



High Speed Aerospace Transportation (HSAT) Workshop 2019

Second Edition

Setting Industry Standards for Safety, Compliance and Profitability

Midland Air and Spaceport

Midland, Texas

Thursday, 12th - Friday, 13th of December 2019

MESSAGE FROM THE WORKSHOP CHAIR

"Welcome to the second High-Speed Aerospace Transportation Workshop (HSAT); it is my honor to again Chair this exciting, diverse and forward-looking gathering of industry leaders. We can be proud to be the first and only group focusing exclusively on enabling the world to fly faster, safely, reliably and economically.

This workshop gathers some of the best experts in most disciplines in the industry, intent to turn basic and applied science and technology into concepts of operations and viable high-speed atmospheric and space bound vehicles.

On this second edition, we will focus on the standards needed for the safe and profitable development of the industry, focused on each high-speed segment from high transonic and faster.

Our work is again trailblazing and unique in the sense that it inquiries into both atmospheric and space flight regimes.

As last year, each speed segment will be evaluated through case studies of real business and technology cases and across most relevant issues and topics included in the ISSUES and SWOT-Matrix we compiled last year; from CONOPS, through design and engineering all the way to economic, regulatory and operational feasibility for uses including commercial, military, government and NGO's. This second edition is setting up to be even more relevant, useful and effective for the High-Speed Flight industry"

Oscar S. Garcia, Chairman & CEO InterFlight Global Corporation-High Speed Flight

MESSAGE FROM THE WORKSHOP HOSTS/SPONSORS

Welcome to Midland, Texas and the Midland International Air and Space Port Business Park.

The City of Midland and the Midland Development Corporation are honoured to host this second inaugural High-Speed Aerospace Transportation workshop.

We welcome the opportunity to build upon our belief that high-speed aerospace transportation is the wave of the future, and to bring like minds together with the vision of high-speed aviation for the benefit of all in the USA and globally.

Moreover, we will introduce you to the business opportunities present in the City of Midland and its world's only commercial airport and spaceport to help make your future high-speed aviation and space ventures successful.

We offer land available at an FAA licensed Air and Spaceport to established aerospace companies as well as entrepreneurial aerospace companies. Midland is gifted with airspace and weather conditions perfectly fit for high speed flight R&D, Testing, Evaluation and Training.

UTPB Colleges of Engineering and Business, and Midland's local technical and engineering colleges and universities are continuously evolving their industry relationships, curriculums and training programs to provide you with qualified local apprentices, technicians, engineers and researchers.

The MDC also owns and controls over 350 acres of available land for new office, manufacturing and research and development needs.

We boast a workforce with over two times the national average of engineers per capita as well as some of the nation's best fabricators. In addition, our local taxes are among the lowest in the State of Texas.

Tim Danielson, Director Business Development, Midland Development Corporation



Program

Wednesday Dec 11th (optional)

9:00-17:00 Optional One on One Familiarization Visits to the Midland Air and Spaceport Business Park's facilities, Midland Altitude Chambers Complex (MACC), UTPB Campus visit and Midland Community College-technical training centers and resources, tailored to each visitors' objectives and goals.

Please, contact yvettegarcia@interflightglobal.com for further details and a personalized itinerary

18:30-20:00 Welcome to the Workshop Cocktail and Networking Session at the Residence Inn Hotel Midland 5509 Deauville Boulevard, Midland, Texas 79706

Day 1- Thursday December 12th, 2019

08.00 Refreshments and registration

➤ **Session One: Welcome to the HSAT workshop**

09.00 Workshop Chairman's opening remarks
Oscar S. Garcia, Chairman and CEO, InterFlight Global Corporation and Fast Forward Project

09.15 Workshop Sponsors and Hosts' welcome to the workshop:

John Trischitti III, Midland Development Corporation Executive Director

Brent Hilliard, Midland Development Corporation, Chairman of the Board

Dr. George Nnanna, Dean & Professor, UTPB College of Engineering

Dr. Steven Beach, Dean, UTPB College of Business

09:25 Keynote Speaker Remarks:

Spaceport and High-Speed Vehicles
Regulatory and Policy Considerations
Keynote Presenter: Dr. George Nield, President Commercial Space Technologies-Former FAA-AST Associate Administrator

➤ **Session Two: Into a Decisive Decade for High-Speed Aerospace Transportation**

09.40 Into the High-Speed Point to Point Air and Space Transportation Era-Key research Areas

Dr. Ken Davidian, Director of Research, FAA AST Center of Excellence for Commercial Space Transportation (COE-CST)

➤ **Session Three: Fast Transonics**

Presenter: Oscar S. Garcia, Chair High Speed Flight-FastForward

9:55 Industry State of the Art- High Speed/ Long-Range Aircraft

10:00 Case Study: The Fastest Commercial Flight Around the World: One More Orbit Presentation

Captain Hamish Harding, Mission Director G-650 World Record Breaking Flight

10:40 Q&A-Next Steps for Transonics-Can we push through Mach 1?

10:45 Coffee Break

➤ **Session Four: Supersonics and Hypersonics**

Regulations, Safety and Compliance Focus

Presenter: John Olds, CEO Spaceworks Enterprises



11:00 Research and Testing Above Mach 1

Case Study: Supersonic Aircraft Testing, Certification and Operations in the 2020's

FAA, EASA and ICAO Focus

11:45 Q&A-Next Steps

12:00 Lunch

**Keynote Address: Midland Development Corporation-
Leadership TBD**

➤ **Session Five: Airports and Spaceports-
Integrating the High-Speed Air and
Spaceflight**

**Presenter: Dr. George Nield, Chair Global Spaceport
Alliance**

**FAA-AST-NEPA Environmental Perspectives- Elyse
Mize, Kimley Horn Spaceport Licensing Practice**

13:00 Best Practices and Standards for Commercial
Airports and Spaceports and Flight Corridors

14:15 Q&A Next Steps

Break

➤ **Session Six: Suborbital and Orbital**

**Presenter: Jess Sponable, Sr. Researcher, The
Aerospace Corp**

14:30 Suborbital and Orbital Vehicles
Case Study: Point to Point

15:15 Q&A-Next Steps

15:30 Break

➤ **Session Seven: Standards for Safety,
Compliance and Profitability**

**Presenters: Len Morrissey, MPA, ASTM International,
Oscar S. Garcia, Chair High Speed Flight-Fast Forward
Project**

15:45 Exploratory and Pre-Planning Meeting for an
ASTM Committee on Supersonic and Hypersonic Flight

17:45 Closing Remarks from the Chair-Day 2 preview

18:00 Cocktail-Appetizers Reception

Enroute to Point to Point High Speed Spaceflight

**Eric Stallmer, President, Commercial Spaceflight
Federation**

**Oscar S. Garcia, Chairman and CEO, High Speed Flight
Group-FastForward Project**



Day 2- Friday December 13th, 2019

08.00 Refreshments and registration

➤ Session One: Spaceflight Standards for Safety and Profitability

Presenters: Len Morrisey, Director, global Business Development, MPA, ASTM International, Kristy Straiton, MPA, Manager Technical Committees

08:30 Commercial Spaceflight Industry Consensus Standards ASTM F 47 Committee- Point to Point Spaceflight Focus

➤ Session Two: HSAT Workshop Conclusions and Next Steps

Presenters: Oscar Garcia, Dr. George Nield, Dr. John Olds, Jess Sponable - Panel

9:45 Workshop Takeaways – Actions-2020 Planning

- **Themes Organization**
- **Groups**
- **Meetings**
- **Open Discussion**

10:00 Break

➤ Session Three: FastForward Project Meeting

Presenter: Oscar S. Garcia, Chair High Speed Flight-FastForward

10:15 Members Call In

10:30 Presentation:

Keynote Speaker: Dr. Adam Dissel, CEO Reaction Engines, Inc

Reaction Engines Supersonic, Hypersonic and Space Propulsion Technologies and Program Briefings

11:15 Q&A

11:30 FastForward Planning 2020

11:45 Adjourn

12:00 Lunch-Boxed

➤ Session Four (optional):

Midland Development Corporation (MDC) Visit to Facilities Air and Spaceport

Presenter: Tim Danielson, MDC Business Development Director

Visit and demo of the Midland Altitude Chambers Complex (MACC)

13:00 MDC One on One Discussions



HSAT MATRIX CHALLENGES AND OPPORTUNITIES

For a real-time/updated version of the HSAT Matrix Issues and Leadership please go to

<https://d.docs.live.net/880bef6dcd556ded/2019/HSAT/WORKSHOP%20HSAT/Program/2019%20WORKSHOP%20MATRIX.xlsx>

HIGH SPEED AEROSPACE TRANSPORTATION WORKSHOP MATRIX				LEADS		< MACH 1.0 TRANSONIC	MACH 1.0- 5.0 SUPERSONIC	MACH 5.0-10.0 HYPERSONIC	MACH 10.0+ SUBORBITAL	MACH 20.0+ ORBITAL
AREAS OF INTEREST AND DEVELOPMENT				SPEED SEGMENTS TRACKS						
1	RESEARCH & DEVELOPMENT	1.1 CONOPS		RICHARD KOE CAPT. HAMISH HARDING	WINGX SOFTWARE M.90+ FLIGHT TRACKING HIGH SPEED TRANSONIC FLIGHT ISSUES					
		1.2 MISSIONS								
		1.3 MARKETS								
2	DESIGN & ENGINEERING	2.1 AERO/SPACE DYNAMICS		OSCAR GARCIA DALE AMON, JMI ELYSE MIZE	WINGX SOFTWARE M.90+ FLIGHT TRACKING HIGH SPEED TRANSONIC FLIGHT ISSUES					
		2.2 STRUCTURES								
		2.3 PROPULSION								
		2.4 GUIDANCE								
		2.5 SYSTEMS-INTEGRATION								
3	MANUFACTURING & ASSEMBLY	3.1 MATERIALS		RICHARD KOE CAPT. HAMISH HARDING	WINGX SOFTWARE M.90+ FLIGHT TRACKING HIGH SPEED TRANSONIC FLIGHT ISSUES					
		3.2 SUPPLY CHAIN								
		3.3 CERTIFICATION								
4	OPERATIONS	4.1 FLIGHT		RICHARD KOE CAPT. HAMISH HARDING	WINGX SOFTWARE M.90+ FLIGHT TRACKING HIGH SPEED TRANSONIC FLIGHT ISSUES					
		4.2 GROUND								
		4.3 INTEGRATION (NAS)								
5	HUMAN FACTORS-OPERATIONS	5.1 CREW		OSCAR GARCIA DALE AMON, JMI ELYSE MIZE	WINGX SOFTWARE M.90+ FLIGHT TRACKING HIGH SPEED TRANSONIC FLIGHT ISSUES					
		5.2 OCCUPANTS/PAX								
		5.3 TRAFFIC MGMT								
6	SAFETY AND COMPLIANCE	6.1 LICENSING		OSCAR GARCIA DALE AMON, JMI ELYSE MIZE	WINGX SOFTWARE M.90+ FLIGHT TRACKING HIGH SPEED TRANSONIC FLIGHT ISSUES					
		6.2 CERTIFICATION								
		6.3 STANDARDS								
		6.4 SAFETY MANAGEMENT								
7	LEGAL-LEGISLATION-INSURANCE	7.1 ENVIRO		OSCAR GARCIA DALE AMON, JMI ELYSE MIZE	WINGX SOFTWARE M.90+ FLIGHT TRACKING HIGH SPEED TRANSONIC FLIGHT ISSUES					
		7.2 LEGAL								
		7.3 INTERNATIONAL								
8	ECONOMIC AND BUSINESS	7.4 INSURANCE		JACOB TEWES-KUTAK ROCK	WINGX SOFTWARE M.90+ FLIGHT TRACKING HIGH SPEED TRANSONIC FLIGHT ISSUES					
		8.1 FUNDING								
		8.2 MARKETS								
9	INFRASTRUCTURE	8.3 BUSINESS/MISSION CASE		RICHARD KOE MATTEO MIDDEI BRIAN GULLIVER	WINGX SOFTWARE M.90+ FLIGHT TRACKING HIGH SPEED TRANSONIC FLIGHT ISSUES					
		9.1 AIR/SPACEPORTS								
		9.2 AIRSPACE								
10	HUMAN RESOURCES-PERSONNEL-EDUCATION	9.3 ENVIRONMENTAL		HR ZUCKER	WINGX SOFTWARE M.90+ FLIGHT TRACKING HIGH SPEED TRANSONIC FLIGHT ISSUES					
		10.1 INNOVATION								
		10.2 EDUCATION								
		10.3 TRAINING								
		10.4 CERTIFICATION								