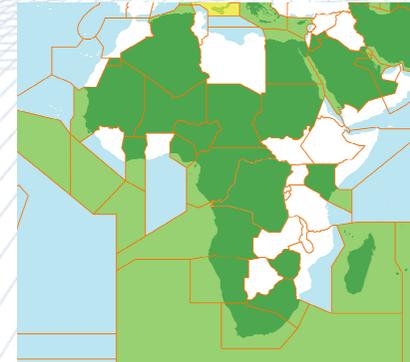




Deploy AIM to open the door for innovations

ICAO AFI AIM Seminar

Nairobi, December 2012





- Deploy AIM

- TopSky-AIM Introduction
- References
- TopSky-AIM overview

- Enabling Innovations



- ▶ A dedicated Team of 50 persons
 - Involved in Aeronautical Information Management (AIM)
 - And AFTN / AMHS switch
- ▶ Located in Paris, Part of ATM activity
- ▶ Strongest and longest experience in AIM
 - Thales is involved in AIS/AIM for more than 20 years
 - Thales has references in:
 - ARINC
 - AIXM 3.3
 - AIXM 4.5
 - AIXM 5.1
- ▶ Part of TopSky-ATM suite

TopSky
AIM

TopSky – AIS

TopSky – AIXM

TopSky – eAIP

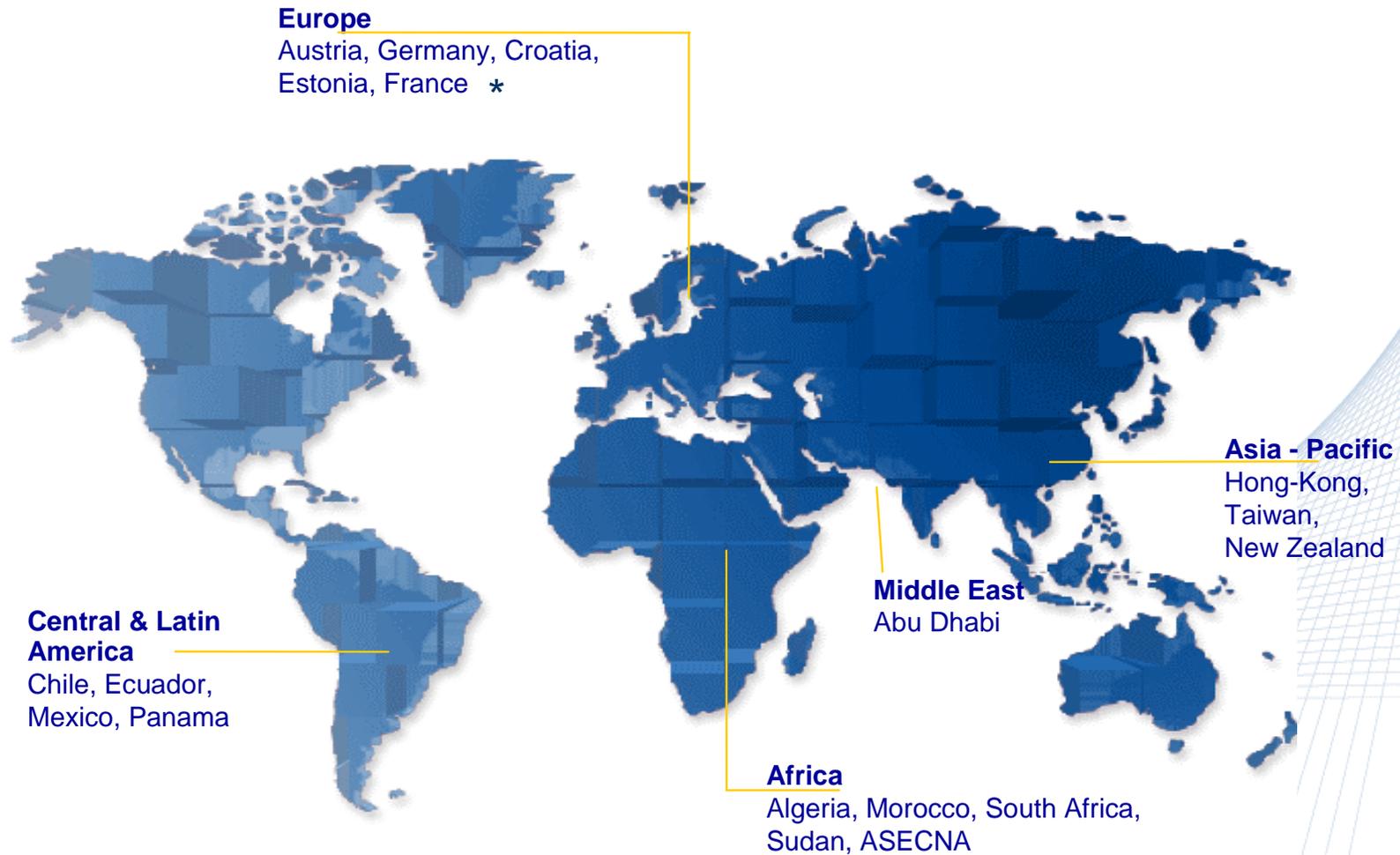
TopSky – Internet Briefing



Thales is involved in all AIM related workgroup and exhibitions:

- Workgroups:
 - CANSO AIS-AIM WG
 - ICAO regional meeting focused on AIM
 - Eurocontrol AIM/SWIM Team
 - SESAR WP meetings
 - EAD evolutions follow-up
- Exhibitions
 - ATC Global Amsterdam
 - IFAIMA (previously called Global AIM)
 - CANSO World
 - AIXM / WXXM Conference in Washington
 - Thales User Group

1.1 TopSky-AIM References

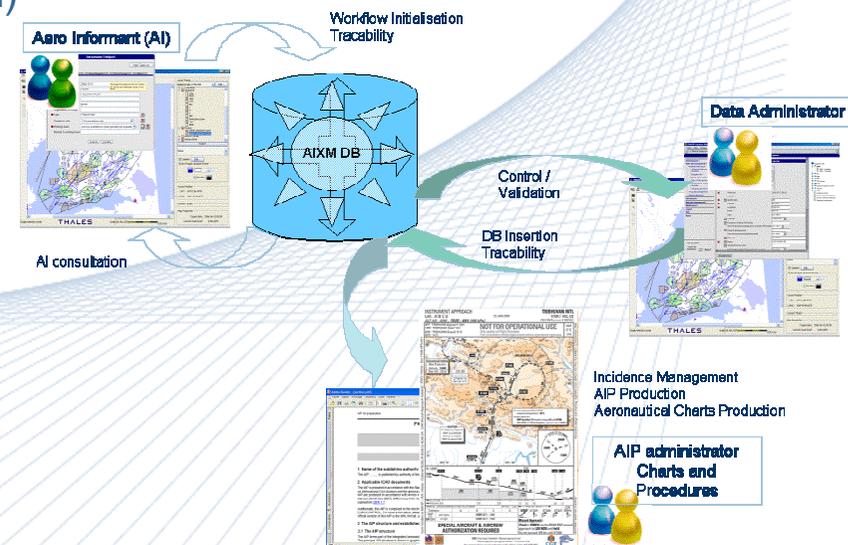


Thales TopSky-AIM : 18 References in the World



AIM System for French SIA (NOPIA)

- Description:
 - Full AIM solution composed of AIXM / eAIP / Charting
- Specificities:
 - Data informant features
 - AIP Display on web server
 - AIP Dual language (french / english)
 - High volume AIP / Charts
 - Incidence Management
 - Support for migration of AIP/Charts
- Awarded in 2009
- Operated since 2011





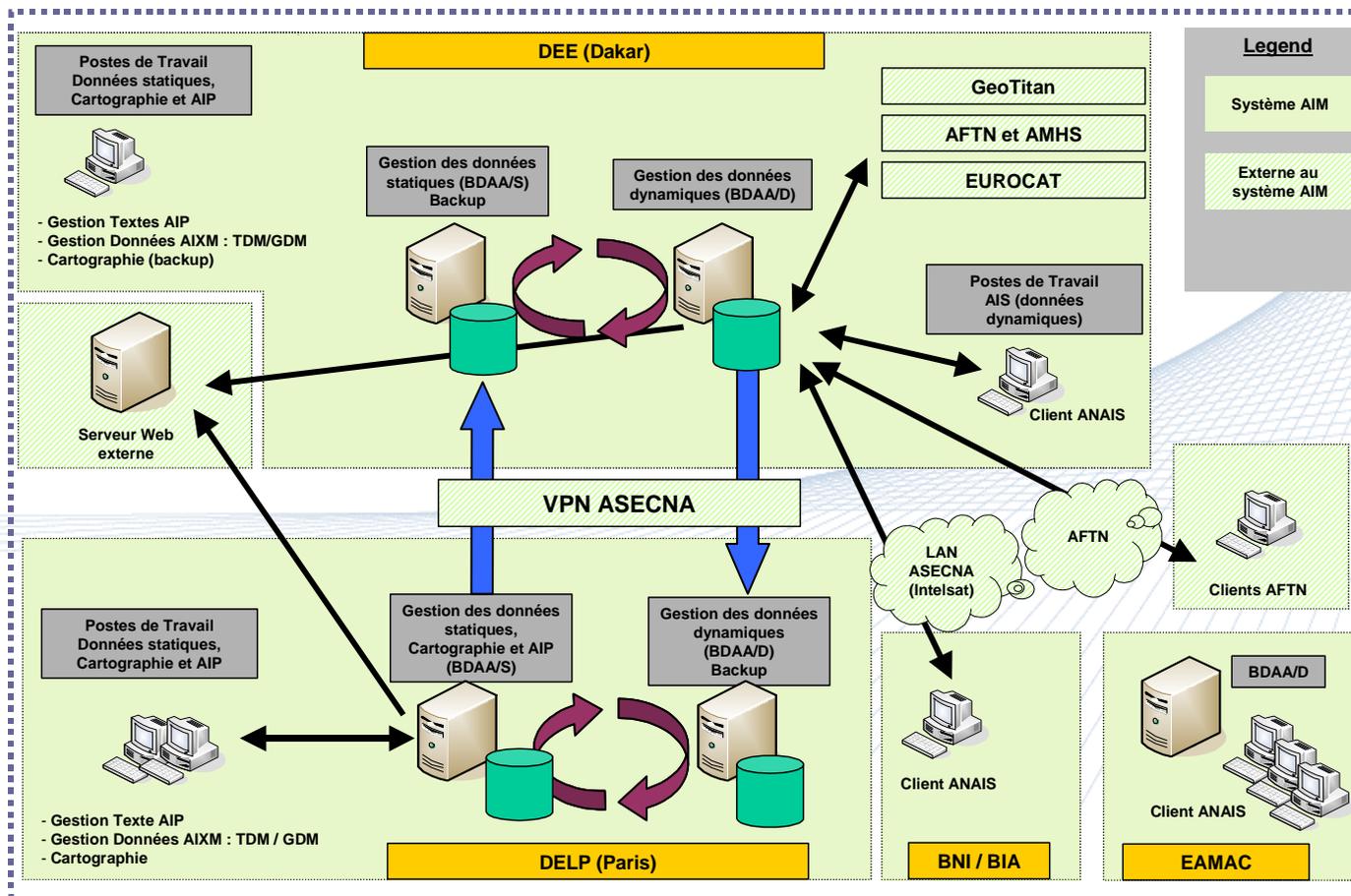
AIM System for ASECNA organisation (17 African countries)

- Description:
 - Full AIM solution composed of AIXM / eAIP / Charting / AIS
- Specificities:
 - Distributed Architecture on multiple sites
 - Servers in Dakar and Paris
 - Real time replication mechanisms
 - AIS Terminals installed in 17 countries
 - Integration of AIM system with existing Geotitan application
 - AIP of 17 countries
 - AIP Display on web server
 - High volume AIP / Charts
 - Compliant with New FPL 2012 format
- Awarded in December 2010
- SAT successful in January 2012



Benefits of such a system for the AFI region

- Strong experience of large system
- Possibility of extension or duplication of the system





AIM System for PANAMA

- Description:
 - Full AIM solution composed of AIXM / eAIP / Charting / AIS / Procedure Design and AMHS
- Specificities:
 - AIXM 5.1 database
 - Integration of Procedure Design / Charting with database
- Entry into Force May 2012
- Expected SAT by Q2 2013



✚ AIS/AIM System in South Africa (ATNS)

■ Description:

- Solution composed of AIS / Internet Briefing and AMHS
- Project MOTSETA

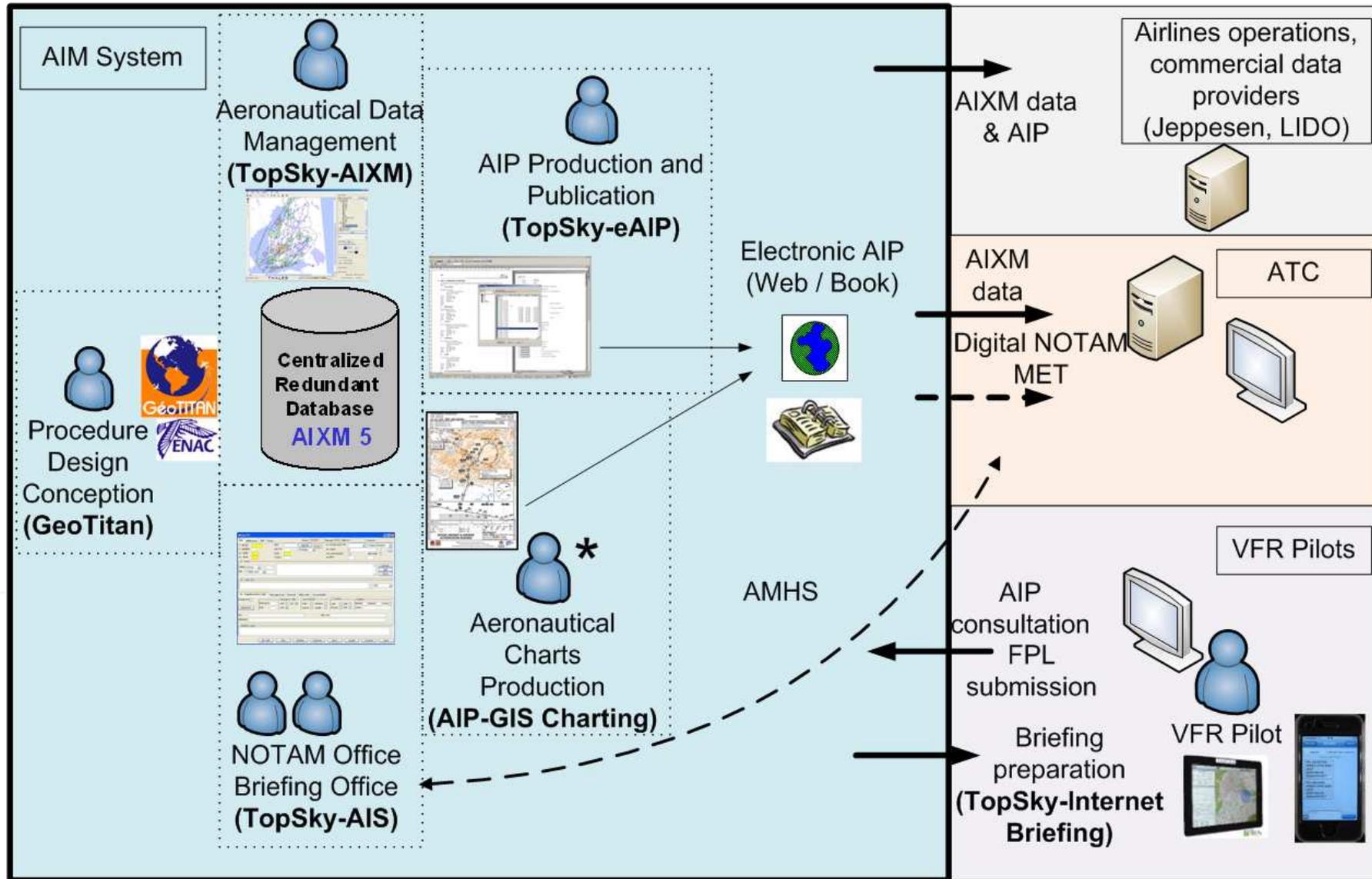
■ Specificities:

- Integration with TopSky-ATC and ATFM (Flow Management)
- Advanced AIS and Internet Briefing component
- NOTAM Proposal management and follow up.

■ Entry into Force 2008

■ Operational since 2009

1.2 TopSky-AIM system overview

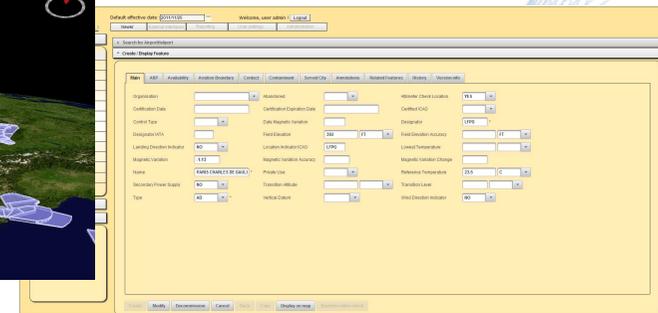
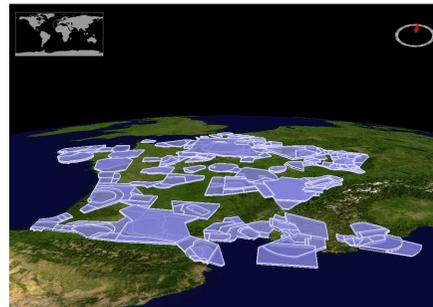




Advantages

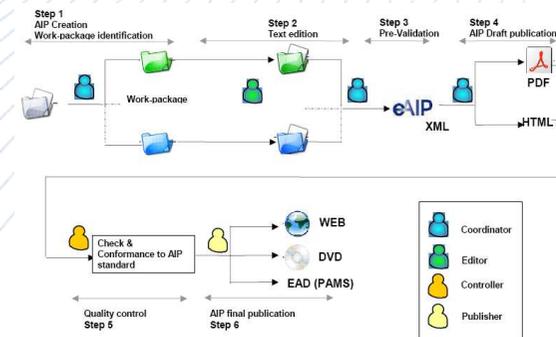
AIXM 5.1 Database

- Built on top of latest technical components (JEE6, WFS, NASA World Wind, MDA ...)
- Operation oriented input forms for main features in order to mask AIXM5 model complexity to end users



Electronic AIP

- Integrated workflow
- Automatic generation & publication of PDF, HTML, web site
- Fully compliant with latest Eurocontrol and ICAO specifications (XML technologies)
- Full integration with AIXM database
- Strong support during AIP migration



Modular Deployment

- Deploy AIM
 - TopSky-AIM Introduction
 - References
 - TopSky-AIM overview

- Enabling Innovations



AIM enables innovations:

Internet Briefing



Briefing on IPAD



Digital NOTAM

Create a new digital Notam

Start of Activity: 2012/06/10 16:55

End of Activity: 2013/06/30 00:00 EST

Feature Type:

Event Type: Créer

Calendar for June 2013:

Sem	Lu	Ma	Me	Je	Ve	Sa	Di
22						1	2
23	3	4	5	6	7	8	9
24	10	11	12	13	14	15	16
25	17	18	19	20	21	22	23
26	24	25	26	27	28	29	30

Heure: 00:00

Heures:

Minutes:

Maintenant Fermer

2. Enabling Innovations - Internet Briefing



- Internet Flight preparation interface
 - Self briefing airport position
 - Home-briefing internet connexion
- Flight plan submission
 - Template
 - ICAO format import
 - New FPL from existing FPL or template
- Flight plan status (IFPS/CFMU) follow-up
 - Users history management in the flight handbook
 - Alert via SMS & email
- Integrated PIB (NOTAM + Meteo)
 - « FPL from PIB » function
 - Narrow route PIB
 - Integrated-PIB = NOTAM + Meteo data
 - Electronic-PIB = HTML and PDF files

Flight Plan Message (Step 1 of 2)

Flight Plan			
3 Message Type (FPL)	7 Aircraft Identification -	8 Flight Rules - L IFR	Type of Flight G. General Aviation
9 Number - 1	Type of Aircraft -	Wake Turbulence Category / L - Light	10 Equipment - S / C *select
13 Departure Aerodrome - *Graphical Search	Time -	Date 2008/10/13	
15 Speed - N - Knots		Level F - Flight Level	
Route * Search			
16 Destination Aerodrome - *Graphical Search	Total EET -	Alternate Aerodrome Graphical Search	2nd Alternate Aerodrome Graphical Search



2. Enabling Innovations - Briefing on IPAD



HMI Ergonomy driven !

HandBook

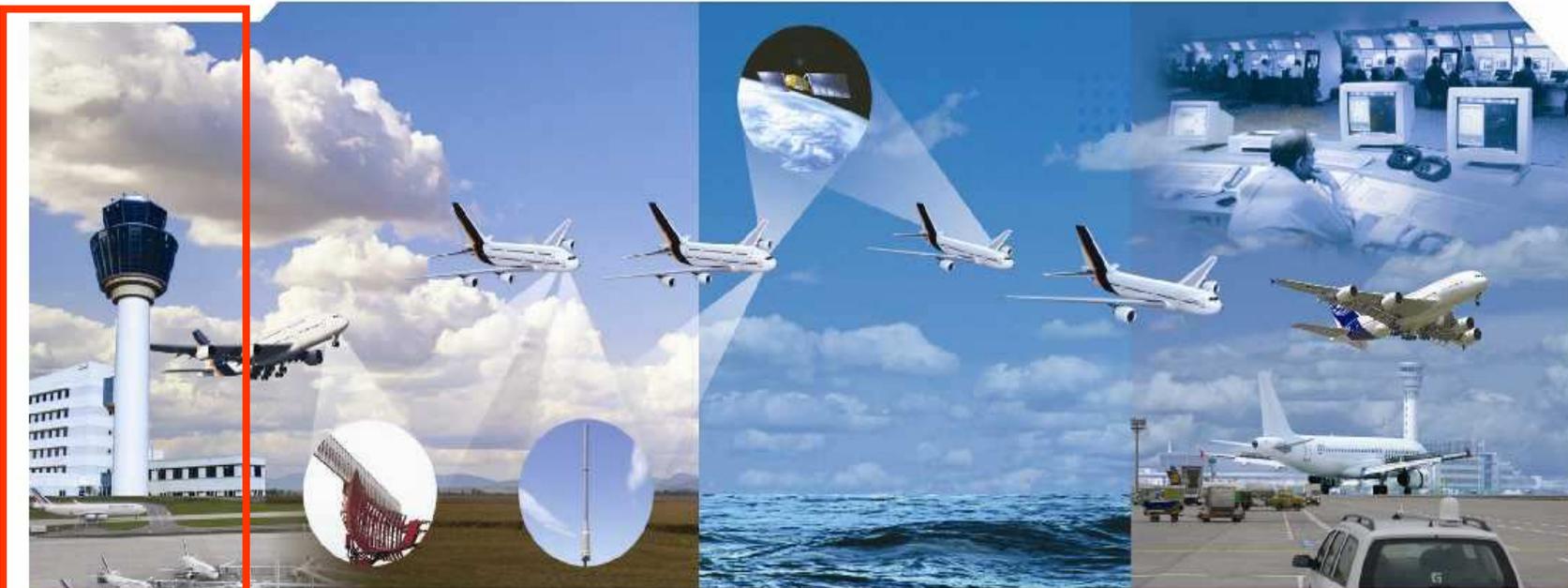
- 14 Oct 2011 07:33 LOWW VIENNA SCHWECHAT D6BDDA27
- 13 Oct 2011 17:03 LOWW VIENNA SCHWECHAT CRF6B206
- 13 Oct 2011 14:45 LOWW VIENNA SCHWECHAT C891ED02
- 13 Oct 2011 14:42 LOWG GRAZ C8909500
- 13 Oct 2011 14:40 LOWW VIENNA SCHWECHAT C88FE590
- 10 Oct 2011 17:25 LOWW VIENNA SCHWECHAT

LFOZ ORLEANS ST DENIS DE L HOTEL

- Departure
- Destination
- All Destination
- All Departure
- All EnRoute 1
- All EnRoute 2
- All EnRoute 3
- All EnRoute 4
- All EnRoute 5

Wed Oct 12	5	38	AM
Today	6	38	PM
Fri Oct 14	7	40	

2. Enabling Innovation - Integration with ATM



Flight preparation:
Flight plan establishment
METAM etc...

Eurocat Radar Data
Processing

Eurocat ADS-B Processing:
Automatic Dependent
Surveillance - Broadcast

Eurocat ADS/CPDLC
Processing: Automatic
Dependent Surveillance -
Contract / Controller Pilot
Data Link Communication

Arrivals Manager: Macezno
Flow management system
from Infassiva

Tecos Tower System

Streamis Advanced Surface
Movement Guidance and
Control System

AIM

ATC

Radars

Nav aids

ADS-B

Tower / Airport

AIM Product fully integrated in the Thales ATM Solution

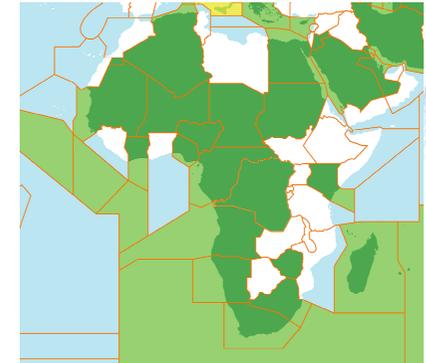
2. Enabling Innovation - Integration with ATM



Thales: A Key actor in ATM in AFI Region

Examples of Integration with ATM

- Display of an AIS window in TopSky-ATC display
- AMHS integrated in several versions of TopSky-ATC
- Transfer of AIM data into TopSky-ATC DPR component



Active participation in SESAR

- WP 8.1.4: Enhancements of AIM5 model
- WP 8.3.3: Definition of external interfaces of AIM systems
- WP 13.2.2: Implementation of future AIM systems (including Digital NOTAM prototype)
- WP 14.2.9: SWIM platform development



Thales is the only industry leader to anticipate new standards for the global aeronautical “AIM-ATC-Air-Ground” market

2. Enabling Innovation - ASBU Participation



B0-30

Service Improvement through Digital Aeronautical Information Management

- Implementation of the AIM Transition from AIS to AIM detailed in 21 steps.
- Solution compliant with AIXM 5 and Digital NOTAM

B1-30

Service Improvement through integration of all Digital ATM information

- Implementation of the ATM information reference model integrating all ATM information using UML and enabling XML data representations and data exchange based on internet protocols with WXXM for meteorological information
- SESAR p13.02.02 (Aeronautical Information Management - AIM sub-system definition)

B1-31

Performance improvement through the application of SWIM

- Implementation of SWIM services (applications and infrastructure) creating the Aviation intranet based on standard data models, and internet-based protocols to maximise interoperability
- SESAR p14.02.09 (SWIM Platform development and demonstrator delivery)

Demonstrated through references for Block 0 and R&D projects for Block 1

2. Enabling Innovation - ASBU Participation



B0-75

Improved Runway Safety

- TopSky-Tower operational in Abu Dhabi, Bangkok.....
- Improved situational awareness and runway incursion alerts
- Benefits: safety and capacity in all weather conditions

B1-15

Improved airport operations through Departure, Surface & Arrival Management

- SESAR p12.04.04 (Integration of Departure Management and Surface Management)

B0-10

B0-10 Improved Operations Through Enhanced En-route Trajectories

- Ground automation supporting Flexible Use of Airspace and Flex Tracks; integrating data from FANS equipped aircraft...

B0-35

B0-35 Improved Air Traffic Flow Management

- Solutions operational: Europe (CFMU), US (Command Centre) and South Africa (CAMU)

B0-40

B0-40 Improved Performance through the Application of Data-Link en Route

- Ground systems supporting CPDLC and ADS-C for FANS-1/A+ and Link2000+

Demonstrated through references for Block 0 and R&D projects for Block 1



- ▶ Complete, operational & modular AIM solution
- ▶ Experience in large scale AIS/AIM system deployment
- ▶ In line with
 - ICAO “Transition from AIS to AIM”
 - ICAO Block upgrade (Block 0 – Block 1)
 - SESAR and SWIM-ready solution
- ▶ Part of a Complete ATM Offer:
 - Air Traffic Control (APP, ACC, Tower ...)
 - Surveillance (Radar, ADS-B, WAM/MLAT ...)
 - Airport equipments



Thank you for your attention

Questions ?