

New Surveillance Solutions for Embraer Commercial Aircraft

ICAO Implementation of Adv Surveillance and Automated Systems Seminar



GLOBAL PRESENCE

CUSTOMERS

COMMERCIAL AVIATION



AIRLINES

90+

COUNTRIES

60

AIRCRAFT IN OPERATION

1.6+ THOUSAND



* E-Jets families and ERJ only; scheduled and non-scheduled airlines.

ERJ 145 family

*MODEL YOUR
BUSINESS. YOUR WAY.*



ERJ 135



37



1,750 nm



Rolls-Royce
AE3007

**In service
since 1998**



Mach 0.78



ERJ 140



44



1,650 nm



Rolls-Royce
AE3007

**In service
since 2000**



Mach 0.78



ERJ 145



50



1,550 nm



Rolls-Royce
AE3007

**In service
since 1995**



Mach 0.78



E-JETS family

**REGIONAL
REDEFINED**



General Electric CF34-8E engines - LR and AR

70 - 78



2,150 nm



**In Service
Since 2004**



General Electric CF34-8E engines - LR and AR

70 - 88



2,200 nm



**In Service
Since 2004**



General Electric CF34-10E engines - LR and AR

98 - 114



2,450 nm



**In Service
Since 2005**



General Electric CF34-10E engines - LR and AR

108 - 124



2,300 nm



**In Service
Since 2006**



E-JETS - BY THE NUMBERS



Global leadership in the
70 to 130-seat segment
(50+% market share)



share of 2014 new 70 to 130-seat jet
orders from US carriers in 2014



New 2014 commercial agreements in China have the
potential to give Embraer a **90% share** of aircraft up to
100 seats
in that country's domestic fleet



More than **a decade** of success:
10+ million flight hours
50+ million passengers



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E-JETS E2

BEHOLD THE POWER OF 2



E175-E2



GTF PW1700G
engines

80 - 88



1,920 nm



E190-E2



GTF PW1900G
engines

97- 106



2,800nm



← **E195-E2**



GTF PW1900G
engines

118- 132



2,000 nm



OUR COMMITMENT

OUR COMMITMENT IS ABOUT CREATING VALUE FOR OUR SHAREHOLDERS, CLIENTS, EMPLOYEES AND SOCIETY IN GENERAL. WE ARE ETHICALLY, SOCIALLY AND ENVIRONMENTALLY CONSCIOUS, ALWAYS ADHERING TO THE HIGHEST STANDARDS OF CORPORATE GOVERNANCE AND THE EMBRAER VALUES. THESE ARE WHAT MAKE EMBRAER STRONG AND GUIDE US AS WE STRIVE FOR LONG-TERM FUTURE SUCCESS.

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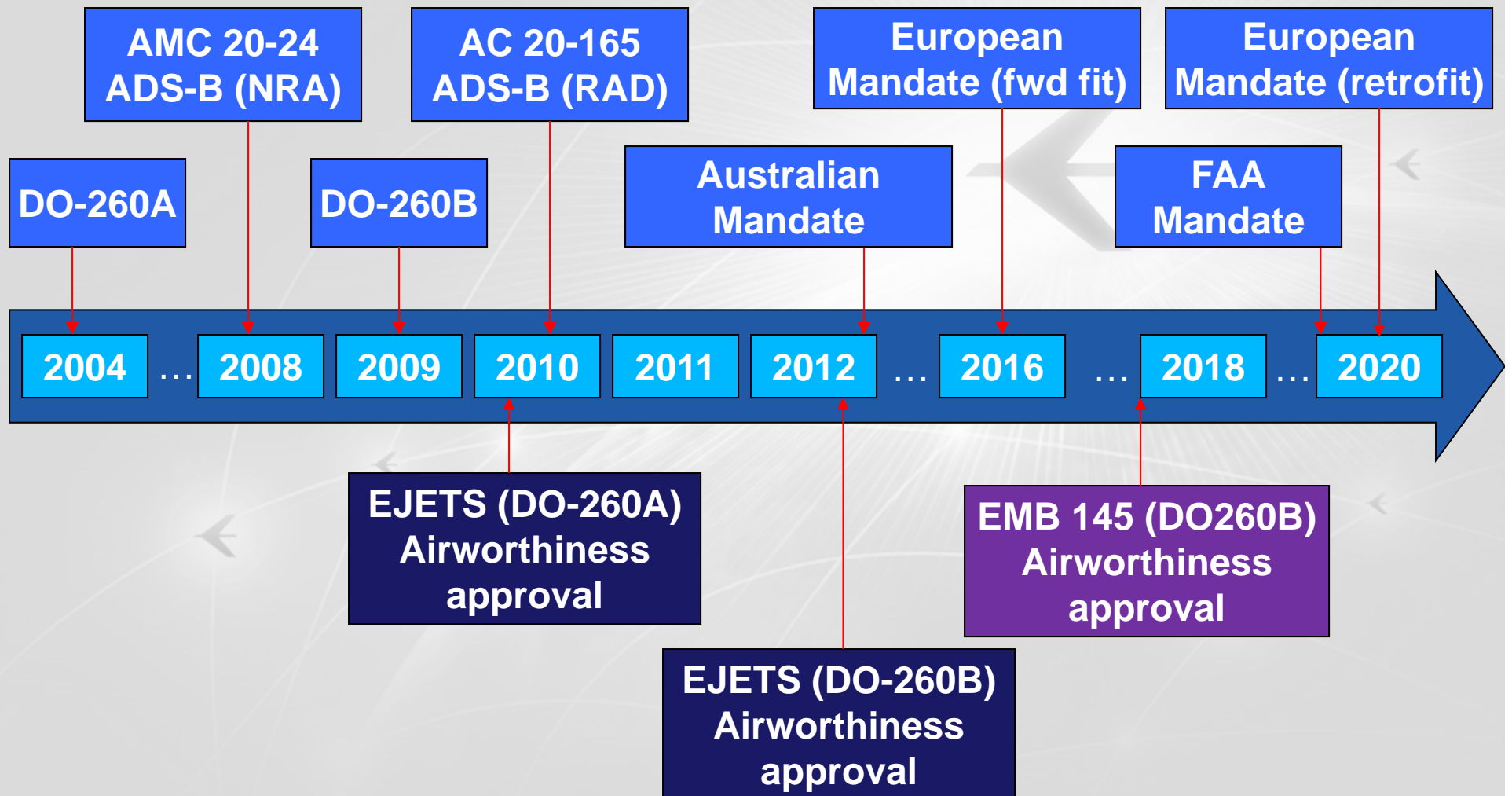




... FOR A SAFER SKY

- Participations on regulatory mandates
- Joining forces with industry in working groups for new specification standards
- Promoting debates with suppliers, operators and regulators
- Tracking field data for system improvements
- Pioneering new developments

ADS-B OUT Timeline



ERJ 145

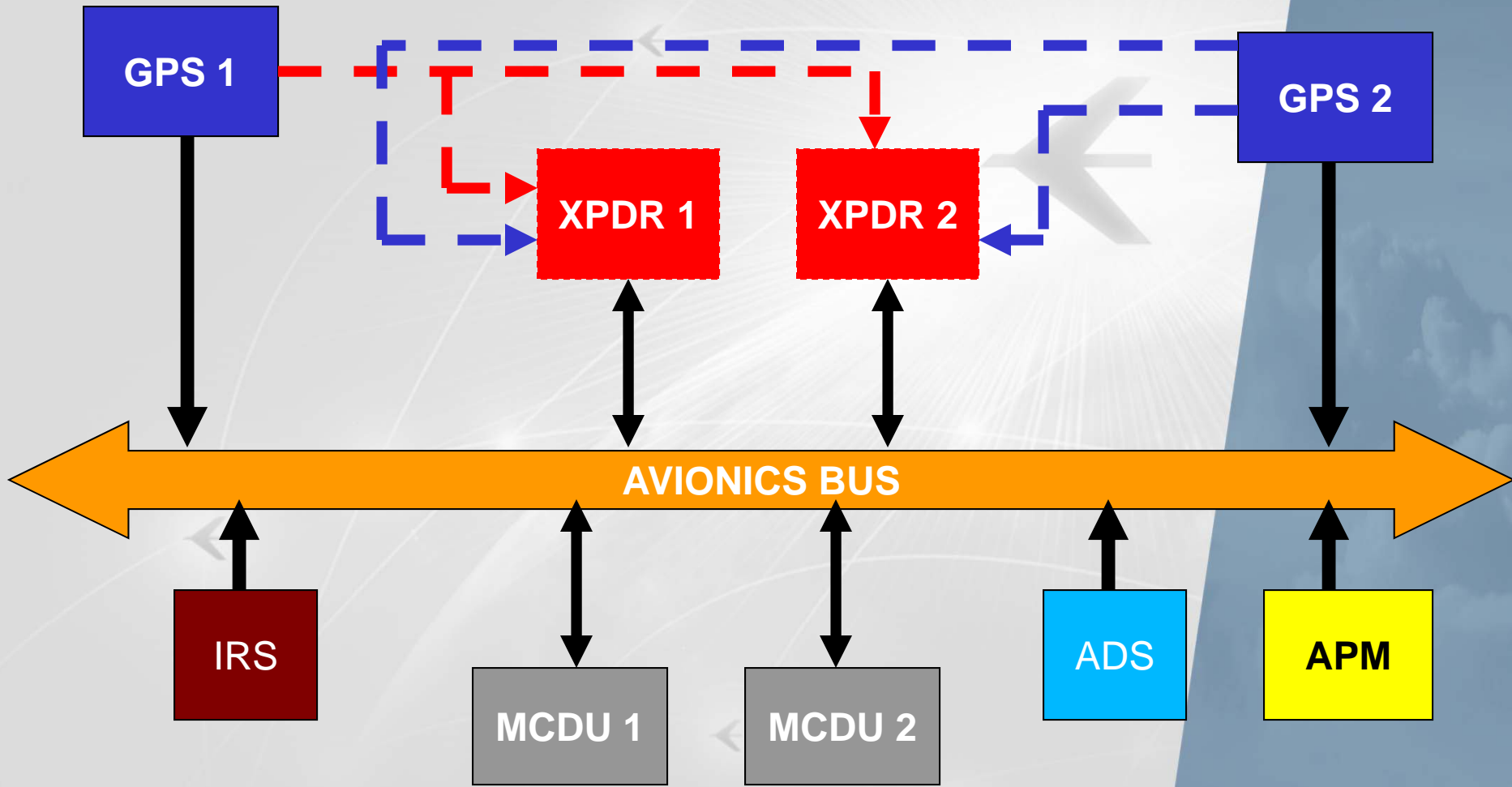
ADS-B OUT

- Economically feasible solution is the biggest challenge
- High integrated radio architecture
- Legacy avionics
- Fleet near operational sunset
- Technical definition and possible solutions was already finished
- Commercial discussions is under way



EJETs & E2

ADS-B OUT



E-JETS & E2 ADS-B OUT

- Developed under DO-260B standards (TSO C166b)
- Uses WAAS GPS (TSO C145) as position source
- Compliant with all current requirements (FAA, EASA, CASA)
- Improved function availability due to the Dual GPS connection for each transponder
- Low GPS data latency
- Provides function status on Crew Alerting system and on MCDU radio page



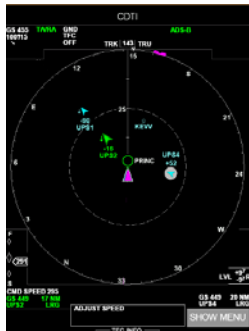
ADS-B IN Applications

- No foreseen mandate
- Potential operational Benefits for equipped aircraft (best equipped, best served)
- Some applications are still under trial phase
- Big Improvements in safety and traffic management is expected



E-JETS ADS-B IN

- ADS-B IN functions for E-JETS is under technical evaluation
- ACSS TCAS 3000SP has provisions for AIRB, SURF-I, IM-S, CAVS and ITP
- Requires changes in display software and TCAS installation to include new inputs
- Update of TCAS Software to include Hybrid Surveillance (TSO C119d) is under evaluation



E-JETS E2 ADS-B IN

- Equipped with Honeywell TPA-100C, with Hybrid surveillance (TSO C119c)
- AIRB will be part of the aircraft Type Certificate
- Growth capability for VSA, SURF-I and ITP



E-JETS & E2 FANS 2

- Implemented as part of the FMS (NG FMS)
- Provides for interoperable airborne datalink operations for both ACARS and ATN ground networks
- Allows flight plan modifications through ATC uplinks
- Enabler to 100% benefit of RTA, RNP and Optimum Descent
- Capable to provide ADS-C periodic contracts, event contracts and demand contracts via FANS 1/A+



E-JETS & E2 FANS 2 (ADS-C)



ADS-C reports are automatically generated in response to commands issued by the ATIS provider system.

The contract identifies the types of information and the conditions under which reports are to be transmitted from the aircraft without flight crew action

ADS-C Status:

- ARMED: default status for ADS-C. A contract can be established
- ACTIVE: there is a contract established
- OFF: default status for ADS-C Emergency. No contracts can be established



E-JETS & E2 FANS 2



Periodic Contract



Event Contract





THANK YOU

LUIZ MADEIRA JR
luiz.madeira@embraer.com.br