



SSAP
SMART SHIP APPLICATION PLATFORM

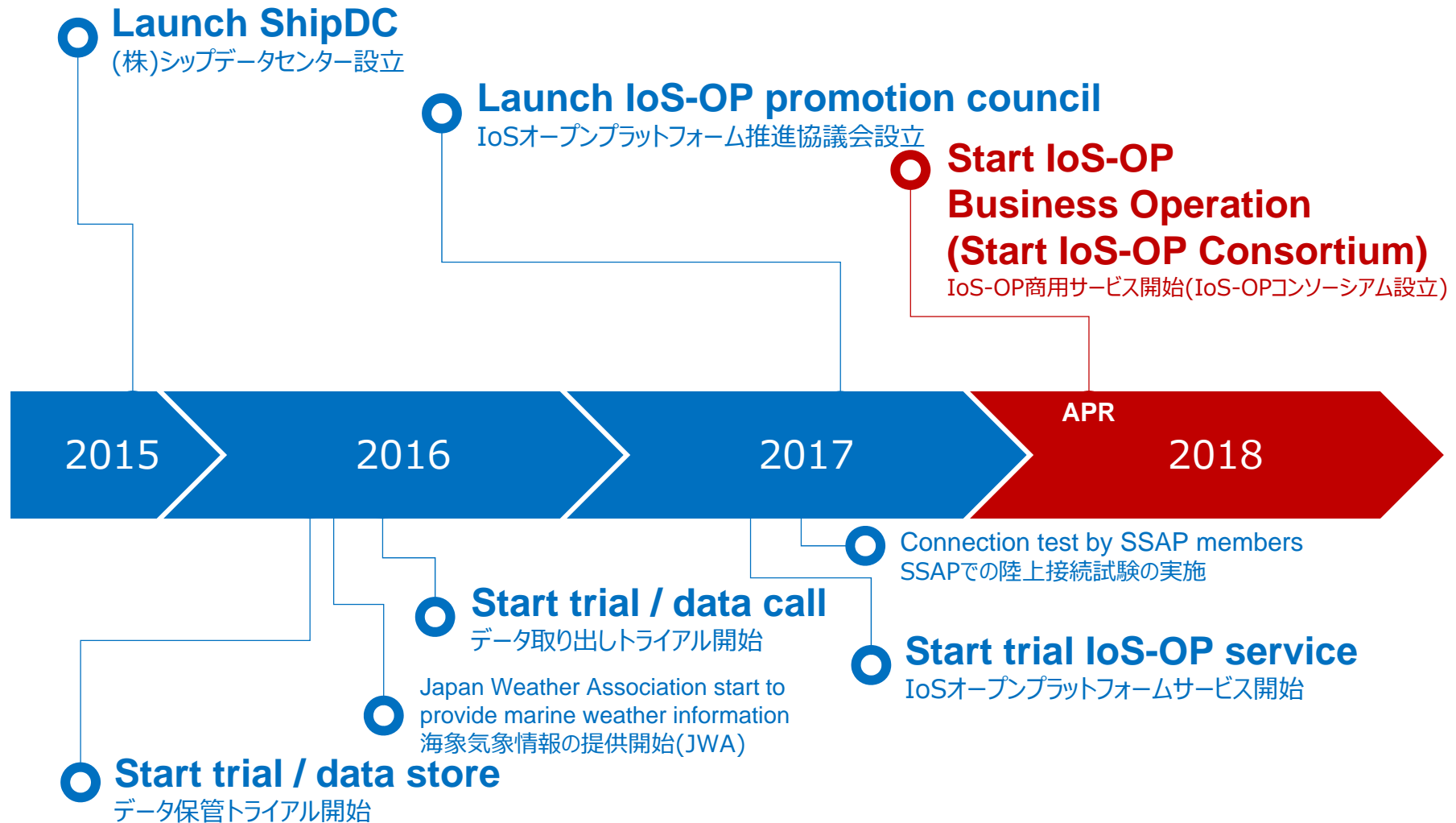
ShipDC **Activities** 活動報告

IoS
(Internet of Ships)

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History

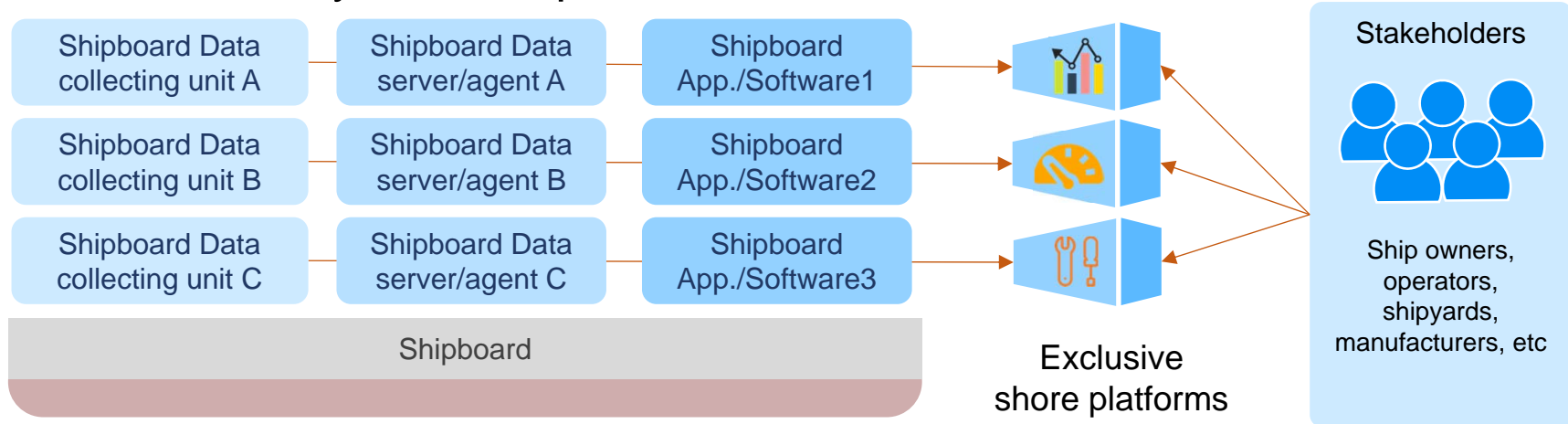
主な活動



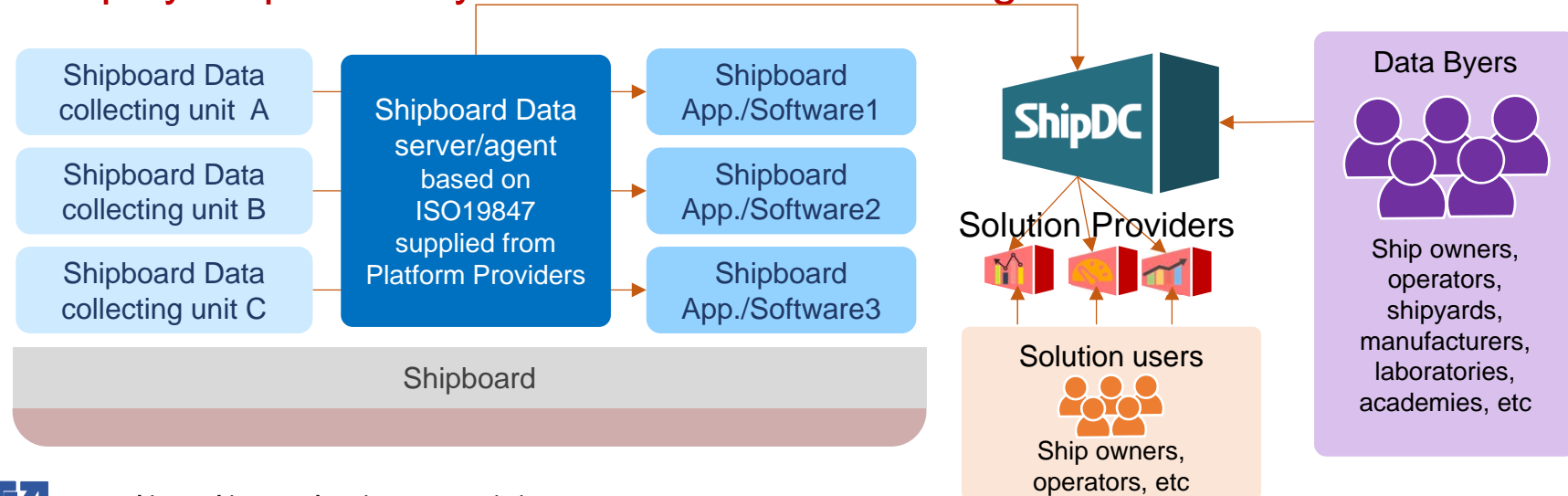
Scope of ShipDC

ShipDCの目的

There are many servers, platforms, stakeholders for exclusive solutions.



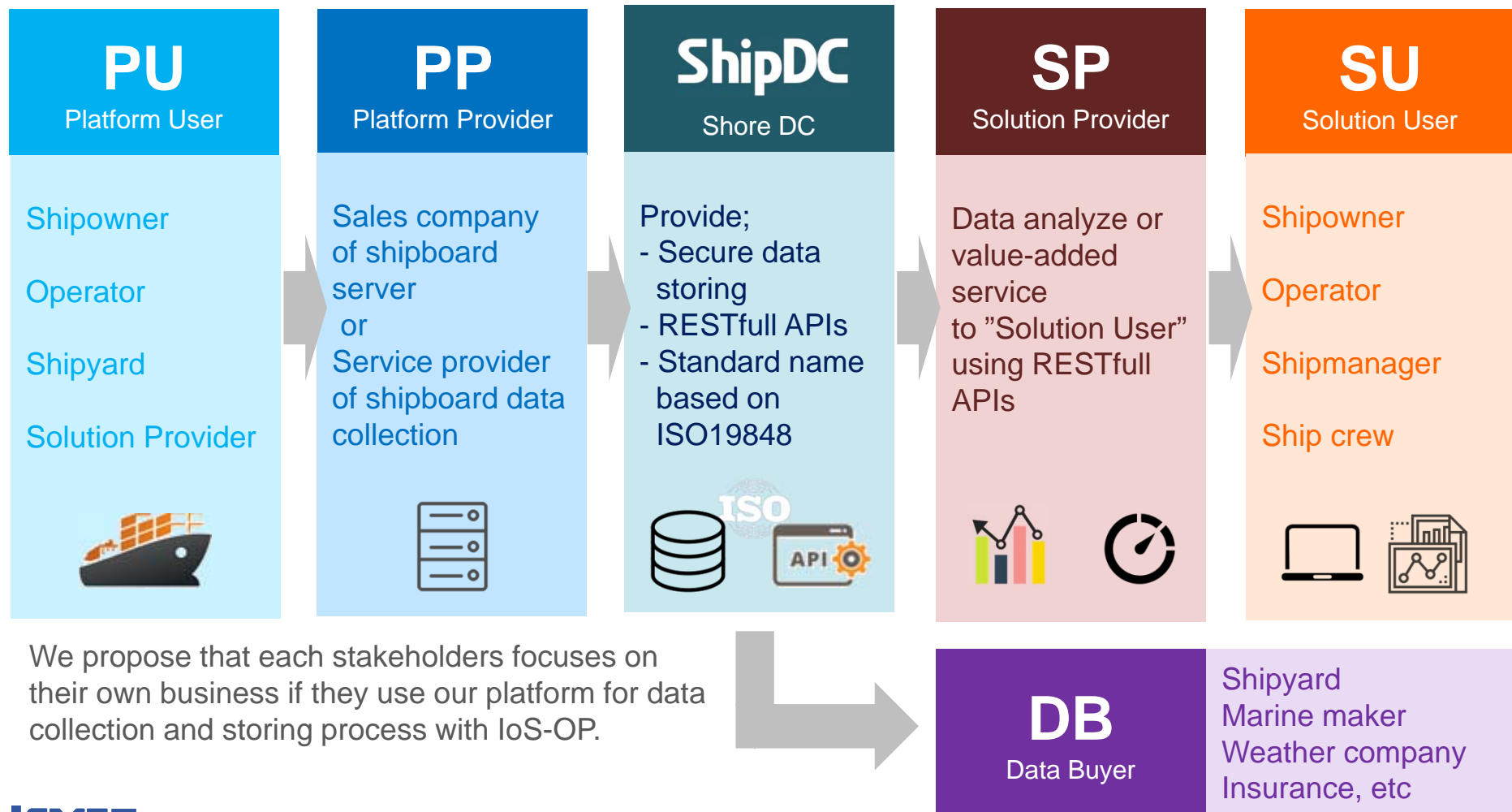
Simplify shipboard system and data access rights.



Outline of IoS Open Platform

IoSオープンプラットフォームの概要

IoS-OP (Internet of Ships Open Platform) will support maritime cluster for their innovation, digital transformation and next generation business.



Roles on IoS Open Platform

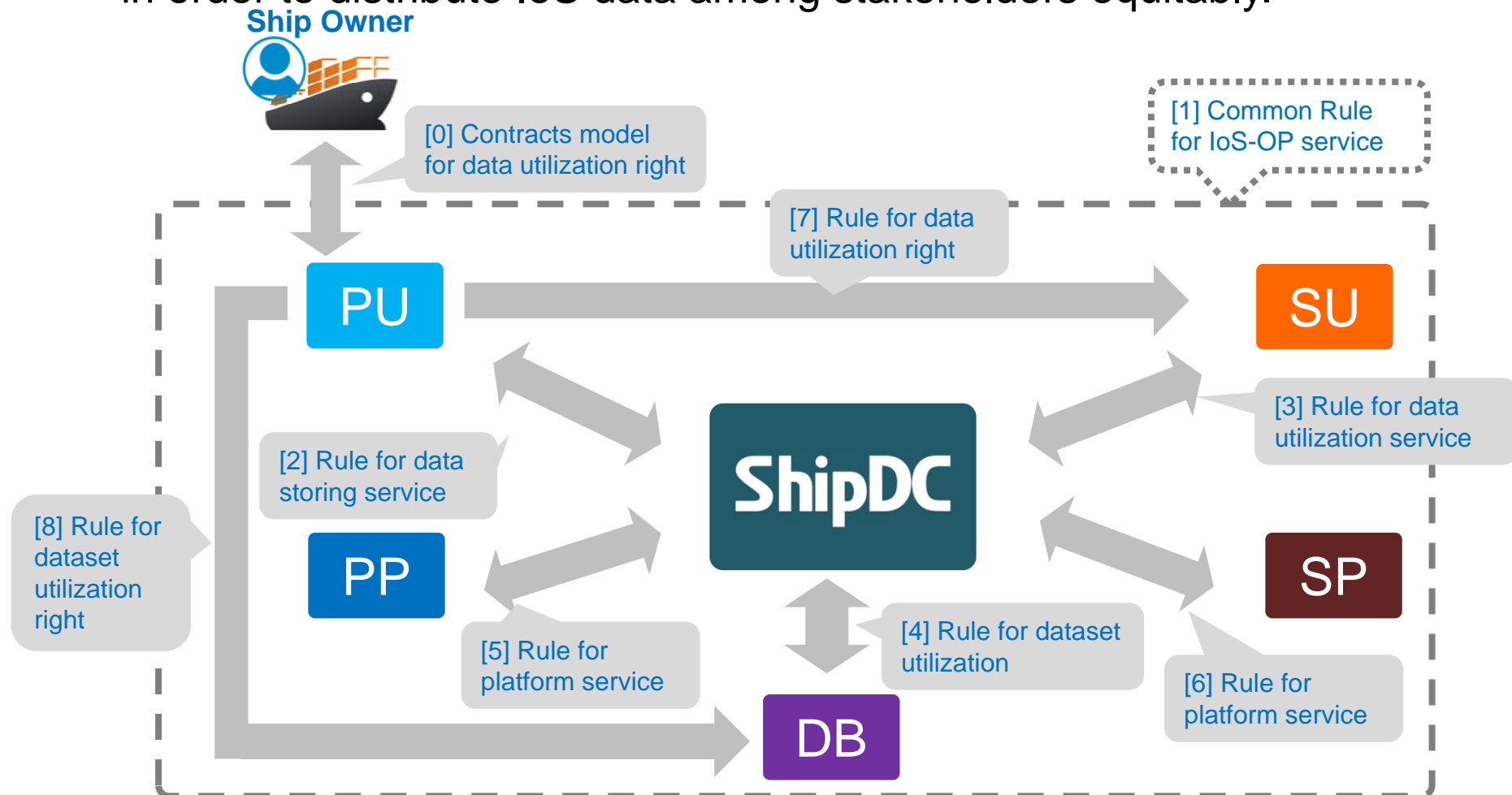
IoSオープンプラットフォームでの関係者の定義

Name of role	Roles	Remark
PU Platform User	Bear cost for data collection (data owner-ship) <ul style="list-style-type: none">• Manage data access rights and data collection• Authorize solution user and data set range	Shipboard server cost, data communication cost and data storage cost, etc
PP Platform Provider	Service provider of data collection to PU <ul style="list-style-type: none">• Sales company of shipboard server, or• Service provider of shipboard data collection	Membership in IoS-OP Consortium and company registration are required.
DC Shore Data Center	Operations manager of shore data center to gather ship data and provider of API service for stakeholder	
SP Solution Provider	Solution service provider for SU such as remote maintenance, performance report, condition monitoring, etc.	Membership in IoS-OP Consortium and company registration are required.
SU Solution User	User of solution service provided by SP	
DB Data Buyer	Data buyer for; <ul style="list-style-type: none">• improvement of own product/building ship• big data analysis• performance analysis, etc	Membership of IoS-OP Consortium and company registration are required.

Rules for IoS Open Platform

IoSオープンプラットフォームの規約類

IoS-OP provides common and individual rules for each stakeholders in order to distribute IoS data among stakeholders equitably.



Summary of Rules

規約の概要

[0] Contracts model for data utilization right
between Ship Owner and PU

This model will reduce workload
for negotiation of data ownership
and data utilization right between
Ship Owner and PU.

[1] Common Rule for IoS-OP service
(All IoS-OP users shall be applied uniformly)

These rules shall be concluded
between ShipDC and each
stakeholders.

[2]
Rule for
data storing
service
(for PU)

[3]
Rule for
data
utilization
service
(for SU)

[4]
Rule for
data
utilization
service
(for DB)

[5]
Rule for
platform
service
(for PP)

[6]
Rule for
platform
service
(for SP)

Also these rules contains
requirements for participation
qualification, registration condition,
use condition, observance matters
and prohibited items.

[7] Rule for data utilization right between PU and SU

For relative transaction rules
between PU and SU/DB for
data/dataset utilization right.

[8] Rule for dataset utilization right between PU and DB

IoS-OP Services

IoS-OPサービス

ShipDC provide IoS-OP service with following feature;

- ✓ Support various kinds of data

Various kinds of data can be sent and stored by defining the data type.

- ✓ Secure infrastructure

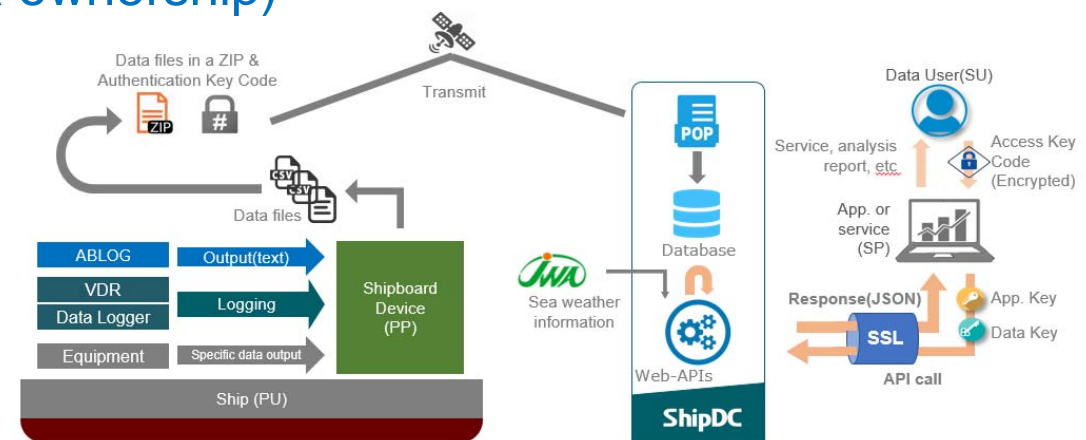
Provide prevention for manipulation of sending data and unauthorized data registration, authentication by enhanced encrypted keys and SSL/TLS communication for data retrieval.

- ✓ Data access control (data ownership)

Subdivided data access control using data key

- ✓ Data quality improvement

Automatic error notification and posting scheme for error data



IoS-OP Services

IoS-OPサービス-多種多様なデータへの対応

Support various kinds of data

In IoS-OP, ShipDC provides the following functions to receive data from various equipment, facilities, and systems onboard.

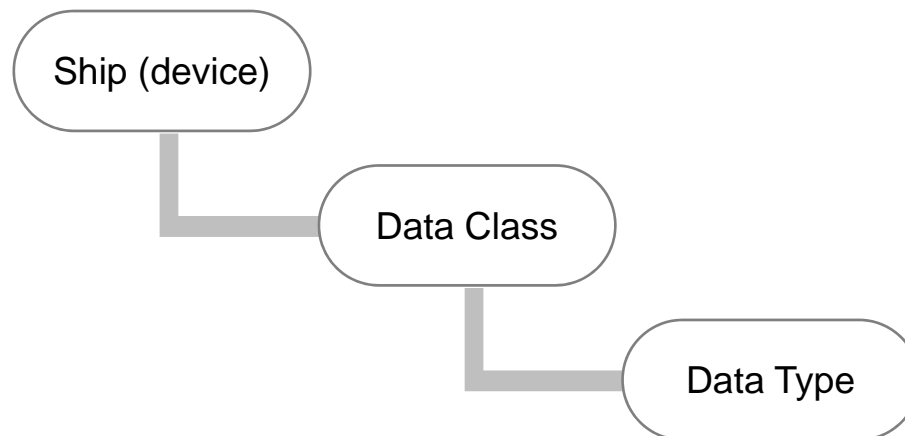
- ✓ Automatic data registration from attached data files based on the file naming rule
- ✓ Support multiple onboard devices
- ✓ Support data other than text-format data files
- ✓ Support confidential data for maker

IoS-OP Services





IoS-OPサービス-データ構造

Concept of data structure

ShipDC introduce data structure as below in order to fit various data.



Data Class

	IoSData Time series text data from VDR, Machinery Data Logger, etc. (csv format)
	RepData Time series text data by manual input from ABLOG software or report system. (csv format)
	ShipFile Scanned file(PDF) and file definition(csv), etc
	MakerFile Specific format data from machinery, equipment or apparatus and file definition(csv)

‘Data Type’ is to specify the data definition in "IoSData", "RepData".

IoS-OP Services

IoS-OPサービス-セキュアな基盤

Secure infrastructure

Following security measures are taken for safe and secure distribution of data.

- ✓ Protection from unauthorized writing by specifying senders of data transmission mail
- ✓ Data key distribution by encrypted file
- ✓ Communication protection in data call
- ✓ Enhanced authentication for data access interface

IoS-OP Services

IoS-OPサービス-データオーナーシップ、データ品質向上スキーム

Data access control/Data quality improvement

ShipDC provides sub-user setting function to grant access authority based on data ownership and schemes to detect/correct error data.

✓ Access control by data key distribution

- ShipDC issues and distributes data key with access range set by ShipDC based on the request of data ownership holder.
- Users access data using the data key via software/application authorized by ShipDC using the data key.

✓ Error data detection/notification scheme

Provides schemes to mechanically detect/notify errors including email non-delivery, data file damage, numerical data blanks and notification.

Requirement of shipboard device (PP)

船上デバイスの要件(PP用)

Sending data are stored in shore database automatically only shipboard device transmits e-mail to ShipDC with attached data file, but it is necessary to include the following process in shipboard device.

- ✓ **Data output**

text and file data output in designated format

- ✓ **ZIP**

Compressed data files in a ZIP file

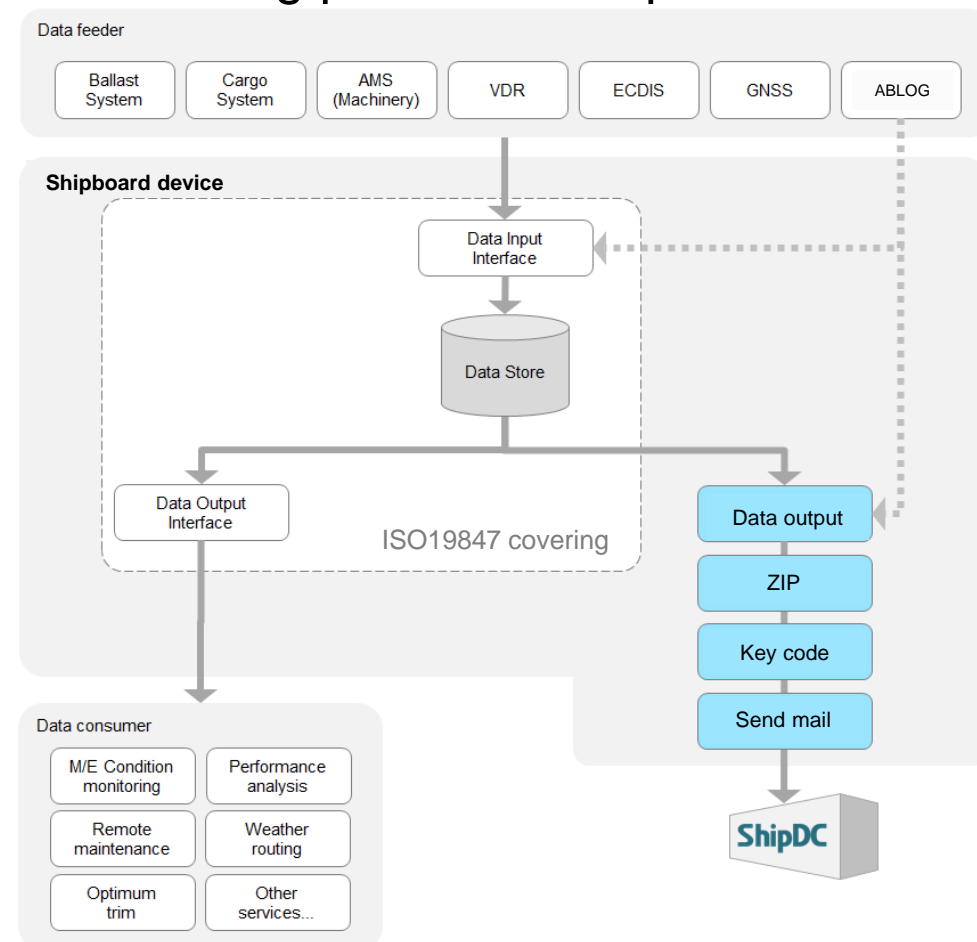
- ✓ **Authentication key code**

Tor prevent manipulation and unauthorized update, generate authentication key code every sending

- ✓ **Send mail**

Send e-mail to ShipDC attached with ZIP file and authentication key code file for data storing

*To be followed the naming rule for all files



RESTful API service (SP)

APIサービス(SP用)

ShipDC provides following data access interface.

- ✓ **DataSet API**
GET available ships and data type list
- ✓ **DataClass API**
GET accessible data with data key
- ✓ **Weather API**
GET free marine weather information mapping to ship position/
date & time in time series data provided by Japan Weather
Association
- ✓ **Maker API**
GET specific data sending/storing are available for maker
confidential data
- ✓ **Other API**
GET supplementary data such as data type definition(meta
information)

IoS-OP Service fee

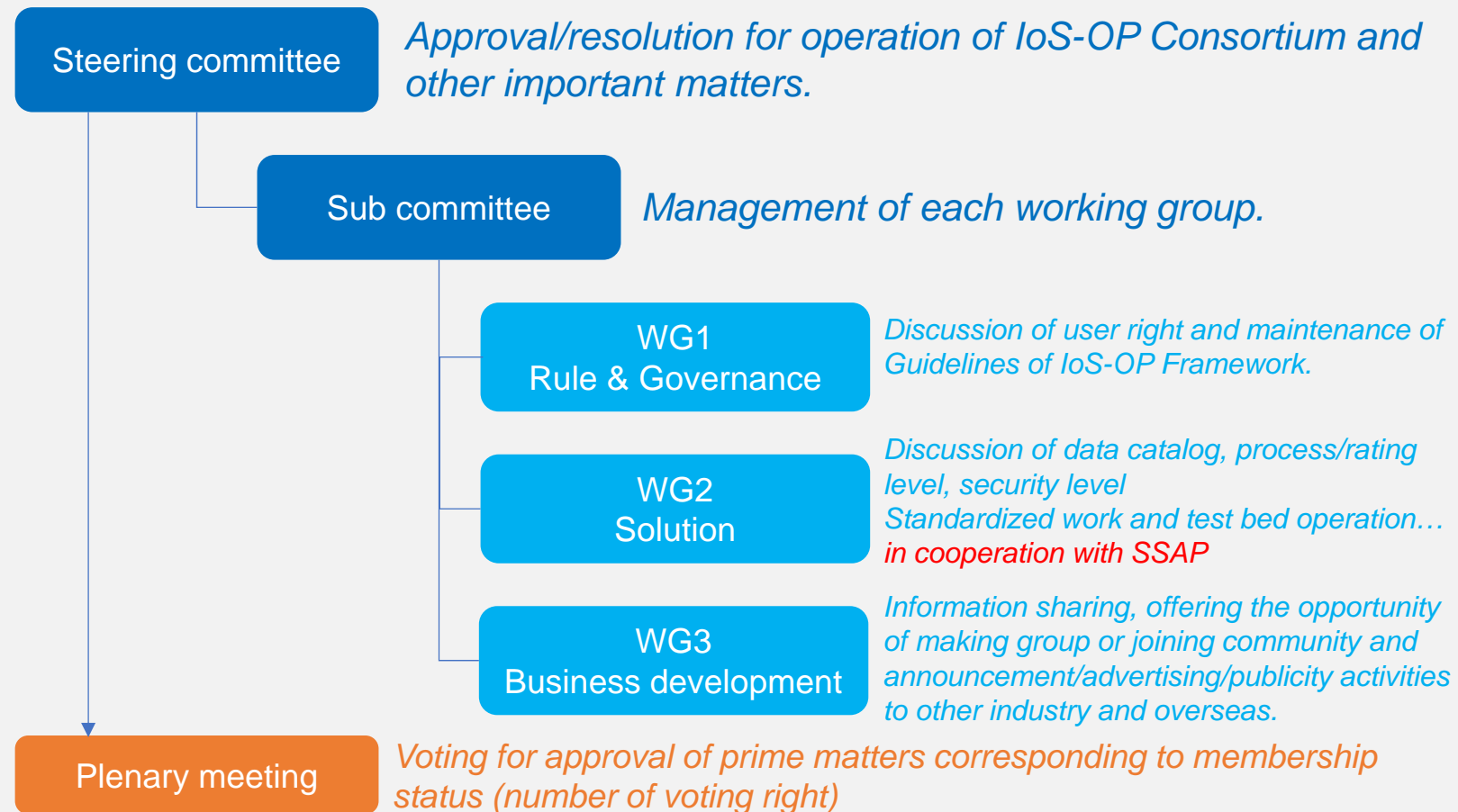
IoS-OPサービス費用

Role	Service	Amount(JPY)	Remark
PU	Registration and Setting initial fee	¥50,000 *	up to 1000 items for every 3 minutes / ship
	Data Store annual fee	¥25,000 *	
* Free campaigns for initial and annual fee for 3 years.			
PP	Company registration annual fee	¥1,000,000	including security exam. and issuance of mail account and key code
	Membership fee in IoS-OP Consortium	see page17	
SP	Application registration annual fee	¥500,000	Up to 25 calls (25 ships) in a day for 1000 items of every 3 minutes
	API Calls - Pay as you go - over 25 ships	¥20,000	1 call (one ship) in a day for 1000 items of every 3 minutes / year
	Membership fee in IoS-OP Consortium	see page 17	
DB	Company registration annual fee	¥500,000	including security exam. and 5 dataset preparation
	Dataset - Pay as you go - over 5 dataset	¥100,000	preparation fee for one dataset
	Payment for data to PU (each dataset)	selling price	SDC charge 2.5% of selling price as brokerage in addition to selling price
	Membership fee in IoS-OP Consortium	see page 17	
SU	Usage fee of application, software or services providing by SP	proposed by SP	

IoS-OP Consortium IoS-OPコンソーシアム

PP/SP/DB should be membership in IoS-OP Consortium prior to business use of IoS-OP services and ShipDC provide below function.

(as advisory body of ShipDC)



Membership status

会員ステイタス

Status	PLATINA	GOLD	SILVER	BRONZE	GREEN
Target	---	Sales volume ¥100 billion and above	Sales volume ¥10 billion and above	Sales volume ¥10 billion below	Government, Academy, University
No. of voting right on plenary meeting	10	3	2	1	0
No. of seats in steering committee	5	2 (election)	3 (election)		0
Membership annual fee	¥3,000,000	¥900,000	¥600,00	¥300,000	¥150,000
Initial registration fee	¥6,000,000	¥1,800,000	¥1,200,00	¥600,000	¥300,000

Test bed service

テストベッドサービス

We found some tasks thru data communication test on shore by SSAP members.

- ✓ Difficulty to carry out connection test between sensors and shipboard server, shipboard server and ShipDC, ShipDC and data call applications by only one company
- ✓ Difficulty to prepare hardware and software for connection or application test
- ✓ Difficulty to find cooperation company for realizing innovative business



ShipDC will provide test bed as a service for IoS-OP Consortium members in cooperation with SSAP.



Thank you for your attention

Please contact below for any questions.

E-mail : ssap@jsmea.or.jp

URL : <http://www.jsmea.or.jp/ssap/jp>