

**NASA/DoD**  
**National Wind Tunnel Alliance**  
**(NwTA)**

**CY 98 Report**

# Alliance Membership

- **DoD**
  - **AEDC: Mr. Tom Best\***
- **NASA**
  - **LaRC: Dr. Ajay Kumar**
  - **LeRC: Mr. John Schaeffer**
  - **ARC: Ms. Nancy Bingham**
  - **FGDO: Mr. Blair Gloss\***

\* **Co-Chairmen**

# Alliance Concept of Operations

- Periodic Meetings are held with the alliance members and other support personnel participating
  - Meetings are rotated among the locations
  - Teleconferences sometimes substitute
- Special Studies get assigned at meetings and teams work on those to report findings to the Alliance

# Alliance Implementation Status

## RESPONSIBILITY

## STATUS

Capabilities Data Base

Implemented

Forecast Test/Technology Needs

In Progress

Report Facility Utilization

Deferred

Test Investment Planning

In Progress

Review Facility Modifications

In Progress

Common Cost/Access/Price

Deferred

Cooperate with Industry

In Progress

# Key Accomplishments

## NWTA Meetings

June 30, 1998

- Defined organization
- Developed a list of actions and potential activities for the NWTA

August 5, 1998

- Recognized differences in full cost reporting formats for wind tunnel facilities. Continued work will provide consistent cost information between organizations.

October 19, 1998

- Wind Tunnel Metrics presentations. A Team was formed to develop a common set of metrics that each organization will use in measuring facility performance.

December 17, 1998

- AEDC briefs team on need for joint NASA/DoD Hypersonic Facility Sustainment Study

# Key Accomplishments

## Hypersonic Test Facilities Study

- Air Force HyTech Program recognized that there was no existing facility in the U.S. that could meet the Program's continuous test time/Mach number/size requirements.
- A Review was held to explore hypersonic air breathing propulsion test requirements, available test facilities, and current test methodology.

### RESULTS/BENEFITS:

- The AEDC Aerodynamic and Propulsion Test Unit (APTU) facility could be modified to meet the HyTech Program's test requirements.
- Developed a consistent comparison of test capabilities across AEDC's APTU, Langley's 8-Ft High-Temp Tunnel, Lewis' Hypersonic Test Facility, and the Navy T-Range Aeroheat Facility.
- Assessed current test methodology and test techniques for hypersonic air breathing propulsion testing and flight certification.

# Key Accomplishments

## Standard Test Benchmarking Study

- Performed a benchmarking analysis of a typical military and commercial test in both the AEDC 16T and the ARC 11-Ft wind tunnels for comparison of processes, skills, and cost
- Differences in processes were identified
  - Best practices are being shared between the organizations

# Key Accomplishments

## Integrated Instrumentation & Testing Systems (IITS)

- NASA and DOD are jointly participating in planning and executing test technology efforts
- Desktop video conferencing capabilities established at each member site to facilitate exchanges

# Issues

- Uncertainty of NWTA future with Implementation of NATA has caused concerns
  - NATA status must be finalized soon
- Budget cuts in NASA and DoD are causing concern for maintaining core national wind tunnel capabilities
  - Hypersonic facility sustainment study recommended to highlight the issues