

BOOM SUPERSONIC ANNOUNCES SIGNIFICANT OVERTURE PROGRAM ADVANCES

News / Manufacturer



At Paris Air Show Boom Supersonic announced significant advances on Overture, its sustainable supersonic aircraft, including milestones for its Symphony engine. Overture will fly at twice the speed of today's airliners and is designed to run on 100% sustainable aviation fuel. Boom signed structural supplier agreements with Aernnova for Overture's wings, Leonardo for the fuselage and wing box, and Aciturri for the empennage. The three aerospace leaders join Boom's growing network of global suppliers which includes Safran Landing Systems, Eaton, Collins Aerospace, Flight Safety International, FTT, GE Additive, and StandardAero. Boom also revealed today, for the first time, Overture's full systems configuration as the aircraft program advances toward production.

Blake Scholl, founder and CEO of Boom Supersonic, commented: "We are incredibly proud of the progress with Overture and Symphony from our global team of partners and suppliers who continue to operate at an accelerated pace toward the future of sustainable supersonic flight."

Boom' commercial order book stands at 130 aircraft, including both orders and pre-orders from major airlines such as United, American and Japan Airlines. Boom continues to advance with Northrop Grumman on a defense variant of Overture that will expand the total addressable market for supersonic aircraft.

Overture systems configuration revealed

Boom also revealed a comprehensive look at the systems configuration for Overture. The schematics shared today highlight key systems inside Overture, including avionics, flight controls, hydraulics, fuel systems and landing gear—all designed and developed for optimal performance, efficiency, and safety.

Among the major systems highlighted, Overture's fuel systems provide center of gravity control during subsonic and supersonic operations, enable sustainable aviation fuel compatibility and supply fuel to the engines. Triple redundant hydraulic systems provide reliable power for flight controls and mechanical systems, and Overture's landing gear is compatible with international airport runways and taxiways—designed for takeoff and landing on over 600 routes around the world.

The all-composite aerostructures support Overture's contoured fuselage and gull wings for enhanced aerodynamic efficiency. Key systems leverage certified technologies, reducing program risk and maturing Overture through aircraft systems development. The company is on track to secure suppliers for the majority of major systems by the end of this year.

Aernnova selected as Overture wing supplier

Spain-based Aernnova, one of the world's largest tier-one aerospace suppliers, will design and develop the wing structure for Overture. Overture's gull wings are shaped to enhance supersonic performance as well as improve subsonic and transonic handling. The wings are structurally thinner than typical subsonic wings to reduce drag, allowing the aircraft to efficiently travel at higher speeds.

"Overture will be an extraordinary opportunity to provide our expertise in the design and development of aerostructures for the first sustainable supersonic aircraft," said Ricardo Chocarro, CEO of Aernnova. "We're thrilled to partner with Boom as its wing supplier and be part of the world-class network of suppliers supporting Overture's production."

Leonardo selected as primary engineering lead for fuselage structural components integration, design and build partner for fuselage sections

With long-standing leadership in structural composite components for commercial aircraft, Italian company Leonardo will support Overture as the primary engineering lead for major fuselage structural components. Leonardo was also selected as design and build partner for two major fuselage sections of Overture, including the wingbox. The proprietary design of Overture's contoured fuselage has a larger diameter toward the front of the aircraft and a smaller diameter toward the rear. Boom applied this design technique to minimize wave-drag and maximize fuel efficiency at supersonic speeds.

"Leonardo has played an integral role in shaping the success and future of the aviation industry," said Stefano Bortoli, Leonardo's Aerostructures Division Managing Director. "We will build on that tradition and believe in Boom's continued, and impressive, progress toward bringing sustainable supersonic air travel to the skies."

Aciturri selected as Overture empennage supplier

Boom selected Spain-based Aciturri, a tier-one leader across aerostructures and aeroengines components, to design and develop the empennage for Overture. Overture's empennage features

a differentiated horizontal stabilizer that allows for greater control at subsonic speeds—particularly takeoff and landing.

“Overture is a generation-defining project,” said Alvaro Fernandez Baragaño, CEO of Aciturri. “We are bringing decades of aerostructures and aeroengines expertise to the future of sustainable supersonic flight with Boom.”

Symphony engine hits new program milestones

Boom and engine design partner FTT continue to achieve key milestones across the design and development of Symphony. First, Boom shared the engine architecture and additional key specifications for Symphony. Reflecting this progress, Boom unveiled its 3D-printed 1/10 scale design model for Symphony at the Paris Air Show. The bespoke engine is optimized for sustainable supersonic flight and is designed to deliver 25% more time on wing and provide 10% operating cost savings to airline customers.

Second, Boom announced today an expanded partnership with FTT to assemble the initial production units for ground test, flight test, and certification. Boom will leverage FTT’s considerable experience with supersonic engines, ensuring seamless continuity as Symphony transitions from design to production. Boom has identified Jupiter, Florida as the base for initial production.

“We believe there is large market potential for both Overture and Symphony, which will be transformational for the future of supersonic travel,” said Stacey Rock, President of Florida Turbine Technologies. “The Symphony engineering team includes many of the best and most experienced engine designers on the planet, and we’re thrilled to expand our role to include the initial assembly of engines for ground test, flight test, and certification.”

Symphony’s technical specifications include:

- Two-spool, medium-bypass turbofan engine, no afterburner
- 35,000 lb thrust
- Optimized for 100% sustainable aviation fuel (SAF)
- Single-stage 72” fan
- Air-cooled, multi-stage turbine
- Additive manufacturing enables lightweight, low part count, and reduced assembly costs
- FAA Part 33 and EASA CS 33 compliant
- ICAO Chapter 14 noise levels
- Low-pressure compressor stages: 3
- High-pressure compressor stages: 6
- High-pressure turbine stages: 1
- Low-pressure turbine stages: 3

“Symphony is the key that will unlock Overture and make it a commercial and enduring success,” said Ric Parker, Chair of Singapore Aerospace Programme & former Rolls-Royce CTO. “Boom’s strategy with Symphony is very innovative. Their approach makes it compelling for top-tier suppliers to seek the opportunity to contribute their expertise and capabilities to this exciting, breakthrough, supersonic engine program.”

Boom and Northrop Grumman progress collaboration

Today, Boom announced it will support Northrop Grumman on a NASA contract to deliver solutions for the “High-Speed Endo-atmospheric Commercial Vehicle Conceptual Design Study

and Technology Roadmaps Development” program.

The study for future research and development will identify technologies to continue the advancement of commercial supersonic flight efficiency. Initial technologies to be explored include mechanisms to increase aircraft efficiency and reduce emissions, net CO2 reduction, net non-CO2 reduction, and climate feedback loops.

Boom and Northrop Grumman are also continuing collaboration on a special mission variant of Overture, after ongoing identification and investigation of use cases that will benefit the Department of Defense.

20 JUNE 2023

ARTICLE LINK:

<https://virginia.50skyshades.com/news/manufacturer/boom-supersonic-announces-significant-overture-program-advances>