

STANDARD

DNVGL-ST-0049:2014-08

Competence management systems

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FOREWORD

The standards lay down technical requirements and acceptance criteria to the object in question, e.g. vessels, offshore units and installations.

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Any comments may be sent by e-mail to rules@dnvgl.com

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CHANGES – CURRENT

General

This document supersedes Standard for Certification No. 3.101, October 2008.

Text affected by the main changes in this edition is highlighted in red colour. However, if the changes involve a whole chapter, section or sub-section, normally only the title will be in red colour.

On 12 September 2013, DNV and GL merged to form DNV GL Group. On 25 November 2013 Det Norske Veritas AS became the 100% shareholder of Germanischer Lloyd SE, the parent company of the GL Group, and on 27 November 2013 Det Norske Veritas AS, company registration number 945 748 931, changed its name to DNV GL AS. For further information, see www.dnvgl.com. Any reference in this document to "Det Norske Veritas AS", "Det Norske Veritas", "DNV", "GL", "Germanischer Lloyd SE", "GL Group" or any other legal entity name or trading name presently owned by the DNV GL Group shall therefore also be considered a reference to "DNV GL AS".

Main changes

- **General**
 - references updated
 - format and linguistic corrections.
- **Sec.1 Application**
 - [1.4]: References have been updated.
 - [1.6.3]: 2000 has been updated to 2008.
- **Sec.3 Competence management system**
 - [3.1]: Updated "with effect on" to "related to".
- **Sec.4 System requirements**
 - [4.3.3]: Guidance note has been updated.
 - [4.3.4]: "made" has been changed into "performed".
 - [4.4.1]: Guidance note has been updated.
 - [4.5.3]: Word has been added.
 - [4.6.2]: Word has been added and sentence corrected.
 - [4.7.6]: Sentence has been corrected.

Editorial corrections

In addition to the above stated main changes, editorial corrections may have been made.

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SECTION 1 APPLICATION

1.1 Objective

The objective of this standard is to continually develop competence of seafarers and those supporting them ashore. This will ensure:

- improved performance on board and ashore related to safety, environment and operation
- conformity to statutory requirements
- active use of data from analysis and handling of incidents
- consistent, high quality recruitment and better retention
- improved competence of individuals
- improved maintenance and reduced quality costs, and
- establishment of a clear connection between the company business goals and key performance indicators (KPIs) and the company competence.

These achievements will be recognised by certification.

1.2 Scope

1.2.1 Relationship to competence

The standard covers identification of business goals and KPIs and their relationship to competence.

1.2.2 Relations to other systems

The competence management system may be an integral part of an established management system. It is a voluntary certification scheme beyond the international safety management (ISM) code. The company ISM certification continues to be valid regardless of certification in accordance with this standard.

1.2.3 Acknowledgement of system elements

Certification in accordance with this standard will acknowledge those system elements that are covered by ISO 9001 if certified by a body recognized by DNV GL.

1.2.4 Primary elements

The standard covers the primary elements illustrated in [Figure 1-1](#). The core process is the competence evaluation and continual improvement of the seafarer. In addition, the standard defines requirements for the administration of the competence and career management system and the management of the sea staff and shore staff, as appropriate.

1.3 Application

1.3.1 General

This standard is applicable to ship owners and ship managers.

1.4 Normative references

The following documents contain provisions which, through reference in this text, constitute provisions of this standard.

- ISO 9001:2008 Quality management systems - Requirements.*
- IMO: International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW).*
- IMO: Seafarers' Training, Certification and Watchkeeping (STCW) code.*
- IMO: International Safety Management (ISM) code.*

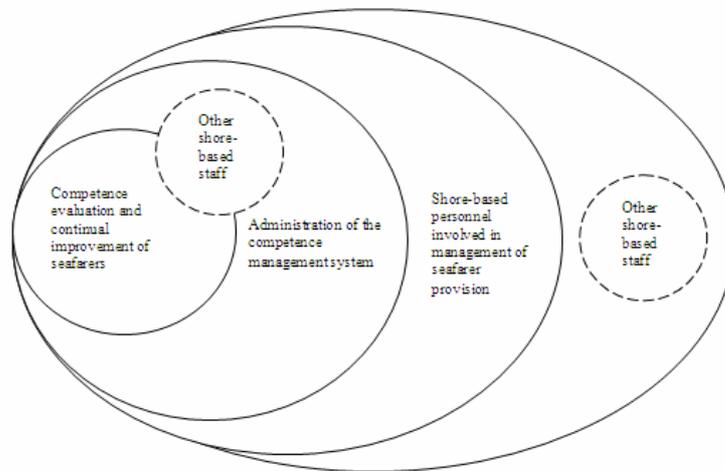


Figure 1-1
Primary elements of the standard. Inclusion of shore-based staff within the competence management system is not mandatory, however, companies are encouraged to consider these aspects.

1.5 Equivalence and alternatives

DNV GL will consider alternative ways of complying with this standard found to represent an overall quality level equivalent to that of this standard.

1.6 Definitions

1.6.1 Assessor

An *assessor* is a person on board or ashore conducting an in-service assessment of the competence of a seafarer who has:

- received appropriate guidance in assessment methods and practice; and
- gained practical assessment experience under the supervision and to the satisfaction of an experienced assessor.

1.6.2 Competence

Competence is the knowledge, skills and attitude utilised to fulfil a defined role, safely and successfully to a defined standard.

Guidance note:

Knowledge, skills and attitude are considered to be *elements* of competence.

Competence may also be described by the following *levels* (see the Taxonomy defined by DNV GL in for example Standards of Competence): *Knowledge, Understanding, Application and Integration*.

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1.6.3 Corrective action

Corrective action is as described in ISO 9001:2008 item 8.5.2.

1.6.4 Company

Company is as defined in the ISM code Part A 1.1.2, unless otherwise agreed in the certification agreement.

1.6.5 Incident

An *incident* is an undesired event that could or does result in a loss.

Guidance note:

Terms such as accidents, near misses, near-accidents, non-conformities, findings and hazardous occurrences are all covered under this definition.

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1.6.6 Non-conformity

Non-conformity means an observed situation where the objective evidence indicates the non-fulfilment of a specified requirement.

1.6.7 Observation

Observation means a statement of fact made during an audit and substantiated by objective evidence. It may also be a statement made by the auditor referring to the competence management system which, if not corrected, may lead to a non-conformity in the future.

1.6.8 Job profiles

Job profiles are descriptions of what competencies are needed for a particular job.

SECTION 2 CERTIFICATION

2.1 Scope of certification

2.1.1 General

The certification process shall verify existence and implementation of a competence management system in accordance with this standard.

The certification process shall not cover verification of competence of individuals.

Guidance note:

The scope of certification may be limited to one ship type, or trade only.

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For initial certification:

- the company shall have an implementation plan - acceptable to DNV GL - for all ships and affected offices
- the number of ships to be audited by DNV GL is given in [Table 2-1](#).

The competence management system shall be implemented for all ships and associated shore-based support offices within 2 years.

2.1.2 Implementation plans and audits

The company shall establish an implementation plan for new ships and or associated shore-based support offices. Unless otherwise agreed with DNV GL, the company shall conduct an implementation audit within 3 months from acquisition or delivery of a ship or establishment of a new branch office.

2.1.3 Limitations and published information

Any limitations and reference to documentation will be stated in the certificate. The part of the company's organisation and the names of the ships covered by the competence management system and audited by DNV GL will be published. The published information will be continually updated in the validity period of the certificate during a phased implementation of the system throughout the company.

2.2 Certification process

2.2.1 Annual audits

All associated shore-based support for the ships shall be audited by DNV GL annually based on an audit plan accepted by DNV GL.

2.2.2 Ship sampling

The minimum number of ships that shall be audited by DNV GL within the validity period of the certificate is shown in [Table 2-1](#).

DNV GL retains the right to increase the minimum number of ships that shall be audited as required.

2.2.3 Concurrent audits

Audits may be done concurrently with ISM audits or other audits carried out by DNV GL.

2.2.4 Implementation period

The competence management system shall have been implemented for a period of 3 months – or a period showing evidence of a complete replacement cycle for a sample of crew members if that is longer - before certification can take place.

Table 2-1 Sample size for audits onboard ships for ship owners and ship managers

| <i>Number of ships</i> | <i>Number of initial audits</i> | <i>Number of annual audits</i> |
|------------------------|---------------------------------|--------------------------------|
| 1 to 50 | 2 | 1 |
| 51 to 100 | 3 | 2 |
| 101 and above | 4 | 3 |

2.2.5 Certificate

Companies that have implemented a competence management system that complies with the requirements of this standard will receive a DNV GL competence management system certificate.

2.2.6 Validity of certificate

The DNV GL certificate is valid for a period of 5 years. The certificate may be renewed, provided the results from periodical audits are satisfactory.

The certification will include:

- initial assessment of the competence management system
- initial and periodical audits
- assessment and review of audit reports
- renewal audit.

2.2.7 Changes to the system

Significant changes affecting the competence management system shall be reported to DNV GL without undue delay.

2.2.8 Withdrawal of certificate

If a breach of requirements in this standard is revealed or other conditions occur that DNV GL considers significant, the certificate will be considered withdrawn.

The certificate may be withdrawn if periodical or renewal audits are not requested by the client.

2.3 Initial assessment

2.3.1 General

DNV GL shall perform an initial assessment of the competence management system to verify conformity with the requirements in this standard. The initial assessment does not cover the implementation of the system.

2.3.2 Preparations for initial audit

Actions shall be taken by the company based on all identified gaps prior to the initial audit.

2.4 Initial audit

An initial audit of the competence management system shall be performed to verify compliance with the applicable requirements in this standard and additional company requirements related to competence needed to comply with the company's business goals and key performance indicators.

2.5 Review after initial audit

When the corrective actions are agreed, implemented and closed, certification will be recommended.

2.6 Periodical audits

Periodical audits shall be carried out to ensure that the competence management system is being

maintained in a satisfactory manner during the period of validity of the certificate. A minimum of one audit per year shall be carried out at the head office ashore.

2.7 Periodical shipboard audits

Periodical shipboard audits shall be carried out according to [Table 2-1](#).

2.8 Additional audits

If audits indicate that the competence management system is not effective, additional audits to verify implementation of corrective actions may be required at the discretion of DNV GL.

2.9 Follow-up of audits

Non-conformities, if any, shall be reported in writing and appropriate corrective actions shall be agreed. The company's handling of observations shall be documented.

2.10 Renewal of the certificate

A request for the renewal of a certificate for a competence management system shall be submitted to DNV GL at least 90 days before the current certificate expires.

The sample audits as given in [Table 2-1](#) shall be carried out prior to the renewal audit.

When the corrective actions are agreed upon, implemented and closed, a new certificate will be issued.

SECTION 3 COMPETENCE MANAGEMENT SYSTEM

3.1 Continual improvement

The competence management system shall provide a foundation for continual improvement of all factors related to generating, maintaining and utilising of competence.

3.2 Responsibility and authority

3.2.1 General

The responsibility, authority and interrelationships of all personnel ashore and onboard who manage, perform and verify work affecting the competence management system shall be defined and documented.

3.2.2 Competence management policy

A written competence management policy shall be formulated.

3.3 System administration

The administration of the competence management system shall be supported by appropriate information systems with authorisation and protection measures and at least cover:

- definition of required competence of administrators of the system
- keeping track of courses, competence, training and assessment records
- document control and
- record keeping.

Guidance note:

Procedures to control documents and data, both ashore and onboard, should be established and maintained.

The document control system should include guidelines for determining documents and records requiring document control.

Document control includes the proper identification, distribution, collection or filing and maintenance of controlled documents and records. Obsolete documents should be promptly removed.

The company should identify and establish retention times for all competence management system related records both ashore and on board.

The company should establish an effective system for document and record protection, including data back-up and storage procedures and facilities ashore and on board.

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3.4 Competence management process

3.4.1 Steps of the process

A successful competence management process consists of the steps described in 4 and illustrated in [Figure 3-1](#).

3.4.2 Implementation of all elements

To obtain certification all elements shall be clearly implemented.

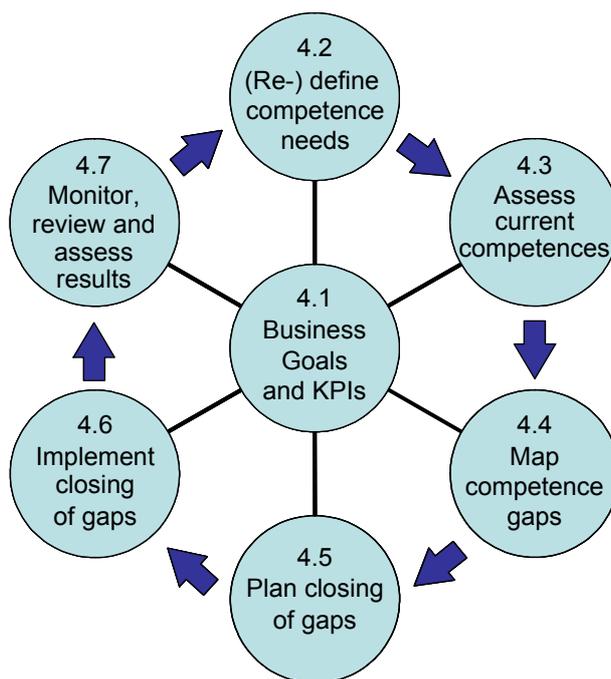


Figure 3-1
The steps of a successful competence management process

SECTION 4 SYSTEM REQUIREMENTS

4.1 Business goals and KPIs

4.1.1 Business goals

Business goals shall be defined. An evaluation of how the defined business goals influence competence needs and plans shall be made.

Guidance note:

A "Business goal" is a state, type of activity, work or operation that the company has formulated and hope to achieve. It is used internally for directional guidance. Examples of Business goals are:

- To become the world's leading operator of floating production, storage and offloading vessels.
- Undisputed world leadership in marine services for the cruise industry by 2018.

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4.1.2 Key performance indicators

Appropriate measuring methods for efficiency, progress and implementation, key performance indicators (KPIs) shall be defined.

4.1.3 Alignment of key performance indicators

The company shall:

- align KPIs between ship owner and ship manager and crew manning office, as applicable
- assess how performance is measured.

Guidance note:

The measurement of performance might be the owner's measurement of how to become the preferred ship operator within a 5 years period.

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4.2 Define competence needs

4.2.1 General

Based on business goals, competence needs shall be identified. Competencies for different positions shall be defined both for competence defined in the STCW code and or ISM code and company-specific competencies.

4.2.2 Job profiles

All elements of competence as defined in [1.6] shall be separately addressed. Job profiles shall be clearly defined.

Guidance note:

"Best practices" may be used to indicate performance level.

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4.3 Assess current competencies

4.3.1 General

Methods, tools and plans for assessment of the current situation within the organization shall be established (how, who, what, when, where and why).

4.3.2 Existing requirements

The assessment shall identify existing requirements versus roles and ranks for the sea staff and shore staff as appropriate, addressing requirements at both the individual and ship levels.

4.3.3 Competence assessment

Methods and criteria for competence assessment shall be established.

Guidance note:

This may be done through self-assessment forms, tests and by interviews.

Special arrangements may have to be considered for Masters and Chief Engineers.

Open experience exchange between employees may only be expected if it is supported by a blame free culture.

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4.3.4 Assessors

Assessments shall be performed by qualified assessors.

Guidance note:

This should be documented by successful completion of training based on IMO Model course No. T130E "On-board assessment", TA312E "Seafarers assessment, exam and certification", or equivalent or as defined by the company.

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4.3.5 Appeals

The person being assessed shall have a possibility to appeal.

4.4 Map competence gaps

4.4.1 General

Based on the definition of the ideal situation and the current situation competence gaps and proposed rectification for improvements shall be identified. An effective recruitment and training strategy shall be established.

Guidance note:

Competence gaps should not be confused with weakness of relevant work process.

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4.4.2 Content of gap assessment

The gap assessment shall at least cover:

- the criticality of the identified competence gaps based on a criticality evaluation of the activity involved (risk assessment)
- operational goals (availability and capacity forecasts, business goals)
- individual annual and long-term competence plans including relocation aspirations
- refresher training requirements
- crew co-ordination training (e.g. drills).

Guidance note:

A methodology for being proactive with respect to individual training needs is recommended.

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4.4.3 Categories

The gap assessment shall at least include the following categories:

- a) General Provisions (STCW Chapter I).
- b) Master and deck department (STCW Chapter II).
- c) Engine department (STCW Chapter III).
- d) Radio communication and radio personnel (STCW Chapter IV).
- e) Special training requirements for personnel on certain types of ships (STCW Chapter V).
- f) Emergency, occupational safety, medical care and survival functions (STCW Chapter VI).

- g) Alternative certification (STCW Chapter VII).
- h) Specific competencies onboard ships not fully defined by the STCW competence requirements.

Guidance note:

Such competence may include risk management, hazard identification study (HAZID) or hazard and operability study (HAZOP), health, safety, environment and quality (HSEQ) leadership and general management skills etc. For some specific ship types such as floating production, storage and offshore loading units (FPSOs), diving support vessels (DSVs) etc. the competence requirements for non-marine positions may also be included.

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- i) Shore-based personnel involved in the administration of the competence management system.
- j) Other-shore based personnel as defined in the competence management system.

4.5 Plan closing of gaps

4.5.1 General

Based on the result of the gap analysis, means (e.g. training courses, changed procedures etc.) that are required in order to fill gaps shall be identified and prioritised. In this process the individual shall be involved to give control and input over their own career path.

4.5.2 Training providers

Requirements for qualifying training providers according to the quality of their training shall be established and implemented.

External evaluation of the training provider's performance shall be an element of the qualification requirements.

4.5.3 Guidelines for promotion, recruitment and exit

Guidelines for promotion, recruitment and exit shall be present. The guidelines may have their origin in business goals.

Guidance note:

Training needs could also be tutoring on newer ships with newer systems, deliberate posting and rotation of staff to newer ships, different ships etc. To ensure an up to date approach, experience should be refreshed.

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4.6 Implement closing of gaps

4.6.1 General

Based on the plan for closing gaps, such as a training needs analysis, training plans shall be implemented, as applicable.

4.6.2 Training plans

When designing training plans, the following aspects shall at least be considered:

- a) training of individual competencies
- b) generic training per role or rank
- c) training for present position
- d) training for qualification for future position
- e) training of assessors
- f) training for compliance with statutory requirements
- g) training for ship type
- h) training for specific vessel and
- i) crew co-ordination training.

Guidance note:

Based on developed training plans, a pilot-test shall be run to verify the suitability before implementation.

Guidelines for additional training should be developed as necessary for graduates from academies with curricula or performance below company-defined minimum standards or from national training schemes that show evidence of training gaps within the STCW curricula, unless recruitment is limited to students from company-approved, satisfactory colleges offering the full STCW curriculum.

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4.7 Monitor, review and assess results

4.7.1 Internal audit

A plan for internal auditing shall be established and implemented. The frequency of the internal audits shall at least be as for the audits carried out by DNV GL.

4.7.2 Management review input

A management review shall be carried out at least annually, be documented and end with an action list. The input shall at least include:

- a) business goals
- b) KPIs
- c) results from audits
- d) customer feedback
- e) reported incidents (ref. [1.6.5])
- f) system effectiveness
- g) follow-up actions from previous management reviews
- h) changes that could affect the competence management system
- i) recommendations for improvement
- j) identification of changes in framework or conditions (e.g. rules, technology, feedback and knowledge management)
- k) collection of statistical data for operational staff performance, including determination of ineffective and under-performing staff
- l) evaluation of competence against performance (key performance indicators) and business goals
- m) recruitment, promotion and exit processes.

4.7.3 Management review output

The output from the management review shall at least include any decisions and actions related to:

- a) improvement of the effectiveness of the competence managements system and its processes
- b) improvements related to customer requirements
- c) resources needs.

4.7.4 Competence development review

Competence development of individuals shall be regularly reviewed. The review shall cover knowledge, skills and attitude and shall segregate a knowledge deficiency from substandard practice and corrective action shall be taken appropriate to each case.

4.7.5 Incident reporting

The company shall ensure that active systems are in place for incident reporting, investigation and follow-up.

The system shall focus on identification and analysis of incidents that are related to competence gaps and include:

- a) incident reporting

- 
- b) investigation and data collection
 - c) cause analysis
 - d) corrective action development
 - e) report review and follow-up to ensure the information is complete
 - f) corrective action implementation and follow-up.

Guidance note:

The purpose of the system is to reveal the basic or root causes so that corrective action can be implemented to remove or reduce the chance of recurrence and improve the management system.

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4.7.6 Assessment of training

Value of the training for the company and training method efficiency shall be assessed. Procedures shall be established to measure the suitability and effectiveness of:

- a) training courses and providers
- b) assessors.

4.7.7 Improvement

Areas of improvement shall be analysed and rectified by corrective actions.

Based on the activities mentioned above, the system should remain dynamic with new and future goals established, its effectiveness reviewed and the overarching process continually examined and improved.



DNV GL

Driven by our purpose of safeguarding life, property and the environment, DNV GL enables organizations to advance the safety and sustainability of their business. We provide classification and technical assurance along with software and independent expert advisory services to the maritime, oil and gas, and energy industries. We also provide certification services to customers across a wide range of industries. Operating in more than 100 countries, our 16 000 professionals are dedicated to helping our customers make the world safer, smarter and greener.