NASA Interest in Developing Simulation Assisted POD Estimates

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Applications for POD

- Inspection Validation
  - New inspection techniques
  - New application for well established techniques
  - New Requirements
- Instrumentation/Methodology Assessment
- Inspector Assessment

Note: Validation of structures and materials involves:

  - Testing
  - Analysis

NASA Drivers for a Computational Simulation Assisted Estimate of POD

- Reduce Validation Cost
- Reduce Time Required for Validation
- Validation of In-Space Inspections
- Rapid Comparison of Different Methodologies for Particular Application - Pretesting down select of methods
- Optimization of Techniques for Particular Requirement
- Identification of Critical Inspection Parameters
- Assessment of Automated Flaw Detection Methodologies
- Optimization of Data Reduction Techniques
- Sanity Check on Technique Claims

Desired Products - Simulation Based POD Estimate

- Establish validated procedures for simulation based estimation of POD (Handbook)
  - Generalized Flaw
  - Complex Structure
- Validated Simulations for Widely Applied Techniques
- User Friendly Packages for POD Estimation