

# Commercial Airplanes

# 7E7 and The e-Enabled Advantage

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Airplanes**

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**Presented to:**



**49<sup>th</sup> Annual  
Air Safety Week**



- **7E7**

- **The e-Enabled Advantage**

# The Boeing 7E7

*A New Airplane for a New World*



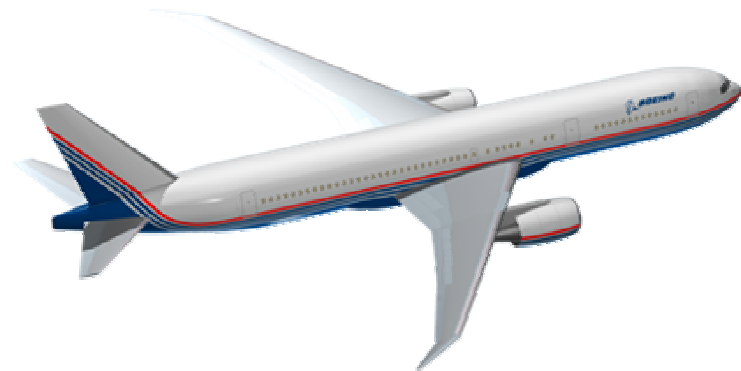
# New Technologies Provide Speed and Efficiency Choices

**Sonic Cruiser**



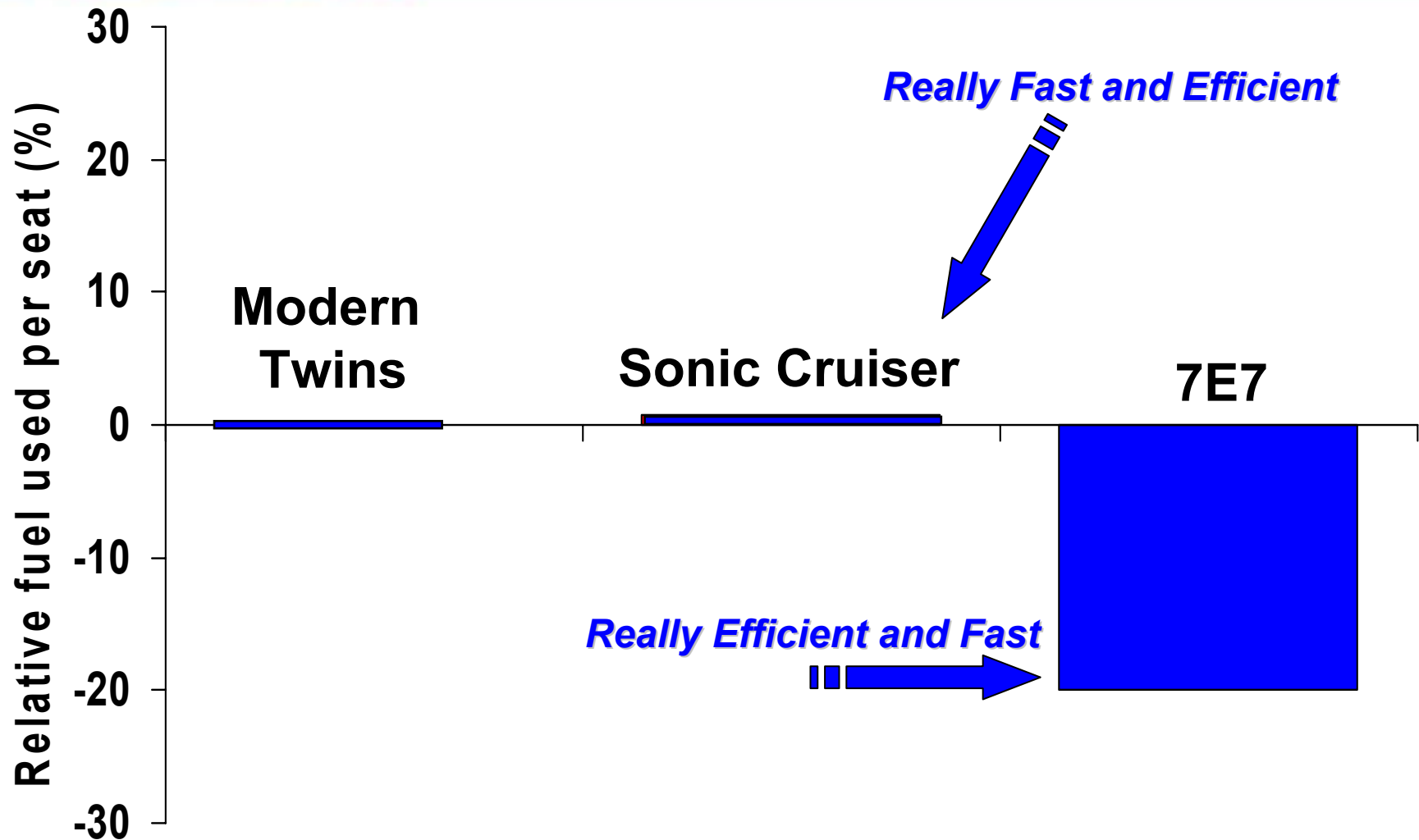
***Advanced technology can provide near-sonic cruise speeds at current efficiencies***

**7E7**



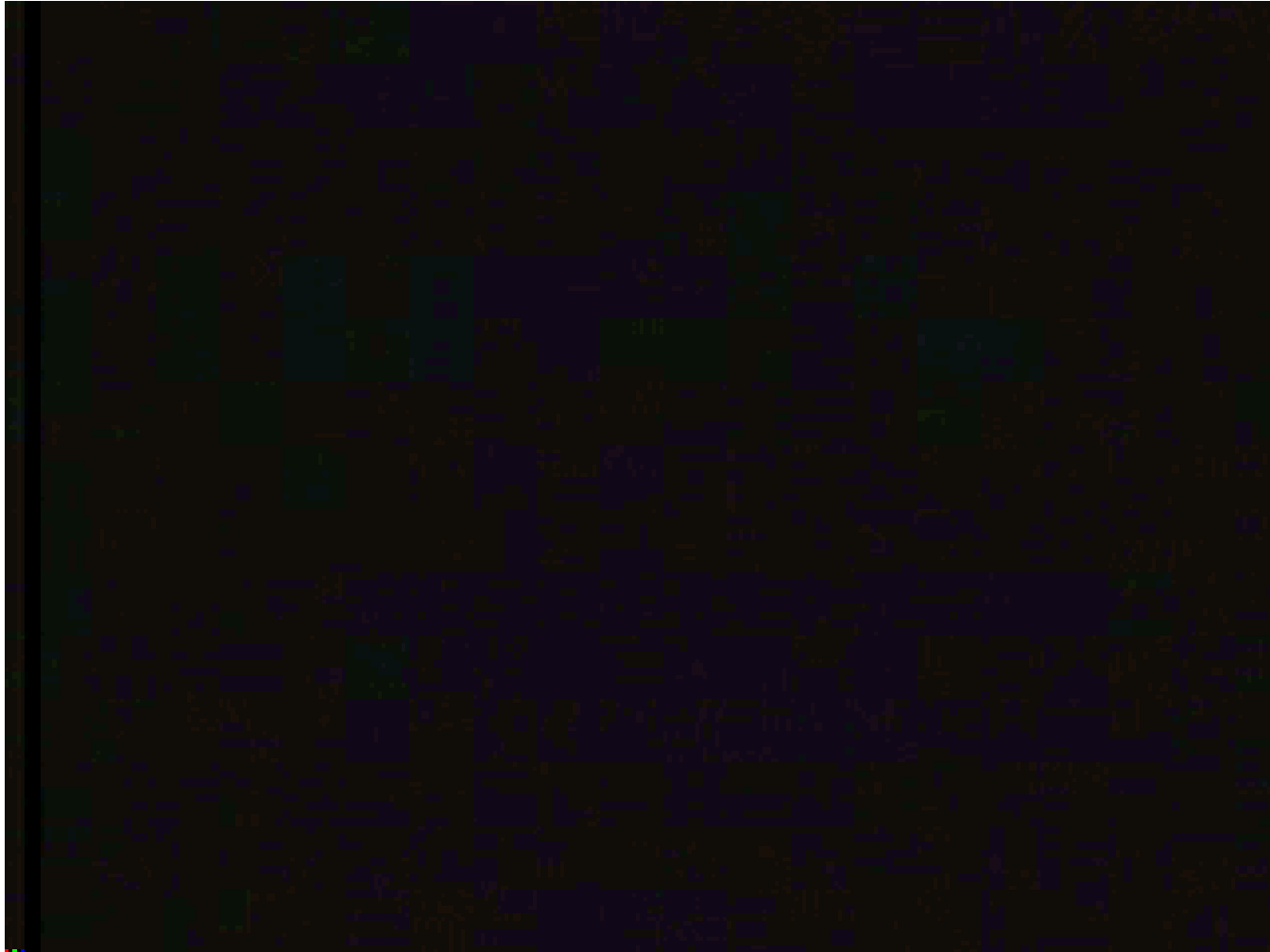
***Advanced technology can provide fast cruise speeds with significantly improved efficiencies***

# Breakthrough Technologies Provide Speed and Efficiency Choices



# The Boeing 7E7

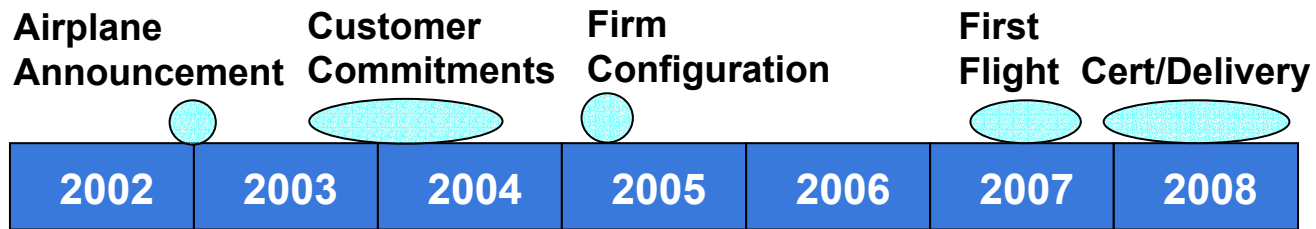
*A New Airplane for a New World*



# 7E7 Program Schedule

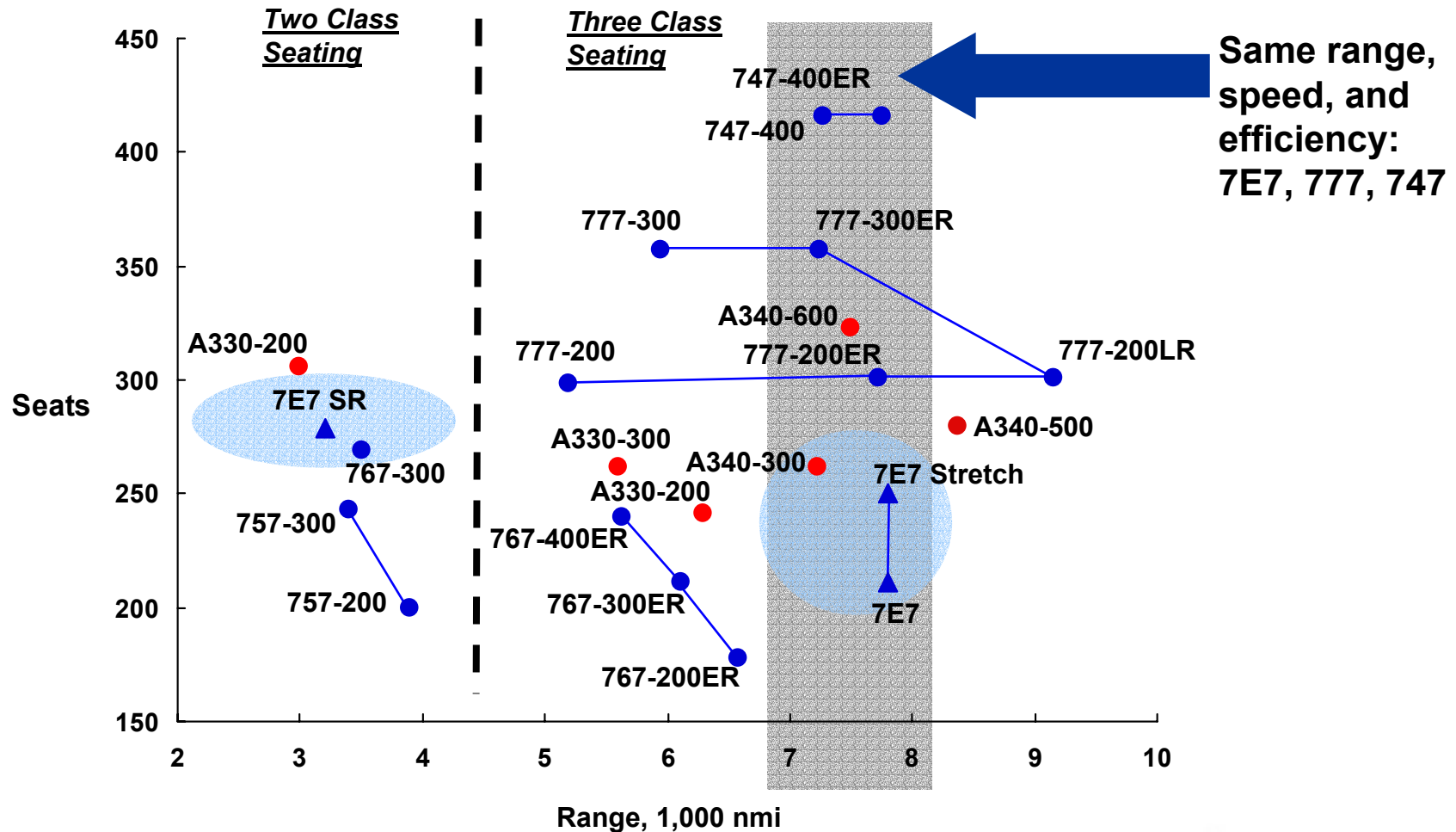
## 2003 Milestones

- Continued dialog with airlines
- Technologies selected
- Suppliers named to design/build teams
- Authority to offer



***Entry into service in 2008***

# The 7E7 Provides Operational Flexibility for the Middle of the Market





# **Configuration Features**

## **7E7**

**Wide 8 abreast cross section**  
• **Wider Seats – Wider Aisles**

**Overhead  
Crew Rests**

**Advanced  
flight deck**

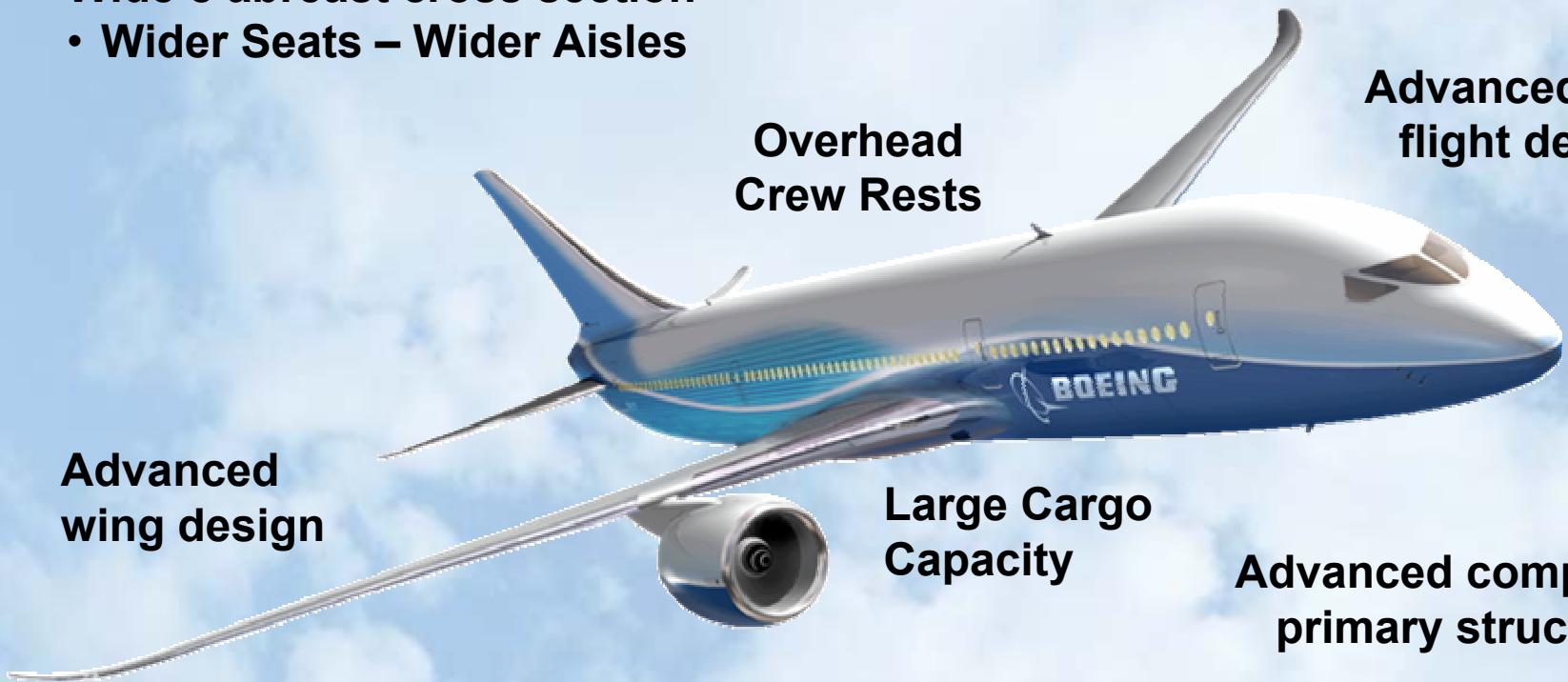
**Advanced  
wing design**

**Large Cargo  
Capacity**

**Advanced composite  
primary structure**

**Advanced technology engines**

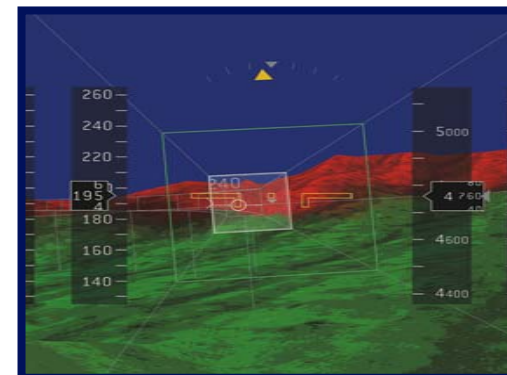
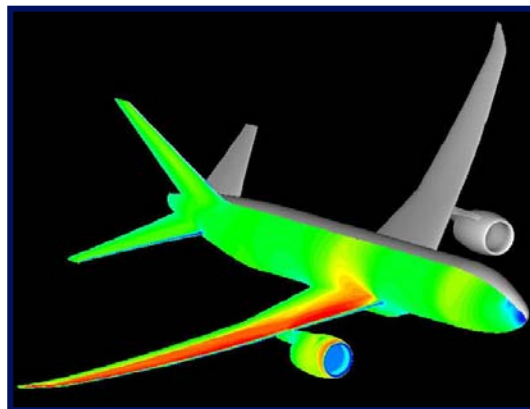
**Advanced technology systems**



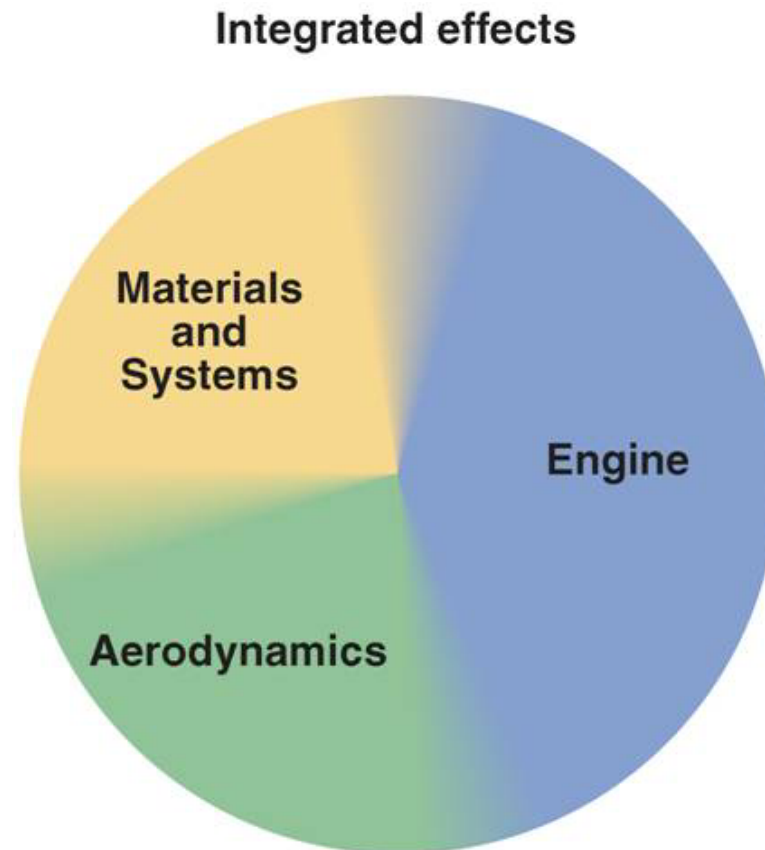
# 7E7 Advanced Technology

**The 7E7  
incorporates  
advanced  
technologies in  
four key areas:**

- **Aerodynamics**
- **Engines**
- **Structures**
- **Systems**



# Advanced Technology Contributions to Fuel Efficiency



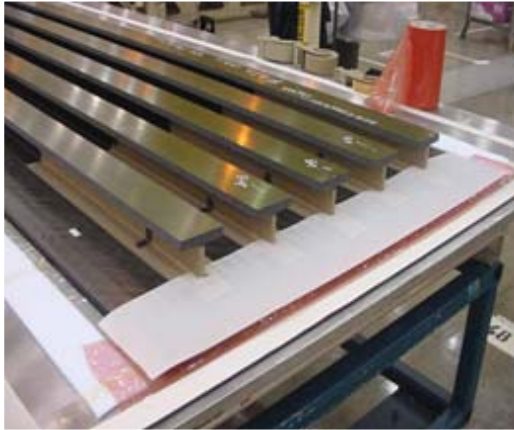
*7E7 offers Superior Efficiency while also offering increased range, speed & seating comfort*

# Advanced Engine Technology



- All three engine manufacturers are engaged
- Together with the high bypass ratio, the advanced engine technologies being developed for the 7E7 will provide:
  - Improved SFC
  - Higher reliability
  - Lower noise (will meet QC1 London departure criteria)
  - Reduced NOx emissions (lower than the best engines of today, and better than probable future regulations)

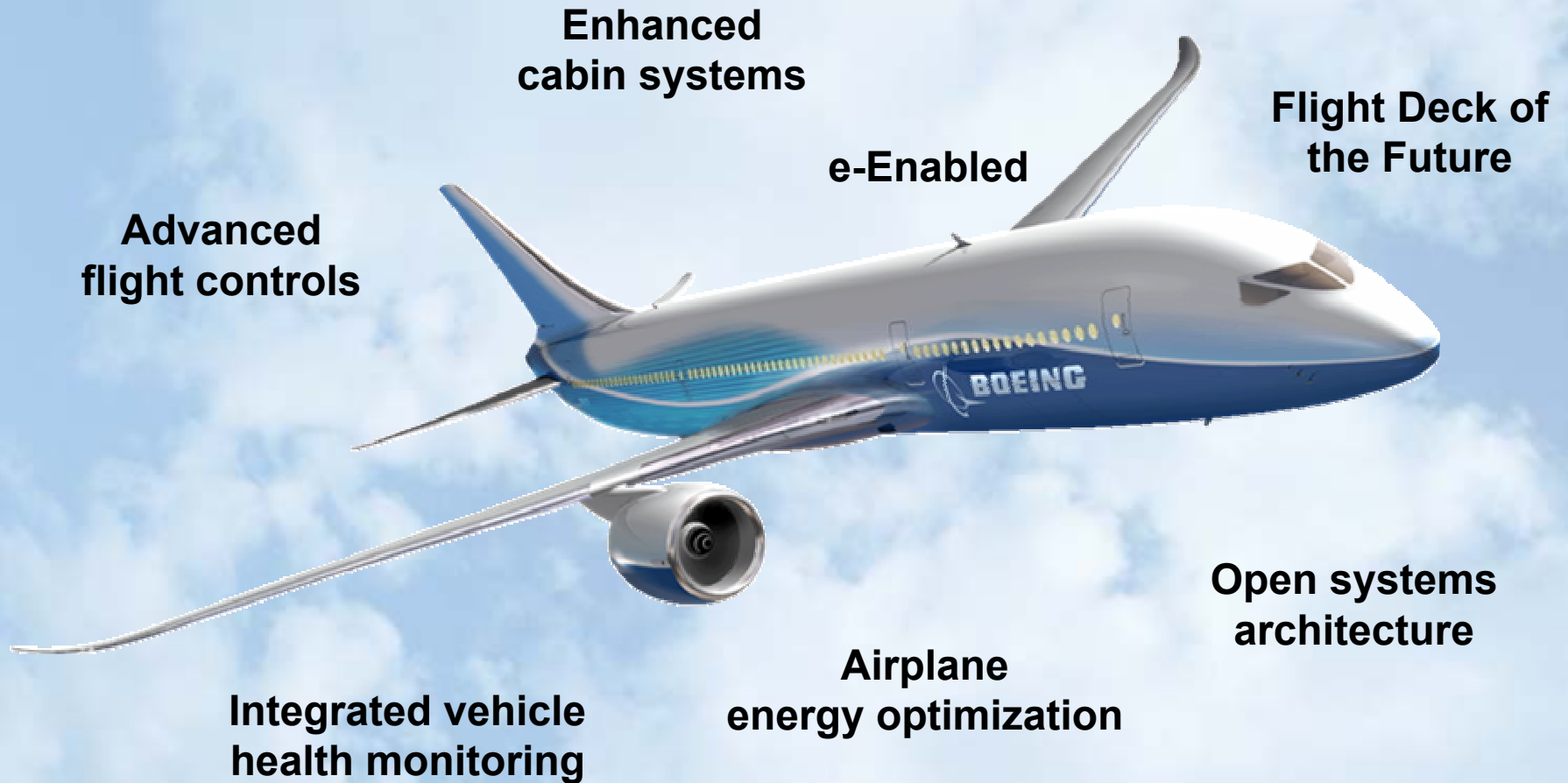
# Advanced Structures Technology



- **Advanced composite materials are used extensively for the 7E7 primary structure:**
  - **Significant weight reduction**
  - **Proven in-service durability**
  - **Improved fatigue and corrosion resistance reduces scheduled maintenance**
  - **Opens new design possibilities (for example, lower cabin altitude)**
  - **More potential for future development**



# **Sophisticated Systems Definition**



# Boeing is Creating a Design for the Passenger

## A New Flying Sensation

### Guiding principles:

- Honor the passenger
- Enrich the flying experience

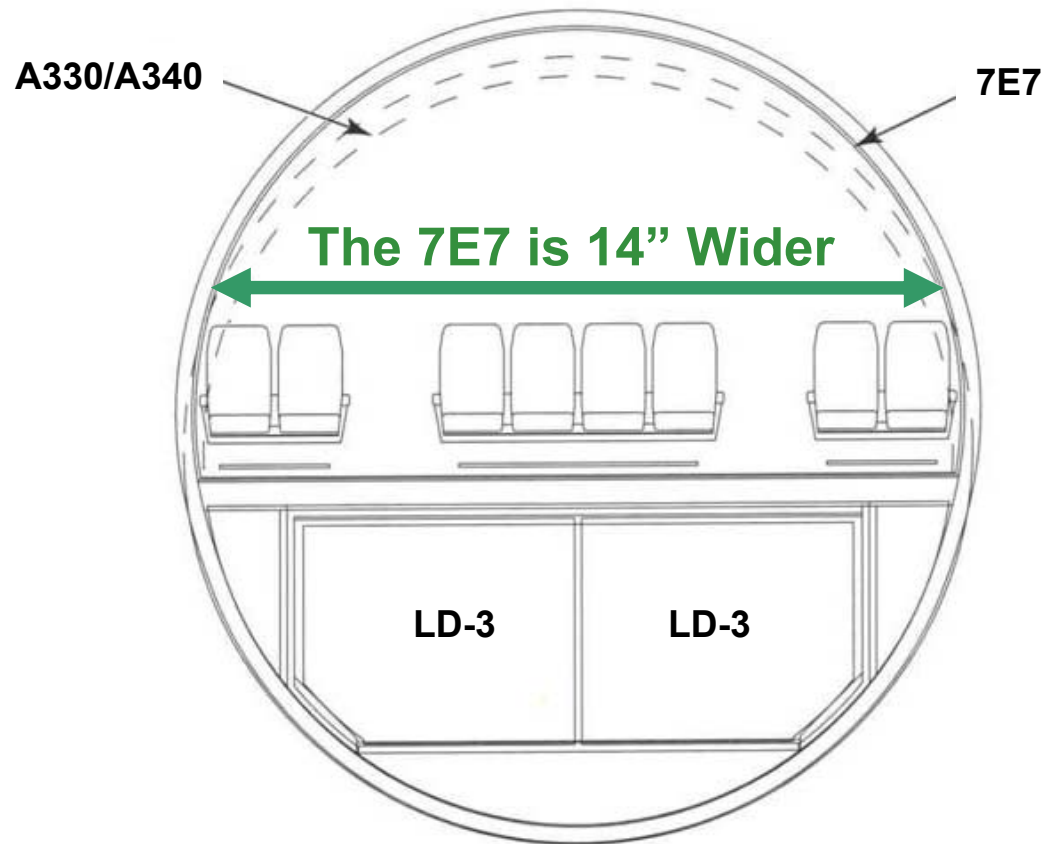
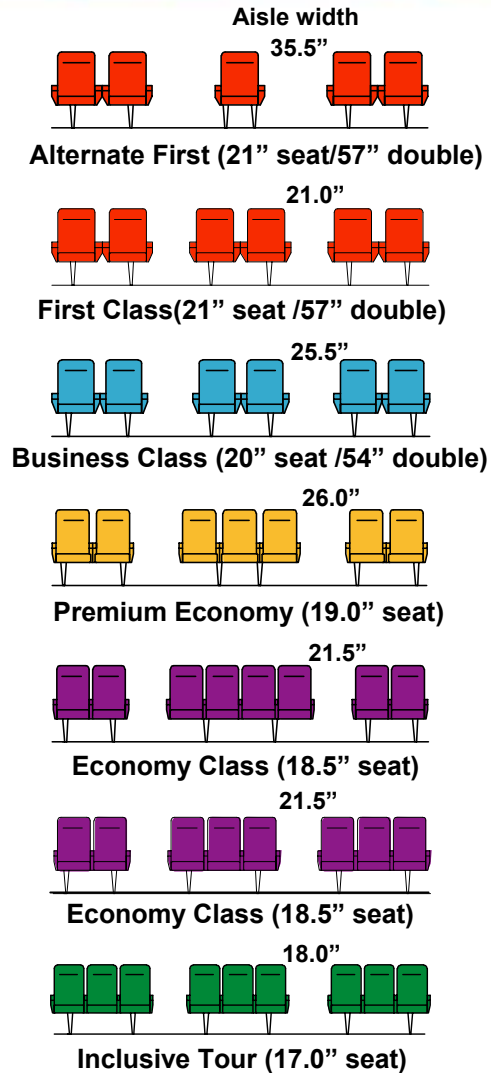
### Design features:

- Wider seats and aisles
- More personal space and superior passenger comfort
- A quiet, more restful flying experience
- Innovative lighting
- Improved humidity and cabin pressure for a healthier environment
- e-Enabled



# Boeing is Creating a Design for the Airlines

## Interior Flexibility Provides Choices and Comfort





# Great 777 Flight Deck Features

**PFD, ND, EICAS**

**Multi-function displays:**

- Electronic checklist
- Flight deck comm
- Synoptics

**ATC datalink**

**Fly-by-wire with  
Thrust Assym.  
Compensation (TAC)**

**Cursor control**



# Great 777 Flight Deck Features

**Electronic  
flight bag (EFB)**

**Low flight deck  
noise levels**





# Great 737 Flight Deck Features

**Vertical  
situation display  
(VSD)**

**Integrated  
approach  
navigation (IAN)**

**Navigation  
performance  
scales**

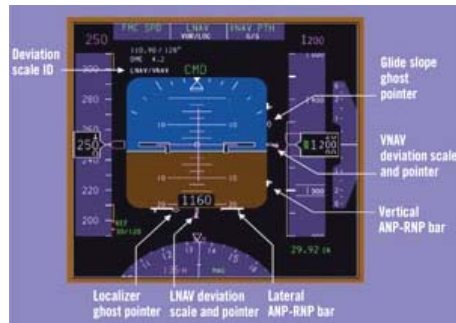
**Reduced RNP**



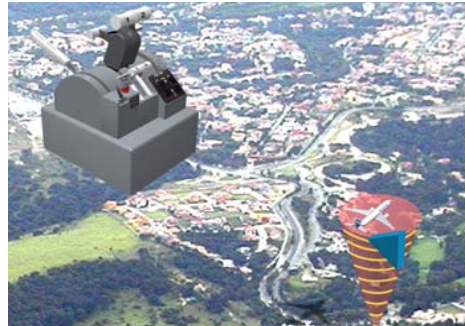
# New and Emerging Technologies

- Safety
- Capacity
- Efficiency
- Environment

Navigation Performance Display  
(LNAV VNAV Dev Scales)



Quiet Climb System



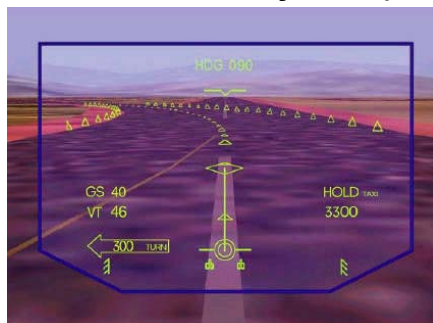
Forward-Looking Infrared  
(FLIR)



Vertical Situation  
Display (VSD)



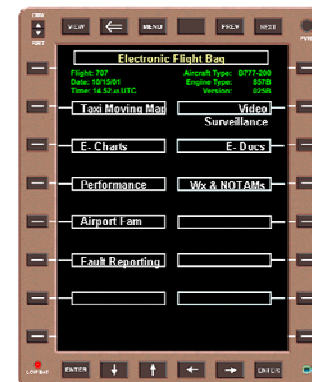
Surface Guidance System (SGS)



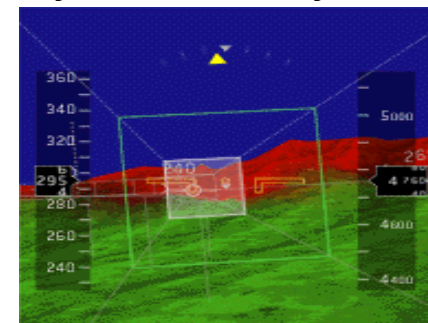
Head-Up Display (HUD)



Electronic Flight Bag



Synthetic Vision Systems

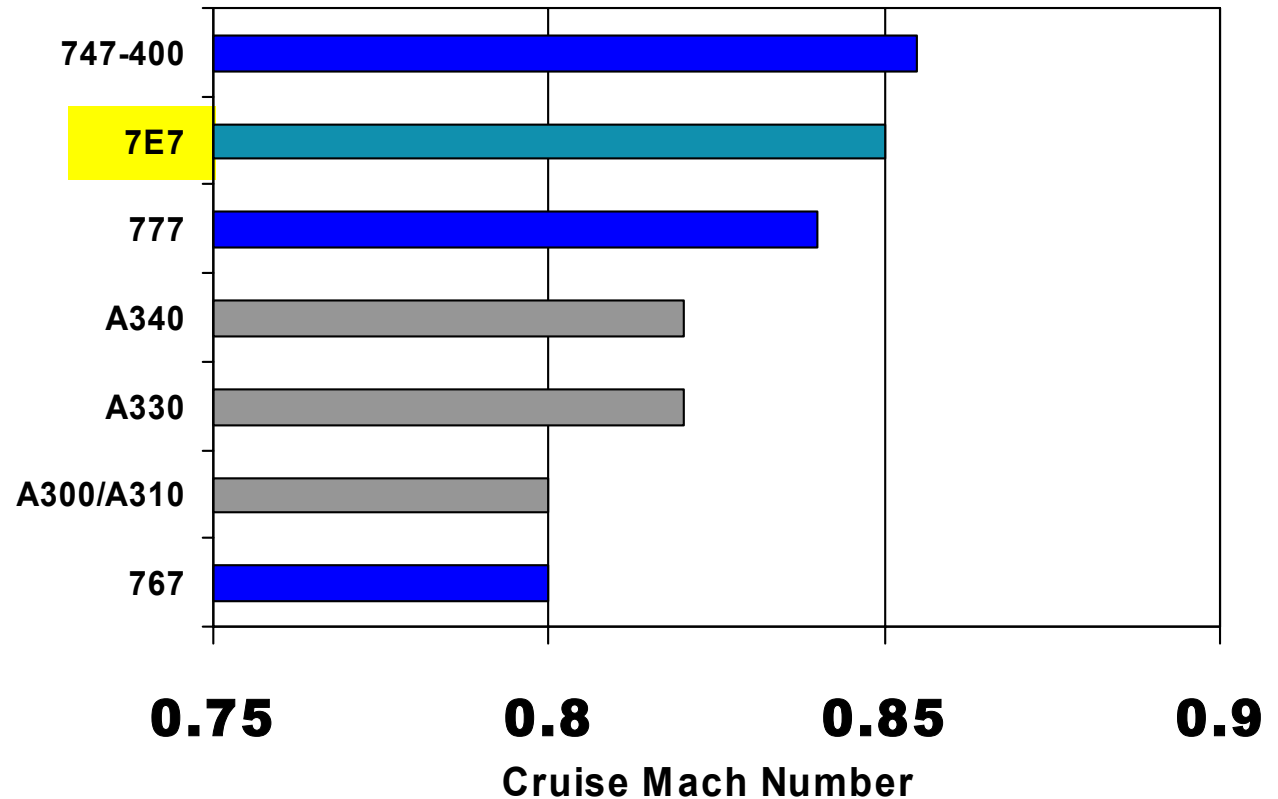




# One of the World's Fastest Airplanes

- **Saves over 30 minutes on long flights**

- **Better Computer Reservation System positioning means increased revenue**

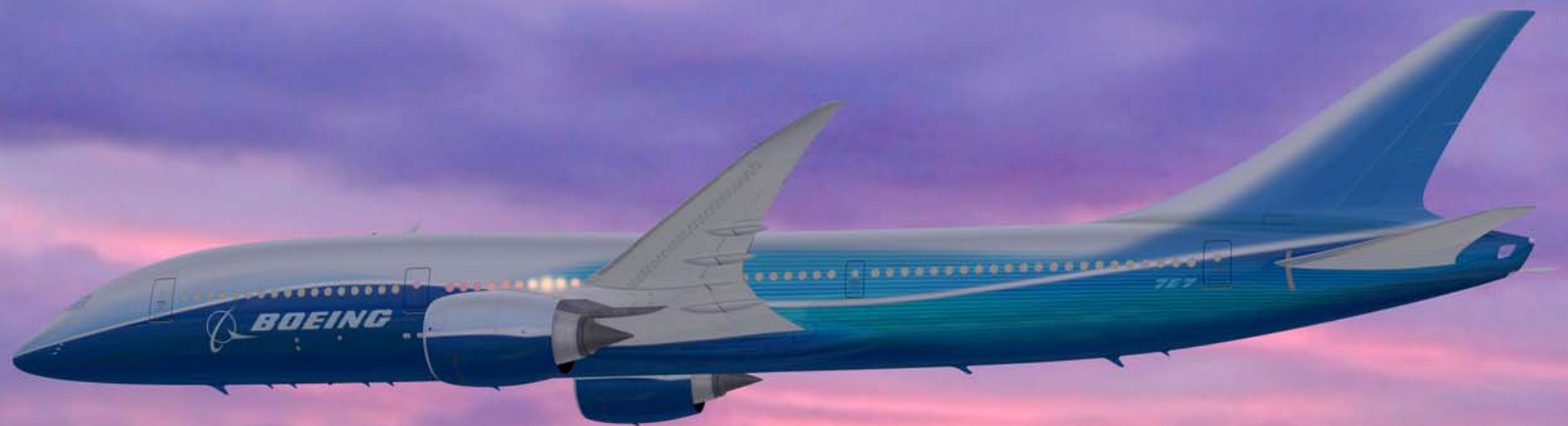


# 7E7 Advantages Over the A330-200

- **Wider seats, wider aisles**
- **Up to 25% lower fuel used per passenger**
- **Significantly lower seat-mile costs**
- **Up to 1,500 nmi more range**
- **1-2 Additional pallet of revenue cargo**
- **Faster (M.85 vs M.82)**



# The 7E7 – The Next Great Advance in Flight



- 7E7

- **The e-Enabled Advantage**



# Commercial Airplanes

## Transportation by Information

**The Boeing Company believes that in the 21<sup>st</sup> century the significant improvements to our air transport system will come primarily from the strategic application of integrated information**





- Deliver integrated products and services tailored to the needs of the individual airline
- Meet the needs of single- and mixed-fleet operators
- Use the capabilities of the entire Boeing enterprise to help solve the airline's challenges and enhance safety

Flight Crew



Airline Operations



Cabin Crew



Maintenance



**ALTEON**  
A BOEING COMPANY

**SBS** INTERNATIONAL  
A Boeing Company

**conneXion**  
by Boeing<sup>SM</sup>

**AERINFO**  
SYSTEMS INC.  
A subsidiary of The Boeing Company



Continental  
Data  
Graphics

PRESTON Aviation  
SOLUTIONS

**HUGHES**  
SPACE & COMMUNICATIONS

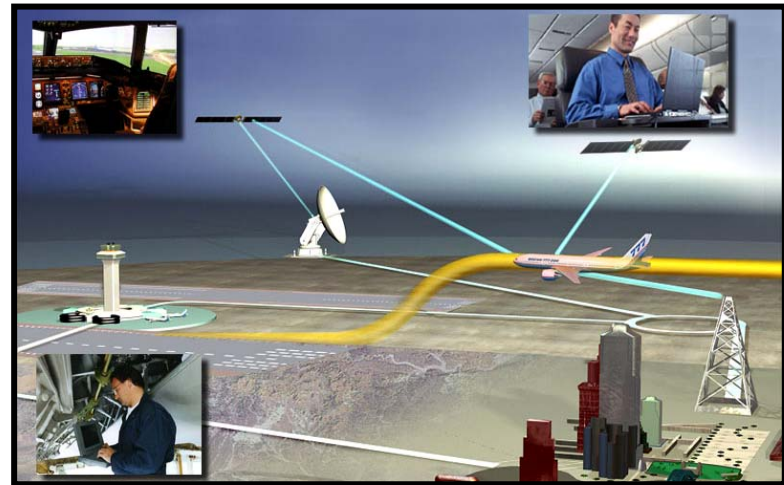
**JEPPESEN**  
A BOEING COMPANY

Autometric, Incorporated



Air Traffic Management

- Increased situational awareness across the fleet and the enterprise
- Decreased airline operating costs and improved fleet management
- Fantastic traveling experience
- Applications and technology that are applicable across an entire fleet
- Simplified cabin operations, duty-free and other-for-fee services
- Better control over fleet management and schedule recovery

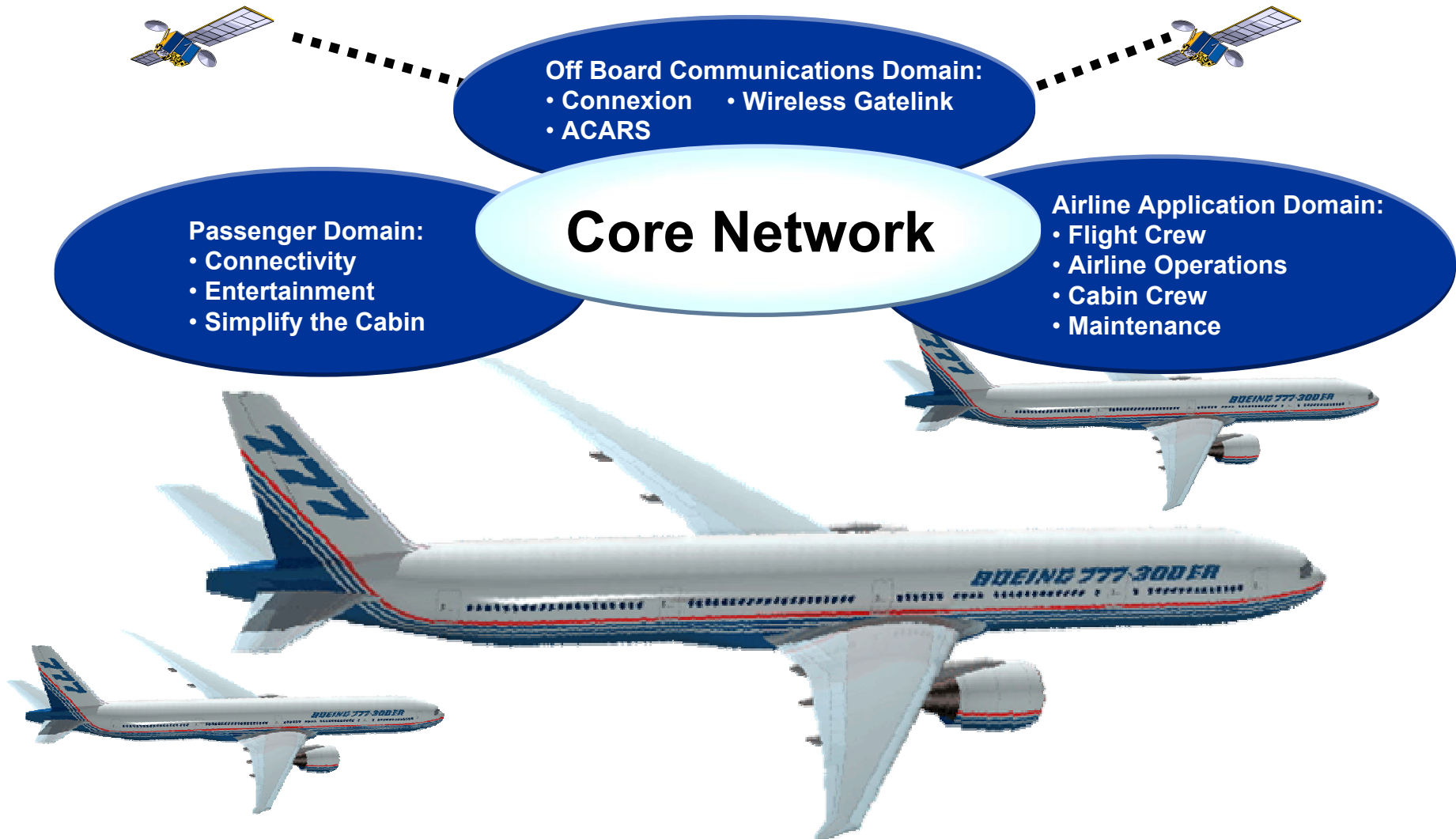


***Enhancing a safe, efficient air transport system***

# Commercial Airplanes

## How e-Enabled works...

The Core Network connects three domains



- Integrated system providing enhanced flight deck information and business automation
  - Taxi positional awareness
  - Video surveillance viewer
  - E-documents and charts
  - Electronic log books
  - Performance calculator





- Working Together
- Create value for passengers, flight and cabin crews, maintenance, and airline operations
- Enhancing a safe and reliable air transportation system
- Use commercial network technology & standards
- Provisions for growth

***The e-Enabled Advantage—achieves competitive advantage through advanced information networks***

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**Thank You!**

