



SWIM : From PAIN to GAIN

Examples of services & solutions

FRANCOIS DELILLE / YANN LE BARS

SWIM ICAO WORKSHOP

16TH - 18TH MAY 2016, BANGKOK



Standards

> Data Models

- > **AIXM** (Aeronautical Information eXchange Model) : obstacles, procedures and airport databases
- > **WXXM** (Weather Information eXchange Model) : meteo information for air transport
- > **FIXM** (Flight Information eXchange Model) for sharing flight information

> Exchange Patterns

- > Collaboration
- > Producer/Consumer

> Security

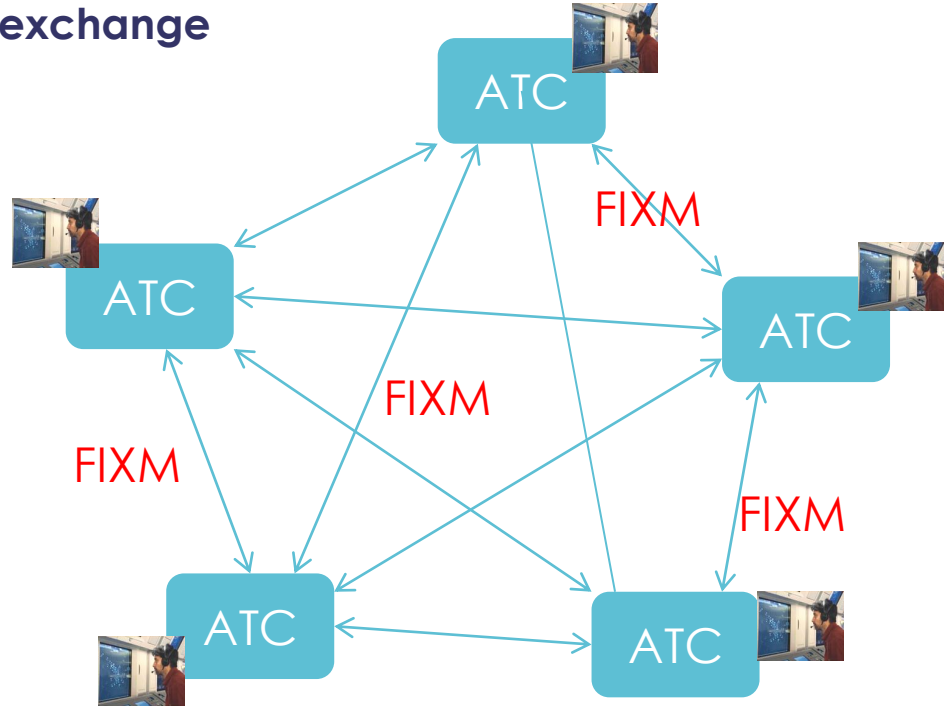
> Federated Services

Standards and Technical Infrastructure are available. Now let's use them !

SWIM Interoperability Patterns - Collaboration

➤ Example: ATC to ATC flight Plan exchange

- Today: OLDI or AIDC
- FIXM Being implemented
e.g. IOP - ED133 in Europe
mandated in SESAR PCP
2024



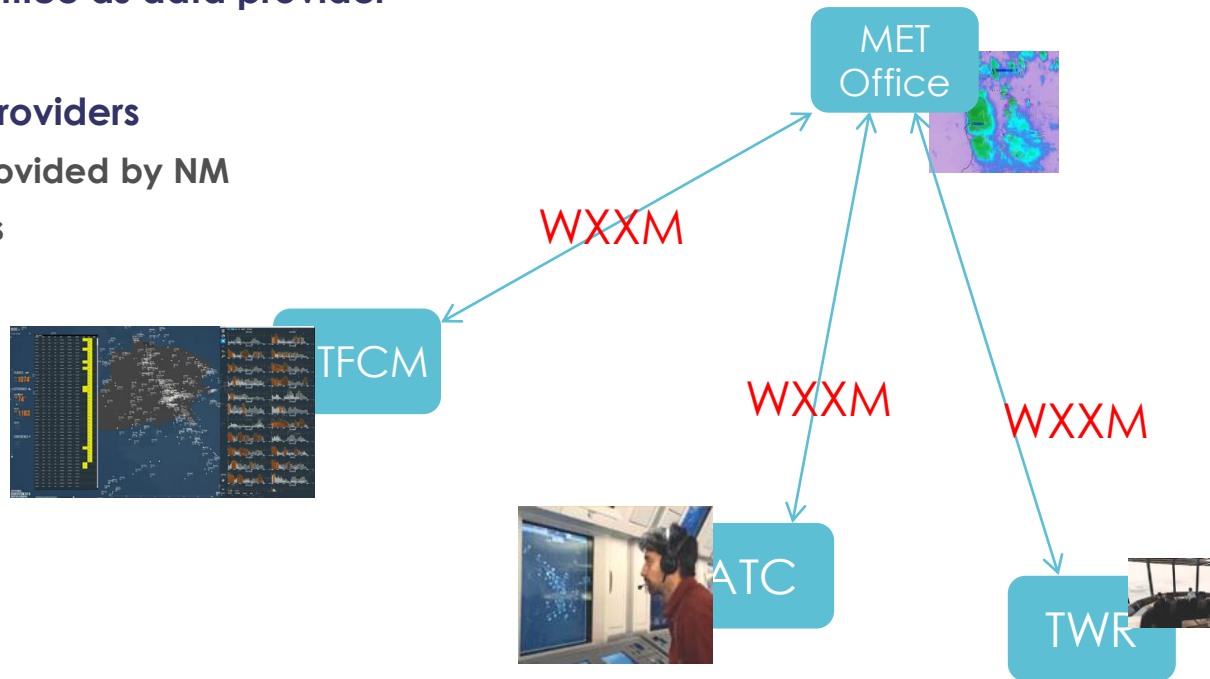
FO enables better accuracy of data in Topsky (provides anticipation)

SWIM Interoperability Patterns - Producer / Consumers

➤ Example: MET Office as data provider

➤ Other existing providers

- Plan data provided by NM
- AIXM servers



Most used pattern – Easy to implement

SWIM Security – Thales Approach

> Analysis

> Risk analysis

- > What are the essential assets?
- > What are their vulnerabilities?
- > What are the consequences in case of loss or c

> Determine the current level of exposure

- > Support for assessing exposure level of ATM syst

> Prevention

- > System protection (security controls)

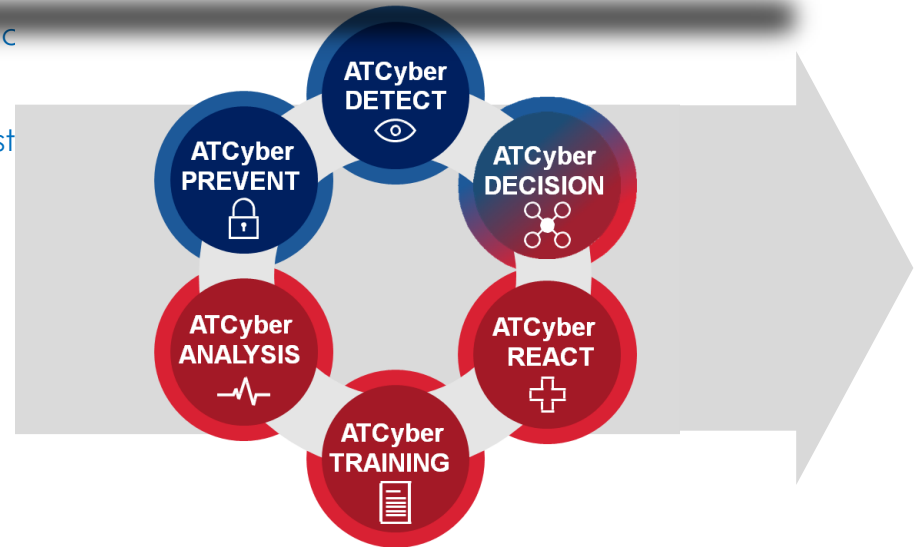
> Detection

- > Security Information and Event Management

> Decision

- > Security Operations Centre

Risks come from Isolated to Open systems – Use of Standards

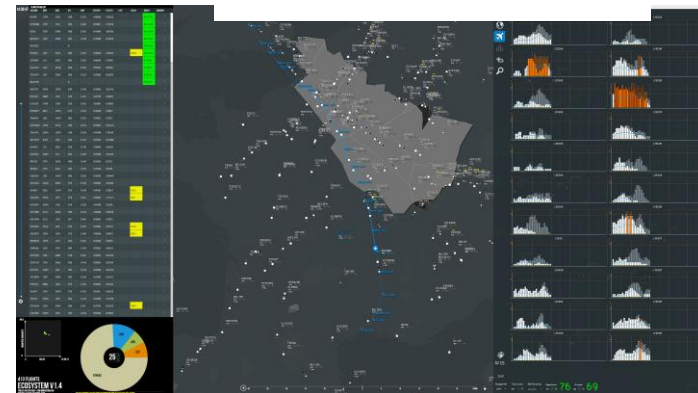
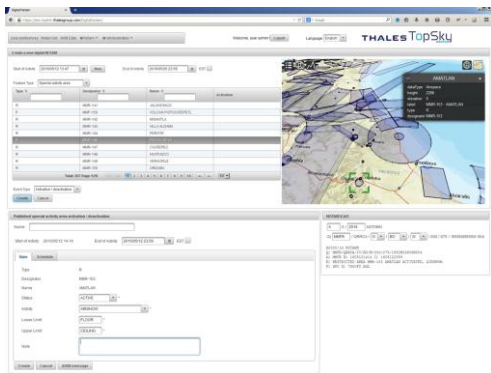


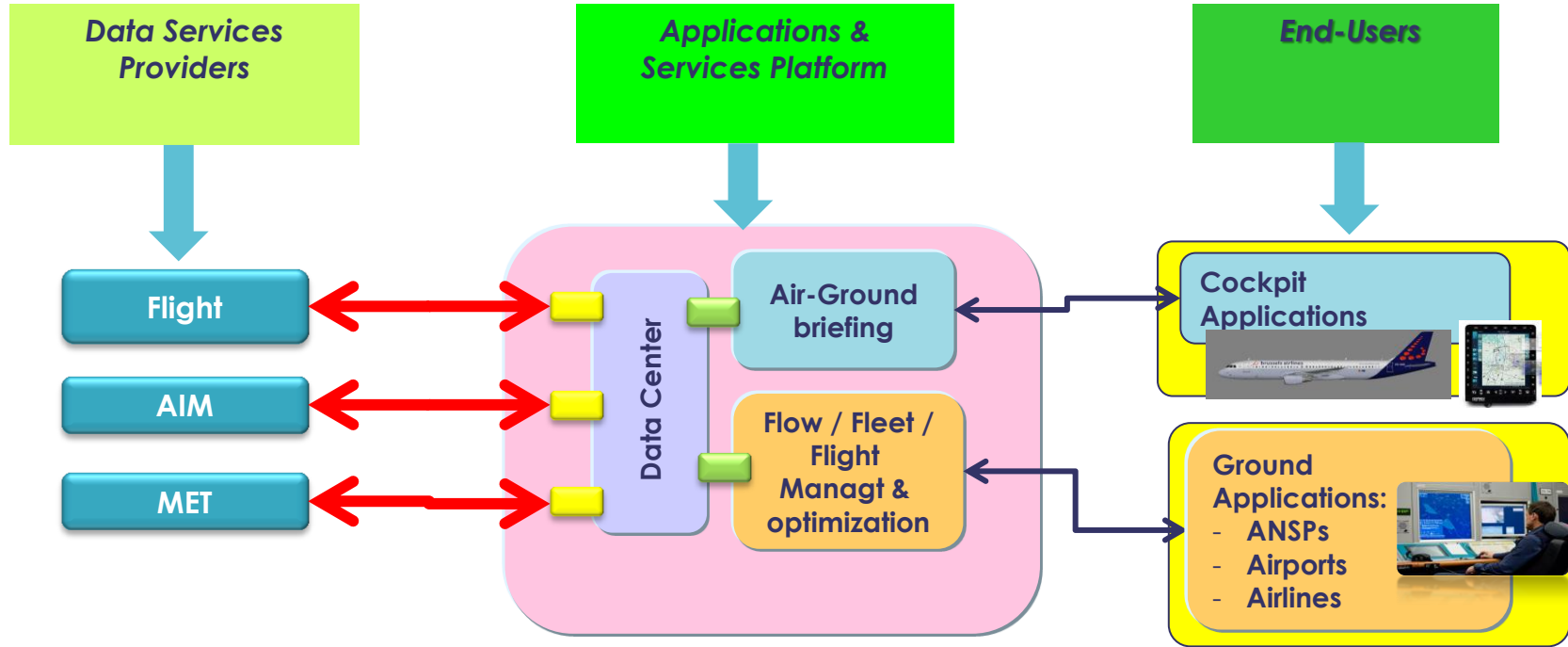
Thales Cyber Security solutions helps overcome SWIM Vulnerabilities

Thales Products SWIM Compliance

Product	SWIM compliance
TopSky ATC	ATC-to-ATC / Collaboration / FIXM
TopSky AIXM	AIXM Provider
ECOsystem	NOP B2B FIXM Consumer
	METGATE WXXM Consumer
	AIXM consumer

ECO SYSTEM

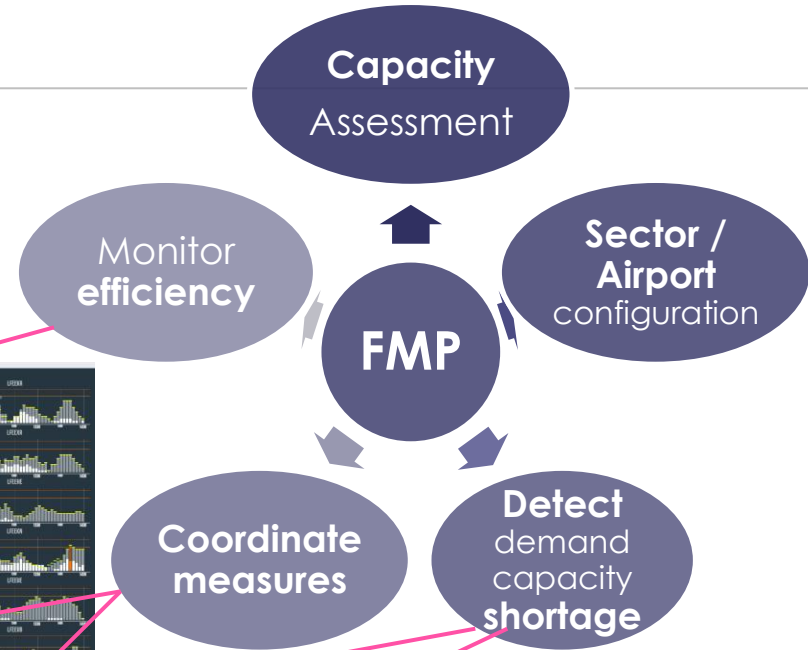
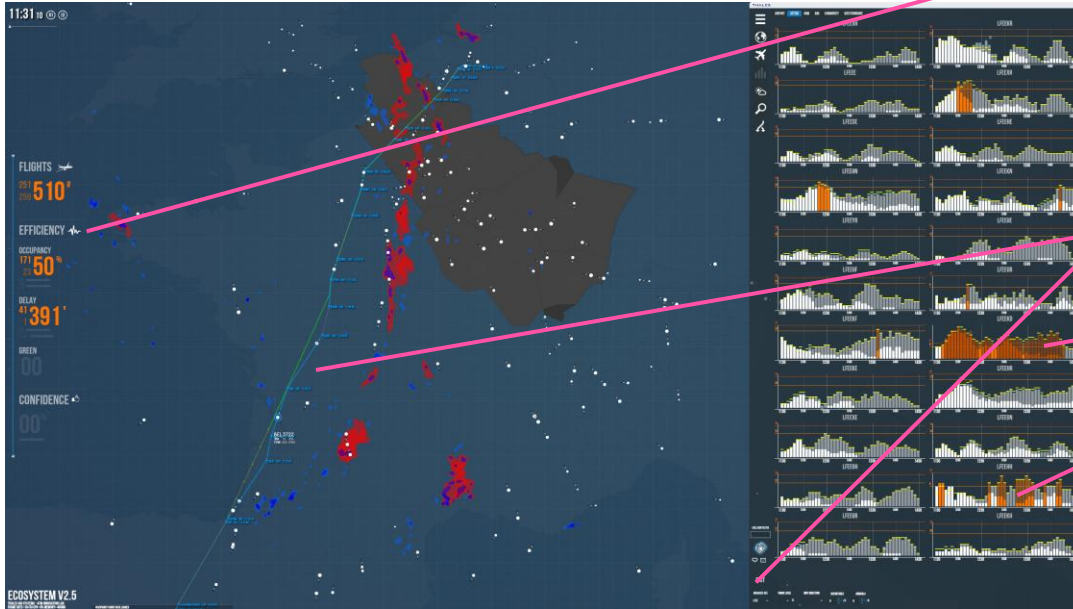




A collaborative platform, supporting multiple customers

Flow Management Position

- Comprehensive Situation Awareness
- Easy navigation in flows / flights / Peaks
- What-if ...



This document may not be reproduced, modified, adapted, published, translated, in any way, in whole or in part or disclosed to a third party without the prior written consent of Thales. © Thales 2015 All rights reserved.

Benefits

- **Faster Development.** Standards are available for use. No need to specify interfaces.
- **New capabilities & services (Provided by Data Integration)**
- **Higher level of automation**

- **ECOsystem provides Collaborative Flow / Fleet / Flight Optimization and then:**
 - Fuel consumption
 - Predictability
 - Safety
 - Punctuality
 - Capacity
 - Cost

SWIM Global Demonstration - ECOSystem

Today's data sources are:

- **METGATE** (Meteo France, UK Met Office, DWD, Finish met office)
- **AIXM** data (Eurocontrol, DSN, Airbus)
- **Flight Information** (Eurocontrol, FlightAware, FlightRadar24)

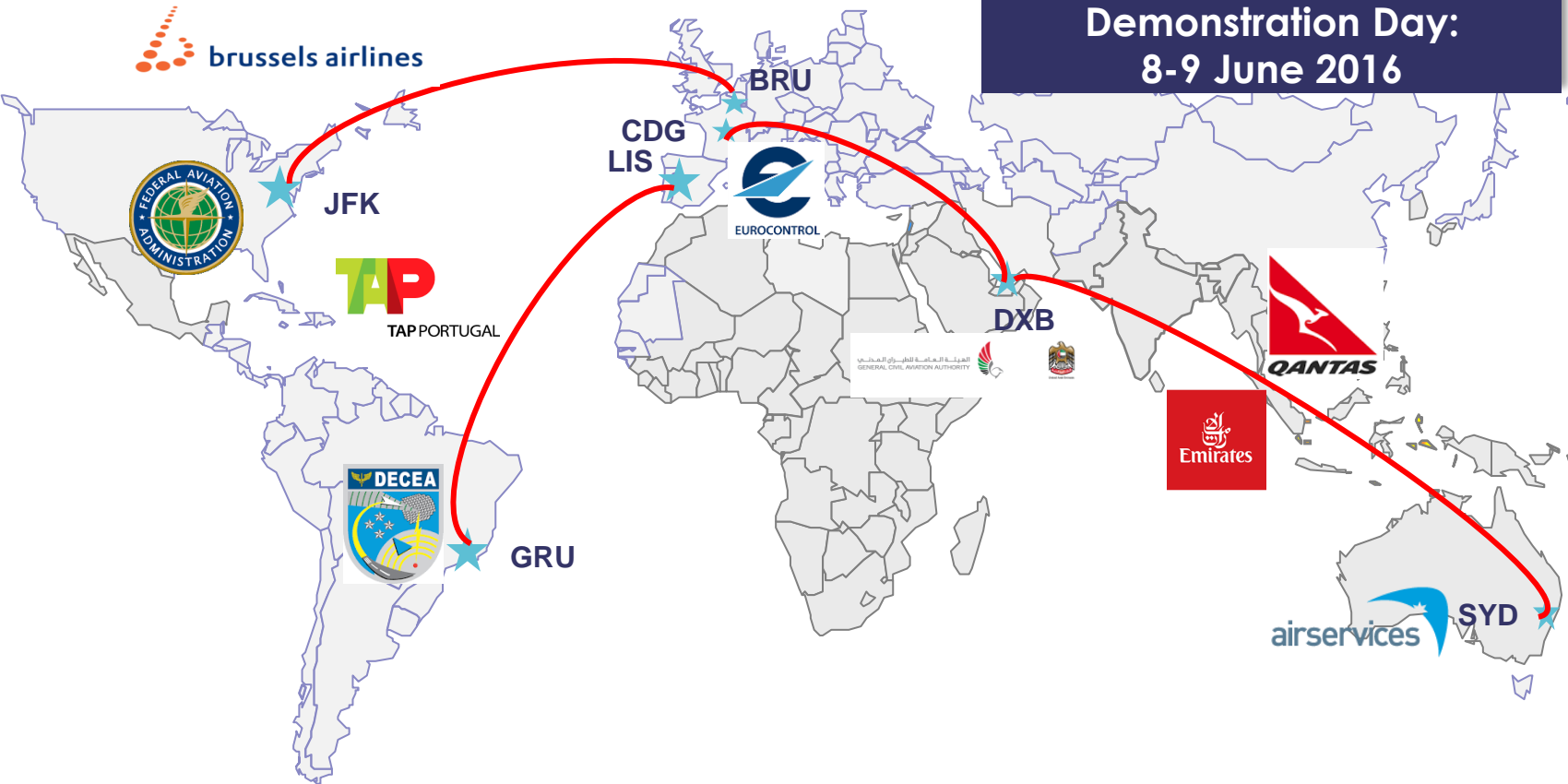


- SWIM Global Demonstration +
- **FAA** (USA) Flight Information
 - **DECEA** (Brazil) Flight Information
 - **Air Services** (Australia) Flight Information
 - **General Civil Aviation Authority** (UAE) for Flight Information

- Merge information
- Early awareness of delays/FPL changes
- Support early impact assessment & possible mitigation actions
- Overall expectation is to improve Airline's awareness & anticipation

SWIM Global Demonstration - ECOSystem

**Demonstration Day:
8-9 June 2016**



This document may not be reproduced, modified, published, translated, in any way, in whole or in part or disclosed to a third party without the prior written consent of Thales. - © Thales 2015 All rights reserved.

THALES



Thank You

www.thalesgroup.com

