PROGRAM MANAGEMENT MISSION CONTROL CENTER

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UCAS-D—Description and Objectives

Proving the viability of the concept before committing to an operational system

UCAS-D Overview

• Prove carrier viability of a tailless unmanned platform—the first step in developing a survivable, persistent ISR & Strike system for the Navy and the Nation

• Tailless design: Compatible with broadband/all aspect stealth

• Fully autonomous (automatic)

• Two aircraft to demonstrate first-ever unmanned carrier-based launches and recoveries—and autonomous aerial refueling
UCAS-D AAR Demonstration Challenge

An extraordinary exercise in Risk Management

Do something that’s never been done before…within a finite budget… and within a finite schedule.

Mission: Demonstrate autonomous aerial refueling using the probe & drogue method remaining in the contact position for a minimum of 5 minutes, and transfer at least 3,000 lbs of fuel.

Funding Available: approximately 75% of initial cost estimates.

Time Constraint: Execute demonstration before end of period of performance.
The Critical Technologies

Making Solutions to Complex Problems Look Easy

Complex Aerodynamic Interactions

Navigation Integrity & Safety

Precision Formation Flight

Image Processing

Data Fusion

Key Solutions Developed

- Complex integrity monitoring of sensors
- Complex decision logic based on system status
- Simple contingency response to anomalies
- Simple information flow to the Mission Operator
The PMMCC Tool

Central Repository For Real-Time Decision Making

Historical Performance Information

- Issues Tracking
- Trend Analysis
- Monte Carlo Analysis Support

Financial Reporting Data

- budgets, actual costs, & IMS

Program Management Mission Control Center (PMMCC)

Execution Data

- planned, actual, & forecast

Program Management Information

- Engineering Artifact Generation
- Test Execution
- Critical Path Analysis
- Resource Utilization

Bench A1
Bench A2
Bench B1
**Information Based Collaboration**

*Northrop Grumman & U.S. Navy working together to manage execution*

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### Program Management Information

- **Engineering Artifact Generation**
- **Test Execution**
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- **Resource Utilization**

### Historical Performance Information

- **Issues Tracking**
- **Trend Analysis**
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**Daily Review of Execution With Joint Team**

*TAEs, IPT Leaders, Chief Engineers, PMs*

- Review of Execution Metrics
- Discussion of Changes In Forecast
- Discussion of Progress on Issues
- Discussion of New Issues Discovered
- Review of Upcoming Activity

**Weekly Engagement With Stakeholders**

*NAVAIR Engineering, Test Squadron, Functionals*

- Discussion of Changes In Forecast
- Discussion of Progress on Issues
- Discussion of New Issues Discovered

**Monthly Review With Senior Leadership**

*Program Executives, PMA, PMs*

- Overview of Execution Metrics
- Forecast With Risk & Opportunity Space
- Identification of Support Needed
Lesson Learned

Recommendations & Advice For Program Managers

• Build a management information infrastructure
  – Capitalize on the systems already in place
  – Concentrate on the most important things
  – Collect the data

• Plan, Perform, & Predict
  – Accountability throughout the organization
  – Accept the reality
  – Act with haste

• Jointly Interpret and Assess Results
  – Must be data driven
  – Must be timely
  – Must be mutual
THE VALUE OF PERFORMANCE.

NORTHROP GRUMMAN