

Innovative Geospatial Solutions Towards A Sustainable Maritime Trade

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Jeppesen Marine – a Boeing company

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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

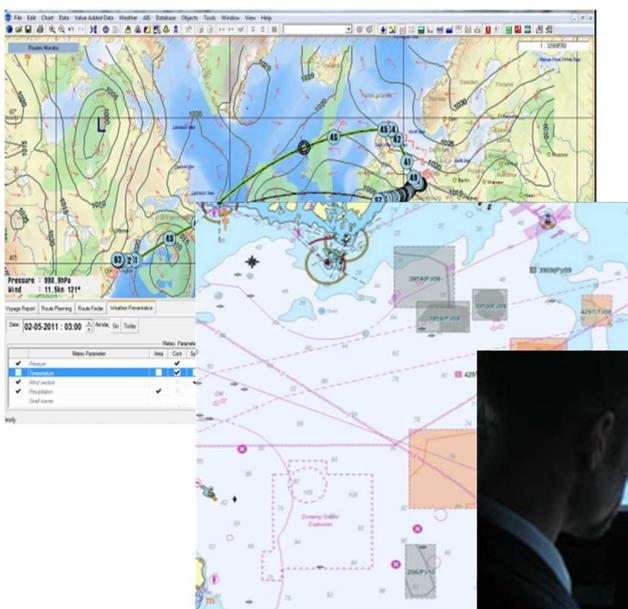


IMO
International
Maritime
Organization

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



2. Vessel and Voyage Planning Solutions

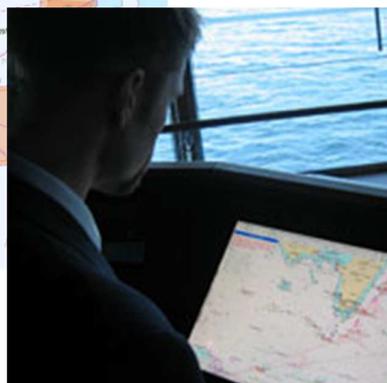


Integrate geospatial data :

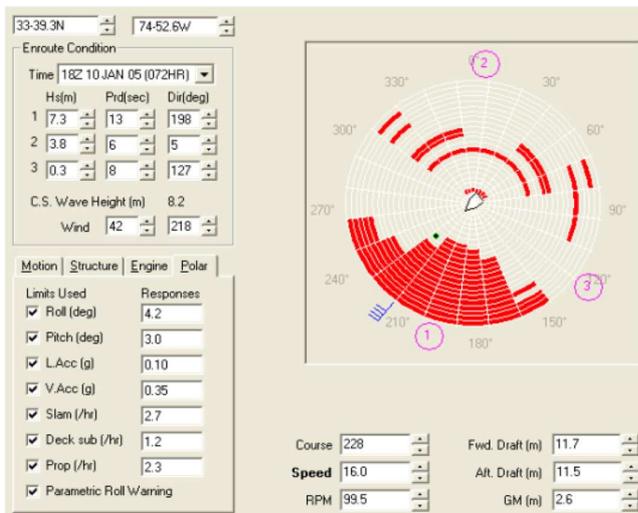
- ✓ Weather prediction
- ✓ Marine cartography

Optimise ship route :

- ✓ Fuel consumption
- ✓ Expected arrival time
- ✓ Reduce GHG emissions

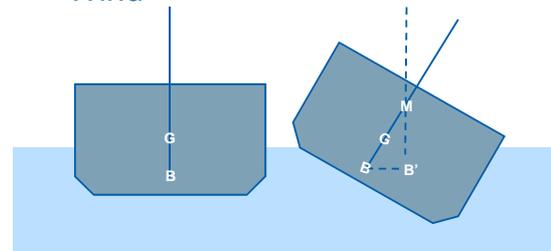


2. Vessel and Voyage Planning Solutions



Taking into account :

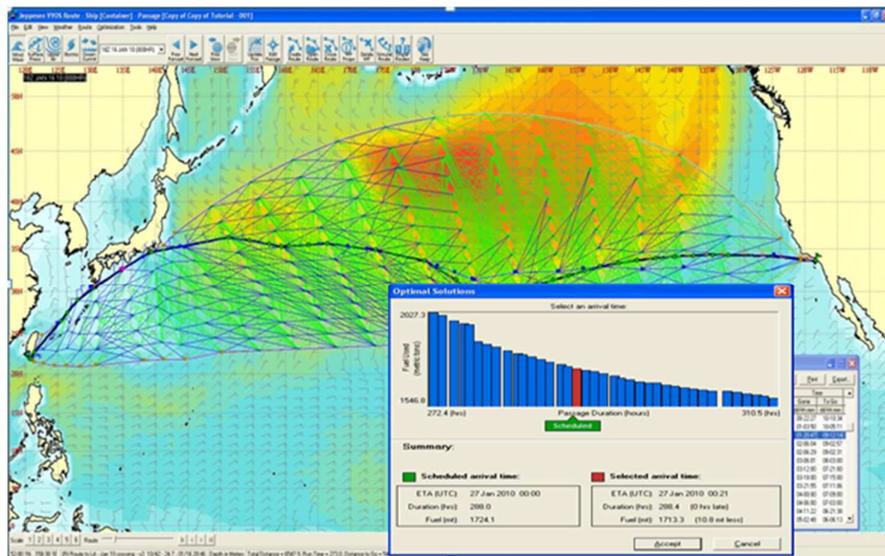
- ✓ Ship specific model
- ✓ Engine characteristics
- ✓ Current draft
- ✓ Metacentric height
- ✓ Waves
- ✓ Wind



Polar diagram shows safe speed and heading.



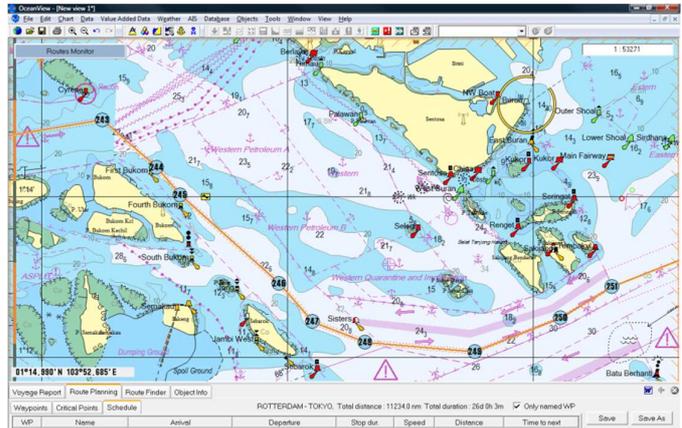
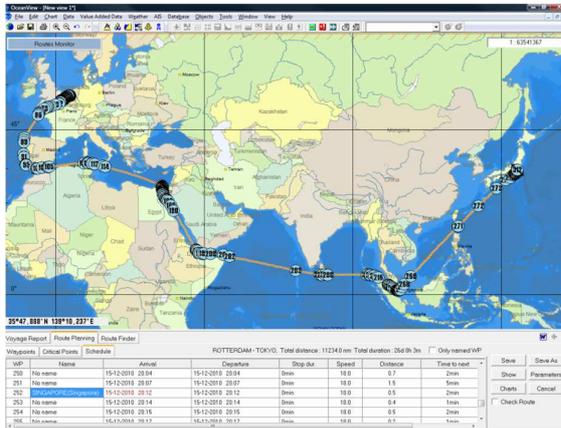
2. Vessel and Voyage Planning Solutions



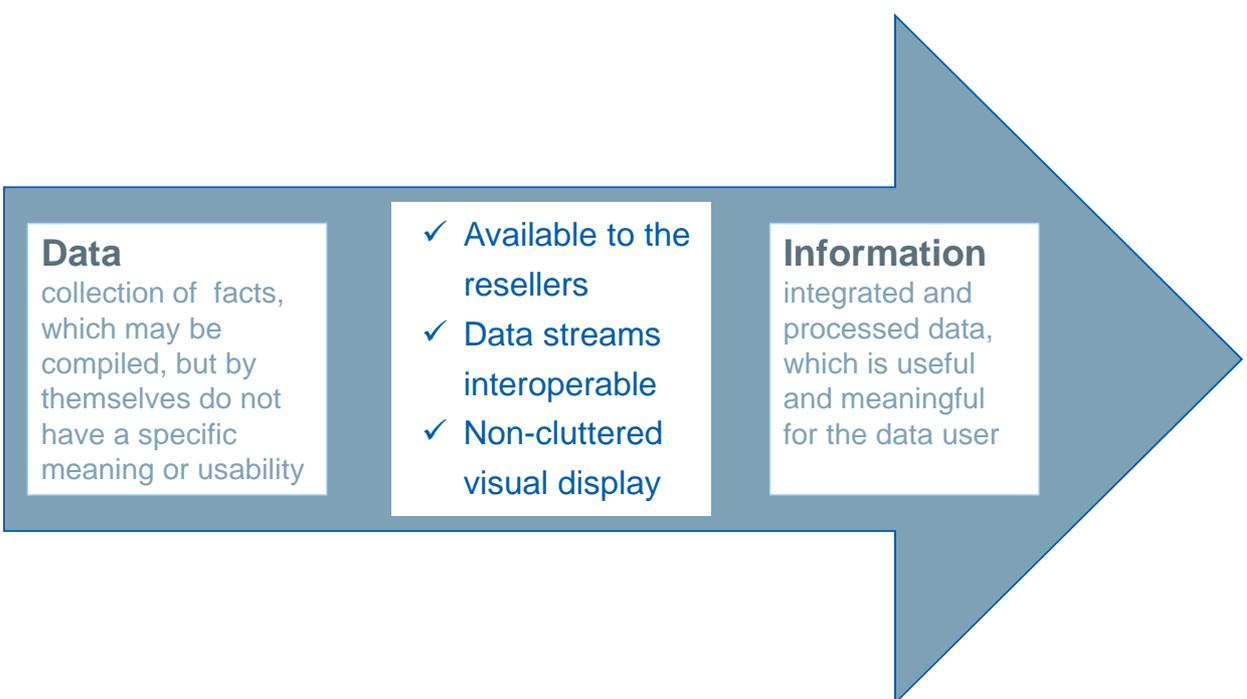
Histogram of fuel consumption trade-off with arrival times and corresponding optimum route

2. Vessel and Voyage Planning Solutions

- ✓ Satellite communications
- ✓ Automatic route planner



2. Vessel and Voyage Planning Solutions



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).

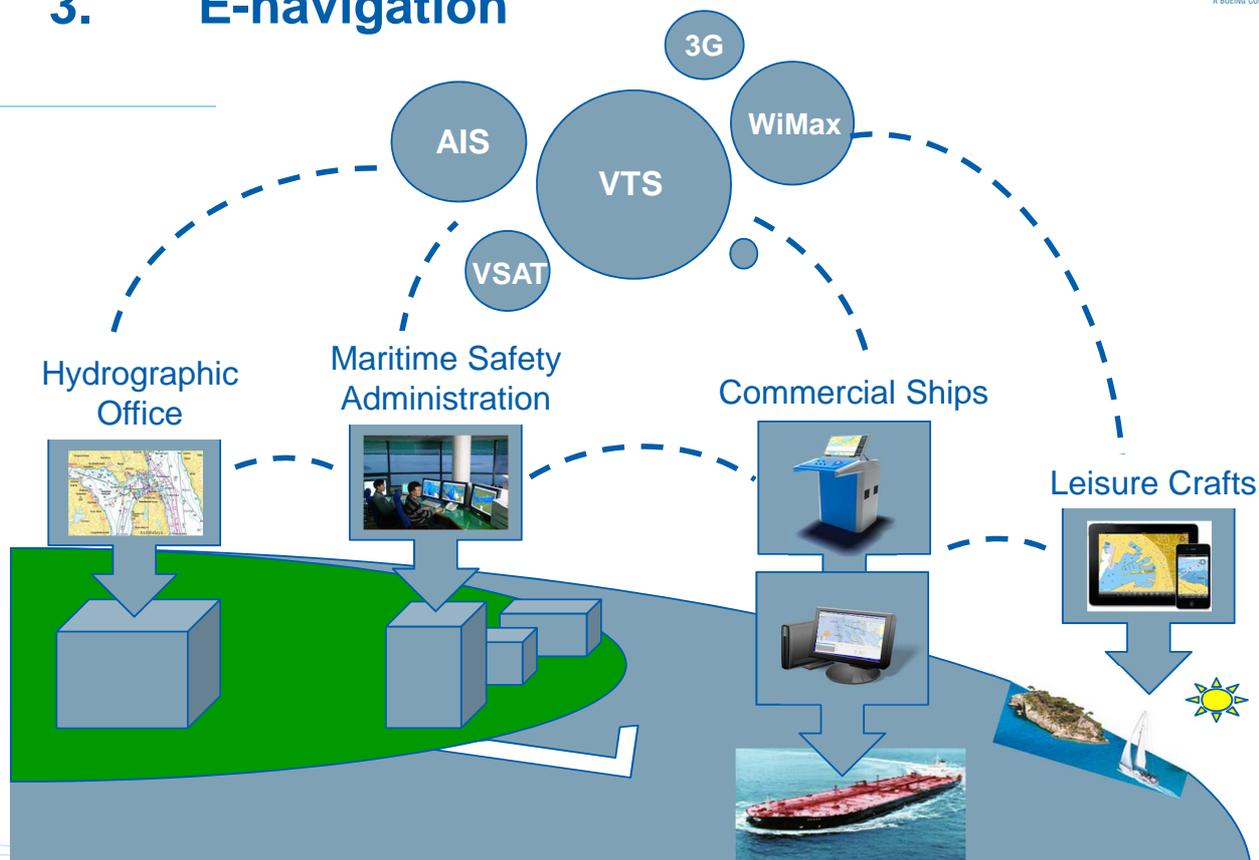
Aim:

- ✓ Safety of navigation
- ✓ Environmental protection
- ✓ Intelligent Information Integrated solutions “I³”

Requirements:

- ✓ Data access
- ✓ Data fusion (including real time)
- ✓ Data rendering
- ✓ Timely delivery

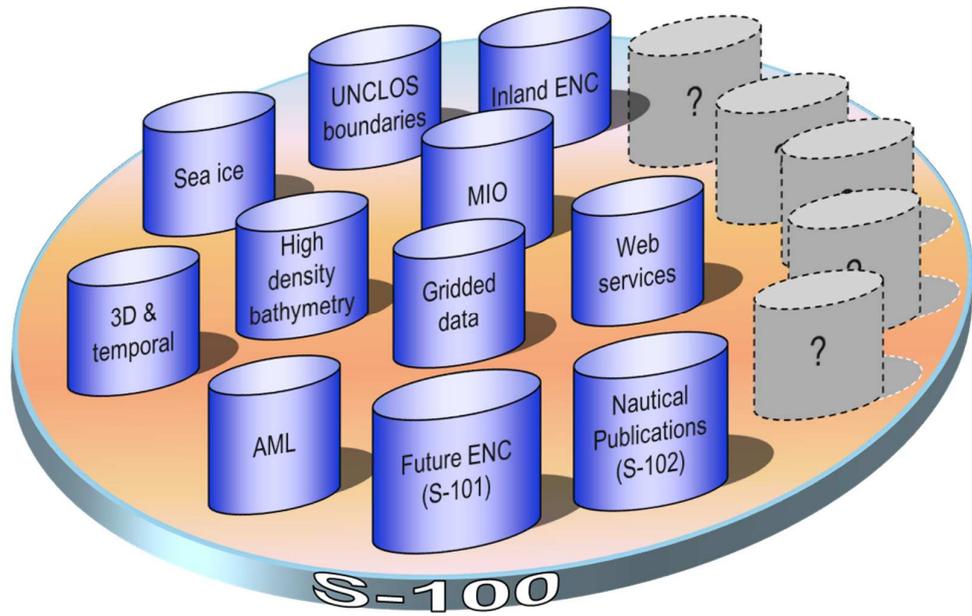
3. E-navigation



3. E-navigation



IHO
International
Hydrographic
Organisation



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

3. E-navigation

E-navigation prototype developed in 2012

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

3. E-navigation

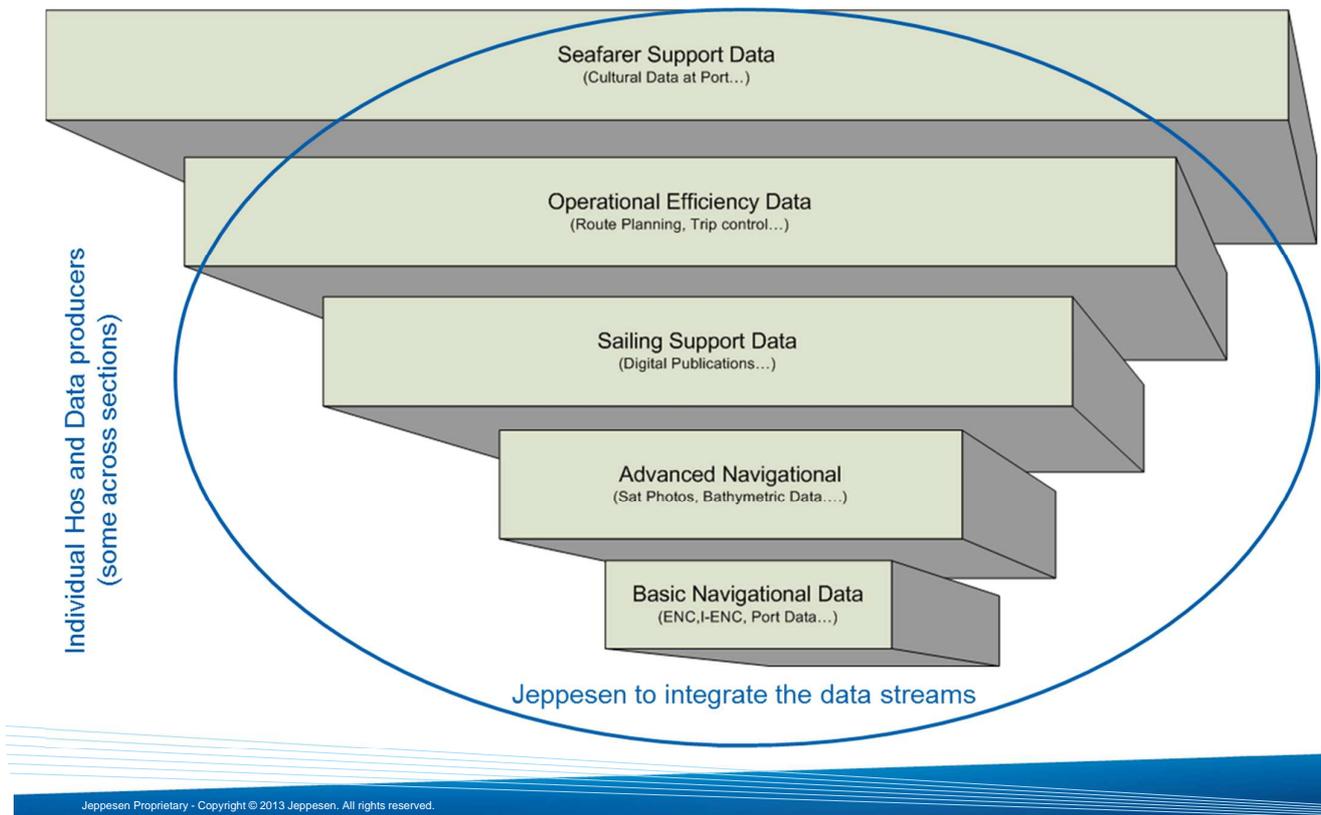


If Aviation would be as Shipping:

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



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For a successful cooperation:

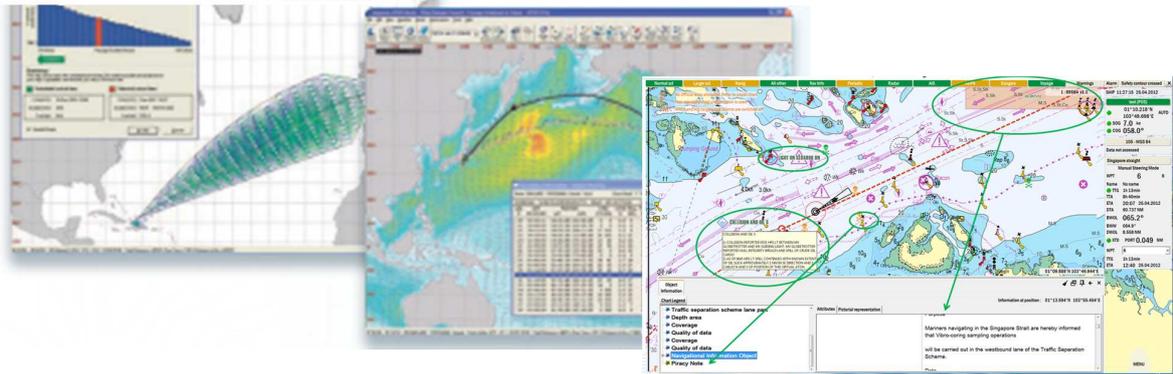
- ✓ Clearly define each other's role and responsibility
- ✓ Accept strengths and limitations of partner
- ✓ Build and maintain full trust
- ✓ Communicate without limitations

4. Private-Public Cooperation



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

- ✓ Reliable quality data
- ✓ Innovative geospatial solutions



5. Conclusion



**Transforming
the way the world moves.**

In the air, on the water or over land, Jeppesen is relentless about transforming innovative ideas into trusted information products and services that help you get where you need to go – safely and efficiently.

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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