

# *DPM Effort at UAH*

*A Multi-Platform Initiative Sponsored by  
OSD, GEIA and UAH  
to investigate DPM material processes involved in  
securing engineering approval.*

The University of Alabama  
in Huntsville

Rotorcraft Systems Engineering and Simulation Center  
(RSESC)

Chris Sautter

# Purpose

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- Catalogue DPM Research.
- Sample Data Sheet.
- Build a DoD/GEIA Materials Matrix for DPM.
  - Resident at DAU.
- Engineering Analysis.
  - Four Candidate Parts
  - Seven material coupons
- Plot path forward.

# Status of Catalogue Effort

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- Material obtained from OSD.
  - Leantha Sumpter's office.
- Provided 70 document titles.
  - Full documents did not accompany material.
  - All documents will be scanned to PDF.
- Currently 2 documents have been through process.

# Sample Data Sheet

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- Origin at GEIA meeting in Baltimore.
- Input from members.
- This is the core of the Materials Matrix and all future engineering effort.
- Completed sheet with accompanying PDF files will be provided to membership for review.

# DPM Materials Matrix

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- Outgrowth of work done by NASA.
- OSD will provide sponsorship to allow information to be used across services and vendors.
- Provide source of information to design authorities.
- Draw on GEIA for standards.
- Utilize DAU facilities as repository for data.
- Non-proprietary data.

# Engineering Analysis

## Legacy Focus

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- Four Candidate Parts
  - 2 Blackhawk
  - 2 Chinook
- Team
  - Blackhawk
  - Chinook
  - RDEC
  - UAH

# Engineering Analysis

## New Part Effort

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- Coupons provided by LM.
- Team
  - UAH
  - ID Integration
  - LM
- Full material analysis.

# Path Forward

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- **Build Materials Matrix.**
  - Complete cataloging literature search.
  - Legacy information added to matrix.
  - Coupon test results added to matrix.

# Good News

Effort from GEIA and OSD yielding results

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- Coordination with NASA has positive outcome.
  - Dr. Ann Wittacker, Chief Materials Branch, is providing further documentation on DPM.
  - Dr. Wittacker's office will work with UAH in the materials testing area.
- UAH – BAE Systems coordination.
  - UAH will be receiving a HALT chamber from BAE as part of joint cooperation effort with University.
    - This capability will be the corner stone of our reliability testing program.
    - Provides the essential element for the coupon testing for LM.

## What does the present effort need from GEIA and OSD?

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- Continued strong support.
- Oversight to ensure program follows the vision of a materials and marking technique standard for DPM.
- Ability to move the results of the UAH effort to the broad vendor and multi-service customer base.