

USAF Scientific Advisory Board

FY 2009

Virtual Training Technologies

Terms of Reference

Background

Training to maintain operational readiness of aircraft systems is a growing concern due to cost and availability of assets. Air Force aircraft are aging and increasingly in demand, making it difficult to conduct live training on some systems. The rising cost of fuel equates to higher training costs since readiness has traditionally been maintained by flying training sorties on operational aircraft. As new weapon systems come online, the integration of new capabilities into the system of systems multiplies training requirements across the force.

Are there virtual training technologies in development that may help the Air Force train more efficiently or effectively? What virtual training techniques are being used extensively in industry that could be leveraged to enhance operational readiness in the future? How are other military services using virtual training and can their successes help guide Air Force use of these technologies?

Study Products

Briefing to SAF/OS & AF/CC in July 2009. Publish report in December 2009.

Charter

The study will:

- Assess the state-of-the-art in modeling, simulation and virtual training methods. Evaluate to what extent such methods are being used within industry and other military services.
- Identify areas in the Air Force where such training technologies could make a significant impact. Assess current capabilities and gaps with the Air Force's Distributed Mission Operations.
- Identify integration challenges when coupling virtual with live training. Include the feasibility of integrating simulated environments with embedded training using aircraft operational flight plan (OFP) software. Recommend technology solutions required to realize a mixed (virtual/live) training capability.
- Assess methods to rapidly create and validate virtual training scenarios to include realistic threat presentations, especially those scenarios where live training is difficult.
- Define technology options for improving aircraft system virtual training in the near-, mid-, and far-term.