



OPIN/MEA webinar: Standardisation and certification for offshore renewables

May 19th 2020

Interreg 
North-West Europe
OPIN
European Regional Development Fund

Interreg 
North-West Europe
**Marine Energy
Alliance**
European Regional Development Fund



Certification schemes for MRE

Jonathan Boutrot – Offshore Wind Market Leader

Jonathan.boutrot@bureauveritas.com

BUREAU VERITAS



Agenda

- Bureau Veritas in brief
- Marine Renewable Energies (MRE) | Standardisation
- MRE | Certification
- Certification schemes for MRE
- Project Certification
- Q&A session

Bureau Veritas at a glance | Key Figures



€4.8 Mrd.

Revenue in 2018



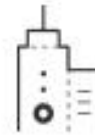
75,000

Employees



400,000

Clients



1,400

Offices
& Laboratories



3,500

Accreditations
& Agreements



**BUREAU
VERITAS**

Interreg 
North-West Europe
OPIN

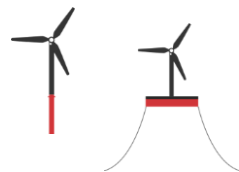
European Regional Development Fund

Interreg 
North-West Europe
**Marine Energy
Alliance**

European Regional Development Fund

Bureau Veritas at a glance | References

- EXPERIENCE ACROSS THE FULL VALUE CHAIN



renewables



Bureau Veritas at a glance | References

- EXPERIENCE ACROSS THE FULL VALUE CHAIN



Other References (Offshore Power Cables, Soil conditions, ...)



Marine Renewable Energies | Standardisation

IEC STANDARDS

TC88

Wind Energy Generation
Systems



TC114

Marine Energy – Wave, tidal
and other water current
converters



**IEC Renewable Energy –
Wind Energy
Sector Working Groups**



**IEC Renewable Energy –
Marine Energy
Sector Working Groups**



ISO STANDARDS

ISO TC8 / WG3 / ISO 29400
Ships and marine technology
- Offshore wind energy -
Ports and marine operations



→ [TC 88 website](#)

→ [TC 114 website](#)

→ [IEC RE website](#)



BUREAU
VERITAS

Interreg 
North-West Europe
OPIN
European Regional Development Fund

Interreg 
North-West Europe
**Marine Energy
Alliance**
European Regional Development Fund

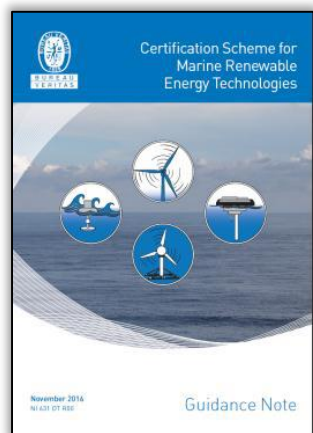
MRE | Certification



Project certificate may be required by:

- National authorities
 - Banks, investors, insurance companies etc.
-
- Technically challenge the design and assumptions
 - Ensure risks are identified and mitigated

Certification schemes for MRE | BV NI 631



Prototype Certification

1st device of a new generation



Type Certification

Series of standard commercial system of common design and manufacture



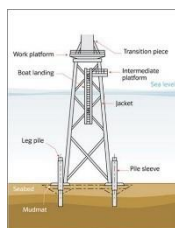
Project Certification

Commercial farm of type-certified systems installed on a specific site



Approval in Principle

Technical feasibility of a concept



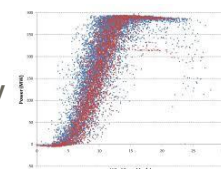
Component Certification

Standard commercial component used in large number



Performance Certification

Power Curve assessment
Grid Connection Compatibility
Acoustic Noise Emission assessment
Resource assessment



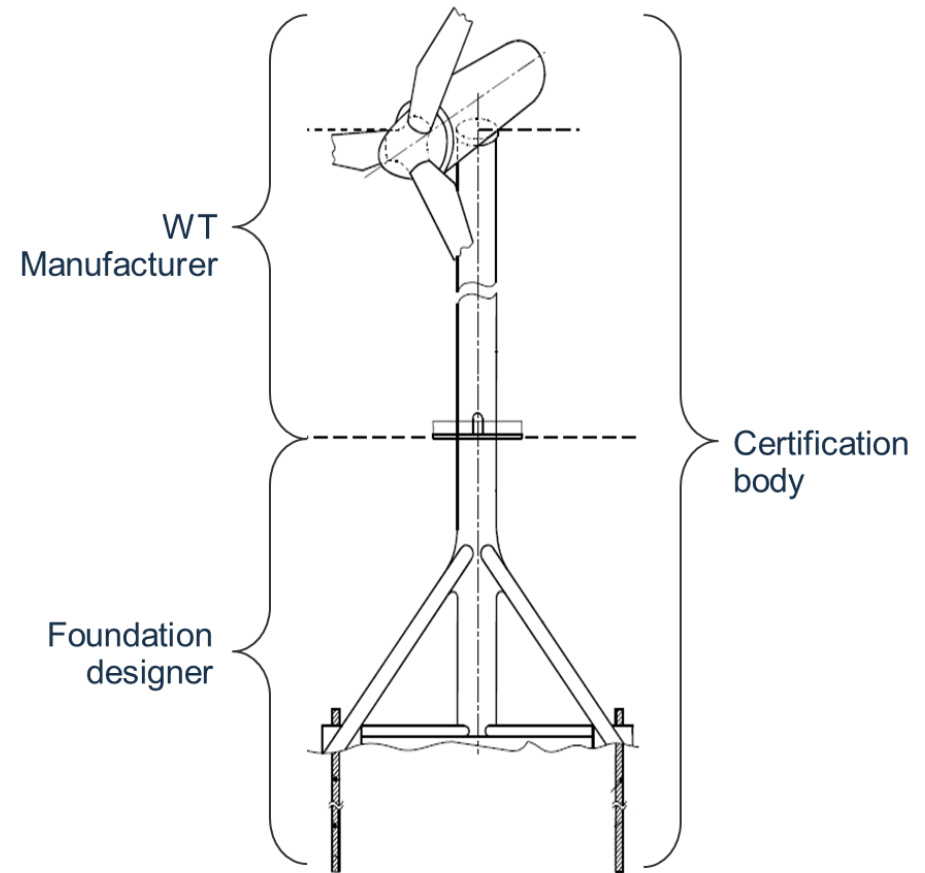
BUREAU
VERITAS

Interreg 
North-West Europe
OPIN
European Regional Development Fund

Interreg 
North-West Europe
**Marine Energy
Alliance**
European Regional Development Fund

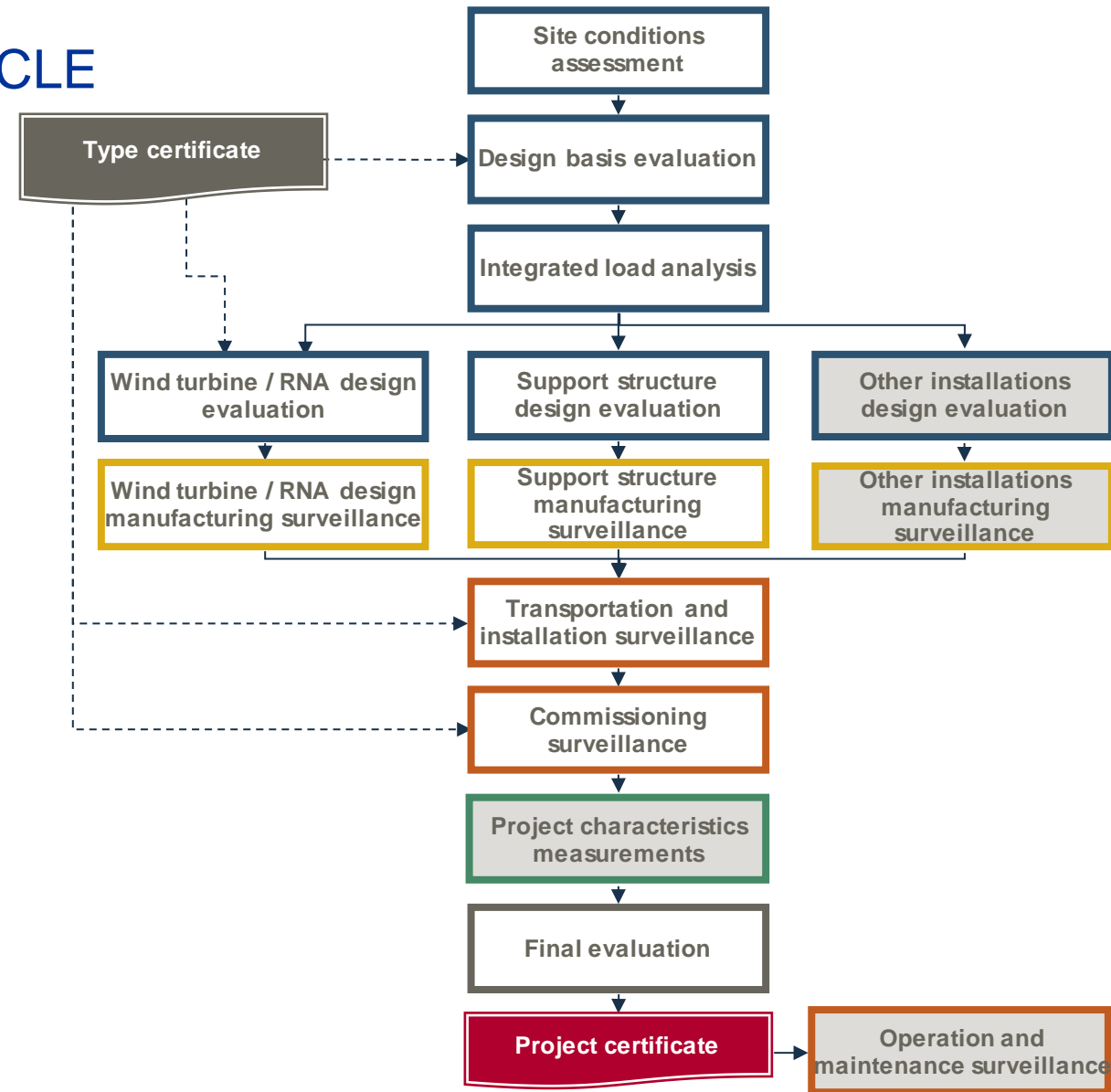
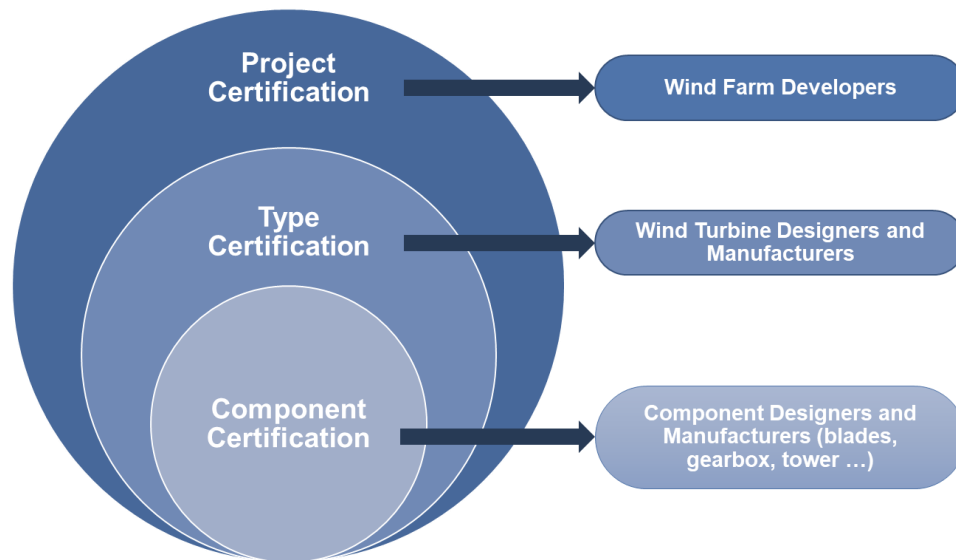
Project Certification

- INTERFACE CONTROL AND DERISKING
 - Review of the deliverables of the various stakeholders:
 - Design Basis: Parts A, B and C
 - Integrated analysis of loads
 - Detailed designs
 - Individually but also in connection to one another
- The certification body will keep the overview and ensure project risks are identified and mitigated

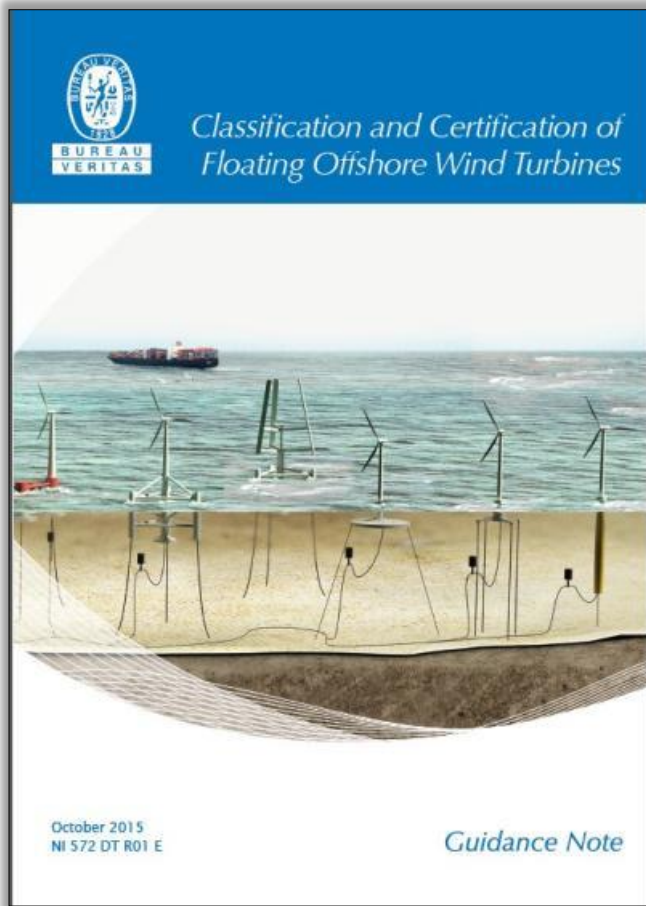


Project Certification Scheme

- COVERING THE FULL PROJECT LIFE CYCLE
- RECOGNISED INTERNATIONALLY
- IECRE COMPATIBLE



Project Certification of FOWT | BV NI 572

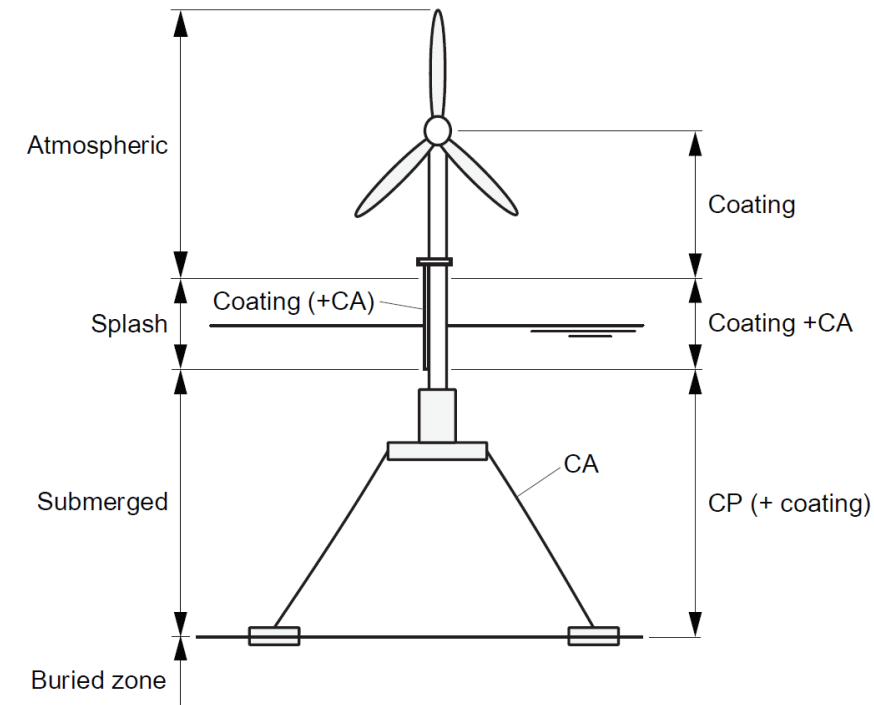


- Requirements for **Certification & Classification** of Floating Offshore Wind Turbines
- Revised in **January 2019**
- Guidance & Recommendations in compliance with **IEC 61400** series standards
- **Scope of Certification & Classification:** Material, Design Conditions and Loads, Stability, Structure Design, Structural Analysis, Scantling, Station Keeping, Foundation and Marine Systems
- Final users: suppliers, technology developers & project developers

Project Certification of FOWT | BV NI 572

Example of requirements: CORROSION

- Plan for corrosion protection:
 - Internal surface & External surface
 - Design life of the structure (included the installation life)
 - Particular condition of each zone



Project Certification of FOWT | BV NI 572

Example of requirements: CORROSION

- Corrosion protection methods:

- CA = Corrosion Addition

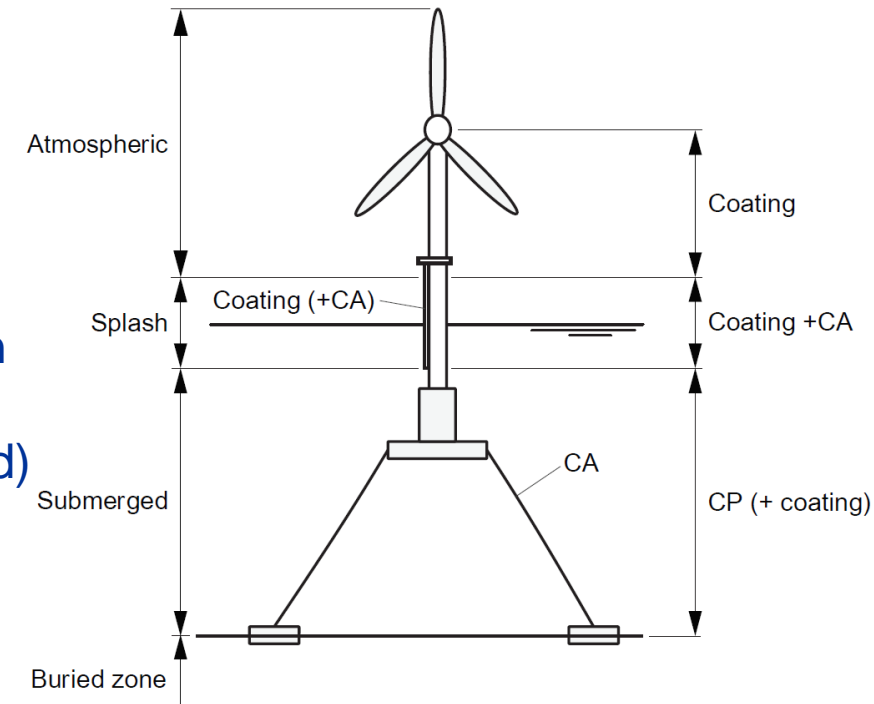
Corrosion rate is to be specified according to the compartment volume and the oxygen level (as a guidance, a reference corrosion rate of 0,10 mm/yr may be consider).

Corrosion addition depends on exposure time (coating life deduced) and corrosion rate

- CP = Cathodic Protection

i.e. sacrificial anodes system or impressed current system (impressed current system is only permitted on external surface of the structure)

- Coating



Q&A

Any Questions?



Interreg 
EUROPEAN UNION
North-West Europe
OPIN

European Regional Development Fund

Interreg 
EUROPEAN UNION
North-West Europe
Marine Energy
Alliance

European Regional Development Fund

Thank you!