

CFD Vision 2030

The CFD Vision 2030 Study

- NASA sponsored the study to provide a long-term, actionable research plan to focus CFD community effort for developing the needed computational technology

Grand Challenges highlight critical aerospace industry needs

- Identification of component problems that help NASA and others focus investment and identify barriers / gaps in capability

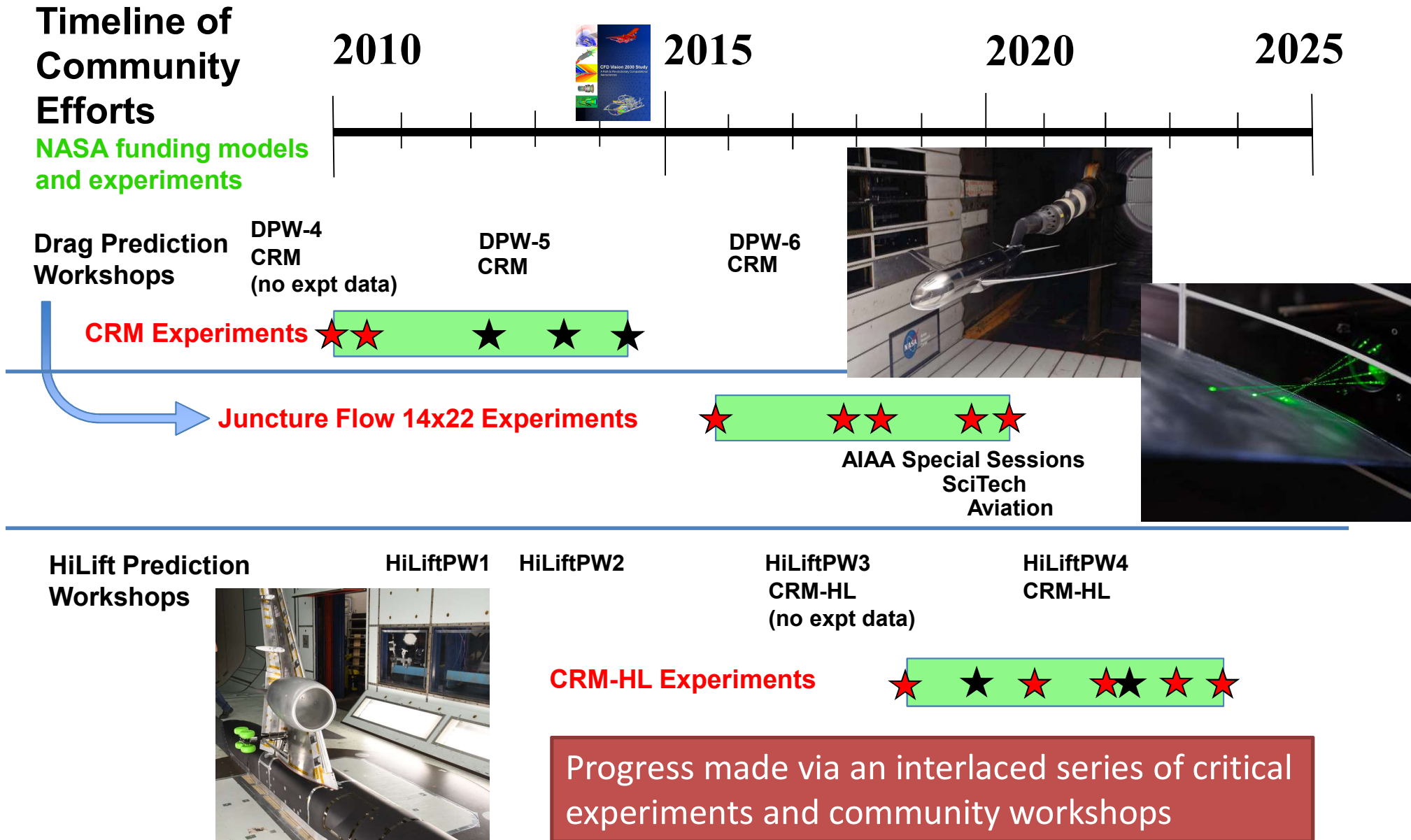
A Coordinated community response enables fastest progress

- Use of non-proprietary but relevant configurations
- Validation Experiments designed specifically to assess computational capability and obtain needed data
 - NASA following Vision recommendation and funding such experiments
- Community workshops for rapid learning



AIAA CFD 2030 Integration Committee, sponsoring this forum, is a welcome outcome of the NASA-sponsored study

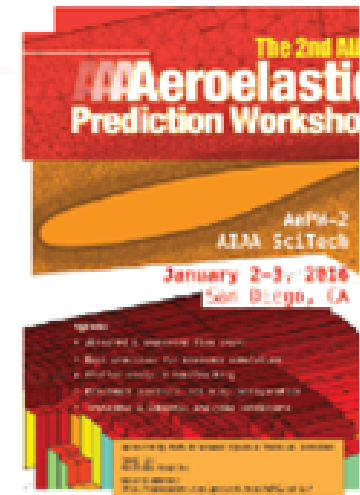
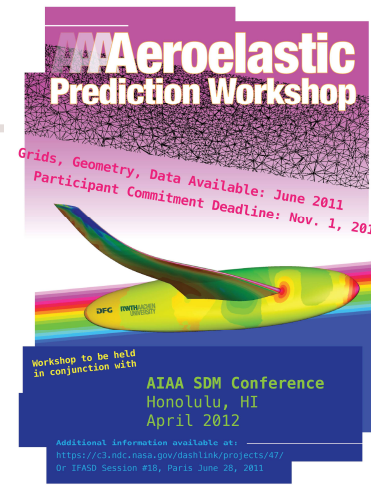
Workshop Activities and Validation Experiments (NASA wind tunnel tests denoted by red stars)



Potential Future Activities

Aeroelastic Prediction Workshop Series

- AePW-1 April 2012
- AePW-2 Jan 2016
- AePW-3 TBD



NASA planning new modern aeroelasticity Validation Experiment

- Modifying NASA Langley Transonic Dynamics Tunnel (TDT) to acquire optical measurement data
- NASA designing new, dynamically-scaled, CRM-based aeroelastic wind tunnel model

Working to identify Validation Experiments that support the Propulsion Grand Challenge

- Considering starting with a component-level approach
- This Forum 360 should provide valuable input

The Aero, Propulsion, Hypersonic, and Space Grand Challenge problems are inherently multi-disciplinary

- NASA developing discipline and MDAO tools to address these problems – shock interaction, hypersonic transition, hypersonic air-breathing combustion, etc.

A whole of the community (Government, Industry, and Academia) approach is the logical way to make progress toward the Vision