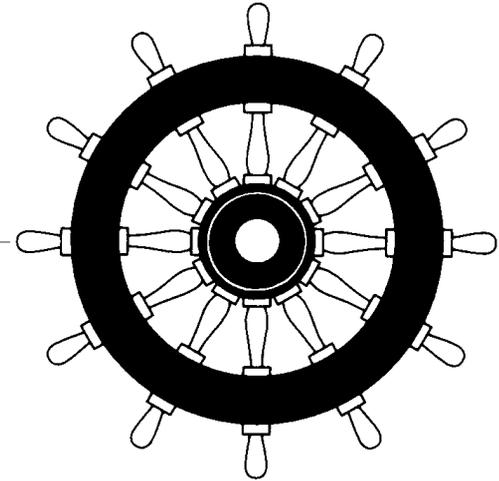


Marine Equipment Directive (MED)



Aldo Matteucci 马爱德

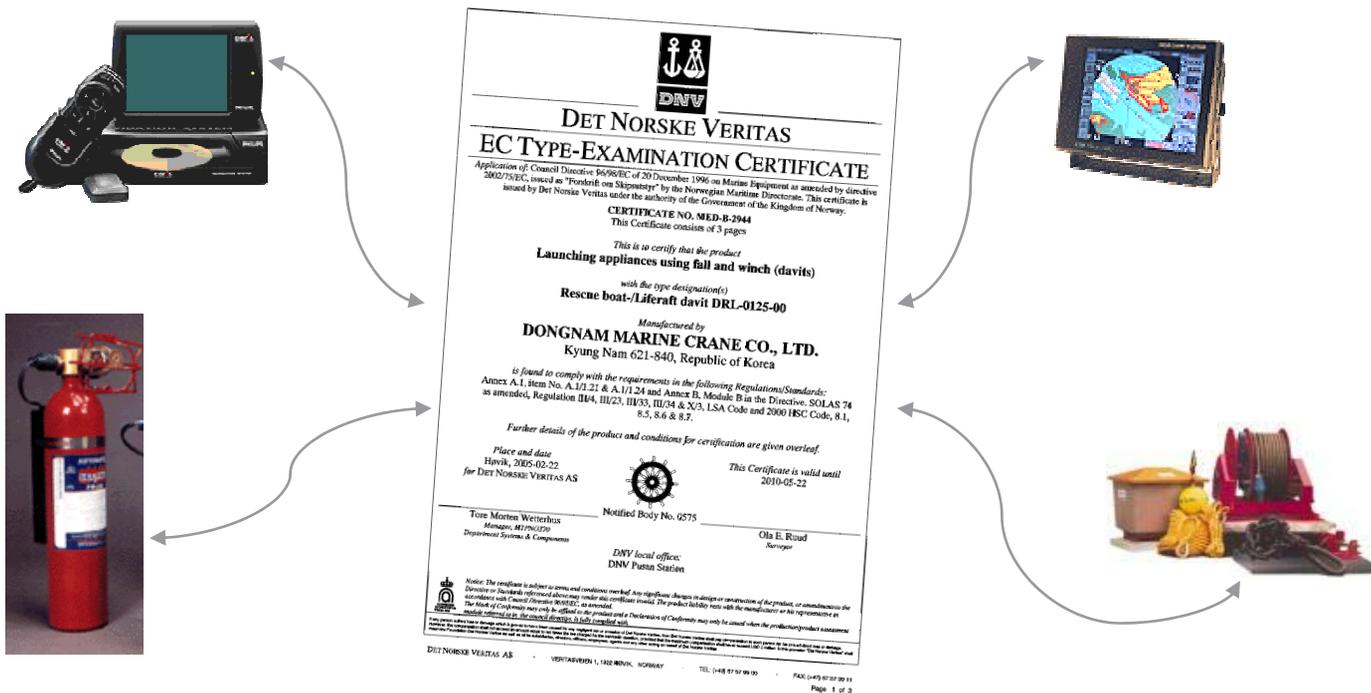
COSCO Qidong Shipyard Co., Ltd. , 27th May 2010



- Opening of Seminar
- Short introduction to the Marine Equipment Directive
- The product groups
- The module system
- 15 minutes Break
- NB survey
- Information / Support
- Mutual Recognition Agreement with USCG
- Summary and Closing of Seminar

Seminar purpose

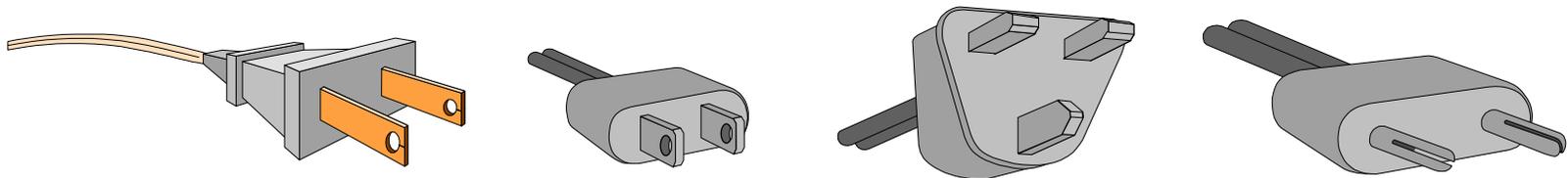
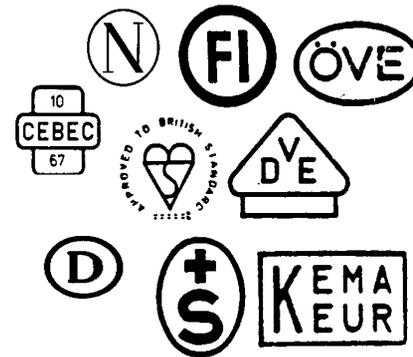
- Overview on Marine Equipment Directive and requirements for wheel-marking of products
- Modules System and relevant Certificates
- This presentation is to be considered as a general introduction.
- *The only official document to be taken as a reference is Directive 96/98/EC on Marine Equipment and subsequent amendments.*



WHY EU directives?

■ "Old days": National requirements and national approvals

- Deviating standards
- Deviating interpretations
- Multiple testing
- Multiple certification

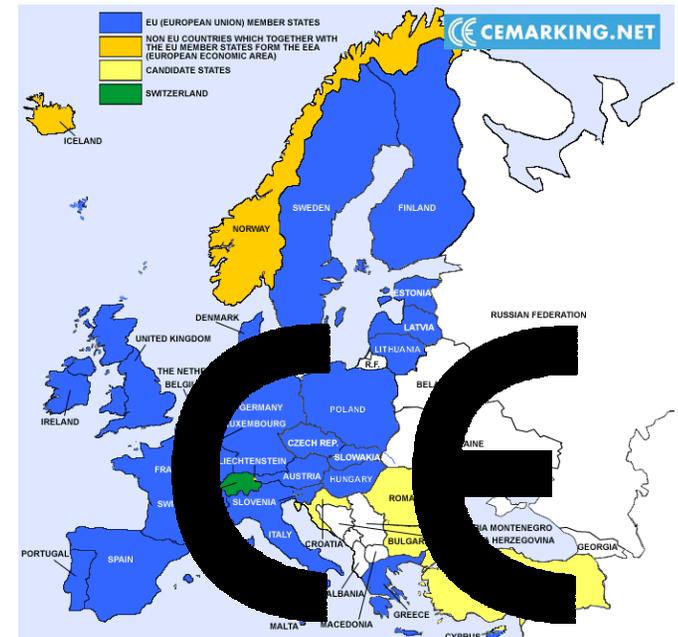


- Harmonisation of rules and certification procedures within the European Community (CE marking)

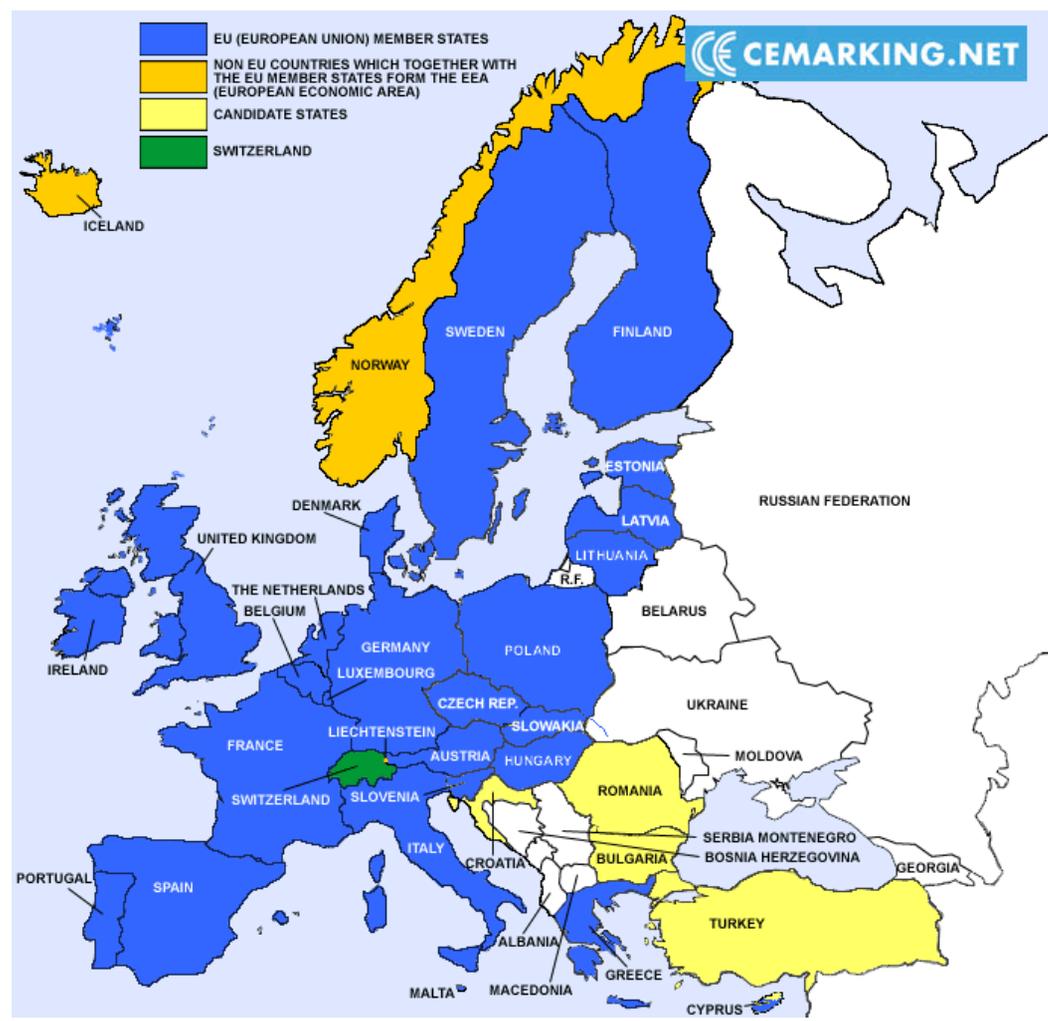
Approval in one EEA country



Access to the complete EEA market



European Economic Area (EEA)



EEA = EU member states + Norway, Iceland, Liechtenstein

- EU Member States (27):

Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, United Kingdom

- EEA (European Economic Area):

EU Member States + 3 EFTA countries (Norway, Iceland and Liechtenstein)

EFTA: European Free Trade Association (Norway, Iceland, Liechtenstein and Switzerland)

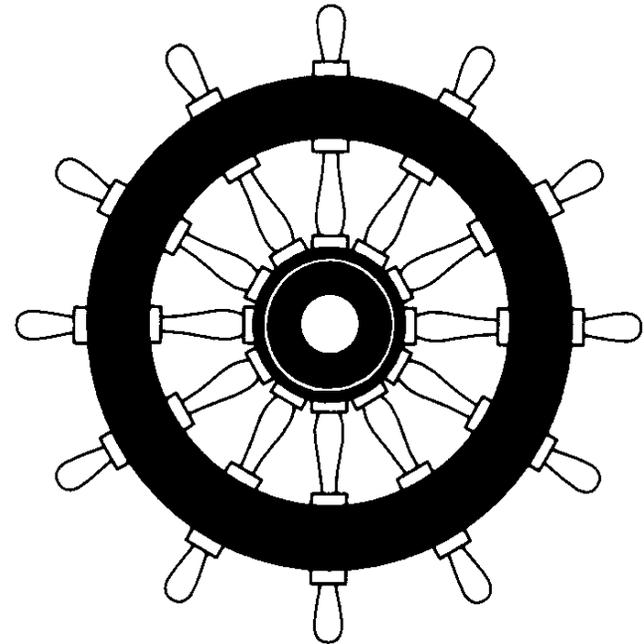
- **Directive 96/98/EC on Marine Equipment**
implemented 1 January 1999
- Amended by
Commission Directive 2008/67/EC (4rd amendment)
Implemented 21 July 2009
- Amended by
Commission Directive 2009/26/EC (5th amendment) – APPLICABLE TODAY –
Implemented 6 April 2010

- A **two-year transitional period** is provided for new (i.e. indicated as “New item” in the amendment) items, when they have been manufactured and certified in accordance with the procedures in force before the implementation date of the amendment.

Such approved equipment can be placed on board a Community ship provided they have a certificate issued by or on behalf of a Member State in accordance with international conventions.

What is the Marine Equipment Directive?

- The Marine Equipment Directive (MED) specifies basic (i.e. minimum safety) requirements to products and manufacturers.
- The Directive applies to all ships that are registered within the European Economic Area. (i.e. have flag of one of the EEA States)
- Equipment listed in the Directive will be required to have the Mark of Conformity (the wheel mark) prior to installation on board.



The Directive applies to equipment for use on board:

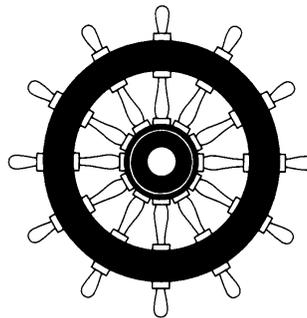
- A new ship
 - Registered (i.e. with flag) within the European Economic Area, regardless if the ship is constructed within EEA

- An existing ship
 - Where such equipment was not previously carried on board, or
 - Where equipment which was carried on board the ship is replaced

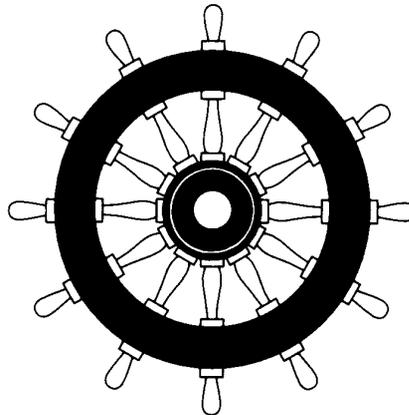


- Equipment onboard a non-EEA vessel that change flag to EEA
 - Inspection of equipment to verify that the equipment complies with the Directive and is wheel marked
 - Equipment considered equivalent but not wheel marked shall be given a certificate by the Member State when they accept the equipment placed on board
 - Equipment that does not bear the wheel mark nor is considered to be equivalent to wheel-marked equipment is to be replaced (Member State to decide)

- Member States (or Recognized Organisation) are responsible to verify that Annex A.1 equipment installed onboard is wheel-marked
- No Member State shall prohibit placing on the market, or onboard a Community ship, equipment listed in Annex A.1 which bears the wheel mark



- An organization designated by the competent national administration of a Member State
- DNV is appointed as a Notified Body by the Norwegian Maritime Authorities
- DNV Notified Body number: 0575



0575/09

Mark of Conformity – Wheel Mark

EU DIRECTIVE ON MARINE EQUIPMENT

MARK OF CONFORMITY (“wheel-marking”)



- The mark shall be followed by the identification number of the notified body (DNV = 0575) which has performed the conformity-assessment procedure in the production phase, and by the last two digits of the number of the year in which the mark is affixed (end of production).
- Minimum size of the wheel and numbers: 5 mm (may be waived for small devices)
- The mark shall be affixed to the equipment or to its data plate so as to be visible, legible and indelible throughout the anticipated useful life of the equipment. However, where it is not possible or nor warranted on account of the nature of the piece of equipment, it shall be affixed to the packaging of the product, to a label or to a leaflet.

February 2009

- The mark shall be followed by the identification number of the notified body (DNV = **0575**) which has performed the conformity-assessment procedure in the **production phase**, and by the last two digits of the number of the year in which the mark is affixed (end of production).
- Minimum size of the wheel and numbers: 5 mm (may be waived for small devices)
- The mark shall be affixed to the equipment or to its data plate so as to be visible, legible and indelible throughout the anticipated useful life of the equipment.
However, where it is not possible or not warranted on account of the nature of the piece of equipment, it shall be affixed to the packaging of the product, to a label or to a leaflet.

- DNV Type Approval certificates are based on DNV Rules and are applicable for DNV classed Ships and mobile offshore units, regardless the flag the ships will fly.

- MED certificates are issued
 - by DNV on behalf of the Norwegian Authorities (with no reference to DNV Rules);
 - by other Notified Body on behalf of the relevant EEA State Authority.

- The wheel mark is mandatory for equipment to be installed onboard ships sailing under EEA flag.

The product groups

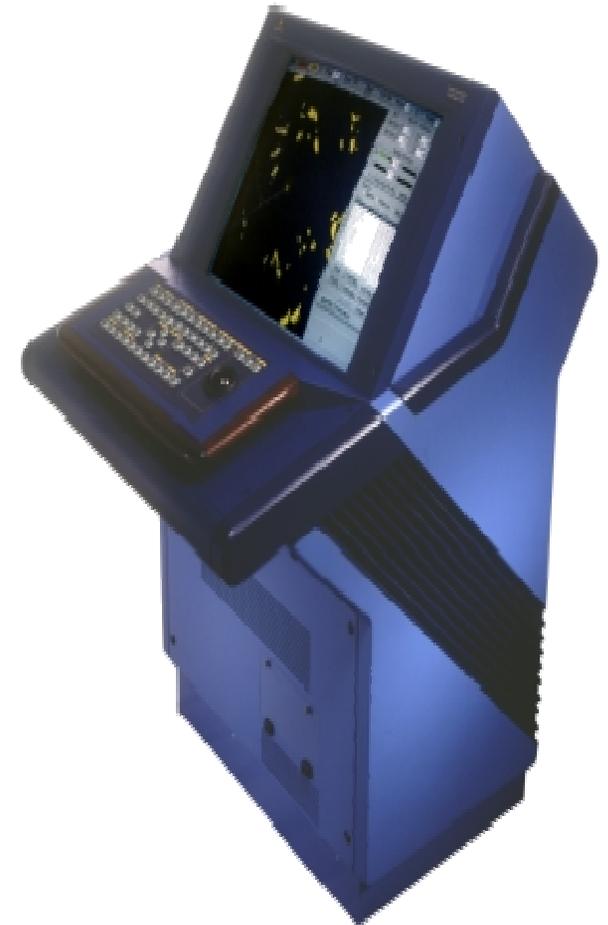
Annex A:

■ Annex A.1 (Equipment to be wheel marked):

- Equipment list
- SOLAS references
- Testing standards
- Acceptable module combinations
- [MED 5th amendment 2009-67-EC.pdf](#)

■ Annex A.2 (Wheel mark not applicable):

- Equipment list for which no detailed standards exist
- Type approval or case by case approval needed



- Annex A.1 contains 6 equipment categories (total 139 items):

1. Life Saving Appliances
(36 items, Nos A.1/1.XX)
2. Marine Pollution Prevention
(6 items, Nos A.1/2.XX)
3. Fire Protection
(49 items, Nos A.1/3.XX)
4. Navigation Equipment
(31 items, Nos A.1/ 4.XX)
5. Radio Communication Equipment
(16 items, Nos A.1/5.XX)
6. Colreg 72
(1item, Nos A.1/6.1)

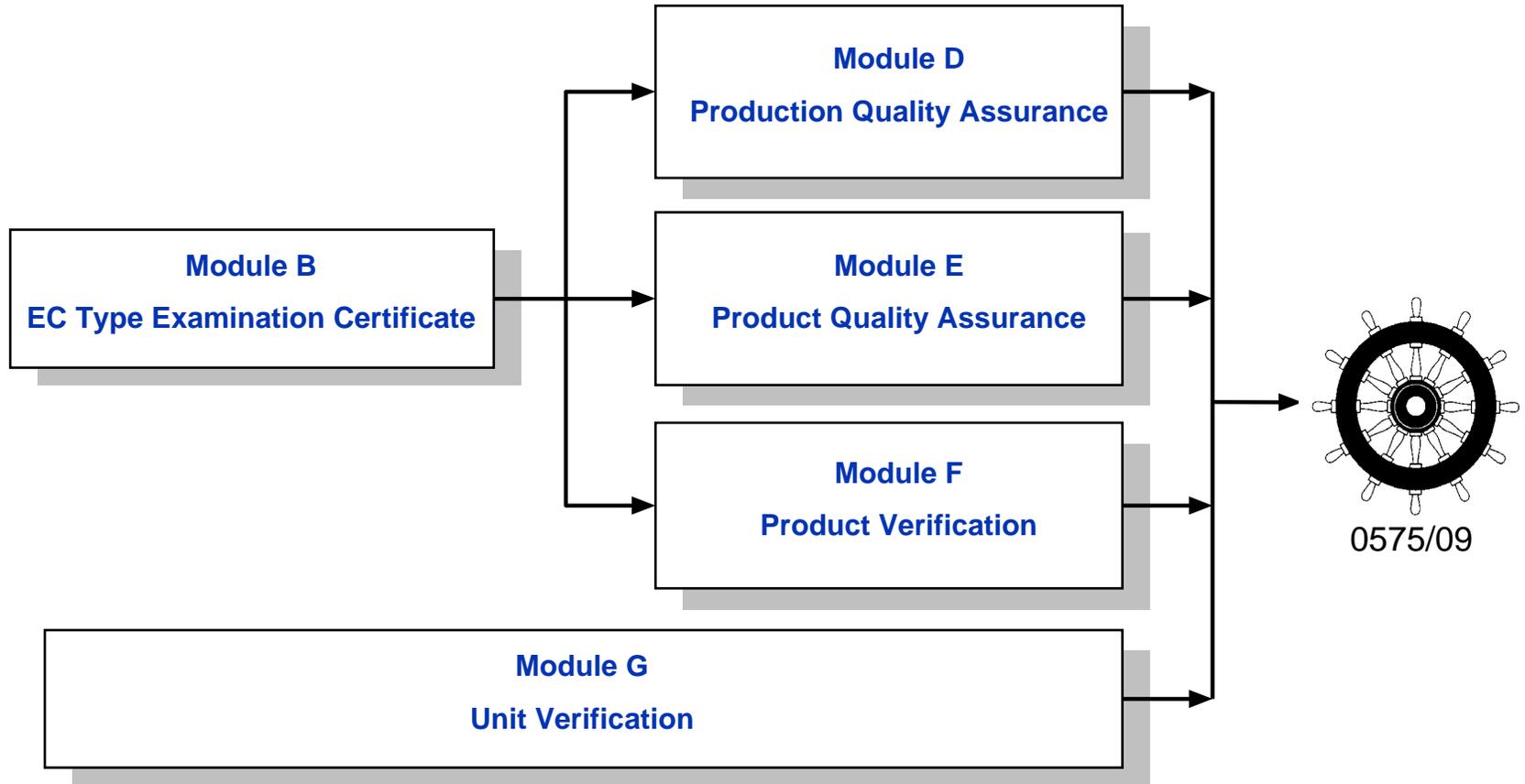


The module system

How to obtain the wheel mark?

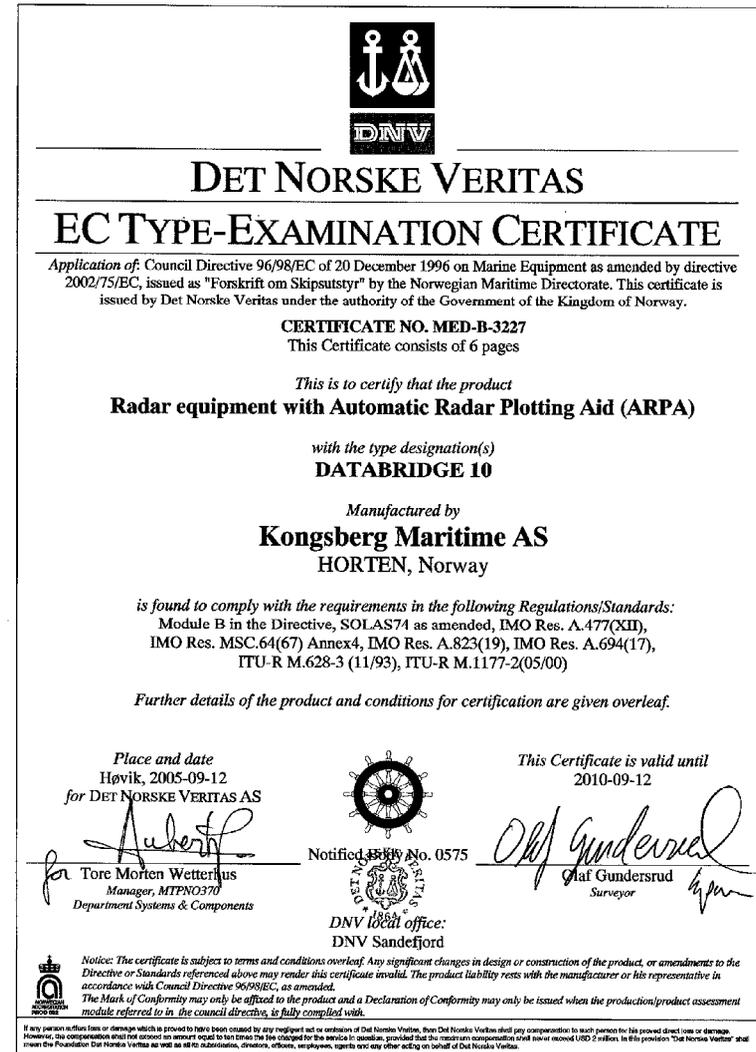
Design phase

Production phase



- Various possible module combination – depending on equipment
(See Annex A.1)
- Different Notified Bodies may be involved for design and production phase
- Same certificate (i.e. same module for same product) **CANNOT BE ISSUED** by different Notified Bodies

- Module B covers type examination of the product design
- Provided full compliance with the technical specifications laid down in Annex A.1, the Notified Body issues an **EC Type-Examination Certificate**
- The validity period of the certificate is 5 years



DET NORSKE VERITAS
EC TYPE-EXAMINATION CERTIFICATE

Application of: Council Directive 96/98/EC of 20 December 1996 on Marine Equipment as amended by directive 2002/75/EC, issued as "Forskrift om Skipsutstyr" by the Norwegian Maritime Directorate. This certificate is issued by Det Norske Veritas under the authority of the Government of the Kingdom of Norway.

CERTIFICATE NO. MED-B-3227
This Certificate consists of 6 pages

This is to certify that the product
Radar equipment with Automatic Radar Plotting Aid (ARPA)

with the type designation(s)
DATABRIDGE 10

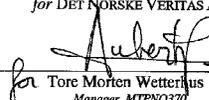
Manufactured by
Kongsberg Maritime AS
HORTEN, Norway

is found to comply with the requirements in the following Regulations/Standards:
Module B in the Directive, SOLAS74 as amended, IMO Res. A.477(XII),
IMO Res. MSC.64(67) Annex4, IMO Res. A.823(19), IMO Res. A.694(17),
ITU-R M.628-3 (11/93), ITU-R M.1177-2(05/00)

Further details of the product and conditions for certification are given overleaf.

Place and date
Høvik, 2005-09-12
for **DET NORSKE VERITAS AS**

This Certificate is valid until
2010-09-12

for 
Tore Morten Wetterhus
Manager, MTPNO370
Department Systems & Components


Notified Body No. 0575


Olaf Gundersrud
Surveyor

DNV local office:
DNV Sandefjord

Notice: The certificate is subject to terms and conditions overleaf. Any significant changes in design or construction of the product, or amendments to the Directive or Standards referenced above may render this certificate invalid. The product liability rests with the manufacturer or his representative in accordance with Council Directive 96/98/EC, as amended.
The Mark of Conformity may only be affixed to the product and a Declaration of Conformity may only be issued when the production/product assessment module referred to in the council directive, is fully complied with.

If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compensation shall never exceed USD 2 million. In this provision "Det Norske Veritas" shall mean the Foundation Det Norske Veritas as well as its subsidiaries, divisions, offices, employees, agents or any other acting on behalf of Det Norske Veritas.

- Production Quality Assurance
- For manufacturers who operates a quality system for production, final-product inspection and testing based on the requirements in EN ISO 9000
- Upon satisfactory assessment of the quality system, the Notified Body issues a **QS – Certificate of Assessment – EC**
- The validity period of the certificate is 5 years




DET NORSKE VERITAS

QS - CERTIFICATE OF ASSESSMENT - EC

Application of: Council Directive 96/98/EC of 20 December 1996 on Marine Equipment as amended by directive 2002/75/EC, issued as "Forskrift om Skipsutstyr" by the Norwegian Maritime Directorate. This certificate is issued by Det Norske Veritas under the authority of the Government of the Kingdom of Norway.

CERTIFICATE NO. MED-D-539
This Certificate consists of 2 pages

This is to certify that the Quality System for the product
Fire Doors
with product designation(s) as specified in the Appendix to this certificate

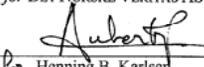
Manufactured by
Kone Component Unit
Hyvinkää, Finland

is found to comply with the requirements applicable to it.

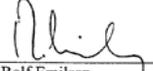
The quality system for the product, defined in Annex A.I, Item No. A.1/3.16 has been assessed with respect to the procedure of conformity assessment described in Annex B, Module D in the directive.

Limitations:
Modifications made to the Quality System shall immediately be reported to Det Norske Veritas AS in order to examine whether this Certificate remains valid. Annual periodical audits will be held to verify the validity of the certificate.

Place and date
Høvik, 2004-08-12
for DET NORSKE VERITAS AS


for Henning B. Karlsen
Manager, MTPN0370
Department Systems & Components
Notified Body No.: 0575

This Certificate is valid until
2009-08-12


Rolf Emilsen
Surveyor
DNV local office:
DNV Helsinki

Notice: The certificate is subject to terms and conditions, if any, overleaf. Any significant changes in design or construction of the product, the quality system or amendments to the Directive or Standards referenced above, may render this certificate invalid. The product liability rests with the manufacturer or his representative in accordance with Council Directive 96/98/EC, as amended.

If any person suffers loss or damage which is proved to have been caused by any negligence act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the services in question, provided that the maximum compensation shall never exceed USD 2 million in any provision. "Det Norske Veritas" shall mean the Foundation Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.

- Product Quality Assurance
- For manufacturers who operates a quality system for final inspection and testing of product based on the requirements in EN ISO 9000
- Upon satisfactory assessment of the quality system, the Notified Body issues a **QS – Certificate of Assessment – EC**
- The validity period of the certificate is 5 years



DET NORSKE VERITAS

QS - CERTIFICATE OF ASSESSMENT - EC

Application of: Council Directive 96/98/EC of 20 December 1996 on Marine Equipment as amended by directive 2002/75/EC, issued as "Forskrift om Skipsutstyr" by the Norwegian Maritime Directorate. This certificate is issued by Det Norske Veritas under the authority of the Government of the Kingdom of Norway.

CERTIFICATE NO. MED-E-81
This Certificate consists of 2 pages

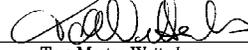
This is to certify that the Quality System for the product
"A" and "B", Class divisions, fire integrity
with product designation(s) as specified in the Appendix to this certificate

Manufactured by
Loipart Oy
Eura, Finland

is found to comply with the requirements applicable to it.
The quality system for the product, defined in Annex A.1, Item No. A.1/3.11 has been assessed with respect to the procedure of conformity assessment described in Annex B, Module D in the directive.

Limitations:
Modifications made to the Quality System shall immediately be reported to Det Norske Veritas AS in order to examine whether this Certificate remains valid. Annual periodical audits will be held to verify the validity of the certificate.

Place and date
Høvik, 2005-08-24
for **DET NORSKE VERITAS AS**

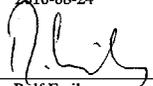


Tore Morten Wetterhus
Manager, MTPN0370
Department Systems & Components



Notified Body No.: 0575

This Certificate is valid until
2010-08-24



Rolf Emilsen
Surveyor

DNV local office:
DNV Turku / Åbo



Notice: The certificate is subject to terms and conditions overleaf. Any significant changes in design or construction of the product, or amendments to the Directive or Standards referenced above may render this certificate invalid. The product liability rests with the manufacturer or his representative in accordance with Council Directive 96/98/EC, as amended.

If any person refuses to pay or attempts to evade payment of any fee or charges which is provided to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, this compensation shall not exceed an amount equal to the fee charged for the service in question, provided that the applicant's compensation shall never exceed USD 3 million to the provision 'Det Norske Veritas' and mean the Foundation Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.

- Product Verification
- For manufacturers that does not operate a quality system
- Requires audit of every product or production series to ensure the conformity of the product with the specified requirements
- The Notified Body issues a **Certificate of Conformity – EC**
- The certificate is valid for a single product or production series/batch




DET NORSKE VERITAS

CERTIFICATE OF CONFORMITY-EC

Application of: Council Directive 96/98/EC of 20 December 1996 on Marine Equipment as amended by directive 2002/75/EC, issued as "Forskrift om Skipsutstyr" by the Norwegian Maritime Directorate. This certificate is issued by Det Norske Veritas under the authority of the Government of the Kingdom of Norway.

CERTIFICATE NO. MED-F-1125
This Certificate consists of 1 page

This is to certify that the equipment
Launching appliances using fall and winch (davits)

with the type designation and item/batch number
LE 100-1 Gravity luffing arm davit
Serial Nos. 1905142, 1905143

Manufactured by
Zhenjiang Marine Auxiliary Machinery Works
Zhenjiang, Jiangsu 212006, China

is, by product verification in accordance with Module F in the Directive, found to comply with:
Annex A.1, item No. A.1/1.21 in the Directive.
EC Type-Examination Certificate, No. MED-B-2718

DNV Case No.: EC-LS-22-7 DNV Assessment Report - Fabrication, dated: 2005-08-23

Place and date
Høvik, 2005-09-09
for DET NORSKE VERITAS AS



Notified Body No.: 0575

Tore Morten Wetterhus
Manager, MIPN0370
Department Systems & Components

Ola E. Ruud
Surveyor

DNV local office:
DNV Shanghai



Notice: Any significant changes made to this equipment may render this certificate invalid. The product liability rests with the manufacturer or his representative in accordance with Council Directive 96/98/EC, as amended.
If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compensation shall never exceed USD 2 million, in this provision "Det Norske Veritas" and shall also the Forcible Det Norske Veritas, as well as all its subsidiaries, divisions, branches, employees, agents and any other bodies or bodies of Det Norske Veritas.

- Unit verification
- The module is used for equipment being produced in small quantities
- The Notified Body issues a **Certificate of Conformity – EC**
- The certificate covers both design and fabrication assessments and is valid for a single product




DET NORSKE VERITAS

CERTIFICATE OF CONFORMITY-EC

Application of: Council Directive 96/98/EC of 20 December 1996 on Marine Equipment as amended by directive 2002/75/EC, issued as "Forskrift om Skiputstyr" by the Norwegian Maritime Directorate. This certificate is issued by Det Norske Veritas under the authority of the Government of the Kingdom of Norway.

CERTIFICATE NO. MED-G-3074
This Certificate consists of 3 pages

This is to certify that the equipment
Radar equipment with Automatic Radar Plotting Aid (ARPA)
with the type designation
DATABRIDGE 10

Manufactured by
Kongsberg Maritime AS
Kongsberg, Norway

is, by design assessment and product verification in accordance with Module G in the Directive, found to comply with
Annex A.1, item No. A.1/4.34 in the Directive, IMO Res.477(XII),IMO Res.MSC.64(67)Annex4,IMO Res.A.823(19),IMO Res.A.694(17),ITU-R M.628-3 (11/93),ITU-R M.1177-2(05/00)

Further details of the equipment and conditions for certification are given overleaf.

Place and date
Høyvik, 2005-04-15
for DET NORSKE VERITAS AS



Notified Body No.: 0575

Tore Morten Wetterhus
Manager, MTPN0370
Department Systems & Components

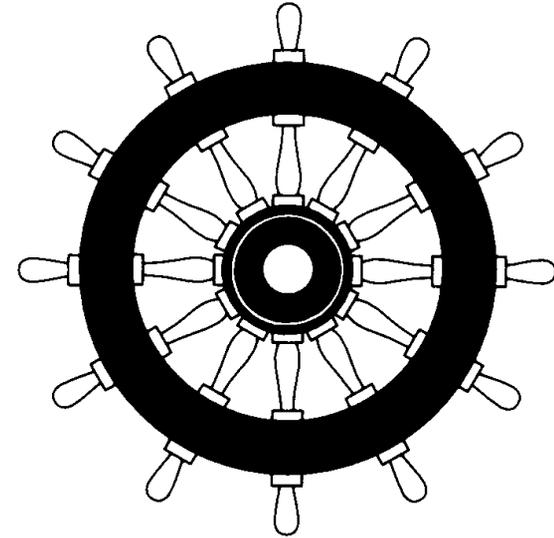
Olaf Gundersrud
Surveyor

DNV local office:
DNV Sandefjord

 Notice: Any significant changes made to this equipment may render this certificate invalid. The product liability rests with the manufacturer or his representative in accordance with Council Directive 96/98/EC, as amended.
If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to the fee charged for the services in question, provided that the maximum compensation shall never exceed USD 2 million. In this provision "Det Norske Veritas" shall mean the Function Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.

DET NORSKE VERITAS AS · VERITASVEIEN 1, 1362 HØVIK, NORWAY · TEL: (+47) 67 67 98 00 · FAX: (+47) 67 67 99 11
Form No.: 20.90a Issue: January 98 Page 1 of 3

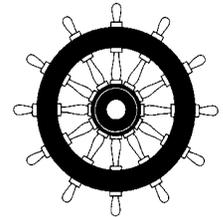
- Upon completion of module B + one of the production phase modules (D, E or F), or alternatively module G, the manufacturer shall issue a **Declaration of Conformity**. DNV strongly recommend above mentioned declaration to follow product (but this is not mandatory according Directive).
- Thereafter, the manufacturer shall affix the **Mark of Conformity**
- Notified Body Number for the Notified Body having issued the module D, E, F or G certificate



0575/09

- A product must be manufactured during the validity period given in the MED-B + MED-D/-E certificates and marked accordingly with year of manufacture
- Generally the certificates shall be valid at date of product installation
- However, for a product manufactured within certificates validity period, it is accepted that the certificate may have expired at the date of equipment installation as long as the SOLAS/Rules/test requirements have not changed since the expiry date of the approval certificate.
- When installed onboard, the equipment shall satisfy the SOLAS/Class rules requirements (and MED requirement) in force at the date of keel laying.
- After the keel laying, the certificates may expire, without consequences for the wheel marked equipment to be installed.

- Checklist: Form No. [EU-MED001a.dot](#)
- Wheelmarking:
 - on the product or
 - on the packaging or
 - on a leaflet
- Certificates to be provided:
 - MED-B: (EC Type-Examination certificate/s) + MED-D or E or F certificate
 - MED-G certificate



0575/09

- If the unit is considered as a Ship (i.e. SOLAS requirements are applicable and CEC is issued) then MED is fully applicable
- Flag requirements to be checked in each case as different states have different interpretations towards application of MED in Offshore.

Where to find information and to get support?

Where to find approved products?

■ Internet:

- www.dnv.com

<http://exchange.dnv.com/DNVX/ApprovedPublic/ApprovedProductsAndManufacturers.html>

- MARED (Group of Notified Bodies for implementation of the Marine Equipment Directive)

www.mared.org

- DNV New Building Site Office and Project Manager are at your disposal for any clarification you may need.
- Involve them at the earliest stage, as soon as you have a doubt. Do not wait until it is too late.
- DNV organization is huge and aimed at assisting you when needed, give us enough time to do it.

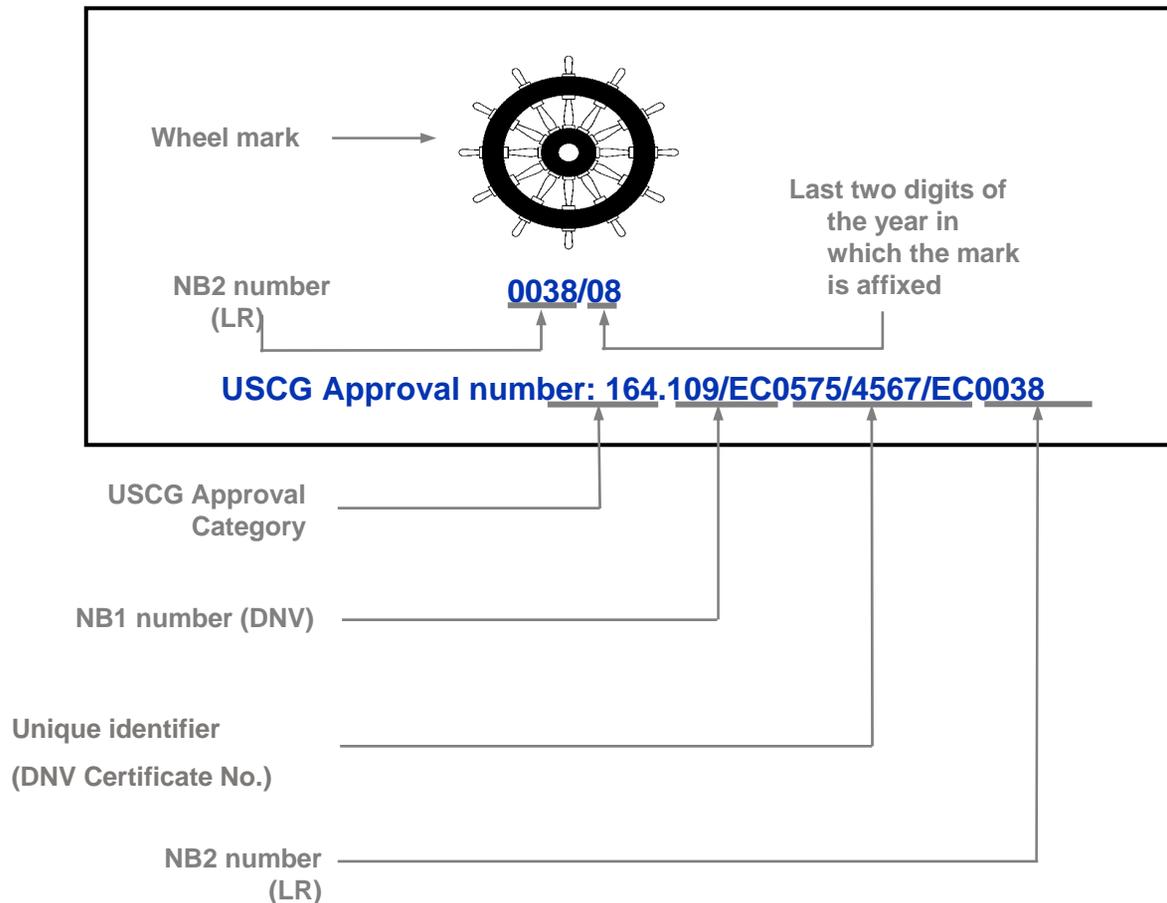
Mutual Recognition Agreement (MRA) with USCG

- The European Community and the United States signed on February 27 2004 a Mutual Recognition Agreement (MRA) on marine equipment
- The agreement covers 43 products (Listed in Annex II of MRA)
[USCG list.pdf](#)
- Products certified to comply with the Marine Equipment Directive will be accepted for sale in the US without the need for additional testing or certification, and vice-versa

- An U.S. Coast Guard approval number will be assigned to the equipment and mentioned on the production module certificate (module D, E, F or G)
- For products that are to be installed on vessels registered within the EEA, the manufacturer shall mark the product with the wheel mark
- For products where USCG Approval is required, the manufacturer shall mark the product with the USCG Approval Number (may be in addition to the wheel mark)

USCG approval number – Marking

One Notified Body (NB1, f.ex. DNV) issue the EC Type Examination (Module B) Certificate and other Notified Body (NB2 f.ex. LR) issue the QA Certificate of Conformity (Module D, E or F)



Summary

- Objective of the Marine Equipment Directive:
 - To enhance safety at sea and the prevention of marine pollution through uniform application of relevant international instruments
 - To ensure free movement of marine equipment within the Community (EEA)
- Module based certification process



- DNV and MARED websites – a good place to search for information
- MRA between EU and US reduces the need for multiple certification for the manufacturer
- DNV New Building Site office will assist you: ask them.

Safeguarding life, property and the environment

www.dnv.com

