



**7<sup>th</sup> HSAT-AIAA WORKSHOP WELCOME MESSAGE FROM THE CHAIRMAN:**

“Welcome to the 7<sup>th</sup> edition of the High-Speed Aerospace Transportation Workshop (HSAT). This very unique aerospace industry event is action packed, interactive, insightful and results producing for the High-Speed Flight (HSF) Industry.

This year, HSAT is co-sponsored by the American Institute of Aeronautics and Astronautics (AIAA) and hosts the leadership and members of its HSF Task Force. The 7<sup>th</sup> Edition is laser focused on the aerospace industry segments enabling Point to Point (P2P) transportation of people and goods across the planet. HSAT is very unique in the aerospace industry as it covers flight missions **across all high-speed flight regimes: transonic, supersonic, hypersonic, and sub-orbital<sup>1</sup>.**

The current state of affairs of the aerospace transportation industry, we believe favor the demonstration of supersonic, hypersonic and orbital point to point high speed flight. But beware of headwinds as well, as they can be stiff, intense and stubborn, as many of you know.

The HSAT workshop’s deliverables are action ready solutions to the most wicked and stubborn barriers and problems that have kept humanity under what the HSF group calls: the tyranny of Mach 1, that has lasted for over six decades, except for the small relief provided by three decades of Concorde limited commercial supersonic (~Mach 2.0) service (1973-2003).

I am honored to welcome you onboard, either for the first time, or again, and I am proud and excited to also collaborate with the Global Spaceport Alliance (GSA) and all of you on this hands-on group meeting focused exclusively on enabling the world to fly faster and to do so safely, reliably, and profitably at all speed realms close to and faster than Mach 1. For situational awareness of existing technology and markets “realities” today, we include the high-speed transonic industry, represented by certified commercial aircraft capable of long-range cruise at speeds exceeding Mach .90.

The HSAT 7<sup>th</sup> Edition will host over one hundred influential HSF stakeholders, thought-leaders, opinion makers, market makers, financiers, regulators, legislators, academics, early adopters and the best experts, innovators, operators and

leaders in the high-speed flight industry in the USA and the European Union, and the UK, in all its key disciplines.

This year’s HSAT will respond to recent US Congress interest in integrating both supersonic and hypersonic commercial flight into the National Airspace. After decades of technology advances and tireless efforts the HSF industry evolution is firmly a part of the FAA Reauthorization Bill of 2024 (H. R. 3935), we will delve into it and assist public and private groups to deliver the results, insights and way forward that the FAA is required to. HSAT’s solutions to the most pressing, stubborn and demanding challenges will contribute to enable the multi trillion-dollar high-speed flight industry in the years and decades to come.

HSAT, interactive format is known to have elicited candid debate and ideas’ exchanges that have yielded tangible and committed actions by working and task groups to achieve practical solutions, such as White Papers, regulatory-legislative level Observations-Findings and Recommendations (OFR’s). We seek to find consensus for sound standards, best practices and initiatives that appeal to key markets, users, producers and general interest stakeholders. Solutions that are financially and economically sound for all HSF stakeholders in the short, medium and long runs.

Technically, we will cover the most relevant areas of vehicles, including powerplants, vehicles, systems, adjacent technologies, airspace and infrastructure development. The HSAT Matrix that allows us to analyze challenges, barriers, and opportunities and rewards across all high-speed realms exploiting synergies and cross-references and thus, avoiding repetition and duplication of efforts.

Safety is first and foremost, always. HSF’s proposes practices and methods to achieve levels of safety and sustainability equivalent to those of subsonic aviation, throughout the vehicle’s innovation cycles, from experimental to fully certified. HSAT promotes the development and use of industry voluntary consensus standards and practices required for the industry to be scalable and interoperable globally.

The HSAT “issues” Matrix (see next page) addresses the HSAT industry key conditions, public responses to surveys and

<sup>1</sup> FAA-IFG *Suborbital trajectory* occurs when a spacecraft reaches space, but its velocity is such that it cannot achieve a full orbit, or the intentional flight path of a launch vehicle, re-

entry vehicle, or any portion thereof, whose vacuum instantaneous impact point does not leave the surface of the Earth. <https://www.ecfr.gov/current/title-14/chapter-III/subchapter-A/part-401/section-401.7>





adjacencies with military-defense (operations other than war), government, and NGOs, as well as related humanitarian and relief operations, and their regulatory and compliance frameworks, challenges, opportunities, and markets.

The 7<sup>th</sup> edition will leverage the workshop previous six editions. Last year identified tools and channels for the public to clamor for and to “shout politely” to enable high speed flights for all, to make the world smaller, more accessible, with the aim of being able to travel anywhere on Earth and back, within a business day. We placed an intense focus on creating the conditions necessary to enroll, galvanize and engage the “mainstream” public to “demand politely,” yet assertively, the advent of high-speed flight for all. We believe that the Congressional push to include HSF in the FAA reauthorization responds in part to our efforts, and the hard earned “social license” from the public, for industry to provide the means to “fly faster”. Yet, we need to persevere and sustain the momentum built, congruent with societal support frameworks.

Business, leisure, government, military and humanitarian-relief missions are ready for high-speed flight with synergies leveraging the budgets, financial returns and economic development gains for the **commercial/civil and military/defense** industrial complexes. And importantly, relieving the general public of torturous commercial long and ultra long flight times that sometimes exceed twenty hours aloft to cover 7-8,000 miles nonstop.

This year we are including relevant and exciting new tracks to the HSF world. For instance, Aerospace medicine, human factors, health-fitness for flight for crew, passengers, occupants and even the support crews on the ground, and uninvolved public. We will include Artificial Intelligence (AI), Machine Learning (ML) and Computing advances (i.e. quantum computing) into technology conversations.

I am very excited to add high-altitude and space weather considerations for the air and space traffic management, safety, reliability and efficiency of HS vehicles, using new and innovative powerplants and propellants and fuels.

Moreover, we are proud that all of our efforts and gains at the workshop will be augmented by the ongoing and future collaboration between the High-Speed Flight-FastForward group with:

- The American Institute of Aeronautics and Astronautics (AIAA) our Co-Branding Partner.

- The Global Spaceport Alliance (GSA) as a member of its Point-to-Point Transportation Working Group
- National Aerospace and Aeronautics Administration (NASA)
- Boeing Research and Technology
- The Commercial Spaceflight Federation (CSF), as a Research and Education Member
- The US DOD Space Force Association (SFA) and related stakeholders
- The Joint Hypersonics Office-University Consortium of Applied Hypersonics (JHTO-UCAH)
- ASTM F 47 Commercial SpaceFlight Standards Committee
- SAE Supersonic and Hypersonic Aircraft Steering Committee
- AIAA Hypersonic and Reusable Launch Vehicles Working Groups
- TRB Committees including the New Entrants in the NAS Working Group

The ultimate objective is to “move” the markets and public to decisively ask their airlines, regulators, politicians and technologists to enable safe, efficient, profitable, and scalable high-speed aerospace transportation for the benefit of all. What we call the “one day world,” “a smaller world.” A World that we believe will be better-connected, with fast, safe both, dependable and environmentally friendly flight through the atmosphere and as well as through space.

Again, it is my honor to Chair this event together with such distinguished, diverse, talented and forward-looking High Speed Aerospace Transportation industry leaders.

We look forward to your participation, to being a part of our work-task groups and to adding to the HSAT Issues-Work-Matrix that we have compiled in the preceding five editions.

**Oscar S. Garcia, Chairman & CEO**



**InterFlight Global Corporation**  
**High Speed Flight-Fast Forward Group**  
[oscardgarcia@interflightglobal.com](mailto:oscardgarcia@interflightglobal.com)





**HSAT AIAA 7<sup>TH</sup> EDITION ISSUES MATRIX**

YELLOW CELLS SHOW DISCUSSION AREAS-ACTION ITEMS FOR 2025		NEW AREAS 2024							
HIGH SPEED AEROSPACE TRANSPORTATION WORKSHOP MATRIX AREAS. INDUSTRY AREAS OF INTEREST AND DEVELOPMENT		SPEED SEGMENTS TRACKS	HSAT 2024 MASTER AREAS OF INTEREST	HSAT 2024 DISCUSSIONS-PARTICIPANTS	< MACH 1.0 TRANSONIC	MACH 1.0- 4.0 SUPERSONIC	MACH 5.0-10.0 HYPERSONIC	MACH 10.0+ SUBORBITAL	MACH 20.0+ ORBITAL
1	RESEARCH & DEVELOPMENT	1.1 CONOPS							
		1.2 MISSIONS							
		1.3 MARKETS AND BUSINESS MODELS							
2	DESIGN & ENGINEERING-INNOVATION-TECHNOLOGY	2.1 AERO/SPACE DYNAMICS							
		2.2 STRUCTURES							
		2.3 PROPULSION							
		2.4 GUIDANCE							
		2.5 SAFETY SYSTEMS							
		2.6 SYSTEMS-INTEGRATION							
		2.7 AI, ML, QUANTUM COMPUTING ET AL							
3	MANUFACTURING & ASSEMBLY	3.1 MATERIALS							
		3.2 SUPPLY CHAIN							
		3.3 CERTIFICATION							
4	OPERATIONS	4.1 FLIGHT OPS							
		4.2 GROUND OPS							
		4.3 PERIPHERAL OPS							
		4.4 INTEGRATION (NAS)							
5	HUMAN FACTORS-OPERATIONS	5.1 CREW							
		5.2 OCCUPANTS/PAX							
		5.3 TRAINING							
		5.3 TRAFFIC MGMT							
6	HUMAN FACTORS-AEROSPACE MEDICINE	6.1 FLIGHT CREW							
		6.2 GROUND CREW							
		6.3 OCCUPANTS/PASSENGERS							
		6.4 PUBLIC							
7	SAFETY & COMPLIANCE	7.1 LICENSING							
		7.2 CERTIFICATION							
		7.3 STANDARDS							
		7.4 SAFETY MANAGEMENT							
8	LEGAL-LEGISLATION-INSURANCE	8.1 ENVIRONMENTAL-SUSTAINABILITY							
		8.2 LEGAL							
		8.3 INTERNATIONAL							
		8.4 INSURANCE-LEGAL							
		8.5 POLICY-REGULATORY INTERFACES							
9	FINANCIAL,ECONOMIC, MARKETS & BUSINESS	9.1 FUNDING							
		9.2 MARKETS							
		9.3 BUSINESS/MISSION CASE							
		9.4 PUBLIC DEMAND AND ADVOCACY							
10	INFRASTRUCTURE-POWERPLANTS	9.1 AIR/SPACEPORTS							
		9.2 AIRSPACE							
		9.3 PROPELLANTS-FUELS AND POWER							
11	HUMAN RESOURCES-PERSONNEL-EDUCATION	10.1 INNOVATION							
		10.2 EDUCATION							
		10.3 TRAINING							
		10.4 CERTIFICATION							
		10.5 INCLUSION AND DIVERSITY							
12	WEATHER AND NATURAL PHENOMENA	12.1 HIGH ALTITUDE ATMOSPHERIC WEATHER							
		12.2 SPACE WEATHER							

Your inputs and takeaways here



# HIGH SPEED.AERO SPACE TRANSPORTATION 7th EDITION

## WORKSHOP

Transonic  
Supersonic  
Hypersonic  
Orbital



In collaboration with:  
the American Institute of Aeronautics and Astronautics



[www.hsat.highspeedflight.com](http://www.hsat.highspeedflight.com)

**November 14 - 15, 2024**  
**Midland, Texas**

