
SmarTEST Training Course Objectives

SmarTEST Training, Operator Level

Objectives:

- At the completion of the course, an operator will have an overview of the SmarTEST system configuration including hardware, Explorer and Manager, be able to start a pre-configured test including switching on, logging in, changing limits (to permit start-up), run data logging, stop a test and identify why a test stopped.
 - Additionally the Operator will be able to carry out basic servo loop set-up, servovalve balancing, adjust PID gain terms and confirm calibration settings including use of Explorer graphics and “CAL” check.
 - Attendance criteria: Able to meet/understand the syllabus items of Systems Services training course “Introduction to Servomechanisms”.
 - Further details are in the relevant syllabus [below](#).
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SmarTEST Training, Technician Level

Objectives:

- At commencement of the course a Technician will be at Operator level.
- At the completion of the course, a Technician will be able to configure a system from scratch including assigning and configuring tests (including calibration, pseudo channels and digital and analogue I/O), load a pre-configured spectrum, use advanced facilities and diagnostics (SmarChart, ACSDump etc) – Programming of tests is covered in the programmer module..
- Attendance criteria – Understanding of hydraulic closed loop control systems using servovalves, understanding of transducers and instrumentation associated with the laboratory tests. Knowledge of SmarTEST systems currently installed. Having completed or be able to meet the requirements of the Operator Level.
- Further details are in the relevant syllabus [below](#).

SmartEST Training Course Objectives

SmartEST Training, Programmer Level

Objectives:

- At commencement of the course a Programmer will be at Technician level.
- At the completion of the course, a Programmer will be conversant with the various types of test (Static, Dynamic & Endurance, [and Iron-Bird if relevant]) and how to create the tests. Additionally the use of Scripting and how to call scripts (for Startup, Shutdown and limits as well as from within tests) will be addressed.
- Attendance criteria – Understanding of hydraulic closed loop control systems using servovalves, understanding of transducers and instrumentation associated with the laboratory tests. Knowledge of SmartEST systems currently installed. Having completed or be able to meet the requirements of the Technician Module. Knowledge of Basic programming useful.
- Further details are in the relevant syllabus [below](#).

SmarTEST Training Course Syllabus

<i>SmarTEST Training, Operator</i>
1. Overview of SmarTEST
2. System architecture (hardware and software overview)
3. FcsExplorer Overview
4. FcsManager Overview
5. Understanding basic software modules of SmarTEST Manager and Explorer
6. Switching on the equipment
7. Messages (including logging in)
8. Overview of the Control loop employed by SmarTEST
9. Tuning an actuator
10. Starting the test
11. Stopping the test
12. Basic data acquisition
13. Basic graphics
14. Basic fault finding
15. Scripting Overview
16. Optimising test performance, including test pacing
17. Basic calibration checks – including Shunt Cal.
18. Glossary of terms

SmarTEST Training Course Syllabus

<i>SmarTEST Training, Technician</i>
1. System architecture (hardware and software)
2. Communication – configuring the Ethernet and ARP system
3. RTFE and SMC boot modules
4. FcsExplorer – Advanced feature
5. FcsManager – Advanced feature
6. Understanding the software modules of SmarTEST Manager and Explorer
7. Transducer connections (loadcell, pressure and displacement)
8. Transducer calibration (load (bridge A&B) and displacement)
9. Defining a single channel test
10. Defining a multichannel test
11. Monitoring facilities
12. Digital inputs and outputs, configuring, assigning etc.
13. Analogue inputs and outputs, configuring, assigning etc.
14. Pseudo channel functionality
15. Data Acquisition – Continuous and single sample, hardware settings
16. Data Acquisition – Test settings and post processing tools
17. Graphics – configuring and saving (Explorer and Manager)
18. Scripting – an overview
19. Scripting – during startup and shutdown
20. Scripting within tests
21. CANbus interfacing – if applicable
22. Tuning a CLAM – if applicable
23. Fault finding using diagnostic tools such as SmarChart, ACSDump etc
24. Glossary of terms

SmarTEST Training Course Syllabus

SmarTEST Training, Programmer

1. Introduction
2. Multichannel tests
3. Static test definition
4. Dynamic test definition
5. Endurance test definition
6. Iron Bird Tests – if applicable
7. Scripting
8. Digital inputs and outputs, configuring, assigning etc.
9. Analogue inputs and outputs, configuring, assigning etc.
10. Sample tests
11. Glossary of terms
12. SmarTEST Export tool