

## **Alternative Systems Review (ASR)**

The Alternative Systems Review (ASR) is a technical review to ensure that:

- The resulting set of requirements agrees with the customers' needs and expectations
- The system concepts align with the external environment (systems, information networks, and infrastructure)
- The system under review is mature enough to proceed into the Technology Development Phase

The ASR assesses the alternative systems that have been evaluated during Materiel Solution Analysis, and ensures that the preferred system is cost-effective, affordable, operationally effective, and suitable, and can be developed to provide a timely solution to a need at an acceptable level of risk. Depending on the acquisition strategy, one or more preferred system solutions may be carried forward into the Technology Development phase.

### **Completion of ASR should provide:**

- An agreement on the preferred system concept(s) to take forward into Technology Development
- A comprehensive rationale for preferred system concept solution, which includes an Analysis of Alternatives that evaluate relative cost, schedule, performance (hardware, human, software, safety), process integration, and technology risks
- A comprehensive assessment on the relative risks associated with including Commercial Off-The-Shelf (COTS) or Non-Developmental Items (NDI) as opposed to a new design.
- Joint requirements for the purposes of compatibility, interoperability, and integration

The ASR is important because it is a comprehensive attempt to ensure that the system requirements are aligned with the customer's needs. The ASR attempts to minimize the number of requirements that may need to be changed in later phases. Changing requirements later in the program usually entails cost increases and schedule slips.

## Typical ASR Exit criteria include:

- Were the proper technical disciplines represented at the review?
- Is the program properly staffed? Do the supporting technical disciplines agree?
- Is the evolving external environment adequately understood to address the risks?
- Is/Are the preferred system solutions(s) sufficiently detailed and understood to enable entry into Technology Development with low technical risk?
- Can the preferred system concept(s), as disclosed, satisfy the ICD/CDD?
- Is the system software scope and complexity sufficiently understood and addressed in the Technology Development plan to enable low software technical risk?
- Is the estimated software cost estimate consistent with preferred concept approved at the ASR?
- Are the risks known and manageable for Technology Development?
- Is the program schedule executable? It is within technical/cost risks and within what margin and probability of the cost estimate?
- Are the program's Technology Development efforts executable with the existing budget?
- Has the system integrated (e.g., research, development, logistics, engineering, T&E, in-service support) technical baseline been captured in a preliminary system specification that is consistent with technology maturity and the proposed program cost and schedule?

The ASR risk assessment checklist is designed as a technical review preparation tool, and should be used as the primary guide for assessing risk during the review. This checklist is available via the "Checklist for Technical Reviews" in the Reference Tab of this course