

RECOMMENDED PRACTICE

DNVGL-RP-0007:2014-04

Certification scheme for dynamic positioning operators

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FOREWORD

The recommended practices lay down sound engineering practice and guidance.

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CHANGES – CURRENT

General

This is a new document.

On 12 September 2013, DNV and GL merged to form DNV GL Group. On the 25th of November 2013 Det Norske Veritas AS became the 100% shareholder of Germanischer Lloyd SE, the parent company of the GL Group, and on 27th 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”.

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SECTION 1 GENERAL

1.1 Introduction

Dynamic Positioning (DP) can be considered a high risk activity during which a team and advanced technological equipment work together to maintain control of a vessel or mobile offshore unit (MOU) or perform a task, using DP. The Dynamic Positioning Operator (DPO) plays a crucial role in these operations and in the communication with other parties.

This Recommended Practice (RP) describes a framework sketching a general, common approach for competence development, assessment and certification of Dynamic Positioning Operators.

The framework is based on the input of a variety of industry stakeholders and also incorporates certification principles as described in ISO/IEC 17024: 2012 - *Conformity assessment – General requirements for bodies operating certification of persons*.

1.2 Objective

The objective of this RP is to provide guidance for parties such as a flag-state, industry organisation or other party aiming to develop, establish and/or maintain a scheme for certification of Dynamic Positioning Operators in line with industry expectations and accepted certification principles.

1.3 Application

As the term indicates a '*Recommended Practice*' is a guidance document containing recommendations, in this case related to certification of Dynamic Positioning Operators in line with industry expectations and accepted certification principles. It may also serve as a basis for verification of scheme processes and systematics and is considered applicable worldwide.

A Recommended Practice must not be confused with a DNVGL '*Standard*' or a '*Certification Scheme*'. A Standard would contain more detailed, measurable and prescriptive requirements and would be used as a reference document to certify against.

The RP does contain references to existing *DNV Standards for Certification* and DNV GL standards that may assist in addressing certain elements of the RP in a way that would align with DNVGL's opinion. These standards reflect DNVGL's views and criteria.

A *Certification Scheme* in this case is a scheme to certify a person. It can use this RP as a reference.

(Ref. [App.A](#) – Sample: Certification Scheme)

It is not guaranteed that a certification scheme developed in accordance with the RP automatically meets DNVGL's criteria. This would only be the case if the detailed criteria and approach formulated by a certification body align with those of DNVGL.

In addition it is noted that the content of this RP is open for additional input and comments in order to include the latest developments and experiences on DPO competence development, assessment and certification. These inputs and comments shall be reflected in subsequent revisions of this document.

1.4 Scope

The scope of the RP includes all elements that have been identified as crucial in the development and certification of a DPO. Based on the industry's expectations the following elements are covered as part of a certification scheme:

- competence development
- sea-time / on board competence building
- competence assessment
- certification
- re-certification
- previously acquired competence.

The RP focuses on the certification scheme itself and does not include all expectations and responsibilities towards the certification bodies issuing certificates of competence.

The RP applies to certification of any DPO on any type and class of DP vessel.

A certification scheme should specifically address operations that require additional competence.

Guidance note:

DNVGL-ST-0023 – *Competence of dynamic positioning operators* provides different notations for specific operations and the DP-systems and modes that should form part of the DPO’s skillset. (Please visit DNVGL-website for latest version)

Table 1-1 Notation codes

<i>Notation Code</i>	<i>Competent in the use of the following DP-systems</i>	<i>Examples of operations</i>
AJ/S	Autopos, Joystick (DP & Independent)	Stationkeeping: Supply, Standby, Anchorhandling, Cruise, Well service, Accommodation, Lifting operations, Construction, Diving
AJ/DPA-WV	Autopos, Joystick, Approach mode, Weather vane	Offshore Loading: Shuttle tankers
AJ/FT-AT	Autopos, Joystick, Follow target, Autotrack	ROV operations, Cable laying, Pipe laying, Trenching, Dredging, Rock dumping
AJ/DPA-STL	Autopos, Joystick, DP-Approach, STL-Connect, STL-Loading	Submerged Turret Loading operations
AJ/POS	Autopos, Joystick, Anchorhandling, Posmoor, Drilling, Riser management	Use of DP by rigs / MODU while anchored during drilling / production operations

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1.5 Document structure

The first chapter contains general information about certification of Dynamic Positioning Operators.

Further guidance on certification schemes, competence development and training, competence assessment, competence retention and equipment are covered in separate chapters.

For distinction, the general information is printed in regular text, and the specific guidance is in italics and grouped under Guidance notes as in the example given. The guidance notes reflect many of DNVGL’s views and certification criteria.

Guidance note:	<i>Sample text</i>
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1.6 Definitions

The following terms are related to the certification activities:

Appeal	Request by applicant, candidate or certified person for reconsideration of any decision made by the certification body related to her/his desired certification status
Assessment	Process that evaluates a person’s fulfilment of the requirements of the certification scheme
Certificate	Document issued by a certification body indicating that the named person has fulfilled the certification requirements
Certification body	An independent and impartial organization having the overall responsibility of a certification scheme, including defining and managing all aspects, maintenance, assessment and issuing and registration of certificates
Certification process	Activities by which a certification body determines that a person fulfils certification requirements, including application, assessment, decision on certification, recertification, and use of certificates and logos/marks
Certification requirements	Set of specified requirements including requirements of the scheme to be fulfilled in order to establish or maintain certification

Certification scheme	Competence and other requirements related to specific occupational or skilled categories of persons
Competence	Ability to apply knowledge and skills to achieve intended results
Complaint	Expression of dissatisfaction, other than appeal, by any individual or organization to a certification body, relating to the activities of that body or a certified person, where a response is expected
Examination	Mechanism that is part of the assessment which measures a candidate's competence by one or more means, such as written, oral, practical and observational, as defined in the certification scheme
Examiner	Person competent to conduct and score an examination, where the examination requires professional judgment
Fairness	Equal opportunity for success provided to each candidate in the certification process
Impartiality	Presence of objectivity
Qualification	Demonstrated education, training and work experience, where applicable
Reliability	Indicator of the extent to which examination scores are consistent across different examination times and locations, different examination forms, and different examiners
Scheme owner	Organization responsible for developing and maintaining a certification scheme
Test Centre	An entity performing impartial assessments of competence as part of a certification scheme, either under supervision or as integral part of a certification body
Validity	Evidence that the assessment measures what it is intended to measure as defined by the certification scheme

(See ISO 17024:2012 /13/)

1.7 Abbreviations

ASOG	Activity Specific Operating Guidelines
CB	Certification Body
DP	Dynamic Positioning
DPO	Dynamic Positioning Operator
FMEA	Failure Mode and Effects Analysis
IMCA	International Marine Contractors Association
IMO	International Maritime Organisation
ISO	International Organization for Standardization
MODU	Mobile Offshore Drilling Unit
RP	Recommended Practice
STCW	Standards of Training, Certification and Watch keeping
WSOG	Well Specific Operating Guidelines

1.8 References

- /1/ DNV Standard for Certification STC 2.14 - *Maritime simulator systems*
- /2/ DNVGL-ST-0008 - *Learning programmes*
- /3/ DNVGL-ST-0023 - *Competence of dynamic positioning operators*
- /4/ DNVGL-ST-0024 - *Competence of maritime teaching professionals*
- /5/ DNVGL-ST-0025 - *Competence of simulator instructors*
- /6/ DNVGL-ST-0029 - *Maritime training providers*
- /7/ DNVGL-ST-0032 - *Test centre for certification of personnel*
- /8/ DNV RP-E306 *Dynamic Positioning Vessel Design Philosophy Guidelines*
- /9/ DNV RP-E307 *Dynamic Positioning Systems - Operation Guidance*

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- /10/ IMO MSC/Circ.738 Rev. 1, 2006 *Guidelines for Dynamic Positioning System (DP) Operator Training*
 - /11/ IMCA M117 *The Training and Experience of Key DP Personnel*
 - /12/ ISO 9001:2008 *Quality management systems - Requirements*
 - /13/ ISO/IEC 17024: 2012 *Conformity assessment – General requirements for bodies operating certification of persons*
 - /14/ STCW Section B-V/f * *Guidance on the training and experience for personnel operating dynamic positioning systems*

SECTION 2 CERTIFICATION SCHEME

2.1 Scheme ownership

The ownership of the certification scheme must be clearly indicated.

The organization responsible for developing and maintaining a certification scheme (scheme owner) should perform annual validation and review to ensure that the certification activities continue to align with the developments in and expectations of the industry.

If the certification body is not the scheme owner, the certification body should verify that the scheme continues to meet the requirements of the RP and monitor all parties involved.

Guidance note:

This could be the case if a flag state chooses to develop their own scheme but requests a certification body to certify the persons.

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2.2 Scope of certification

The DPO certification scheme should ensure that only persons that fully meet certification requirements for a defined activity become certified. This should also include navigational watch keeping, manual control and communications, which are crucial for safe DP-operations.

The certification scheme should define a modular certification structure based on the type of operations, where the activity, systems and modes used are the determining factors for the certification or endorsements. (Ref. [1.4] Guidance note, Table of Notation Codes).

The certification scheme should clearly indicate how the operational differentiation is defined and assessed and how this is displayed on certificates.

Guidance note:

During competence development or in the shipboard organisation different levels of DPO may be distinguished (e.g. Trainee, Junior, Senior). The scheme may recognize various levels of expertise as part of development of an individual but should not certify partial competence to avoid confusion in the industry.

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2.3 Roles and responsibilities

The certification scheme should review and clearly describe the roles and responsibilities of the parties involved, including any committee involved in the certification process.

Guidance note:

Examples of parties that may be involved in certification:

Authorities / Flag states	- Regulatory role influenced by (inter)national legislation
Oil majors	- Defining expectations
Scheme owner	- Development and Maintenance of the certification scheme
Industry Organisations	- Guidance / Best practices / Lessons learned / Recognition
Recognised Organisations	- Standards / Certification (centres, simulators, programs)
Training providers	- Development and delivery of training content
Shipping companies	- Shipboard competence development / On-board assessment
Certification bodies	- Impartial assessments and Certification/ Issuing certificates
Test centres	- Perform assessments on behalf of a certification body

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2.4 Professional profile

Under the responsibility of the Master:

- the DPO operates the DP control systems of the vessel working in a possible hostile environment and in changing weather conditions, judges whether DP operations can commence, continue or should be suspended and takes immediate action if required;

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- the DPO is responsible for the vessel's integrity and safety when operating under DP and must therefore be able and legally allowed to take immediate manual control in case of DP failure;
 - the DPO uses the systems and modes that apply to the vessel and operation, has a holistic view of the vessel's management systems and operation and a deeper understanding of DP systems and consequences of actions or occurrences;
 - the DPO considers the impact of operating under DP on e.g. vulnerability (safety and security) as well as from a legislative and regulatory point of view. The DPO acts as officer of the watch (OOW).

2.5 Measurable competence criteria

The certification scheme should be based on measurable competence criteria as defined in DNVGL Standard for Certification ST-0023 – *Competence of dynamic positioning operators*. The scheme must ensure compliance with relevant international regulations (e.g. IMO, STCW, flag state, shelf-state).

The scheme uses this as the foundation for both competence development and competence assessment.

2.6 Language

Competence development

Educational institutions, maritime academies, training centres, etc. predominantly use the local language to educate people. The focus in that instance lies on providing people with a detailed knowledge, understanding and skill-set related to DP. For a better understanding competence development can take place in the local language. Acquiring an operational use of the English language is considered to be part of a person's competence development.

Competence assessment / certification

The international character of the maritime industry and the fact that communication with other parties mostly takes place in the English language emphasize the importance that DPO-examinations should be conducted in the English language. Every operational (DP) watch keeping officer should possess and demonstrate an operational use of the English language.

The equipment, signs and scenarios used for the assessments should also be in the English language. Should persons be assessed using equipment displaying local languages only it is possible that they will not be able to recognize similar functions on equipment in an international environment.

SECTION 3 CERTIFICATION REQUIREMENTS

3.1 Initial certification

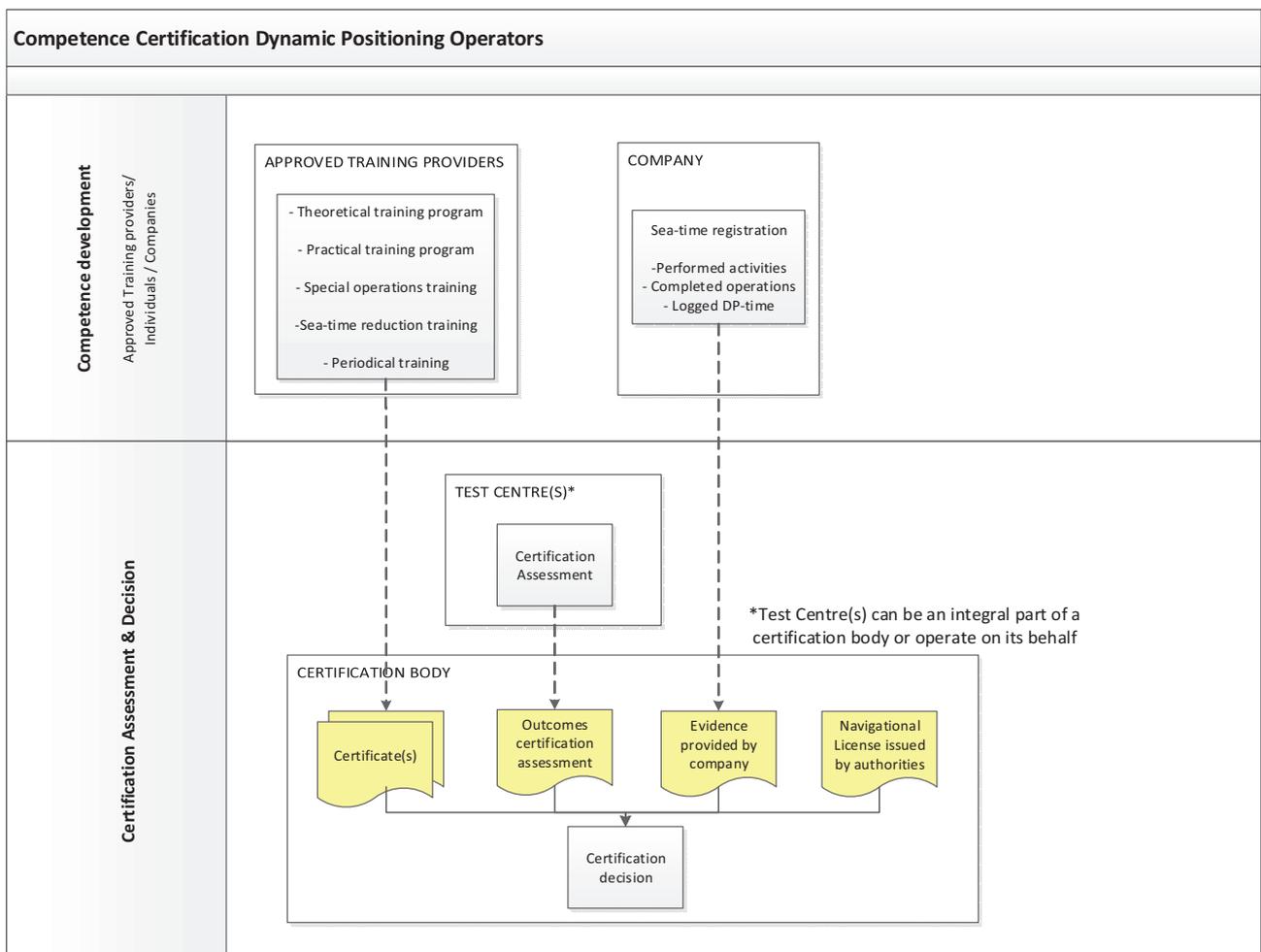
The following certification requirements must be met as part of the initial certification process of DPOs:

- Training completed at an approved training centre (ref. [Sec.4](#) Competence development / Training).
- Sea-time completed in accordance with defined criteria (ref. [Sec.5](#) Sea-time requirements).
- Impartial competence assessment at an approved test centre (ref. [Sec.6](#) Certification assessment).

A DPO is responsible for the vessel's integrity and safety when operating under DP and must therefore be able and legally allowed to take immediate manual control in case of DP failure.

A certification scheme should ensure that before a person can be certified as DPO he/she should hold a valid license as navigational watch keeping officer, issued by national/local authorities (STCW or equivalent – e.g. USCG).

Figure 3-1 Competence certification DPOs



3.2 Re-certification

Certification of persons provides value through public confidence and trust. Public confidence relies on a valid impartial assessment of competence reconfirmed at defined intervals.

Certificates issued under a scheme should have a maximum validity of 5 years.

The following re-certification requirements should be met as part of the re-certification process of DPOs:

- Completed periodical training at an approved training centre (ref. [4.2] Certification criteria training providers).
- Impartial re- assessment of competence at an approved test or assessment centre.
- Valid navigational license (STCW or equivalent, issued by flag state / authorities).
- Documented evidence of twelve months of seagoing service in total during the preceding five years, performing DPO duties.

3.3 Exemptions (re-certification)

The scheme or flag state may define exemption or equality criteria for re-certification of people who are professionally involved in DP-related work but who may not meet the seagoing service requirement. (E.g. FMEA-inspectors, DP-instructors). The exemption should be limited to the seagoing service in the preceding five years. Other requirements would have to be met.

3.4 Registration of certificates

The scheme should describe the ownership and responsibilities for processes related to issuing and registration of DP certificates under its responsibility and the maintenance of the database of issued certificates, endorsements, etc.

The party responsible for issuing certificates should provide a way to verify the validity of certificates by third parties (e.g. for safety, vetting or contracting purposes) and to produce overviews of valid, expired, withdrawn or suspended certificates, while data protection legislation is obeyed at all times.

3.5 Certificate format

The scheme should use the same certificate format for all certificates issued. The certificate should contain:

- the name, picture and date of birth of the certified person
- a unique, traceable identification number / code
- the name of the certification body
- reference to the certification scheme, standard or other relevant documents including issue date
- the scope of certification (e.g. notations, modes of operation)
- the effective date of certification and date of expiry
- a means to check the validity online.

(Ref. [App.B](#): Sample certificate)

3.6 Validity of certificates

Certificates should have a maximum validity of 5 years. The validity of the DPO certificate should be connected to a valid navigational license. If this can no longer be produced, the DPO certificate should be considered invalid.

If, during initial certification, a person has completed the DP certification scheme and is awaiting the issuance of a license of watch keeping officer the certification results remain valid for a period of 12 months. Should this period be exceeded a new assessment is required before a certificate is issued.

3.7 Certification decision

The scheme should describe the basis for the certification decision and how the decision is made.

It should contain verification of meeting:

- training requirements
- sea-time requirements
- assessment requirements
- license requirements.



3.8 Appeals and complaints

A scheme should describe the process of handling appeals made against the certification decision or of other complaints made against the organization of assessments.

SECTION 4 COMPETENCE DEVELOPMENT / TRAINING

4.1 Introduction

The certification scheme should contain requirements related to competence development / training of persons. The scheme should ensure global alignment of training and education, by clearly indicating the learning objectives to be met with reference to DNVGL Standard ST-0023 Competence of dynamic positioning operators.

4.2 Certification criteria training providers

Training providers should have a certified management system with an appropriate scope in accordance with an internationally recognized standard.

The certification body should ensure that learning programmes, facilities and equipment used are suitable for the training to be conducted.

(Ref. [4.3] Criteria learning programmes and Sec.8 Equipment requirements).

Guidance note:

Reference is made to DNVGL standard ST-0029 *Maritime training providers*, which contains detailed criteria for an educational environment and ISO 9001, which gives a more general overview

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4.3 Criteria learning programmes

Training programmes should be based on clear, measurable learning and performance objectives.

The scheme should only approve training providers who:

- deliver training based on clear learning objectives
- provide an extensive theoretical understanding of DP-systems
- create a deeper understanding of DP-systems, allowing the student to anticipate consequences of occurrences or actions
- prepare students to handle realistic operational scenarios through application and integration of knowledge and understanding in a simulated or real environment
- enable students to master non-routine situations
- use multiple delivery methods and student interactions
- have adequate resources.

Further, the certification body should ensure that the learning programmes are properly designed, carried out by qualified instructors and evaluated and improved.

Guidance note:

Reference is made to DNVGL standard ST-0008 *Learning programmes*, which contains detailed criteria for the development of learning programmes or courses.

Learning objectives to be met can be found in the IMCA guidelines 117 and DNVGL Standard ST-0023 *Competence of dynamic positioning operators*.

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4.4 Criteria instructors / trainers

The scheme must contain measurable criteria for instructors/trainers. As a minimum the scheme should require lead trainers to:

- be fully competent as a DPO, demonstrated through an impartial assessment
- be involved in a professional development program to remain up to date
- have a thorough understanding of the DP equipment / simulator used for the training
- have pedagogical competence to optimize learning for individuals.

Note: Non DP specialists may only be used for specific topics (e.g. specific equipment) under the responsibility of a fully qualified lead trainer/instructor.

Guidance note:

Specific pedagogical requirements are to be defined by the scheme. Reference is made to IMO Model course 6.09, Training course for instructors, DNVGL standards ST-0024 *Competence of maritime teaching professionals* and ST-0025 *Competence of simulator instructors*.

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4.5 Initial training

To be able to ensure alignment of training within a specific scheme, a course framework should be created by the scheme-owner to be used as a reference by training providers when developing and delivering their courses.

In case of a modular structure of the training this should enable people to use different training providers for the various modules.

Initial training or competence development as part of the certification scheme should include providing knowledge & understanding and application and integration of acquired knowledge and skills.

4.5.1 Training programmes

4.5.1.1 Duration

Based on the defined measurable learning objectives to be met the scheme should define:

- a course structure
- the minimum number of contact hours for the training course(s) / modules
- the maximum number of hours per day
- the number of course days.

The scheme should base this on sound educational principles taking into account the limitations of students to absorb learning.

The training providers should determine the feasibility based on availability of resources (e.g. simulators) and adjust where necessary.

Multiple delivery methods (e.g. case study, presentations, reading, simulator-exercises, desktop exercise, e-learning) should be used in a methodological structure which optimizes the learning experience of students and serves all different learning styles.

Courses can be structured in different ways, either as 2 or more separate courses or as an integral program.

An indicative duration of 32 contact hours, spread out over a minimum of 4 to 5 days, is considered a bare minimum to establish a basic theoretical foundation and deeper understanding of Dynamic Positioning and related systems and modes. This knowledge and understanding is required for the further competence development and should include elements such as switching DP on/off, vessel control, stopping the vessel, systematically transferring from Manual to DP and vice versa, going from A to B, gain settings, changing headings and demonstrate position reference system user interfaces.

In addition, an indicative duration of 32 contact hours, spread out over a period of a minimum of 4 to 5 days, is considered a bare minimum to build up further practical skills related to the operational side of DP. This could to some extent be influenced by factors as group size.

Each individual trainee shall be exposed to at least 10 hours of actual DP-control at the DP-desk to allow the trainee to develop required skills in a controlled, simulated environment.

Communication, disturbance and non-routine occurrences should also be part of training.

Guidance note:

Reference is made to DNVGL standard ST-0008 *Learning programmes*, which contains detailed criteria for the development of learning programmes or courses.

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4.5.1.2 Entry requirements competence development / training

The scheme should include a straightforward description of its entry requirements and should include measures to ensure these requirements are consistently applied.

From a competence development or training perspective the scheme should enable people to enter the training part of the scheme before they are licensed watch keeping officers. (e.g. nautical colleges / cadets, mariners).

The training part of the scheme should focus on the DP-aspects. The candidates should therefore:

- already possess ship handling skills and be able to perform manual operation of the vessel or
- be in the process of acquiring these competencies as part of a navigational officer education.

In case theory and practice are delivered as separate courses the theoretical foundation should be a pre-requisite for the practical training. Training providers may develop a pre-test for candidates to ensure that candidates meet the required starting level for the course.

Guidance note:

The scheme should ensure that those entering the scheme are aware of the actual certification criteria to avoid situations where people have completed all steps but still cannot be certified. (Ref. [3.7] Certification decision).

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4.5.2 Sideways entry

The scheme should enable a person with demonstrated DP training, expertise and DP time on board, equivalent to or exceeding the requirements of the scheme, to be allowed on any further DP training for a specific notation and certification assessment without having to go through all competence development parts, subject to the candidate criteria as stated in [4.5.1.2] being fulfilled.

4.5.3 Student / instructor ratio

The scheme should define the student-instructor ratio for both theoretical sessions as for practical sessions.

For a practicum the student-instructor and student/simulator ratio should be determined by the ability of the training provider to ensure sufficient individual practice for the student. Each student should spend a minimum of 10 hours in control. The student-instructor ratio for combined theoretical/practical sessions should not exceed 8:1.

4.5.4 Self-study / E-learning

The scheme may allow training providers to offer part of the generic underpinning knowledge and understanding through well-structured self-study / e-learning to meet a defined selection of learning objectives forming part of the foundation development.

The suitability of self-study / e-learning modules to meet a selection of learning objectives and the number of hours this would represent should be determined and approved by the certification body or a party recognized by the certification body.

Self-study that does not focus on meeting learning objectives but merely on getting acquainted with the field of DP (e.g. list of useful sources, publications, links to webpages, etc.) should not replace contact hours.

Guidance note:

Reference is made to approval according to DNVGL standard ST-0008 *Learning programmes*, which contains detailed criteria for evaluating learning programmes and e-learning modules.

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4.6 Development of operation-specific competence

4.6.1 Duration

The scheme should define the training required to develop additional competencies related to specific DP-modes or systems, preparing the person for a focused certification assessment. (Ref. Guidance table under [1.4]).

4.6.2 Pre-requisites

Having completed the theoretical and practical foundation should be pre-requisites for entering a program, focusing on specific operations.

4.6.3 Student / instructor ratio

See [4.5.3].

4.7 Periodical training

The scheme should contain requirements and methods for periodical training as part of continuous development and competence retention. A 5 year interval should be considered as a maximum regardless of the experience with or exposure to DP. (Ref. [4.6] for further details)

Guidance note:

An indicative minimum duration of periodical training in a 5 year period would be 3 days.

Periodical training may be more frequent due to applicable regulations, company policy, customer expectations or performance level of the DPO.

Periodical training with reference to dynamic positioning should focus on the notation and at least contain:

- updates on technology
- revision / updates of best practices
- incidents, accidents, lessons learned
- reporting criteria for DP-incidents
- practical exposure to non-routine scenarios / emergencies (simulator).

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4.8 Formative assessments (Competence development)

4.8.1 Introduction

Formative assessments are intended to give a person insight in his/her development or current skill level and illustrate areas of attention for their competence development. They are not related to certification but can be used for measuring training outcomes and effectiveness.

The scheme should recognize the importance of formative assessments as part of the training. It enables training providers to verify if learning objectives were met on an individual level. Training without assessment cannot be considered adequate training, since it would not measure if the training has been effective on individual level.

4.8.2 On board assessment

The certification scheme should define criteria for on board assessment, assessors and also provide logging and reporting requirements. On board assessment examples are:

- The performance review of an individual as part of regular human resource management routines (line manager).
- The assessment of an individual related to specific tasks that need to be performed as part of the competence development part of DPO-certification (competent assessor). This would include the assessment of new hires.

On board assessments during sea-time are considered to be part of individual competence development (formative) and not of the impartial certification assessment.

4.8.3 Assessor criteria

Formative assessments should be carried out by competent assessors with both assessment qualifications and up-to-date operational DP-expertise.

SECTION 5 SEA-TIME REQUIREMENTS

5.1 Purpose of sea-time

Sea-time is considered an important element in competence development by the industry and should be part of a certification scheme. It allows the prospective DPO to translate the competencies acquired in the classroom and on the simulator to real-world operations and hone their DP abilities through hands-on experience and observational learning.

Since sea-time is considered part of competence development it should precede the certification assessment. This way the experience and effectiveness of sea-time can also be measured during the certification assessment.

5.2 Duration of sea-time

In order to translate acquired competence to the practical environment a certification scheme should have a sea-time element. Considering the differing duration and frequency of DP operations, vessels, usage styles and complexity, a universal sea-time requirement expressed in days cannot be given.

Sea-time requirements should be practically achievable by industries covered by the scheme, be experience-based, and include the following components:

- A task list, familiarizing the prospective DPO with operational components and activities (e.g. change course, thrusters in/out, independent joystick, manual thrusters, and power management);
- Exposure to differing weather conditions and non-routine operations as well as company procedures, field specific procedures and industry practices (e.g. A/WSOG);
- A set amount of time spent shadowing certified DPOs carrying out DP operations; and
- An operational requirement, whereby the DPO-trainee controls the DP system under supervision of a certified DPO, for a defined duration or a number of operations.

The duration of sea-time is determined by the time it takes to complete all tasks as defined by the scheme of which a minimum of 270 hours should be spent at the DP-desk under DP control.

For specific activities with less frequent use of DP, the scheme should define feasible criteria to enable them to meet sea-time and operational requirements such as the number of operations to be performed on board.

Guidance note:

Example for Specific Activities:

Perform 6 supervised operations of sufficient length in control under DP, whereby an operation is considered a planned activity involving various steps, phases or actions. (Note: DP-watchkeeping is not considered an operation. A sequence such as Approach, Discharge and Depart is.)

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The scheme should clearly articulate all of these requirements and include clear performance measures to be achieved by each sea-time component.

5.3 Reduction of sea-time

The scheme may include a partial sea-time reduction element, to be achieved through an approved practical simulator-based training using a full mission bridge / DP simulator.

The scenarios used in sea-time reduction training should focus on the activities for which certification is requested.

The scheme should define the reduction achievable through successful completion of sea-time-reduction training. The reduction should be limited to 30% of the defined sea-time duration.

For specific activities, with less frequent use of DP, the scheme should define the remaining number of operations to be performed on board after successful completion of sea-time reduction training.

In order to realize comparable exposure to the specific activities, sea-time reduction training should be focused on similar operations making use of a full mission bridge / DP simulator.

The sea-time reduction should not exceed 50% of the defined number of operations to be performed.

Guidance note:

Sea-time reduction training of at least 32 contact hours spread out over 4 to 5 days, whereby each trainee would have at least have 10 hours of actual DP-control at the DP-desk, would allow the trainee to further develop skills in a controlled, simulated environment, especially focusing on handling communication, disturbances and exposure to non-routine occurrences.

Successful completion of a sea-time reduction training would result in a remaining sea-time requirement.

This could be defined as the time it takes to:

- spend a minimum of 180 hours in control under DP
- or
- perform 3 supervised operations in control under DP (specific activities).
 - An operation is considered a planned activity involving various steps, phases or actions. (*Note: DP-watchkeeping is not considered an operation. A sequence such as Approach, Discharge and Depart is.*)

DNVGL standard ST-0008 *Learning programmes* contains detailed criteria for evaluating learning programmes and e-learning modules.

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5.3.1 Student / instructor ratio sea-time reduction training

See [4.5.3].

5.4 Non DP Class vessels

The scheme should define if and under which conditions DP-experience and sea-time can also be built up on non-DP Class vessels. Non DP Class vessels may be suitable and meet the criteria of DP Class vessels, still allowing for a suitable DPO learning environment. A vessel with an unclassified DP system is only allowed to be used for the accrual of sea-time after it is proven that this system has the functional equivalency of a classed DP system.

5.5 Registration of sea-time activities

The scheme must use a common format to log achievements, experiences and on board training activities (if applicable) during sea time. The log-entries should be signed off by a certified DPO.

SECTION 6 CERTIFICATION ASSESSMENTS

6.1 Summative assessments

The scheme should use summative assessments (Ref. [6.6] and [6.7]) to determine if a candidate can be considered competent to perform a specific task as input for the certification decision. Summative assessments or exams should determine if a person meets competence requirements as defined in the certification scheme.

Guidance note:

Formative assessments as mentioned under [4.7] serve a different purpose and should not be confused with certification assessments.

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6.2 Quality assurance of assessments

The certification scheme should describe how it ensures quality, alignment, impartiality and security of examinations under its responsibility.

It should describe how verification of the quality and alignment of assessments is realised by the approved test centre(s), ensuring that any certificate issued under the scheme reflects a similar level of competence.

6.3 Assessment focus

The certification scheme should ensure that critical DP operations are assessed in which, apart from regular approach, station-keeping and departure, the focus lies on:

- handling DP-incidents
- failures
- changes in parameters
- emergencies
- manual control.

The scheme should ensure that scenarios are used that are relevant to the operations for which certification is requested and are kept up to date with developments in the industry.

The certification assessment should measure fundamental knowledge and understanding but primarily focus on application of acquired knowledge and skills.

6.4 Pass / fail criteria

The scheme should define pass/fail criteria for assessments which can be objectively measured.

On simulators, the assessment result (scoring) should be standardized by implementing automatic technical simulator functionalities or by electronic Integrated Assessment Programs. (See [Sec.8](#) Equipment requirements).

For a theoretical examination a minimum score of 70% should be considered a minimum requirement.

The practical examination should only be passed if a candidate successfully completes a practical simulator test with pre-determined pass / fail criteria that indicate competence in all critical steps in the DP operation.

The pre-determined criteria should be verified during the approval process of the Test Centre by the certification body.

6.5 Relative weight

Relative weight should be taken into account, where critical errors are weighed differently than non-critical errors.

6.6 Theoretical assessment

A theoretical examination should be used to test relevant 'need to know' knowledge and understanding. The questions should demonstrate a deeper understanding of DP, essential for making decisions, recognizing conditions or overseeing consequences of actions related to DP.

The scheme should ensure that questions are set correctly, validated, measure what they intend to measure and meet best practice for question development.

In case only multiple choice questions are used, the assessments should consist of at least 60 validated questions.

Theoretical assessments should ensure that critical understanding is verified. They should be well balanced and focus on elements that are not tested during the practical assessment.

6.7 Practical simulator assessment

During a practical assessment the candidate should demonstrate:

- setting up and control
- handling DP-incidents (failures, changes in parameters, emergencies)
- manual control / emergency ship handling.

The scheme should allow for sufficient time for the assessment(s) or scenarios to assess all critical steps required for someone to act as DPO / DP watch keeper in routine and non-routine conditions.

During the certification exam the candidate should be exposed to different scenarios related to the relevant operations and competence standard elements to establish competence.

6.8 Re-assessment

The scheme should define criteria for re-assessment in cases where candidates fail an examination (e.g. interval, maximum, pre-requisites) and ensure that different examination questions or scenarios are used than during a previous assessment.

6.9 Validity and reliability

The scheme should contain a mechanism to:

- verify the validity and reliability of examinations
- ensure that the assessments measure what they intend to measure and
- verify if scores are consistent across different examinations, locations and examiners.

The validity of individual examination questions and scenarios should be reviewed in a similar fashion.

Guidance note:

Where possible, the reporting functionality of electronic integrated assessment systems can be used for this purpose.

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6.10 Assessor criteria

Summative assessments require impartiality as they are part of the certification process.

They should be carried out by competent assessors with both assessment expertise and up-to-date operational DP-expertise. (Ref. STCW / IMO Model course 3.12)

Due to the impartiality requirement summative assessments for certification cannot be performed by those directly involved in the training of the candidate or by in-company coaches or assessors.

SECTION 7 CERTIFICATION BODIES AND TEST CENTRES

7.1 Certification body

A certification body (CB) is an organization with overall responsibility of a certification scheme.

It manages all aspects and ensures that the certification scheme is clearly defined and maintained.

It also ensures that competencies are well defined, assessments are valid and that issued, expired and withdrawn certificates are registered and traceable.

The CB must ensure that a person is competent before issuing a certificate of competence against a clearly defined standard. It can do so through an own test centre but may also outsource these activities to test centres under its supervision.

The certification decision is always made by the CB while the issuing of certificates may be delegated to a test centre. The CB must ensure that external organisations and examiners operate in accordance with its instructions.

Guidance note:

Reference is made to ISO/IEC 17024 *Conformity assessment – General requirements for bodies operating certification of persons* and DNVGL standard ST-0032 *Test centre for certification of personnel*.

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7.2 Test centre approval

Test centres being part of or acting on behalf of a certification body should have a certified management system with an appropriate scope in accordance with an internationally recognized standard and are required to demonstrate their ability to manage and perform quality assessments at least once a year.

The certification body shall ensure that the assessments, facilities and equipment used are suitable for the assessments to be conducted. (Ref. [Sec.8](#) Equipment requirements).

7.3 Test centre requirements

The scheme should define criteria for test centres before they can be approved.

The following criteria should be met:

- certified management system in place with an appropriate scope description
- able to ensure consistent and high quality approved examinations
- adequate reporting routines in place
- suitable facilities
- approved simulators
- competent simulator operators
- competent assessors.

Guidance note:

Reference is made to DNVGL standard ST-0032 *Test centre for certification of personnel* and ISO/IEC 17024 *Conformity assessment – General requirements for bodies operating certification of persons*.

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7.4 Impartiality

The scheme should ensure that the party performing the assessment has not been involved in the training of the candidate and does not have a direct relationship with the candidate or with the organization where the candidate is employed. This relates to both the Test Centre as to the individual assessor.

Guidance note:

In case of doubt the certification body can decide to attend the assessment to monitor the proceedings.

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SECTION 8 EQUIPMENT REQUIREMENTS

8.1 Level of realism

There is a relationship between learning and performance objectives and the equipment required for competence development and competence assessment.

The scheme should require that the equipment used for training and assessment is relevant and suitable for the performance objectives to be demonstrated, resembles equipment currently used in the industry and behaves in a realistic manner.

The use of an operational DP-vessel for training would be a perfect fit from an equipment and operational point of view. It would however not be possible to meet all learning objectives and performance criteria related to non-routine operations and emergencies.

Realistic simulation allows for repetition of non-routine scenarios and DP incidents and is considered a valuable and preferred tool for competence development and competence assessment as long as all operational aspects are included, such as communication and cooperation with others.

8.2 Minimum simulator requirements

The scheme should define minimum requirements for simulators to be used, both for training and assessment based on the objectives to be met in line with internationally approved simulator criteria.

The certification body shall ensure that facilities, equipment and scenarios used are suitable for the training or assessments to be conducted.

Guidance note:

For training purposes DNVGL does not consider a full mission Class A simulator as a strict requirement.

For sea-time reduction training and certification assessment a Class A simulator would be required as the simulator should represent the operational environment as realistically as possible.

Table 8-1 Simulators classes for the function area Dynamic Positioning

		<i>Practical Training (initial / periodical)</i>	<i>Sea-time reduction training</i>	<i>Certification Assessment</i>
Class A (DP)	A full mission simulator capable of simulating Dynamic Positioning (DP) operations in a realistic and fully equipped ship's bridge environment, including the capability for visual presentation near offshore installations.		X	X
Class B (DP)	A multi task simulator capable of simulating DP operations in a realistic and fully DP equipped ship's bridge environment, excluding the capability for visual presentation.	X		
Class C (DP)	A limited task simulator for instrumentation or blind DP-manoeuving and position keeping. The simulator should at least consist of a DP control and monitor.	X		
Class S (DP)	A special tasks simulator capable of simulating operation and/or maintenance of particular DP instruments, and/or defined DP operations.	X specialized training		

Ref. DNVGL Standard for Certification STC 2.14 - *Maritime Simulator Systems /1/*.

Detailed minimum requirements for simulators may be found in DNVGL's Standard STC 2.14 - *Maritime Simulator Systems /1/* which specifies simulator requirements.

See also STCW Section B-V/f *Guidance on the training and experience for personnel operating dynamic positioning systems*.

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8.3 Language

As indicated under [2.6] the equipment, signs and scenarios used for the assessments must be in the English language. Should persons be assessed using equipment displaying local languages only it is possible that they will not be able to recognize similar functions on equipment in an international environment.

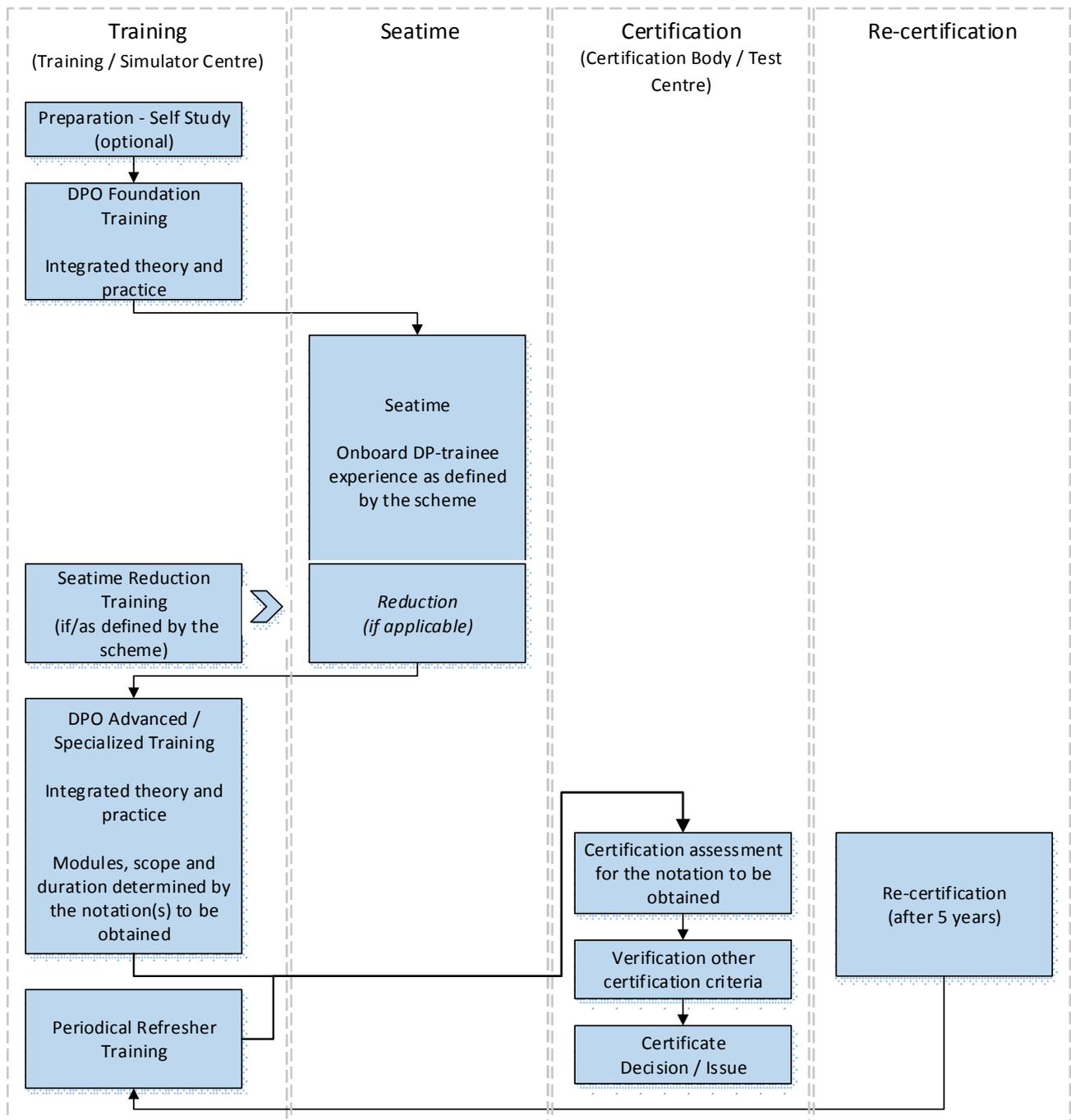
8.4 Unavailable resources

If suitable facilities, adequate expertise and infrastructure for certification assessments are not available in a region, certification activities in accordance with this RP are not possible.

Training may still be possible due to the fact that less stringent equipment requirements apply.

A scheme may describe an alternative approach to meet the requirements, only when this results in a similar output and a similar competence level of the DPO. (e.g. on board assessment to be carried out by a third party approved by the certification body, dedicated DP-training vessel, performing assessments elsewhere).

APPENDIX A SAMPLE: CERTIFICATION SCHEME



APPENDIX B SAMPLE: CERTIFICATE

LOGO / NAME CERTIFICATION BODY	DPO	Certificate number: CB 00234
Dynamic Positioning Operator Certificate		
DNVGL Standard for Certification ST-0023 Notations: AJ/S - AJ/FT-AT		
 PICTURE	Name : _____ Date of Birth : _____ Date of issue : _____ Place of Issue: _____	
<i>Signature Certification Body</i>		Expiry date: _____



DNV GL

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