A diamond-shaped, joined-wing configuration offers an ideal surveillance platform:

- Sensors
  - Large antennas
  - Low sidelobes
  - Stiff wings
- Aircraft
  - High performance
  - Compact envelope
EX Concept: Advanced Surveillance Aircraft

The Boeing EX concept employs joined-wing technology. The sensors in each of the four wings provide full spherical coverage for surveillance. Each wing-mounted radar provides 2-1/2 times greater detection range on a small target than existing systems. Multiband active electronically scanned arrays enable mode flexibility for response to the dynamic tactical situation. Onboard multisensor fusion creates an all-source tactical picture for users. This concept meets all requirements stated in the temporary operational requirements (TOR).

Operational effectiveness is dramatically higher than that of retrofit options. With life cycle costs much lower, a significant increase in cost effectiveness is not only feasible but affordable.

Missions
- Airborne early warning (AEW)
- C3 battle management
- Air superiority
- Strike support
- Cooperative engagement
- Ballistic missile defense
- Intelligence and reconnaissance
- Others

Specifications
Altitude ................. 50,000 ft
Station time ............. 4 hr at 600 nmi
Patrol speed ............. mach 0.38
Maximum sustained speed .......... mach 0.76
Unrefueled range ........... 2,900 nmi
Refuelable .............. yes
Gross weight ............ 55,200 lb
Operating weight ...... 35,380 lb
Overall length .......... 51 ft 2 in
Overall height .......... 18 ft 7 in
Wingspan .............. 63 ft 4 in
(Wing area .............. 845 ft²
Spot factor .......... 1.34 (F-18 reference)
Engines ................ TF34-GE-400A, sea-level static thrust (SLST) 9,275 lb each
Radar power .......... 1700-GE-701C, turbofan engine, 1,890 eshp

Primary sensors
- UHF radar
- Surveillance
- Ground mapping
- Synthetic aperture radar (SAR)
- Mid-band active electronically scanned array (AESA) radar
- Bistatic
- Signals exploitation
- Interrogation
- Radar
- Communications
- Communication/navigation/identification friend or foe (IFF)
- Electronic countermeasures (ECM)
- High-band AESA radar
- SAR, inverse synthetic aperture radar (ISAR)
- Precision track cooperative engagement capability (CEC)
- Electronic support measures (ESM)
- Infrared search track (IRST)

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