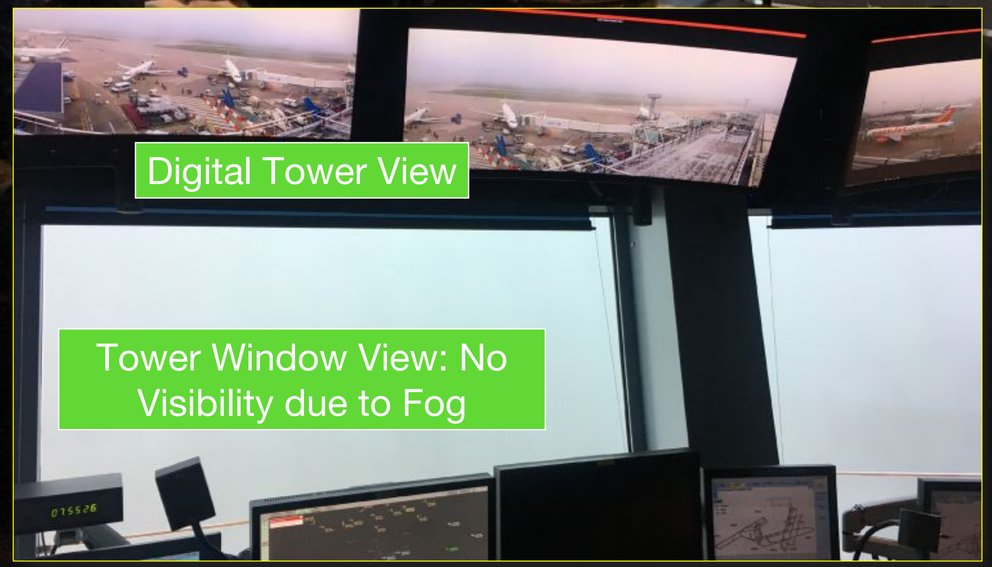
Budapest Remote Digital Tower

Most Advanced & Largest Operational Digital Tower in the World

HungaroControl
Hungarian Air Navigation Services

DSNA

Use Case: Paris Orly Digital Tower



NATS

Use Case: LHR Heathrow Digital Tower

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Digital Tower for 3rd Runway

Business Case:
Avoid having to build 2nd TWR for 3rd runway, enhance existing tower and VCF operations

Solution:

Industry first 4K digital tower system

Operational Application

Upgrade existing VCF with video capability
Blind Spot gap-fill for existing tower ops
3rd RWY = Digital Tower

Capacity Enhancement
LHR AIMEE Hold Line Surveillance

Business Case: Tower in the Cloud

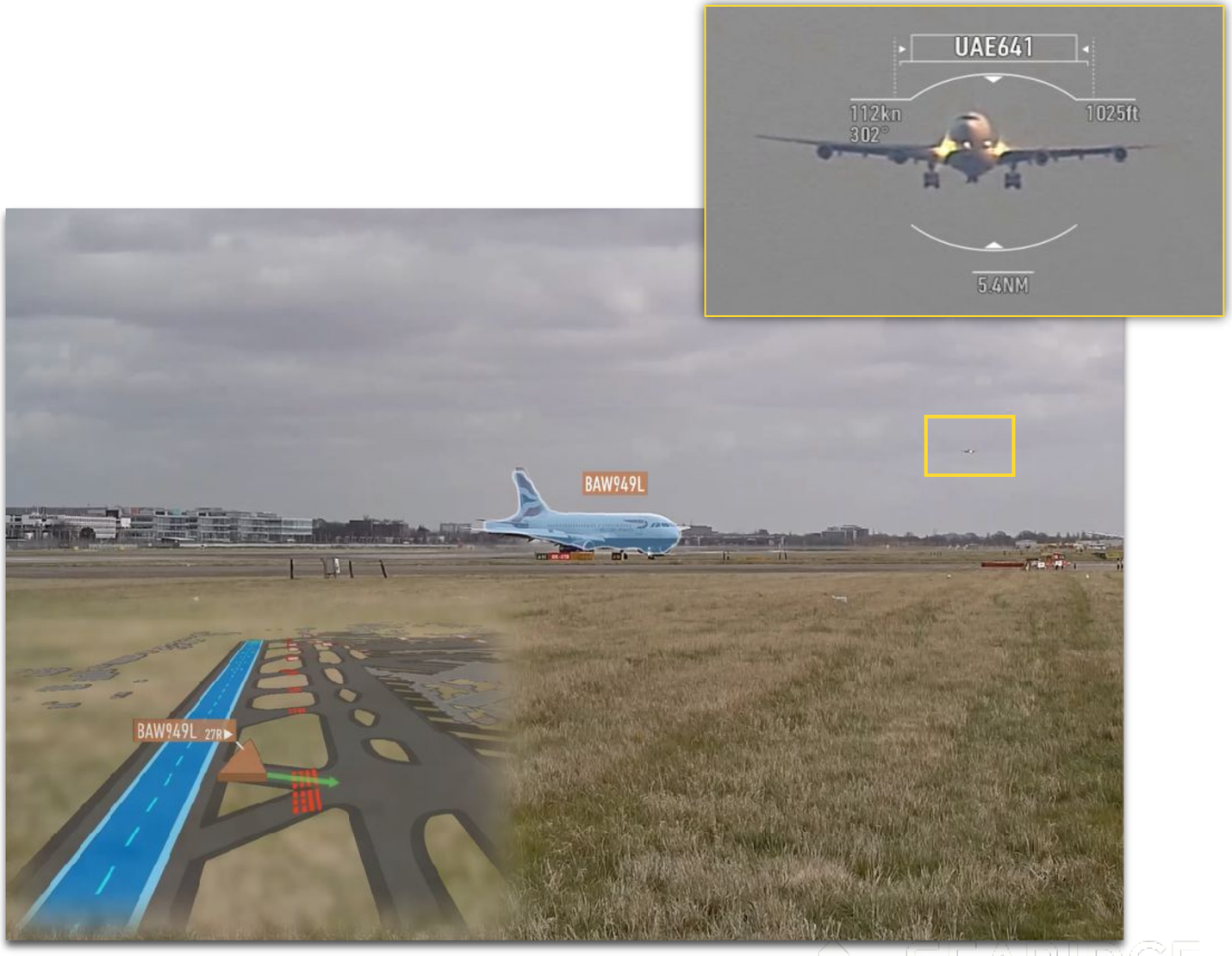
Current Con-Ops: A- SMGCS Ground Separation during vis 2 conditions = 20% reduction in capacity

Solution:

AI application (processing video & A-SMGCS data) to provide indication of aircraft clearing obstacle free zone. Match or exceed performance of ATCO looking out window

Operational Application

Goal to augment both standard tower operation (during tower in the cloud) & VCF contingency operation (which currently uses tower in the cloud ConOps)



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NATS

Use Case: Singapore Smart Tower

CAAS
Civil Aviation Authority of Singapore

BROWARD COUNTY FLORIDA

Ft. Lauderdale: Virtual Ramp Control System

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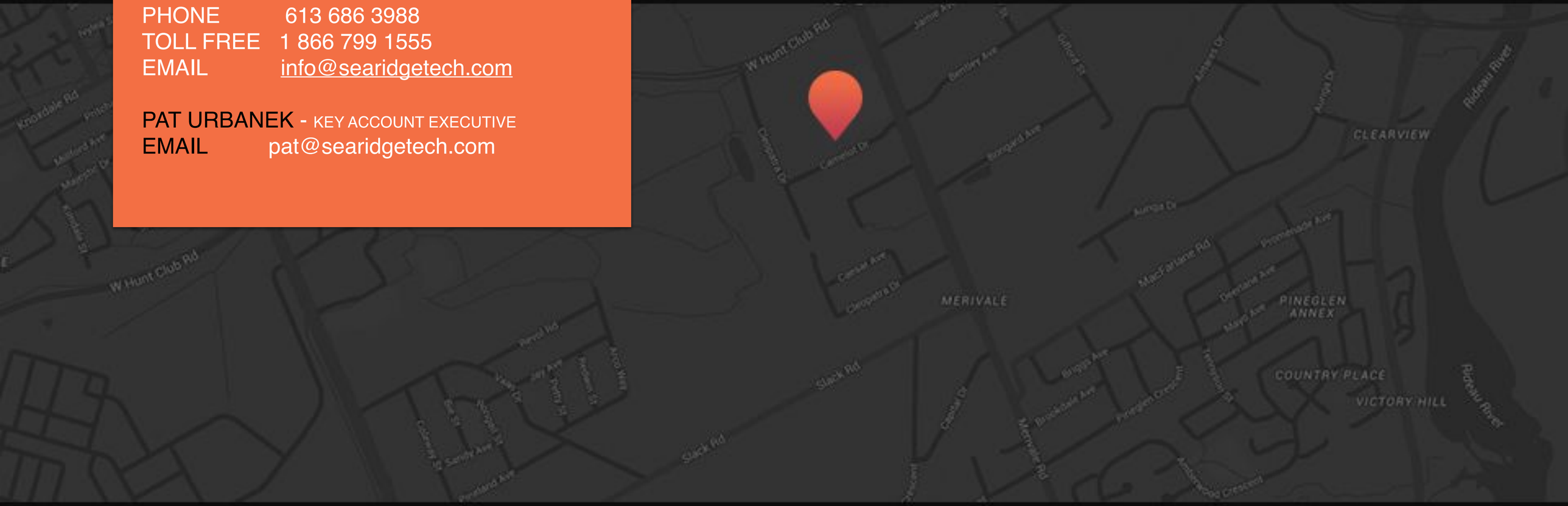

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Thank you!