EDUCATION

M.B.A. in Magister Management (2009-2012)
MMUGM Yogyakarta, Indonesia
ST in Marine Engineering (2004-2006)
ITS Surabaya, Indonesia
Amd in Ship Building (2000-2003)
Surabaya Ship Building State,
Polythecnic ITS Surabaya, Indonesia

JOB POSITION

Manager of Marketing Product Development (2020-Now)
Division of Business and Marketing,
PT. PAL Indonesia (PERSERO)
Manager of Research and Development (2018-2020)
Division of Design,
PT. PAL Indonesia (PERSERO)
Manager of Basic Design (2016-2020)
Division of Design,
PT. PAL Indonesia (PERSERO)

R. JOZA EMERALD NOUVANTORO, MBA

“Experiences”

SHIP DESIGN PROCESS

R. JOZA EMERALD NOUVANTORO, MBA

ABOUT THE TOPIC

Penjelasan proses-proses desain kapal baru sampai dapat diproduksi di galangan kapal

DESIGN PROCESS SHIP BUILDING

Penjelasan proses desain di Industri Kapal

BASIC DESIGN

Penjelasan Basic Design sebagai bagian penting dari desain kapal baru

DESIGN OPTIMIZATION

Penjelasan optimisasi di dalam mendesain kapal baru pada lambung displacement

INTEGRATION DESIGN SYSTEM

Penjelasan integrasi sistem desain kapal baru, termasuk:
- Construction
- Outfittings

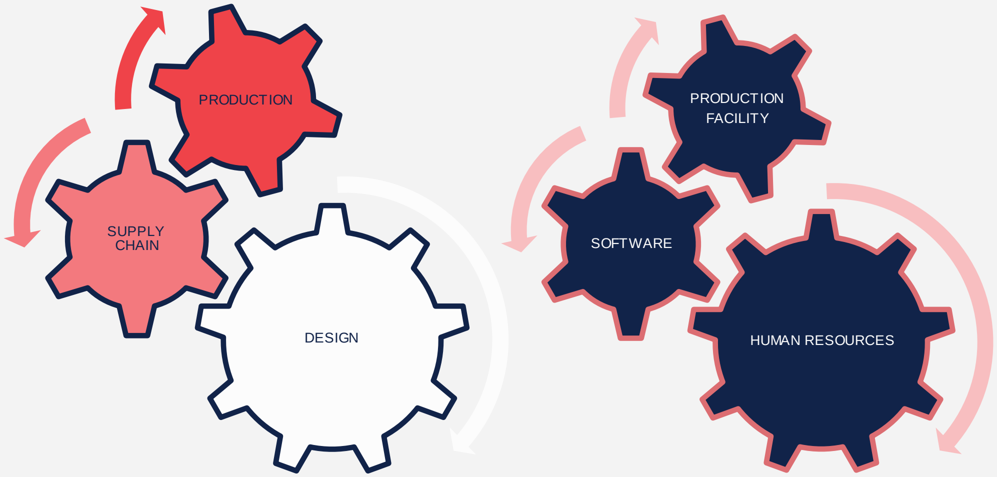
BUILDING STRATEGY

Penjelasan fungsi desain sebagai bagian penting di dalam membuat strategi untuk membangun kapal baru

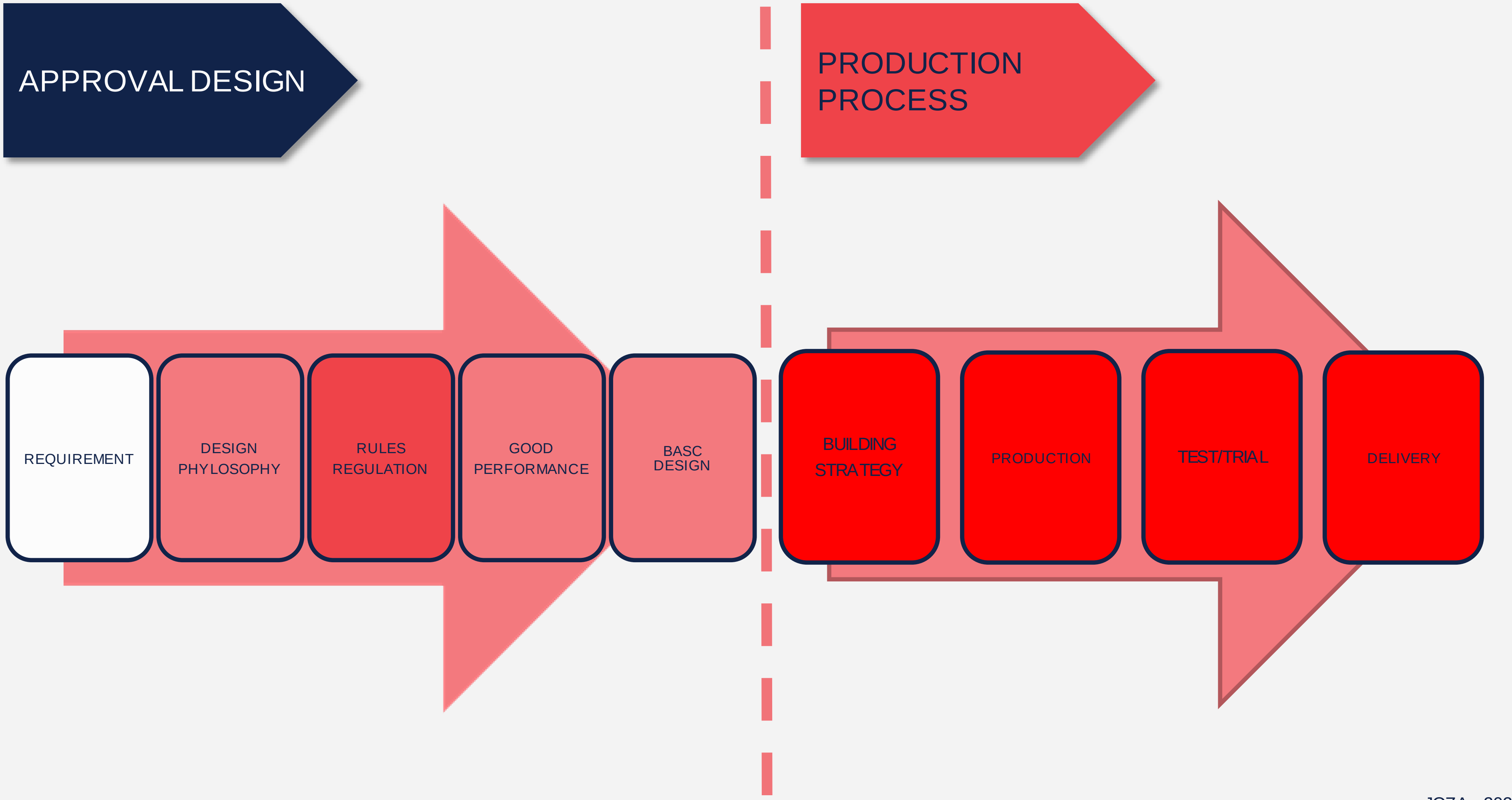
ABOUT THE TOPIC

Penjelasan proses-proses desain kapal baru sampai dapat diproduksi di galangan kapal

MODERN INTEGRATION SYSTEM SHIP BUILDING



GOOD INTEGRATION SYSTEM


APPROVAL DESIGN
PRODUCTION PROCESS
REQUIREMENT
DESIGN PHYLOSOPHY
RULES REGULATION
GOOD PERFORMANCE
BASC DESIGN
BUILDING STRATEGY
PRODUCTION
TEST/TRIAL
DELIVERY

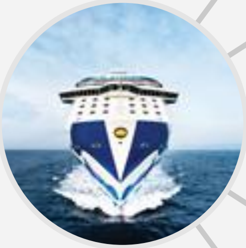
REQUIREMENT

MISSION

DESIGN PHILOSHOPY

GOOD PERFORMANCE

BASIC DESIGN



ENERGY

OIL/GAS

CARGO

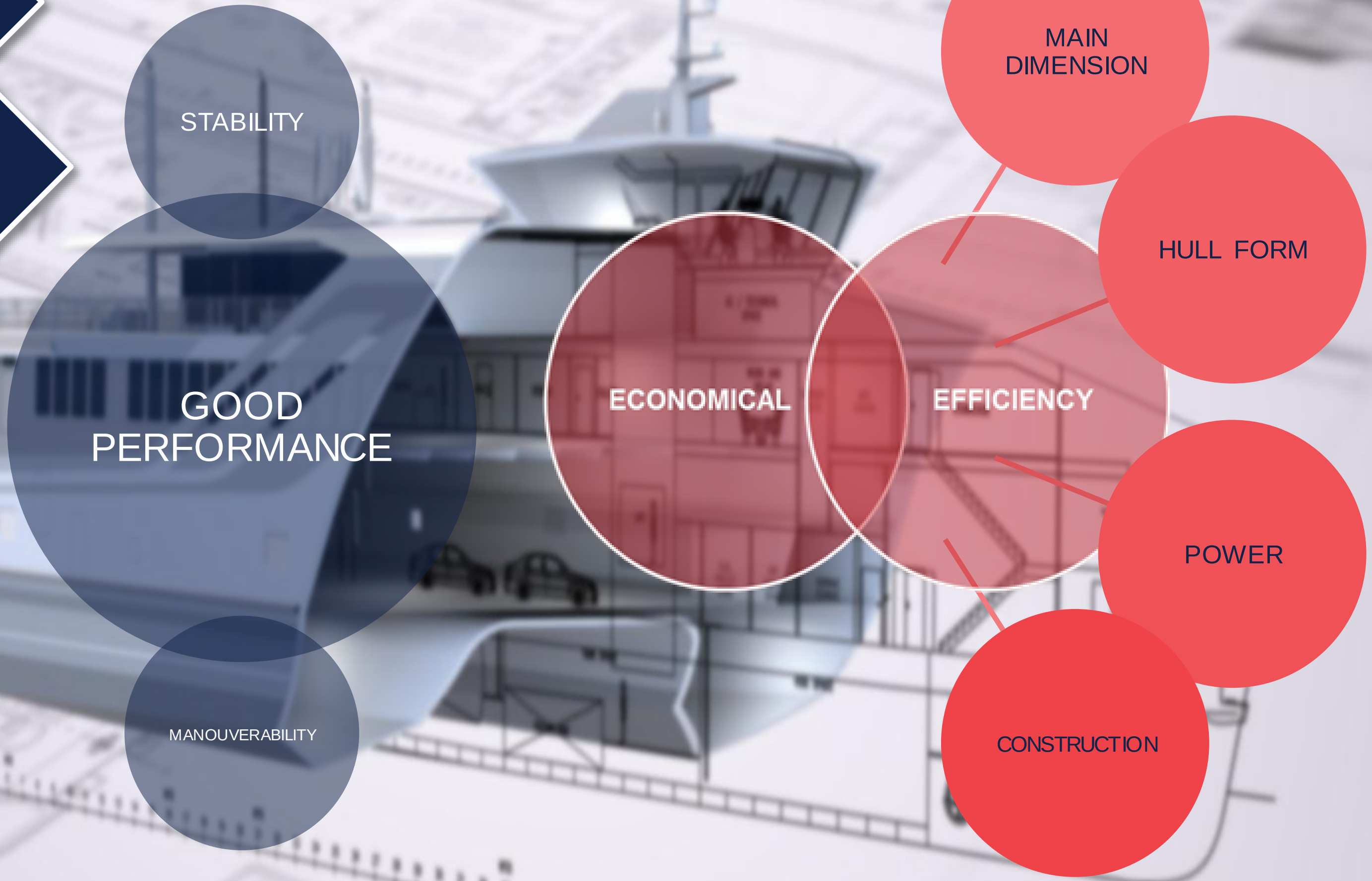
PASSENGER

DEFENCE /MILITARY

OTHERS

BASIC DESIGN

DESIGN OPTIMIZATION



DESIGN OPTIMIZATION

MAIN DIMENSION

CARGO/CONTAINER/
TANKER/LNG/PASSENGER
/OTHERS

RUTE PELAYARAN

FUEL OIL

FRESH WATER

OTHERS

DEADWEIGHT (DWT)

Oil fuel tank protection

The Marine Environment Protection Committee (MEPC) at its 54th session in March 2006 adopted an amendment to MARPOL Annex I to include a new regulation 12A on oil fuel tank protection. The regulation applies to all ships delivered on or after 1 August 2010 with an aggregate oil fuel capacity of 600 m^3 and above. It includes requirements for the protected location of the fuel tanks and performance standards for accidental oil fuel outflow.

A maximum capacity limit of 2,500m^3 per oil fuel tank is included in the regulation, which also requires Administrations to consider general safety aspects, including the need for maintenance and inspection of wing and double-bottom tanks or spaces, when approving the design and construction of ships in accordance with the regulation. Consequential amendments to the IOPP Certificate were also adopted.

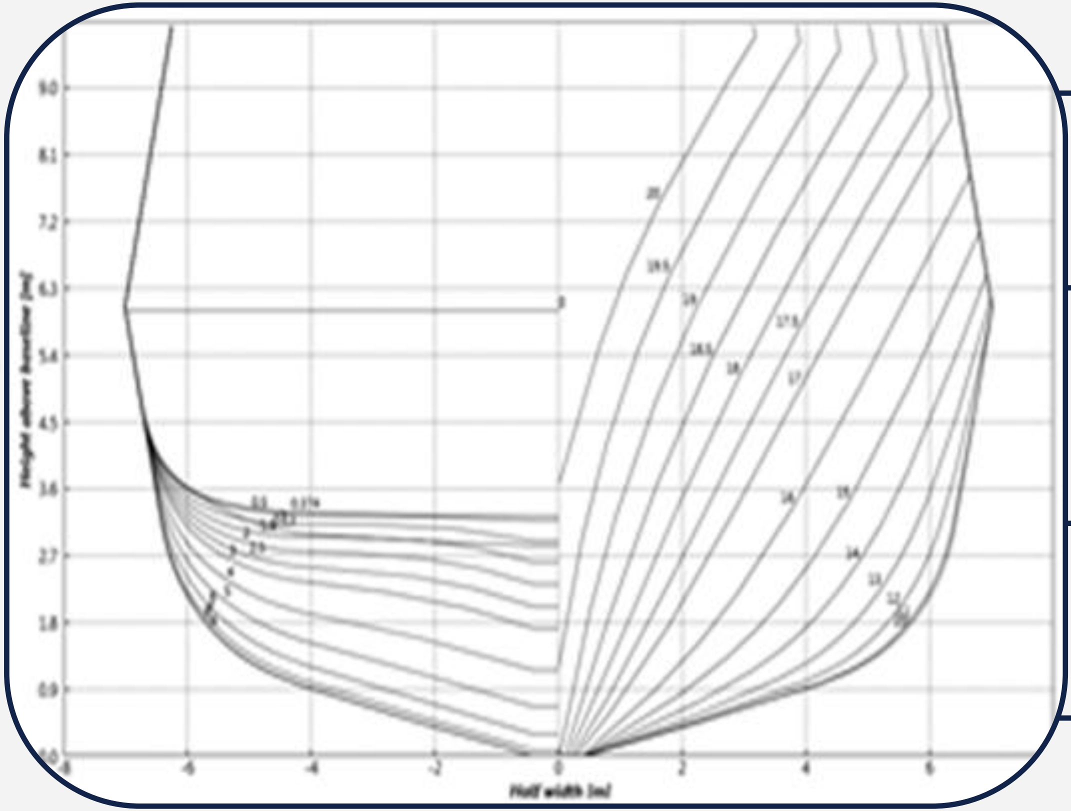
DESIGN OPTIMIZATION

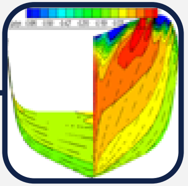
HULL FORM

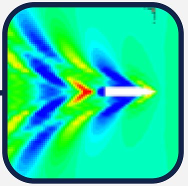
CFD

TOWING TANK

ISSUE POWER





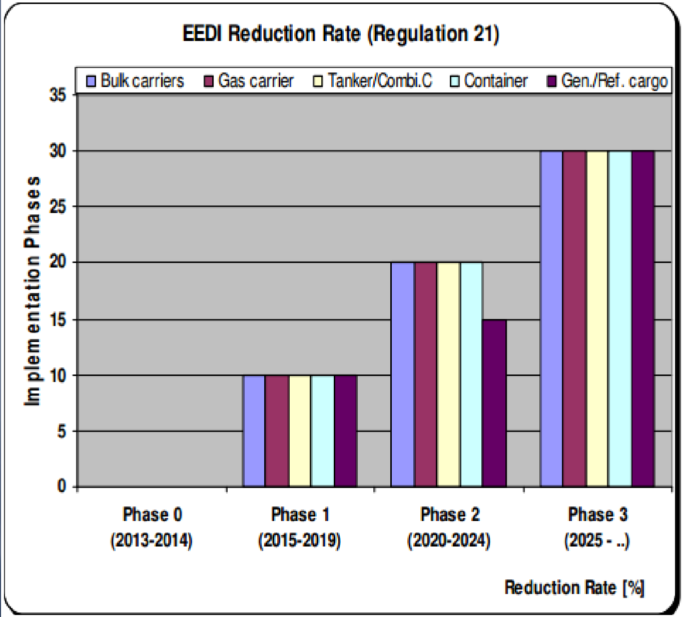


DESIGN OPTIMIZATION

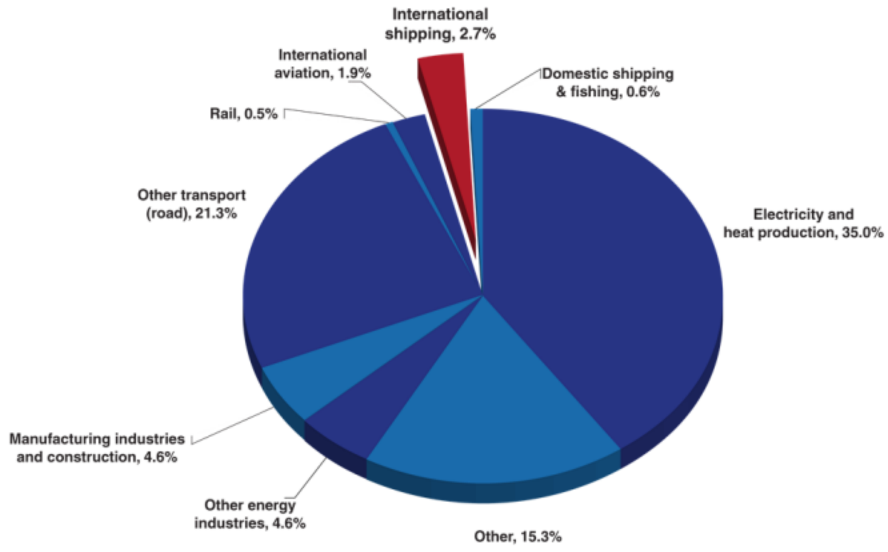
POWER

MARPOL

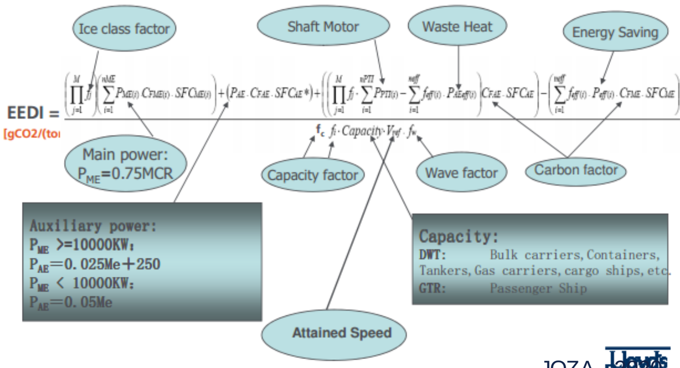
ISSUE CO2 EMISSIONS



Shipping's Contribution to CO_2 Emissions



EEDI parameters



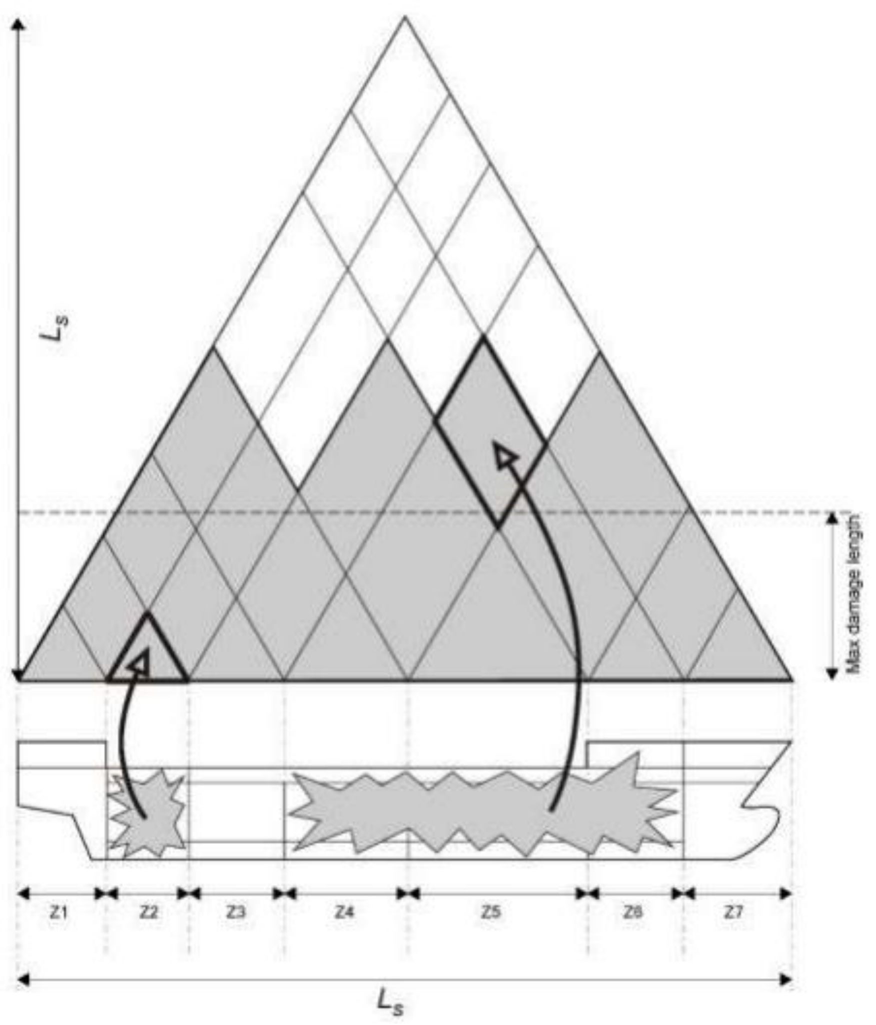
JOZA - Lloyd's Register LIFE MATTERS

DESIGN OPTIMIZATION

SOLAS

DAMAGE ISSUE

LONGITUDINAL SUBDIVISION



DESIGN OPTIMIZATION

CONSTRUCTION

STRENGHT ISSUE

MID SHIP CONSTRUCTION

CLASSIFICATION

MODULUS FORMULA

K B C I 1964

2. Minimum midship section modulus

2.1 The section modulus related to deck and bottom is not to be less than the following minimum value:

$$W_{min} = k \cdot c_0 \cdot \mathbf{L}^2 \cdot \mathbf{B} \cdot (\mathbf{C}_B + 0{,}7) \cdot 10^{-6} \quad [m^3]$$

c_0 according to Section 4, A.2.2 for unlimited service range.

For ships classed for a restricted range of service, the minimum section modulus may be reduced as follows:

P	(Restricted Ocean Service)	: by 5%
L	(Coasting Service)	: by 15%
T	(Shallow Water Service)	: by 25%

c_0 = wave coefficient

$$= \left[\frac{L}{25} + 4{,}1\right] c_{RW} \qquad \text{for } \mathbf{L} < 90 \text{ m}$$

$$= \left[10{,}75 - \left[\frac{300 - L}{100}\right]^{1,5}\right] c_{RW} \qquad \text{for } 90 \le \mathbf{L} \le 300 \text{ m}$$

$$= 10{,}75 \cdot c_{RW} \qquad \text{for } \mathbf{L} > 300 \text{ m}$$

c_{RW} = service range coefficient

= 1,00 for unlimited service range

= 0,90 for service range P

= 0,75 for service range L

= 0,60 for service range T

DESIGN OPTIMIZATION

CONSTRUCTION

STRENGHT ISSUE

MID SHIP CONSTRUCTION

CLASSIFICATION

MODULUS FORMULA

SPECIFIED OPERATING AREA SERVICE

5.2 Design vertical wave bending moments

5.2.1 The appropriate hogging or sagging design hull vertical wave bending moment at amidships is given by the following:

$M_w = f_1 f_2 M_{wo}$

where

C_b = is to be taken not less than 0,60

C_1 = is given in Table 4.5.1 Wave bending moment factor

C_2 = 1, (also defined in Pt 3, Ch 4, 5.2 Design vertical wave bending moments 5.2.2 at other positions along the length L)

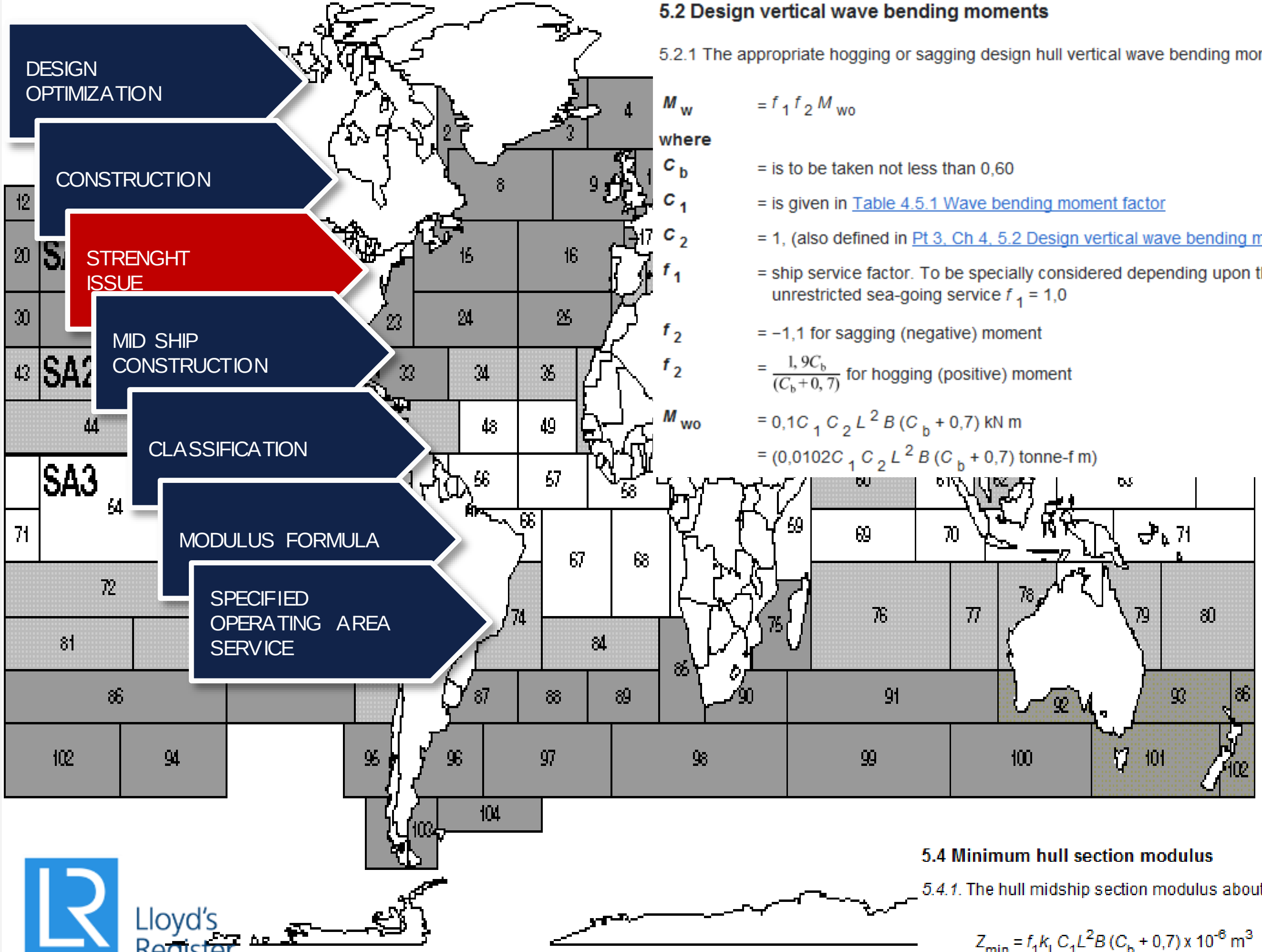
f_1 = ship service factor. To be specially considered depending upon the service restriction and in any event should be not less than 0,5. For unrestricted sea-going service $f_1 = 1{,}0$

f_2 = −1,1 for sagging (negative) moment

$f_2 = \frac{1{,}9C_b}{(C_b + 0{,}7)}$ for hogging (positive) moment

$M_{wo} = 0{,}1 C_1 C_2 L^2 B (C_b + 0{,}7)$ kN m

$= (0{,}0102 C_1 C_2 L^2 B (C_b + 0{,}7)$ tonne-f m)



Service Area Definitions
Chart shows the minimum required service area notation for each sea area.

Table 2.2.2 Environmental wave data for service area

Service Area Notation	Intercept factor f_1	Slope factor f_2
SA1	1,00	0,00
SA2	0,93	−1,15
SA3	0,70	−1,00
SA4	0,50	0,00
SAR	To be specially considered	

5.4 Minimum hull section modulus

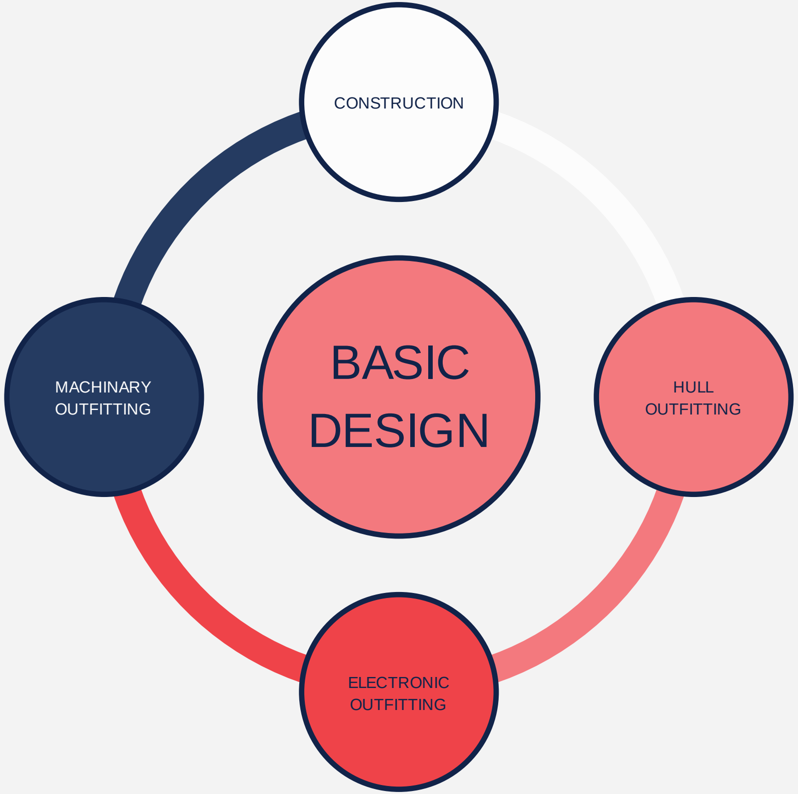
5.4.1. The hull midship section modulus about the transverse neutral axis, at the deck or the keel, is to be not less than:

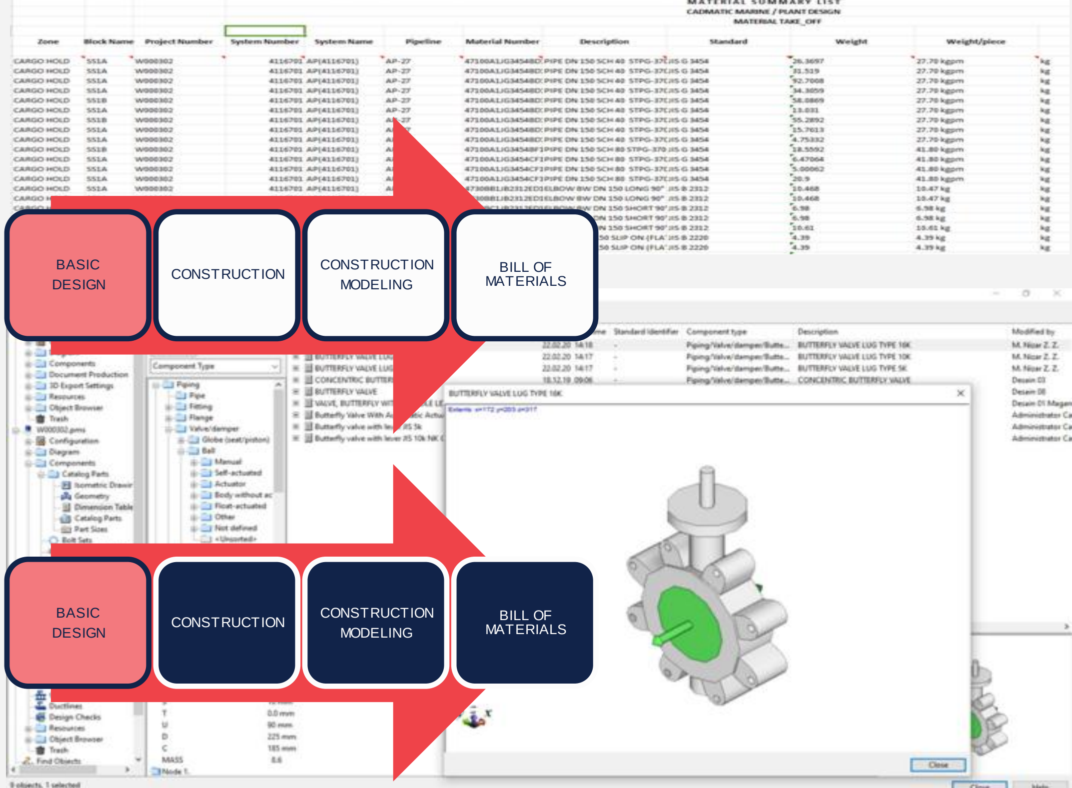
$Z_{min} = f_1 k_L C_1 L^2 B (C_b + 0{,}7) \times 10^{-6}$ m^3

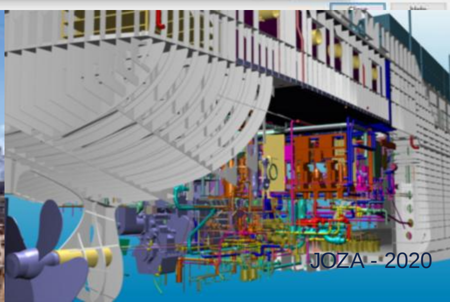
and f_1 is to be taken not less than 0,5.

Lloyd's Register

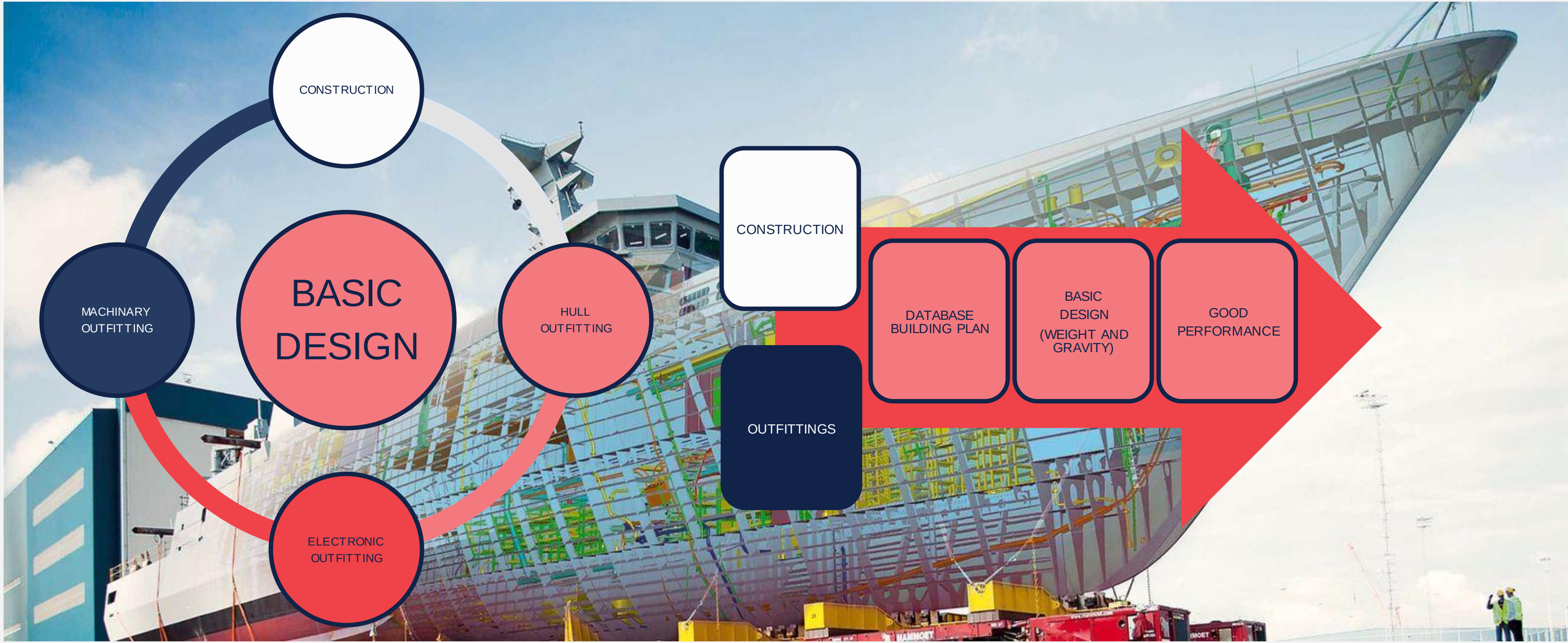
INTEGRATION DESIGN SYSTEM
DETAIL DESIGN



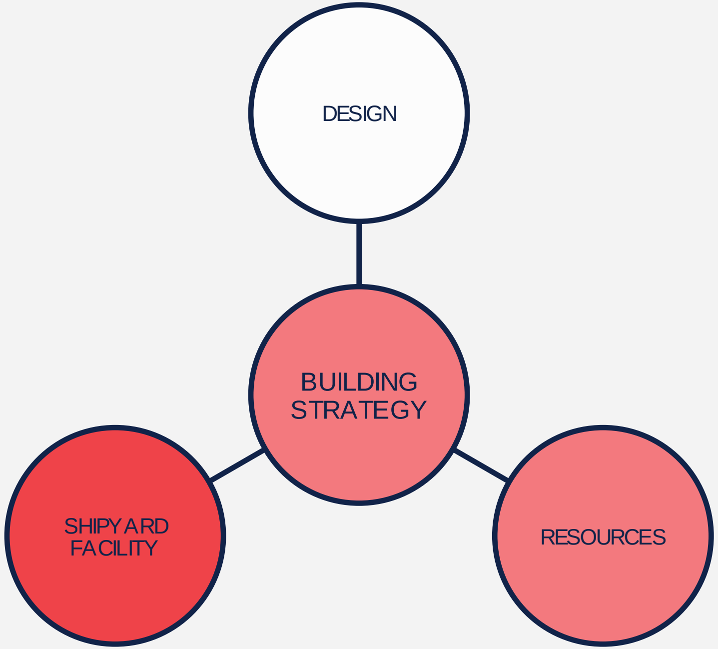


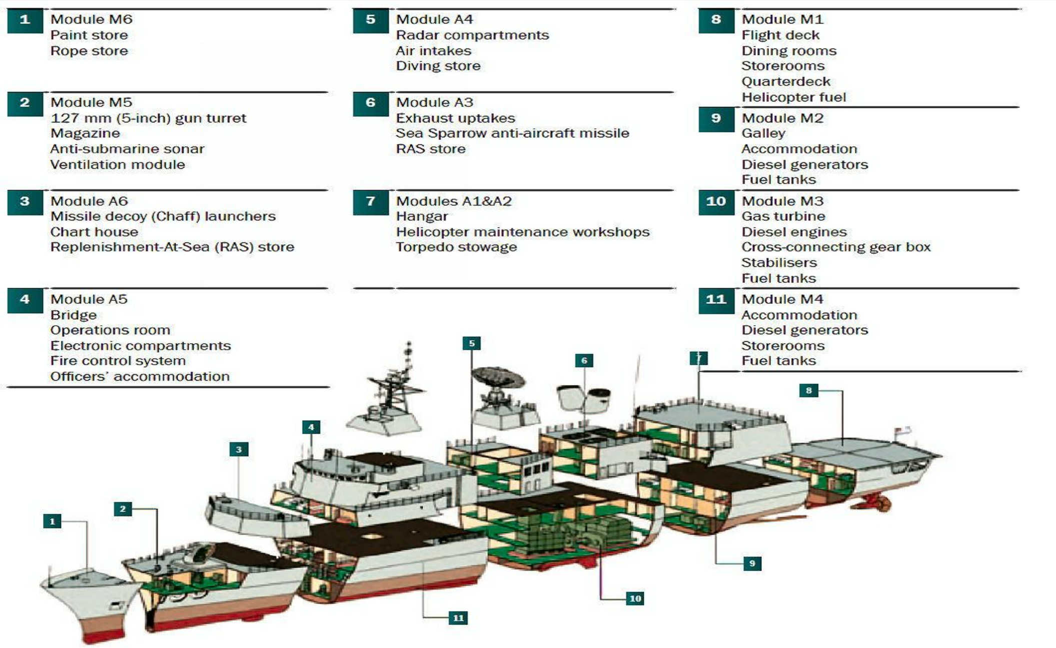


INTEGRATION DESIGN SYSTEM
DETAIL DESIGN



BUILDING STRATEGY





THANKS!