



Introduction of

ISO/FDIS 19847

Standard data server to share field at sea



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13th April 2018

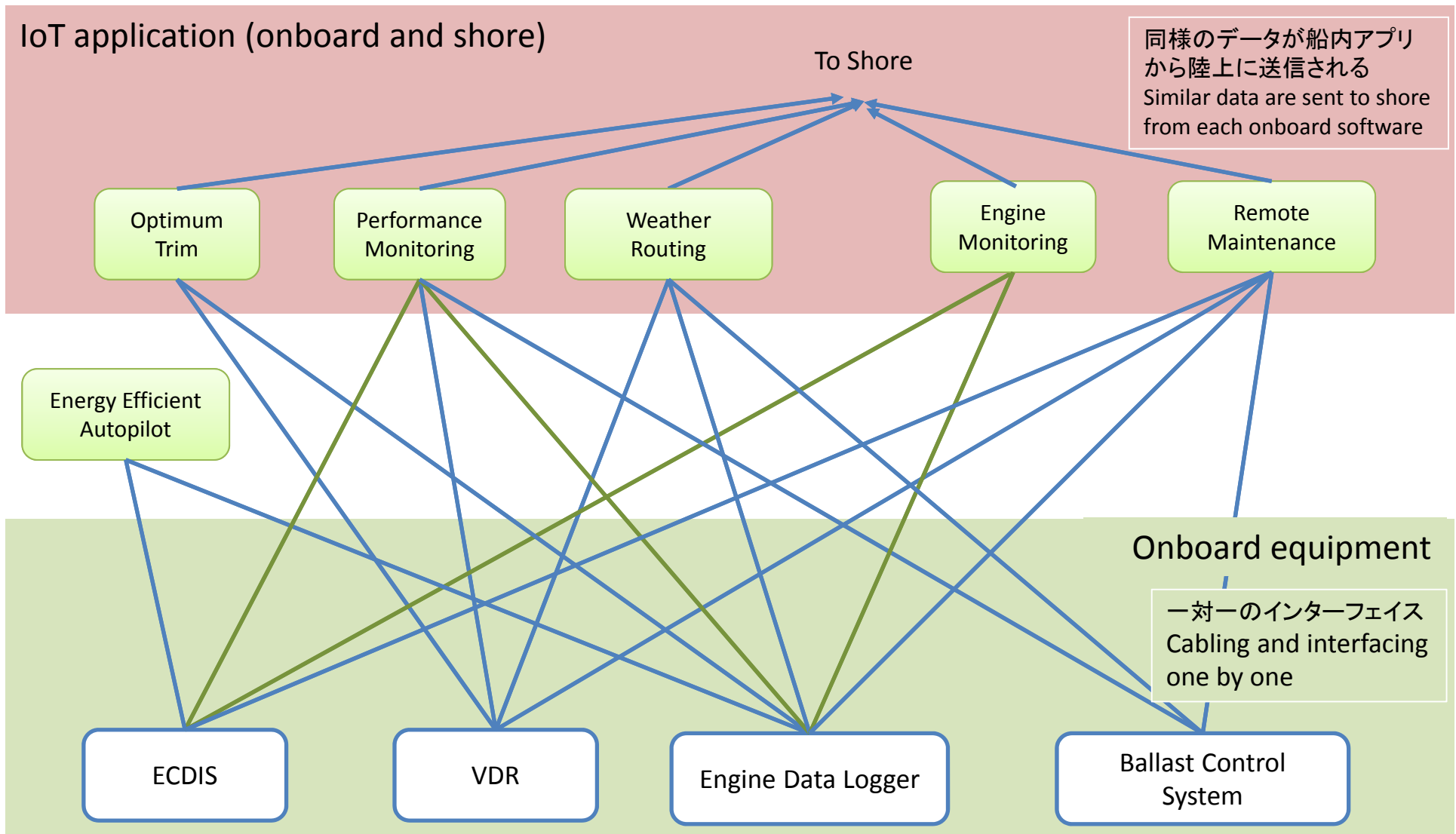
～ Introduction of ISO/FDIS 19847 ～

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- 船内データ収集の現状と課題
- ISO/FDIS 19847のご紹介
- 当社のデータ収集システムのご紹介
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- まとめ
- Current situations and issues of data collecting on the shipboard
- Introduction of ISO/FDIS 19847
- Introduction of our data collecting system
- Future of IoT platform
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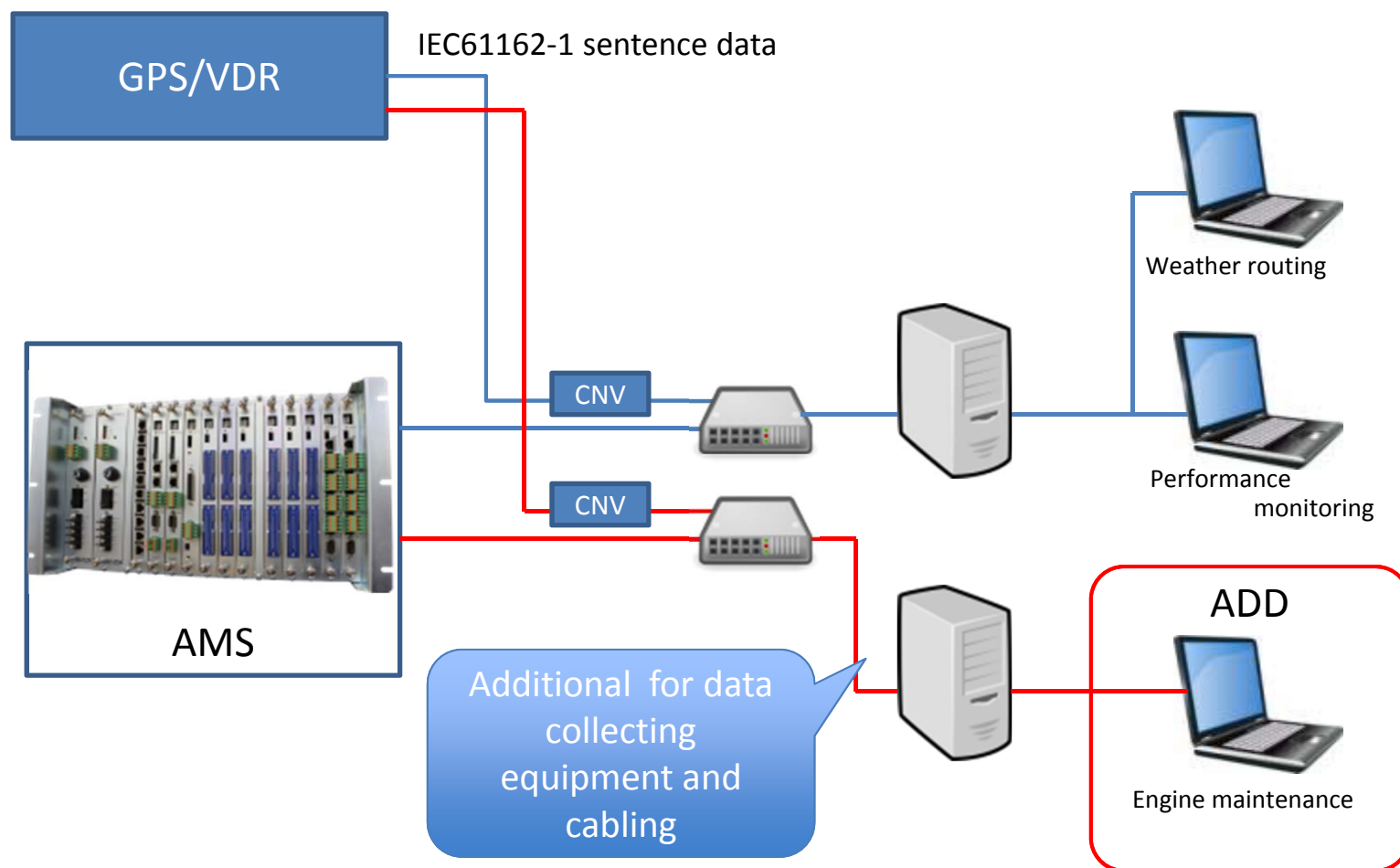
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現状と課題 — Current situations and issues

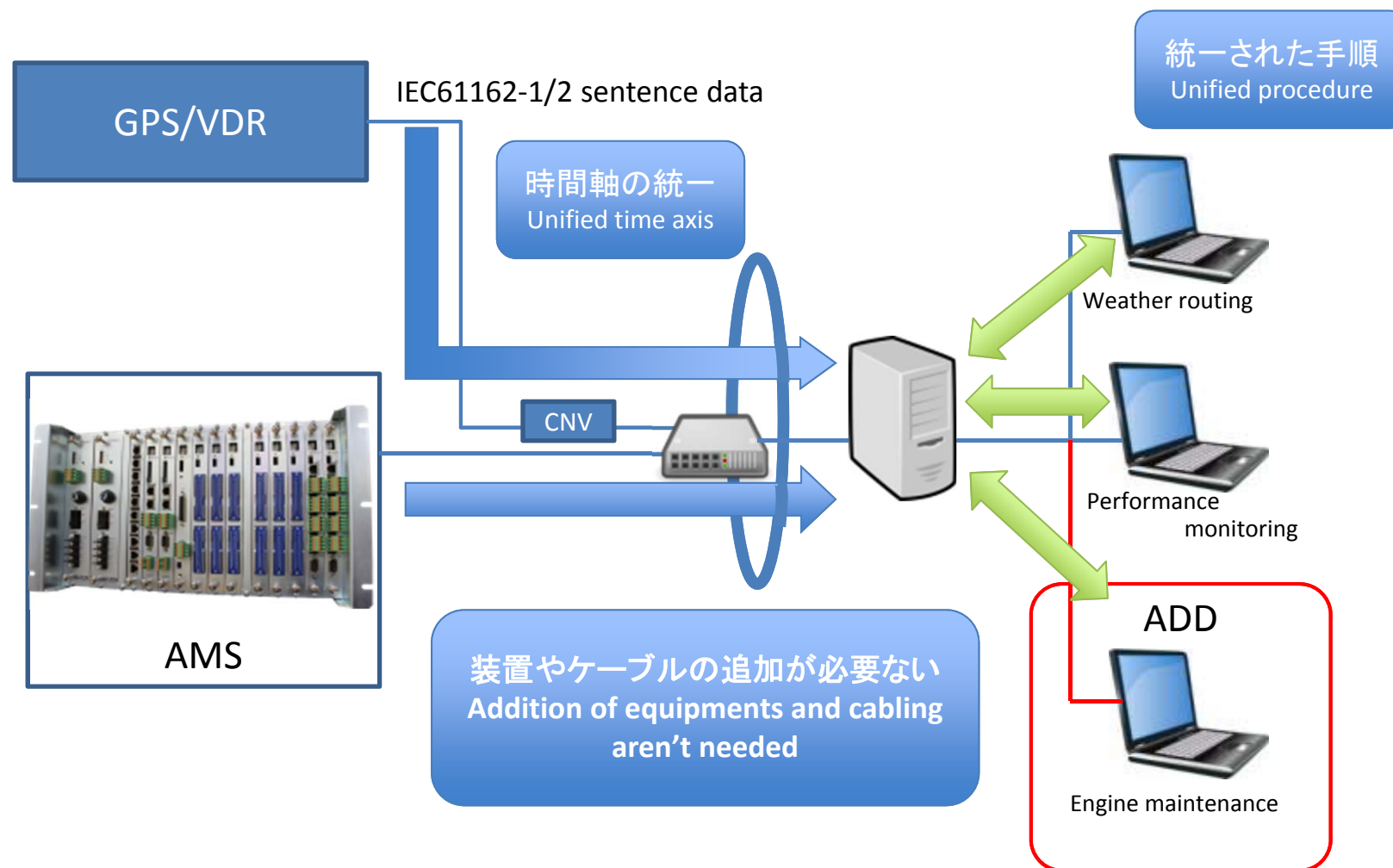


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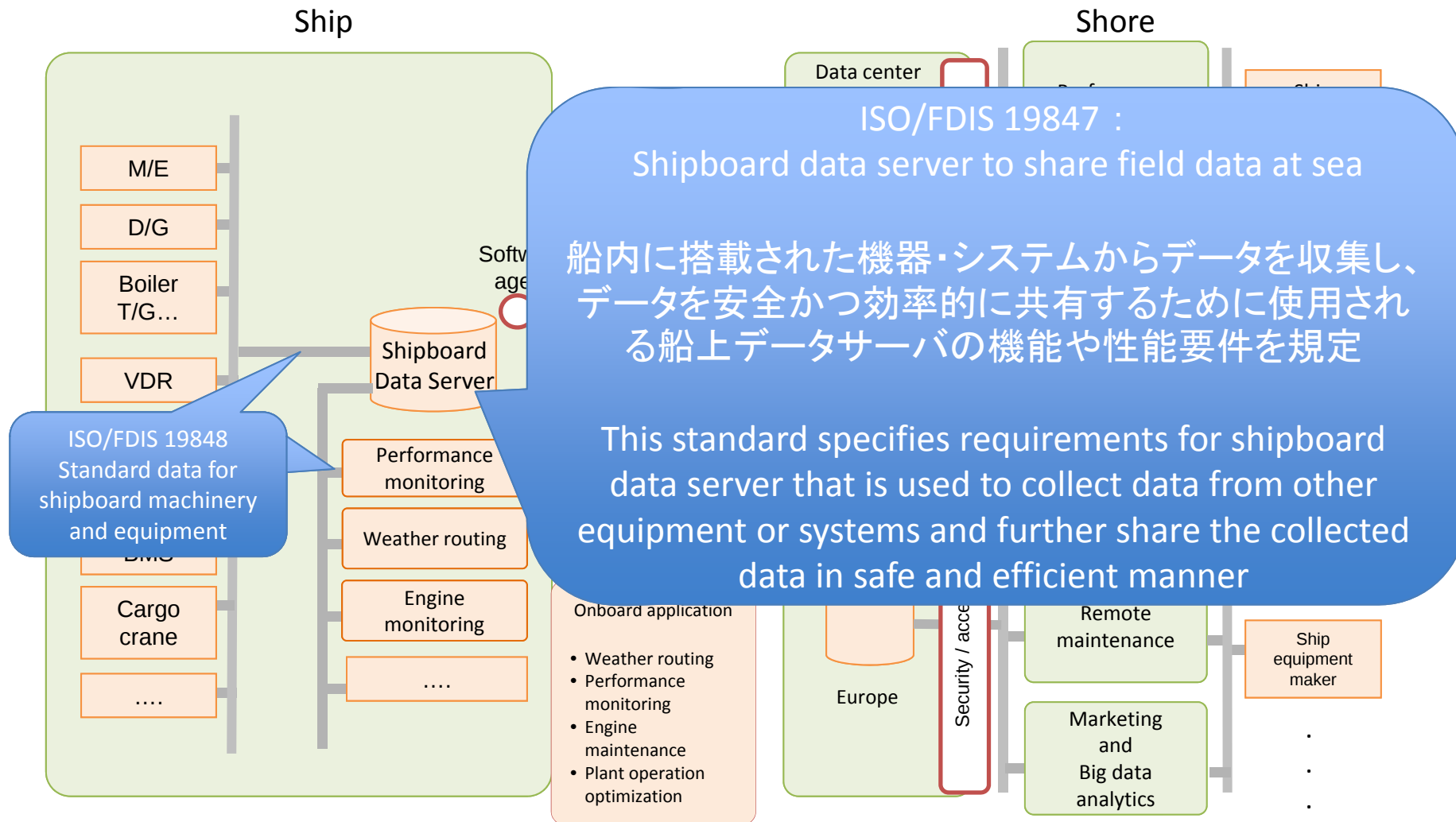
現状と課題 — Current situations and issues



～現状と課題 — Current situations and issues ～



～現状と課題 — Current situations and issues ～

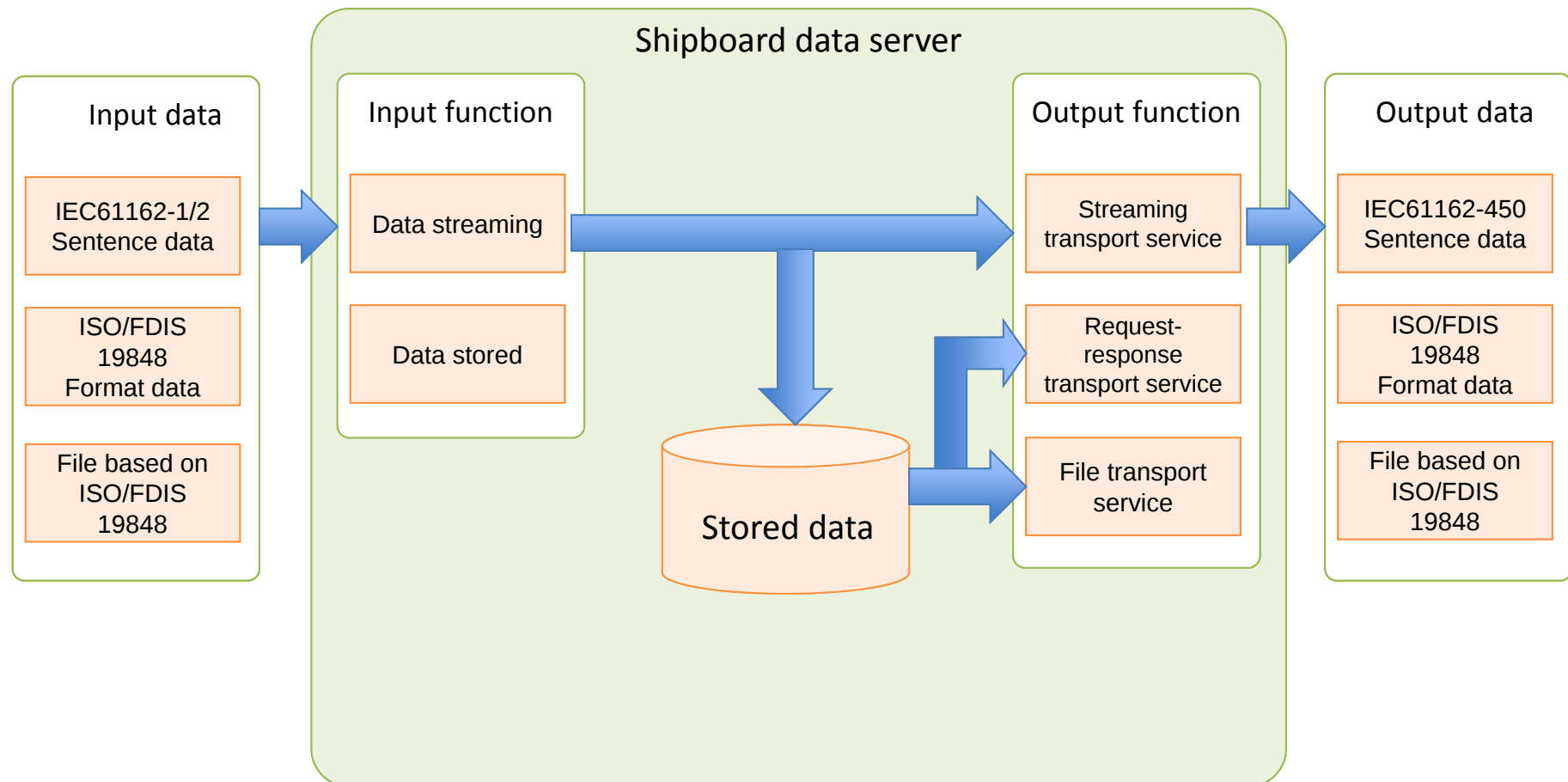


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Data input and output concept model

6 Data input/output and data management on shipboard data server

6.3 Data input and output functions

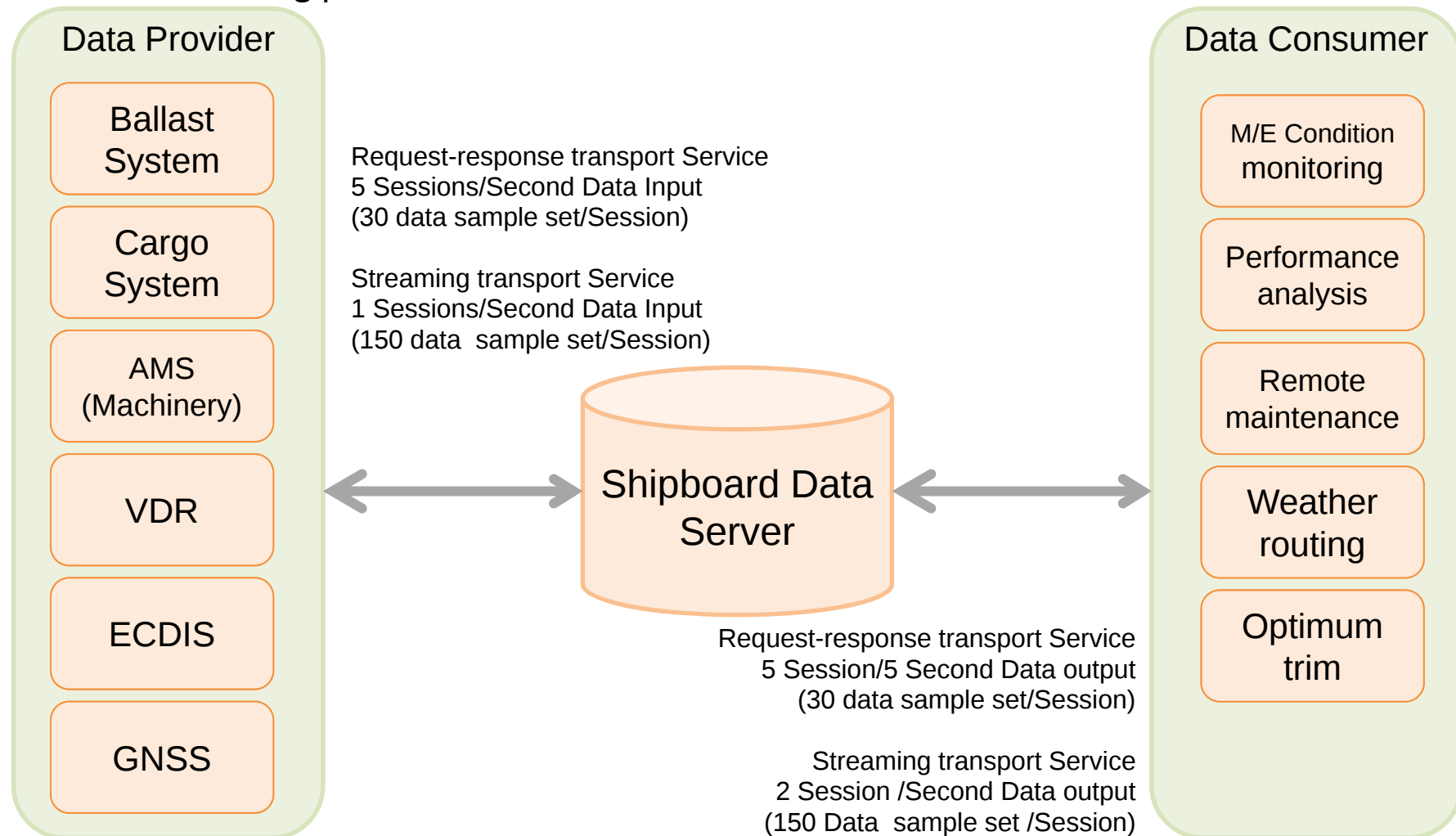


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Input data processing performance requirement

5.1 Function and performance of shipboard data server

5.1.1 Processing performance



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- 装備しなくてはならない機能

Functions that shall be implemented

- ✓ Storage function



Stored the latest data for 30 days
It's necessary to ensure the redundancy of stored data

- ✓ Interface function



More than 10/100Mbps Ethernet
Self-diagnosis function

- ✓ Condition monitoring function



Condition notification function

- ✓ Data backup and restore function



Data backup and restore
Protect stored data from unauthorized access

- ✓ REDS Security



Protection to REDS(cyber security)

- ✓ Status reporting

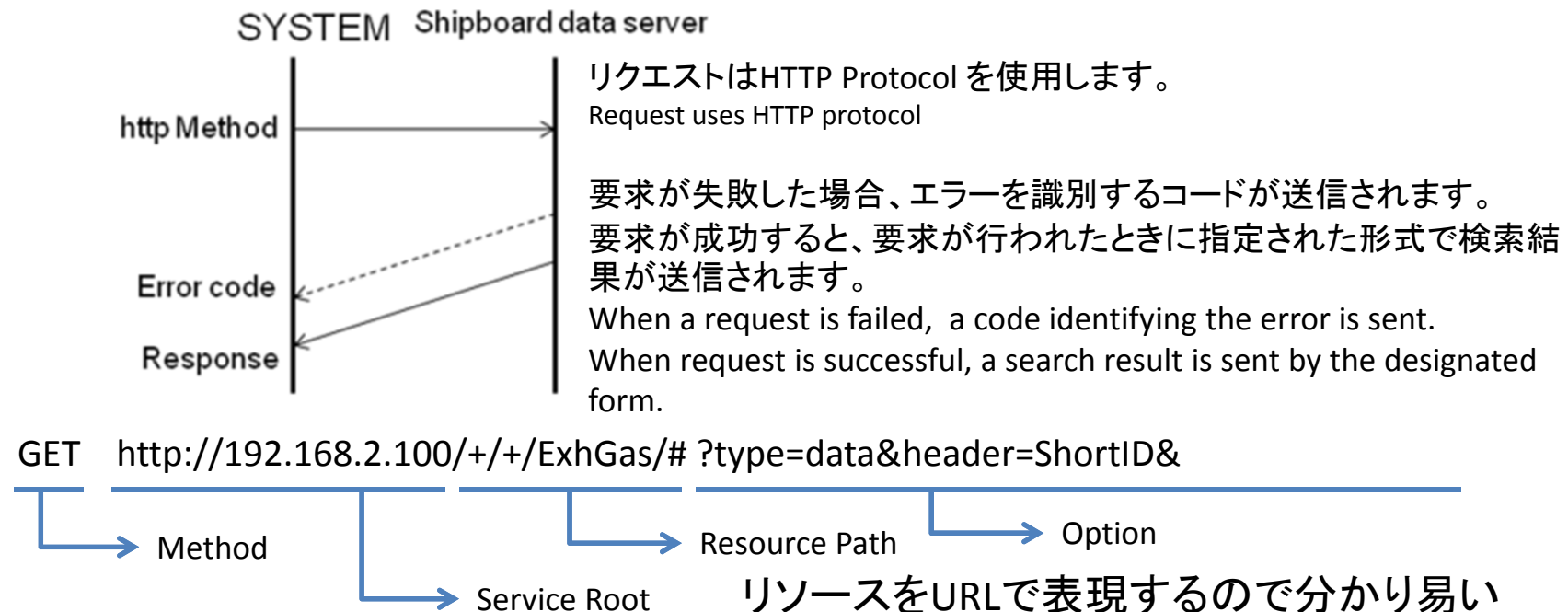


Provide a status reporting interface
IEC61162-1 sentence data or syslog

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Protocol requirement : Request-response transport service

船上データサーバーは、REST APIで要求応答プロトコルを提供
REST APIは、時系列データ、データチャネル・リスト、および別名リストの各情報を処理
HTTP メソッドで各データの取得(get)、追加(post)、更新(put)が可能
Shipboard data server provide request-response transport service with REST API
The REST API processes time series data, data channel list and alias list
It's possible to read(get), write(post), update(put) each data by executing the method of HTTP



リソースをURLで表現するので分かり易い

Easy to understand because resource is description by URL

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Protocol requirement : Request-response transport service

Annex C Request-response transport Service

- **Method**

- ✓ GET: READ (データ又は定義情報を取得・閲覧する際に使用)
 - ✓ POST: WRITE (データ又は定義情報を格納する際に使用)
 - ✓ PUT: UPDATE (データ又は定義情報を更新する際に使用)
 - ✓ TRACE: Data Count (データ又は定義情報の件数を取得する際に使用)
-
- ✓ GET: GET method is used for obtainment and viewing of Data or configuration
 - ✓ POST: POST method is used for stored of Data or configuration information
 - ✓ PUT: UPDATE method is used for updates Data or configuration information
 - ✓ TRACE: TRACE method is used for obtainment the number of data or configuration information

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Protocol requirement : Request-response transport service

Annex C Request-response transport Service

- Option

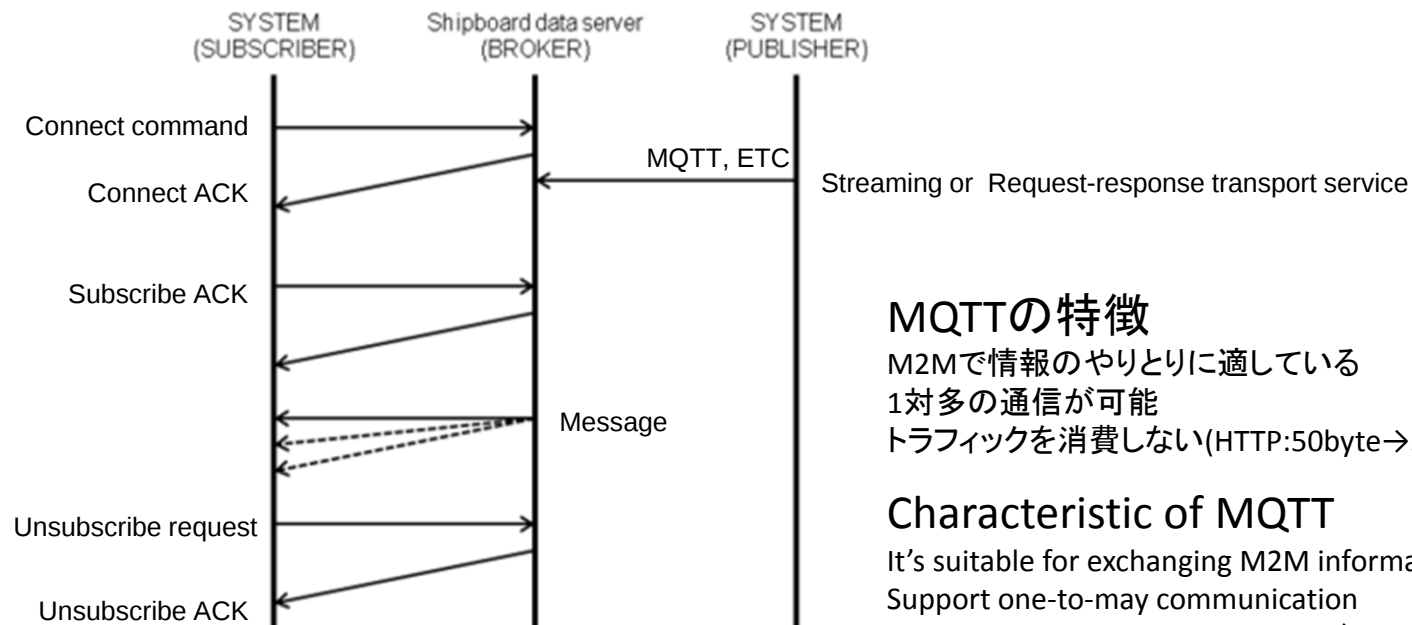
- ✓ IDType : 検索するID(Local ID/Short ID/Alias ID)の種別を指定
 - ✓ type : データ種別を指定する(Data/Data Channel List/Alias List)
 - ✓ make : 検索結果を指定したPathにファイルとして生成する
 - ✓ label : 検索結果を返す時、時系列データにヘッダー出力の優先順位を指定
ヘッダーはLabel、Short ID、Local IDの三種類がある。
 - ✓ query : 検索条件を指定
-
- ✓ IDType : Specify the type of ID(Local ID/Short ID/Alias ID)to be searched
 - ✓ type : Specify the data type (Data/Data Channel List/Alias List)
 - ✓ make : Search results is made by the file at the designated path
 - ✓ Label : Specify the priority of the output format of Column header when
getting time series data with get method. There are three types of
header Label, ShortID and LocalID
 - ✓ query : Specify the search criteria

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Protocol requirement : Streaming transport service

船上データサーバは、MQTTプロトコルのブローカとパブリッシャの機能を提供します。MQTTプロトコルに準拠したフィルタリング機能を有し、要求されたローカルIDに該当するデータをストリーミング方式で送信する。

The shipboard data server have filtering function that complies with MQTT Protocols, and shall be sent data that fall under requested Local IDs as messages to subscribers



MQTTの特徴

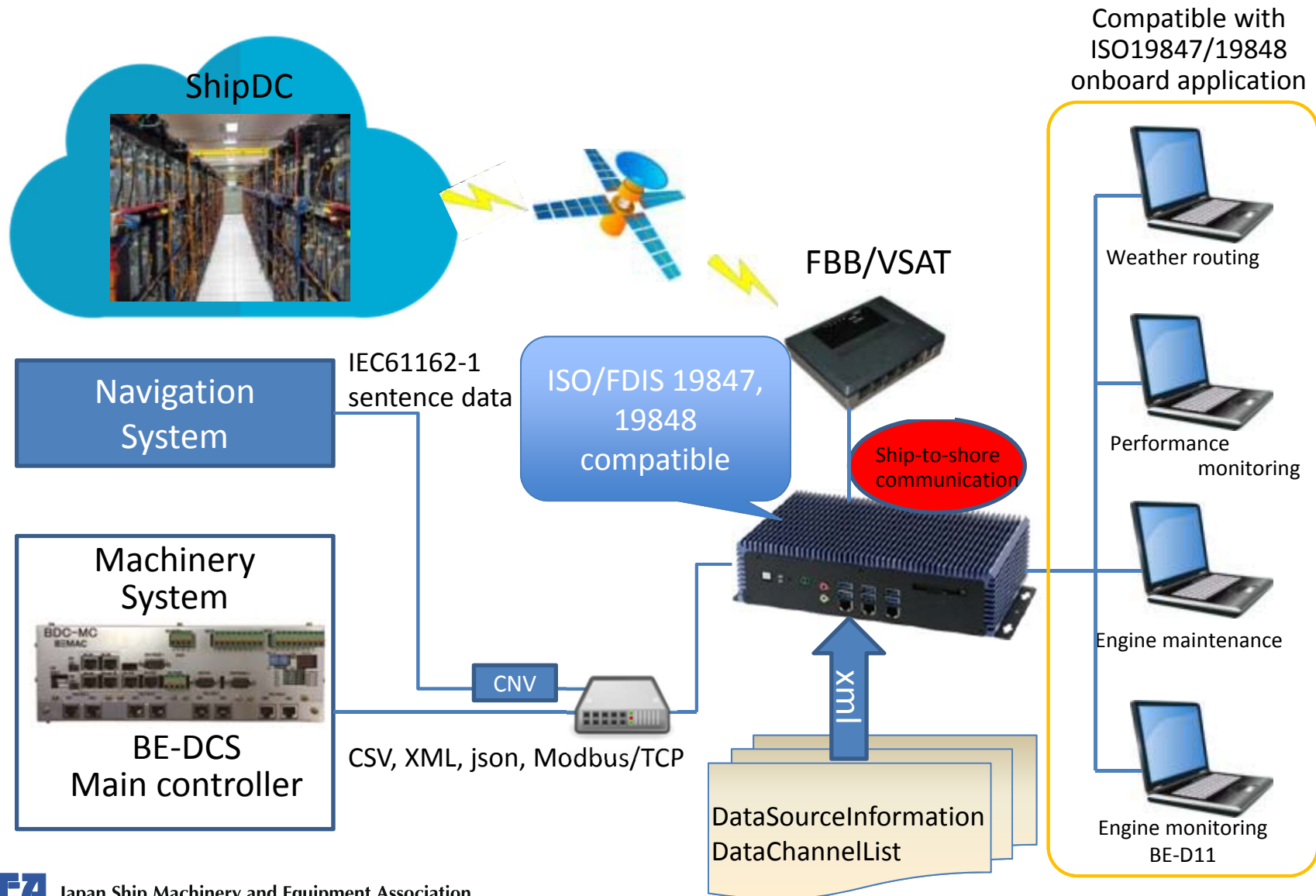
M2Mで情報のやりとりに適している
1対多の通信が可能
トラフィックを消費しない(HTTP:50byte→2byte)

Characteristic of MQTT

It's suitable for exchanging M2M information
Support one-to-many communication
Saving traffic (HTTP:50byte→2byte)

～ 当社のデータ収集システムのご紹介 ～

— Introduction of our data collecting system



～ 当社のデータ収集システムのご紹介 ～

— Introduction of our data collecting system

Input Data	Output Data	
ISO19848(xml, json)	Request Response	ISO19848(xml, json)
	Streaming (pending)	
	File	
IEC61162-1/2	Request Response	ISO19848(xml, json)
	Streaming (pending)	
	File	
	Streaming	IEC61162-450
CSV	Request Response	ISO19848(xml, json)
	Streaming (pending)	
	File	
Modbus/TCP	Request Response	ISO19848(xml, json)
	Streaming (pending)	
	File	

～ 当社のデータ収集システムのご紹介 ～

— Introduction of our data collecting system

The screenshot displays the WebDeckMach web application interface. The top navigation bar includes links for Home, Schema, XML, System, Alert, Display, StandardForm, About, and Contact. The main content area is divided into several sections:

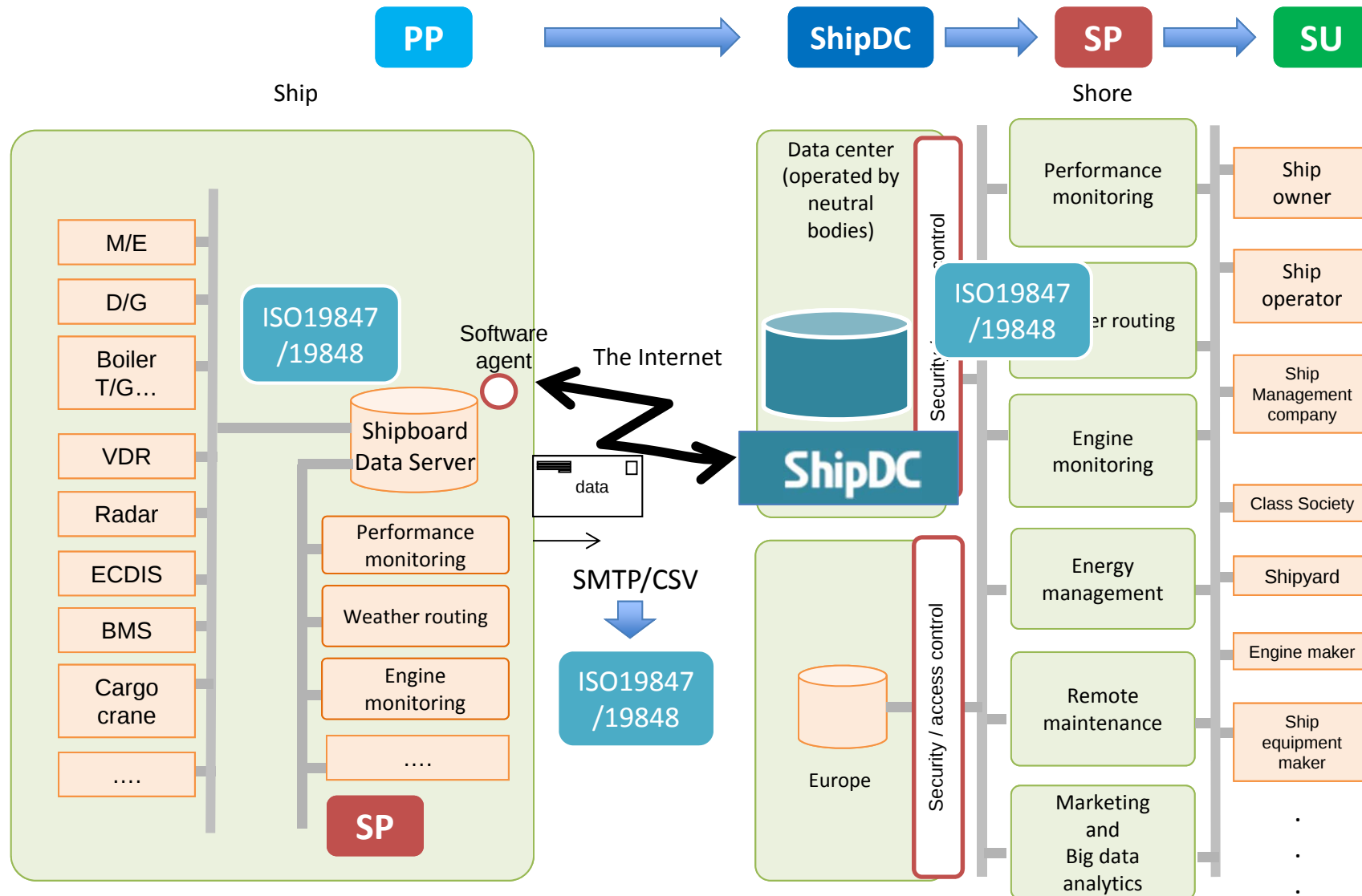
- Data Source Information:** A table listing data sources with columns for File Name and a View button. The table contains three entries:

File Name	View
DataSourceInformation_xmlSchema_20160105	View
DataSourceInformation_xmlSchema_20171123	View
DataSourceInformation_xmlSchema_20171125	View
- Alert:** A table showing system alerts with columns for OccuredDate Time, EventID, Description, ACKDate Time, RecoverDate Time, and StatusFlag. The table contains 10 entries:

OccuredDate Time	EventID	Description	ACKDate Time	RecoverDate Time	StatusFlag
20160329 01:57:43	9520001	System Error	20160327 11:07:03		1
20160329 01:57:07	9520001	System Error	20160327 11:07:03		1
20160327 13:07:26	9520001	System Error	20160327 13:10:41		1
20160327 11:55:18	9520001	System Error	20160327 13:10:41		1
20160327 11:45:07	9520001	System Error	20160327 13:10:41		1
20171109 06:16:41	9520002	Eth Link Down			-5
20171109 06:16:25	9520002	Eth Link Down			-5
20171109 06:16:22	9520001	System Error			-5
20171109 06:16:16	9520004	UTC Sync Error			-5
20171109 06:16:15	9520002	Eth Link Down			-5

The interface also includes an 'Import' button and a 'DataChannelList' section. The footer indicates the copyright is © 2018 - WebDeckMachinery/Visualize.

～ IoTプラットフォームの今後 — Future of IoT platform ～



～ まとめ – Summary ～

- ✓ 船陸間データ通信共通プラットフォームの構築
 - ✓ アプリケーションの開発コスト低減
 - ✓ データ品質・利便性が高まり、データ利活用が推進される
 - ✓ システムのインシヤルコストと維持費を低減
 - ✓ 業界に参入し易い(幅広いコラボレーションが可能)
-
- ✓ Construction of common platform for Ship-to-shore communication
 - ✓ Development cost of the application is reduced
 - ✓ Data quality and convenience are improved and data usage is promoted
 - ✓ Initial cost and running cost of the system are reduced
 - ✓ Industry is easy to join (Extensive of collaboration are possible)

～ まとめ – Summary ～

- ✓ システムの取りまとめが重要
 - ✓ データを使用する上でのルール(所有者権、利用権)
 - ✓ 幅広いコラボレーションの実現
-
- ✓ Construction of common platform for Ship-to-shore communication
 - ✓ Rule for using data(authority of the owner and user)
 - ✓ Extensive of collaboration

謝辞 — Acknowledgment

本ISO化は以下の皆様の支援を頂き進めております。

- 国土交通省 殿
- (公財)日本財団 殿
- (一財)日本海事協会 殿
- (一財)日本船舶技術研究協会 殿
- JSMEA 新スマートナビゲーションシステム研究会 メンバー各位

This work was supported by:

- Ministry of Land, Infrastructure, Transport and Tourism
- The Nippon Foundation
- Class NK
- Japan Ship Technology Research Association
- JSMEA SSAP Project members



ご静聴ありがとうございました。
Thank you for your kind attention.

お問い合わせはこちらまでお願いいたします。

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