

## **ITT2B -Scenario: Reliability, Availability, Maintainability (RAM)**

### **Question**

In no more than 1500 words contained in a maximum of 4 sides of A4 (pictures, diagrams etc. may be included in the sides of A4 limit), provide evidence of how you apply activities to have a significant and beneficial effect on the delivery of works at the following phases of a project lifecycle:

#### **1) Managing RAM Lifecycle**

Within project delivery, RAM aspects are evident throughout the lifecycle. The RAM discipline needs to continually assess issues raised and implement changes to better reflect the target of the works:

Analysis of mission

Definition of system concept and environment including operational and maintenance concepts

Risk analysis

Requirements definition

Apportionment over interfaces\subsystems

Design (and evaluation design reviews)

Manufacture

Installation

Commission with system validation

Monitoring to quality reliability

#### **2) RAM Tools**

RAM delivery can be assisted by the use of analysis and tools:

Analysis of FRACAS data

FMEA/FMECA

Functional Failure Analysis

Reliability Block Diagram

Fault / Event Trees

Reliability Centred Maintenance

Whole Life Cost Modelling

Reliability Growth Techniques

#### **3) Reliability Growth Modelling**

Operational and Maintenance decisions are often based on assessment of reliability risk. Reliability growth prediction techniques are critical in order to manage risk and plan for changes to service operation. There are a range of reliability growth prediction techniques available to a RAM Engineer.