

Aerospace systems design engineer

Systems design engineers connect requirements, interfaces and evidence across an aircraft system. The examples focus on environmental/pneumatic systems, not every aerospace specialty. Their task is to make the design demonstrably coherent across teams, rather than service an installed system as a maintenance technician.

What the role does

- Define and manage system requirements and interfaces. [EMP1, EMP2]
- Develop models and verification evidence. [EMP1, EMP2]
- Coordinate suppliers, design changes and production/test support. [EMP1, EMP2]

Where the work happens

Dorval engineering-office work and Boeing's North Charleston environmental-control-system team; coordination may involve suppliers, laboratories and production.

Employer example 1

Bombardier • Canada • Professional Engineering - Air Systems/Pneumatics

Vacancy status unconfirmed not an offer • Checked 2026-10-27 [EMP1]

Category	What this employer states
Essential in this source	French/English bilingualism is explicitly described as required.
Desirable in this source	Five-to-eight years of relevant experience is described as ideal.
Other stated conditions	Mechanical/aerospace degree, fluids/thermodynamics, modelling and qualification knowledge are listed; not all listed items are required to apply.

One employer and role; not a worldwide entry rule.

Employer example 2

Boeing Commercial Airplanes • United States • Mechanical Systems Design & Analysis Engineer (Experienced or Senior)

Active vacancy when checked • Checked 2026-10-27 [EMP2]

Category	What this employer states
Essential in this source	Relevant engineering BSc; Level 3 related-experience/education combination and specified mechanical-systems/team experience. Domestic/international travel availability.
Desirable in this source	Mentoring, aerospace, verification, certification and environmental-systems experience.
Other stated conditions	Export-control eligibility and no visa sponsorship stated.

One employer and role; not a worldwide entry rule.

PREPARE AND VERIFY

Separate requirements from preparation

United States occupational guidance: BLS distinguishes entry-level aerospace engineering from state professional-engineering licensure; no aircraft approval privilege follows from this guide. [REG1]

Still to verify: Canadian engineering registration and design-authority applicability remain unresolved; the US occupational statement is not transferred to Canada.

Explore a realistic entry route

- Select an initial system domain and strengthen the relevant engineering fundamentals, rather than treating systems engineering as software proficiency alone.
- Practise requirements writing, interface description and model limitations through non-operational projects.
- Compare graduate and experienced openings; investigate Canadian professional-title rules separately from US examples.

Build evidence of your skills

- Write five testable requirements for a fictional room-temperature monitor and connect each to a safe simulated verification activity.
- Draw an interface map for a household study project, marking units, assumptions, ownership and unanswered questions.

Prepare for an interview

Reflection prompts only, not questions claimed to be used by an employer.

- How would you distinguish validation of a requirement from verification of a design?
- What would you do when two suppliers assume different interface conditions?

Investigate possible next roles

Domain specialisation, systems integration or technical leadership may follow experience; organisational approval or signatory roles require separate review.

Sources and scope

[EMP1] [Bombardier Professional Engineering - Air Systems/Pneumatics](#)

Vacancy status unconfirmed not an offer. Canada. Checked 2026-10-27.

[EMP2] [Boeing Commercial Airplanes Mechanical Systems Design & Analysis Engineer \(Experienced or Senior\)](#)

Active vacancy when checked. United States. Checked 2026-10-27.

[REG1] [U.S. Bureau of Labor Statistics Aerospace Engineers - Occupational Outlook Handbook](#)

Occupation guidance Not an engineering board ruling or an aircraft design approval. Checked 2026-10-27.

Educational reference. Verify current requirements with the relevant authority and employer. Job-specific and country-specific conditions are not worldwide eligibility rules. Requirements shown are selected examples, not complete application checklists. A visible listing is not a guarantee that recruitment remains open. Exercises use invented, non-operational material; do not inspect, modify, repair, test or release real aircraft or components. No job guarantee.