
Current information service by JHOD

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JAPAN COAST GUARD



- Quick Bulletin of Ocean Conditions
- Tidal information at Kurushima Straits

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- Tidal information at Kurushima Straits

The image displays a map of the Japanese archipelago and surrounding waters, illustrating ocean currents. The map includes a legend for current types (warm and cold) and a table listing specific currents with their names, directions, and speeds. The map is titled '第1図 海流図' (Figure 1: Ocean Current Map) and is part of a report from the Japan Coast Guard (JCG).

Figure 1: Ocean Current Map

Legend:

- 0 ~ 0.2 km
- 0.2 ~ 0.9 km
- 1.0 ~ 1.9 km
- 2.0 ~ 4.9 km
- 想定流線 (Estimated stream line)
- W: 暖水流 (Warm eddy)
- C: 冷水流 (Cold eddy)

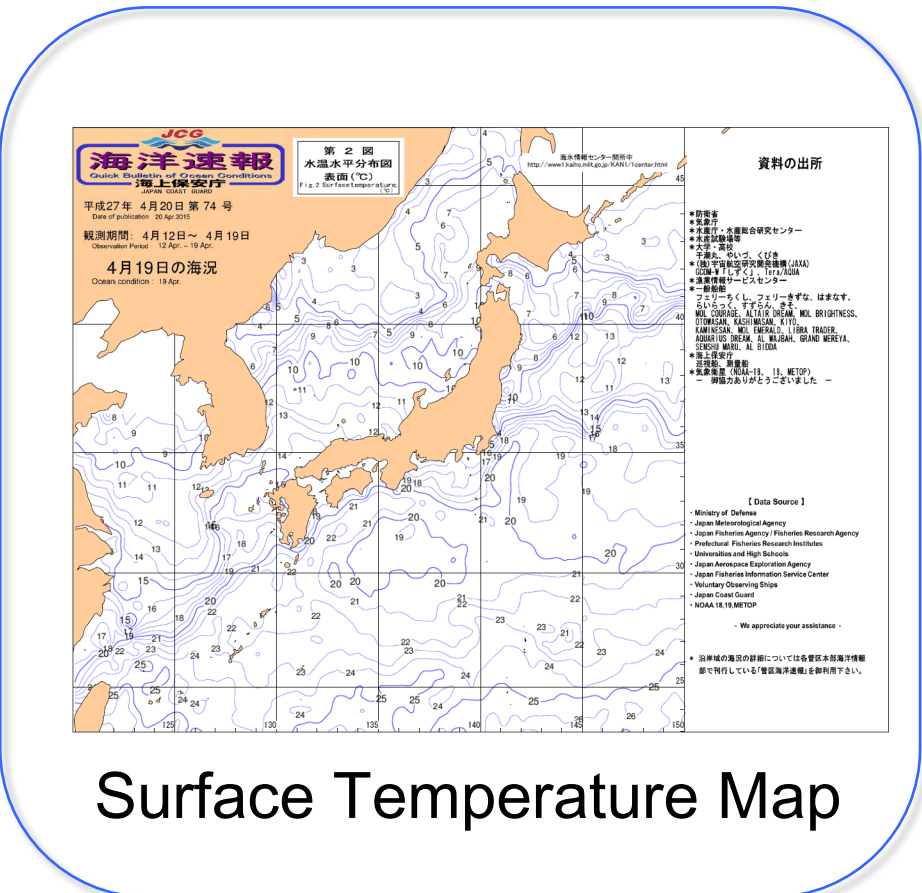
Table of Ocean Currents:

番号	地名	流況	速	深
1	石岐島 (Ishigaki Shima)	NW	80	25
2	沖縄島 (Okinawa Shima)	WNW	80	23
3	奄美大島 (Amami Oshima)	NW	80	22
4	鹿児島 (Kagoshima)	S	40	22
5	種子島 (Tanaka Shima)	ESE	30	22
6	那覇市 (Naha City)	E	40	21
7	足間島 (Ashimori Shima)	ESE	25	21
8	宮戸島 (Miyado Shima)	SSE	20	21
9	瀬田 (Seta)	SW	20	21
10	大正島 (Taisho Shima)	S	80	21
11	御前島 (Gomori Shima)	S	125	21
12	石垣島 (Ishigaki Shima)	SSE	160	21
13	八丈島 (Hachijo Shima)	ESE	60	20
14	三宅島 (Miyake Shima)	E	50	20
15	野島崎 (Nojima Shima)	ESE	55	20
16	犬伏崎 (Inubo Shima)	ESE	50	20
17	塩屋崎 (Shioya Shima)	ESE	140	18

Source: Japan Coast Guard (JCG) Marine Information Service Office, J.H.O.D. J.C.G.

Contact: Tel: 03-5556-7155, E-mail: consul@jcg.go.jp, URL: http://www1.kaiho.mlit.go.jp/

Ocean Current Map



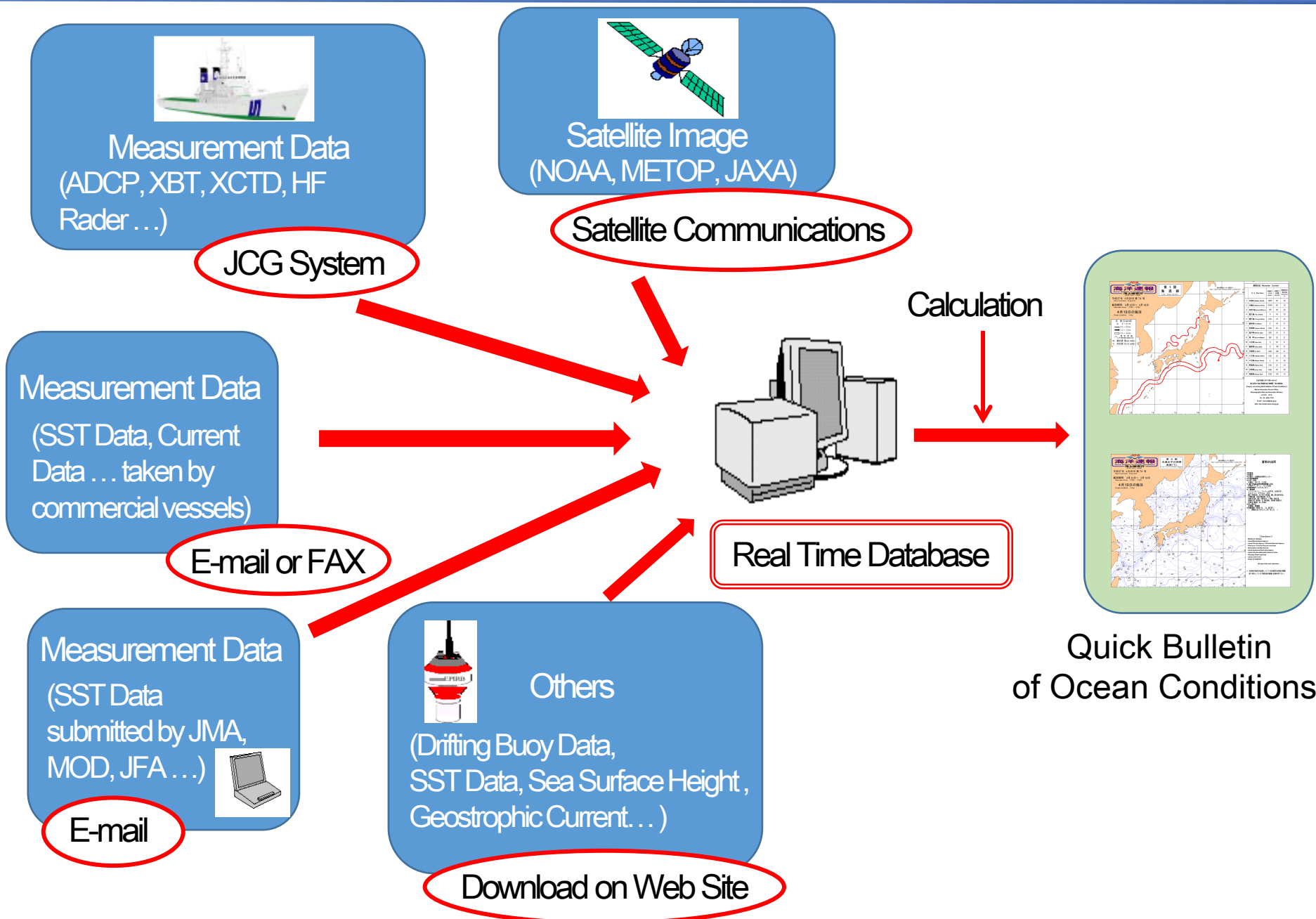
Surface Temperature Map

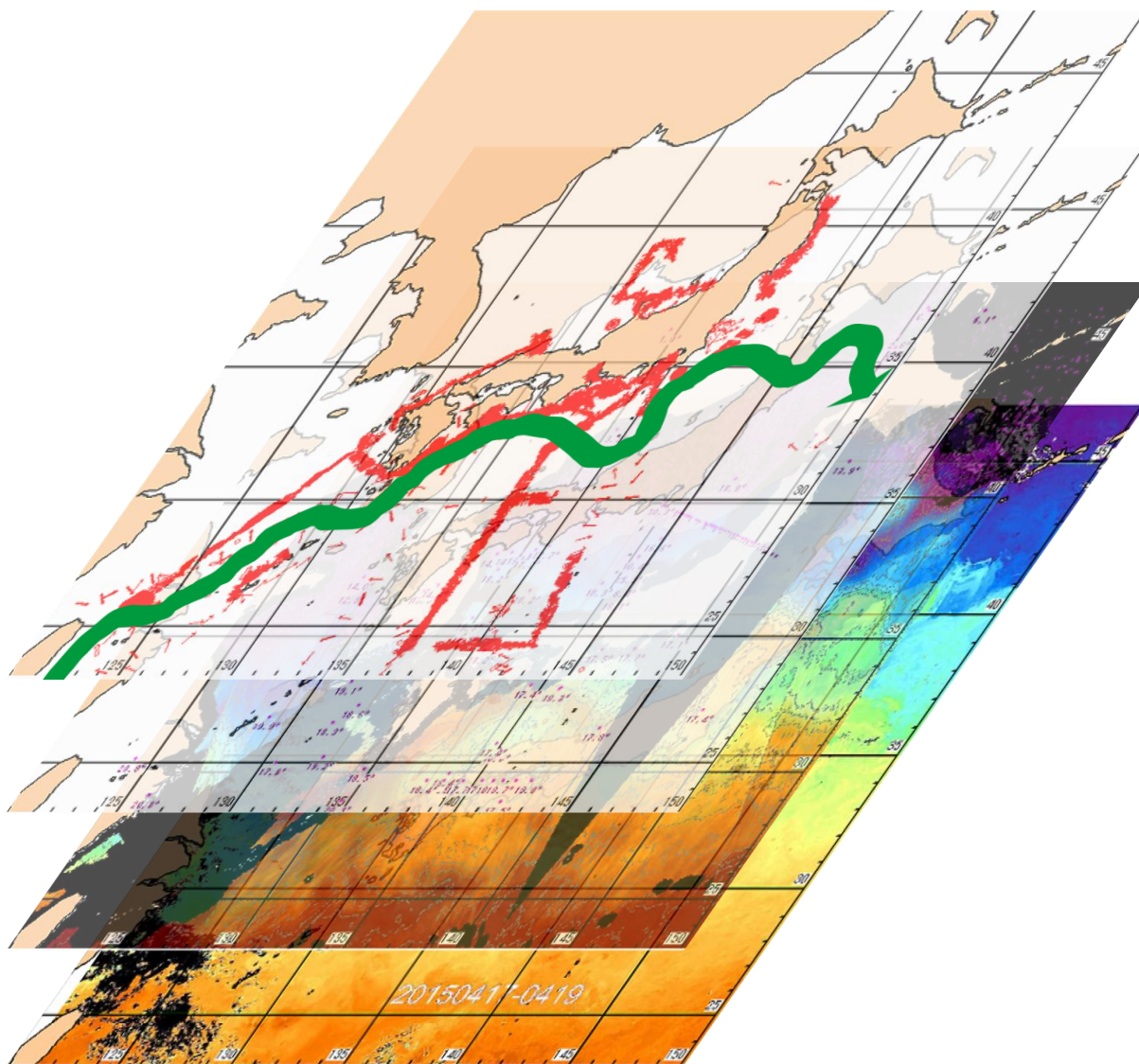
✓ Objectives

- To keep safety of navigation and prevent from marine accident
- To provide the accurate drift prediction for search and rescue

✓ Further, to utilize

- For an economical ship routing
- For fishery and marine leisure
- For fundamental geophysical data





Kuroshio Current

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ADCP Data

XBT, XCTD Data

Satellite Image

Satellite Image

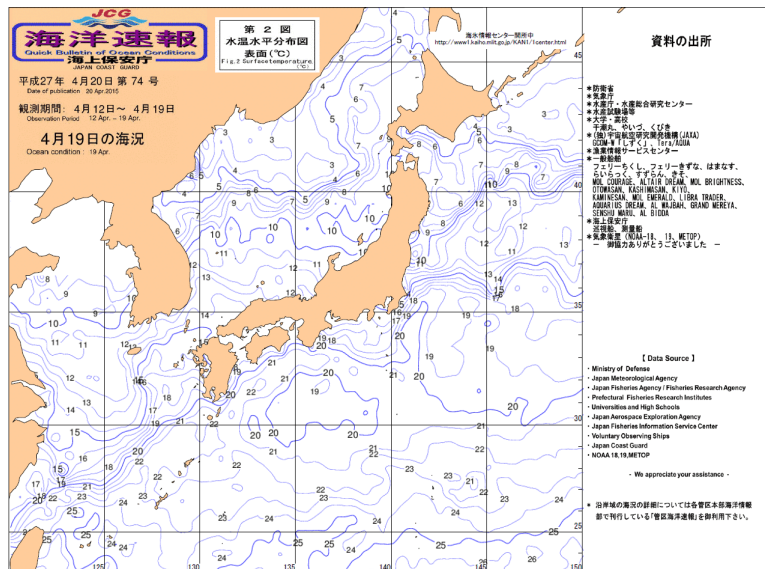
Estimate for most appropriate path of Kuroshio based on some layers



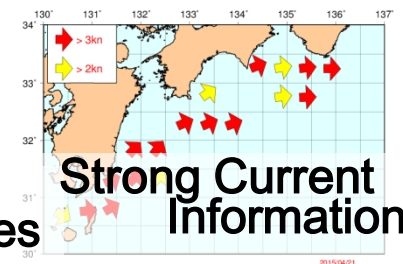
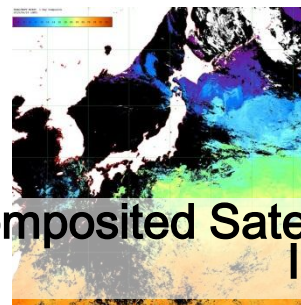
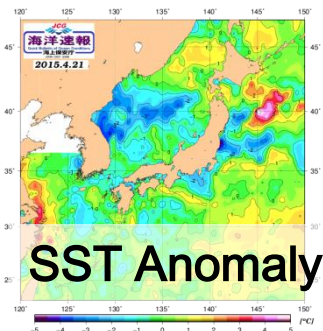
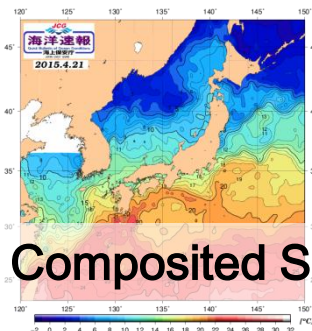
- PNG
- PDF
- SHP

✓ Surface Temperature Map

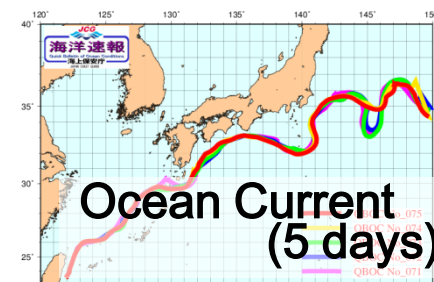
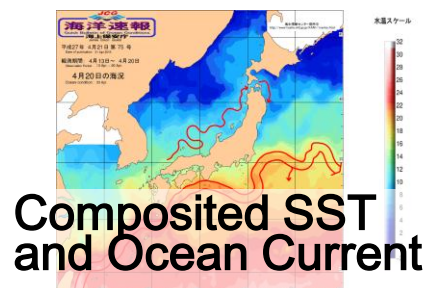
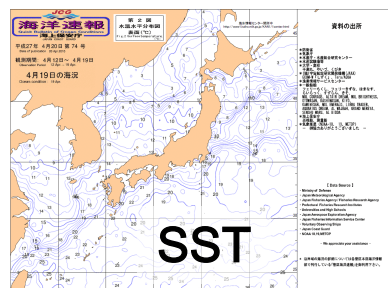
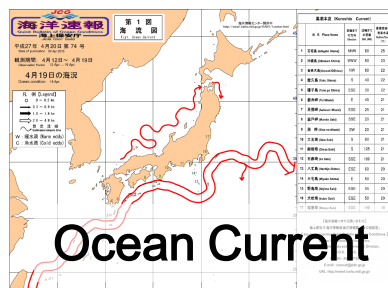
- PNG
- PDF



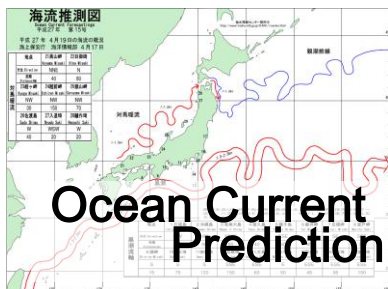
●Daily Update



●Weekday Update (Monday to Friday)



●Weekly Update (Friday)



✓ Strong Current Information (Weekday Update)

✓ Kuroshio Detail (Weekday Update)

- Kuroshio Path Information
- The Shortest Distance from the land to Kuroshio Current
- Strong Kuroshio Flow Information

✓ Sea Surface Temperature (Daily Update)

- Detailed Temperature
- Surface Temperature Anomaly

✓ Real-time Tide (Updated every 10 minutes)

海上保安庁
海況情報・急潮情報
携帯版



☆命を守る3つのポイント

○ライフジャケットを着用しましょう

○携帯電話は防水ケースに入れて携帯しましょう

○海のもしものは、118番へ

本サイトは、海況情報を提供しています。

2012年03月05日 更新(平日毎日更新)

海面水温及び潮位情報は休日も毎日更新しています。

<急潮情報>

2012年03月05日現在、黒潮が

[足摺岬、室戸岬、潮岬及び三宅島から八丈島](#)
に接近しています。

沿岸付近では強い流れが発生していると思われます
のでマリナー関係者等は注意して下さい。

<黒潮詳細情報>

[① 黒潮流路図](#)(平日夕方更新)

[② 黒潮までの最短距離](#)(平日夕方更新)

[③ 黒潮流速情報](#)(毎日13時30分頃更新)

<海面水温情報>

(毎日更新されます)

[④ 詳細水温情報](#)(毎日9時30分頃更新)

[⑤ 水温偏差図](#)(毎日9時30分頃更新)

<リアルタイム潮位情報>

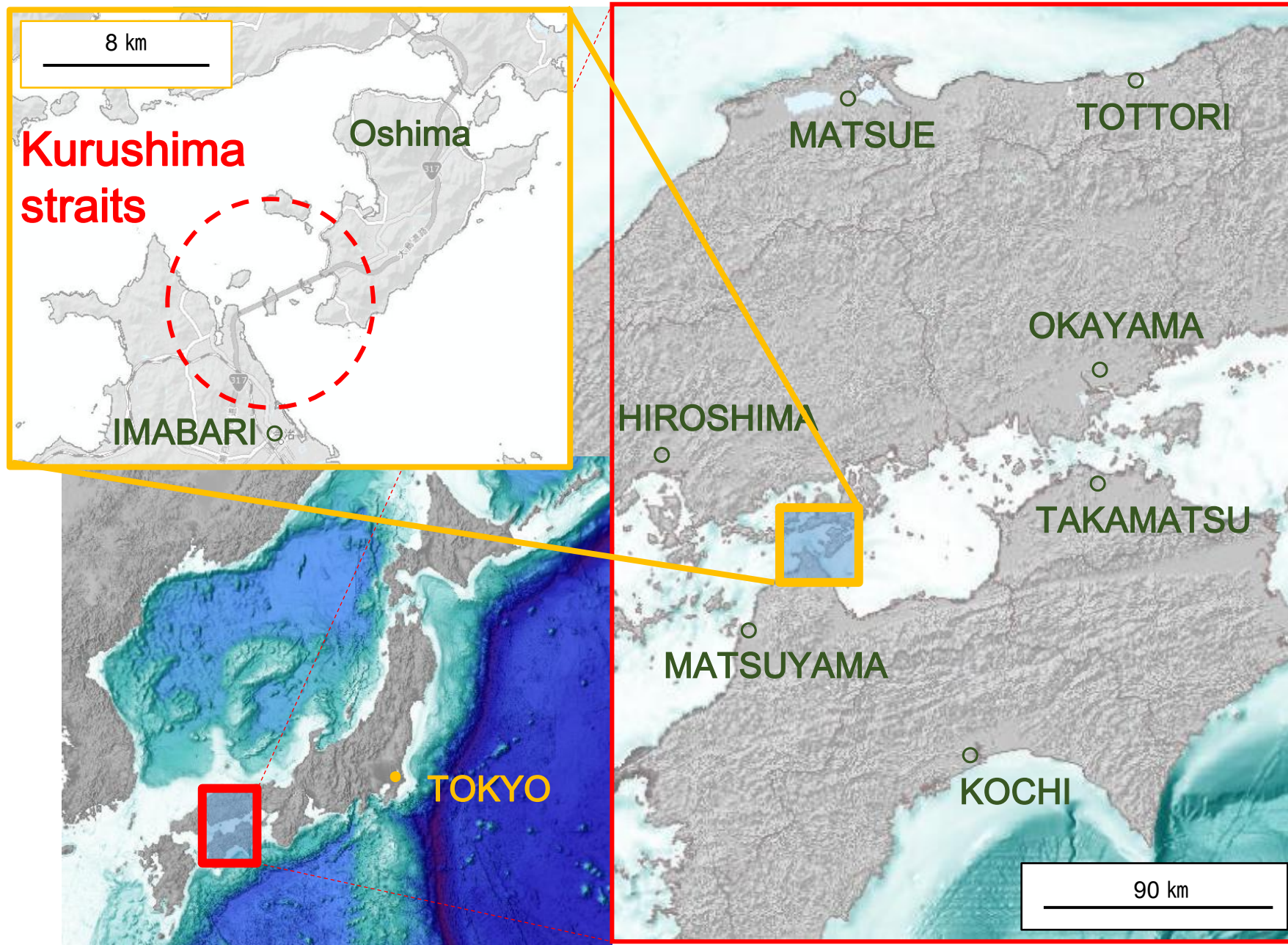
(10分毎更新されます)

[⑥ リアルタイム潮位情報](#)(10分毎更新)

[本サイトへのご意見](#)

- Quick Bulletin of Ocean Conditions
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Target area



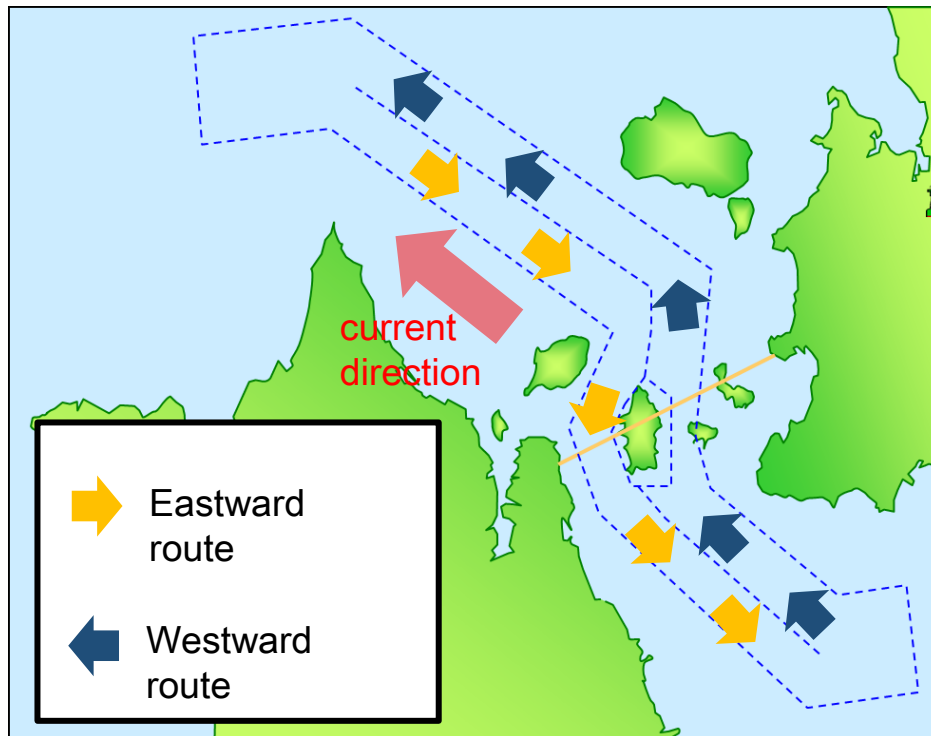
What kind of place?



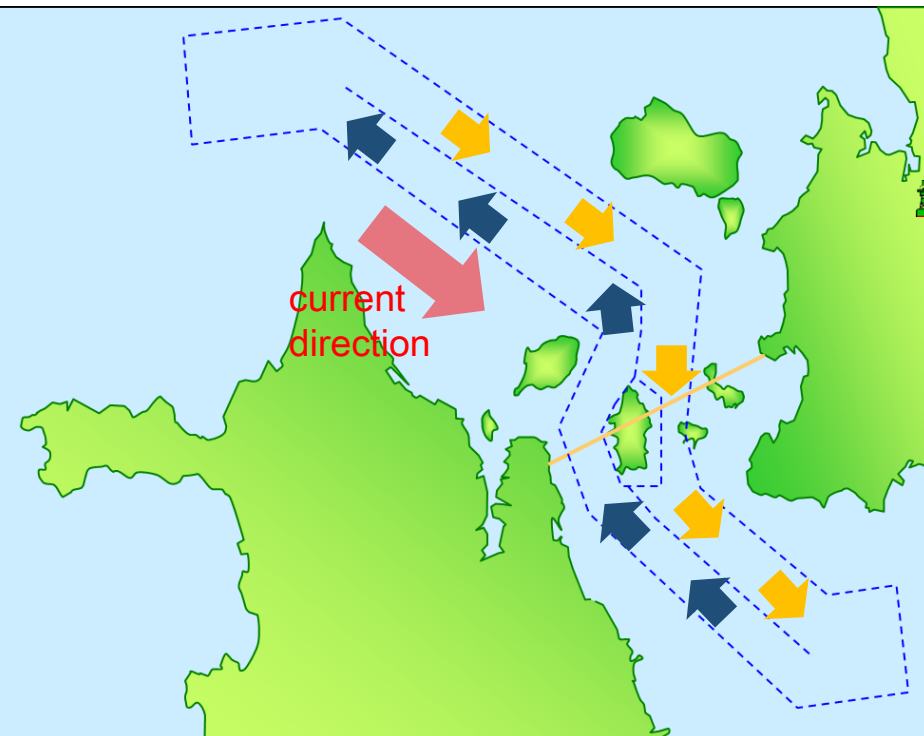
Dangerous point
for maritime traffic

- Strong tidal current (max. over 10 knot)
- Curved shipping route
- shipping route changes in accordance with the current direction.

Northward current



Southward current



Comments from Mariners

- different tidal current from the tidal current information on the chart
- dangerous situations induced by swirls from strong current.

Partly Change for The Maritime Traffic safety Lows

- ships should keep her ground velocity over 4 knot when she goes through a maritime traffic route in the strait.

In the straits...

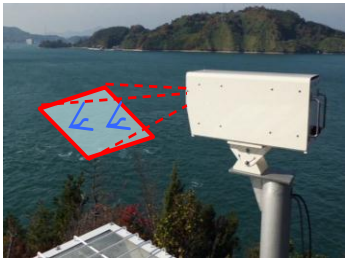
- Heavy traffic induced by narrow passage
- Requires sensitive operation
- Strong current often occurs and significantly influences to the sensitive operation

**Needs for the tidal current information
with high resolution and accuracy**

- tidal current observed in the straits
- tidal current distribution is simulated by the numerical model and calibrated by the measured current
- Uploaded to the JHOD website

Observation

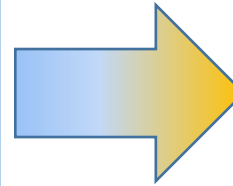
Current velocity by
video analysis
(Lighthouse)



Buoy
Mounted
ADCP
(Light Buoy)

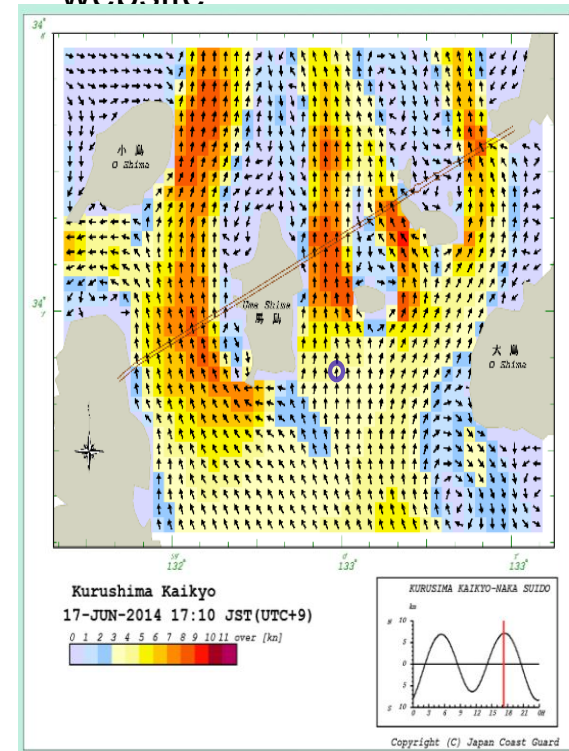


calibration

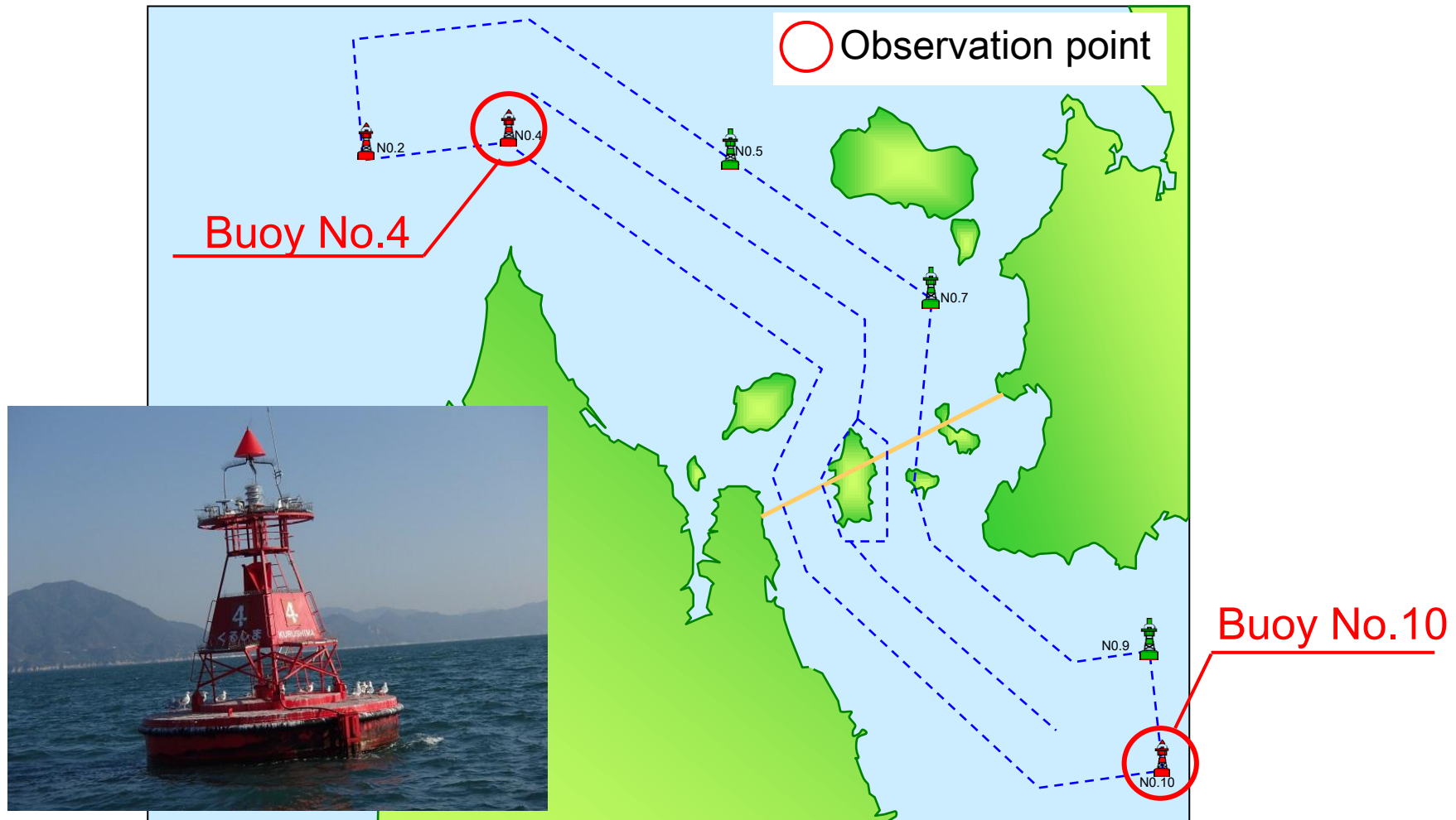


Simulation

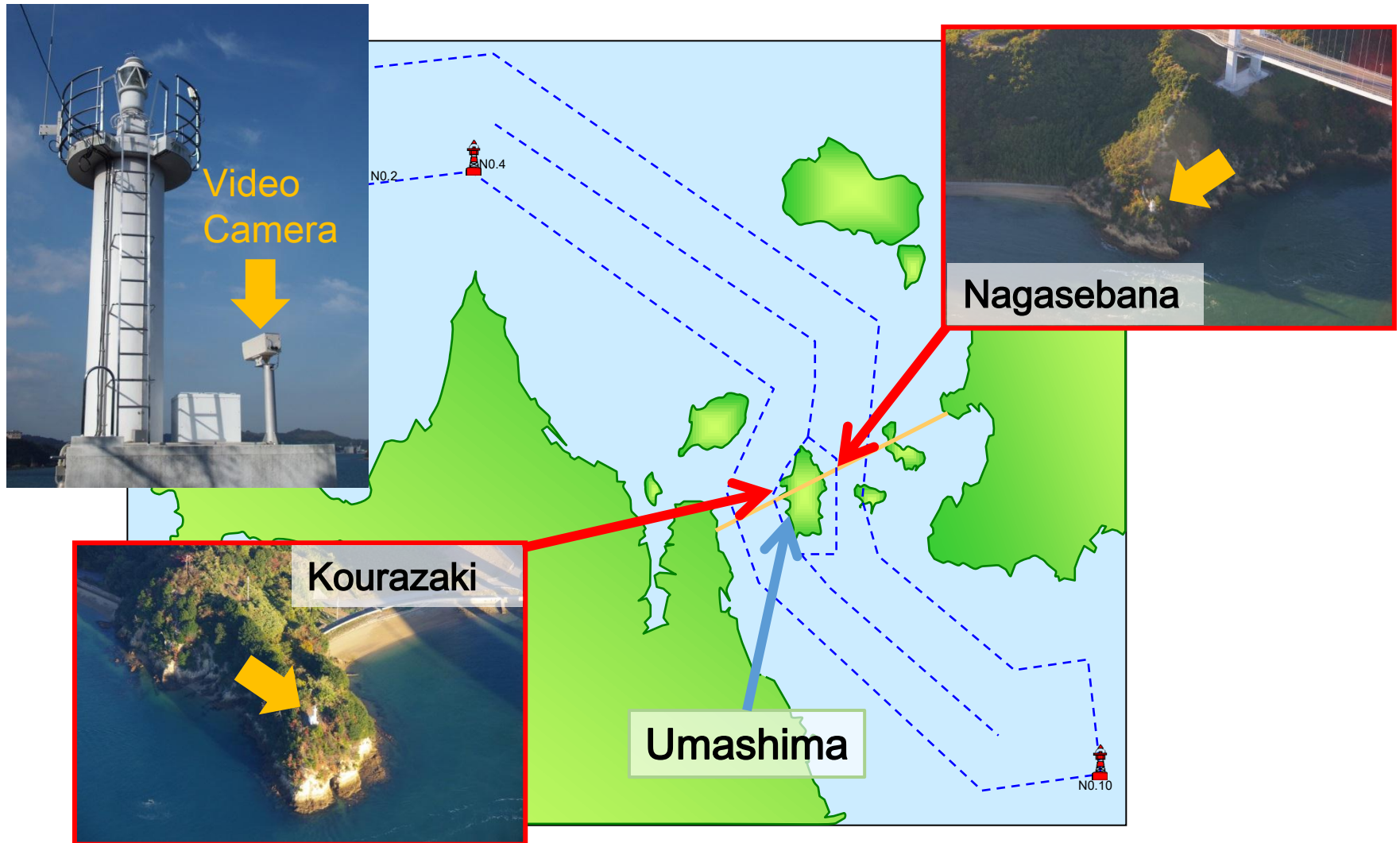
tidal current simulated
and uploaded on the
website



Two Acoustic Doppler Current Profiler (ADCP) are fixed on the light buoy at the entrance of the shipping route



Video cameras were fixed on two lighthouses at the center of the straits.

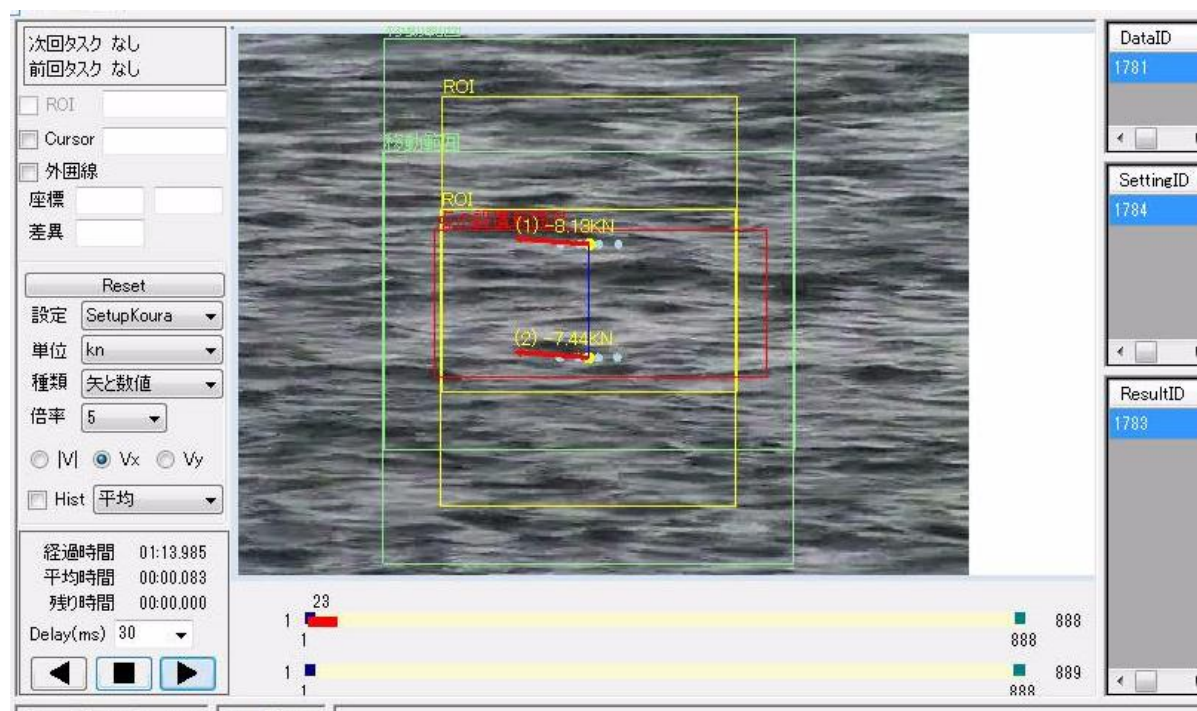


- surface current velocity is derived from the recorded movement of the sea surface
- Current data is transmitted in quasi-real time by WiMAX (delayed in few hours ~ one day) to the JHOD headquarter

【Accuracy】 ± 0.5 knot

【Maximum measureable velocity】 14 knot

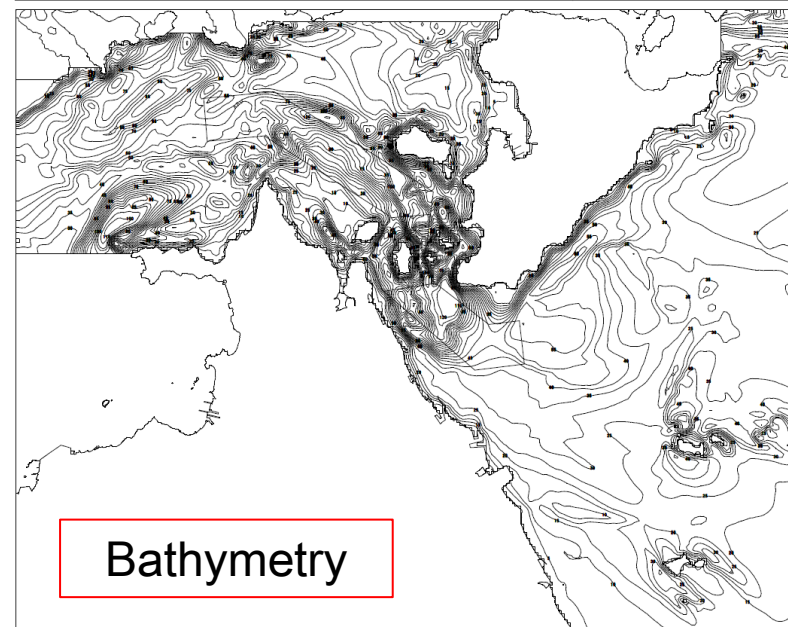
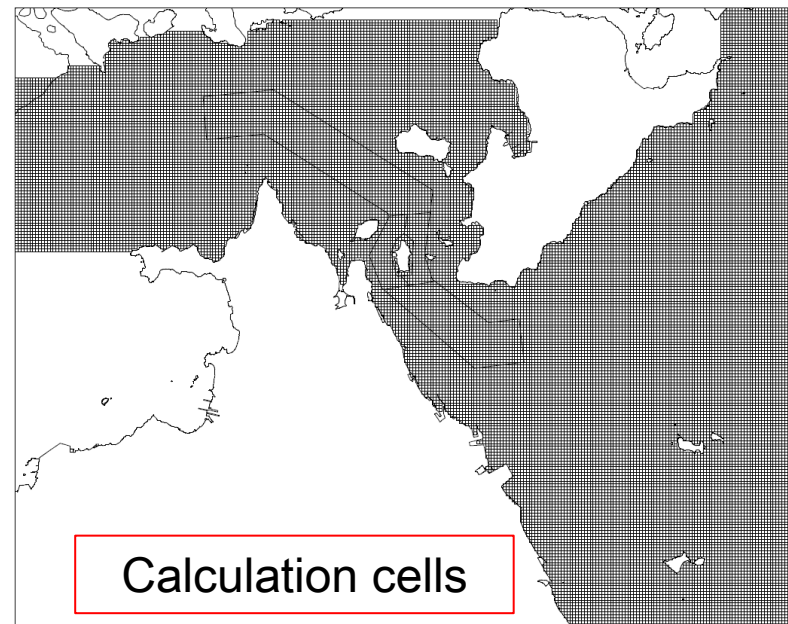
【Resolution】 0.1 knot



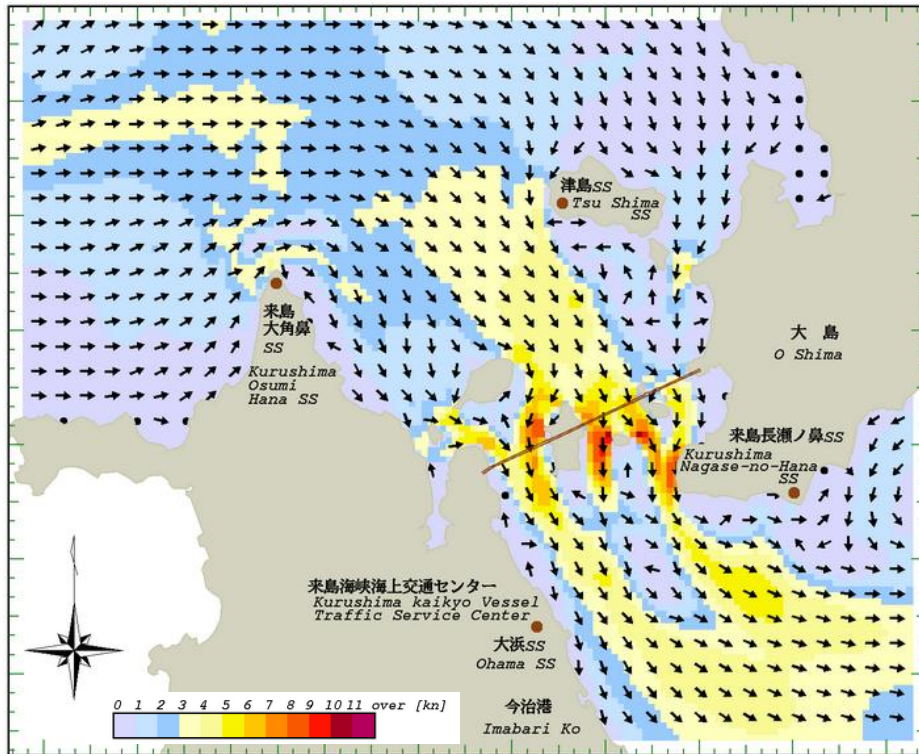
【model】 Delft3D
【mesh size】 100m
【vertical layer】 single
【boundary condition】 estimated tide level
【calculation period】 one year
【Time step】 0.2min



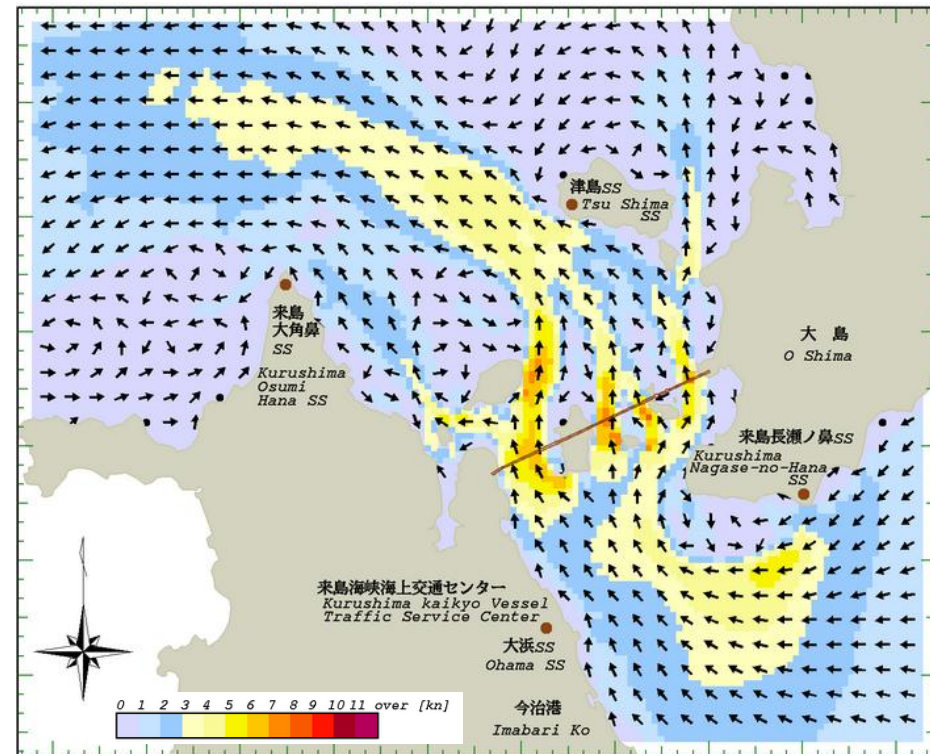
- image of the current distribution stored on the server
- images for the web site updated on request



Southward current



Northward current



- Background color shows current velocity
- Arrows only for current directions (16 directions pattern, fixed length)

- Image of the current distribution at any time from one year ago
- Temporal change of the distribution
- the position of the vessel from the GPS overlaid on the present current distribution and updated every 30 sec (on the Smartphone only)

