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NR/L2/CTM/012/050 Competence & Training in Signal Engineering

SWT Mod 6: Configure, Test and Introduce Electronic Systems and Equipment into Service.

1 Purpose

The purpose of this competence standard is to define the competence requirements for persons required to undertake the duties of a Signalling Electronic Systems Tester.

2 Scope

This competence standard covers the role of persons undertaking the duties of Electronic Systems Configuration and Testing. Signalling Electronic Systems Testers are responsible for establishing the conformity of high integrity electronic systems to the authorised design as part of the testers installation (new works and maintenance activities). Signalling Electronic Systems Testers are also to be capable of introducing, or reintroducing, the system and equipment to service following such work, as long as it does not directly interface with the safety-critical signalling.

The level and extent of responsibility will include their own safety and that of others who might be affected by their work. The person will be expected to refer to others for authorisation when required, will be responsible for the implementation of the instructions and will work within set procedures and specifications. The person is responsible for the quality of their completed work.

This competence standard shall be used to assess the competence of people undertaking the duties of a Signalling Electronic Systems Tester.

3 Competence Standard

This Competence Standard comprises three elements.

- Element 1 Prepare to Test Systems and Equipment
- Element 2 Verify Compliance of Systems and Equipment with Specification
- Element 3 Introduce Equipment and Systems to Operational Service

The first element deals with the availability of test procedures and equipment for the work, and check that tests are sufficient. To identify the resources required and to establish that adequate safety arrangements and any additional related measures are provided. To identify testing equipment and materials and to check they are correctly accessed and fit for purpose. Check that any pre-test procedures are established and adhered to including sufficient correlation testing carried out prior to the existing installation being disturbed. Establish and maintain effective communications with relevant people and organisations including all relevant information.

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The second element deals with ensuring that appropriate safety procedures are implemented during testing and test specifications are adhered to, sufficient in content and scope and completed within timescales. Ensuring that test equipment and materials are correctly identified and fit for purpose. To establish compliance to specifications within scope of testing, and that any non-compliance is identified and dealt with. Establish and maintain effective communications. Check that documentation is complete and accurate, making amendments within the limits of own authority and competence or referring to the appropriate people.

The third element deals with implementing appropriate safety procedures during hand-over verifying completed testing activities and that incomplete testing activities are recorded and action taken to maintain safety. Check that all test equipment and materials are recovered and the site is secured. Authority is given for safe operational use of the system when testing has been completed, within agreed timescales and is confirmed with relevant people. Check that sufficient functional tests are monitored to establish the availability of the system. Establish effective communications, and check that document requirements are complete and accurate. Check that all action is taken within the limits of own authority, and where required they are referred to the appropriate people.

4 Assessment

4.1 Initial Assessment

Progression to this competence will be from Module 5E by suitable and sufficient work experience under mentorship as well as training in the correct use of testing documentation and check marks, or from a Mod 6 course if available.

Equipment specific courses will also be required to attain competence in specific Signalling Electronic Systems.

4.2 Re-Assessment

Licence holders will undergo surveillance after 5 years in order to retain their licence with a renewal IRSE Licensing assessment required after 10 years. Employers may have their own additional assessment processes in addition to this, and shall employ suitable surveillance of SWT staff.

4.3 Knowledge Evidence that is common to the whole unit

You shall have knowledge and understanding of:

1. Health and safety legislation, regulations and safe working practices and procedures.
2. Reporting lines and procedures
3. Lines and methods of communication
4. Which communication methods/protocols are applicable and how to establish that colleagues understand what is required.

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Sig Mod 6_Unit – Configure, Test and Introduce Electronic Systems and Equipment into Service

Element 1: Prepare to Test Systems and Equipment

Performance statements.

You shall be able to:

- a. Confirm that the requirements and availability of test procedures and equipment for the work is accurately established within the limits of own authority, responsibility and competence.
- b. Confirm that the planned tests are correct in relation to content, scope, sufficiency and requirements for independent testing.
- c. Confirm the resources required for testing are accurately determined and where necessary additional resources requested.
- d. Confirm that adequate safety arrangements are provided and relevant additional measures are implemented before testing begins.
- e. Check that necessary testing equipment and materials are correctly identified accessed and their fitness for purpose established.
- f. Check that any pre-test procedures to be undertaken are established and adhered to.
- g. Check that sufficient correlation testing is undertaken prior to the existing installation being disturbed.
- h. Check that effective communication is established and maintained with relevant people and organisations.
- i. Check that necessary information is communicated to relevant people and organisations.

Scope of Competence.

1. Resources include:
 - Personnel, numbers and competence / Time
 - Equipment / Availability of the system for testing
2. Safety arrangements include:
 - Personnel / Occupational
 - Operational / Environmental
3. Pre-test procedures include:
 - Instrument verification / Document verification
 - Control of tools and testing equipment / Reconfiguration
4. Correlation is established by reference to:
 - Documentation / Labelling
 - Standards / Data version
5. Methods of correlation include:
 - Reference to test equipment / Inspection
6. Communication is both:
 - Formal / Informal
 - and is
 - Verbal / Written
7. Information includes:
 - Reportable results of correlation / Safety arrangements
 - Test instructions