HLPW6: Scale-Resolving Simulation Technology Focus Group

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Meeting

Feb 10th, 2026

HLPW6: SRS TFG (Repeat)

- HLPW6 Website: https://aiaa-hlpw.org/
- If you have not yet, join Workshop TFG DL by sending an email to **konrad.a.goc@boeing.com**
- Meeting schedule: bi-weekly on Tuesdays 7 am PST/10 am EST
  - Meeting Link
- Can join as:
  - Active participant (attend meetings & run simulations)
  - Limited participant (attend meetings & run *some* simulations)
  - Observer (attend meetings only)

Schedule (Updated)

- Test Case 1 – CRM-HLS: January to May 2026
  - **Ongoing:** https://aiaa-hlpw.org/HLPW6/cases
  - Looking for willing participants to run **WRLES/DNS**.
  - Mini-Workshop 1: AIAA Aviation 2026 (8-12 June, San Diego, CA). **Special session confirmed.**
    - APA-49, Session Title: HLPW6 Mini-Workshop I and All-Hands Tagup: **Thursday, June 11, 3:30-5:30 pm PDT.** Room Harbor B.
      - Hybrid option will be available.

- Test Case 2 – ONERA LRM 2.3 or 2.4: June 2026 to January 2026
  - Focus on laminar-to-turbulent transition on slat and flap lift overprediction
  - Mini-Workshop 2: AIAA SciTech 2027 (11-15 Jan, Orlando, FL)

- Test Case 3 (Tentative) – CRM-HL Take-off Configuration: February 2027 – June 2027
- HLPW6: AIAA Aviation 2027 (7-11 June, San Diego, CA)

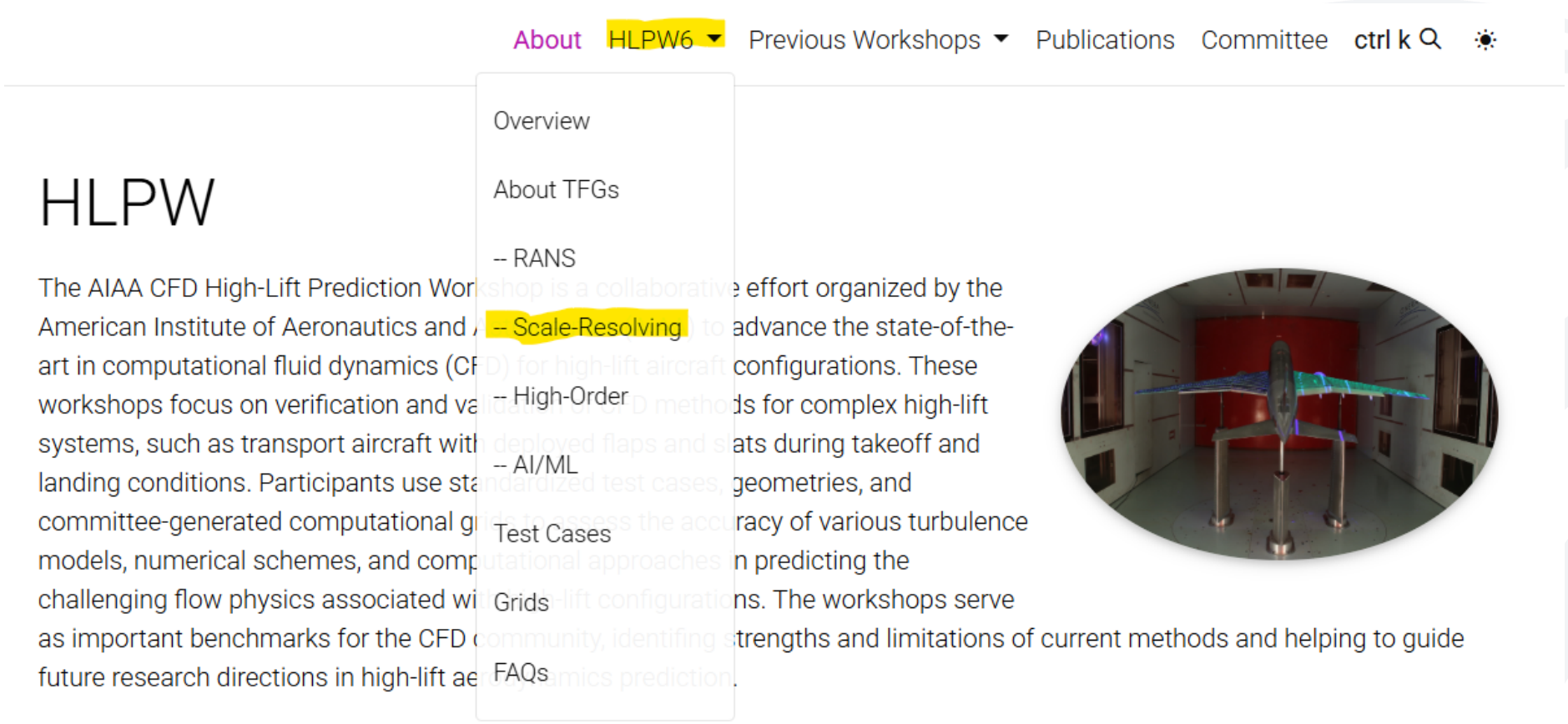
Meeting Format (Repeat)

Informal bi-weekly presentations will consist of:

- SRS TFG Leadership Updates (short)
- Participant Updates (majority of time)
    - Verbal & prepared updates are welcome
- Open Discussion

- Note: we ask that all participant presentations are shared with:
    - heathcote.daniel@aurora.aero, eduardo.molina@embraer.com.br, and konrad.a.goc@boeing.com
    - **All CL, CD, CM plots should be accompanied by their raw numerical values listed somewhere in the ppt**
        - This will facilitate more efficient cross-plotting of preliminary results and will not be formally shared or published anywhere

HLPW6 Website: https://aiaa-hlpw.org/ (New)



More updates coming soon, planning to upload SRS TFG slides here. Slides from kickoff meeting are already live: https://aiaa-hlpw.org/HLPW6/TFG_SRS

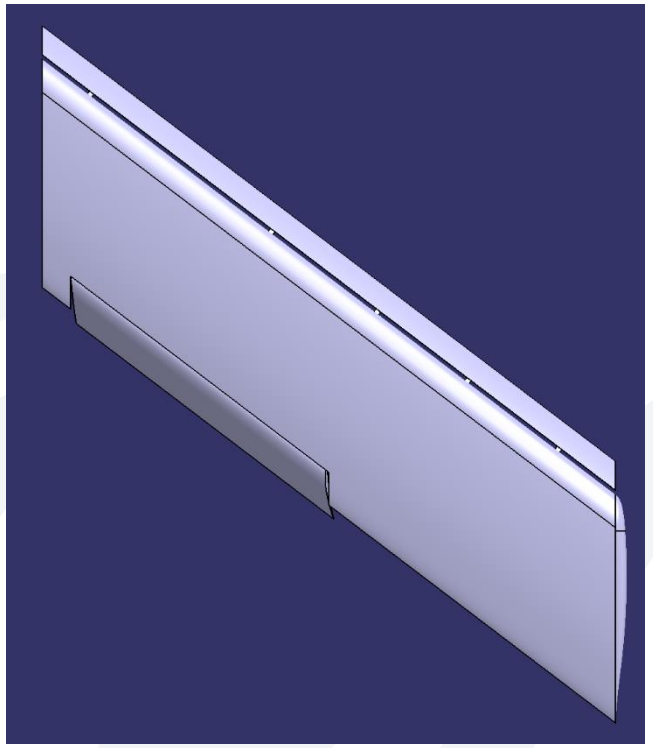
Other Updates (New)

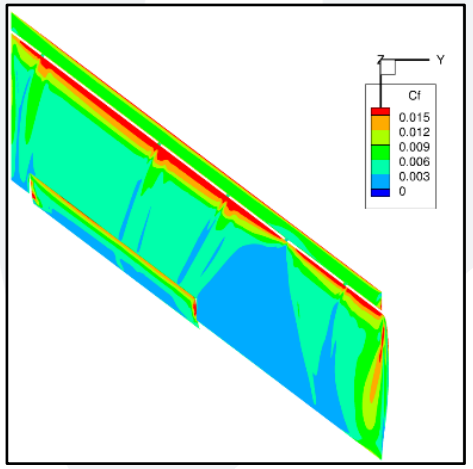
- **Tecplot** is offering complementary licenses for the duration of the workshop to participants.
    - Interested parties should make requests specifically to Gibson Adams at g.adams@tecplot.com
- Please contact TFG leadership if you need grids to run on.
    - Standardized guidelines do not yet exist for committee-provided SRS TFG grids, and differ between HRLES & WMLES
    - You would partner with HeldenMesh/Pointwise grid generation teams to drive the gridding characteristics for these meshes

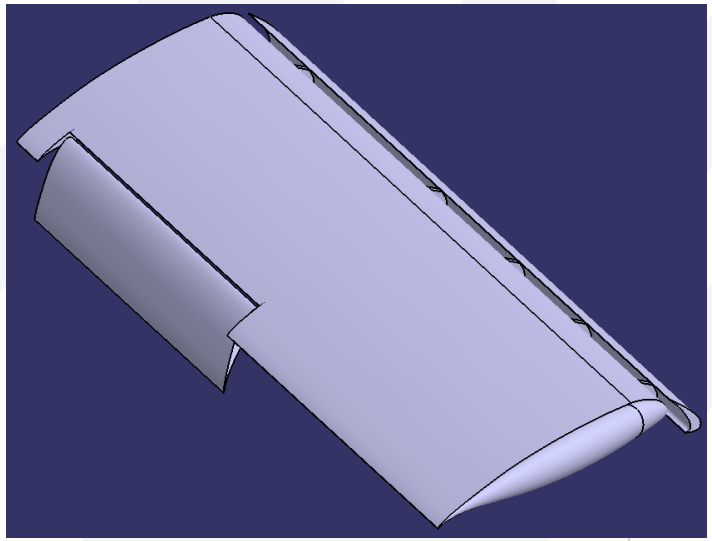
Test Case 1 Updates

Test Case 1: CRM-HLS

- Simplified High-Lift configuration, developed with Boeing / University of Washington Collaboration
- Features finite span wing, full span slat, partial span flap
- No experimental data yet, but maybe mid-workshop
- Free air with Y=0 Symmetry, 3.55m ReC
- Built to target slat bracket wake separation on 2nd from outboard bracket
- Many geometric variations possible
  - slat bracket width / depth
  - removable flap
  - removable slat
  - deflection changes, etc.







Thank You

Key Questions (Repeat)

General Key Questions

1. Are there meaningful distinctions in the predictive accuracy among the various types of scale-resolving methods (e.g. WMLES, DES, LBM)? What are the relative strengths/weaknesses of the methods in predicting aircraft maximum lift and the flow features that drive it (e.g. wing root separation, slat bracket wakes, flap separation)?
2. What is the state of affordability of scale resolving methods for high-lift prediction? Are these methods feasible for routine industrial use on modern compute hardware?
3. Are there certain types of turbulence model choices/frameworks that are needed to systematically improve the accuracy of high-lift flow predictions?
4. What choices regarding grid distribution/topology/density are needed to achieve accurate predictions of high-lift flows? What are the implications for different SRS methods of near-wall grid size (e.g. WMLES/HRLES running at y+ in the log layer)?

Test Case Specific Key Questions

1. TC1 (CRM-HLS, Jan 26-May 26): Can scale-resolving methods be used to provide a high-fidelity reference solution set for the High-Lift CRM Simplified Wing (CRM-HLS) model, including solutions on highly resolved meshes (potentially WRLES/DNS)?
2. TC1/TC2.1 (HLPW5 TC2.3/4, 3-4 AoA's near stall, June 26 – Jan 27): How should scale-resolving methods be handling laminar to turbulent transition, especially on the slat? How can the state of the leading-edge boundary layer predicted by scale-resolving methods be validated to build confidence in the predictions (e.g. using experimental or DNS/WRLES data)?
3. TC2.2 (HLPW5 TC2.3/4, 3 AoA's in linear CL curve range, June 26 – Jan 27): What can be done to improve the accuracy of scale resolving methods at low angles of attack, where inaccurate predictions of flap separation often lead to large mispredictions of aircraft lift?
4. TC3 (likely an ONERA takeoff config, Feb 27 – May 27): Are scale-resolving methods able to reliably predict aircraft drag at low angle of attack?