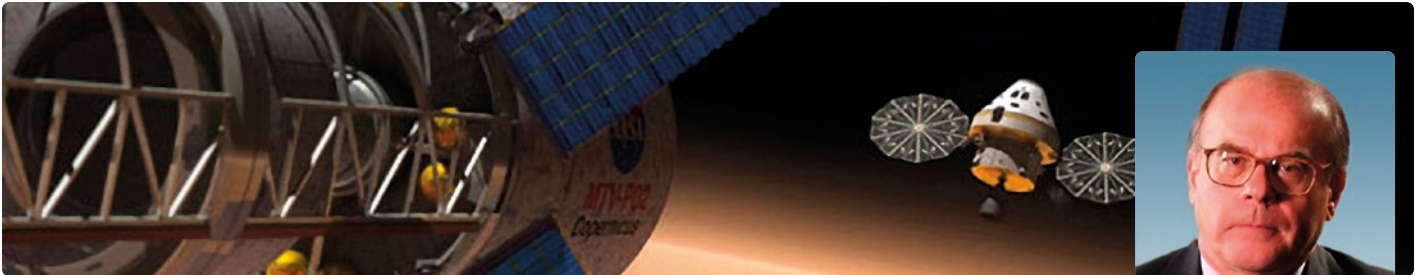


QUALITY ASSURANCE (QA) FOR SPACE PROJECTS

Code 006



Tommaso Sgobba

The Challenges

The course is designed to provide the participant with an understanding of basic principles of Quality Management, Quality Assurance and Quality Control, as they are usually applied to space projects. (The course material copyright is owned by IAASS).

Scope of the Course

- The key role of management in setting quality objectives for the organisation, how to establish policy, goals, organisation and allocate responsibilities.
- Key principles of quality control/assurance, and their evolution. Measuring the quality and promoting improvements.
- Formal quality systems. European (ECSS), NASA requirements standards, international standard (ISO).
- The need for a Quality and relationship to contractual QA Plans. Conducting internal and external quality audits.
- Quality in design. Specifications, the V-cycle, support to Projects Reviews.
- Managing the non-conformities resolution process.
- The importance of alerts systems.
- Quality Assurance. Quality records, process control, workmanship standards, traceability, inspections, measuring equipment calibration system.
- Statistical methods in brief.
- Space environment effects on materials. Including materials used in space, requirements and testing, materials evaluation, and process control.

In summary, the participant will acquire an understanding of quality principles, requirements and techniques, and how to apply them for achieving product conformity, customer satisfaction and for increasing productivity.

Target Audience

- Managers and engineers new to quality principles and processes.
- QA managers and engineers with no previous experience in space projects

What You Will Learn

- Why Quality is important.
- The Quality culture, philosophy and organisation.
- The Quality standards.
- Basic principles and techniques.
- How to satisfy the Customer
- Common mistakes.

How You Will Learn It

- Verbal instructions using Power Point Presentations.
- Videos & Photographs.
- Case studies.
- Group exercises & problem solving.

Why You Need to Know This

- To prepare and implementing cost/effective QA plans
- To understand the significance and procedures of quality assurance.
- To identify and justify resources for implementing a quality system.
- To know what ESA expects from you.
- To convince your management of the benefits.

What You Will Learn

- The course e-file with the presentation charts.
- A set of reference documents.
- A USB flash drive with all the above.
- A Certificate of Course Completion.

Course Duration & Format

12 modules of 1 and a half hours each.

Instructors

Tommaso Sgobba (ESA Ret. - PA/QA Manager)

INTRODUCTION TO CONFIGURATION MANAGEMENT

Code 007a



The Challenges

The course is intended to provide the participant with an introduction of Configuration Management (CM). The participant will gain an understanding of the principles and procedures applied through CM to space projects; the interdisciplinary activities between CM and other project activities; and will get an idea of CM requirements tailoring for the level of project complexity.

Introduction

The technical-administrative discipline Configuration Management was born in the post WWII era when technical system's complexity increased. Driver for CM establishment were the US armed forces followed by NASA in the second half of the fifties.

Scope of the Course

This course lectures the five CM functions:

- Configuration Identification
- Configuration Control
- Configuration Status Accounting
- Configuration Verification & Audit
- CM Planning and Organizing

and the principles for implementing these functions.

What You Will Learn

- How to structure and document a system.
- How to control the evolution of such a system.
- How to enable the reporting of a certain configuration at a certain point of the product's life-cycle.
- How to verify that a desired configuration state has been achieved.
- How to plan a CM organization and how to anchor it in contract language.
- How to manage the configuration of digitized product definitions.

Target Audience

- Engineering manager and project engineers involved in spacecraft and launcher development and design.

- Engineers and project staff involved in production planning and control.
- Engineers and technicians responsible for verification of product compliance with documented requirements and design.

Prerequisites

Engineers or technicians with good skills in reading and understanding of technical documentation (specifications, drawings/lists, diagrams).

How You Will Learn It

- Verbal instructions by use of Power Point presentations.
- Class exercises.

What You Will Take With You

- A USB flash drive with Power Point presentation
- Certificate of Course Completion

Course Duration & Format

4 modules of 1 and a half hours each.

Instructor

The course will be taught by Mr. **Tommaso Sgobba**.

Mr. Sgobba career spans four decades in aerospace. Starting as structural engineer in the aviation industry, at the age of 31 he became chief inspector of military transport aircraft final assembly line, and later Quality Assurance manager for plants manufacturing advanced composites materials and jet engines. After moving to the European Space Agency, he worked on the Hermes spaceplane, on the development of solid rocket motors, and on Earth observation and meteorological satellites. Later he became head of Product Assurance and Safety for all major ESA manned missions on Space Shuttle, Russian space station MIR, and International Space Station (ISS).



Tommaso Sgobba