



Air Force Research Laboratory|AFRL

Science and Technology for Tomorrow's Air and Space Force

Success Story

F-35 PROGRAM ADDS CAI'S STRESSCHECK™ TO ANALYSIS SOFTWARE SUITE



The Materials and Manufacturing Directorate and Air Vehicles Directorate initiated and developed StressCheck, structural analysis software, as part of the Composite Affordability Initiative (CAI) team. The F-35 Joint Strike Fighter program is including the tool in their accepted suite of analysis software. The analysis tool may minimize the amount of physical testing and its impact on costs and schedules.



Air Force Research Laboratory
Wright-Patterson AFB OH

Accomplishment

The two directorates, Boeing, Lockheed Martin, Northrop Grumman, and Bell Helicopter make up the CAI team. The team developed and enhanced finite element software for analysis of composite structures. The StressCheck analysis tool shows a significant improvement in bonded and co-cured joint strength prediction capabilities compared to finite element analysis tools currently on the market.

Background

Preliminary applications on the F-35 inlet duct assembly joints and independent validation increased program confidence to use this tool on additional structures. Initially, the F-35 program evaluated the use of this software tool to analyze inlet duct assembly joints. As a result of the success with this initial application, the value of the StressCheck analysis tool was recognized for stress analysis of complex composite structural details, and the use of this software on the F-35 program has expanded.

Materials and Manufacturing
Support to the Warfighter

Additional information

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