Building a Solid Base of "Influence and Credibility"

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The F-35 *Lightning II* aircraft stands as the leading focal point of the Department of Defense's (DoD) initiative to produce an affordable next-generation aircraft weapons system for the U.S. Air Force, Navy and Marine Corps, British Royal Navy and military services of U.S. allies, including Australia, Belgium, Canada, Denmark, Israel, The Netherlands, Norway and Singapore.

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At the heart of this initiative lies the development of two propulsion systems, one of which is the F136 advanced fighter engine. This engine is the product of the General Electric (GE) and Rolls-Royce fighter engine team (FET). The FET consists of GE Transportation Aircraft Engines in Evandale, Ohio, and Rolls-Royce Joint Holdings Company in Indianapolis. Rolls-Royce Joint Holdings Company is comprised of Rolls-Royce Corporation (RRC) in Indianapolis and Rolls-Royce plc in Bristol, England.

The GE/Rolls-Royce FET joint venture, whereby GE has 60 percent share and Rolls-Royce Joint Holdings Company has 40 percent share, was formally created in July 2002 and is responsible for the development of the F136 engine. RRC has the primary responsibility for major engine modules such as the combustor, high-pressure turbine nozzle, low-pressure turbine and accessory/internal gearbox. It is for these components that the DCMA Aircraft Propulsion Operations (APO) team at RRC provides essential program support to ensure that critical engine parts meet technical, cost and schedule targets.

Such a collaborative program requires a cohesive program support team (PST) to guarantee that the major engine components provided by RRC are delivered on time and at the right cost and achieve the performance requirements. The DCMA RRC F136 PST consists of only two full-time members who provide both program integration and engineering support. Additional program support is supplied in the areas of earned value

(Above) The GE Rolls-Royce F136 engine for the F-35 *Lightning II* fighter aircraft has undergone extensive testing. The DCMA Aircraft Propulsion Operations team at Rolls-Royce provides essential program support to ensure that critical engine parts meet technical, cost and schedule targets. (Photo courtesy of Rolls-Royce © Rolls-Royce plc 2006)

DCMA and the DCMA Aircraft Propulsion Operations F136 program support team continue to build a solid base of "influence and credibility" in the pursuit of a successful program. – Air Force Brig. Gen. Charles R. Davis

management, quality assurance, production, property management, contracting and pricing.

In response to the customer's needs, the team provides insight into RRC's technical and operational affairs through weekly technical reports and monthly earned-value analysis reports. The team's contributions were especially important during the recently

concluded integrated baseline review, which was completed ahead of schedule with all cost and schedule action items closed. The team accomplished this by utilizing their working relationship with RRC's integrated process teams, providing status overviews, examining potential issues and engaging in predictive analysis for the assessment of RRC's progress and ability to achieve program milestones. The DCMA RRC F136 PST provides this type of technical and pricing support to the F136 program and other program proposals in addition to their other daily program functions, which is just one example of their commitment to the program and the customer.

With the program now in the system development and demonstration phase, the DCMA RRC F136 PST is working with RRC on a preliminary design review of the combustor, high pressure turbine nozzle, low-pressure turbine and accessory/internal gearbox. The team is preparing to actively participate in the internal product introduction reviews prior to preliminary design reviews to ensure that the RRC team meets all criteria. The DCMA RRC F136 PST will actively track and ensure the closure of all requests for action so that the next phase of detailed design can begin.

The DCMA RRC F136 PST also actively participates in affordability initiatives, which focus on weight and cost reduction. Affordability is not only an initial procurement initiative — it reaches far into the future, examining the areas of reliability, maintainability and sustainability. The team also is engaged in the diminishing manufacturing sources and material shortages program. This program addresses the issues of discontinued and obsolete parts, manufacturing lines no longer tooled to produce particular parts, manufacturers no longer in business and other customer-focused areas such as supply chain management, property management, critical safety items and unique identification.

In today's economic and technological environment, the F-35 *Lightning II* continues to be in the news as one of the DoD's largest acquisition programs destined to bolster an aging fighter fleet within the U.S. and several allied nations. As stated by Air Force Brig. Gen. Charles R. Davis, program executive officer, F-35 *Lightning II* Program Office, during his August 2006 all hands meeting, DCMA and the DCMA APO F136 PST continue to build a solid base of "influence and credibility" in the pursuit of a successful program that is, as its promotional material asserts, "lethal, survivable, supportable and affordable."

(Above) To date, the F-35 has flown at 23,000 feet and achieved speeds of Mach 0.8 and a 16-degree angle of attack. (Lockheed Martin Co. photo)