This presentation includes forward-looking statements or statements about events or circumstances which have not occurred. We have based these forward-looking statements largely on our current expectations and projections about future events and financial trends affecting our business and our future financial performance. These forward-looking statements are subject to risks, uncertainties and assumptions, including, among other things: general economic, political and business conditions, both in Brazil and in our market. The words “believes,” “may,” “will,” “estimates,” “continues,” “anticipates,” “intends,” “expects” and similar words are intended to identify forward-looking statements. We undertake no obligations to update publicly or revise any forward-looking statements because of new information, future events or other factors. In light of these risks and uncertainties, the forward-looking events and circumstances discussed in this presentation might not occur. Our actual results could differ substantially from those anticipated in our forward-looking statements.
Capacity & Size - EMBRAER 170/190 Family Concept

EMBRAER 170
70/78 Seats
26,00m
29,90m
9,67M

EMBRAER 175
78/86 Seats
26,00m
31,68m
9,73 m

EMBRAER 190
98/108 Seats
28,72m
36,24m
10,28 m

EMBRAER 195
108/118 Seats
28,72m
38,65m
10,28 m
Extensive market research with 40 Major & Regional Airlines defined the main drivers for a new generation family of jets:

- Lower DOC
- High Performance
- Mainline standards
- Maximum Family Commonality
<table>
<thead>
<tr>
<th>Competitive Drivers</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Unmatched Economics</td>
</tr>
<tr>
<td>• Excellent Performance</td>
</tr>
<tr>
<td>• Outstanding Comfort</td>
</tr>
<tr>
<td>• Right Level of Technology</td>
</tr>
<tr>
<td>• High Level of Commonality</td>
</tr>
</tbody>
</table>
Main Product Features
Interior

EMBRAER 170/190 Cabin has Standards Superior to any Mainliner
Largest Cargo Compartment in its category

Cargo/Baggage Volume (m³)

- E170 CRJ-700: +16%
- E175 CRJ-900: +18%
- E190 E195 B737-600: +21%
- A318: +23%
Range from Brasília

- **FAR International Reserves**
  - **Taxi allowance**: 14 minutes
  - **Air Maneuvers**: 3 minutes
  - **Cruise**: ISA
  - **Wind**: 85% Annual Reliability
  - **Pax Weight & Baggage**: 90.7 kg (200 lb)

- **EMBRAER 170**
- **EMBRAER 175**
- **EMBRAER 190**
- **EMBRAER 195**
Range from Dallas

- **EMBRAER 170**
- **EMBRAER 175**
- **EMBRAER 190**
- **EMBRAER 195**

**FAR Domestic Reserves**

- Taxi allowance: 14 minutes
- Air Maneuvers: 3 minutes
- Cruise: ISA
- Wind: 85% Annual Reliability
- Pax Weight & Baggage: 90.7 kg (200 lb)
Range from Paris

- **EMBRAER 170**
- **EMBRAER 175**
- **EMBRAER 190**
- **EMBRAER 195**

**JAR OPS Reserves**

- Taxi allowance: 14 minutes
- Air Maneuvers: 3 minutes
- Cruise: ISA
- **Wind**: 85% Annual Reliability
- **Pax Weight & Baggage**: 90.7 Kg (200 lb)
Conditions:
600nm, ISA, no wind, SL
Full Pax @ 220lb/pax

London City Airport:
- EMBRAER 170: 1236 m (4055 ft)
- EMBRAER 175: 1436 m (4711 ft)
- EMBRAER 190: 1383 m (4537 ft)
- EMBRAER 195: 1605 m (5266 ft)

TOFL (m)
### Landing Field Length

<table>
<thead>
<tr>
<th>Aircraft</th>
<th>London City Airport</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EMBRAER 170</strong></td>
<td>1244 m (4081 ft)</td>
</tr>
<tr>
<td><strong>EMBRAER 175</strong></td>
<td>1290 m (4232 ft)</td>
</tr>
<tr>
<td><strong>EMBRAER 190</strong></td>
<td>1324 m (4344 ft)</td>
</tr>
<tr>
<td><strong>EMBRAER 195</strong></td>
<td>1372 m (4501 ft)</td>
</tr>
</tbody>
</table>

*LFL (m)*

*Reserves: 100 nm + 45' holding Full Pax@220lbs, SL*
Thrust levels to provide excellent field performance and operational flexibility

**EMBRAER 170**

GE CF34-8E

- Max TO Thrust (SL, Static, ISA): 14200lb
- Fan Diameter: 46.2"

**EMBRAER 190**

GE CF34-10E

- Max TO Thrust (SL, Static, ISA): 18500lb
- Fan Diameter: 53"

70% LRU commonality
EMBRAER 170/190 Family Ground Operations

Four doors fuselage and appropriate GSE clearances expedite turnaround time

- Very low TAT
- Adequate positioning of Ground Service points
- Two baggage/cargo compartments
- Low GSE collision risk
- Simultaneous pax and service cabin flows
EMBRAER 170/190 Economic Life

80,000 flight cycles or 80,000 flight hours
Approximately 30 years of operation.
Cost-effective use of new technologies results in very competitive direct maintenance costs (DMCs)

Maintenance Cost Comparison

DMC/FH (%)
System Main Features

Right Level of Integration

Circuit Breakers

Circuit Breakers

PMAT

CVR

FMS 1

GUIDANCE PANEL

FMS 2

DC1

DC2

MAU 1

MAU 2

MAU 3

LICC

EICC

SPDA

MRC 1

MRC 2

CVR

SPDA 2

TCAS II

AICC

RICC
System Main Features

➔ Right Level of Integration

➔ High level of commonality within the family

- EMBRAER 170
- EMBRAER 175
- EMBRAER 190
- EMBRAER 195

鸰 Common pilot type rating
鹡 High level of commonality of system components
鹡 100% cockpit commonality
鹡 100% of flying qualities commonality due to the Fly-by-Wire system

95% 89% 95%
EMBRAER 170/190

Program Strategies
# A Customer-Driven Design

## Advisory Boards, Steering Groups and Man-machine Interface Meetings:

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
<th>Location</th>
<th>Date</th>
<th>Airlines</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; AAB</td>
<td>SJC - Brazil</td>
<td>March 7</td>
<td>Airlines</td>
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<td></td>
<td>2&lt;sup&gt;nd&lt;/sup&gt; AAB</td>
<td>FLL - USA</td>
<td>April 9</td>
<td>Airlines</td>
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<td>3&lt;sup&gt;rd&lt;/sup&gt; AAB</td>
<td>PAR - France</td>
<td>September 20</td>
<td>Airlines</td>
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<tr>
<td></td>
<td>1&lt;sup&gt;st&lt;/sup&gt; SG</td>
<td>SJC &amp; LAX</td>
<td>October 11</td>
<td>Airlines</td>
</tr>
<tr>
<td>2000</td>
<td>2&lt;sup&gt;nd&lt;/sup&gt; SG</td>
<td>SJC &amp; LAX</td>
<td>January 13</td>
<td>Airlines</td>
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<tr>
<td></td>
<td>4&lt;sup&gt;th&lt;/sup&gt; AAB</td>
<td>FLL - USA</td>
<td>June 24</td>
<td>Airlines</td>
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<tr>
<td></td>
<td>3&lt;sup&gt;rd&lt;/sup&gt; SG</td>
<td>SJC - Brazil</td>
<td>November 16</td>
<td>Airlines</td>
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<tr>
<td>2001</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; MMI</td>
<td>SJC – Brazil</td>
<td>April 11</td>
<td>Airlines</td>
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<tr>
<td></td>
<td>5&lt;sup&gt;th&lt;/sup&gt; AAB</td>
<td>SJC - Brazil</td>
<td>April 27</td>
<td>Airlines</td>
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<tr>
<td></td>
<td>2&lt;sup&gt;nd&lt;/sup&gt; MMI</td>
<td>PAR - France</td>
<td>May 6</td>
<td>Airlines</td>
</tr>
<tr>
<td></td>
<td>3&lt;sup&gt;rd&lt;/sup&gt; MMI</td>
<td>SJC - Brazil</td>
<td>July 11</td>
<td>Airlines</td>
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<tr>
<td></td>
<td>4&lt;sup&gt;th&lt;/sup&gt; MMI</td>
<td>SJC - Brazil</td>
<td>September 9</td>
<td>Airlines</td>
</tr>
<tr>
<td>2002</td>
<td>5&lt;sup&gt;th&lt;/sup&gt; MMI</td>
<td>SJC – Brazil</td>
<td>April 9</td>
<td>Airlines</td>
</tr>
<tr>
<td></td>
<td>6&lt;sup&gt;th&lt;/sup&gt; MMI</td>
<td>SJC – Brazil</td>
<td>May 10</td>
<td>Airlines</td>
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<tr>
<td></td>
<td>Interior SG</td>
<td>PAR – France</td>
<td>June 23</td>
<td>Airlines</td>
</tr>
<tr>
<td></td>
<td>Maintenance MMI</td>
<td>SJC – Brazil</td>
<td>August 17</td>
<td>Airlines</td>
</tr>
</tbody>
</table>
## Maintenance Plan Working Groups and Industry Steering Committee:

### Status

**Accomplished:**
- 24 WGs
- 7 ISCs
- 8 CMCC

**Analyzed:**
- 100% MSIs
- 100% SSIs

**TOTAL Accomplished:** 100%

<table>
<thead>
<tr>
<th>Year</th>
<th>1st 175/195 MSG-3 Training</th>
<th>5th 170 EWG</th>
<th>2nd 170 GWG</th>
<th>7th 170 ISC</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>SJC – Brazil, February 04-06</td>
<td>Phoenix – USA, February 25-28</td>
<td>SJC – Brazil, March 06-07</td>
<td>SJC – Brazil, March 18-19</td>
</tr>
</tbody>
</table>

### 170 RA Meeting

- SJC – Brazil, June 09-12

### 1st 195 ISC

- SJC – Brazil, March 20-21

### 4th 170 CMCC

- SJC – Brazil, March 24-28

### 2nd 170 GWG

- SJC – Brazil, May 13-16

### 6th 170 CMCC

- SJC – Brazil, July 29-31

### 170/175 GWG

- USA, August 04-08

### 3rd 175/195 MSG-3 Training

- FLL, October 14-17

### 9th 170 CMCC

- SJC – Brazil, September 22-26

### 8th 170 CMCC

- SJC – Brazil, October 22-24

### 1st 190 ISC

- SJC – Brazil, December 08-12
## Partners and Suppliers Evolution

<table>
<thead>
<tr>
<th>80’s</th>
<th>90’s</th>
<th>00’s</th>
</tr>
</thead>
<tbody>
<tr>
<td>500 Suppliers</td>
<td>4 Partners and 350 Suppliers</td>
<td>16 Partners and 22 Suppliers</td>
</tr>
</tbody>
</table>

**System Partners:**
- **HAMILTON SUNDESTRAND**
  - Air Management
- **PARKER**
  - Electrical System
  - Hydraulics
  - Flight Controls
  - Fuel System
- **C & D**
  - Interiors
- **LIEBHERR**
  - Landing Gear
- **HONEYWELL**
  - Avionics

### Parts and Systems

- **GAMECA (España)**
  - Wing, Nacelle
- **SONACA (Bélgica)**
  - Fuselage
- **ENAER (Chile)**
  - Vertical & Horizontal Stabilizers, Elevators

- **LATECOEIRE**
  - Center Fuselage
- **EMBRAER / AKRS**
  - Center Fuselage II
  - Wing to Fuselage Fairing
- **EMBRAER**
  - Forward Fuselage
- **HAMILTON SUNDESTRAND**
  - Tail Cone & APU
- **KAWASAKI / SONACA**
  - Wing, Stub, Control Surfaces & Pylon

---

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A Joint Design Teaming Effort

JDP in 1999

All partners co-located at Embraer since early design
Integration Supported by a World-Wide Portal

... A virtual team co-location for detailed design and manufacturing
<table>
<thead>
<tr>
<th>Partnership advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Funding</td>
</tr>
<tr>
<td>• Risk sharing</td>
</tr>
<tr>
<td>• Diversity</td>
</tr>
<tr>
<td>• Lean Logistics</td>
</tr>
<tr>
<td>• Integrated Development</td>
</tr>
<tr>
<td>• Market Penetration</td>
</tr>
</tbody>
</table>
EMBRAER 170 Status
Test Aircraft

1st Flight
February 19th, 2002

0001
0002
0003

0004
0005
0006

0007
Flight Tests

3.174 hours flown

COMPLETED - Oct. 24th
F&R Campaign

- 108 flights
- 7 FH/day
- 22 days
- 2600 pax

COMPLETED - Oct. 22nd
Structural Tests

Wing Up Bending Test

Completed – Apr. 29th
Fatigue Tests

- 5000 cycles for JAA certification completed in May 30th, 2003

5,000 cycles - May 30th
Rig Tests

Development and certification tests

Iron Bird, Fly By Wire – over 7,000 hours

Avionics Rig - over 8,000 hours
Lab & Rig Tests

Tests Performed (Accumulated)

Planned End (Accumulated)

Finished (Accumulated)

COMPLETED - Oct. 24th

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FFS # 2 Ready – Oct. 10th

FFS # 1 Ready – Oct. 23rd
Certification Reports

Completed - Nov. 12th
<table>
<thead>
<tr>
<th>Product Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Fuel Burn ✓</td>
</tr>
<tr>
<td>- Take-off Field Length ✓</td>
</tr>
<tr>
<td>- Landing Field Length ✓</td>
</tr>
<tr>
<td>- Noise ✓</td>
</tr>
<tr>
<td>- Cruise Speed</td>
</tr>
<tr>
<td>- Range</td>
</tr>
<tr>
<td>- Comfort ✓</td>
</tr>
<tr>
<td>- DMCG ✓</td>
</tr>
</tbody>
</table>
EMBRAER 170 Schedule

- Initial Definitions Phase
- Joint Definition Phase
- Detailing and Manufacturing
- Roll out
- Flight Preparation
- First Flight
- Certification Tests
- Provisional Certification
- Certification

1Q | 2Q | 3Q | 4Q | 1Q | 2Q | 3Q | 4Q | 1Q | 2Q | 3Q | 4Q | 1Q

1999-2004:

- GO AHEAD
- 2000
- 2001
- 2002
- 2003
- 2004

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EMBRAER 175
Program Status
EMBRAER 175 – Fuselage

FWD CENTRAL FUS I (FWD PLUG)  
838,2 (33in)

AFT CENTRAL FUS II (AFT PLUG)  
939,8 (37in)
EMBRAER 175

Flight test duration ~ 2 hours
Evaluation demonstrated very high handling quality similarity to EMBRAER 170's

1st Flight - June 14th, 2003
Program On Going

- 2 prototypes supporting certification campaign
- 1st flight performed on June 14th, 2003

Flight Test Campaign

- Ground Vibration Tests (Aug, 03)
- Flight Controls Free Play (Aug, 03)
- Horizontal Tail Loads Calibration (Sep, 03)
EMBRAER 175

<table>
<thead>
<tr>
<th>2002</th>
<th>2003</th>
<th>2004</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q4</td>
<td>Q1</td>
<td>Q2</td>
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<tr>
<td>Q3</td>
<td>Q4</td>
<td>Q1</td>
</tr>
<tr>
<td>Q2</td>
<td>Q3</td>
<td>Q4</td>
</tr>
</tbody>
</table>

Initial Definitions Phase

Detail Design

Detail Design and Manufacturing

1st Flight

Certification Tests

On Going

Type Certification CTA – 2nd Quarter 04

Type Certification JAA – 2nd Quarter 04

Type Certification FAA – 3rd Quarter 04
EMBRAER 190/195

Program Status
EMBRAER 190/195 – Fuselage

FWD CENTRAL FUS I
( FWD PLUG )

2407.2 mm
(94.8 in)

AFT CENTRAL FUS II
( AFT PLUG )

3716.8 mm
(146.3 in)

FWD CENTRAL FUS I
( FWD PLUG )

3220 mm
(126.8 in)

AFT CENTRAL FUS II
( AFT PLUG )

5317 mm
(209.3 in)
Engine Development Status

CF34-10E at GEAE
1st Engine flight test in Nov, 2003
Iron Bird 190

EMBRAER 190 will have dedicated Iron Bird and SITS
<table>
<thead>
<tr>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1</td>
<td>Q2</td>
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</table>

Preliminary Studies

Detail Design and Manufacturing

- First Flight – 1st Quarter 04

Certification Tests

- CTA Type Certification – 3rd Quarter 05
- FAA Type Certification – 3rd Quarter 05
- JAA Type Certification – 3rd Quarter 05
# EMBRAER 195 – Schedule

<table>
<thead>
<tr>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
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<tbody>
<tr>
<td>Q1</td>
<td>Q2</td>
<td>Q3</td>
<td>Q4</td>
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</tbody>
</table>

**Detail Design and Manufacturing**

**Certification Tests**

- **First Flight – 3rd Quarter 04**
- **CTA Type Certification – 2nd Quarter 06**
- **JAA Type Certification – 2nd Quarter 06**
- **FAA Type Certification – 3rd Quarter 06**
Series Production
Embraer Manufacturing Capacity

- All investments for the serial production are done.
- Manpower is available and trained.
Series Aircraft

Aircraft S/N 0008 performing a production flight
Thank you!