



## Aerospace Maintenance Procedures

Enhanced procedures and innovations are needed to improve the quality and accessibility of maintenance information, clarify the roles and responsibilities of maintenance teams and reduce the risks associated with human error and collateral damage.

### Objective

To enhance safety and effectiveness in maintenance operations by developing enhanced procedures and innovations that 1) improve the quality and accessibility of information provided to maintenance teams, 2) clarify the roles and responsibilities of team members and 3) reduce the risks associated with human error.

### Approach

Collaborative working groups comprising both space and aeronautics maintenance teams work to develop improved procedures; to advance the understanding of maintenance tasks and develop tools needed to support those tasks; to improve the inspection process; to provide a means of analyzing procedure-related incidents; to apply Human Factors skills and training to maintenance teams; and to develop advanced tools necessary for real time maintenance aiding.

### Impact

Maintenance errors can have a devastating effect on safety and efficiency of operations. By investigating the underlying causes of procedural failures and developing innovative design and task analysis tools to support their improvement, this research area will help the industry to establish standards and performance metrics to improve the quality of maintenance operations. By incorporating human-centered principles and risk assessment techniques to maintenance procedures, the industry can improve maintenance performance through enhanced awareness of risks as well as more effective work processes. Advanced communication and display technologies can provide new ways to provide better and more timely information to maintenance teams.



### Relevance to Exploration Systems

Enhanced Aerospace Maintenance procedures may lead to fewer accidents associated with human error as well as enhanced safety and effectiveness.

#### *H&RT Program Elements:*

This research capability supports the following H&RT program /elements:

TMP: Advanced Space Operations

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