



MANAGING RISK

DNV

Maritime Safety Regime



Relationship Class / Maritime Authorities

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17th April 2008

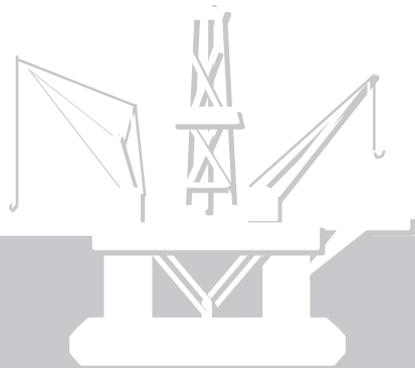
Maritime Safety Regime

- Class Systematics
- Relationship between Maritime Authorities and Class



The Class Circle – Life Time Approach

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Hierarchy of Classification Certificates

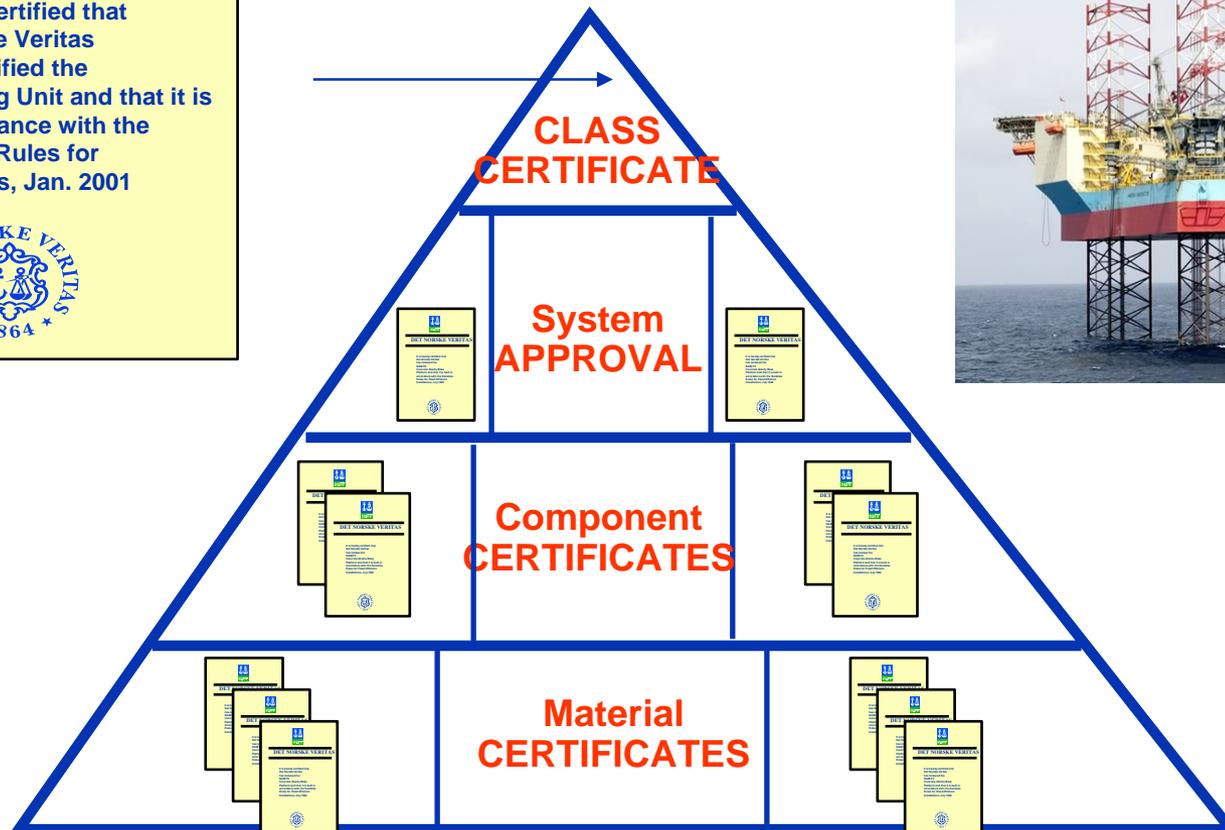
MANAGING RISK



DET NORSKE VERITAS

It is hereby certified that
Det Norske Veritas
has classified the
Self-elevating Drilling Unit and that it is
built in accordance with the
Societies Rules for
Offshore Units, Jan. 2001



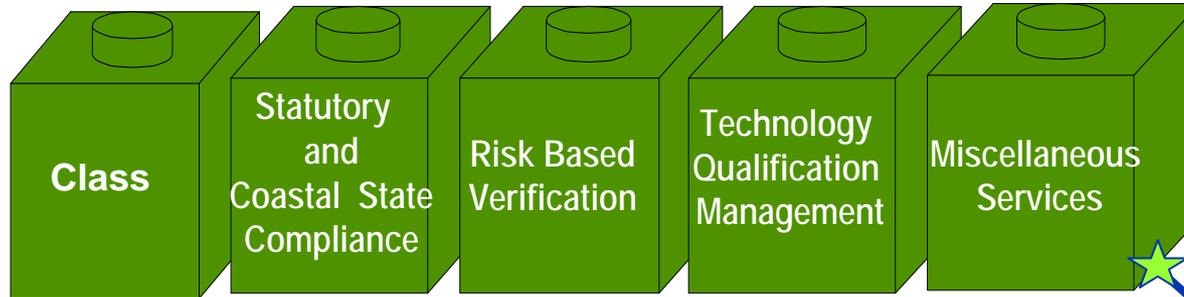


DNV Offshore Codes: 3-level document hierarchy

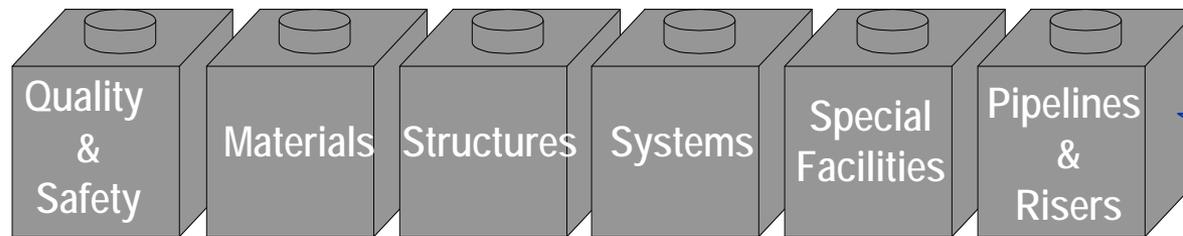


DNV Offshore Codes - Formal structure

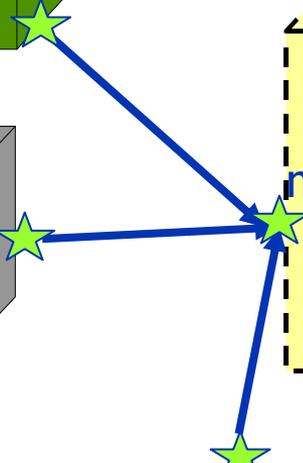
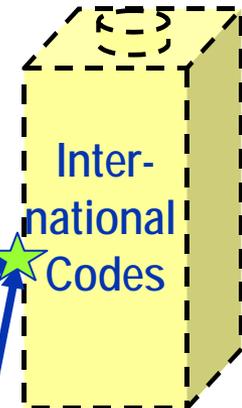
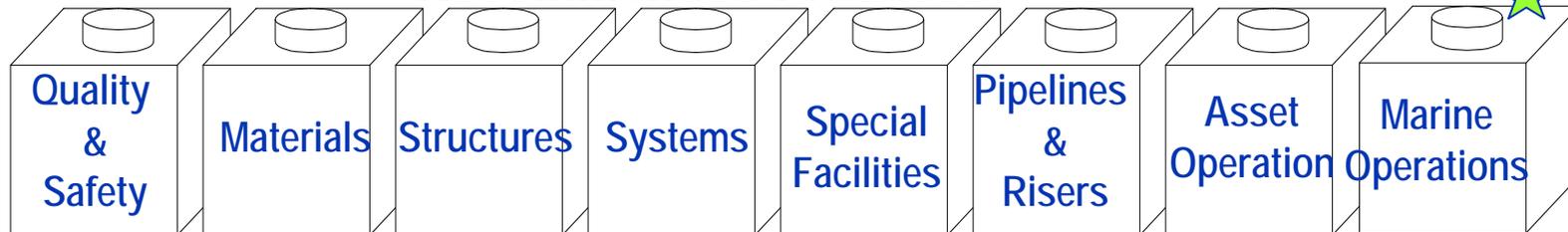
RULES/Service Specifications



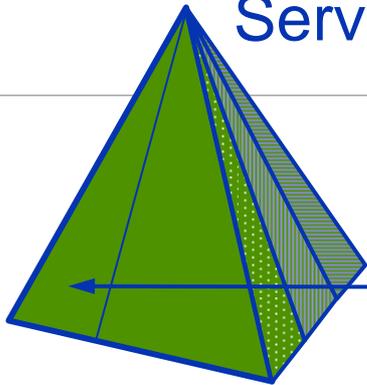
Offshore Standards



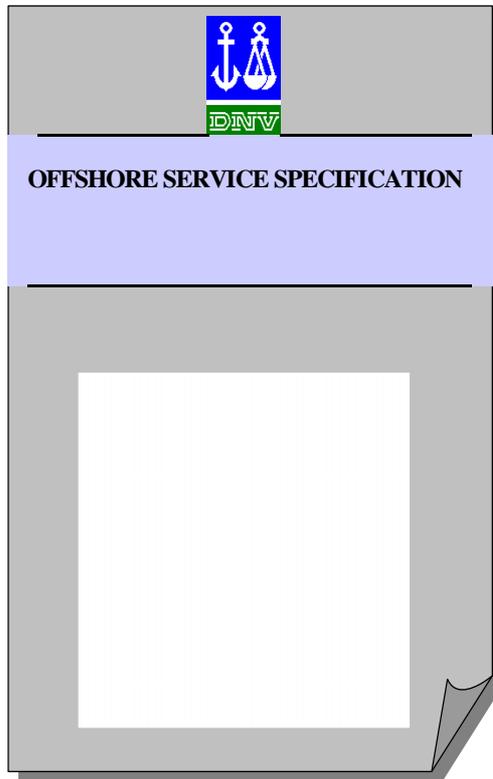
Recommended Practices



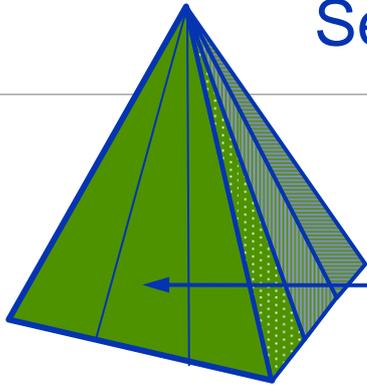
Service Specifications - Classification



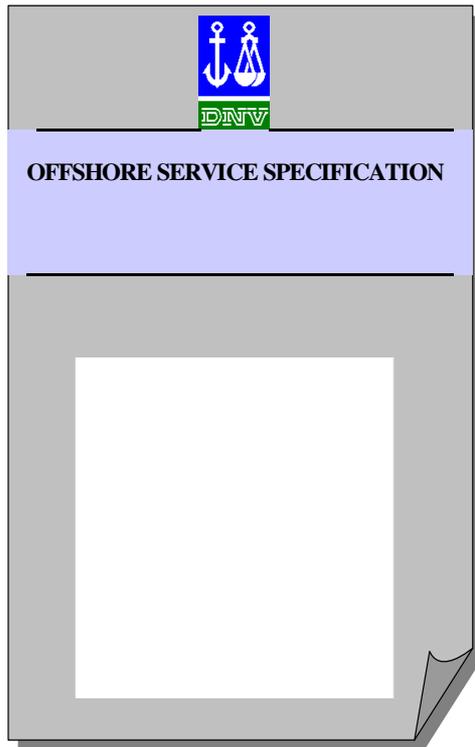
Classification (OSS-100 series)



- ◆ **DNV-OSS-101:** *Rules for Classification of Offshore Drilling and Support Units*
- ◆ **DNV-OSS-102:** *Rules for Classification of Floating Production and Storage Units*
- ◆ **DNV-OSS-103:** *Rules for Classification of LNG/LPG Floating Production and Storage Units or Installations*
- ◆ **DNV-OSS-121:** *Classification using Performance Criteria determined By Risk Assessment Methodology*



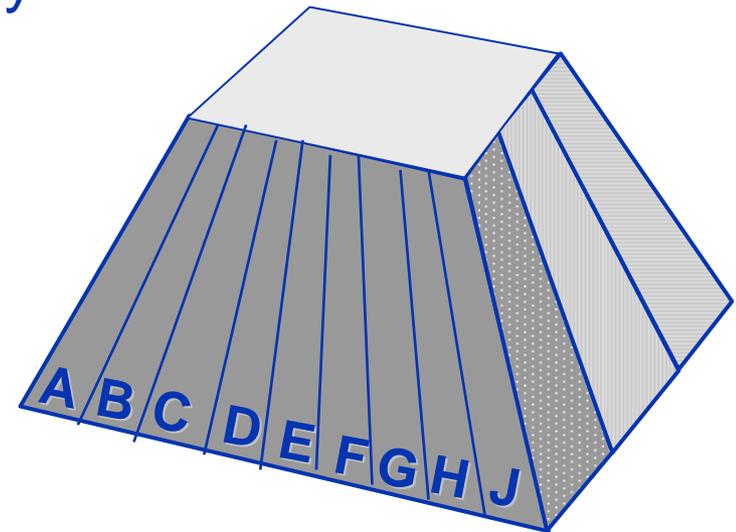
Shelf Compliance Services (OSS-200 series)



- ◆ **DNV-OSS-201:** *Verification for Compliance with Norwegian Shelf Regulations*
- ◆ **DNV-OSS-202:** *Verification for Compliance with UK Shelf Regulations*

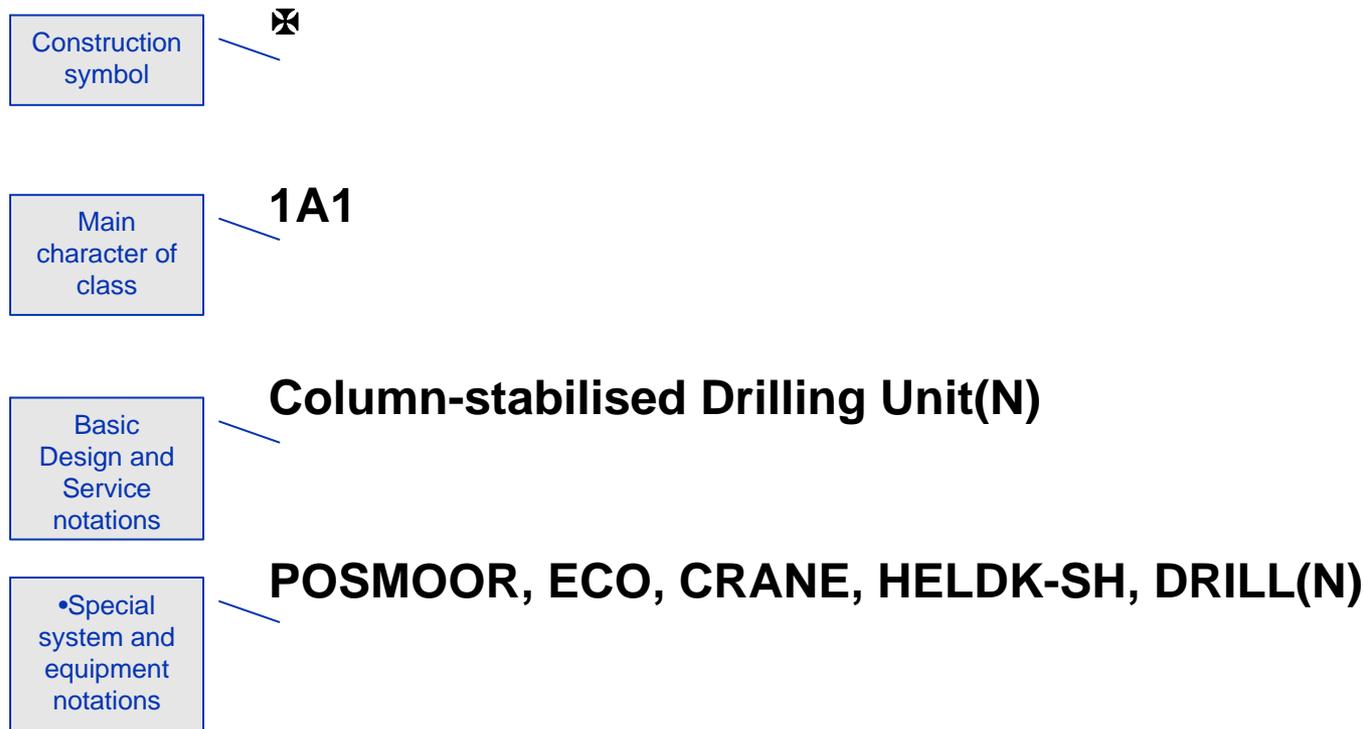
Formal Structure

- ◆ A: Quality and Safety Methodology
- ◆ B: Materials Technology
- ◆ C: Structures
- ◆ D: Systems
- ◆ E: Special Facilities
- ◆ F: Pipelines and Risers
- ◆ G: Asset Operation
- ◆ H: Marine Operation
- ◆ J: Wind Turbines

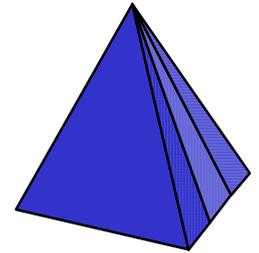


DNV Offshore Class - Class Notations

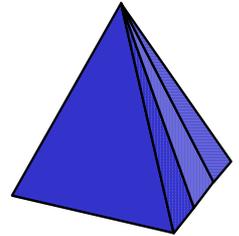
- Scope of classification is determined by mandatory and additional *class notations*, e.g.



- ◆ Ship-shaped Unit
- ◆ Column-stabilised Unit
- ◆ Self-elevating Unit
- ◆ Tension-leg Platforms
- ◆ Deep-draught Units



- ◆ **Drilling Unit**
 - with drilling as a main function
- ◆ **Well Intervention Unit**
 - with well intervention as a main function
- ◆ **Accommodation Unit**
 - primarily used for accommodation purposes
- ◆ **Crane Unit**
 - primarily used for heavy-lift purposes
- ◆ **Offshore Support Unit**
 - intended for offshore support functions (fitted with only parts of equipment necessary to perform main functions)
- ◆ **Production Unit**
 - Production of hydrocarbons as main function
- ◆ **Storage Unit**
 - Storage of hydrocarbons as main function
- **The service notations are mandatory**



Main Class covers the following systems:

- Arrangement, incl. area classification and escape
- Emergency safety systems
- Structural strength including hull and superstructure, materials, welding, fabrication and corrosion protection
- Stability
- Watertight and weather-tight integrity
- Machinery and systems for marine use
- Electrical installations for marine use
- Instrumentation and automation.
- Fire protection
- Position keeping

Classification of MODUs

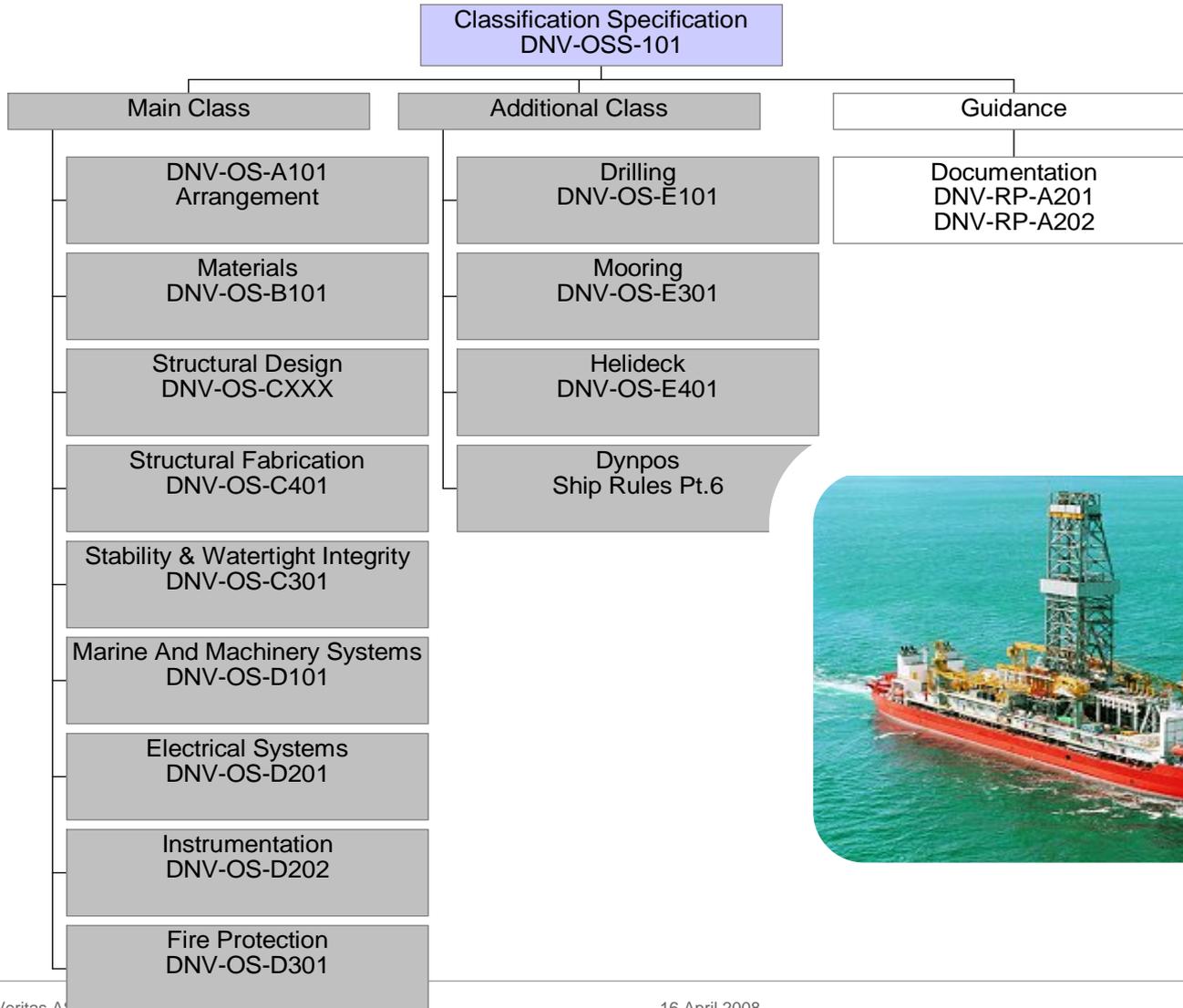
Table B3 Additional system and special facility notations	
<i>Notation</i>	<i>Description</i>
POS MOOR	Passive position mooring system
POS MOOR V	Mooring system designed for positioning in vicinity of other structures
POS MOOR TA	Thruster assisted mooring system dependent on manual remote thrust control system
POS MOOR ATA	Thruster assisted mooring system dependent on automatic remote thrust control system
DYN POS T	A semi-automatic position keeping system without redundancy
DYN POS AUTS	An automatic position keeping system without redundancy
DYN POS AUT	An automatic position keeping system, with a remote thrust control back-up and a position reference back-up
DYN POS AUTR	An automatic position keeping system, with redundancy in technical design
DYN POS AUTRO	An automatic position keeping system, with redundancy in technical design and physical arrangement
DRILL	Drilling plant

Menu of Additional Class Notations (contd..)

Classification of MODUs

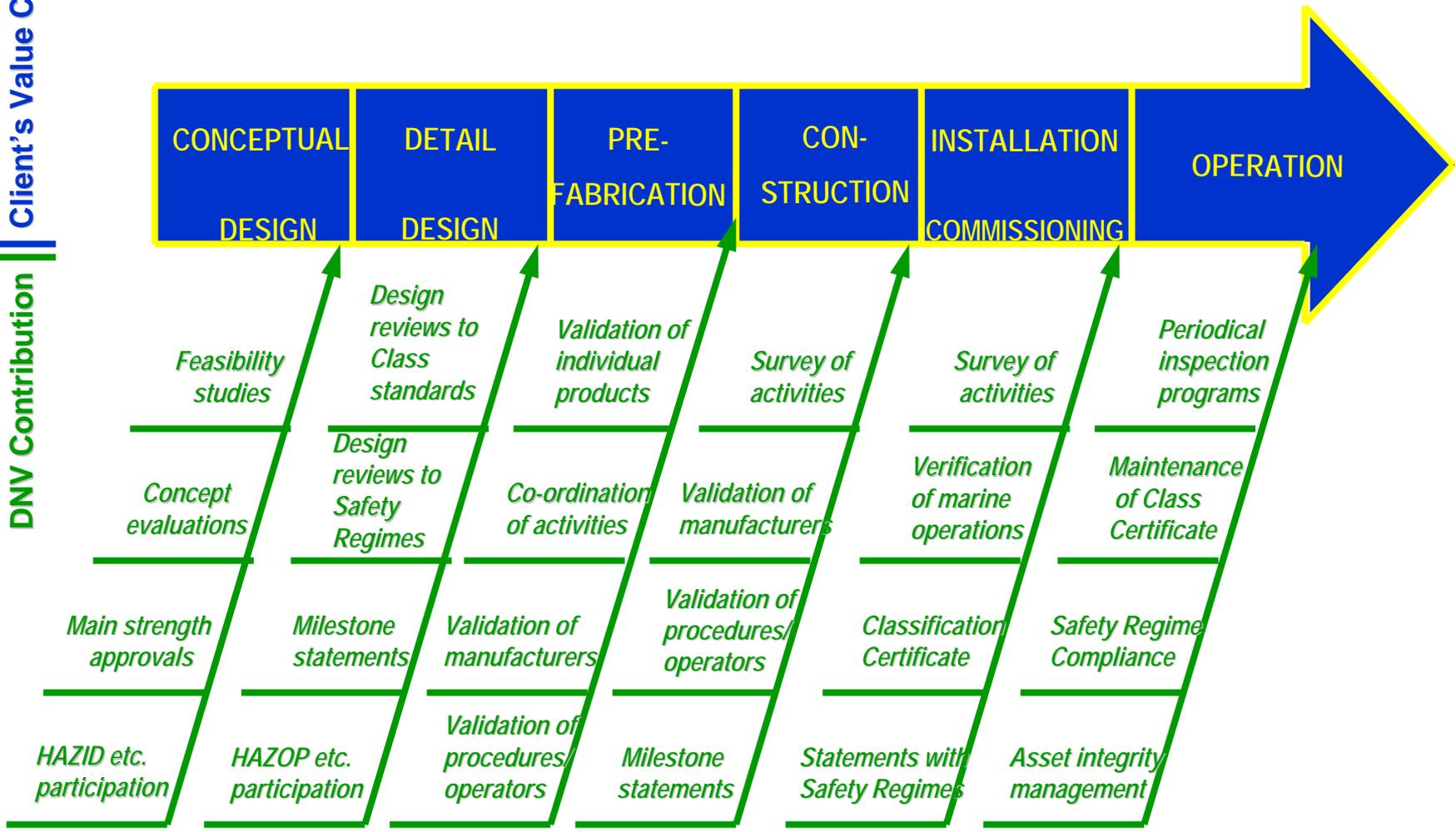
HELDK	Helicopter deck structure
HELDK S	Helicopter deck structure including safety aspect related to the unit
HELDK SH	Helicopter deck structure including safety aspect related to the unit and to the helicopter
WELLTEST	Facilities for well testing
TEMPSTORE	Temporary storage of oil
CRANE	Equipped with crane(s)
DSV-I SF	Equipped with diving system with operational limitations
DSV-II SF	Equipped with diving system with operational limitations
DSV-III SF	Equipped with diving system without operational limitations
DEICE or DEICE/C	Unit equipped with de-icing/anti-icing systems
E0	Unit equipped for unattended machinery space
ECO	Unit equipped for operation of machinery from centralised control station
F-A	Additional fire protection of accommodation space
F-M	Additional fire protection of machinery space
F-AM	Additional fire protection of accommodation and machinery space

Example: Application for MODUs



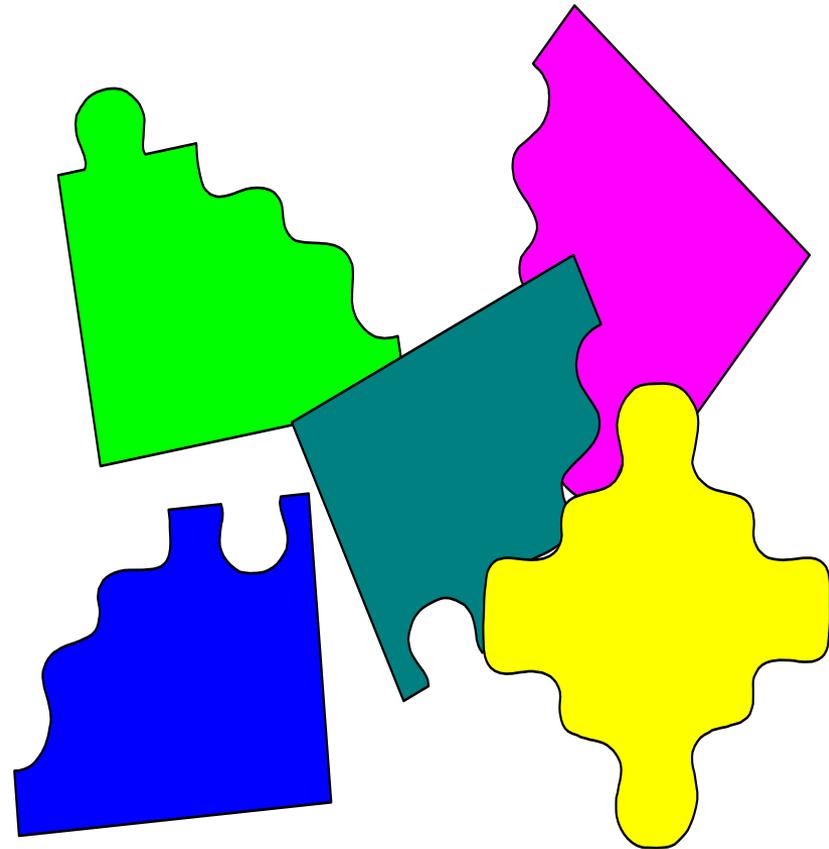
Client's Value Chain

DNV Contribution



Safety Regimes - Jigsaw Puzzle ?

- Which rules are valid when and for what?
 - National legislation (shelf state)
 - Flag state regulations
 - Class rules
 - International conventions
 - Regional regulations
- How are these related?



Shelf State Legislation

- ***Floating Offshore Units must comply with Shelf State Legislation of the country it is to operate***
- All states have *full sovereignty* w.r.t regulating activities on their continental shelves
- Activities on the shelf are generally *not* regulated by international conventions
- National legislation precede Maritime (Flag State) Rules, but will often refer to flag state rules w.r.t. maritime aspects

- Ships and Mobile Offshore Units trading internationally have to comply with safety regulations of the Maritime Authority in the country whose flag the unit is flying (the Flag State)
- Flag states adopt and implement the safety regulations given in conventions issued by IMO (International Maritime Organisation)

- United Nation's body for maritime affairs
- Develops and maintains conventions giving safety regulations for ships and MOUs trading internationally
- Abt. 156 nations are members of IMO
- Secretariat and meetings in London
- IMO has no operational role

- Important IMO conventions include:
 - SOLAS (Safety of Life at Sea)
 - MARPOL (pollution prevention)
 - Load Line
 - Tonnage
 - MODU (Safety code for drilling units)
- Degree to which IMO requirements are enforced for MOUs depend on the flag state
- Important to check flag authority position early in a project

- Flag states require classification
- Delegation of authority from Flag State to Class is normal
- For operation on continental shelves, there are normally additional local coastal state requirements
- Delegation of authority from Coastal State Authority to Class is rare

Martime Safety Regime





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