



U.S. AIR FORCE

DoD Symposium

Rapidly delivering war-winning capability



Aging and Corrosion

26 October 04

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Keep'em flying & Keep'em relevant



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Overview



Rapidly delivering war-winning capability

- **Structural Issues – Addressing Corrosion**
- **Key Challenges**
- **Aging Aircraft Program Process**
- **Key Solution Areas**
- **Success Stories**
- **Concluding Remarks**





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Structural Issues

Addressing Corrosion

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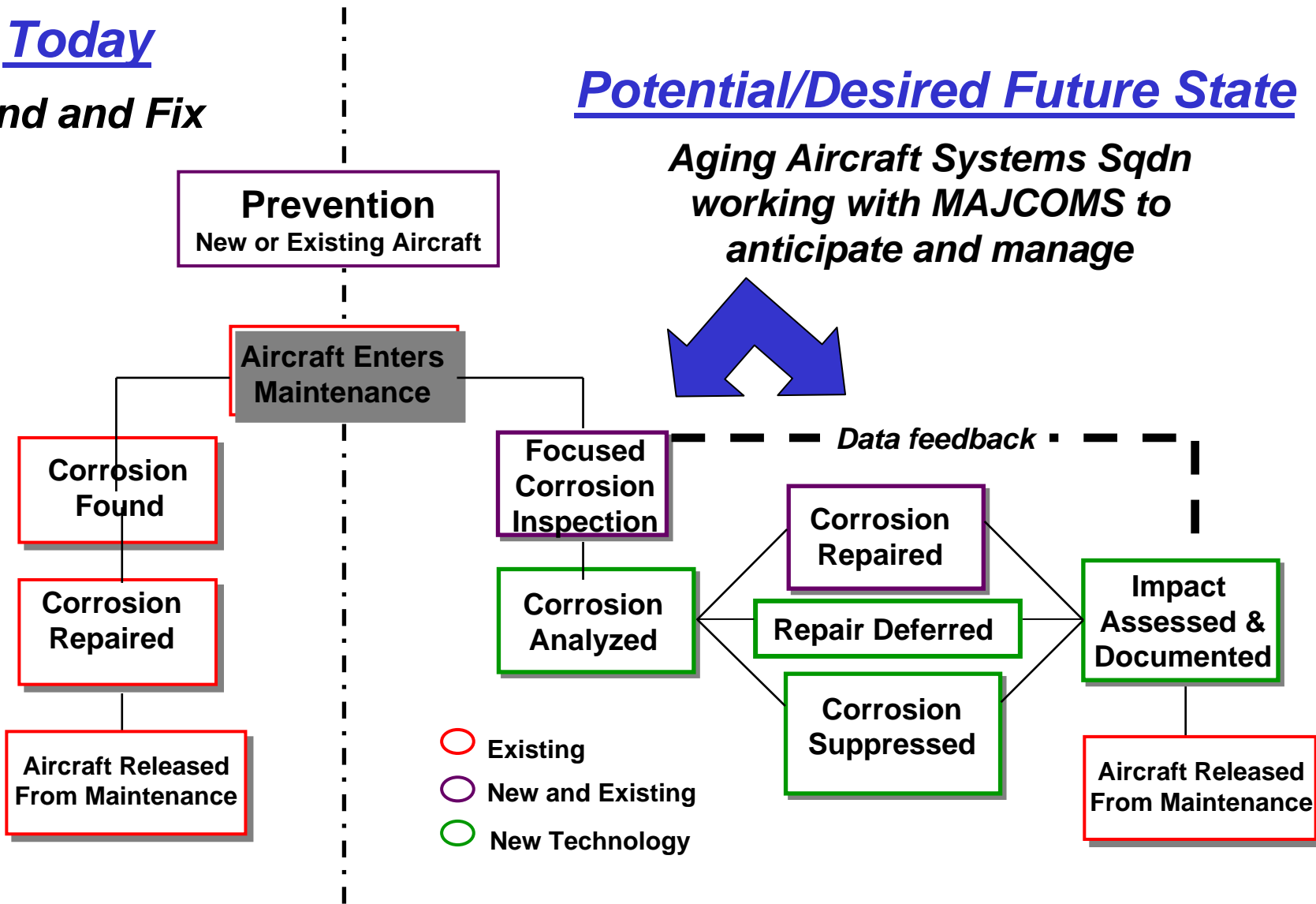


Today

Find and Fix

Potential/Desired Future State

*Aging Aircraft Systems Sqn
working with MAJCOMS to
anticipate and manage*





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Key Challenges

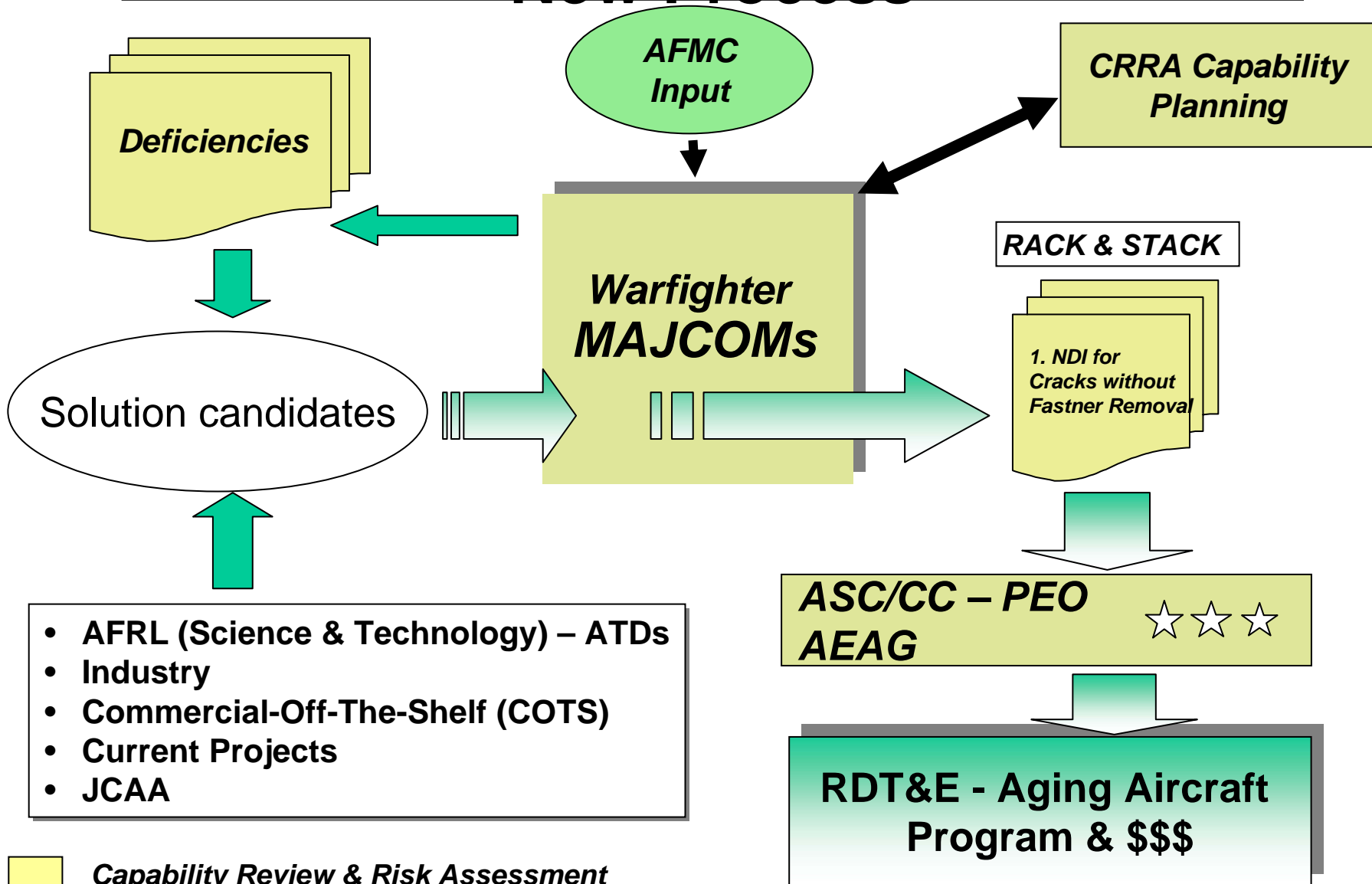
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- ***Preventing/Predicting*** problems before they occur
 - Cold-worked holes
 - Corrosion prevention compounds (CPCs)
- ***Inspecting*** for problems before they become catastrophic
 - Detection of hidden cracks & corrosion
- ***Analyzing*** inspection results for structural implications
 - Analytical & predictive tools
 - Data collection & management
- ***Analyzing*** information for effective fleet management
 - Risk Assessments
 - Business Case Analyses
- ***Repairing*** the problems that need fixing
 - Bonded repair technologies

Key Solution Areas: Prevention/Prediction, Inspection, Analysis, Repair



Aging Aircraft Program New Process





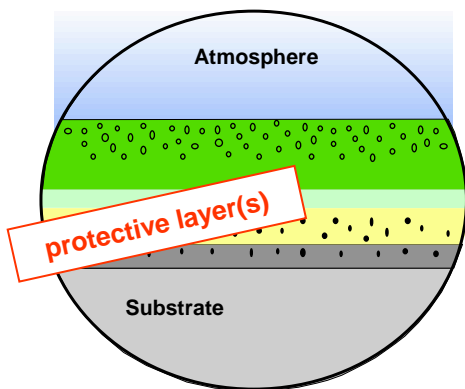
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Key Solution Areas

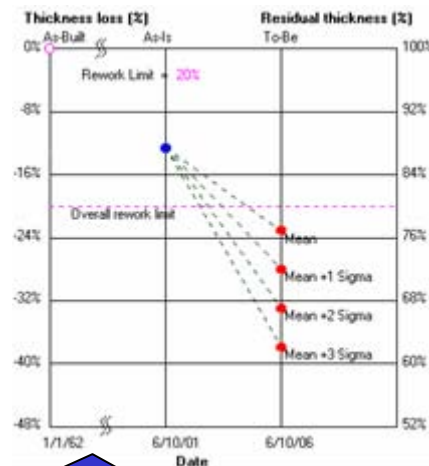
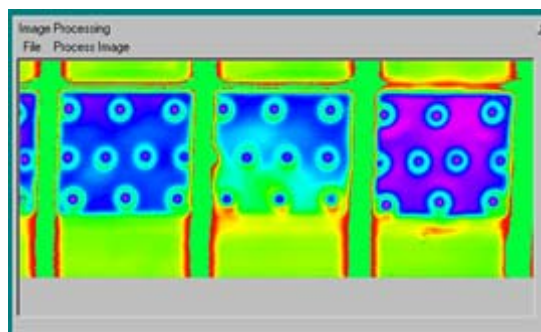


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• Prevention/Prediction



• Analytical Tools



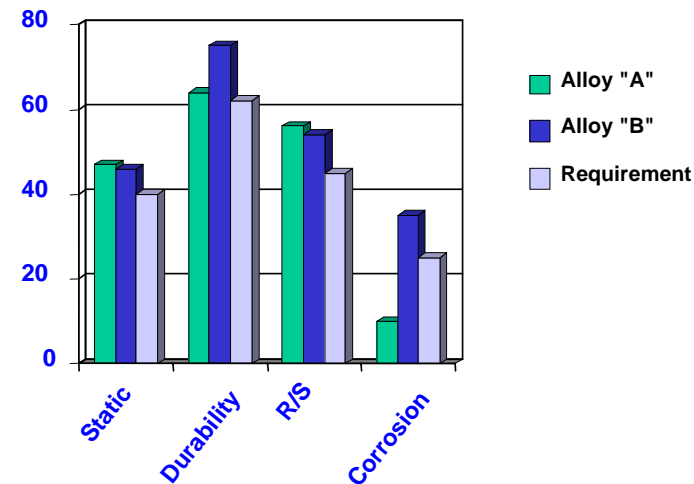
• Nondestructive Inspection



• Repair Development – Bonded Repairs



– Material Substitution





RDT&E for Aging Aircraft Program Successes



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- **B-1B Multi-Layer Wing Splice Inspection**

- R&D invest \$1.33M, cost/labor savings/avoidance \$4.5M & 18,055 hrs



- **F-15 Material Substitution**

- R&D invest \$525K, cost/labor savings/avoidance \$15.9M & 28,350 hrs



- **B-52 Multi-Layer, Crack & Corrosion Detection**

- R&D invest \$2.05M, cost/labor savings/avoidance \$15.8M & 54,400 hrs



All technologies applicable to multiple systems



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