Innovative Geospatial Solutions Towards A Sustainable Maritime Trade

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20th June 2014 – 25th FIG in Kuala Lumpur

Jeppesen by the Numbers

Global
- 40 Jeppesen locations in 20 countries
- 195 Countries/territories providing source data
- 3,300 Jeppesen employees
- 150,000 Jeppesen charts (air & sea)
- 1,400,000 NavData records in our database
- 5,000,000 Unique pages of documents
- 850,000,000 Sheets printed, annually

Aviation
- 650 Airlines served by Jeppesen
- 48,000 Pilots trained w/ Jeppesen courseware, annually
- 70,000 Jeppesen flight plans provided, daily
- 83,000 Jeppesen weather briefs provided, daily
- 250,000 Crew managed with Jeppesen tools, daily
- 1,000,000 Pilots worldwide using Jeppesen

Journey Planning
- 2,400,000 Travelers benefiting from Jeppesen real-time optimization, daily

Marine
- 7,500 Commercial vessels using Jeppesen
- 42,000 Digital navigation charts in Jeppesen library
- 1,000,000 Leisure boat customers
1. Introduction

“establishing a sustainable maritime transportation sector is essential to the development and growth of the world’s economy” (Sekimizu, 2012)

IMO
International Maritime Organization

2. Vessel and Voyage Planning Solutions

Integrate geospatial data:
- Weather prediction
- Marine cartography

Optimise ship route:
- Fuel consumption
- Expected arrival time
- Reduce GHG emissions
2. Vessel and Voyage Planning Solutions

Taking into account:
- Ship specific model
- Engine characteristics
- Current draft
- Metacentric height
- Waves
- Wind

Polar diagram shows safe speed and heading.

Histogram of fuel consumption trade-off with arrival times and corresponding optimum route
2. Vessel and Voyage Planning Solutions

- Satellite communications
- Automatic route planner

Data
- collection of facts, which may be compiled, but by themselves do not have a specific meaning or usability

Information
- integrated and processed data, which is useful and meaningful for the data user

Available to the resellers
- Data streams interoperable
- Non-cluttered visual display
3. **E-navigation**

**E-navigation** is defined as “the harmonised collection, integration, exchange, presentation and analysis of maritime information on board and ashore by electronic means to enhance berth to berth navigation and related services, for safety and security at sea and protection of the marine environment” (IMO, 2009).

**Aim:**
- Safety of navigation
- Environmental protection
- Intelligent Information Integrated solutions “I³”

**Requirements:**
- Data access
- Data fusion (including real time)
- Data rendering
- Timely delivery
3. E-navigation

S-100 supports a greater variety of data sources, products and services

E-navigation prototype developed in 2012

IHO
International Hydrographic Organisation
3. E-navigation

IMO/MEH/NCA “S100” Test bed

Vessel Traffic Service
✓ Singapore Maritime Port Authority
✓ Kongsberg NorControl

Test Vessel
✓ WiMax for Maritime Safety Information
✓ Jeppesen e-navigation prototype

If Aviation would be as Shipping:
1.5 airliner disasters every single day, or 550 per year
Loss of 82,500 human lives per year

Alaska Oil Spill Commission, Final Report "SPILL-The wreck of Exxon Valdez"
4. Private-Public Cooperation

For a successful cooperation:

- Clearly define each other’s role and responsibility
- Accept strengths and limitations of partner
- Build and maintain full trust
- Communicate without limitations
4. Private-Public Cooperation

PPC provides the mariner with best of both Private and Public worlds

- Reliable quality data
- Innovative geospatial solutions

5. Conclusion

Combining the effort of all stakeholders, we can speed up our journey towards a sustainable maritime trade and a global “blue economy”.
Thank you for your attention!

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