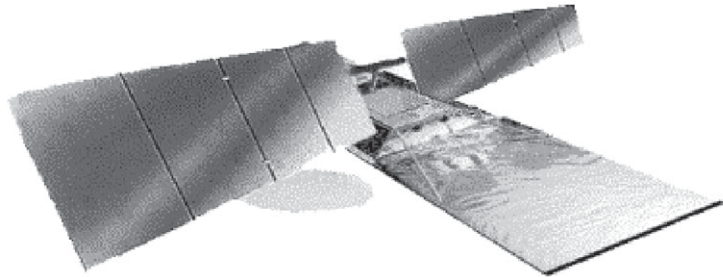


AIR FORCE PROGRAMS

Spaced Based Radar (SBR)

SUMMARY

- Space Based Radar (SBR) test and evaluation planning is proceeding at an adequate pace to provide an assessment of operational effectiveness and suitability.
- During Phase A, the test and evaluation strategy should focus on the mitigation of key risk areas.
- The initial Test and Evaluation Master Plan (TEMP) should emphasize developmental testing, with a well-structured path towards operational testing, based on an understanding of the SBR program at Key Decision Point (KDP)-B.



SBR improves near real-time targeting and situational awareness.

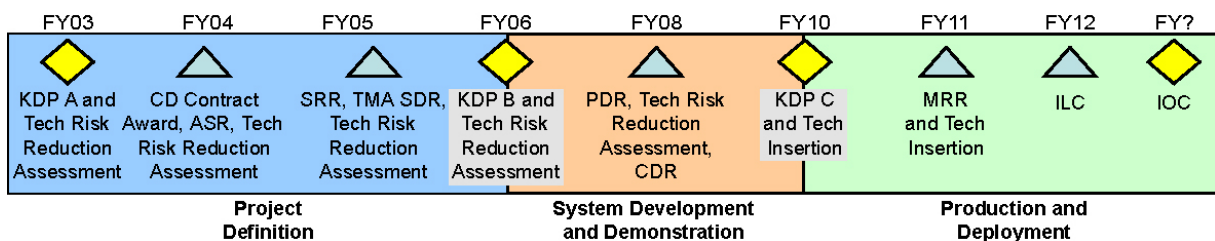
SYSTEM DESCRIPTION AND MISSION

The SBR system is a planned constellation of satellites that can be tasked in near real-time to provide a rapid response to real-time Combatant Commander requirements. Moving Target Indicator data and Synthetic Aperture Radar imagery will transmit directly, or via relay satellites, to earth receiving stations. SBR information users include Air Expeditionary Forces, Army objective forces, naval forces, intelligence components, and Homeland Security networks. Fused with current Moving Target Indicator systems data, SBR improves near real-time targeting and situational awareness.

The Secretary of Defense appointed the Secretary of the Air Force as the DoD Executive Agent for Space in 2002. The Air Force is acquiring SBR under new DoD National Security Space Policy directives tailored for space programs. SBR is in the initial phase of development, and passed its first Key Decision Point A (KDP-A), to enter Phase A (the Concept Study Phase) in July 2003. The purpose of this study phase is to develop concepts and architectures to a sufficient level of maturity to enter the KDP-B Design Phase. The study phase consists of further concept definition, concept of operations, requirements development, risk reduction, and initial planning to develop a test and evaluation strategy prior to KDP-B. After KDP-B, the program should enter a system pre-acquisition period lasting through a planned KDP-C, when system acquisition activities will begin.

The System Program Office accomplishments include formulation of a draft acquisition strategy and award of key contracts to support ongoing risk reduction activities.

TEST AND EVALUATION ACTIVITY



Test activity during 2004 focused on development of a Combined Test Force charter that defines agency roles and responsibilities for testing, and maturing a test strategy document that will serve as the basis for a TEMP. The test

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strategy document emphasizes combined developmental and operational testing in order to maximize testing efficiency, and addresses critical operational issues, measures of effectiveness, and measures of performance.

TEST AND EVALUATION ASSESSMENT

SBR is at an early stage, but test and evaluation planning proceeds at an adequate pace to support an assessment of operational effectiveness and suitability. During Phase A, the test and evaluation strategy should focus on the mitigation of key risk areas. Generally these areas involve:

- Information management.
- The capability of the system to manage very large amounts of expected data.
- Satellite on-board processing capability and reliability needed to “pre-digest” the collected radar data before transmitting to ground.
- The ability of signal processing algorithms to present radar-derived data for rapid analysis and dissemination.
- Spacecraft technology in terms of power, structural integrity, and detection technology.
- Communications reliability and system survivability.

The initial TEMP should emphasize developmental test, with a well-structured path towards operational test, based on an understanding of the SBR program at KDP-B. Because the Air Force has selected two contractors for competition in the Concept Development Phase A, the government test communities need to be aware of both concepts - and interact with - developmental test and operational test representatives from both contractors. At KDP-B, the TEMP should include separate appendices, marked for government use only, prepared by each contractor. These appendices should reflect individual contractor test concepts. The government and each of the two contractors are developing test concepts according to their own set of Critical Operations Issues. Although each contractor should follow their own Critical Operations Issues, the government should ensure they cover the parameter space indicated by the government.

The current Test Strategy for the Air Force Operational Test Center consists of over 2,500 test events, most of which are projected to be covered by developmental test activities. The magnitude of the testing program envisioned for SBR underscores the need for combined developmental/operational testing as an efficient and effective strategy for performing SBR testing.

Current budget reductions will cause delays in SBR development; however, the TEMP’s general test concepts objectives should remain fixed.