



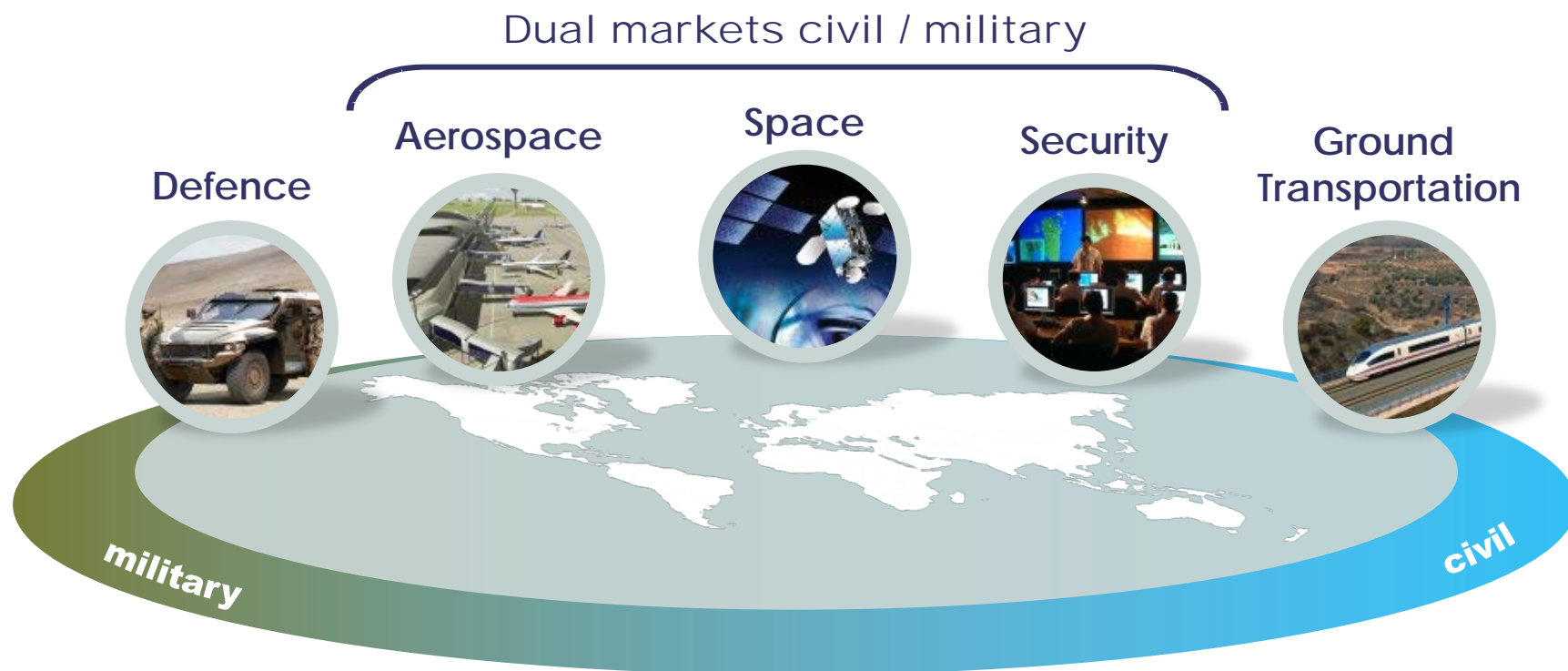
www.thalesgroup.com

Thales Satcom and Connectivity

Peter Durrant – Technical and Product Line Director
Thales UK Flight Avionics

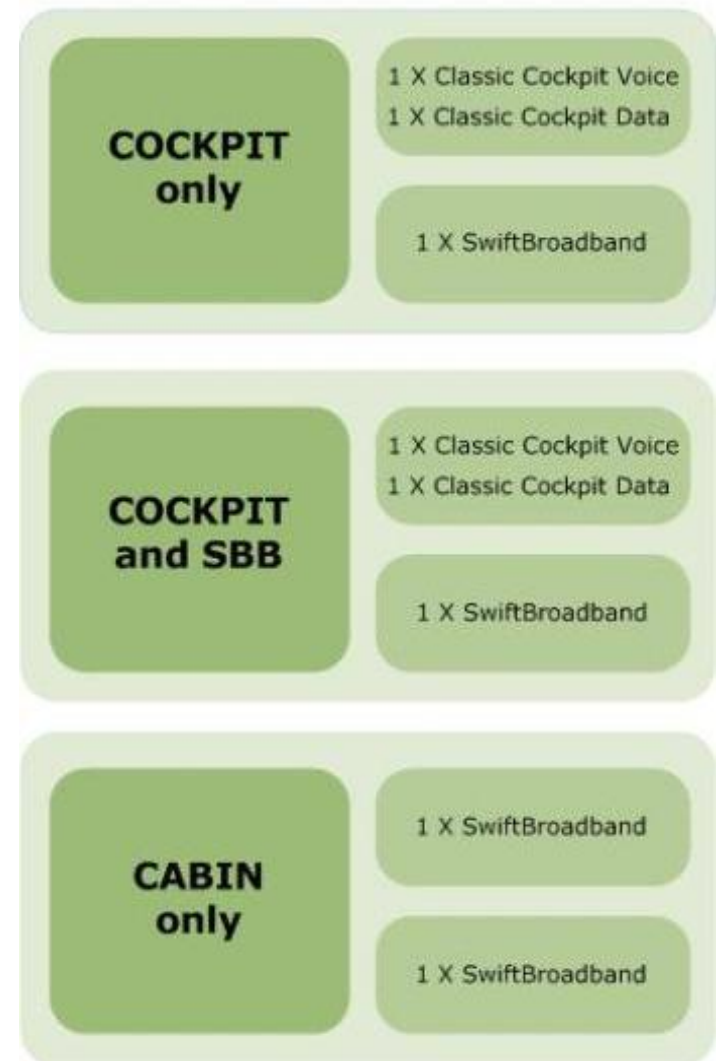
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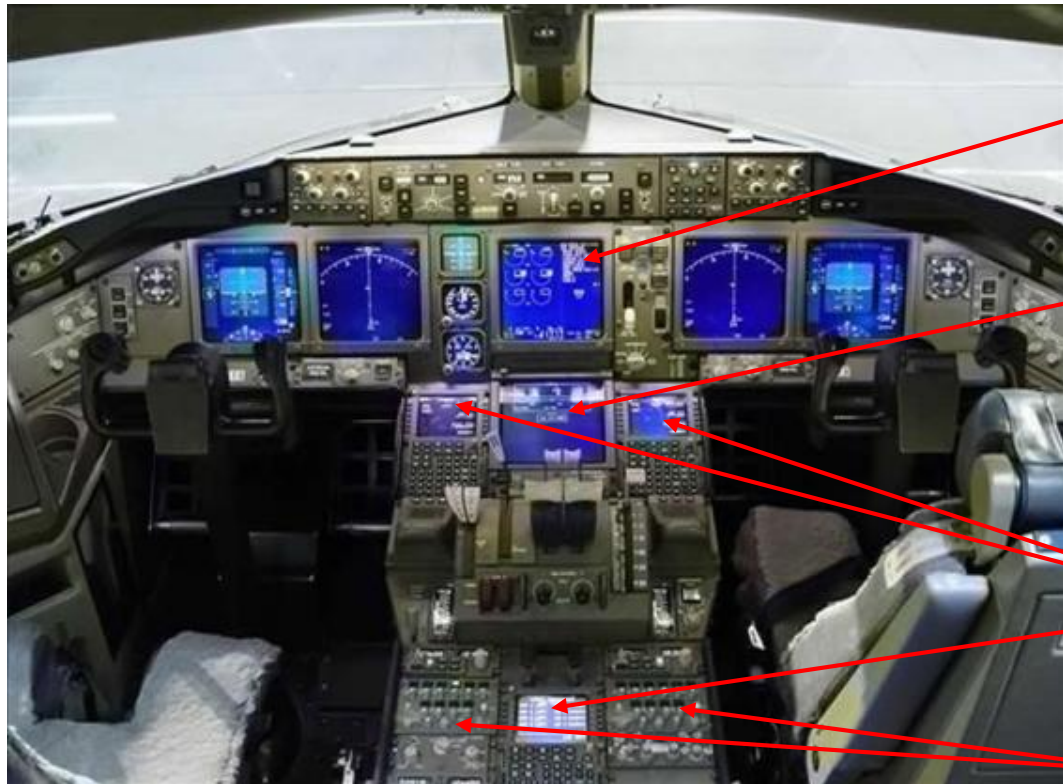
THALES



Trusted partner for a safer world

- ◆ **Cockpit-only, Cabin-only and Cockpit/Cabin configurations – with appropriate segregation and security**
- ◆ **Classic Voice and ACARS/FANS Data / Up to two channels of SBB including CS Voice over SBB**
- ◆ **ARINC 781 Compliant**
 - Breakthrough in size and performance
 - Housed in a single 6 MCU enclosure
- ◆ **Compatible with all onboard communication networks**
 - Thales TopConnect, Airbus KID-Systeme, Aeromobile, eXConnect





Engine indication and
crew alerting system

Centralised fault
display system

Three multifunction control
and display units

Two audio control panels

Aircraft /
Portable Data
Loaders

Inertial
Reference
System / GPS

Straps /
Discretes

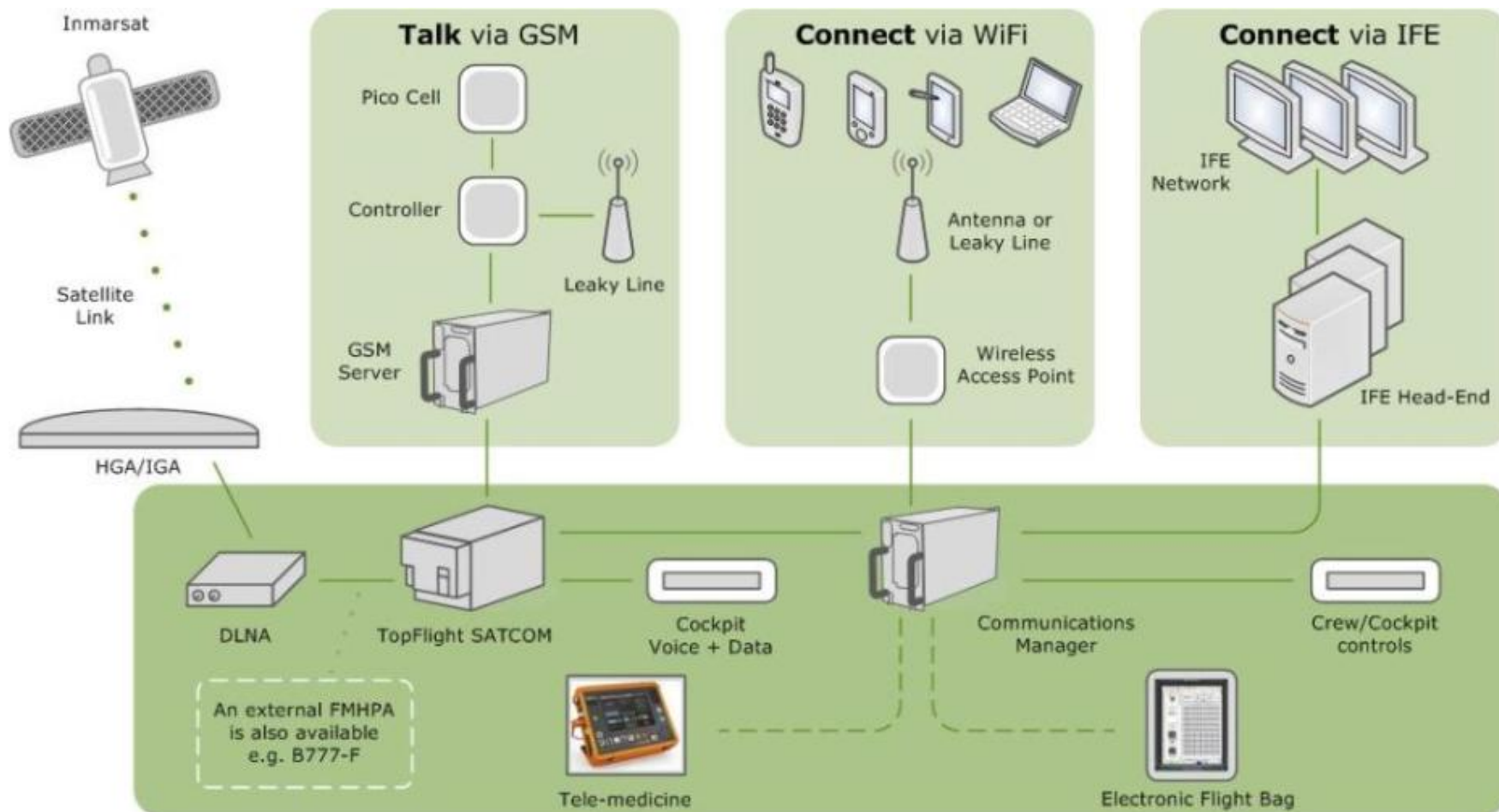
Power

Maintenance
Terminal

TFS tightly integrates with cockpit systems

OPEN

THALES



TFS integrates with fully connected IFE systems

◆ Thales WiFi

- Secondary cabin network
- Crew and passenger
- Communications management
- Bandwidth optimisation



◆ Thales mobile network

- GSM/GPRS/SMS Services



◆ Mobility and entertainment

- Connected IFE experience

◆ Media delivery

- Streamed wireless to PEDs
- Distribution of live media – TV (Planned)



Proven with **SwiftBroadband**

A rich suite of bearer-agnostic connectivity solutions



L Band market

◆ Thales sees a strong and growing long-term market for L Band Satcom

- Cockpit: 'Safety Services' status is a key OEM requirement for the long term
- Cabin: mobility applications, GSM & Wi-Fi can all be delivered with SBB

Inmarsat roadmap

◆ Thales is following the Inmarsat roadmap

◆ Thales continues to evolve its 6MCU ARINC 781 Product Range

- SwiftBroadband Safety services
- Multi SBB with HDR/LDR

◆ Thales will expand its L Band Product Range in line with published evolutions of ARINC 781 – 2 MCU LRUs

- SwiftBroadband Safety services and extended L Band will be incorporated

◆ Thales has a vision for multi-band Satcom product range

Cockpit Connectivity

◆ Boeing 777F

- TopFlight™ Satcom
 - Classic Voice and Data
 - SwiftBroadband (AMBE+2™ Voice / EFB)

Cockpit and Cabin Connectivity

◆ Boeing 737 and 777PAX

- TopFlight™ Satcom
 - Classic Voice and Data
 - SwiftBroadband (AMBE+2™ Voice / EFB)
 - Integrated with Thales GSM / GPRS / SMS

Cabin Connectivity

◆ Airbus Single Aisle A320 family

- TopFlight™ Satcom
 - Integrated with Airbus KID-Systeme GSM / GPRS / SMS

◆ Embraer 170 / 190 / Lineage

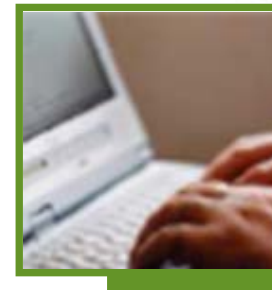
- TopFlight™ Satcom & TopConnect™
 - Thales WiFi / Airline Portal / VoIP (Through PEDs)
 - Billing Application
 - Caching and Bandwidth Optimisation

◆ Boeing B787 / B777

- TopFlight™ SATCOM & TopConnect™
 - Thales WiFi / Airline Portal / VoIP (Through PEDs)
 - Thales GSM / GPRS / SMS
 - Connected IFE (Through the Seat Back Screen)



Versatile range of system offerability
to meet both Cockpit and Cabin needs



- ◆ **Boeing Linefit on 737, 777 and 777F**
- ◆ **Multi-Service TopFlight SATCOM**
- ◆ **Can be configured as:**
 - One Classic Aero SATVOICE and one Classic Aero data, plus one SwiftBroadband Channel (providing a non-safety cockpit voice channel plus IP data)
 - Or two Classic Aero SATVOICE and one Classic Aero data channel
 - Or two channels of SwiftBroadband
- ◆ **In service**
 - 777 – Aeroflot
 - 777F – Multiple operators
 - 737 – Malaysia Airlines, US Navy (C40A)
- ◆ **Flange Mount HPA used to overcome installation constraints on 777F**



Cockpit voice and data services and/or Cabin connectivity

- ◆ **Dual Multi-Service TopFlight SATCOM**

- ◆ **Dedicated cockpit Satcom**

- One Classic Aero SATVOICE and one Classic Aero data, plus one SwiftBroadband Channel (providing a non-safety cockpit voice channel plus EFB connectivity)
- High Gain Antenna (HGA)

- ◆ **Dedicated cabin Satcom**

- Two channels of SwiftBroadband
- High Gain Antenna (HGA)

- ◆ **Saudi Arabian installation pending**



- ◆ **Entertainment**

- Augmented IFE experience
- Media delivery

- ◆ **WiFi Connectivity**

- Personal Electronic Devices

- ◆ **GSM/GPRS/SMS**

- Thales designed solution
- Configured to support 16 concurrent voice calls

Live news, Web browsing, E-mail, SMS, Cellular phone calls and data services

◆ Embraer Linefit

- Lineage 1000 and ERJ 170/190

◆ Dedicated cabin Satcom

- 2 channels of SwiftBroadband
- High Gain Antenna (HGA)

◆ In service with multiple private operators



◆ Cabin Server and WiFi Access Point

- WiFi Connectivity
- Two Ethernet ports (RJ45) for wired laptops

Corporate / VIP / Business Jet Connectivity Solutions

◆ **Airbus linefit**

- A318/319/320/321

◆ **Dedicated cabin Satcom**

- 1 channel of SwiftBroadband
- Intermediate Gain Antenna (IGA)

◆ **In Service with multiple airlines**



◆ **GSM/GPRS/SMS**

- OnAir / KID-Systeme solution

Live news, Web browsing, E-mail, SMS, Cellular phone calls and data services

- ◆ **First Connectivity system available on the Boeing 787**
- ◆ **Dedicated cabin Satcom**
 - 2 channels of SwiftBroadband
 - High Gain Antenna (HGA)
- ◆ **In Service with Qatar Airways**



- ◆ **Entertainment**
 - Augmented IFE experience
 - Media delivery
- ◆ **WiFi Connectivity**
 - Personal Electronic Devices
- ◆ **GSM/GPRS/SMS**
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End of Presentation