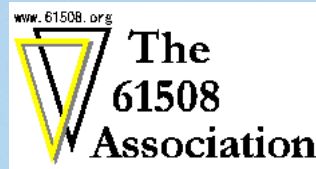


# **Competence management for functional safety - a certifier's viewpoint**

**Paul Reeve  
Sira Test & Certification**

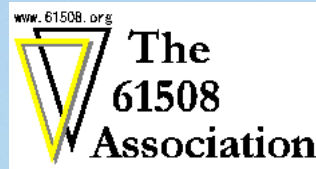
**2nd November 2007**



## *Competence is part of the management of functional safety - 61508 Part 1 clause 6.2.1 (normative)*

- A policy & strategy for achieving functional safety
- Roles & responsibilities for functional safety defined
- Identification of the applicable safety lifecycle phases
- etc, etc
- **Competence and training** - Part 1, clause 6.2.1 (h)
- etc, etc

*So, it's part of the "safety culture" of an organisation*

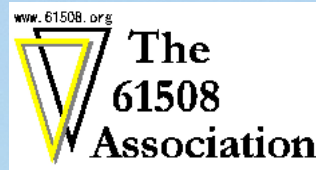


*Competence is assessed under the scope of a*  
***'Functional Safety Capability Assessment'***

We are looking for evidence of:



- ✓ **competent people**  
- deployed on SR systems/projects
- ✓ **an effective management process for competence**



## ***IEC 61508-1/6.2.1, h) states:***

To define procedures for ensuring that applicable parties... are competent to carry out the activities for which they are accountable;

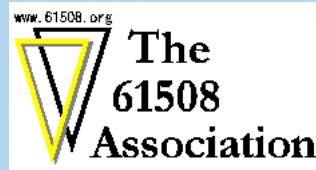
In particular, the following should be specified:

the training of staff in diagnosing and repairing faults and in system testing;

the training of operations staff;

the retraining of staff at periodic intervals.

***(CASS FSCA TOE 8)***



# Competent people

**Roles defined** (that have a SR element)

Procedure?

**Grading defined, e.g.,**

- no. years experience....
- no. projects worked on..
- qualifications.....
- training.....
- knowledge

Supervised

2yrs

0-2

BSc

intro

Competent

5yrs

2+

BSc+

1wk

Expert

10yrs

5+

CEng

extens

...relevant to sector, discipline, domain

**Competence records**

- link roles to names

HR records?

## A competence process

### Review

#### 1) Project

- planned
- change

#### 2) Generic capability

- appraisals
- corporate planning

**Identify** competence requirements for project

**Compare** requirements with competence records

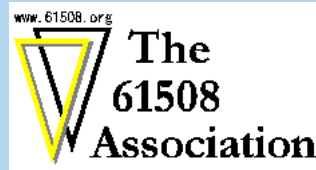
**Address the gap** (hire?, training? ...)

**Allocate** people to SR tasks

Is there a logical process for deciding why an individual has been allocated to a task?

Analyse requirements spec?

Safety Plan?



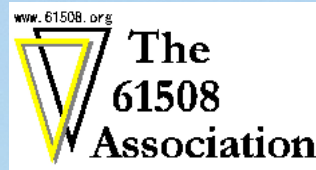
## What is the assessor looking for?

Does the safety plan identify functional safety tasks?

Are the competencies identified for those tasks?

Is there a gap analysis between the competence required and that of the individual allocated to the task?

Is there a logical process for deciding why an individual has been allocated to the task?



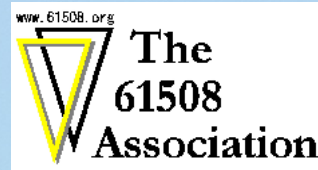
## What is the assessor looking for...continued

Is there an organisation training plan and training records that can be reviewed?

How are sub-contractors assessed before being allocated?

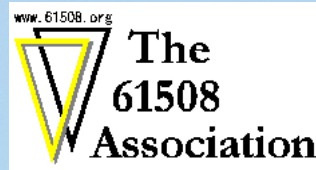
What is the company's response to the HSE guidelines?

How does the company match SIL against level of competency



## Example of one competence management system

- Safety related systems advisor (non-manufacturer)
- Overall lifecycle activities covered phases 3 - 5
- Implemented the HSE guidelines
- Small company



## Project level

### 1) Quotation stage

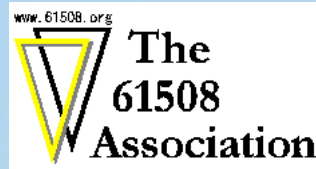
- identify competence requirements
- select appropriate staff from records
- put names in quotation with explanation

### 2) Order received

- use names as per quote
- under change control

### 3) Regular review of competence requirements

- at project meetings, in terms of:
  - existing level
  - supervision required
  - projected needs



## Individual level

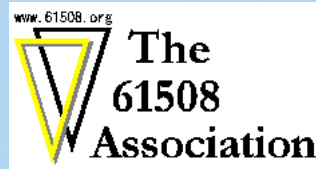
### Personnel assessment process

- self assessment (using questionnaire)
- peer review group (senior staff)
- facilitated by Personnel Manager
- results documented

### Peer review process

Every 5 years external assessor invited to:

- assess peer review group process against 61508 and latest guidance
- assess the review process against client safety needs
- review future needs
- review achievements

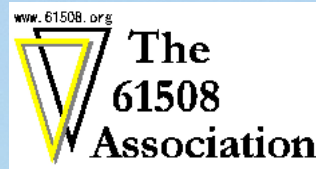


## **The procedure document**

**Referred to the HSE guidance**

**- Against each HSE principle there was a statement of implementation**

**One procedure, 12 pages**



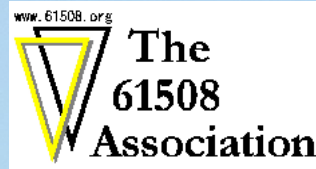
## Finally

There was evidence of:

- competent people in the company
- an effective process

**CASS FSCA certification covers the effective implementation of the HSE guidance**

*Thanks for listening*



# A competence model

Staff

Organisation

FUNCTI ON with Competency standards

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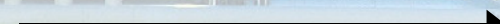
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Team with the combined competence to perform a Function