



Taking the lead:  
the **A350** **XWB**  
XTRA WIDE BODY



# A350 XWB



- Wider, more comfortable **Cabin** incorporating innovative Airbus Cabin Vision features and personalised IFE

- **Aerodynamics** for Mach 0.85 cruise with unequalled levels of efficiency

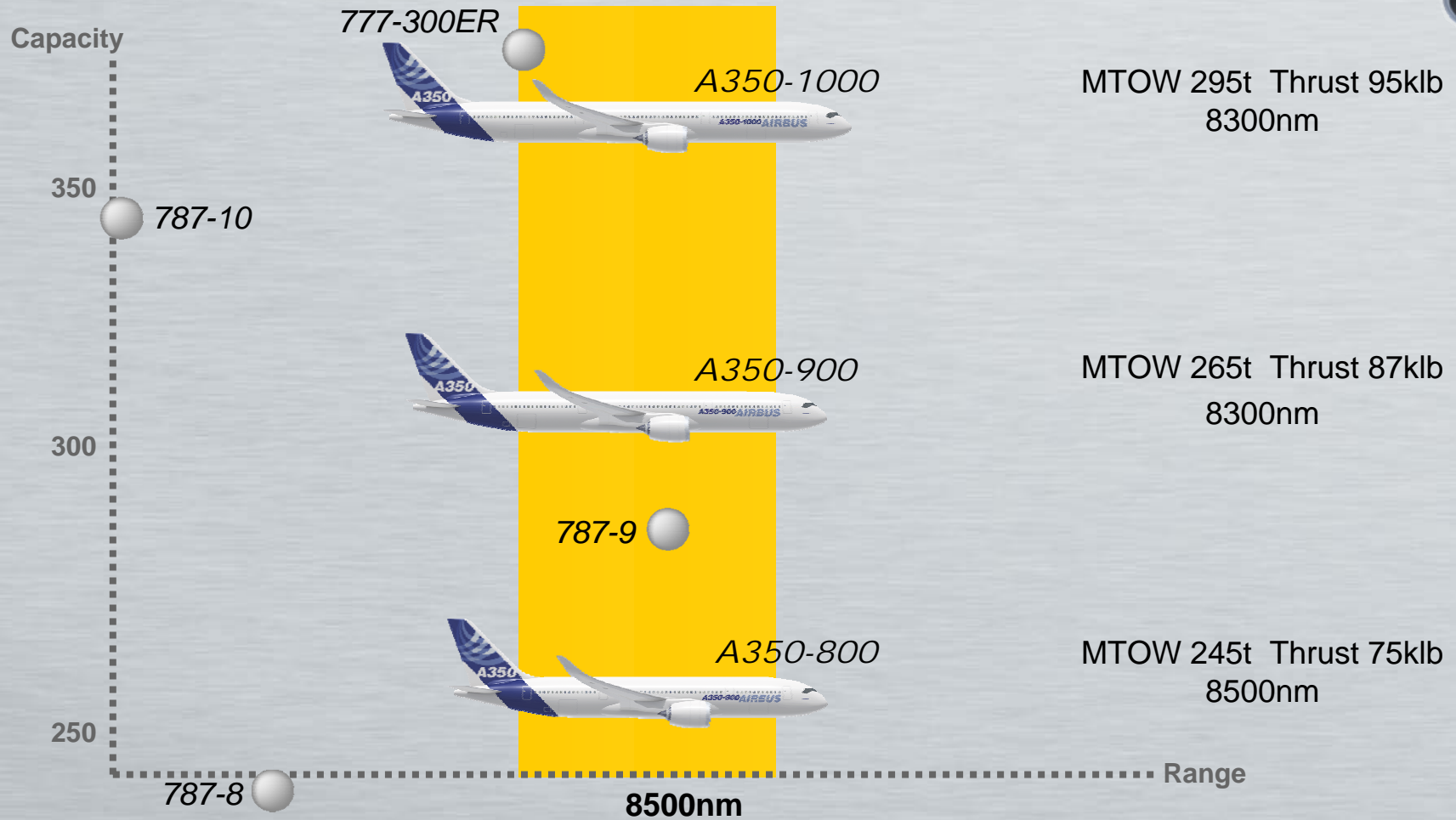


- Light, robust, repairable **Structure**

- A380 **Systems** and **Cockpit** commonality

- Advanced Rolls Royce Trent XWB **Engines** delivering best levels of fuel efficiency, maintainability and environmental impact

# A350 XWB – a step ahead of the 787



● A superior family with no compromise on range

# What is new on the A350 XWB



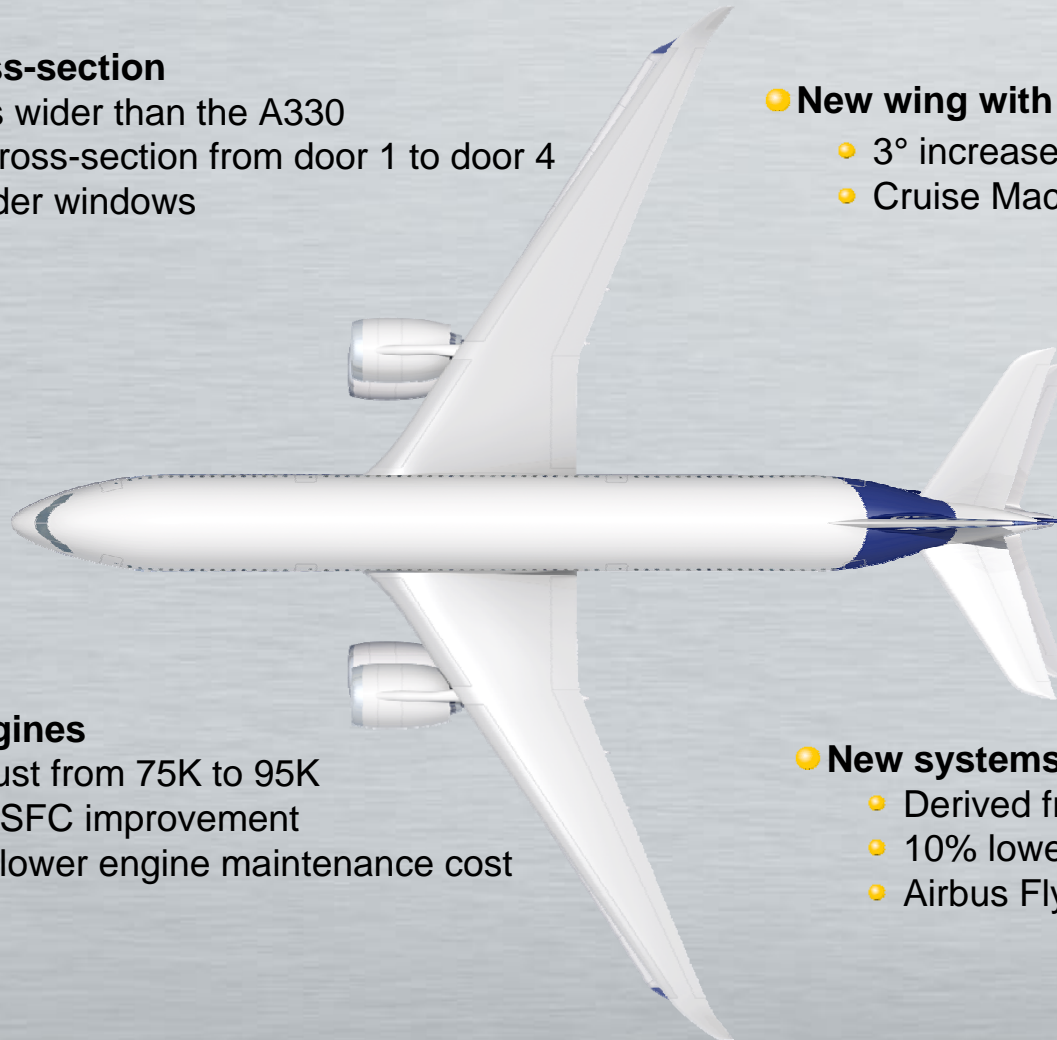
## Compared with the original A350 design, the A350 XWB has

### ● New cabin cross-section

- 12 inches wider than the A330
- Parallel cross-section from door 1 to door 4
- 2 inch wider windows

### ● New wing with increased sweep

- 3° increase in wing sweep (35°)
- Cruise Mach number increased to 0.85



### ● New engines

- Thrust from 75K to 95K
- 2% SFC improvement
- 5% lower engine maintenance cost

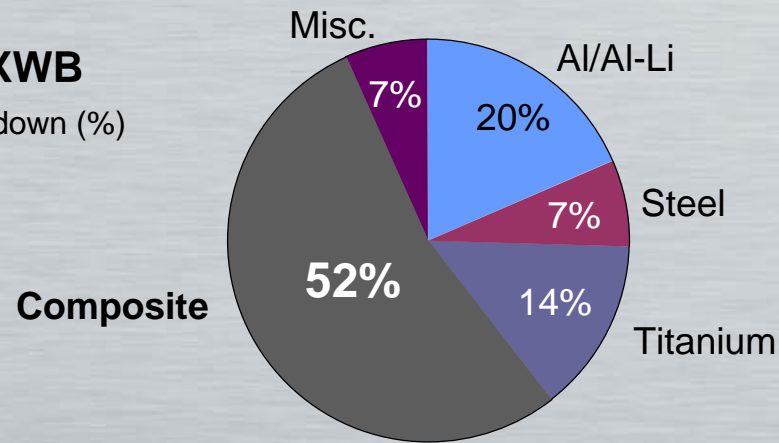
### ● New systems

- Derived from the A380
- 10% lower airframe maintenance
- Airbus Fly-by-wire Pilot commonality

# A350 XWB – Intelligent Airframe



**A350-900 XWB**  
Material Breakdown (%)  
Including Landing Gear

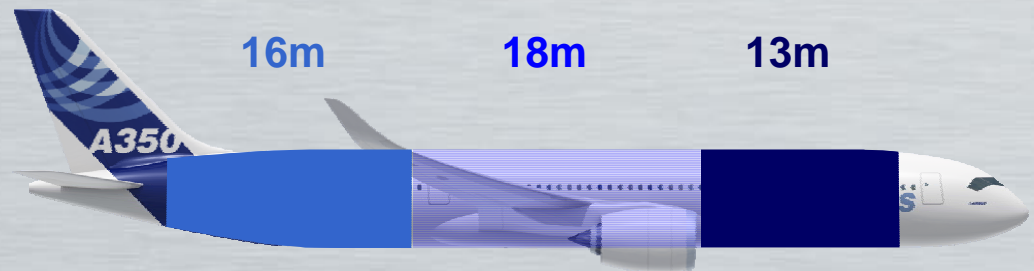


● A350 XWB puts the right material in the right place

# A350 XWB fuselage: efficient use of CFRP



- ➔ New cross-section
- ➔ New materials
- ➔ New aerodynamic shape



- 4 shells concept
- Long panels require only lap joints – less weight
- Lay-up and skin thickness optimisation
- Each panel optimised for local loading

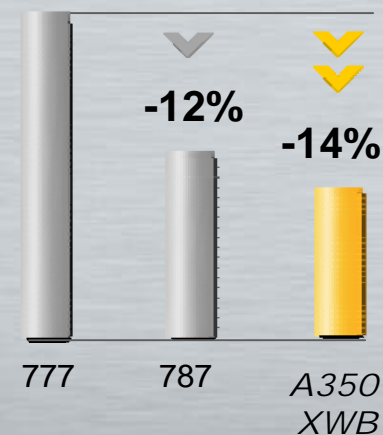
# A350 XWB fuselage material choice



- ➔ Lowest overall weight for
  - Structural performance (4 shells concept)
  - Electrical conduction (metallic network)
  - Crashworthiness (energy absorption by frames)
  - Reparability (panel removal)

- Skin panels, doublers, joints and stringers in CFRP
- Aluminium frames

Empty weight per seat



# A350 XWB wing design

Relative to A330:

- 3m larger wingspan (64m)  
(ICAO Category E)
- 20% more wing area (442m<sup>2</sup>)
- 3° sweep increase (35°)

● CFRP structure

● M 0.85 cruise speed

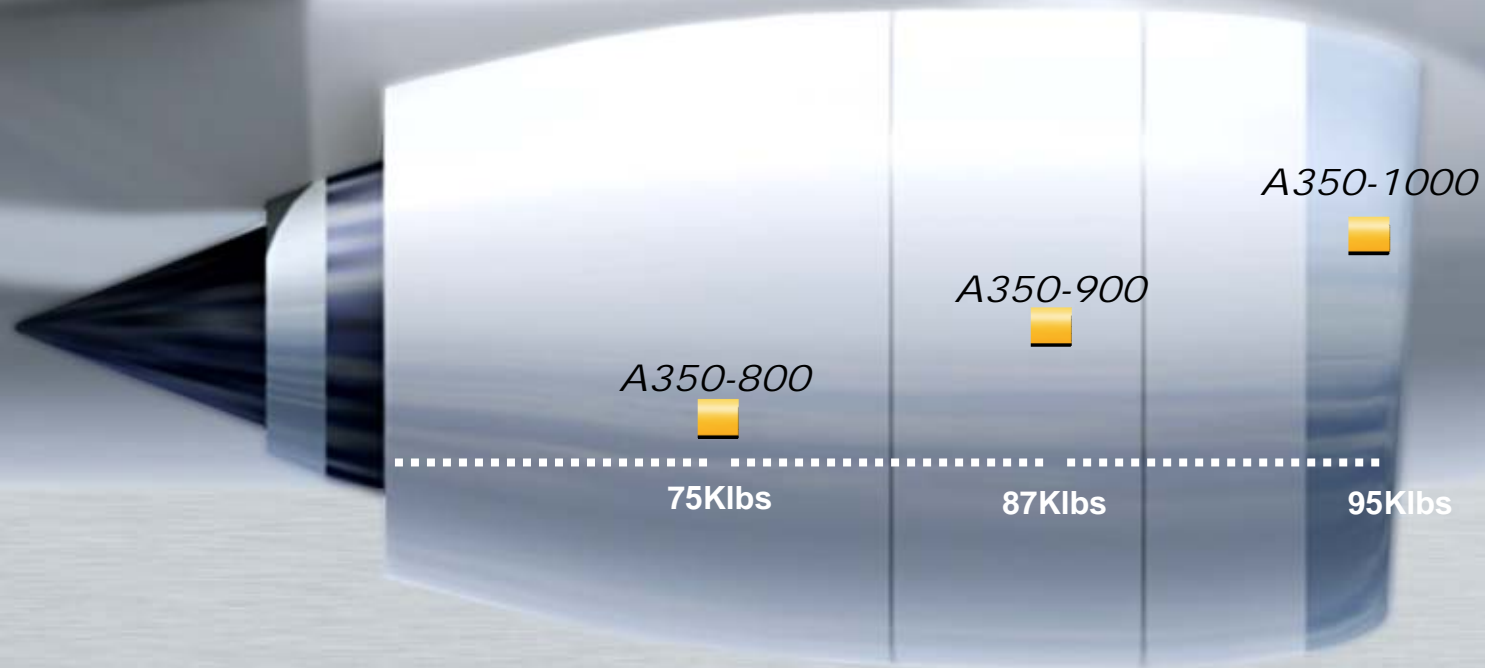
● Advanced high lift devices



# Xtra efficiency – next generation engines



**Rolls-Royce** Trent XWB



- **Common engine type across aircraft family**
- **Low noise and emission levels**

# A350 XWB systems



- **2 hydraulic/ 2 electric (2H/2E) flight control architecture**

- Proven in A380 flight-test

- **Electro-Pneumatic bleed system**

- More efficient at aircraft level

- **3 tank fuel system with inerting**

- Simplified architecture. No trim tank

- **4 variable frequency electrical generation systems**

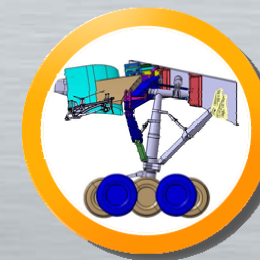
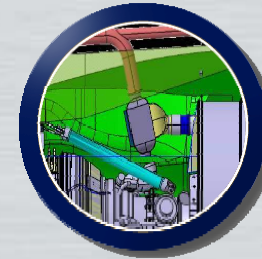
- Significant maintenance cost reduction

- **A380 Interactive Cockpit Concept with modular server systems**

- + enhanced functionalities

- **Double side stay main landing gear**

- Reduced weight and maintenance cost



# Building on A380 experience



- Head-up display
- Dual Integrated Standby Instrument System
- Vertical Display

- Onboard Information System
- Brake to Vacate
- Onboard Airport Navigation System

**ADVANCED SYSTEMS & FLIGHT DECK**

# Respecting the environment



- **Low noise levels**
  - Stage III minus ~ 20dB
- **Low emissions levels**
  - 25% below CAEP/6 NOx level
- **Powerful takeoff performance**
  - Optimised calculations using On-board Information System
  - 85dB noise contour within airfield boundary
- **Precision on-airport guidance systems**
  - On-board Airport Navigation System
  - Brake To Vacate

# Passenger at heart, Airline in mind



**XWB**  
XTRA WIDE BODY



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A350 **XWB** : Dimensioned for the future  
XTRA WIDE BODY

# Widest high-efficiency Economy seat

- Uncompromised comfort at high efficiency (17.5" seat width)

## Dimensioned for the future

# Widest Economy seat



- Best long-haul comfort level – a tool for differentiation (19.25” seat width)

## Dimensioned for the future





# Highest quality Business Class

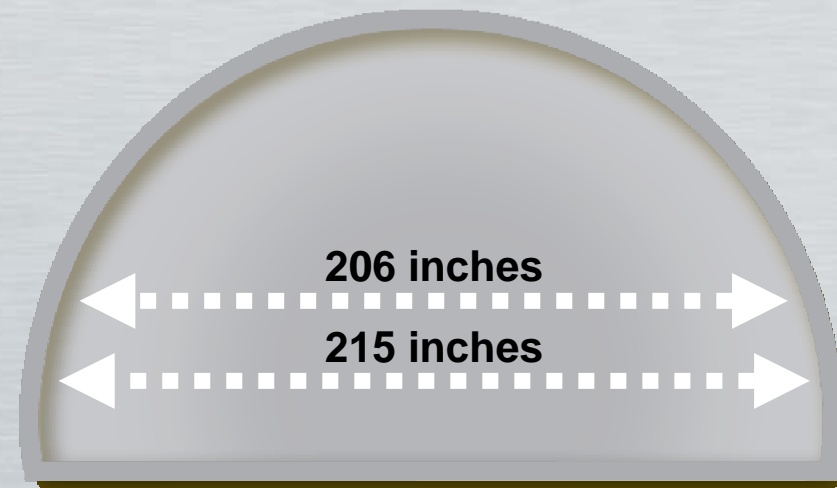
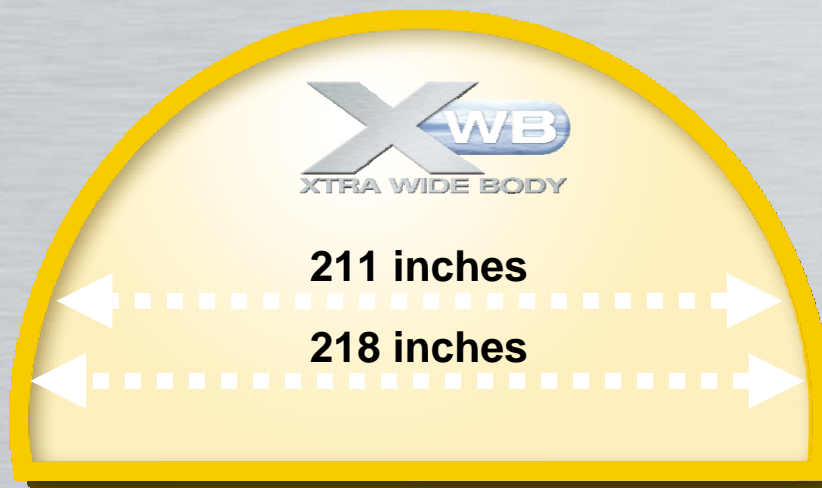
- Space for leading First Class products
- Integration of all innovative Business Class seating solutions

# Dimensioned for the future – Xtra wide



**A350**

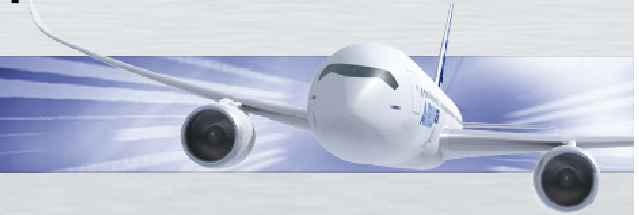
**787**



Xtra comfort all round

- 5 inches wider at eye level
- 4 inches wider at the shoulder
- 3 inches wider at armrest

# Xtra comfort – a better cabin atmosphere



**XWB**  
XTRA WIDE BODY

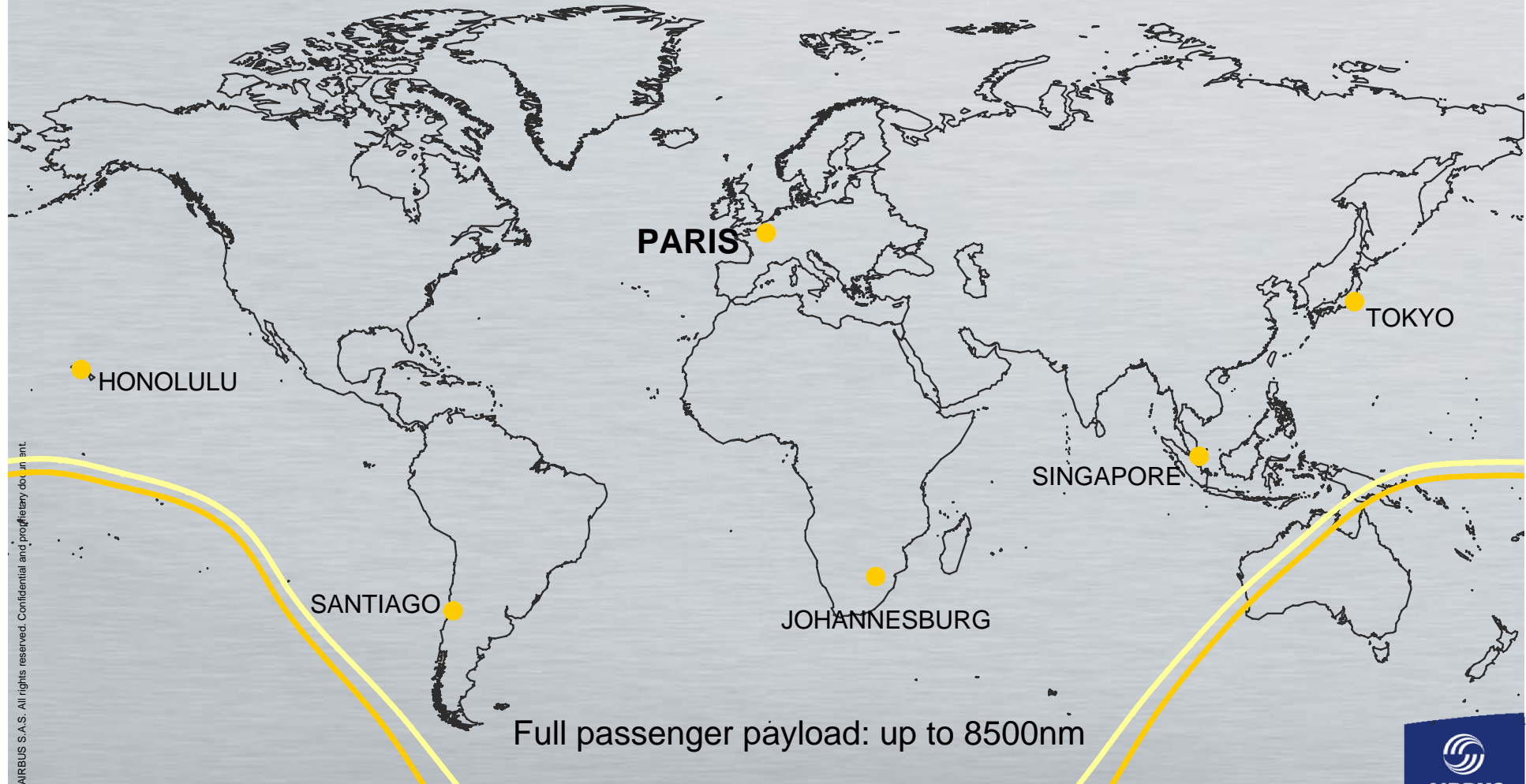
- **Cabin pressure**  
Cabin altitude at or below 6000ft.
- **Cabin humidity**  
20% humidity level.
- **Cabin air distribution**  
Flow Management System adapts cabin airflow to passenger load. Ceiling and lateral air outlets allow a uniform, draft-free air circulation.
- **Cabin noise**  
The quietest cabins in the skies.



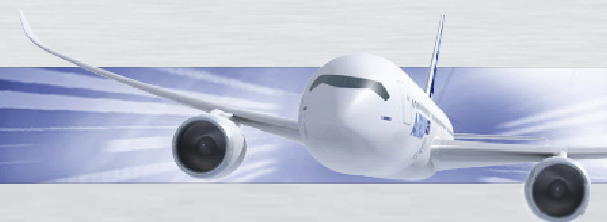
# Extra efficiency – A350 range around Paris



- **One Family, three models, similar range**



# A350 XWB – Xtra efficiency



**Seats (3-class)\***

**Design range**

**MWE** per seat

**Block fuel** per seat

**Cash Operating Cost** per seat

**Noise Classification at London**

**Departure**

**Arrival**

**A350-800**

**787-8**

**270**

**242**

**8,500nm**

**7,900nm**

**Datum**

**+2%**

**Datum**

**+6%**

**Datum**

**+8%**

**QC 1**

**QC 1**

**QC 0.5**

**QC 0.5**

# A350 XWB – Xtra efficiency



**Seats (3-class)\***

**Design range**

**MWE per seat**

**Block fuel per seat**

**Cash Operating Cost per seat**

**Noise Classification at London**

**Departure**

**Arrival**

| <b>A350-900</b> | <b>787-9</b> | <b>777-200ER</b> |
|-----------------|--------------|------------------|
| <b>314</b>      | 280          | 301              |
| <b>8,400nm</b>  | 8,500nm      | 7,700nm          |
| <b>Datum</b>    | +2%          | +16%             |
| <b>Datum</b>    | +4%          | +30%             |
| <b>Datum</b>    | +7%          | +25%             |
| <b>QC1</b>      | QC1          | QC2              |
| <b>QC0.5</b>    | QC0.5        | QC1              |

# A350 XWB – Xtra efficiency



**Seats (3-class) \***

**Design range**

**MWE** per seat

**Block fuel** per seat

**Cash Operating Cost** per seat

**Noise Classification at London**

**Departure**

**Arrival**

**A350-1000**

**777-300ER**

**350**

365

**8,300nm**

7,800nm

**Datum**

+14%

**Datum**

+25%

**Datum**

+25%

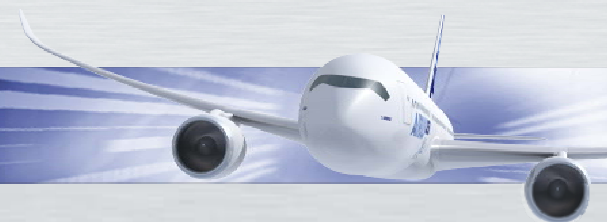
**QC2**

QC2

**QC1**

QC1

# Programme timing



**A350-900**



Mid 2013

**A350-800**

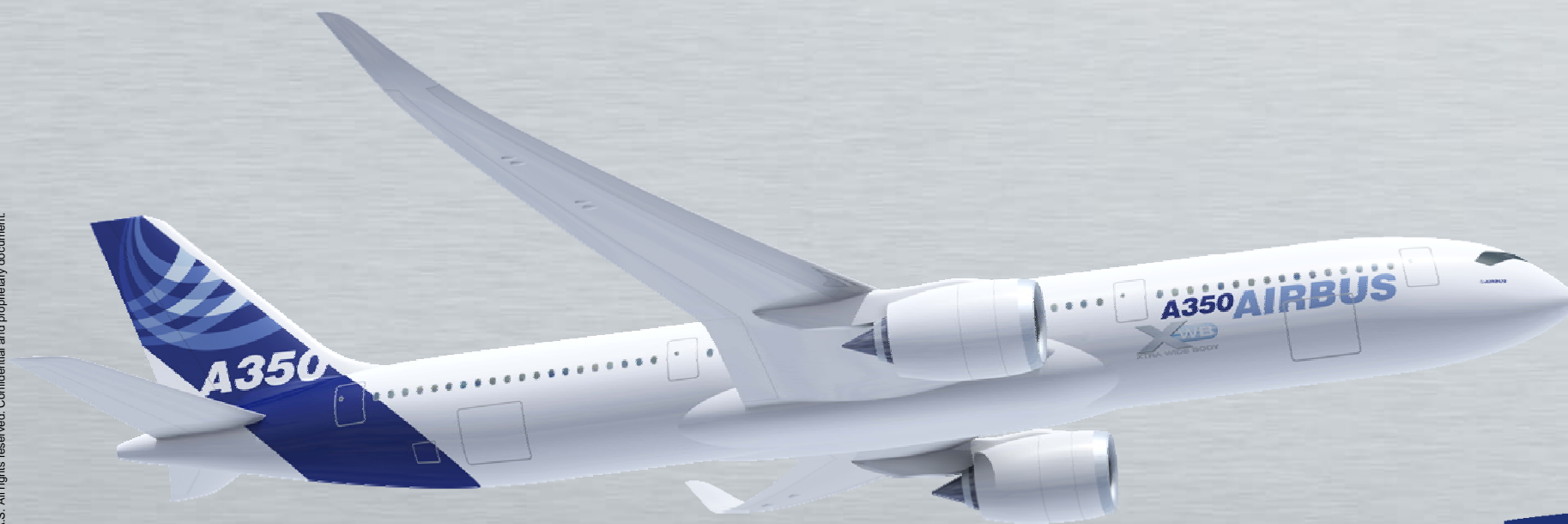


Mid 2014

**A350-1000**

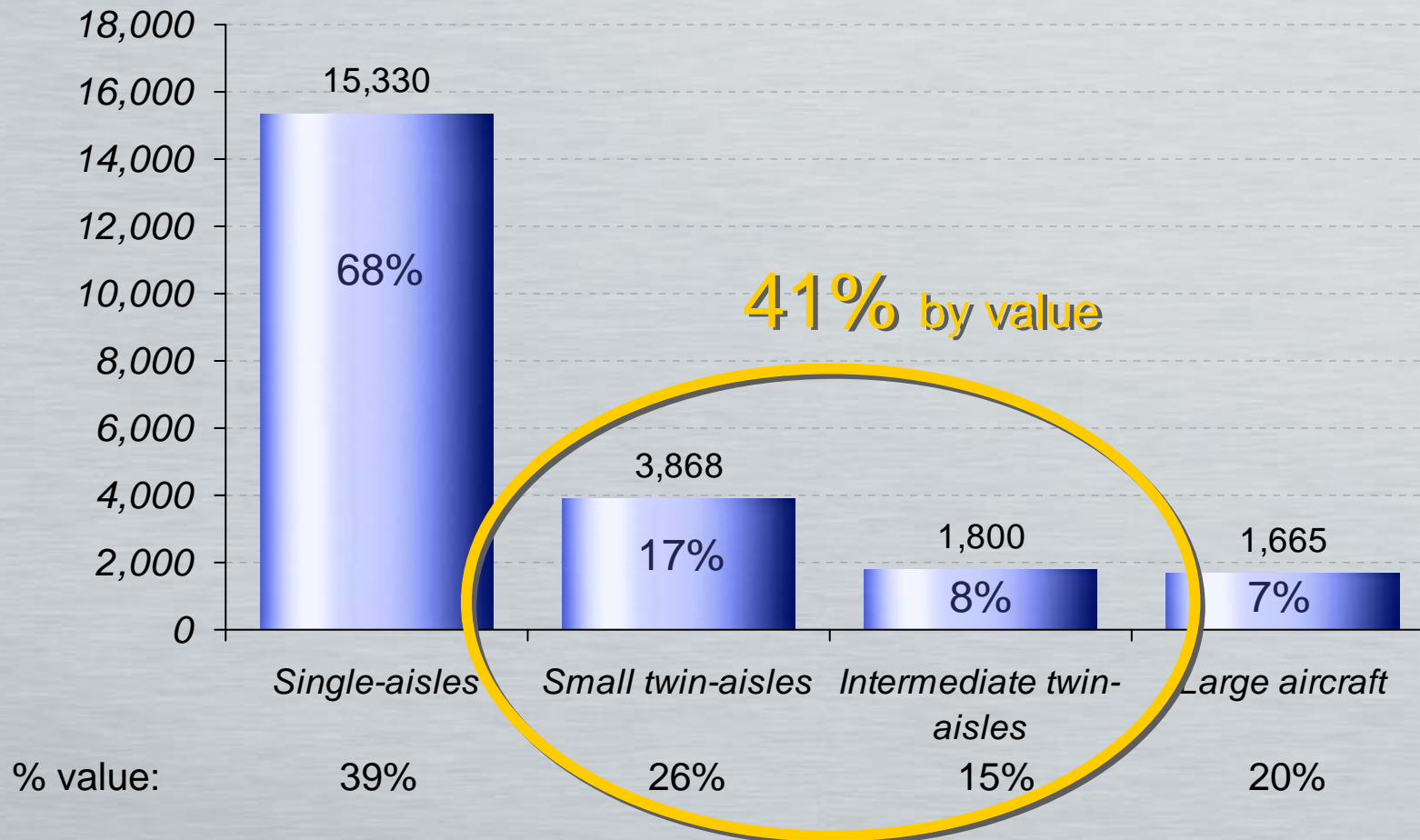


Mid 2015





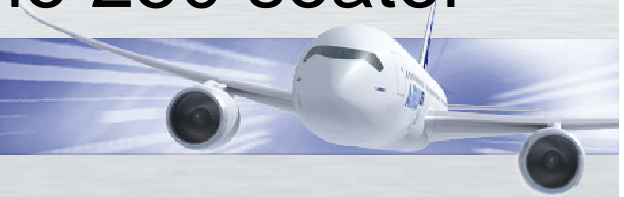
# Demand by category 2006-2025



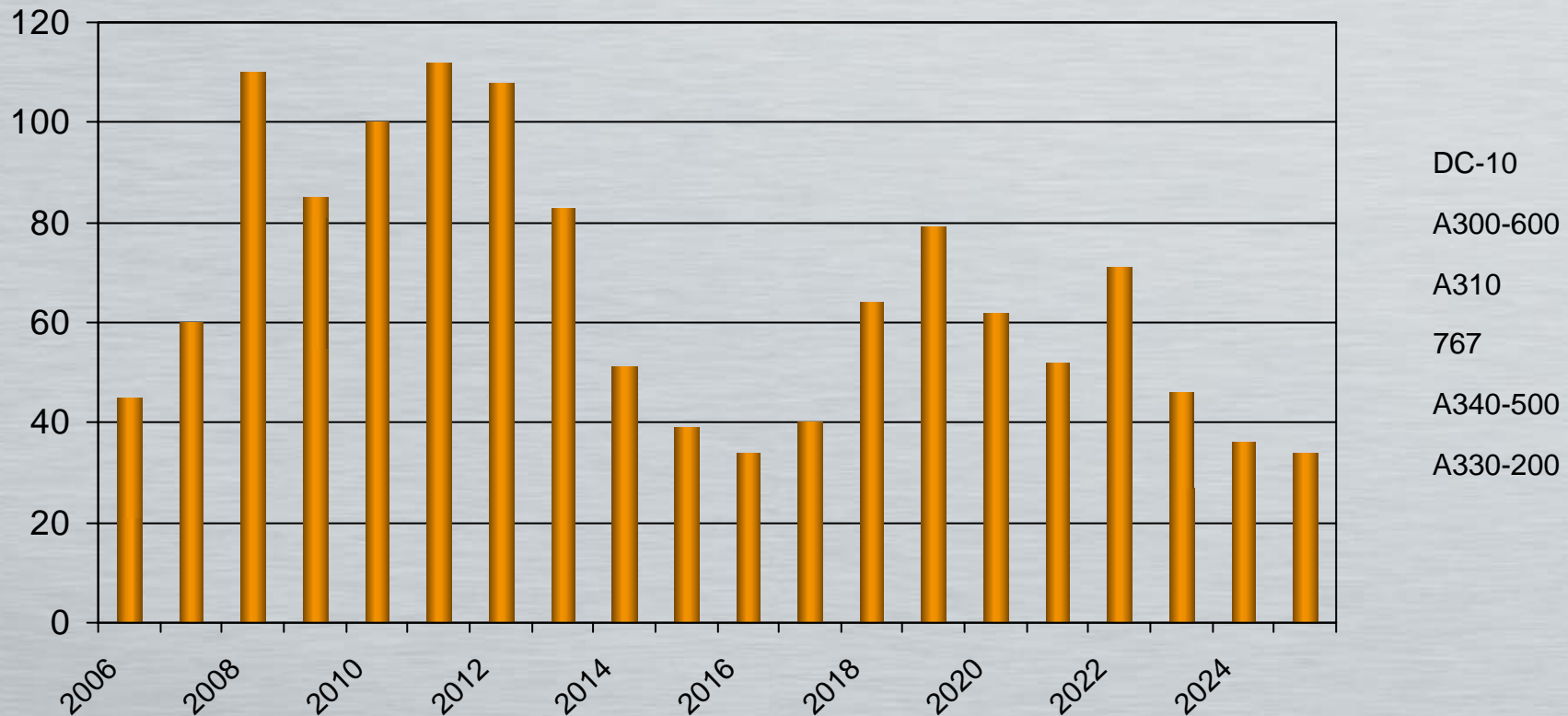
● **Almost 5,700 twin-aisle aircraft will be required**

# Replacement wave 250 seater category

## 1<sup>st</sup> wave of replacement concerns the 250 seater



Number of aircraft retired

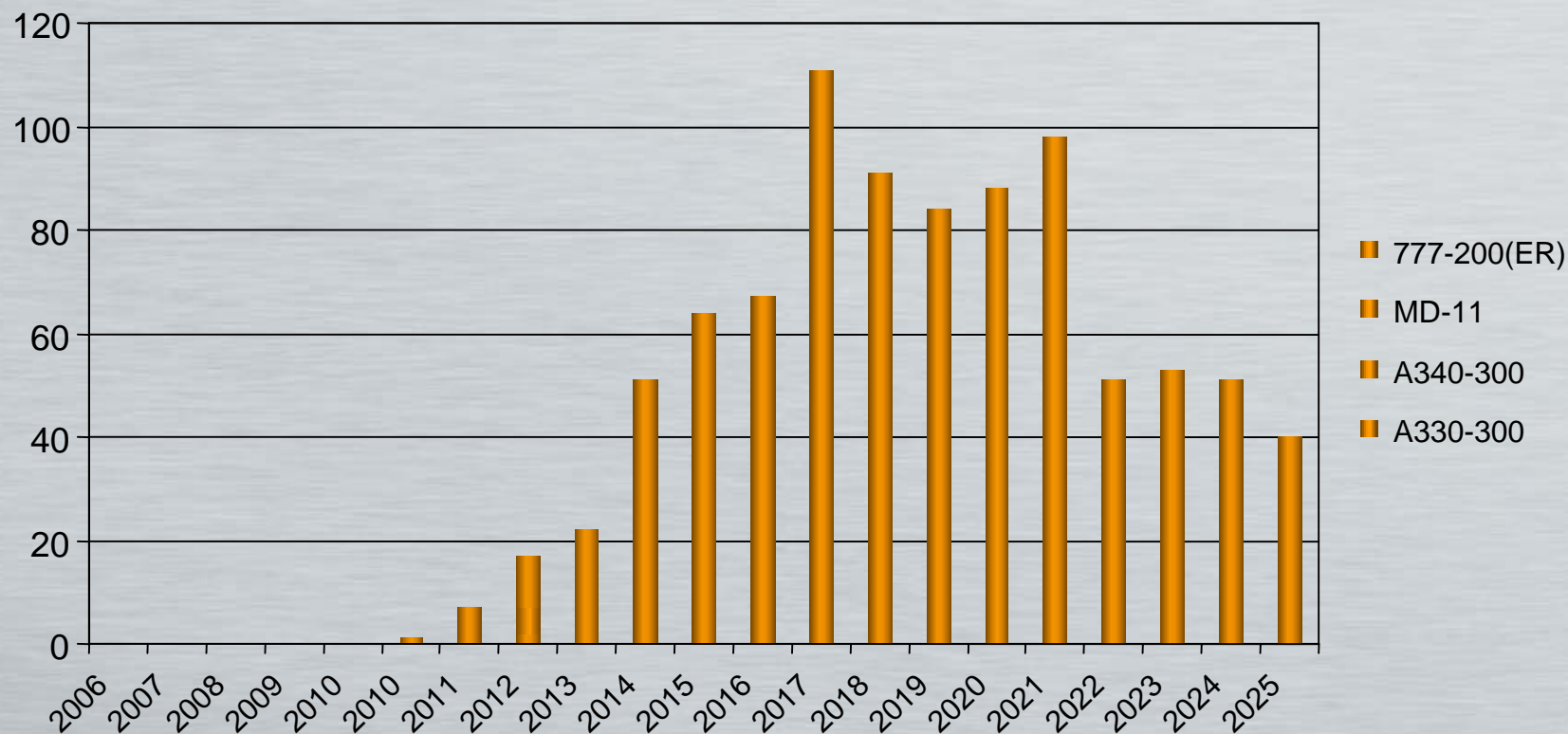


# Replacement wave 300 seater category

## 2nd wave of replacement concerns the 300 seater



Number of aircraft retired



# A350 XWB – taking the lead



- A totally new design
- Unrivalled performance
- Unbeatable economics
- A new long-range family

**A350 XWB**  
XTRA WIDE BODY



For the Xtra experience