

Bdx

Verified delivered configuration · interactive mesh available in [report.html](#)

328 km/h

DASH SPEED

0.25 h

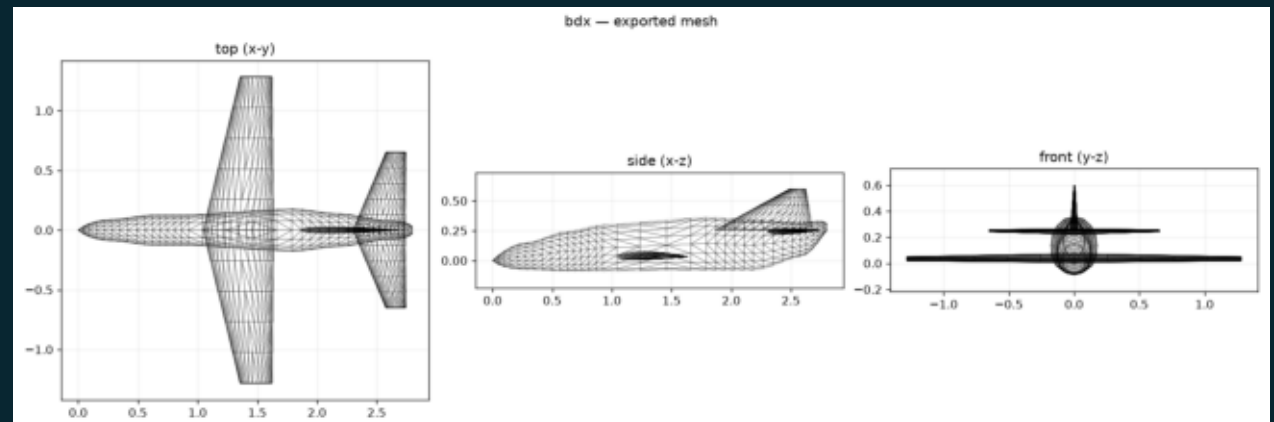
ENDURANCE

0.0 kg

PAYLOAD

20.8 kg

MTOW



Flight-worthiness gate review

● Schema

source=yes; optimized=yes; engine requirement=yes; payload requirement=yes

● Geometry truth

read-back=yes; bbox=yes; mesh checks=16

● Packing

fuel-volume margin 0.106 m³; engine/payload clear

● Balance

independently measured SM full 0.148; reserve 0.128 MAC

● Pitch trim

tail incidence -1.689° vs spec -1.690°; CM residual 0.0000

● Stall

V_{stall} 16.816 m/s ≤ 25.0 m/s at CL_{max} 1.20

● Directional stability

cant-corrected fin volume V_v 0.0476 in [0.02, 0.09]

● Structures

+6g failure index -0.923; CL 0.842/0.842; lift closed=yes; mass closed=yes; ti

● Endurance & thrust

0.25 h; cruise/dash thrust ≥ buildup drag

● MDO honesty

feasible=yes; driver=yes; post-delivery verify=yes; calibration=yes; frozen=ye

● Shape fidelity

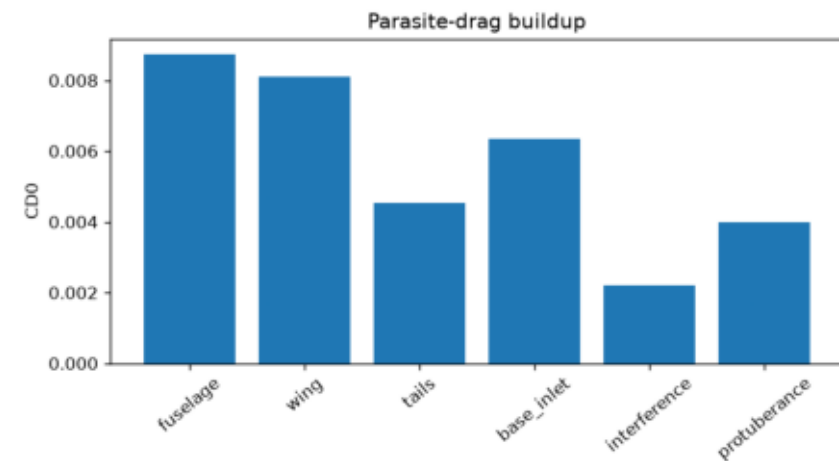
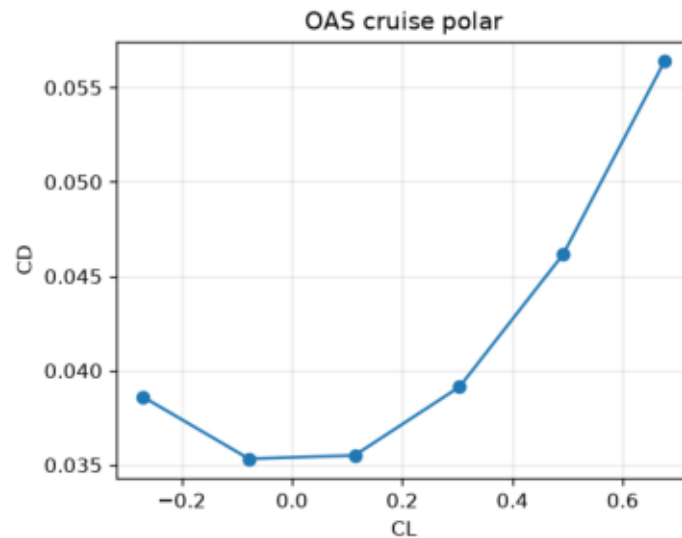
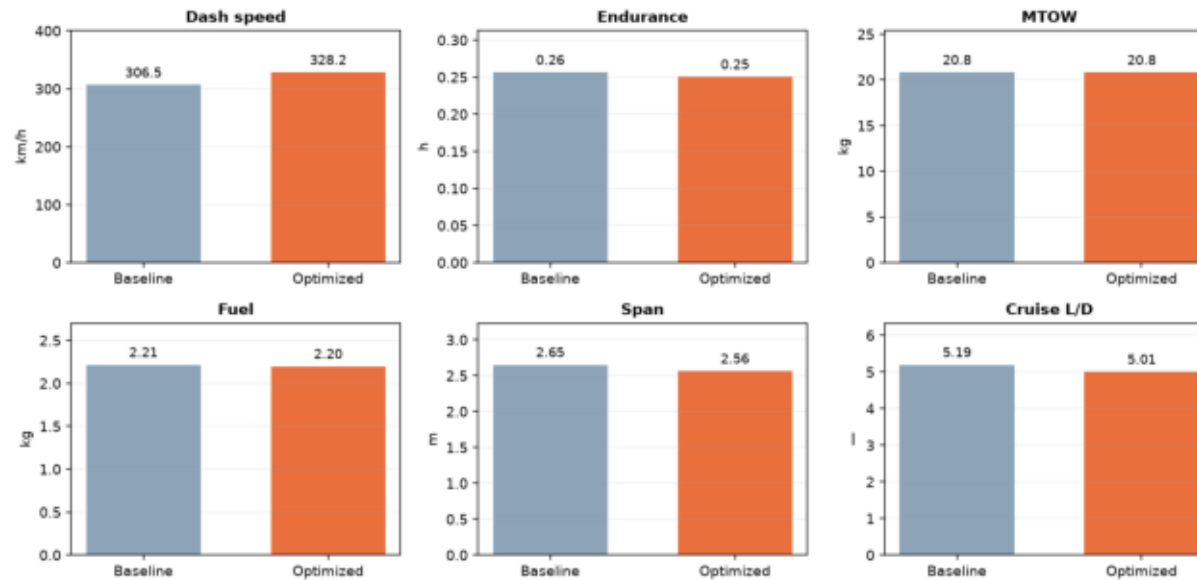
span/L 0.92; root/L 0.21; sweep 13.6°; 5 scored shape departures; 6 total audi

● Cross-checks & traceability

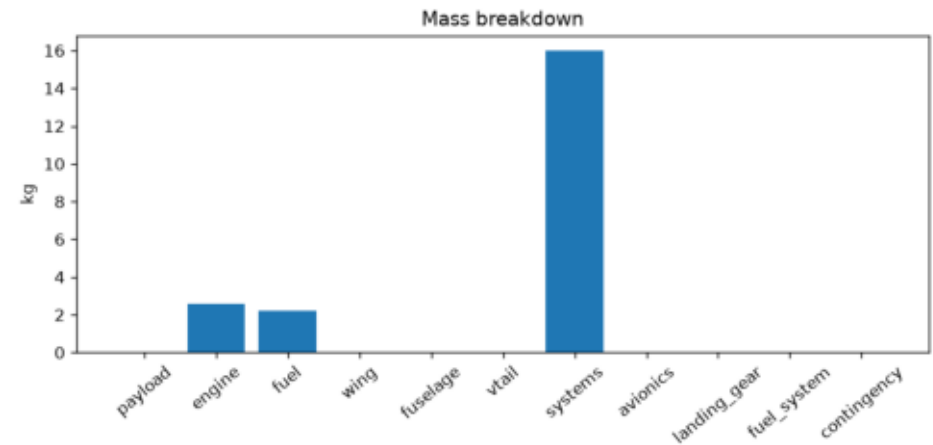
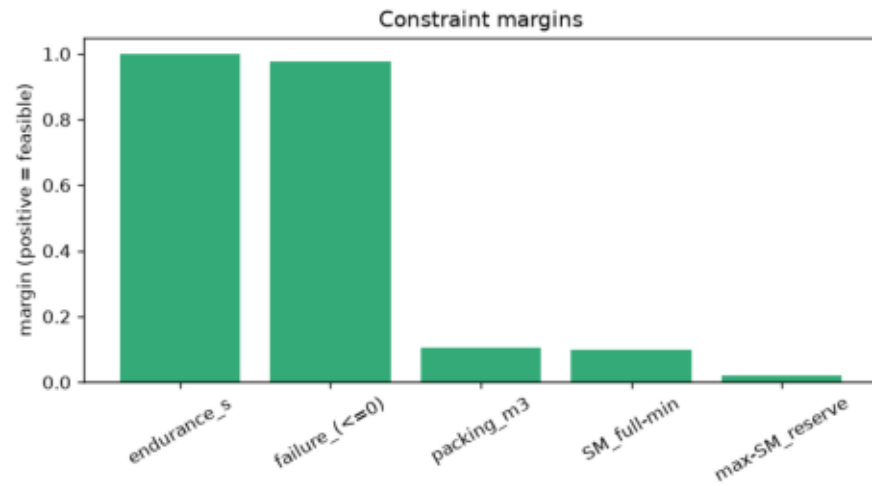
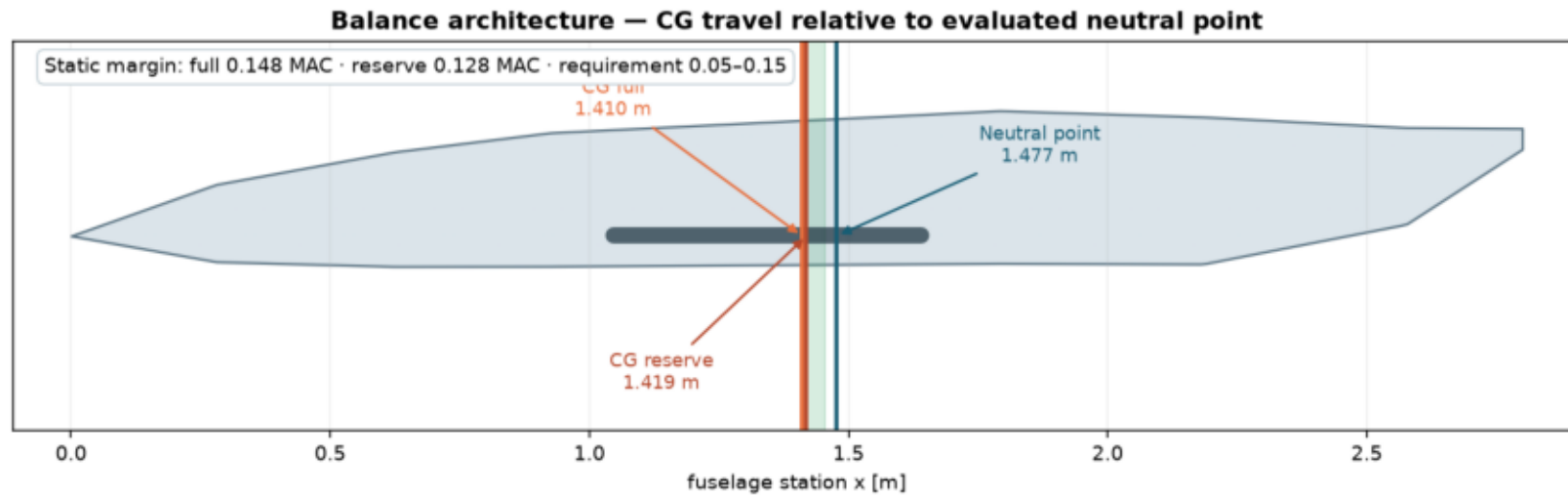
core 12/12; VSPAERO/OAS CL_α ratio 0.976; NP method spread 0.008 MAC (diagnosti

Performance and aerodynamic evidence

Design evolution: source baseline → verified optimum



Balance and structural margins



Verification summary and engineering limits

Validation core: 12/12 · all recorded checks: 14/14

- ✓ k450 tsfc kg per kgf hr
- ✓ breguet round trip
- ✓ isa T sl
- ✓ isa rho sl
- ✓ oas induced drag vs elliptic
- ✓ cantilever deflection identity
- ✓ thin airfoil cm ac
- ✓ fin volume coefficient
- ✓ fin te within body
- ✓ neutral point model vs oas
- ✓ wing mass buildup vs oas
- ✓ vspaero vs oas CL
- ✓ tacs artifact schema

Documented limitations

- Engine thrust-lapse and part-throttle TSFC are assumptions anchored by one static vendor point.
- Stall uses an assumed $CL_{max}=1.20$; no high-lift or nonlinear separation model is present.
- OAS/VSPAERO are lifting-surface models; fins are gated separately by V_v and exported-mesh truth.
- SU2 is a coarse 2-D Euler calibration and must report convergence separately from successful execution.
- TACS and OAS use different wingbox idealizations; their mass/stress ratio is calibration evidence only.

Full interactive evidence, exact stage values, and configuration: [report.html](#)