

# Development of the SCF Industry Standard

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## Actions Taken by the Industry

- Encouraging Tripartite spirit since 2008  
balancing design transparency and IPR
- SCF onboard and SCF Supplement ashore  
model: successful joint submissions to MSC  
87
- Developing the SCF Industry Standard

# Milestone



Nov/2011: Tripartite meeting in Beijing

31/Aug/2012: Shipbuilders team will submit the draft Industry Standard (IS) for discussion among the cross industry team.

(Meetings among the cross industry team must be held regularly.)

31/Dec/2012: The cross industry team will complete the 1<sup>st</sup> draft IS for industry review

May/2013: The cross industry will submit an Info. Paper to MSC92

31/Dec/2013: The cross industry will issue the basic IS accompanying to the submission of HSR to verification of conformity to GBS

1/July/2016: The cross industry issues the detail IS for GBS application

End of 2017: Archive centers will be operated for GBS application

# Industry meeting results in MSC89

## **Shipbuilders representative internal meeting**

### **■ Results of the SCF questionnaire on IT security measures to digital files supplied by shipbuilders**

-The basic principle ,which digital files would be already prepared widely and IT security measures would be applied, will be presented to the cross industry.

-For the SCF, smarter and stricter IT measures should be developed.


### **■ Access procedures and other protection means**

### **■ Progressing report on the development of SCF industry standard**

### **■ Pre-discussion for the cross industry meeting**

## Industry meeting results in MSC89

### Development schedule of the SCF Industry Standard in shipbuilders by 31/Aug/2012

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- 31/Dec/2011:** Koshiya/SAJ submit the joint study results for SCF detail definitions and examples, the linkage between functional requirements and SCF, and IP levels of SCF.
  - B/Feb/2012- :** The Shipbuilders start discussing on standard access procedures by various IP sensitivity levels, access procedures when IP holders cease trading or renounce their property right, and standard confidentiality terms and conditions.
  - B/April/2012-:** The Shipbuilders start discussing on the functional requirement for ashore archive center.

## Recent Activities



### Oct/2010: Tripartite meeting

⇒ Development milestone was planned and reviewed by the cross industry.

### Nov/2010: The 4<sup>th</sup> Asian Shipbuilding Expert's Forum

⇒ Mutual understanding among Asian shipbuilders on SCF and development of industry standards was reached.

### Nov/2010: Shipbuilder's meeting at MSC88

⇒ Investigation into the status of security measures adopted to protect electronic files supplied by the shipyards was initiated.

### May/2011: Shipbuilder's and the Cross industry meetings at MSC89

⇒ The results of the investigation were reviewed and discussed.

Oct/2011: KOSHIPA & SAJ discuss the definition and examples of SCF and their IP sensitivity levels, and the report of mutual consent will be submitted to the shipbuilding industry by the end of December 2011.

⇒ The results are discussing now!!

# Industry meeting results in MSC89

## Cross industry meeting

### ■ Progress report on the development of SCF industry standard

### ■ Results of the SCF questionnaire on IT security measures to digital files

- Most owner organization representatives recognized:
  - Digital files have been widely prepared to shipowners
  - No objection to appropriate IT security measures
- Hard copies of SCF onboard

# General Framework of The SCF Industry Standard

- Contents of the SCF information
  - Concrete image of SCF information
  - Linkage of SCF item with GBS Tier II requirement
  - Linkage of SCF item with IP sensitivity level
- Availability and storage
  - Standard access procedures for SCF onboard and SCF Supplement ashore by various IP sensitivity and requesting parties
  - Functional requirements for ashore archive centers
- Standard contract clause among parties



## SAJ's Activities

SAJ has established the Working Team to develop the SCF industry standard since 2010.

### - 3 Sub-Working Groups under 1 steering WG

**SCF project management WG** { SCF Information  
System  
Legal issues



# SAJ's Activities

## Tasks of 3 Sub-Working Groups

### **SCF Information Sub-WG**

- More detail and clear definitions of SCF information showing example documents
- Definition of standard IP Sensitivity levels of SCF information

### **System Sub-WG**

- Development of storage, access, searching, and recording procedures for SCF information by each IP sensitivity level
- Functional requirements and standard contract with archive centers

### **Legal Issues Sub-WG**

- Solutions for the legal issues including the balance of design transparency and IPR.



## Planned Contents of The SCF Industry Standard (Main body)

1. Preamble
  2. Definitions
  3. Principle, Scope & Application
  4. SCF
  5. Ship Owners' items
  6. IP Holders' items
  7. Archive Centers' items
  8. Revision of Industry Standard
- References



***Presented as a reference only  
- The contents are under discussion in SAJ!! -***

## Planned Contents of The SCF Industry Standard (Annex)

- ANNEX-1: Practical Guide for SCF Information Definition
- ANNEX-2: Terms of Access to SCF
- ANNEX-3: Terms of SCF Delivery
- ANNEX-4: Terms of Archive Center Management
- ANNEX-5: Terms of Access to SCF (Detail)
- ANNEX-6: Examples of SCF Standard Contracts



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# 1. Preamble

- History of SCF development in the cross industry
- Editorial members in the cross industry group

# 2. Definitions

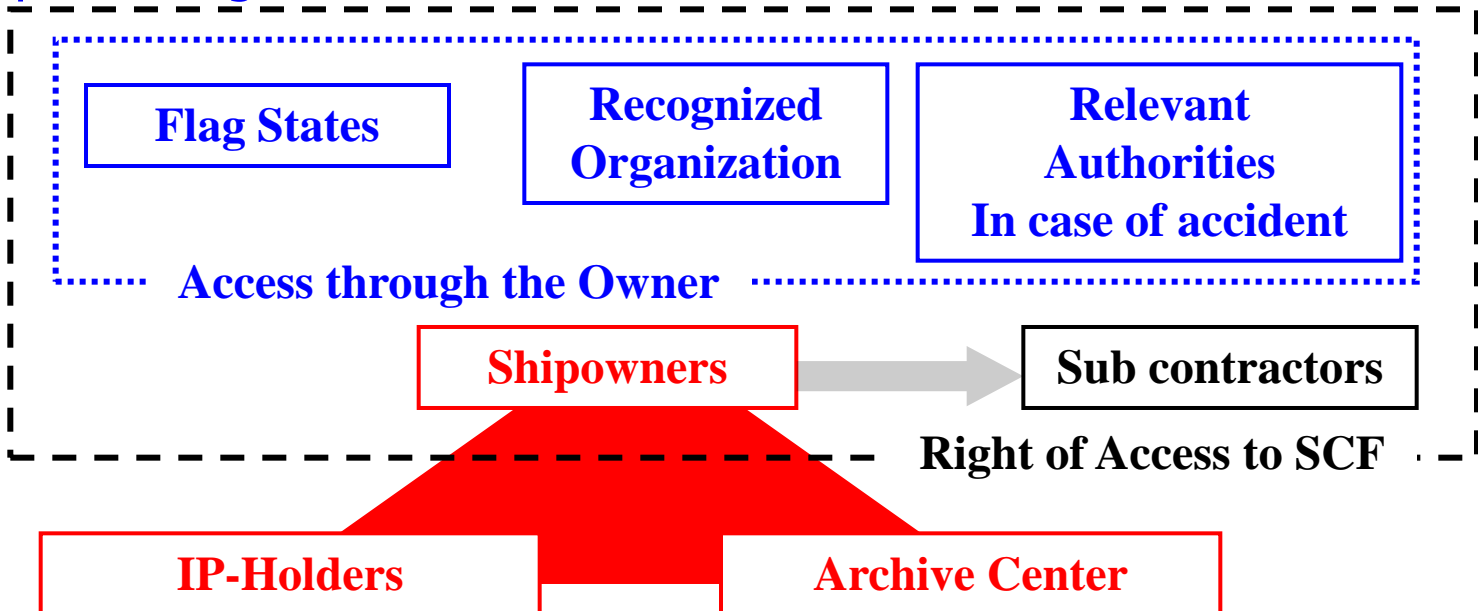
- Shipowners
- IP-Holders
- Archive Center
- SCF Information
- SCF Onboard
- SCF Supplement Ashore
- .....

Terminology used in the IS are clearly defined!!

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### 3. Principles, Scope & Application

- The main body consists of clauses on each role of three parties (Shipowners, IP-Holders, and Archive Center), and the practical guide for SCF information.



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## 4. SCF

The following three items have been discussed between KOSHIPA and SAJ, and the results will be submitted in the shipbuilding industry by Dec. 2011.

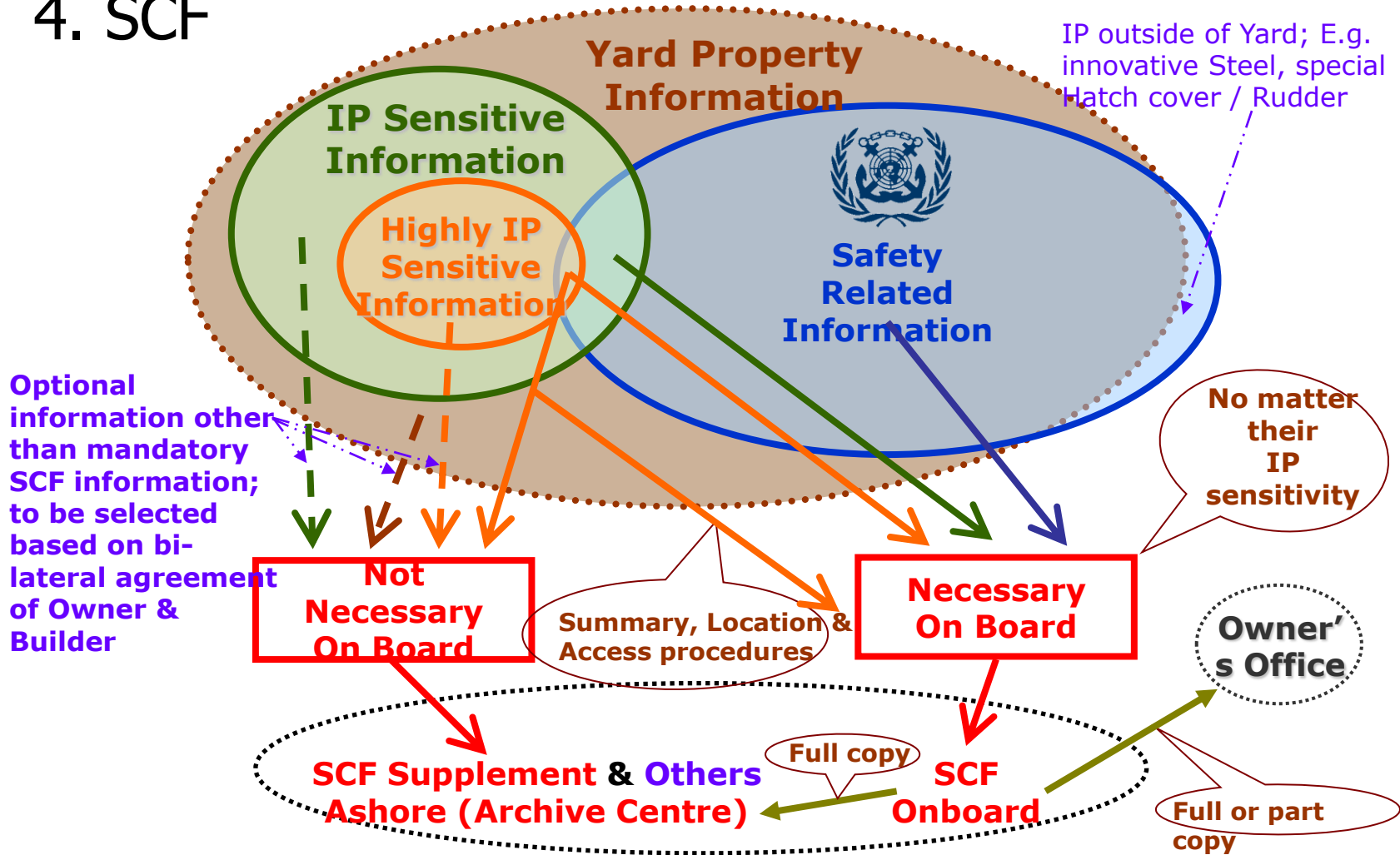
- Detail definitions of SCF contents showing sample documents/drawings
- IP sensitivity levels
- Linkage between SCF and Tier II functional requirements



Busan meeting on Oct. 2011 between KOSHIPA and SAJ

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## 4. SCF





## 4. SCF

### ■ Standard names of SCF

Tier II item (Functional requirement)	Information to be included	Further explanation of the content	Document name used in Industry Standard (*1)
1.Design life	assumed design life in years	statement or note on midship	SCF-specific(1) or Midship section
2. Environmental conditions	assumed conditions	data specific rule (conformance revision)	SCF-specific(2)
3..Structural strength	app		SCF-specific(3)
3.1 General design	rev		
3.2 Deformation and failure modes	app	method	
3.3 Ultimate strength		rule and	
3.4 Safety margins		subject structure(s)	
	calculating conditions and results; • assumed loading conditions • operational restrictions due to structural strength	• allowable loading pattern • maximum allowable hull girder bending moment and shear force • maximum allowable cargo density or storage factor	Capacity plan Loading manual
			Trim and stability booklet
			Loading instrument instruction manual

Document names and configurations may be changed according to each shipbuilder's practice

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## 4. SCF

### ■ Standard IP sensitivity levels and normal storage locations

IP sensitivity level	IP Class(*3)	Document name used in Industry Standard	Normal storage location
Minimum	B	Capacity plan (*2)	on board ship
	B	Loading manual (*1)	on board ship
	C	Trim & stability booklet (*1)	on board ship
	C	Loading instrument instruction manual (*1)	on board ship
	C	Operation and maintenance manual (*1)	on board ship
	B	General arrangement (*2)	on board ship
	C	Docking plan	on board ship
Low	C	Calculation of hull girder section modulus	on board ship
	C	Dangerous area plan	on board ship
	C	Coating technical file	on board ship
	C	Structural details of hatch covers, doors and other closings in the shell and bulkheads	on board ship
	C	General property provisions	on board ship
	C	Access and access procedure for part of SCF	on board ship
	C	For ship structures	on board ship
	C	Details of forgings and castings welded into the	on board ship
	C		on board ship
	C	Docking plan	on board ship

Document names and configurations may be changed according to each shipbuilder's practice, and their IP sensitivity levels will be discussed in the cross industry

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## 4. SCF

### ■ Linkage of SCF documents with functional requirements in Tier II

Table 3 Linkage of SCF Documents with Functional Requirements in Tier II

Document name used in Industry Standard	Linkage between Functional Requirements in Tier II																		
	1	2	3				4	5	6		7	8	9	10	11	12	13	14	15
			.1	.2	.3	.4			.1	.2									
Capacity plan			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>													
Loading manual			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>											
Trim & stability booklet			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>													
Loading instrument instruction manual			<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>													
Operation and maintenance manual			<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>					<input checked="" type="checkbox"/>						<input checked="" type="checkbox"/>		
Strength calculation	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		
Areas subject to yielding and/or buckling			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>									<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		
Calculation of hull girder section modulus			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>													
General arrangement			<input checked="" type="checkbox"/>																
Midship section			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>							<input checked="" type="checkbox"/>		
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			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>							<input checked="" type="checkbox"/>		
Forward construction			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>							<input checked="" type="checkbox"/>		
Stern construction			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>							<input checked="" type="checkbox"/>		

Document names may be changed according to each shipbuilder's practice

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## 4. SCF

### ■ Practical guide for SCF information (ANNEX-1)

LIST OF INFORMATION TO BE INCLUDED IN THE SHIP CONSTRUCTION FILE (SCF)  
(Quoted from Annex to MSC.1/Circ.1343 (2 June 2010))

Item with  
explanation

Item already referred  
to in other Section

Tier II items	Information to be included	Further explanation of the content	Example documents
<b>DESIGN</b>			
1 Design life	• assumed design life in years	• statement or note on midship section	• SCF-specific • midship section
2 Environmental conditions	• assumed environmental conditions	• statement referencing data	• SCF-specific
3 Structural strength			
3.1 General design	• applied Rules • applied alterations		
3.2 Deformation and failure modes	• calculating results; • assumed		
3.3 Ultimate strength	• operational restrictions due to structural strength (3-1)	girders bending moment and shear force	• trim and stability booklet
3.4 Safety margins	• strength calculation results	• maximum allowable cargo density or storage factor	• loading instrument instruction manual • operation and maintenance manuals
		• bulky output of strength calculation (3-2)	• strength calculation
		• plan showing highly stressed areas prone to yielding and/or buckling (3-3)	• areas prone to yielding and/or buckling
		• plan showing areas prone to denting due to impact loads (13-A)	• areas prone to denting due to impact loads
			Refer to Notes *1)

**Definition and examples of some SCF information are introduced as supplementary explanation of SCF guidelines (MSC.1/Circ.1343)**

Item (3-3); plan showing highly stressed areas prone to yielding and/or buckling

**Definition**

This plan is used for proper inspections and surveys of newly-built ships or after their delivery and indicates each specific areas specified for each ship as "areas without margin more than a certain degree" specified by the classification rules. Despite of above description, areas for which general caution is advised may be included. Requirements by classification society for yielding or buckling of all structural members are of course satisfied.

**Models & Examples**

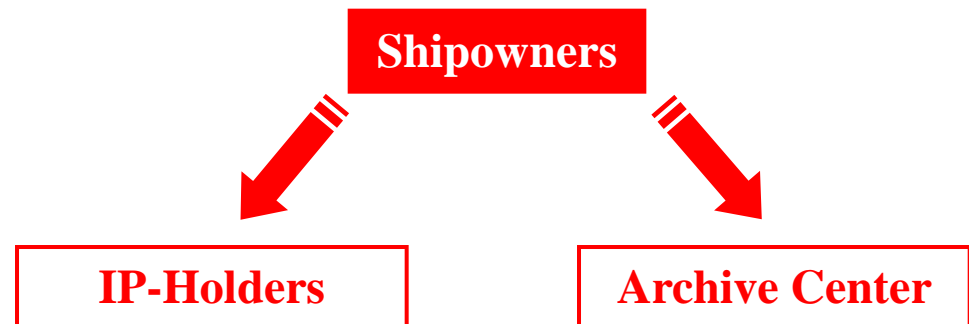
Fig.3-3 Typical plan showing highly stressed areas prone to yielding and/or buckling for Double Hull

Background of this subject is the cautionary statement below in the Tier I Goal of GBS:  
"Ships shall be designed and constructed for a specified design life to be safe and environmentally

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## 5. Shipowners' items

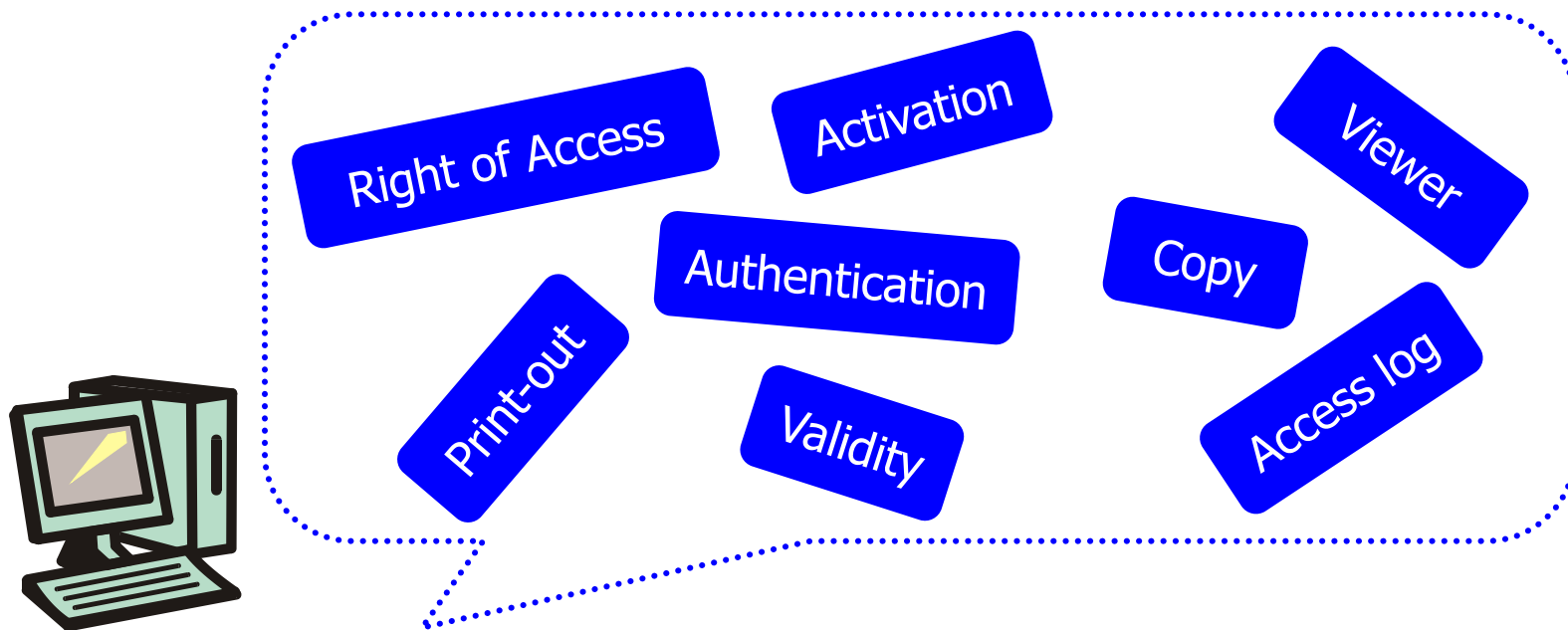
- Entrustment of SCF preparation to IP-Holders
- Storage and maintenance of SCF
- Update of SCF
- Entrustment of SCF management to sub-Contractor
- Access to SCF
- Payment for SCF maintenance cost to the archive center
- .....



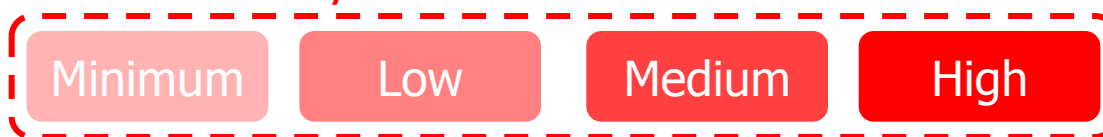
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## 5. Shipowners' items

### ■ Outline of access to SCF (Security Measures for IPR protection)



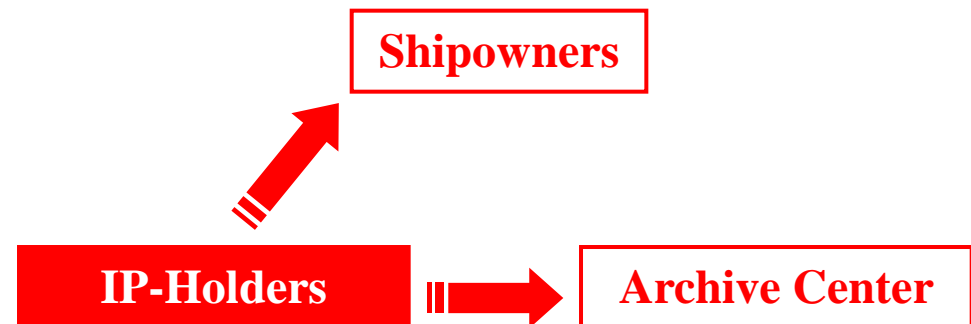
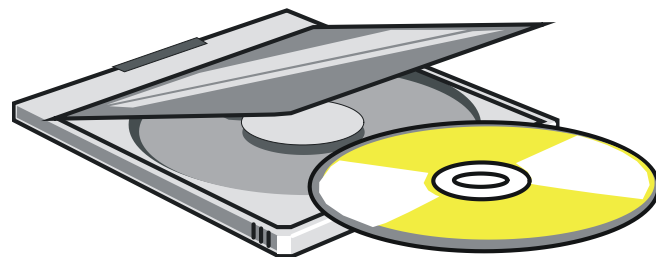
Security measures to access SCF are stipulated for each IP sensitivity level



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## 6. IP-Holders' items

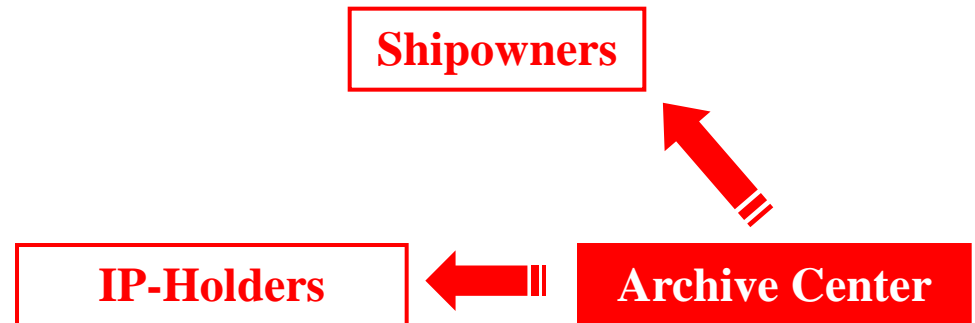
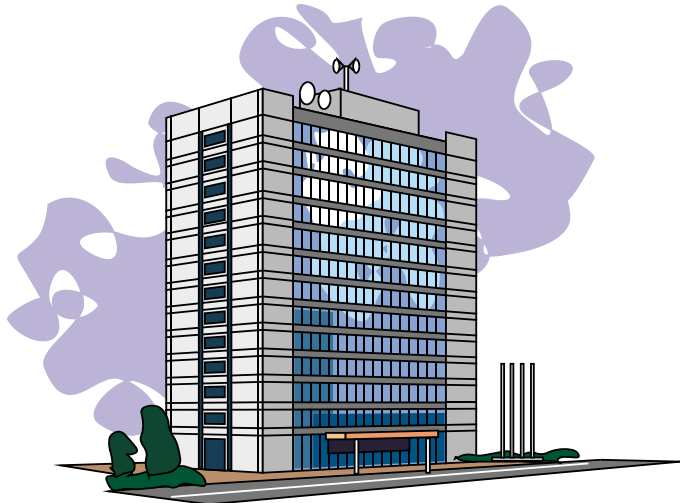
- Documentation and Supply of SCF
- Consent to access to SCF and IP control
- Payment for initial fee to the archive center
- Renounce of IPR
- .....



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## 7. Archive Centers' items

- Registration
- Storage and maintenance of SCF
- Update of SCF
- Optional internet service
- User manual
- Confidentiality
- .....



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Draft SCF Industry Standard by the Shipbuilders' team will be presented in the cross industry in late summer of the next year !!

Thank you for attention!!