Issues, Challenges and Current Efforts

7th Research Consortium for
Multidisciplinary System Design Workshop

Purdue University, West Lafayette, IN
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Other Comments and Input

- Are there other issues and challenges from industry, government attendees?
- What other things were left out of today's presentations?
  - Clearly, presentations are not all encompassing
  - Other pressing issues that make it difficult to use MDO and associated approaches to facilitate design of multidisciplinary systems

Thoughts for Issues Discussion

- Distributed and concurrent computing
- Appropriate test problems
- Size of problems – differentiation approaches

- Geometry
  - Can we define what “geometry” means in our context and why it is important?
  - Rapid input to engineering analyses
  - Regeneration of CAD geometry
  - Ease of manipulation for design space exploration and optimization
  - Multi-fidelity and multi-disciplinary – how to extract different types of information from the same model

Thoughts for Discussion

- Concept of “fastener weight” missing from finite-element model / analysis
  - Move to higher-fidelity structural analysis (finite element), but to predict structural weight need to then add a density factor (that may be difficult to correlate / calibrate)
  - Other areas where this occurs?
- Visualizing results
  - Provide engineering oversight of results
  - How does one display / understand results?