Development of GBS Tier V (Industry Standards and Practices)

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Why GBS ?

- **Higher standards** than today for ships design and construction
- **More comprehensive safety work** at sea
- **Super regulation** linking all current IMO instruments (SOLAS, MARPOL and Load Line)
- **Clarifying relationship** between Class and National Administrations

Expectations to GBS

IMO (Public / Regulators)
- Safe
- Environmentally Friendly
- Robust

Shipping Industry
- **Fit for purpose**
- **Reliable**
- **Easy to Maintain**

Higher Standards

Quality Control

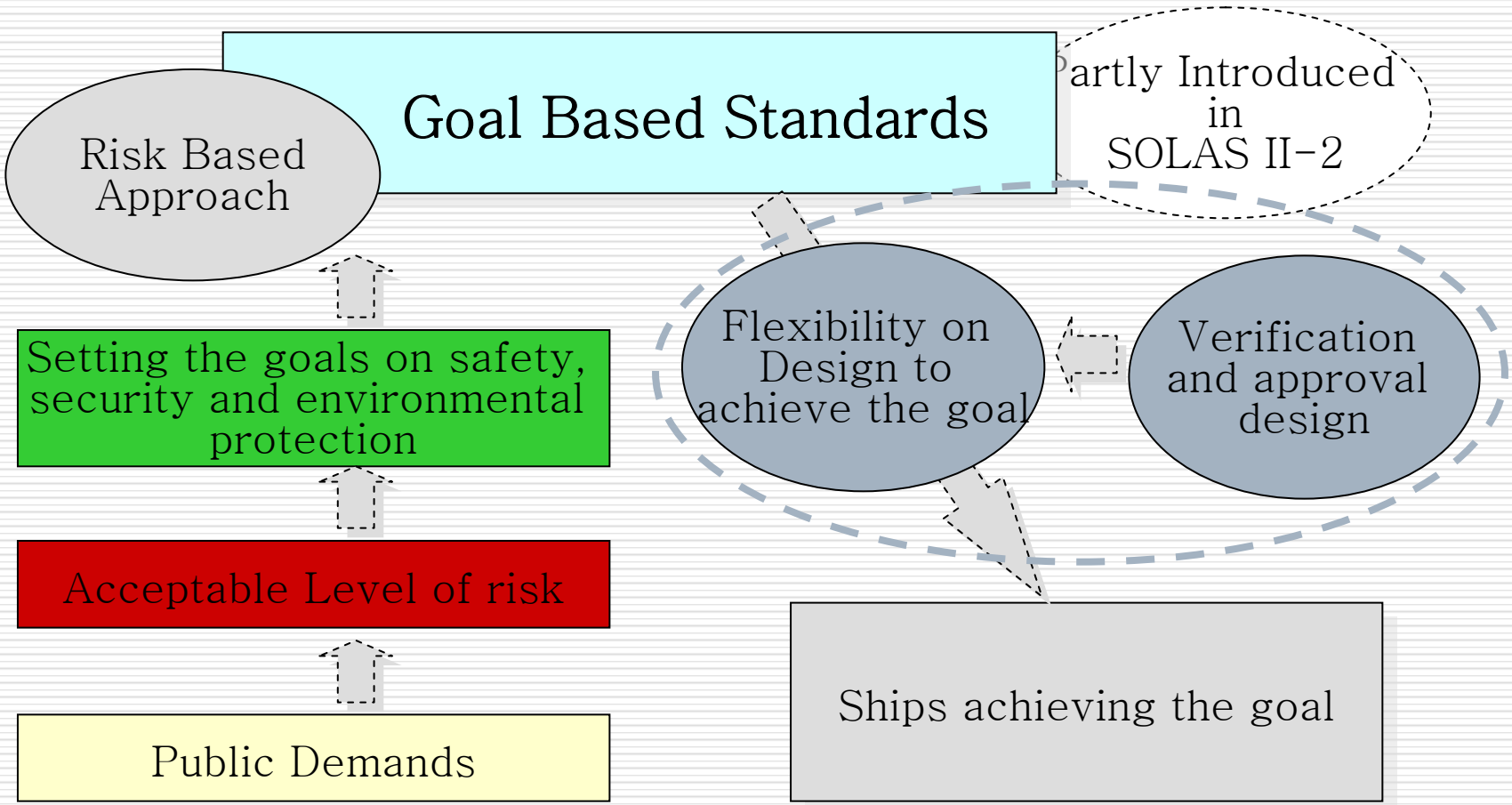
Liability

Shipbuilding Industry

Effects of GBS on shipbuilding industry

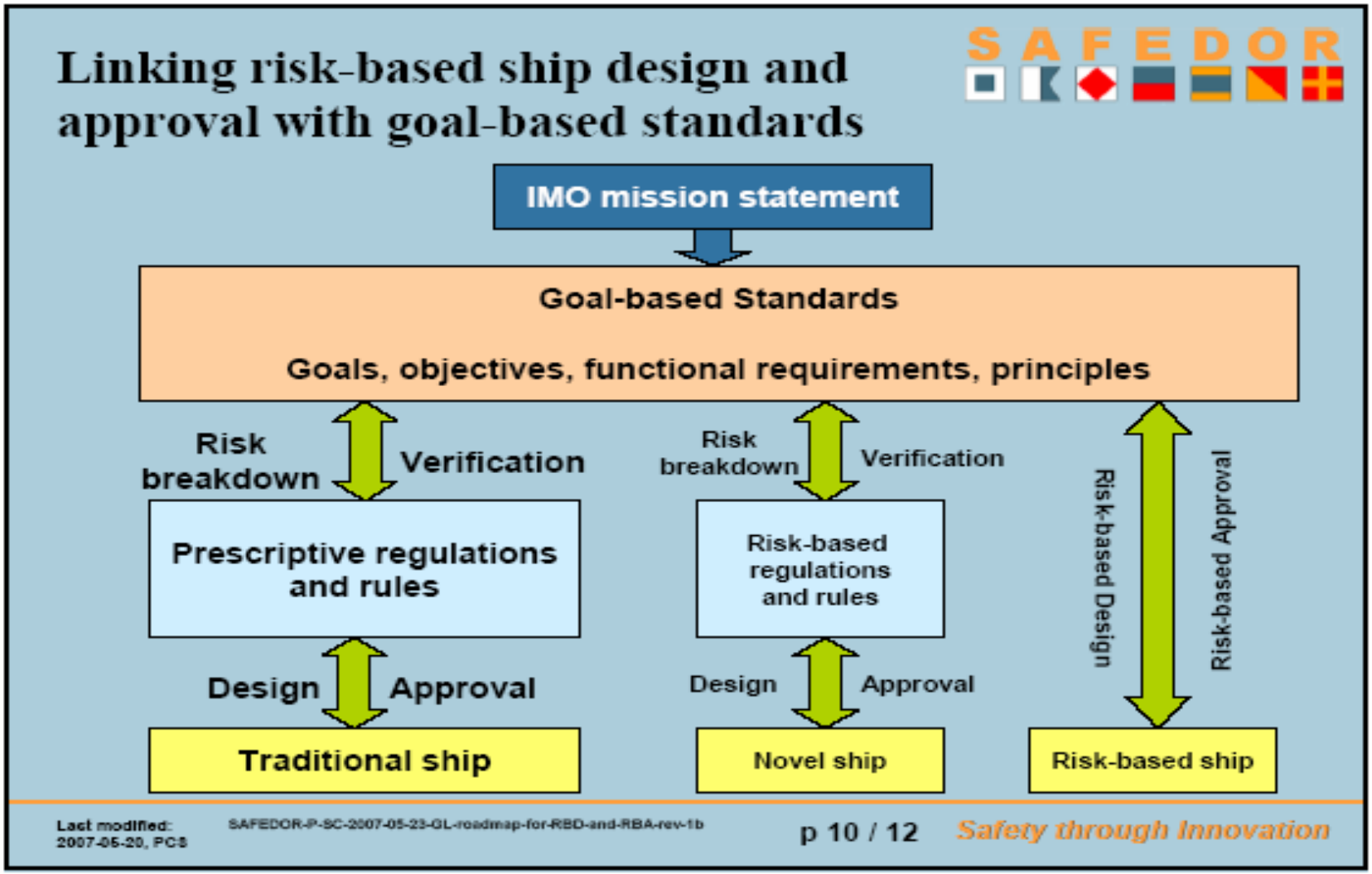
- **Increase of initial cost**
  - Design and engineering
  - Materials and equipments
  - Labor
- **Change of processes and facilities**
  - Design and approval
  - Construction quality assurance
- **Change of shipbuilding environment**
  - Market: Seller's Market -> Buyer's Market
  - Engineering service market
  - Role of Administrations, ...

Effects of GBS

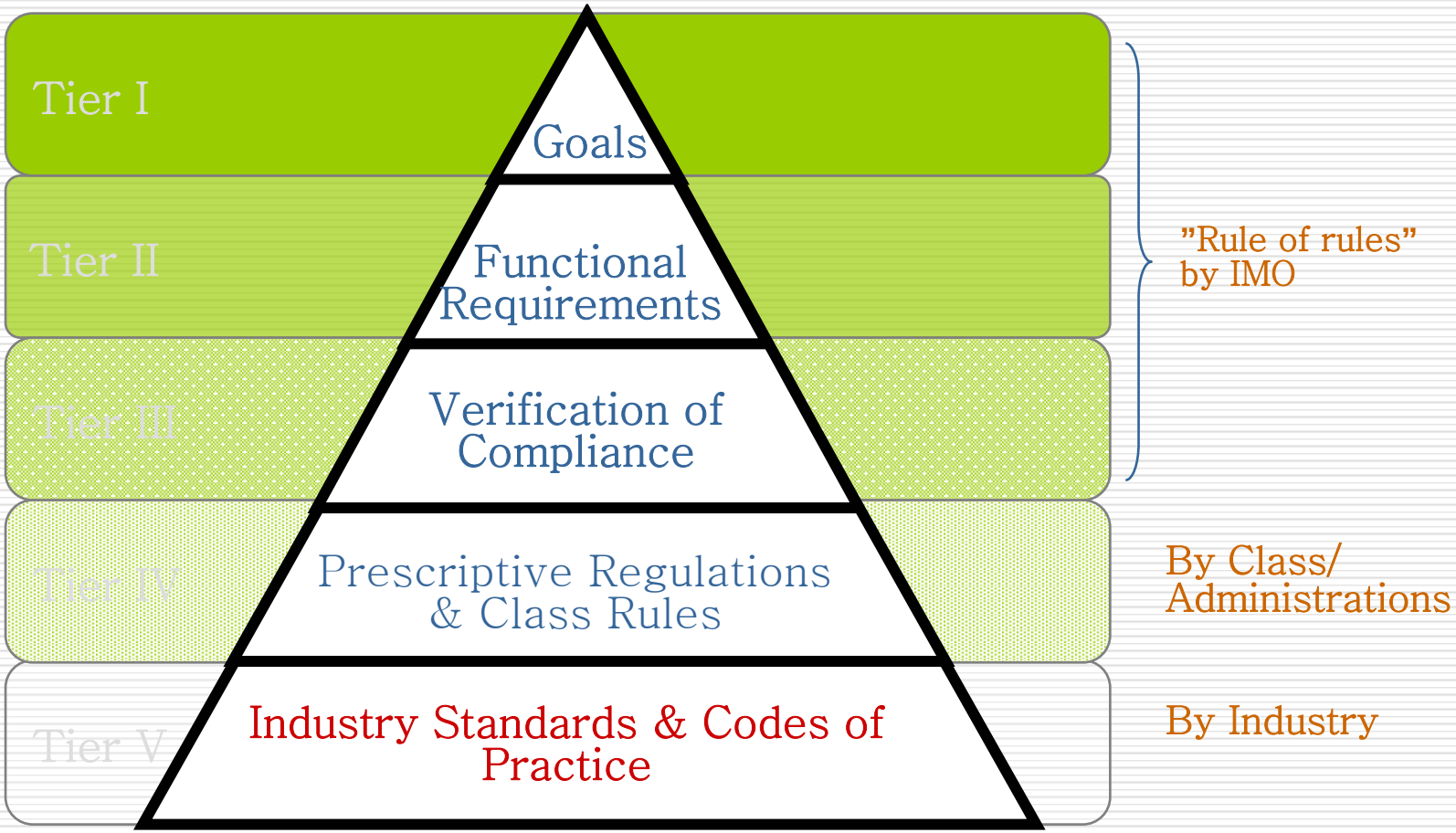


[Source: Mr. K. Yoshida, 2005]

Effects of GBS



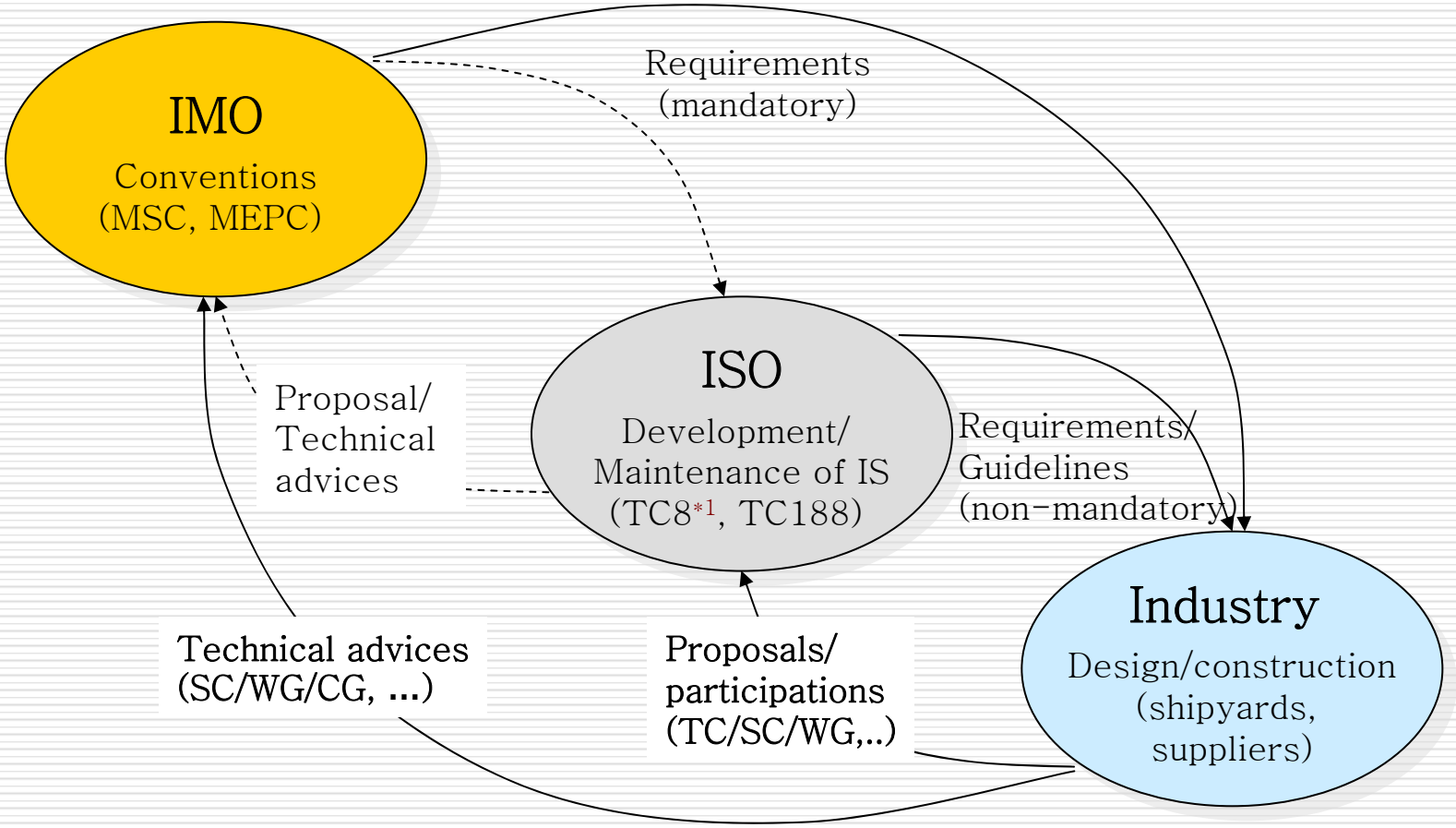
Scope of Interests



Importance of Tier V

- **Flexibility in design and approval**
- **Different interpretations for GBS**
  - Based on different expectations from different stakeholders
- **Feed-backs to rules/regulations**
  - IMO, IACS, ...
- **Practical means to assure the safety**
  - e.g airplane
- **To improve the productivity in design and construction**

Roles of IMO, ISO and Industry



IMO (MSC/SCs)

- **Goals for**
  - **Ship safety**
  - Cargo safety
  - Passenger safety
  - Environmental safety ...
- **Functional Requirements for**
  - Design
  - Construction
  - Survey and maintenance
  - Recycling, ...
- **Verification scheme for**
  - Class. Rules (e.g CSR)
  - Regulations of IMO and Administrations

ISO (TC8/SCx, TC67, TC188)

TC8/SCx	IS published	IMO links (published)
TC8 ships and marine technology	**3**	**1(0)**
SC1 lifesaving and fire protection	18	57(17)
SC2 marine environment protection	2	3(0)
SC3 piping and machinery	41	15(7)
SC4 outfitting and deck machinery	23	5(0)
SC6 navigation	32	31(18)
SC7 inland navigation vessels	44	0
SC8 structures	21	7(5)
SC9 general requirements	9	7(3)
SC10 computer applications	17	5(1)
SC11 inter modal and sea shipping	2	2(1)
Total	**212**	**133(52)**

[Source: ISO/TC8 N1000 Status report, 2005]

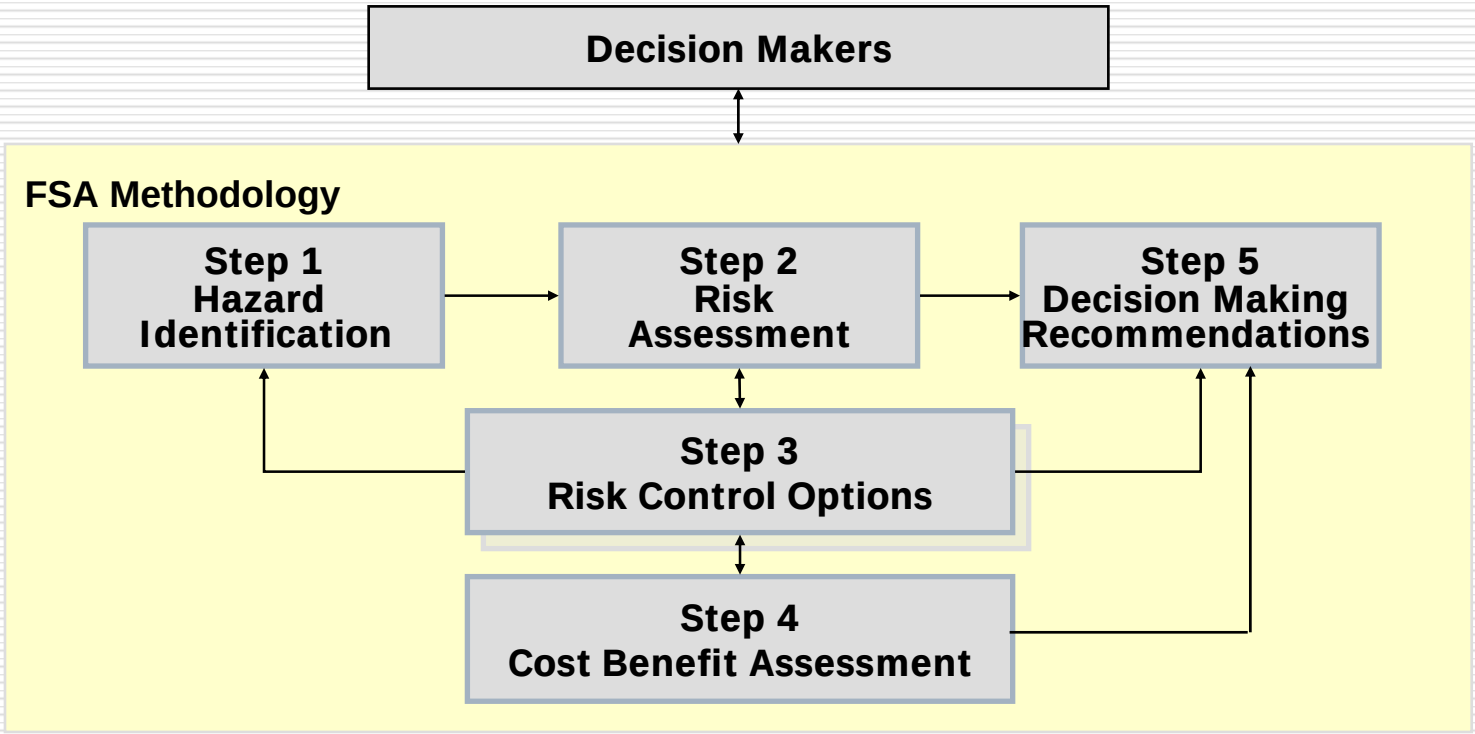
Development of GBS Tier V

- **Category of industry standards**
  - Processes/methodologies
  - Performance standards
  - Materials and equipments
  - Others

- **Stakeholders**
  - Regulators
  - Classification societies
  - Ship operators
  - Shipbuilders
  - Suppliers

Identification of Tier V

- Based on Tier I, II and III of GBS
- FSA methodology can be used



[FSA Guidelines, MSC/Circ.1023]

Goals and Functional Requirements

Goals	Functional Requirements		Remarks
Safety of the ship	o Design transparency o Structural Integrity o Protection against corrosion o Survey and maintenance (design stage) o Structural accessibility o Intact stability o Floatability / (reserve) buoyancy o Manoeuvrability o Sea-keeping performance o Anchoring o Mooring/towing	– Structural strength – Fatigue limit state – Residual strength/ accidental limit state – Structural redundancy – Watertight and weather-tight integrity	SOLAS 74
Environment protection	o Pollution prevention o Recycling	– air pollution – water pollution	MARPOL 73/78
Human Elements	o safety of crews o safety of passengers		
Others	o safety of cargos o security		

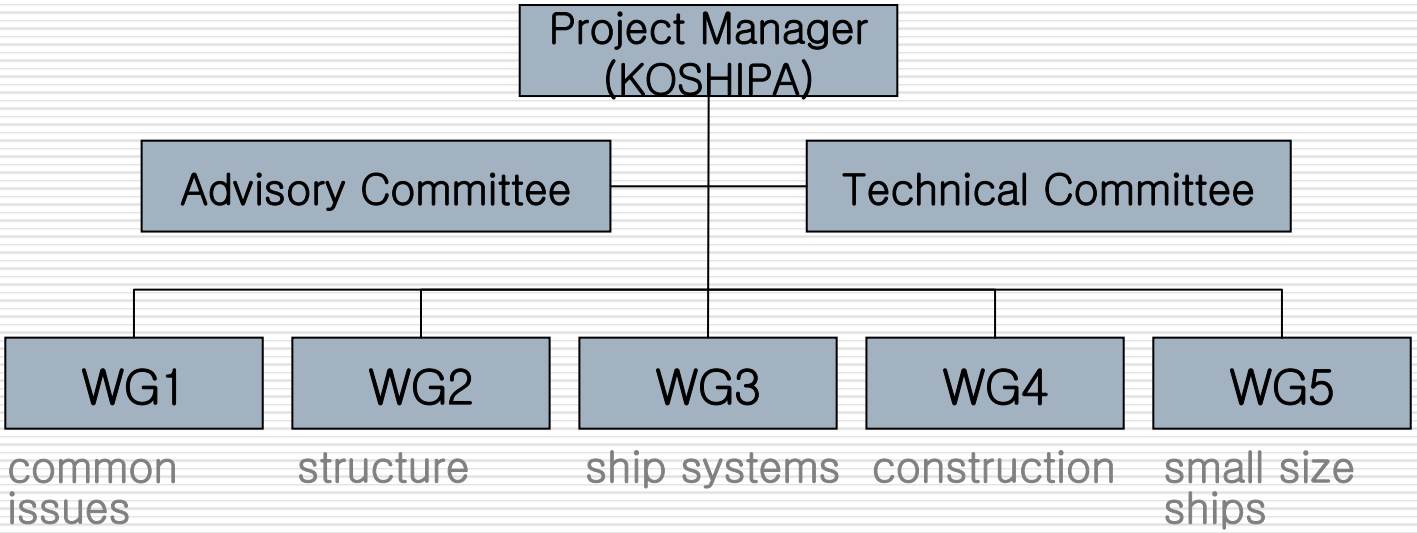
[Source: MSC83/5/3, 2007]

Examples of Tier V

- **Guidelines:**
  - Design for safety
  - Design for environment
  - Design for human elements
  - Ship construction files, ...
- **Performance standards :**
  - Protective coating
  - ...
- **Material and equipments :**
  - Safety equipments and devices
  - Information systems
- **Other risk control options :**
  - Training
  - Management

GBS Tier V Initiatives in Korea

- **Objectives:**
  Development of IMO GBS related industrial standards for Shipbuilding
- **For 5 years (2007.8~2011.7)**
- **Leaded by KOSHIPA**
- **Co-worked with MOERI, KR, RIMS**



Challenges

- **Identification of standards**
- **Participation of experts from industry**
- **Supports from R&Ds**
- **Collaborations with**
  - Industries (shipping, shipbuilding, suppliers)
  - Other nations
- **Feed-back to IMO**

Suggestions

- **Industry Standard is “more than regulations”**
  - for safety assurance
  - for their competitiveness
- **International level of collaboration is required among worldwide shipbuilding industry for:**
  - Development of international standards
  - reflects on IMO GBS and related rules/regulations
- **Further discussions are required at ASEF**

Thank you for your attention!

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