



1998 VIRTUAL STRIKE WARFARE SIMULATION AND ANALYSIS EVENTS

WRIGHT-PATTERSON AFB
JOINT STRIKE FIGHTER
VIRTUAL SIMULATION BASED
ACQUISITION TEAM



TEAM OBJECTIVES



- Build a world-class strike warfare simulation environment for the Joint Strike Fighter program;
- Leverage existing work and commercial tools to the maximum extent possible to avoid costs; and
- Collaborate with other programs and agencies to collectively increase the utility of the tools for common use.

100% Success in Achieving Objectives



SCOPE



- People: 45 engineers, scientists, & managers
- Budget
 - \$1.2M JSF funding
 - 9,000 man-hours of government personnel
 - Contractor IR&D and SBIR funding
- Number of models/lines of code
 - 9 highly integrated models plus databases
 - Over 250,000 lines of new software written
 - Over 2,000,000 lines of code plus several Gigabytes of data



TRUE "FIRSTS"



- Developed the Analysis Process
 - Use of Virtual Analysis to guide Constructive Analysis
 - Analytical results extracted from Virtual Simulation this early in an acquisition program
- Conducted On/Off Board Trade Studies
- Conducted Robust Evaluation of a Real-Time Mission Planner
- Developed Intra-flight Imagery capability for the cockpit sim
- Developed Off-board Imagery capability for the cockpit sim
- Developed sophisticated scenario planning and de-briefing tools to streamline the development and analysis process



NOTEWORTHY ACCOMPLISHMENTS



- True Integrated Product Team
 - Overcame problems of organization boundaries
- Conducted 2 air-to-air and 2 air-to-ground simulations
 - Within 10 months after project approval
 - 98% system availability
 - 50 Pilots: Air Force, Navy, Marines & International partners
 - 24 Days of testing
 - Customer response: “You guys are right on target.”
- AFOTEC/CC briefed and shown capability
 - Estimated 7 year reduction of some portions of the CONOPS development process
- Leveraged over \$5.7M in labor and hardware to create the environment in the simulation facility



IMPACTS



- Cost savings and avoidance
 - Leveraged cross-program capabilities
 - Government (AFRL) owned software--saved \$650K
 - Use of COTS where appropriate
 - AFRL \$1.1M labor \$2.0M equipment
 - ASC \$ 450K labor \$250K equipment
 - SIMAF \$ 25K labor \$1.5M equipment
 - NAIC \$ 15K labor
 - Potential to avoid the costs of the firsts several ECPs that most programs suffer from due to a lack of early understanding of the CONOPS



IMPACT (CONTINUED)



- Improved dialogue with warfighters which has resulted in a CONOPS that is more mature at this phase in a program than ever before

