

An Overview of Availability, Reliability and Maintainability

Overview

This course addresses the application of an AR&M programme within the overarching context of a Defence Acquisition programme and hence it focuses on the impact of AR&M on combat capability, safety and Through Life Cost [TLC].

Once the underlying reasons for an AR&M programme have been established the delegate is introduced to the key availability, reliability, maintainability and testability parameters, particular attention is given to ensuring that the delegate understands the true nature of these probabilistic metrics.

The course then addresses the application of the AR&M process throughout the acquisition life cycle, this module introduces the concept of the R&M Case and it is based on the UK MoD's CADMID/T cycle but the principles can readily be applied to all AR&M programmes. During this module the complex interrelationship of the AR&M process with other aspects of Supportability Engineering are introduced, with particular emphasis on the relationships with the LSA process and through life cost. The delegate is given a brief introduction to a wide range of the relevant standards, including UK Defence Standards, US Military Standards plus a selection of civil standards.

Target Audience

The Target Audience consists of Managers and practicing engineers requiring a basic appreciation of the objectives of an AR&M programme and an understanding of the separate aspects of the topic.

It is intended to provide an introduction to some of the issues, techniques, planning, and management aspects that are required during AR&M activities.

Objectives and Utility

The objective of this course is to provide an insight into the AR&M discipline and the relationship between AR&M and other related engineering disciplines.

Delegates attending the course will understand the need for AR&M programmes, they will gain a basic understanding of the associated AR&M parameters and a basic understanding of how AR&M programmes are applied during the various stages of an acquisition process.

This approach gives the delegate a broad understanding of the overall AR&M process, and hence provides a sound foundation for future study.

Alternatively it provides the delegate with the knowledge and understanding required to engage effectively with the AR&M discipline, as such it is ideal for Supportability Engineering managers, IPTL's, etc who have to manage, indirectly, an AR&M programme.

This improved understanding will have a positive impact on the ability of the parent organisation to impact operational capability, safety and through life cost.

The Training Process

The course begins by introducing the delegate to the reasons for AR&M and this is followed by an introduction to the definitions of AR&M. This is followed by a high level introduction to the key AR&M parameters, beginning with availability measures and then progressing to measures associated with the Reliability, Maintainability and Testability engineering disciplines. Attention is focused on ensuring that the delegate understands the nature of the measures in this module. The application of AR&M during an acquisition life cycle is then addressed, this includes a brief look at relevant Standards for AR&M, the interrelationship of the AR&M process with Logistic Support Analysis (LSA) and the effects of AR&M on Life Cycle Costs.

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Course Programme

Day 01 - AM

076-P-1 AR&M Defined

The module defines Availability, Reliability, Maintainability and Testability and gives a high level overview of the engineering activities that are typically found in an AR&M programme.

The module introduces the delegate to the concept of an R&M Case and discusses the wider issues that should be considered when addressing a project's AR&M requirements.

077-P-1 Introducing the AR&M Measures

This module introduces the delegate to the basic AR&M measures including Testability. The focus however is on ensuring that the delegate has a profound understanding of the nature of the measures and hence an appreciation of how to use the measures to greatest effect and an appreciation of the associated risks and difficulties.

The message is reinforced by the a series of simple instructor led interactive sessions.

Day 01 - PM

068-P-1 AR&M and the Acquisition Process

The aim of this module is to provide the delegate with an brief overview of how an AR&M programme is applied throughout the acquisition cycle. The UK MoD Concept, Assessment, Definition, Manufacture, In-service, Disposal/Termination [CADMID/T] cycle is used as a basis of this approach but the concepts made be readily adapted for application to any structured procurement process.

This module also addresses, albeit at a high level, the relationship of an AR&M programme with other Supportability Engineering activities, in particular with the Logistic Support Analysis [LSA] and Through Life Costing [TLC] activities. Finally a brief introduction to a wide range of standards, both military (UK Defence Standards and US Military Standards) and civil standards are introduced.