Paper for Consideration by NIPWG

Background and Update on requirements for detailed terminal and berth information.

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Executive Summary:	An update on the development of Harbour Infrastructure Product Specification. Explaining the background and requirement for detailed information on terminal, berth and berth positioning.
Related Documents:	NIPWG letter 6/2019
Related Projects:	None

Background

There is a need to address the precise identification of:

- Terminal
- Berth
- Berth position

from the perspective of the end user for the prime purpose of navigational safety. Under IMO Resolution A.893(21) re. “Guidelines for Voyage Planning” a detailed plan should cover the entire voyage, from berth to berth. The importance of this activity is highlighted by the fact that most nautical accidents happen between pilot boarding place and berth. Vessel captains complain that complying with IMO Resolution A.893(21) is often impossible if they do not have an understanding where the location of the berth is.

Detailed description.

For example, in the wet (tanker) and dry bulk sector a ship is nominated to a terminal first. Later, when the ship is approaching port, the terminal advises the berth, and finally, even after the pilot has boarded, the berth position is known. Having a correct understanding of all three (terminal, berth and berth position) provides more comfort for safe port and safe berth assurance and planning.

Today pilots, VTS and Harbour Masters use their own local ENC datasets, with additional information regarding e.g. terminals, berths, berth positions and soundings. This results in less effective collaboration between bridge team (which has access only to the authorized ENC of the National Hydrographic Office) and all other parties.

Having the positions of terminals, berths and berth positions available to the National Hydrographic Office will bring an authorized ENC for all stakeholders a step closer, allowing the ship to have access to the same data as the Harbour Master uses for the berth and port planning.

Individual aspects and the benefits of harmonized data.

1) **Automated docking** Automated docking is already available. However, without having a correct understanding of the exact position of the ship's side and the ship's stern, automated docking cannot be used to its full potential.

2) **Mooring safety** Having a correct understanding of the berthing position will allow a proper pre-planning of the mooring arrangements, e.g. the correct position of mooring lines. Today many mooring accidents result in personal injuries. Pre-planning of these operations is key to minimize the number of accidents. This will even improve if, after identification of terminal, berth and berth positions, the next step forward can be made by identification of specifications per mooring facility (e.g. Safe Working Load, bollard or quick release hook etc.)

3) **Environment – optimization of speed** For optimization of speed it is key to understand which terminal offers which berth and berth position to allow all stakeholders to understand when a berth position will become available, allowing the incoming ship to adjust speed. Research has shown that the impact on an average size container ship, sailing with an average draught and speed is 23.1% less bunker consumption. Based on an average delay of 3 hours, on a voyage of 200 nautical Miles, and communicated 8 hours before arrival (versus communication only at first Calling In Point).

4) **Environment – optimization of draught** For optimization of draught it is key to understand what the berth position of the ship will be. E.g. a container berth may be 3000 meters long, having different berthing pockets with different depths. The same research mentioned above has revealed that th impact on an average size container ship, sailing with an average draught which has been optimized with 0,5 meter is 6,7% less bunker consumption per TEU.

5) **Commercial – optimization of speed** Even on a short voyage of 205.8 nautical Mile, with a saving of 23,1% and an average price per Ton HFO of 400 US$, the impact is 6.700 US$ per port call. These benefits may increase with the IMO 2020 regime where higher bunker fuel prices are envisioned. It is also noted that today ships sailing under voyage charter require a Just In Time clause allowing the ship to reduce speed without breaching contractual clauses.

6) **Commercial – optimization of draught** A large tanker (VLCC), bulker or container ship with 15cm more draught can carry 2,250 ton more cargo. Profit per ton oil: 22,2 US$ (price difference between buying and selling), result 49.950 US$ Profit per ton grain: 35 US$ (average price, depending on world economics),

result 78.750$ Profit per ton containers: 60 US$ (average price, depending on world economics), the overall result 135,000 US$

7) **Indirect impacts** The benefits of using standard identifiers for terminals, berths and berth positions are valid for all parties. The translation in dollars however varies per party. E.g. the impact for parties who invest a lot in collecting data to keep their port data bases up to date is significant (e.g. trading floors). The benefits of being able to connect to the industry supply chain by using same identifiers has not been assessed yet. However, it is an IMO / EU starting point to connect the maritime industry to the end to end supply chain, recognizing the port is posing to be a bottleneck.

8) **ISPS** It is important that the ship, national authorities, port authorities, the Port Facility Security Officer and service providers know exactly where the vessel is berthed in port thus facilitating better reporting and security control measures.

Conclusions.

This paper shares the experiences of the IHMA in researching more harmonized data for terminal, berth and berth positioning.

Recommendations.

NPWG is asked to note the contents of this information paper,