



IFREMER Brest  
CMA CGM

**CMA**SHIPS

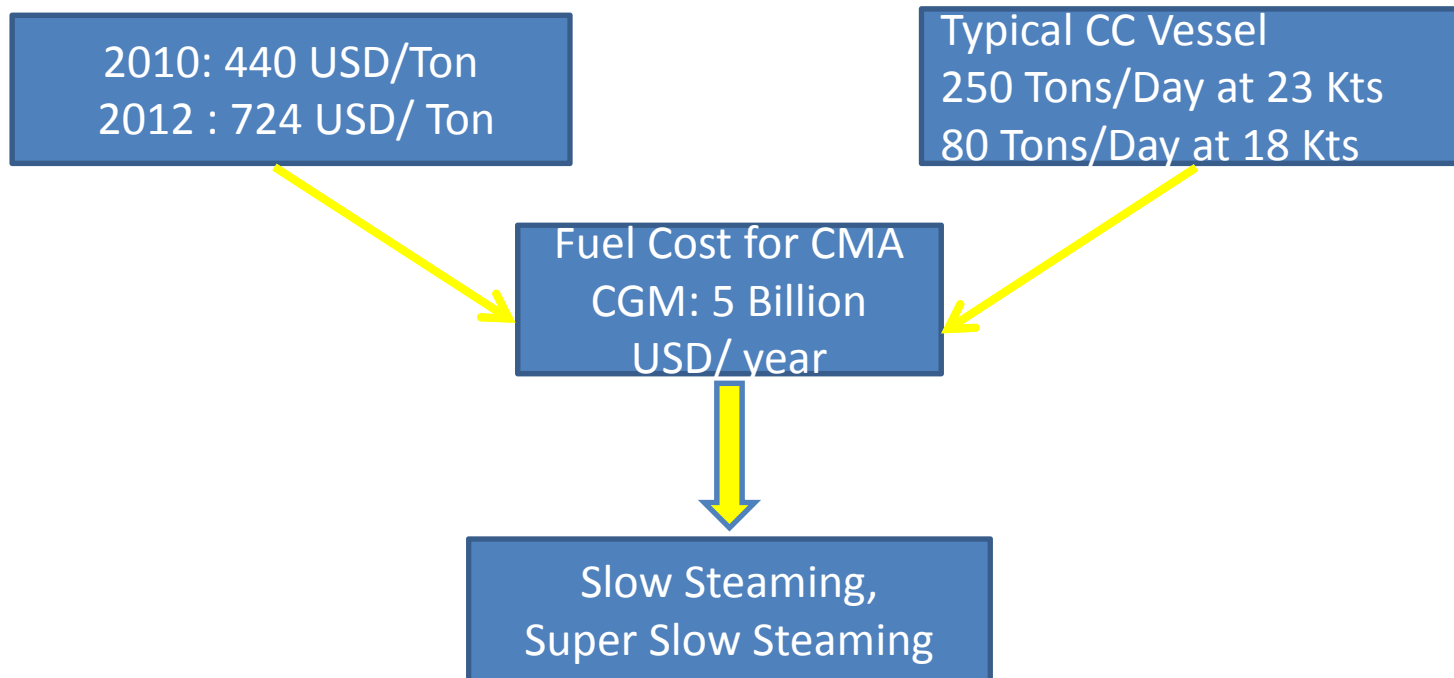
**CMA CGM**

# Shipping Context

## 1. CMA CGM Fleet

- 410 Container Carrier Vessels , Owned and Chartered, from 200 m to 400 m long,
- Vessels on Regular Lines: calling ports **each week at the same day/time**, according to Terminal bookings

## 2. An Economical and Ecological Challenge



# Fuel Routing

## 1. Slow Steaming



## 2. Constraints for scheduling

Ops Constraints  
- Terminal Windows  
- Draft, Tide, Under Keel Cl.



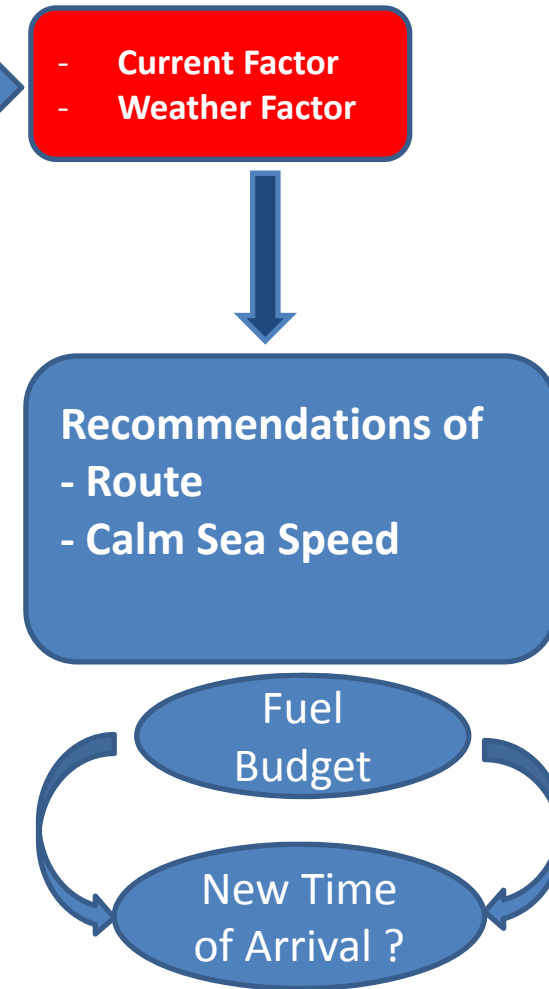
Geographical  
- Straits, Channels, Traffic System  
- Piracy, Emission Control Areas, Whales Areas



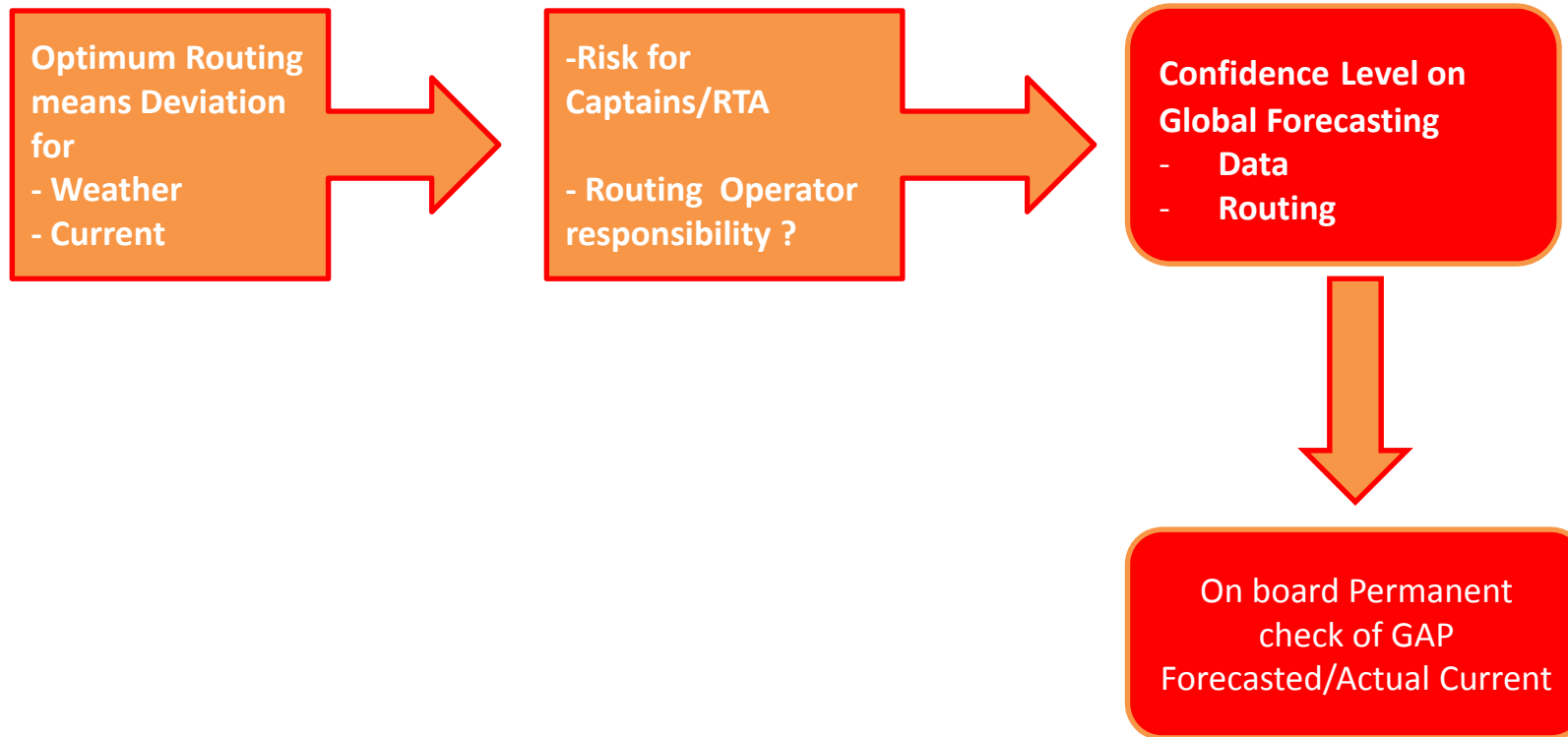
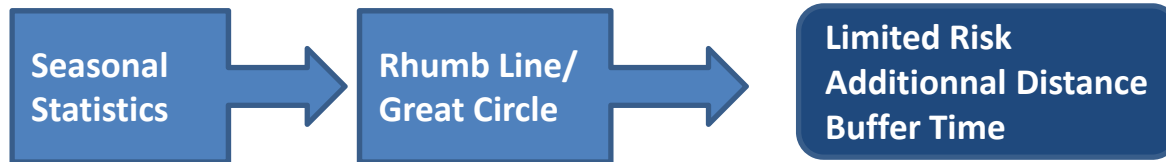
Vessel  
- Stability conditions  
- Minimum Load Engine  
- Engine Unusable range



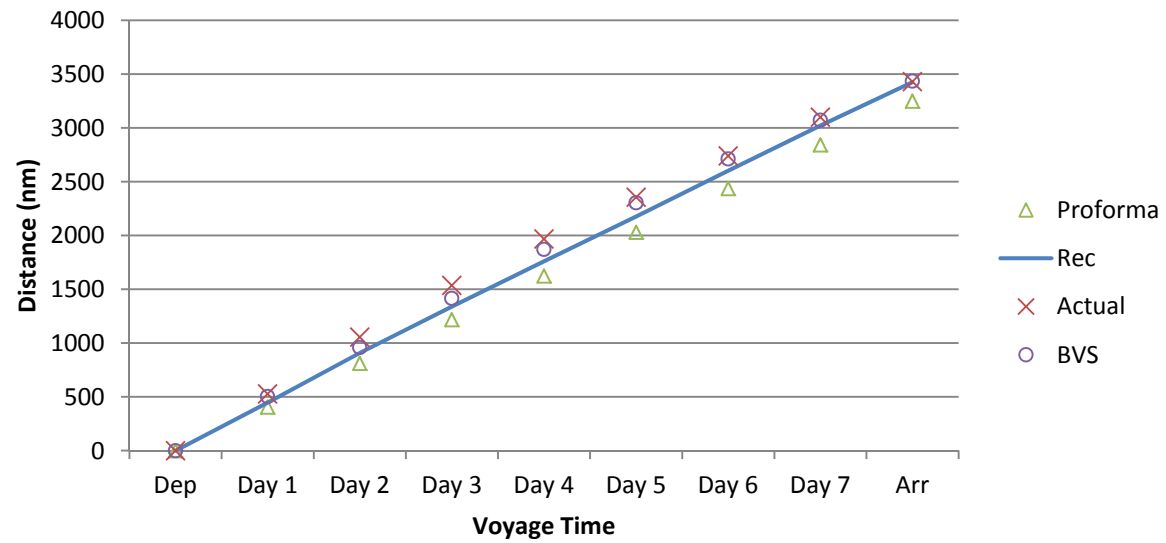
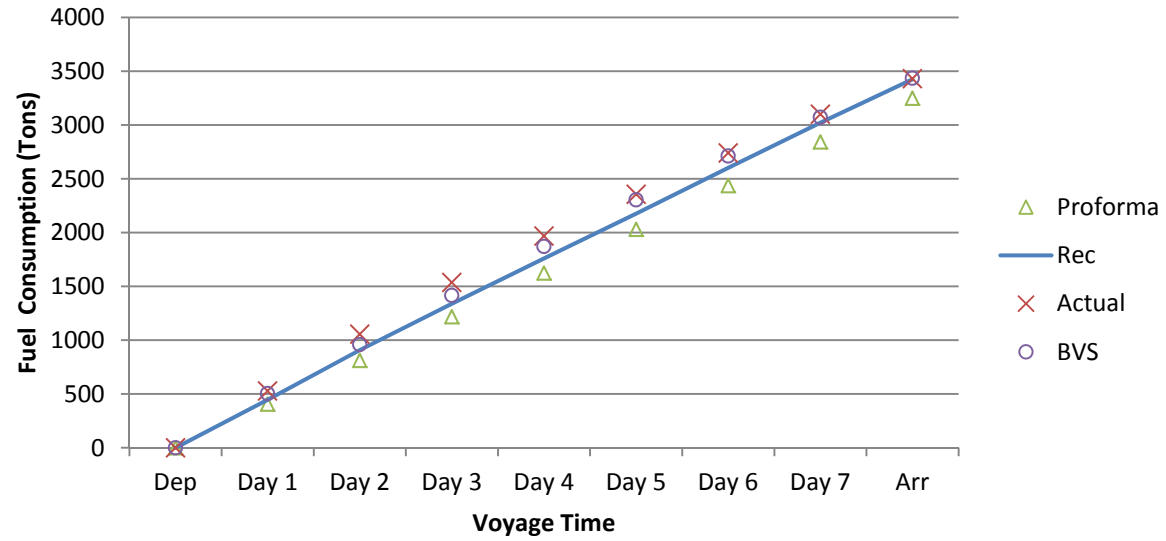
Weather  
- Waves height and direction  
- Swell period (Parametric Rolling)



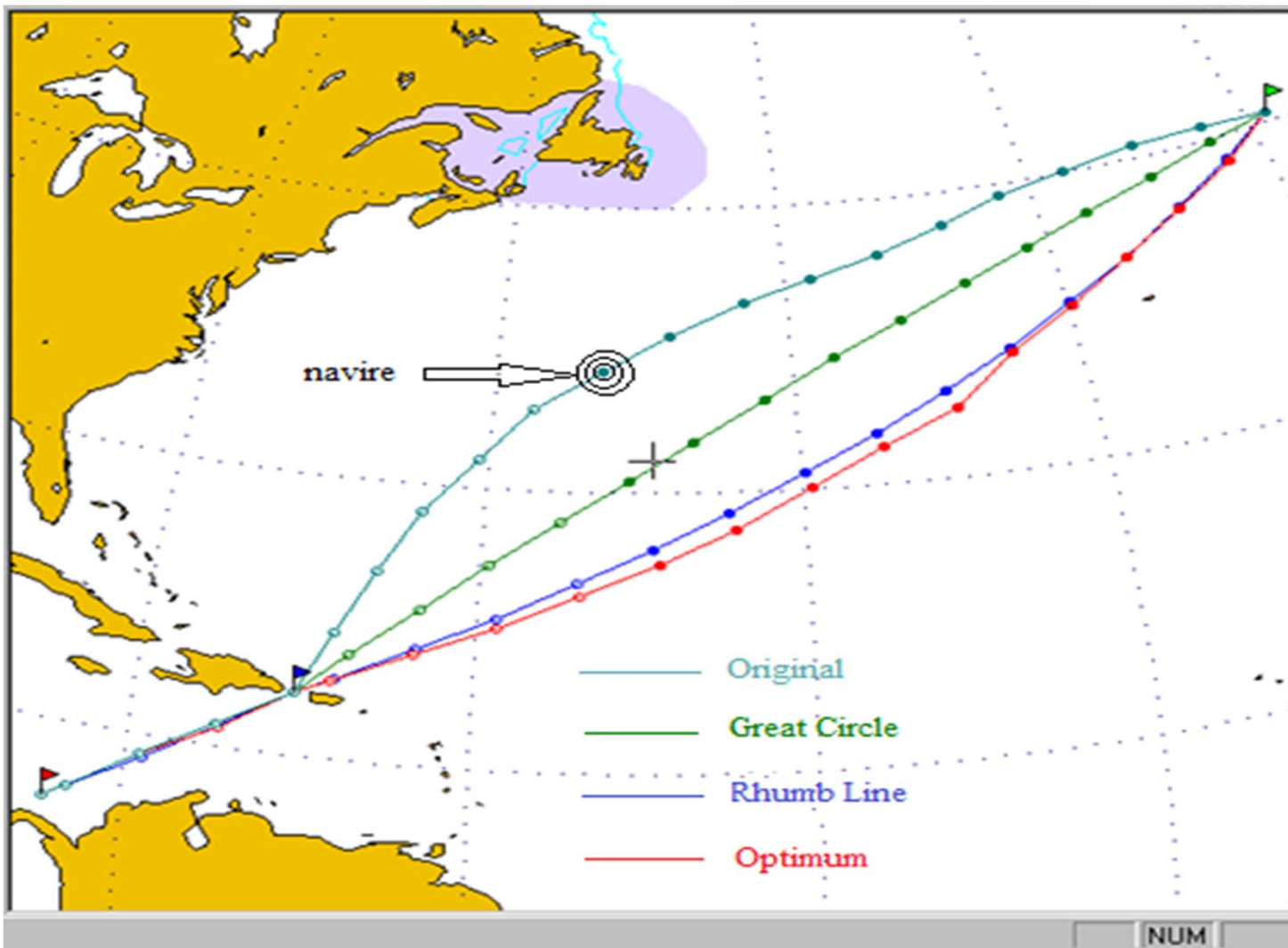
# Daily Route Monitoring



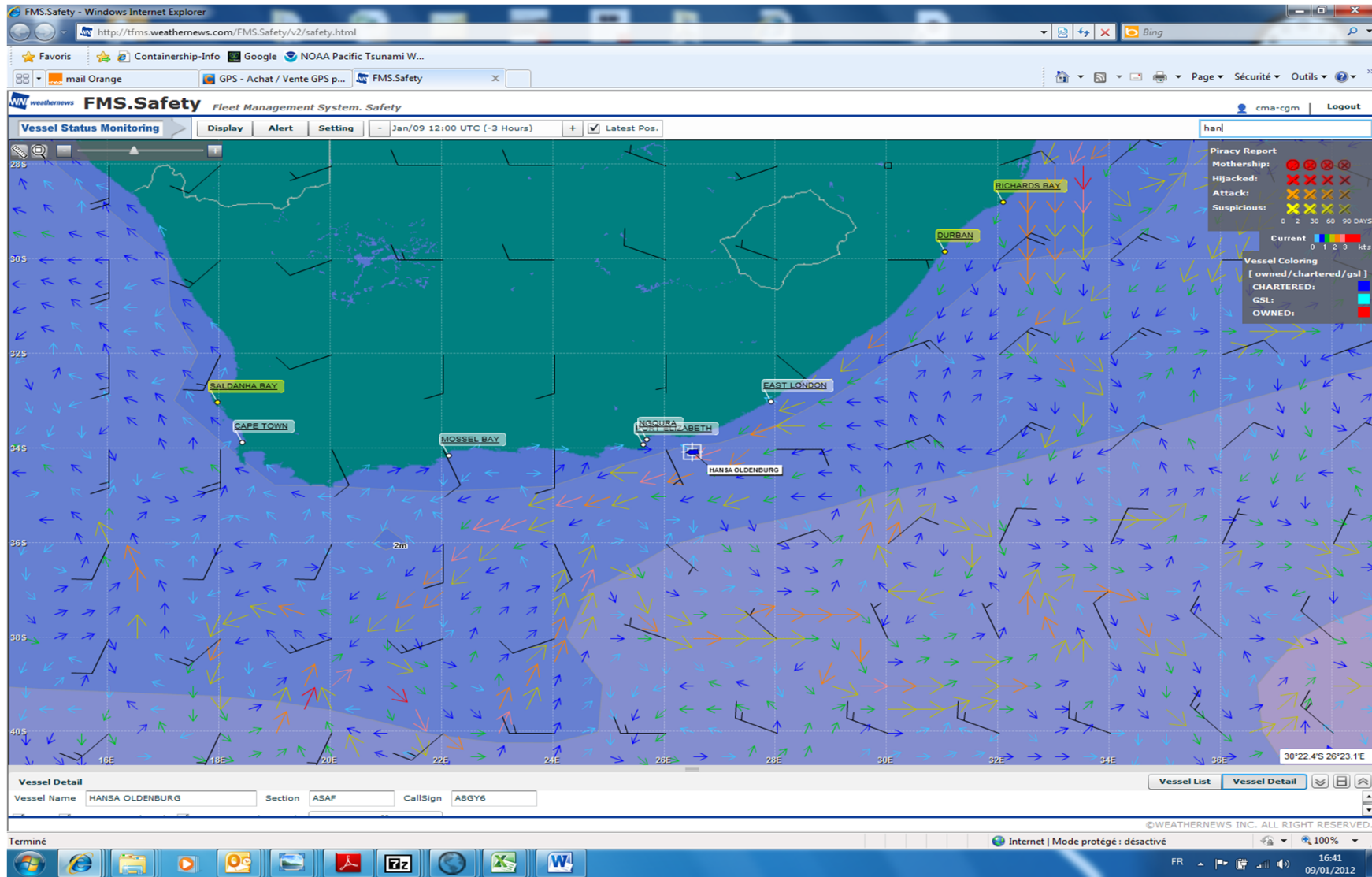
# What we Do



# What we Need



# What we receive



# Forecasting along a Track





# Daily Vessel Report

Message: Sent (It) 08/01/12 07:20 Time zone (hh:mm) +08:00 Master name CAPT. V CHARI Email "CMA CGM BIZET" <[master.A8VP5@globeemail.com](mailto:master.A8VP5@globeemail.com)>  
Vessel : 9222302 / CMA CGM BIZET call sign A8VP5 security level 1  
Line : ECSA / East Coast South America  
Route : SEAS / Asia South America East Coast  
Voyage : AA666E  
Daily time (It) : 08/01/12 12:00  
Position (lat / long) : 06 18 N / 095 19 E  
Distance done (NM) : 405  
**Average speed (Kt) : 17,84**  
Distance since SOS (NM) : 4314  
Speed since SOS (Kt) : 18,28  
RPM : 64,4  
MCR : 21,67  
**SLIP : 9,5**  
Speed instruction : ECO  
**Set RPM : 65**  
Next port : MYPKG / PORT KELANG  
TimeShift next port : +08:00  
Distance to go (NM) : 432  
ETA (It) : 09/01/12 15:00  
RTA (It) : 09/01/12 15:00  
**Course (Degree) : 107**  
**Wind (Beaufor/Dir) : 3 / NE**  
**Sea (Douglas / Dir) : 3 / NE**  
**Current (Kt / Dir) : 1 / E**  
**Swell (m / Dir) : 1 / NE**  
**Sea temperature (degree) : 29**  
ROB (ton) : HSFO 1482 DOGO 177,1  
Consumption M/E (ton) : HSFO 72,3  
Consumption AUX/E (ton) : HSFO 12,1 DOGO 0,1 Master remarks: 1.DO 0.1 MT IS USED FOR INCINERATOR. 2.PRESENT SPEED MAINTAINED AT 17.5 KTS WITH INTENTION TO REDUCE TO SAFE MANOEVRING SPEED OF 12-13 KTS UPON ENTERING MALACCA STRAITS TSS AND MAKE GOOD ETA 09TH/1500.

Capt. CAPT. V CHARI  
Master CMA CGM BIZET  
E-mail: "CMA CGM BIZET" <[master.A8VP5@globeemail.com](mailto:master.A8VP5@globeemail.com)>

- Daily SLIP  
(Theoretical distance-distance Done)

- Daily Observed Current

# Route and Speed Recommendations

TO:MASTER/CMA CGM LA SCALA  
FM:AWT

THE FOLLOWING IS BASED ON VOYAGE FROM PUSAN TO SEATTLE

TO MEET DESIRED ARRIVAL TIME SEATTLE 16 MAR, 02Z BASED ON DEPARTURE PUSAN AT 03/06 1200Z

- **SUGGEST POWER** SETTING TO PRODUCE: **20.7 KTS IN CALM SEAS**
- APPROXIMATE DISTANCE TO GO: 4625 NM
- APPROXIMATE TIME REMAINING: 230 HOURS
- AVERAGE WEATHER FACTOR: -0.5 KTS
- **AVERAGE CURRENT FACTOR: 0.2 KTS**
- AVERAGE SPEED OVER GROUND: 20.1 KTS

- BASED ON LATEST FORECAST, SUGGEST MAINTAIN THIS POWER SETTING THROUGHOUT THE VOYAGE RECOGNIZING THAT SPEED WILL DECREASE AS WEATHER INCREASES, ALL AS SAFE NAVIGATION PERMITS

1. WEATHER: SEE LATEST WEATHER DATA VIA YOUR BON VOYAGE SYSTEM:

**FORECAST** WIND(D/BF/SEA) SWELL(D/HT/PD) SIGWV(D/HT)

06/12Z	WNW/5/2.0M	WSW/1.0M/5S	WNW/2.0M
07/00Z	WNW/4/1.0M	WNW/2.0M/8S	WNW/2.0M
07/12Z	W/5/2.0M	WSW/2.5M/8S	WSW/3.0M
08/00Z	W/4/1.0M	W/1.5M/5S	W/1.5M
08/12Z	SE/4/1.0M	SSW/2.5M/9S	SSW/2.5M
09/00Z	SE/4/1.0M	N/2.5M/11S	N/2.5M
09/12Z	E/5/2.0M	NNE/2.5M/11S	NNE/3.0M

Need to check  
Daily Local GAP:

- Forecasted Current Factor
- Observed Current Factor

Iterative Recalculation of  
Average Calm Sea Speed  
to arrive in Time

2. **ROUTE RECOMMENDATION:** AS SAFE NAVIGATION PERMITS, DIRECT ABEAM ERIMO SAKI VIA TSUGARU KAIKYO THEN RL 50N 165W, GC STRAIT OF JUAN DE FUCA DIRECT SEATTLE

REASON: ROUTE IS EXPECTED TO **CLEAR WEST THEN SOUTH OF HEAVIER CONDITIONS** ASSOCIATED WITH A LOW PRESSURE SYSTEM FORECAST TO LIFT NE-WARD THROUGH THE WEST INTO THE CENTRAL PACIFIC AS YOU EXIT TSUGARU KAIKYO. LATER, ROUTE POSITIONS VESSEL NORTH OF HEAVIER CONDITIONS AND MORE FULLY DEVELOPED SWELL EXPECTED TO ACCOMPANY EAST OCEAN LOW PRESSURE SOUTH OF 50N DURING THE LONG RANGE OUTLOOK.



Thanks for your  
Attention  
- Any Question ?

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