



2015 MARCH

# AISデータとマライムデータの活用について

IHS マライム&トレード  
 齋藤 淳 / Jun Saito  
 Sales Manager  
 03-6262-1758  
[Jun.saito@ihs.com](mailto:Jun.saito@ihs.com)

## IHS in Japan

### ・ IHS グローバル株式会社

- ・ 新オフィス移転：東京スクエアガーデン12階 (2014年7月)



### 人員構成:

- アナリスト / コンサルタント: 42
- ・ セールス: 45
  - ・ 社員数: 103 (2015年2月現在)

### ・ 日本国内のお客様:

- 既存顧客数：約1000社
- ・ 産業分野：エネルギー、自動車、製造業、総合商社運輸海運、電気電子、化学、銀行保険証券、航空宇宙防衛、



## IHS INDUSTRIES

### 航空宇宙 & 防衛

防衛、セキュリティ装備市場、産業、リスクに関する情報、知見、インテリジェンスを提供してきた100年を超える実績が、ここに集約されています

### ケミカル

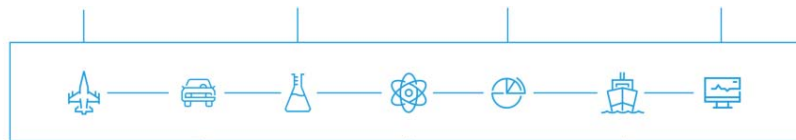
95産業を対象に、300を超えるケミカル市場および2,000プロセスを俯瞰した統一見解と分析を、200人以上の産業エキスパートが提供しています

### ファイナンス

200を超える国・地域に関する調査を、整合された指標とともにIHSのアナリストとエコノミストが提供しています

### テクノロジー

世界最大、3億5千万を超える電子部品データベースを運用しています



### 自動車

15の主要市場に配置された数百人の専門家と自動車アナリストで構成された世界最大のチームが、自動車業界におけるすべてのバリューチェーンをカバーしています

### エネルギー

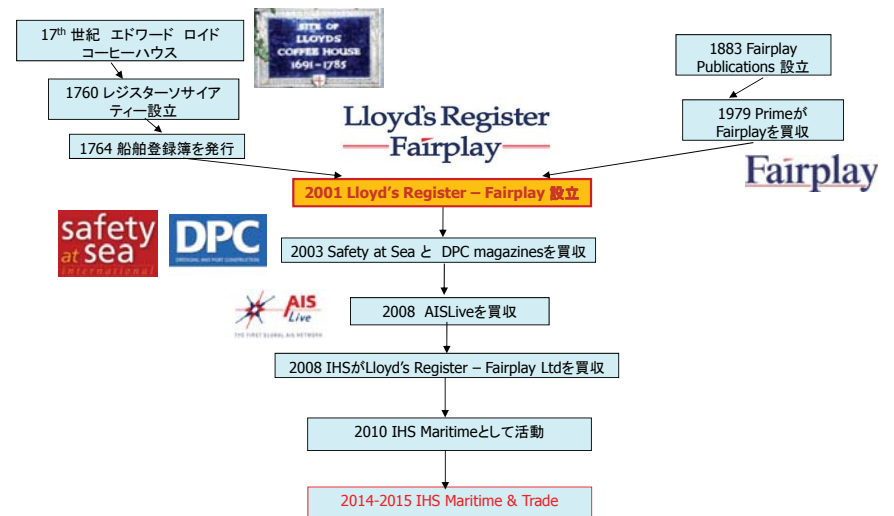
1860年まで遡った、世界の500億を超える石油・ガス井に関する膨大な情報を保有しています

### マライム & トレード

100GT以上の全船舶を対象とした情報集積で250年超の実績を誇る世界最大の海運データベースを運用しています

## IHS Maritime & Trade

<https://www.ihs.com/industry/maritime.html>



## Setting industry standards

# IMO 9282625 =

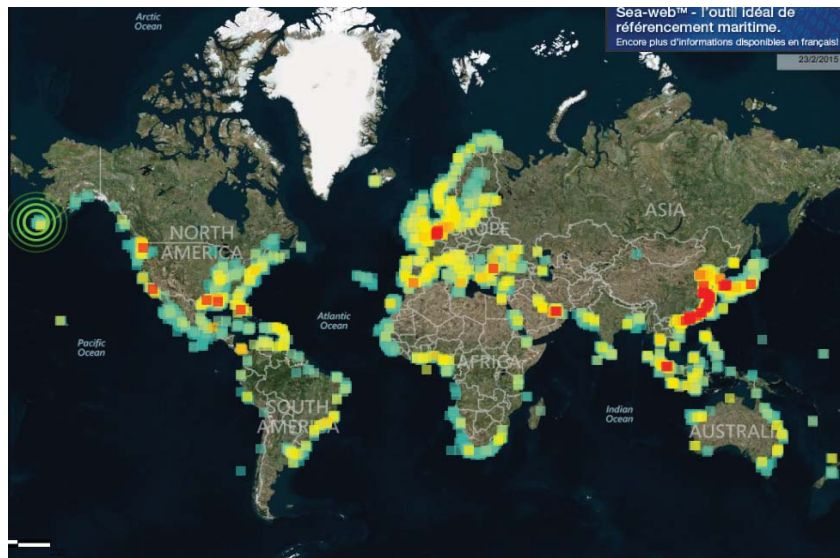


従来よりLR番号として発行していた番号制度を1987年よりIMOが導入。1996年よりIMO必須事項。IHS FairplayはIMO番号の**唯一**の発行機関。  
⇒100GT以上の全船舶  
⇒新造船情報

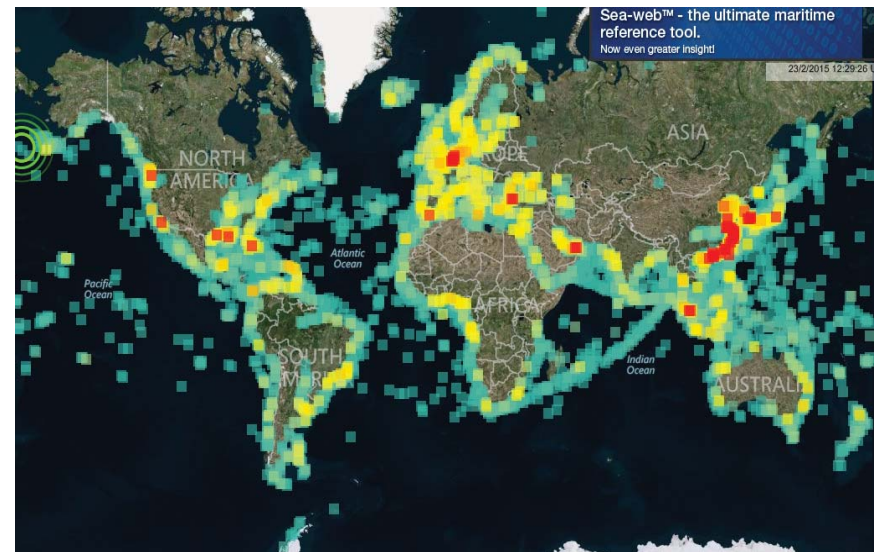
- 特定船種を除く全100GT以上の船舶**
- 専ら漁業に従事する船舶
  - 機械的な推進機構を持たない船
  - プレジャーヨット
  - 特別な業務(たとえば灯台船、SAR船)をする船
  - ホッパーバージ
  - 水中翼船、エアークッション艇
  - フロティングドック及び類似のものとして分類された構造物
  - 戦闘艦および軍事輸送船
  - 木造船



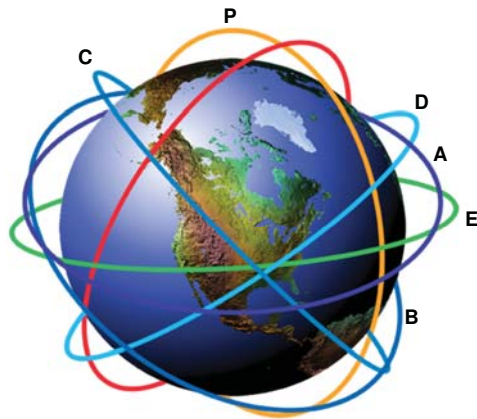
## 地上AISアンテナ



## 地上AISアンテナ + 衛星AISアンテナ



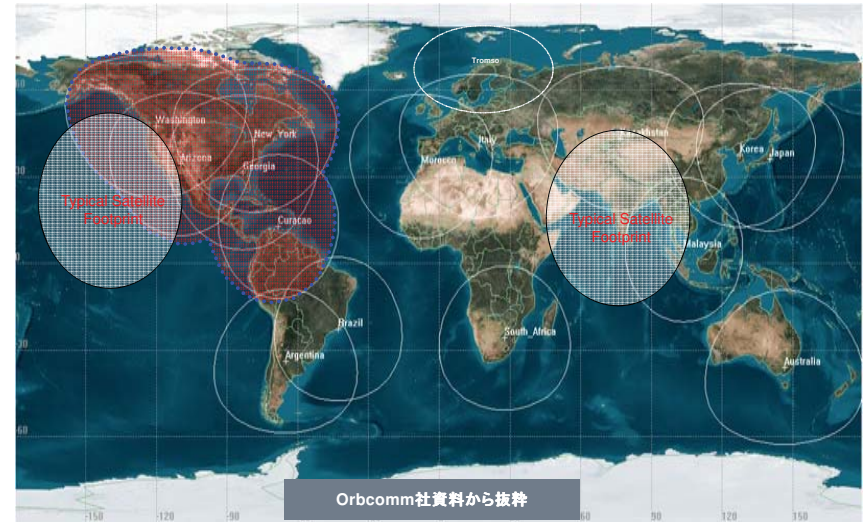
## ORBCOMM AIS Constellation



- Satellite Planes**  
**ALL satellites to have AIS**
- Planes A, B C and D:** [47 Deg]  
**Four to Six** Satellites per Plane
- Plane E:** [Equatorial]  
**One** Satellite
- Plane P:** [Polar]  
**One to Five** Satellites

Orbcomm社資料から抜粋

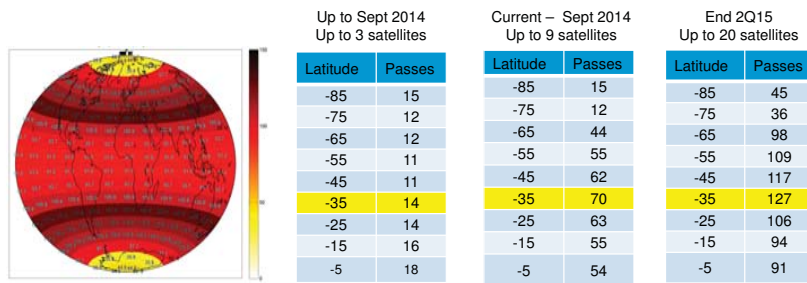
## Worldwide Ground Earth Stations



Orbcomm社資料から抜粋

## Satellite Passes Per Day

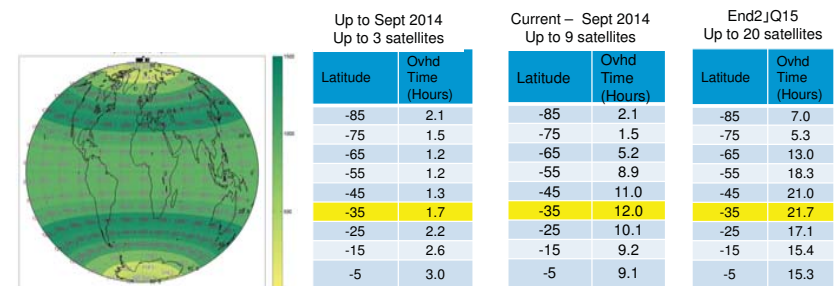
- Multiple satellite passes increase the detection and refresh detection rates
- Example: Brazil
- Passes per day: 18 (before 9/15/14), 54 (current) and 91 (2015) passes per day
- Example: South Africa/Argentina/Australia
- Passes per day: 14 (before 9/15/14), 70 (current) and 127 (2015) passes per day



Orbcomm社資料から抜粋

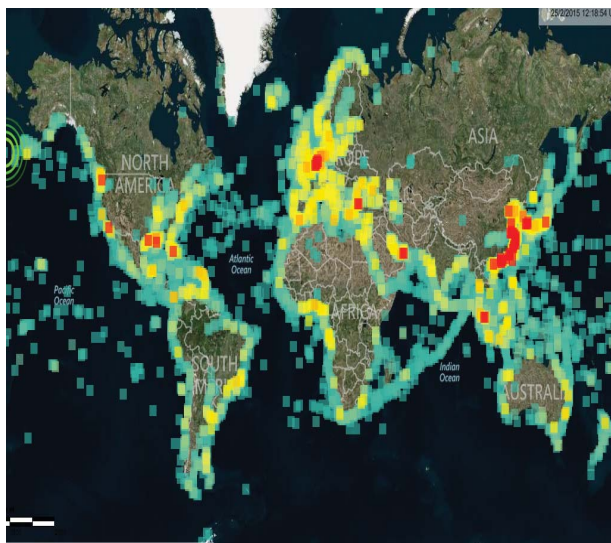
## Cumulative Time Overhead

- Cumulative amount of time satellites are over an individual vessel
- Satellites are nominally in view of a particular vessel for ~ 10 to 12 minutes per pass
- Example: Brazil ~ 3 hrs (before 9/15/14), 9.1 hrs (current) and 15 hrs (2015) per day
- Example: South Africa/Argentina/Australia ~ 1.7 hrs (before 9/15/14), 12 hrs (current) and 21.7 hrs (2015) per day



Orbcomm社資料から抜粋

## AISデータとマリタイムデータの活用



### Real Time Intelligence

All Ships	108,550
Ships Not Moving	60,023 (55%)
Ships Moving >= 0.5kn	48,527 (45%)
Average Speed	10kn
Average Draught	4m
Verified Ships	46,461
Total DWT	1,509,825,021
Total GT	1,022,663,273
Average Draught	6.78m (82% of max)
Unverified Ships	62,089

## 船舶データ詳細1

**Ship Detail**

Ship Name: **ZHONG GUO HAI JIAN 46** Ship type: **Patrol Vessel**

LR/IMO No.: **9351878** Gross: **1,111**

Call Sign: **BNRP** Deadweight: **263**

MMSI No.: **413210000** Year of Build: **2005**

Flag: **China, People's Republic Of** Status: **In Service/Commission**

Operator: **China Govt East Sea Oceanic** Shipbuilder: **Wuchang Shipyard**

**REGISTRATION, P&I, AND COMMUNICATIONS**

Port of Registry: **Ningbo, Zhejiang** Flag: **China, People's Republic Of**

Official Number: **441321010** Fishing Number: **441321010**

**P&I Club History**

Date: **2005-02-20** P&I Club: **Unknown**

**OPERATIONAL DATA**

Group Owner: **China Govt** Location: **China, People's Republic Of**

Shipmanager: **China Govt East Sea Oceanic** Location: **China, People's Republic Of**

Operator: **China Govt East Sea Oceanic** Location: **China, People's Republic Of**

DOC Company: **Unknown** Location: **China, People's Republic Of**

Registered Owner: **China Govt East Sea Oceanic** Location: **China, People's Republic Of**

Technical Manager: **Unknown** Location: **China, People's Republic Of**

Classified Owner: **Unknown** Location: **China, People's Republic Of**

**COMMERCIAL HISTORY**

Date	Name	Flag	Group Owner	Operator	Manager	Registered Owner	DOC	Price
2005-05	ZHONG GUO HAI JIAN 46	China, People's Republic Of	China Govt	China Govt East Sea Oceanic	China Govt East Sea Oceanic	China Govt East Sea Oceanic	Unknown	
2005-05								
2005-05								
2005-05								
2005-05								

**CLASS**

Class: **China Classification Society (2005-05-05), Class ID: 05H2010**

**CONSTRUCTION OVERVIEW**

Builder: **Patrol Vessel** Year: **2005** GT: **1,111** Deadweight: **263**

**SHIP BUILDER**

2005-05 Wuchang Shipyard - Wuchang HB Yantai No. 1, A104.

**STATUS**

Date	Status
2005-05-05	In Service/Commission
2004-05-20	Keel Laid
2004-05-05	On Order/Not Commissioned

## 船舶データ詳細2

**CONSTRUCTION DETAIL**

Stalcoo65 B34+2B2; Hull Material: Steel; Hull Connections: Welded; Deck: 1 d; FS Ice Class II

**SERVICE CONSTRAINTS**

Other Government: Sea, Unspecified

**ALTERATIONS & CONVERSIONS**

**DIMENSIONS**

Length Overall	73.800	Length (BP)	89.600
Length (Reg)	0.000	Bulbous Bow	
Breadth Extreme	0.000	Breadth Moulded	10.200
Draught	3.400	Depth	4.800
Height	0.000	TICM	0.0
Displacement	0		

**TONNAGES**

Tonnage Type	One tonnage, unspecified	Tonnage System	New System (International 1989)
Effective Date	2006-00	Effective Date	2005-00
Gross Tonnage (GT)	1,111	Net Tonnage (NT)	233
Deadweight (DWT)	263	Compensated Gross Tonnage (CGT)	0
Formula Deadweight	1,439	Light Displacement Tonnage (LDT)	0

**SUPPLEMENTARY FEATURES**

FS Ice Class II

**MACHINERY OVERVIEW**

1 oil engine reduction geared to screw shaft driving 1 FP propeller

Total Power: 1cr 1,710KW (2,325hp)

Max. Speed: 16.00kts

**PRIME MOVER DETAIL**

Design: MaK; Engine Builder: Caterpillar Motoren GmbH & Co. KG - Germany

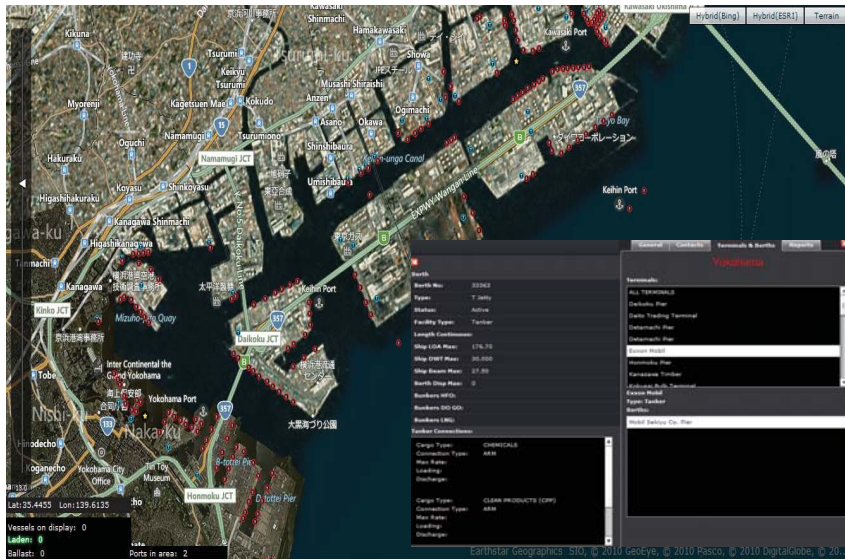
1 x 8M20, 4 Stroke, Single Acting, In-Line (Vertical)

9 Cy, 200 x 300, Mor: 1,710 kW (2,325 hp) at 1,000 rpm

## 過去寄港データ履歴

Ships in Port	Port of Call	Country	Arrival Date	Departure Date	Hours in Port
View	Suanshan	China	2014-11-26	2015-02-10	1830
View	Xiazhimen North Anchorage	China	2014-11-26	2014-11-26	<2
View	Xiazhimen Kouwai Tanker Anchorage	China	2014-11-25	2014-11-25	<2
View	Xiazhimen Kouwai Tanker Anchorage	China	2014-11-19	2014-11-19	<2
View	Mashi Anchorage Area No 1	China	2014-11-19	2014-11-19	29
View	Zhoushan	China	2014-11-18	2014-11-18	<2
View	Mashi Anchorage Area No 1	China	2014-11-16	2014-11-16	38
View	Aoshan Joint-Inspection Anchorage	China	2014-11-16	2014-11-16	<2
View	Xiazhimen North Anchorage	China	2014-11-16	2014-11-16	<2
View	Xiazhimen Kouwai Tanker Anchorage	China	2014-11-16	2014-11-16	<2
View	Xiazhimen South Anchorage	China	2014-11-13	2014-11-13	<2
View	Mashi Anchorage Area No 1	China	2014-11-12	2014-11-12	8
View	Mashi Anchorage Area No 1	China	2014-11-08	2014-11-12	153
View	Xiazhimen North Anchorage	China	2014-11-06	2014-11-06	<2
View	Xiazhimen Kouwai Tanker Anchorage	China	2014-11-06	2014-11-06	<2
View	Xiazhimen South Anchorage	China	2014-10-10	2014-11-05	626
View	Suanshan	China	2014-10-10	2014-11-05	626
View	Mashi Anchorage Area No 1	China	2014-10-09	2014-10-10	19
View	Luneng North Anchorage	China	2014-10-09	2014-10-09	<2
View	Xiangshan Harbour	China	2014-10-09	2014-10-09	20
View	Mashi Anchorage Area No 1	China	2014-10-06	2014-10-06	20
View	Xiazhimen South Anchorage	China	2014-09-27	2014-09-27	2
View	Zhoushan	China	2014-09-27	2014-09-27	6
View	Yeyashan Joint Inspection Mooring Anchorage	China	2014-09-27	2014-09-27	<2
View	Suanshan	China	2014-09-27	2014-09-27	<2
View	Suanshan	China	2014-09-23	2014-09-23	<2
View	Xiangshan Harbour	China	2014-09-21	2014-09-23	48
View	Luneng North Anchorage	China	2014-09-21	2014-09-21	<2
View	Daxie	China	2014-09-21	2014-09-21	28
View	Suanshan	China	2014-09-03	2014-09-21	411
View	Mashi Anchorage Area No 1	China	2014-09-03	2014-09-03	8
View	Xiazhimen South Anchorage	China	2014-09-03	2014-09-03	<2
View	Xiazhimen South Anchorage	China	2014-08-15	2014-08-15	2
View	Suanshan	China	2014-08-15	2014-08-15	<2
View	Suanshan	China	2014-08-05	2014-08-15	248
View	Daxie	China	2014-08-03	2014-08-05	28
View	Suanshan	China	2014-08-03	2014-08-03	<2
View	Mashi Anchorage Area No 1	China	2014-08-03	2014-08-03	13
View	Luneng North Anchorage	China	2014-08-03	2014-08-03	<2
View	Xiangshan Harbour Anchorage	China	2014-07-25	2014-07-25	<2
View	Xiangshan Harbour	China	2014-07-22	2014-07-25	80
View	Xiangshan Harbour Anchorage	China	2014-07-22	2014-07-22	<2
View	Luneng North Anchorage	China	2014-07-14	2014-07-14	2
View	Daxie	China	2014-07-14	2014-07-14	<2
View	Suanshan	China	2014-07-14	2014-07-14	<2
View	Daxie	China	2014-07-11	2014-07-14	78
View	Zhoushan	China	2014-07-10	2014-07-11	21

## 過去寄港データ履歴



## 北極海航路に於けるAISデータ



## AISデータを活用した運航に於ける分析

### Vessel operation analysis

Data Updated: 18 February, 2015

稼働割合

移動距離

平均船速

停止割合

Sulphur Emission Control Area内

Aggregation	Unit	Aug	Sep	Oct	Nov	Dec	Jan
Time moving of total, vessel (Segment)	%	26.2 (56.1)	8.6 (57.5)	67.4 (55.5)	81.7 (67.3)	41.1 (56.0)	52.2 (54.9)
Distance made, vessel (Segment)	nm	168.7 (4,531.2)	691.8 (4,513.9)	5,789.2 (4,645.7)	5,880.1 (4,512.5)	3,532.4 (4,488.6)	4,397.0 (4,387.7)
Avg speed steaming, vessel (Segment)	kn	11.4 (11.6)	11.5 (11.5)	11.6 (11.5)	10.8 (11.5)	12.3 (11.5)	12.0 (11.5)
Time still of total, vessel (Segment)	%	73.8 (43.9)	91.4 (42.5)	32.6 (44.5)	18.4 (42.7)	58.9 (43.4)	47.8 (45.1)
Time in SECA of total	%	0.0	0.0	44.5	29.8	100.0	99.9
Time moving in SECA of total	%	0.0	0.0	13.9	15.3	41.1	52.2
Distance made in SECA	nm	0.0	0.0	1,174.2	1,206.1	3,532.4	4,397.0
Average speed steaming in SECA	kn	N/A	N/A	11.7	11.8	12.3	12.0

① Time moving/still is identified as time in speed over/under 1 kn. Average speed is calculated for time in speed over 0 kn. Time moving in SECA area is percent of total time in full month and not percent of time in SECA. For more detailed, longer analysis or SECA area analysis please contact Marine Benchmark.

### Vessel trading area analysis

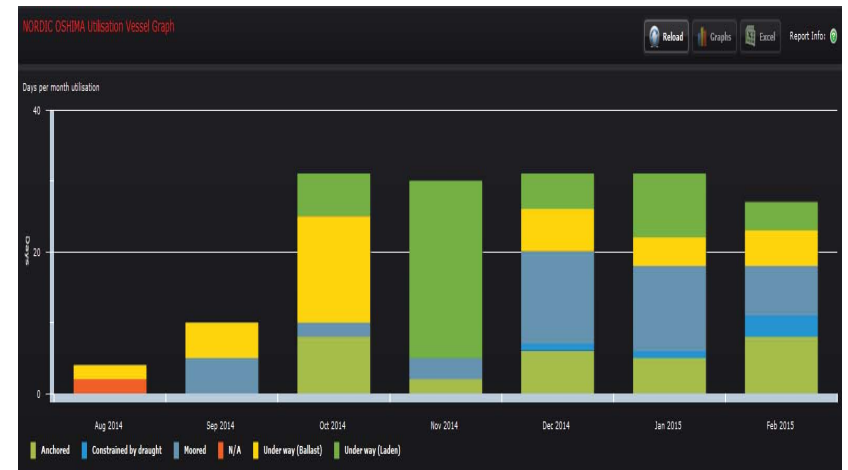
Data Updated: 18 February, 2015

活動領域の割合

Trading area	Unit	Aug	Sep	Oct	Nov	Dec	Jan
Time in area, North/West Europe (Segment)	%	0.0 (6.6)	0.0 (6.9)	0.0 (7.1)	50.7 (7.2)	100.0 (6.9)	100.0 (7.0)
Time in area, North East Asia/Russia (Segment)	%	100.0 (24.2)	100.0 (22.5)	20.6 (22.0)	38.4 (21.3)	0.0 (23.6)	0.0 (24.0)
Time in area, North America (Segment)	%	0.0 (12.4)	0.0 (15.1)	79.4 (18.4)	11.0 (18.6)	0.0 (15.9)	0.0 (15.4)

① Time in area is defined as all time still or moving. The globe is divided into 9 highly aggregated trading areas (for area definitions, please see the help file under help tab or in a link at the top of this section). For more detailed geographical analysis, first down to 18 well defined and market based trading areas, containing US Gulf, Sain Lawrence seaways etc or any custom defined area on the globe please contact Marine Benchmark.

## 貨物積載状況をAISの数値から推測



\*船舶データからの最大喫水の数値に対して、AIS上の喫水の数値の割合でLadenかBallastを推測

## Integrated Dataの活用

センサー情報：衛星写真、SAR、レーダー、LRIT等

