Blended Wing Body (BWB) Project Overview

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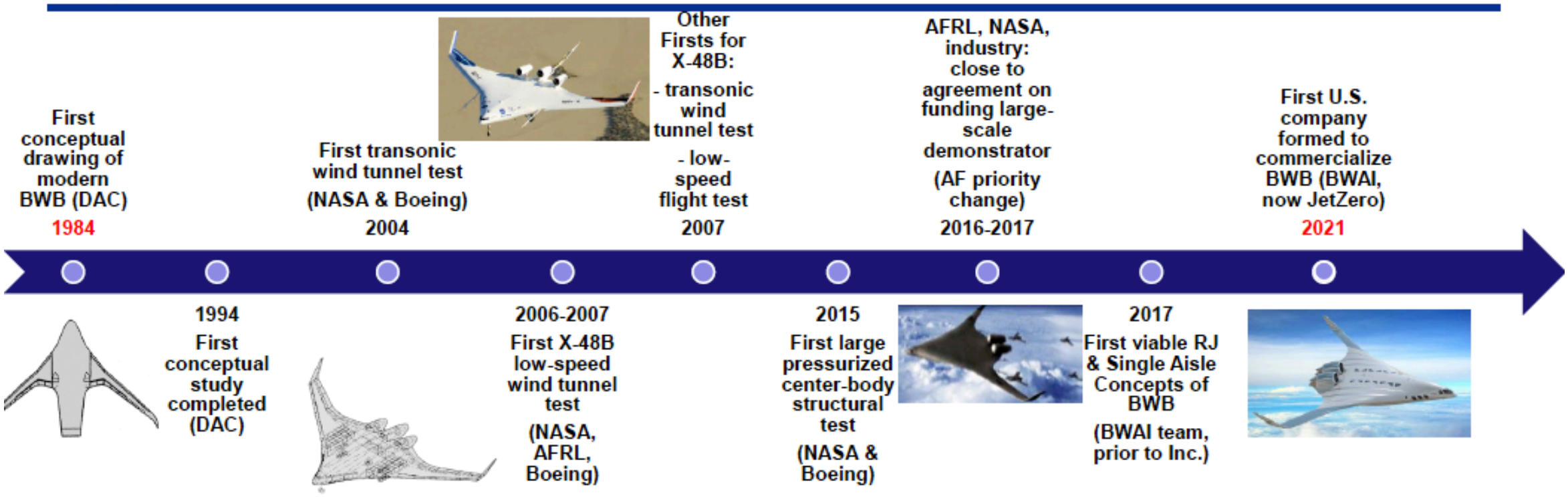
SAE AeroTech

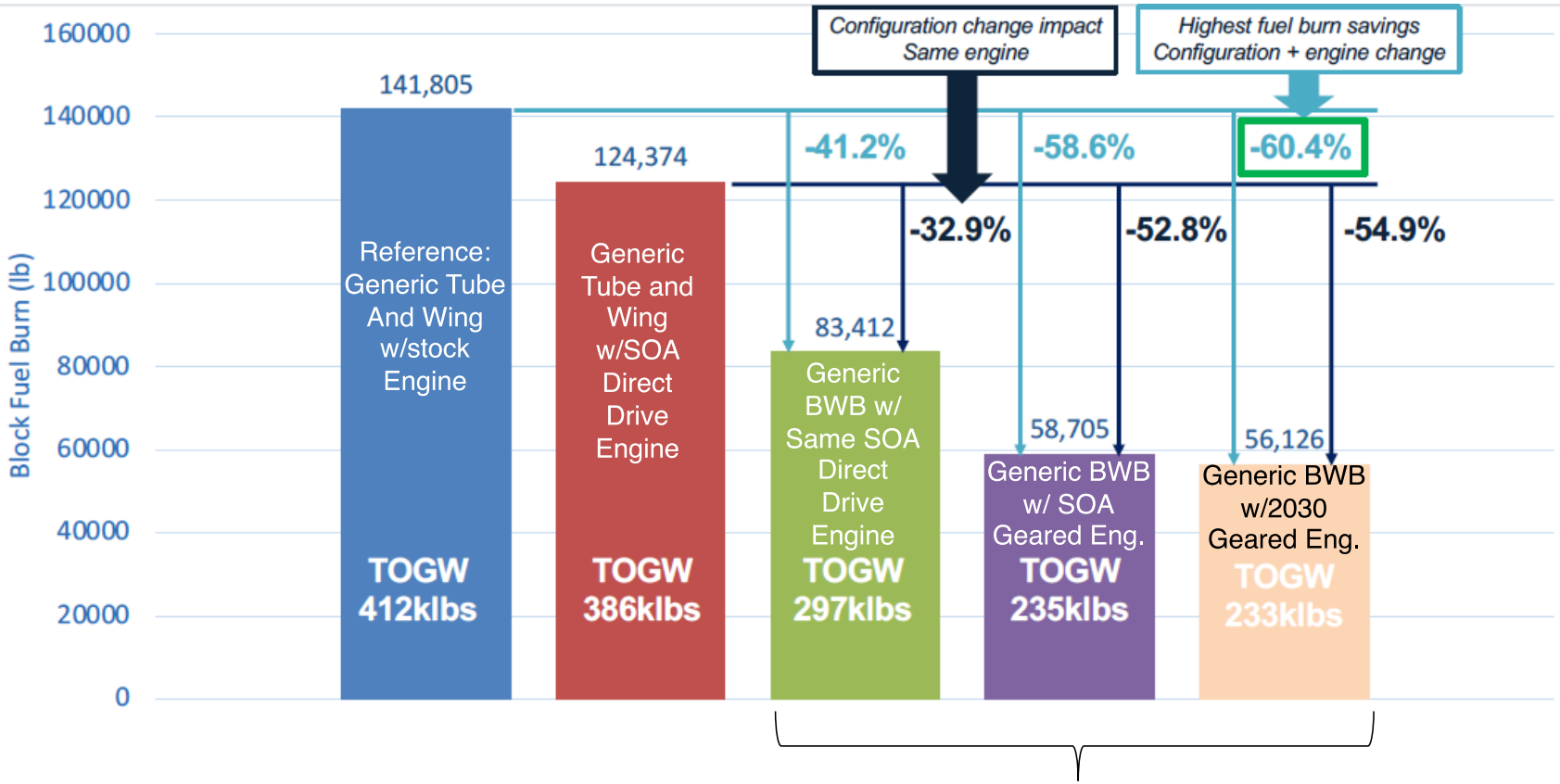
History of BWB Research and Development



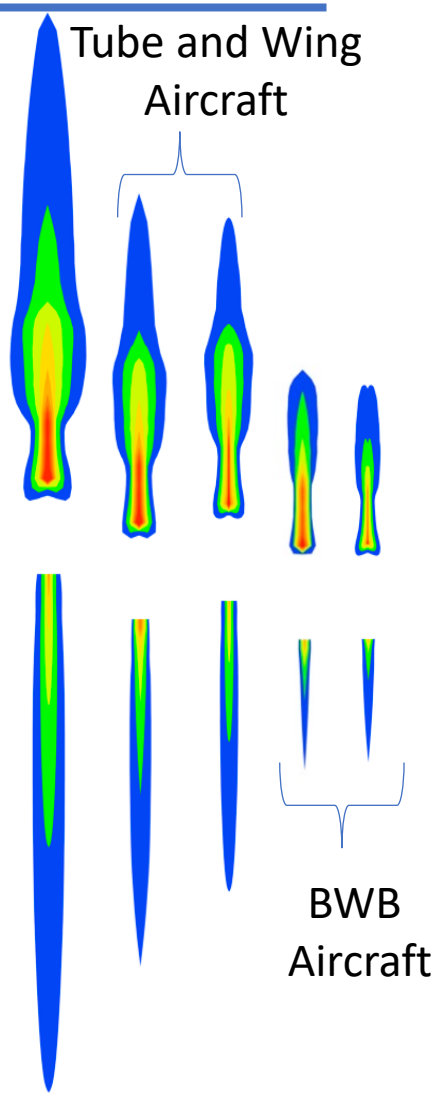
NASA has invested roughly $500M to mature the modern BWB technology and demonstrate viability with proven benefits; AFRL has also invested $10's of millions

Potential BWB Airliner Impacts

Small Twin Aisle Seat Class Mission Analysis – NASA/Georgia Tech (2022)
Generic BWB versus Generic Tube and Wing



Damage Arresting Composites Technology Maturation Report (2022)
Independent Assessments of Recent BWB Commercialization Efforts



Noise Footprint

Potential BWB Tanker/Airlift Impacts

- Fuel-constrained wars will reward fuel efficiency → improved energy intensity
  - Reduces sorties cancelled due to lack of fuel
  - Enables longer-range sorties → increases basing options
  - Basing further away reduces attrition rates
  - Reduces logistics requirements, or increases capability with same log requirements

- Summary of BWB advantages (767-size class, tanker application):
  - +30% aerodynamic efficiency over KC-46 (propulsion efficiency gains are additive)
    - +94% offload capability at 2,500nmi radius
    - +97% radius at 50,000 lbs offload
  - Strat Air applications: increased volumetric efficiency improves cargo productivity (ton-miles per pound of fuel), a key metric in energy intensity of airlift operations

Overarching Objectives of the BWB Project

Stimulate widespread adoption of BWB technology in commercial and military markets

Develop public/private partnership to enable rapid BWB technology adoption

Build and fly a full-scale BWB demonstrator by 2027

Flight demonstrate 30-percent aerodynamic efficiency gain over legacy Tube and Wing commercial and military products

Approach

Utilize a Commercial Solutions Offering-based agreement method

Defense Innovation Unit chosen as the agreement agent

Initial effort was monitored by a small gov’t team representing key DoD and Air Force stakeholders

A bigger team was developed/deployed to lead the effort beyond conceptual design phase

Key milestones to date

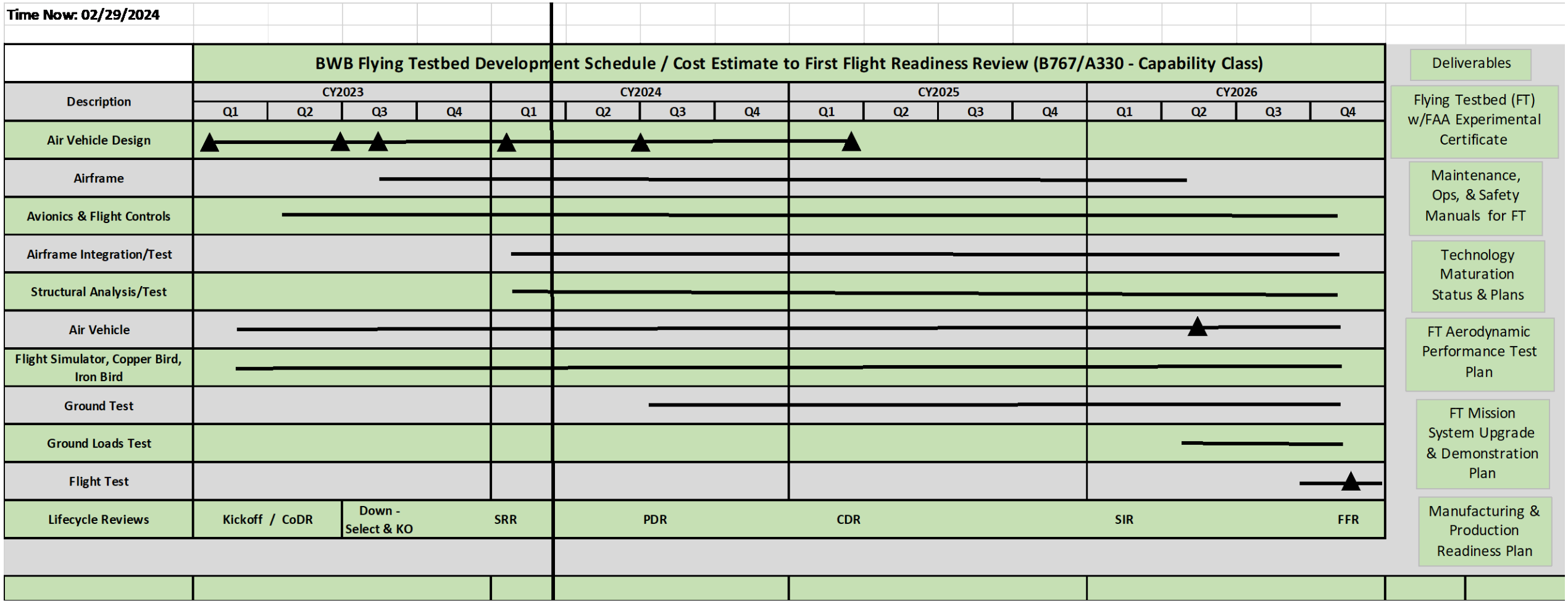
Conducted under government contract

• Area of Interest developed and posted	June – July 2022
• Robust set of responses received and evaluated	Aug 2022
• Agreement development and concept design phase	Sept – Apr 2023
• Evaluation and down selection	May – Aug 2023

Conducted under public/private partnership

• Announcement and kickoff meeting at JetZero	August 15, 2023
• System Requirements Review at JetZero	January 28, 2024

Overview of project schedule beyond SRR



Key technical demonstrations

- Design tools to enable rapid and accurate design iterations
- Outer mold line to enable high aerodynamic efficiency gains
- Landing gear system design / test to enable single deck design
- System of ground laboratories to enable rapid system design / test
- Cabin layout to enable dramatically improved customer experience and customer acceptance
- Parallel manufacturing and factory developments to enable rapid transition to low-rate production (by 2030)

BWB - A clear path to zero carbon emissions

Flight Demonstration Objectives

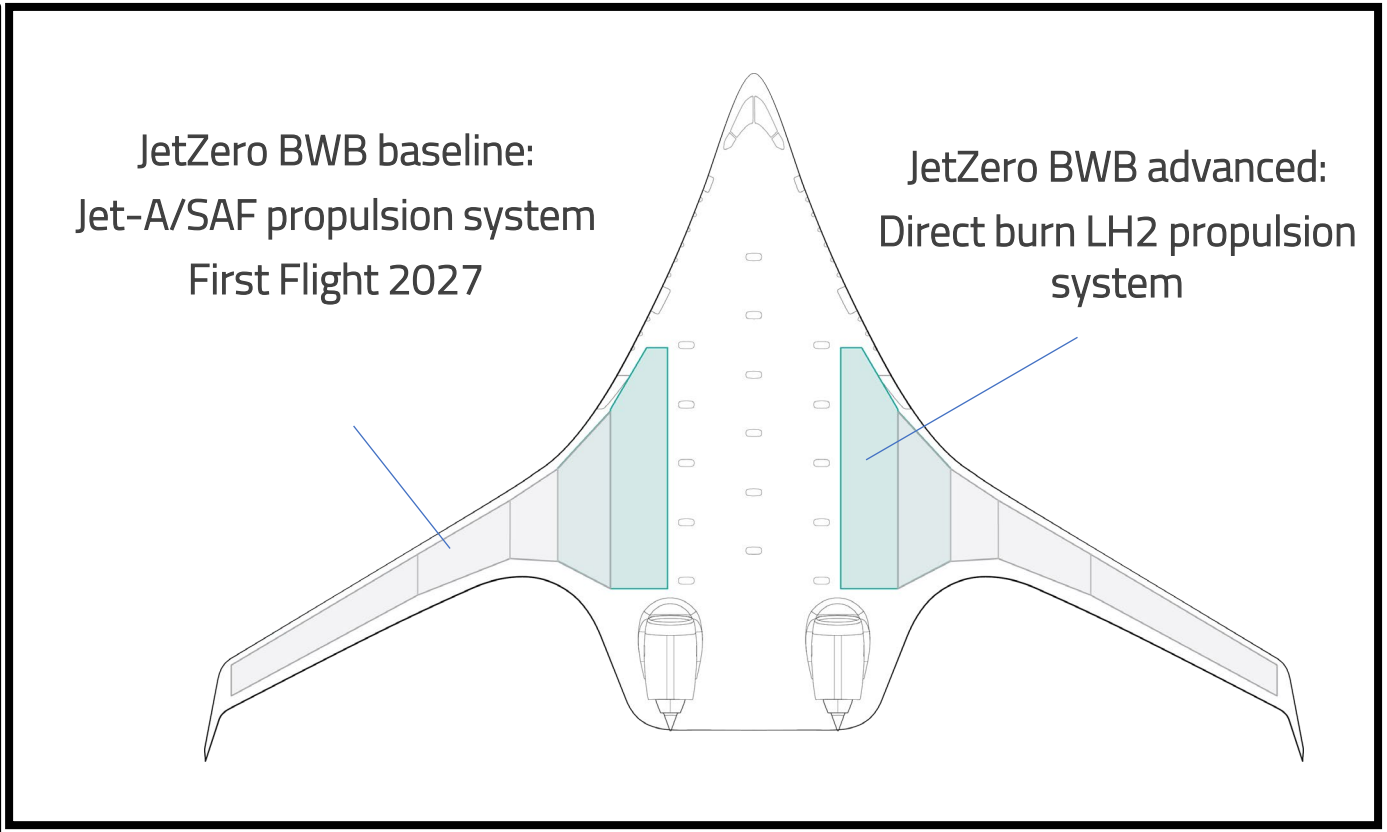
- Flight demonstrate full scale blended wing body
- Demonstrate COTS propulsion system integration with novel airframe configuration
- Measure and quantify aerodynamic efficiency gain over SOA tube and wing products

In parallel, mature production readiness

- Advance manufacturing processes

Relevance to Market

- Advance TRL/MRL/SRL a for family of passenger, cargo & tanker products
- Encourage additional innovations to enable zero carbon emissions for long range flight



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Questions

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