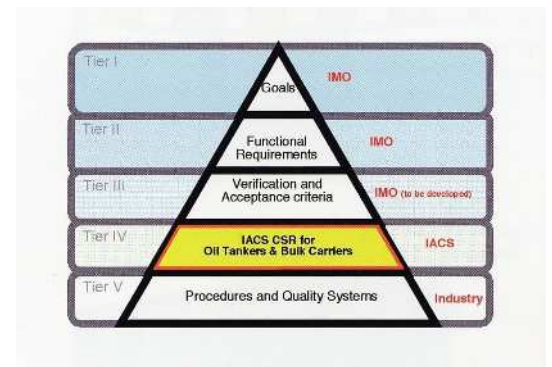


Scheme of providing Ship Construction File

<Goal-based new ship construction standards>

Goal-based new ship construction standards (GBS) was adopted by IMO's MSC meeting as "Goal" for ships in order to be designed and constructed for a specified design life with safe and environmentally friendly throughout their life.



<Requirement of GBS>

- GBS to be required for oil tankers and bulk carriers of 150 m in length and above, and
 1. for which a building contract is placed on or after July 2016 or
 2. which are delivered on or after July 2020
- Requirement of GBS regarding ship's design to be referred to H-CSR. (Ship's design is not changed by GBS, if H-CSR is already applied.)
- GBS compliant Ship Construction File (SCF) to be required.

<Requirement of SCF>

- SCF have to be stored onboard for providing ship's information related to design and construction to facilitate the Ship's safe operation, maintenance, inspections and repair, and should be updated throughout the ship's life.
- Some highly-sensitive intellectual property information for shipyard such as lines plan and structural strength calculations, etc. to be also required for SCF. However, these confidential information must be stored in archive center ashore which complied with IMO guideline instead of onboard for prevention of information leakage.
- ClassNK Archive Center to be used for registration and storage of necessary documents.

Fig.-1 : Documents required for SCF

Fig.-2 : Brochure of ClassNK Archive Center

<Estimated fees for use ClassNK Archive Center>

Initial registration fee : JPY 500,000 / vessel

Usage fee : JPY 250,000 / upload / vessel

- The above fees will not be changed regardless of 1st vessel or sister vessel.
- Initial registration fee to be paid by the Builder and usage fee to be paid by the Owner.

(End of document)

Documents required for SCF

1. To be stored onboard

Capacity plan
 Loading manual
 Trim & stability booklet
 General arrangement
 Damage control plan
 Equivalent to lines plan
 Loading instrument instruction manual
 Operation and maintenance manual
 Coating technical file
 Structural details of hatch covers, doors and other closings integral with the shell and bulkheads
 Hatch cover maker drawings
 Docking plan
 Calculation of hull girder section modulus
 Inspection Guidance in Operation
 List of materials
 Copies of certificates of forgings and castings welded into the hull
 Areas prone to yielding and/or buckling
 Areas prone to fatigue
 Areas prone to excessive corrosion
 Detail of bottom plug
 Means of access to other structure-integrated deep tanks and large void spaces
 Ship structure access manual
 List of applied rules & standards and general information on SCF
 Midship section
 Main O.T. and W.T. transverse bulkheads
 Construction profiles/plans
 Shell expansions
 Forward and aft sections in cargo tank (or hold) region
 Engine-room construction
 Forward construction
 Stern construction
 Superstructure (deck house) construction
 Rudder and rudder stock
 Stern frame
 Dangerous area plan (Tanker only) (*)
 Details for in-water survey
 Block inspection list
 Inspection schedule for ship structures
 Tank testing plan including details of the test requirements
 Non destructive testing plan

Note:

- Above SCF information to be supplied by the Builder by hard copy at delivery time.
- Above SCF information have to be kept and updated by the Owner after delivery.
- Access management for SCF information such as recording of name of document or drawing, access date, name of accessing person/organization to be required.

2. To be stored ashore

Full detailed strength calculation
 Full detailed fatigue life calculation
 Yard plans
 Structural details
 Master lines plan

ClassNK Archive Center is the solution for GBS-SCF data storage and related services



ClassNK Archive Center can store GBS-SCF for ships registered with any classification society.

Fully compliant with IMO GBS

ClassNK Archive Center fully complies with the functional requirements of IMO GBS Guidelines and the SCF Industry Standard developed by a cross-industry group such as Shipbuilders' Associations, Shipowners' Associations and the International Association of Classification Societies (IACS).

Robust security system

ClassNK Archive Center combines cloud-based infrastructure developed by IBM Japan to provide a fully secure and user-friendly system to stakeholders.

ClassNK Archive Center allows GBS-SCF to be stored safely ashore

➤ GBS-SCF

Following the adoption of a new SOLAS regulation II-1/3-10 at the 87th session of the IMO's MSC meeting on Goal-based ship construction standards (GBS), oil tankers and bulk carriers of 150m in length and above,

- ❶ for which a building contract is placed on or after July 2016 or;
- ❷ which are delivered on or after July 2020

are required to have a GBS compliant Ship Construction File (GBS-SCF) available on board.

As the new GBS-SCF requires the inclusion of highly-sensitive intellectual property information such as Lines plan and Structural strength calculations belonging to shipbuilders and ship designers, the new SOLAS requirement specifies that this information can be stored in an archive center ashore.



Functional requirements

[as specified in Guidelines for SCF implementation (MSC 87/5/4)]

- Neutral among intellectual property holders (IP Holders)
- International service
- Robust security system
- High quality and cost-effective
- Accessible 24 hours a day, 365 days a year
- Long-term data storage
- Quick data backup and recovery

Main features

- ClassNK operates the archive center as an independent third party.
- Data is managed and stored in a highly-secured facility that complies with the industry standard. The facility is installed with an electronic lockage system and access is controlled through biometric identification and ID card use.
- Certified according to ISMS (ISO-27001) *
*ISMS: Information Security Management System
- Use of IBM Japan's cloud computing technology ensures operational continuity even in the event of widespread disasters such as earthquakes and tsunamis. The system is both highly secure and user-friendly.
- Our center is operational 365 days a year 24/7.

A platform to store any ship drawings or documents for all ship types

In addition to GBS-SCF, ClassNK Archive Center can be used as a platform to store various ship drawings or documents required by regulations or information that the shipowner wants to store for any type of vessel. (Note that permission from the IP Holder will be required.) Using this service will enable you to centralize your ship drawings or documents and save storage space.

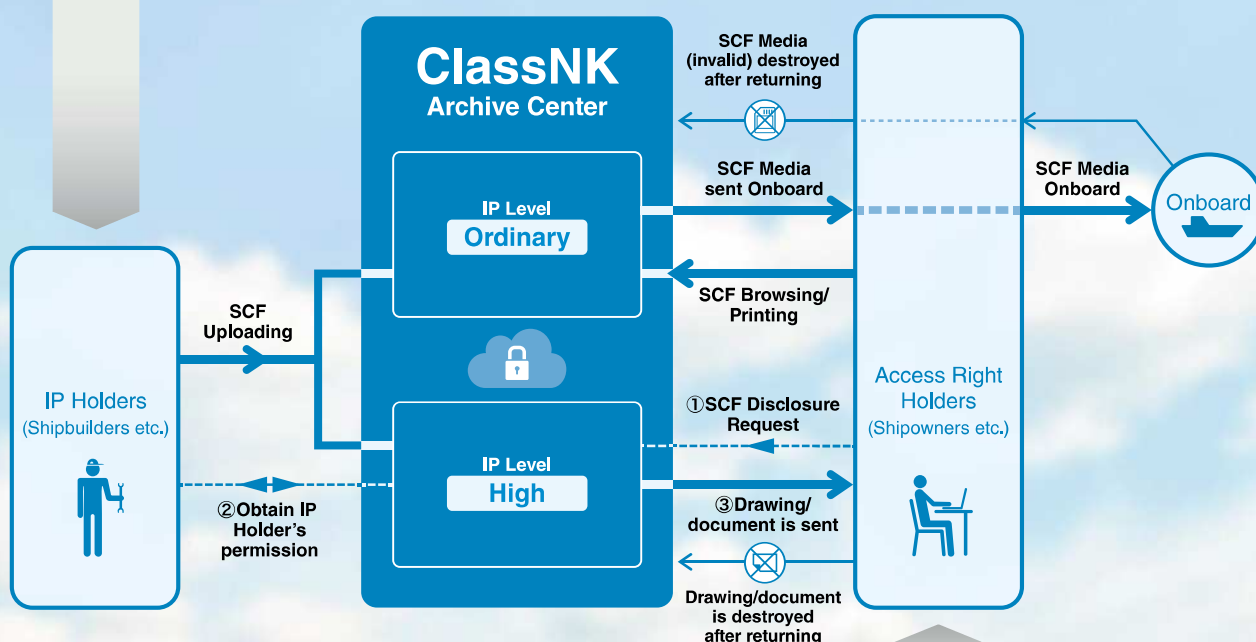
Ship information such as ship outfitting drawings, manufacturers' operation manuals or drawings belonging to the other IP Holders can also be stored in ClassNK Archive Center. As with the GBS-SCF, all ship information will be securely stored in a database that is protected from illegal external access. The system will be accessible 24/7, 365 days a year by authorized users.

Overview of ClassNK Archive Center

Data registration by IP Holders (shipbuilders etc.)



- ClassNK Archive Center service allows you to register and upload your SCF drawings and documents to a secure cloud-based platform.
- Upon delivery of the ship, IP Holders (shipbuilders etc.) define the IP level for each of the SCF drawings and documents as **Ordinary** or **High** level according to the SCF Industry Standard and register them to ClassNK Archive Center.
- The registered SCF drawings are then encrypted and stored securely in a database that cannot be accessed externally.



Data browsing by Access Right Holders (shipowners etc.)



- Access Right Holders access the SCF drawings specified with an **Ordinary** IP level via the cloud platform and browse or print as necessary.
- For the SCF drawings defined with a **High** IP level (see example below), as a rule, Access Right Holders can receive the SCF drawings in paper format via ClassNK Archive Center once ① the Access Right Holder has issued a disclosure request* and ② the IP Holder has authenticated their disclosure request to ClassNK Archive Center. This printed copy is then returned to ClassNK Archive Center where it is destroyed.

* ClassNK Archive Center responds to disclosure requests 24/7, 365 days a year.

[Example of data defined as High IP level]

- Lines plan
- Structural strength calculations
- Yard plans

Robust Security

- Detects illegal activity and is equipped with intrusion prevention system to block intruders. The system also blocks access when illegal access attempts are made.
- The data can only be viewed using a dedicated browsing system.
- An identification mark, sign and the name of the Access Right Holder will be always embedded and a precaution will be displayed when printing drawings.

ClassNK

Information Technology Department
(Contact for ClassNK Archive Center)

1-8-5, Ohnodai, Midori-ku, Chiba, 267-0056 Japan
TEL : +81-43-294-5451
E-Mail : info-nkac@classnk.or.jp

www.classnk.com

〈Operating Environment〉

Windows 7 or later (recommended)

Internet Explorer 11 or later

<http://windows.microsoft.com/ja-jp/internet-explorer/download-ie>

Java Runtime Environment (JRE) 8 Update 51 or later

https://java.com/ja/download/windows_xpi.jsp

A dedicated drawing viewer

(This software can be downloaded from ClassNK Archive Center.)