HOW DOES FREQUENTIS SUPPORT ATFM?

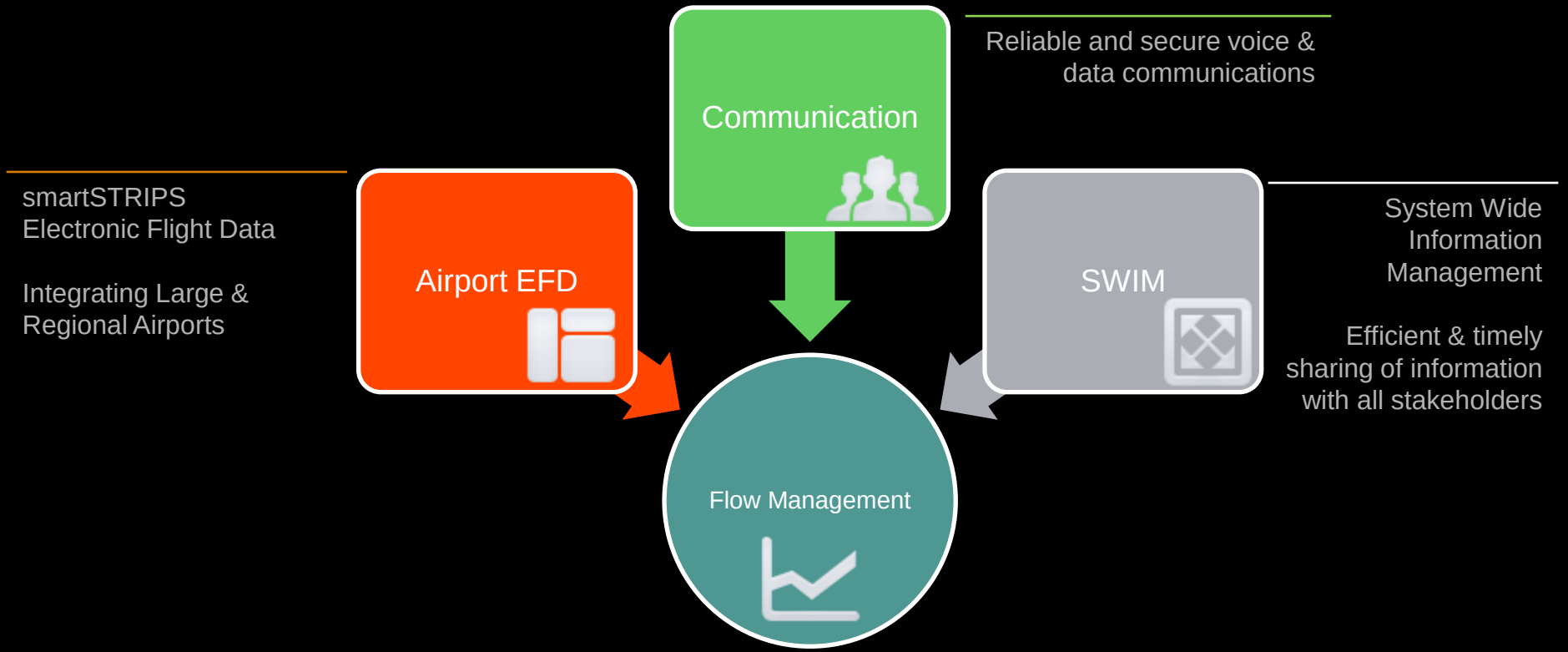
2014-11-05 KLOPF Markus

Intro


Destination: Cancun
Origin: Frankfurt
Altitude: 30001 ft
Time to Dest: 9:47
Ground Speed: 551 mph
Distance to Destination: 5276 mi
Air Temp: -52 F
Time of Arrival: 5:34 PM

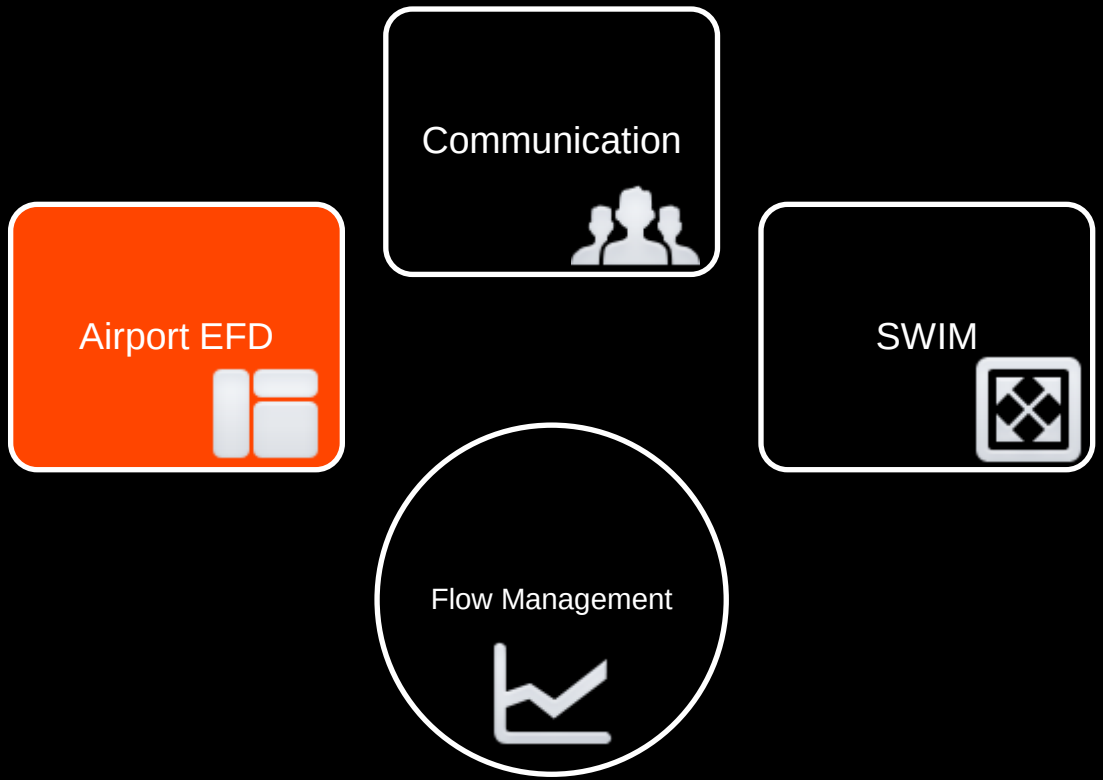

Arctic Ocean
Murmansk
Reykjavik
Stockholm
Aberdeen
Cardiff
Frankfurt (FRA)
Toronto
Montréal
St. Johns
Zurich
Istanbul
Chicago
Boston
Madrid
Lisbon
North Atlantic Ocean
Atlanta
Marrakech
Miami
Cancun (CUN)
Bridgetown
Dakar
Niamey
Medellin
Maracaibo
Monrovia
Lagos
Kano
Belem
Port-Gentil
Yaounde
Guayaquil
Maraba
Recife
Luanda
Kinshasa

The 4 Elements of Flow Management



smartSTRIPS
Electronic Flight Data

Integrating Large &
Regional Airports

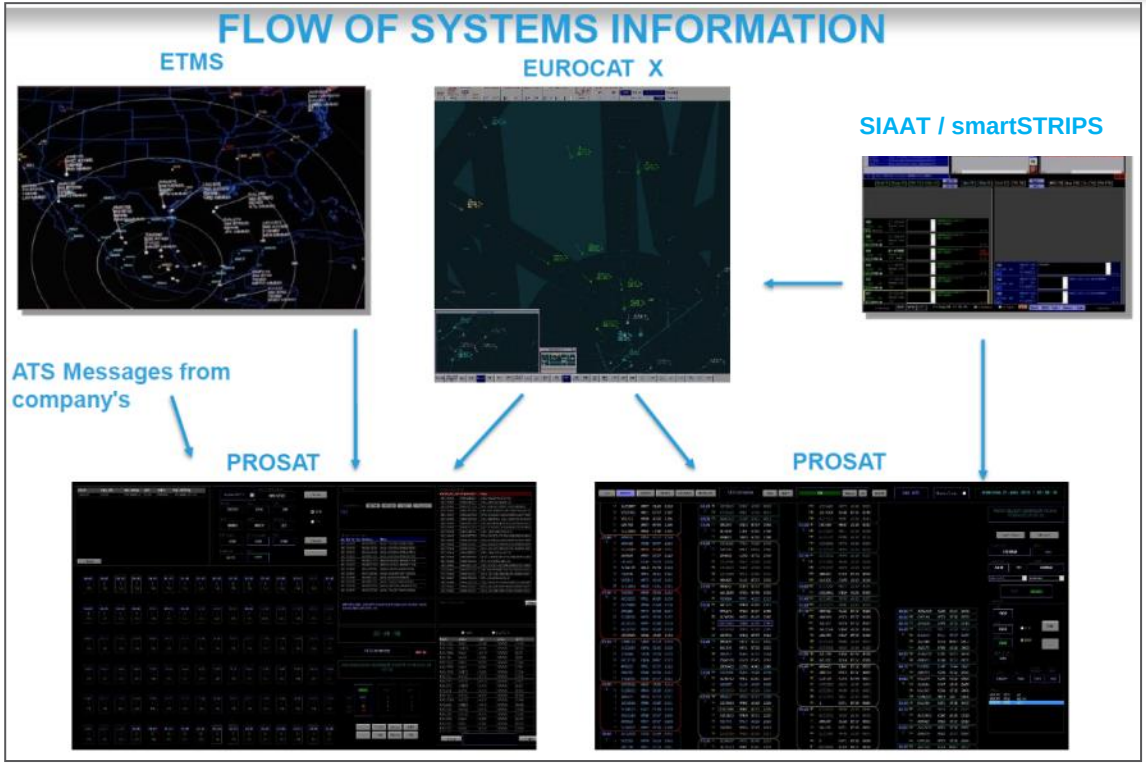


→ Legacy tools

*“For the last 80 years, the world’s air traffic controllers have been safely guiding our flights through the skies using some fairly familiar tools – **radar**, **radios** and **little strips of paper** to keep track of the flights.”*

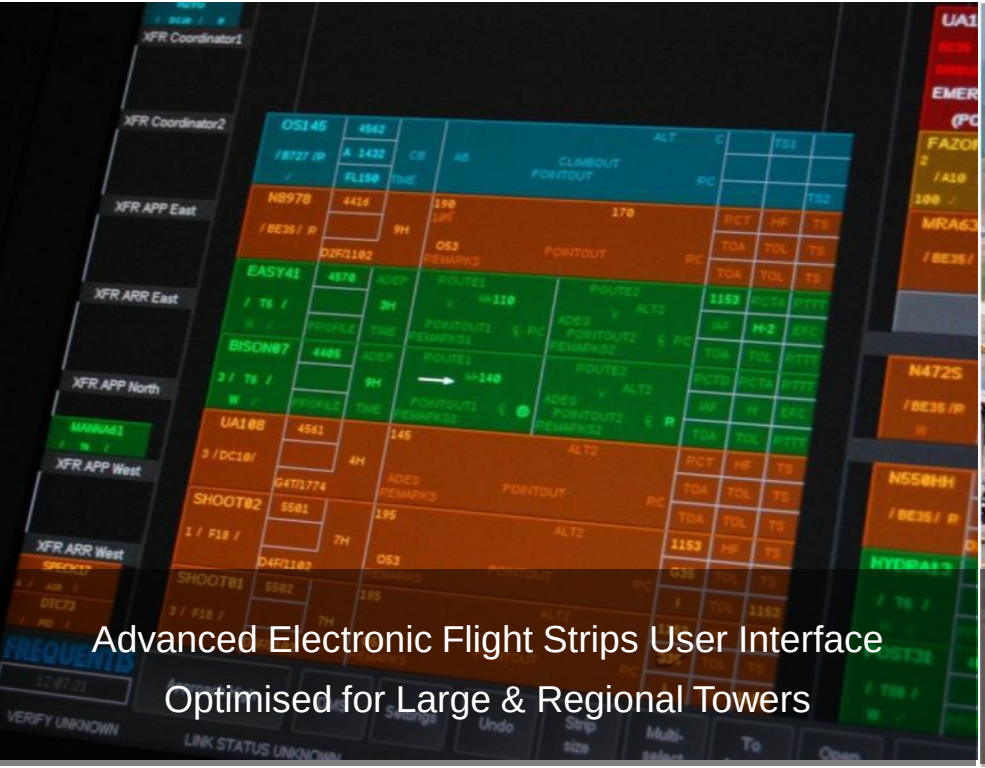
--- Revolutionising Air Traffic Management, Nov 2012, Air Transport Action Group

→ Reference Case



Source: *SENEAM* Presentation at ICAO, Nov 2013

→ smartSTRIPS



Advanced Electronic Flight Strips User Interface

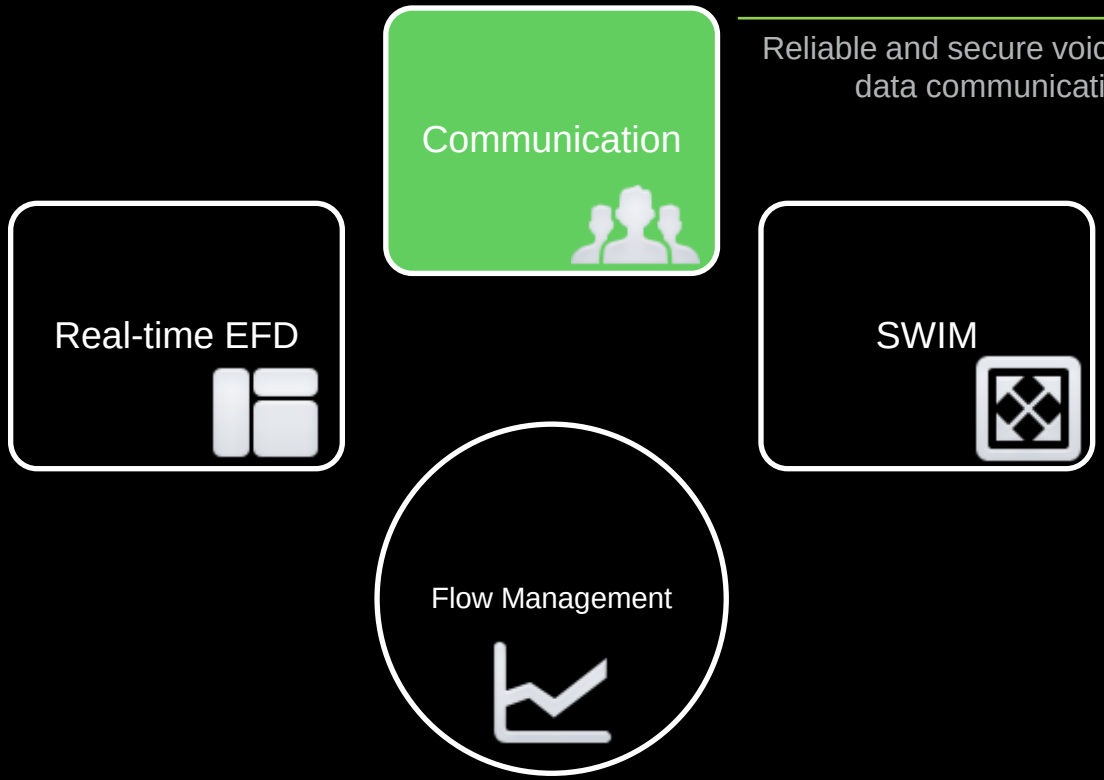
Optimised for Large & Regional Towers

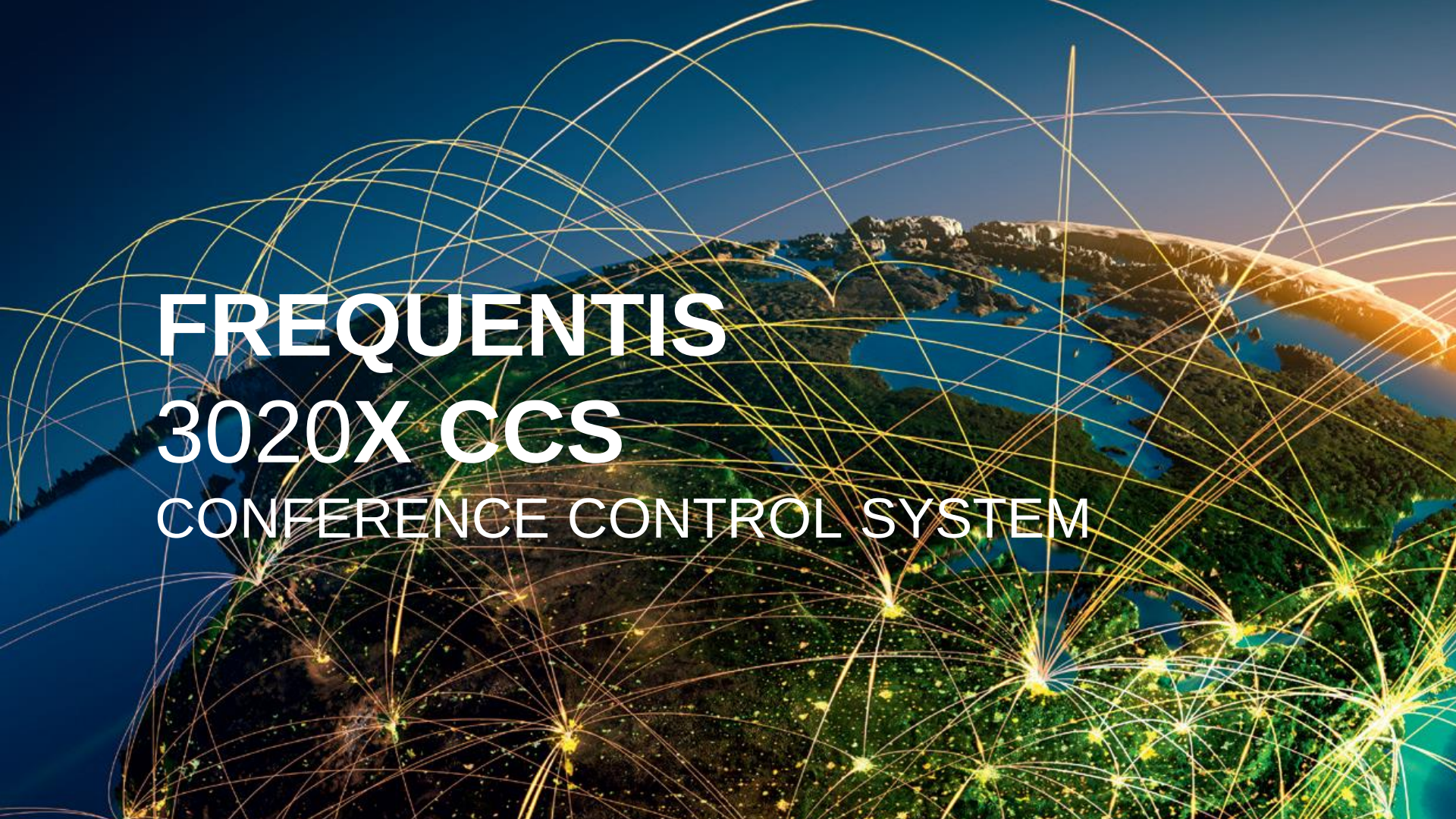
Workflow Management and Decision Support

Improves Efficiency through Automation & Improved Situational Awareness


Enables Real-time information sharing
Reduces Cost of Operations through Automation
Helps Controllers to make better decisions

→ Recent customer deployments


Communication
Reliable and secure voice & data communications
Real-time EFD
SWIM
Flow Management


FREQUENTIS
3020X CCS
CONFERENCE CONTROL SYSTEM

→ The CCS and the FAA Command Center (“ATCSCC”)

- → Adjusting traffic demands when significant events impact an airport or portion of airspace
  - Adverse Weather
  - Equipment Outages
  - Runway Closures
  - National Emergencies
- → Direct communication with its partners:
  - Air Route Traffic Control Centers (ARTCCs)
  - Terminal Radar Approach Control Facilities (TRACONs)
  - Air Traffic Control Towers (ATCTs)
  - Aviation Industry Partners

http://www.faa.gov/about/office_org/headquarters_offices/ato/service_units/systemops/system_ops/atcscc/

Conferences for Every Situation

Case Popocatepetl Alert

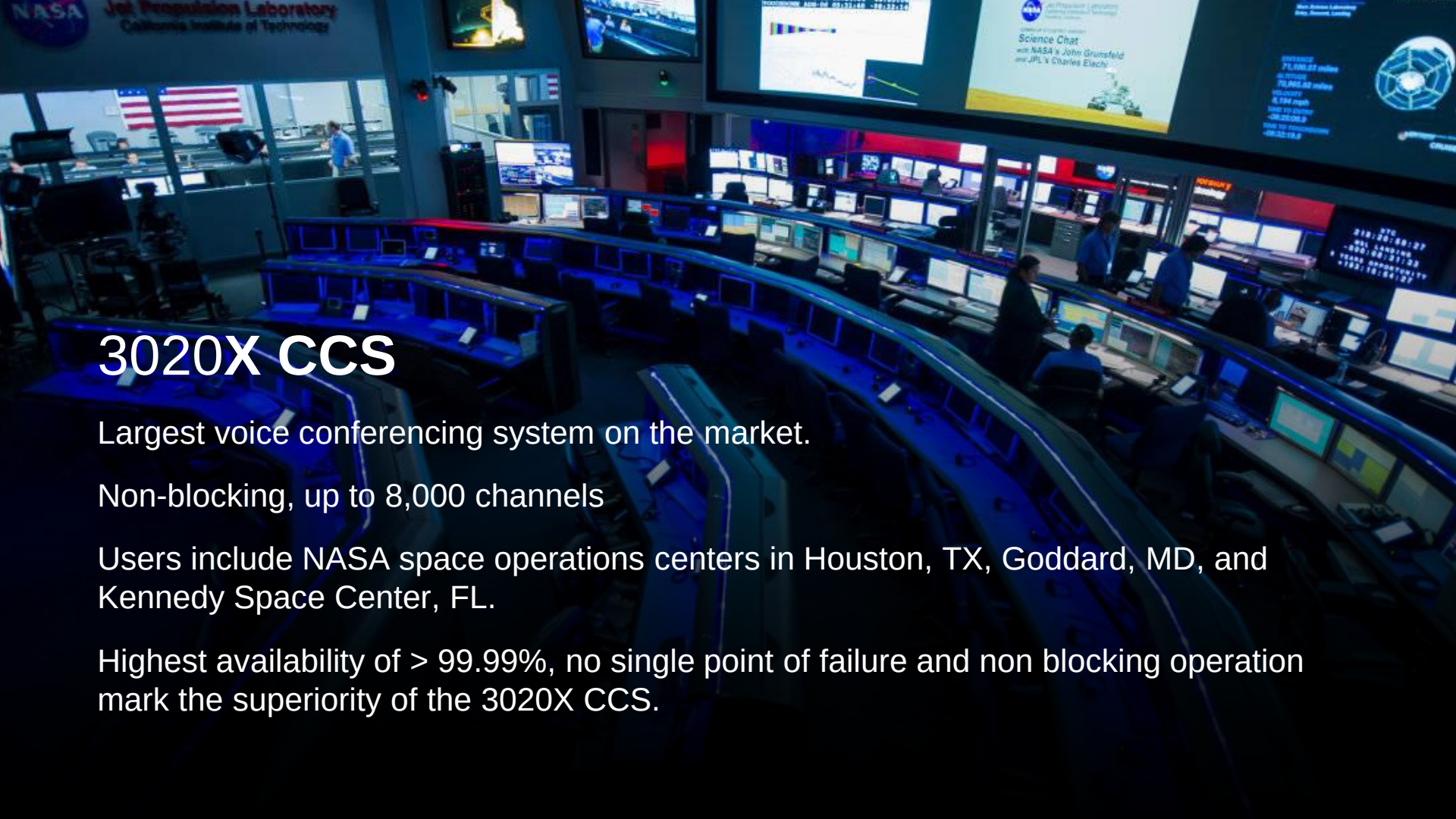
- In the case of a potential Volcano eruption an AdHoc conference could be opened and unique passcode created
- Unique passcode would be distributed to necessary conferees:
  - Mexico Emergency Committee
  - Weather service
  - Airlines
  - Others as needed

The conference host enables necessary communication sharing from command center and between participants

Reference: http://www.bbc.co.uk/news/world-latin-america-23193828

Conferences for Every Situation:
Extreme Weather

- **AdHoc Conference** feature allows the CCS specialist to rapidly create conference space for communication during an emergency situation.



3020X CCS

Largest voice conferencing system on the market.

Non-blocking, up to 8,000 channels

Users include NASA space operations centers in Houston, TX, Goddard, MD, and Kennedy Space Center, FL.

Highest availability of > 99.99%, no single point of failure and non blocking operation mark the superiority of the 3020X CCS.

→ Conference Control System 3020X CCS

Conferencing features

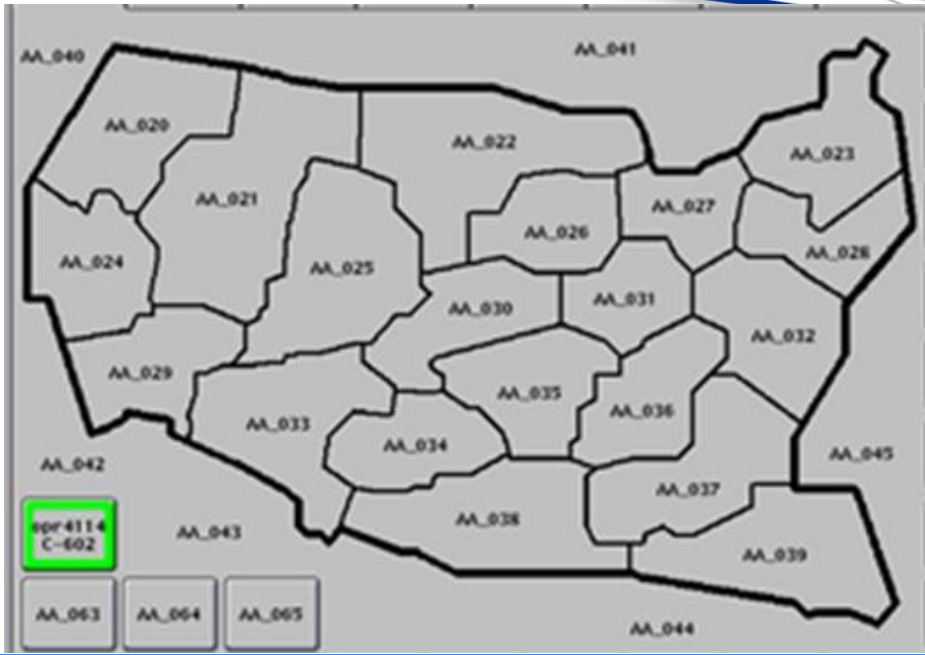
- → Ad Hoc – Used to set up unplanned conferences
- → Meet Me – Allow scheduled conferences with/without PIN security
- → Progressive – Used to create large call out conferences
- → Preset – Blast out of simultaneous calls to participants

FULLY NON BLOCKING VOICE CONFERENCING FOR UP TO 8,000 CHANNELS

→ Optimal Workflow

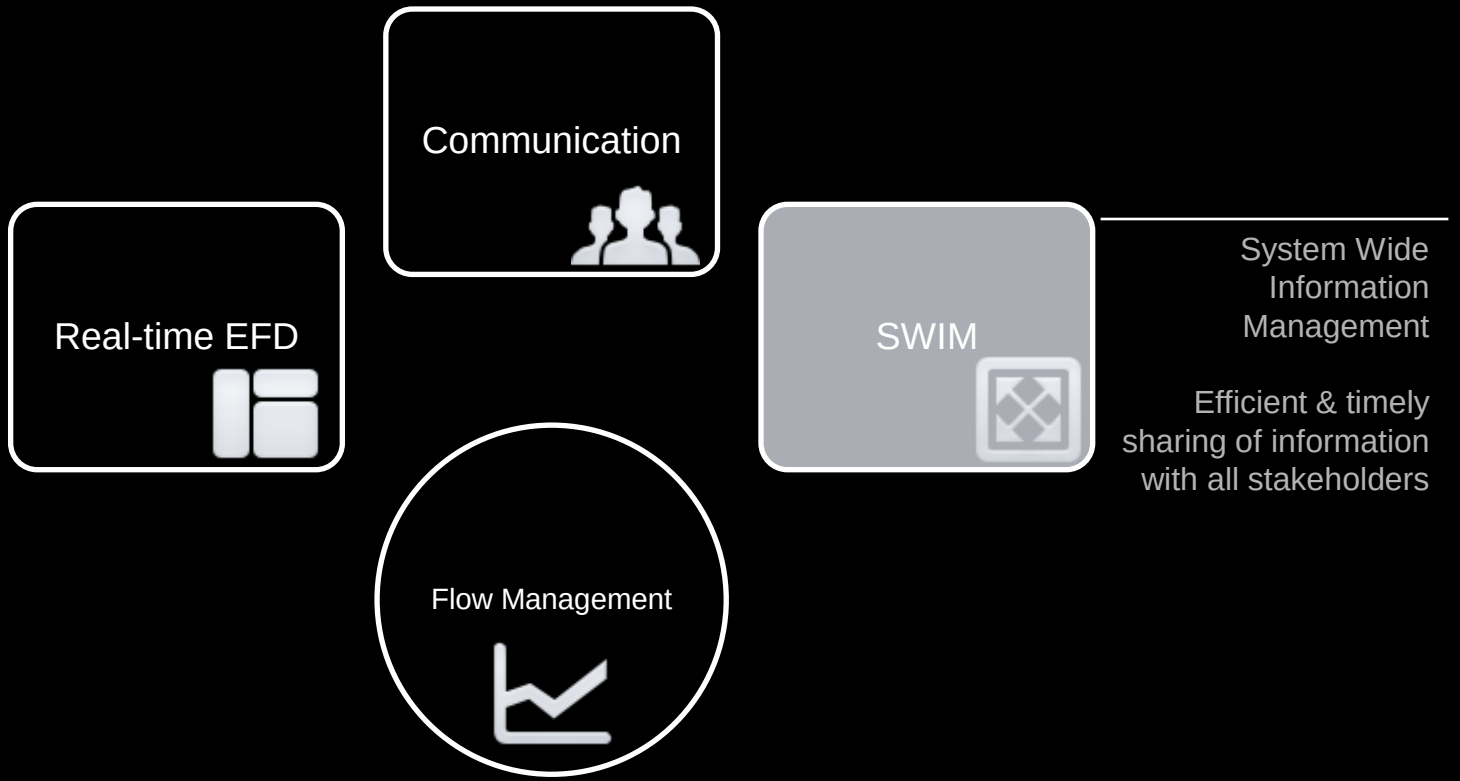
Workflow is optimized via customer specific user interface design

- → Easy to use touch entry display
- → Graphical map based pages
- → Optimization of operational objectives via user interface
- → Homepage design allows user specific customization
- → Role base concept for user profiles



FREELY CONFIGURABLE USER INTERFACE MAXIMIZES USER EXPERIENCE

The 4 Elements of Flow Management

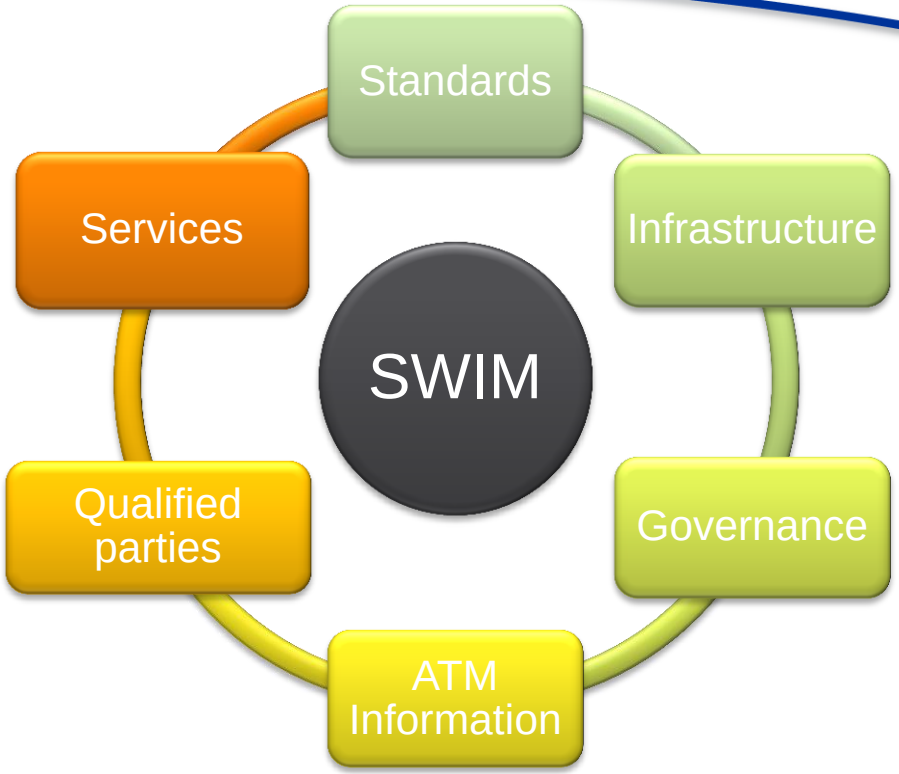


Definition : SWIM consists of standards, infrastructure & governance enabling the management of ATM information

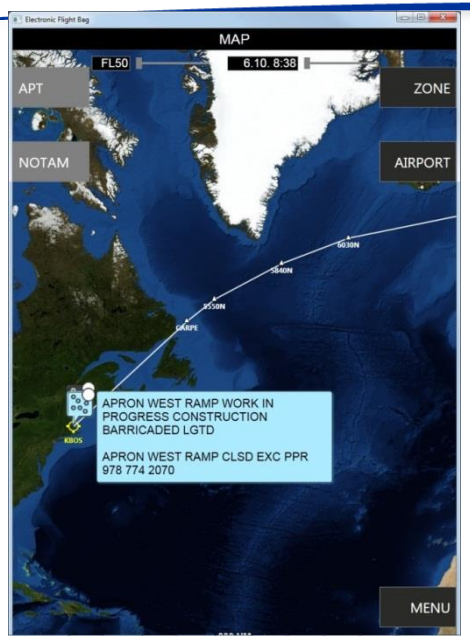
and its exchange between qualified parties via interoperable services.”

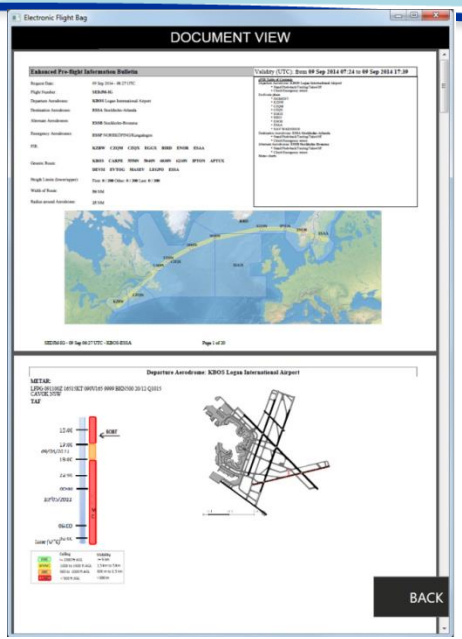
→ System Wide Information Management

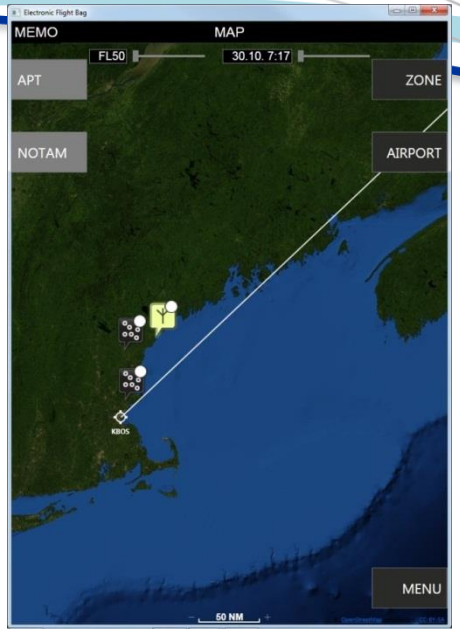
- Information is at the heart of ATM
- Develop the concept of ‘System-Wide Information Management’
- Moving ATM from System-Centric to Information-Centric operations
- Establish the ‘intranet’ for aviation
- Access to the right information at the right time by all ATM stakeholders in support of the decision making process.



→ Example: Digital Briefing - EFB







- visualize ePIB data on a map and in PDF form
- receives in-flight updates
- SWIM service orchestrated, communication via SWIM Infrastructure

→ FREQUENTIS and SWIM

TAPTOOLS SOA-based Tower and Airport Applications

EFS Weather Open Interface SESAR Validations & Demos

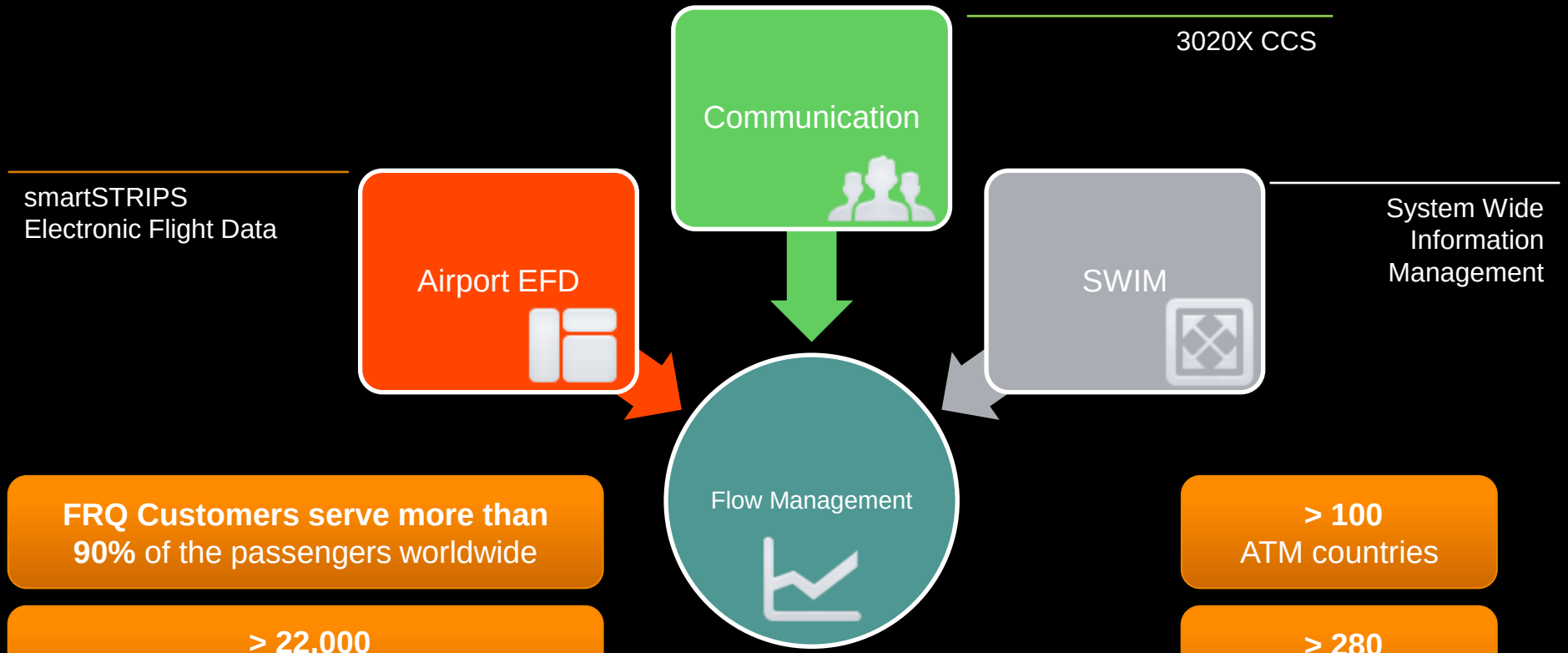
EAD Aeronautical Information Sharing Platform

Decentralized Structure EAD SWIM Access

Early Projects	SESAR Development	SESAR2020
SWIM SUIT	CONOPS, Governance, Infrastructure, Data & Service Modelling, Outreach	Evolution A/G Integration

2006 2008 2010 2012 2014

How does FREQUENTIS support Flow Management?



FRQ Customers serve more than 90% of the passengers worldwide

> 22,000
working positions in operation

> 100
ATM countries

> 280
ATM customers

FREQUENTIS