IMMINGHAM EASTERN RO-RO TERMINAL DCO APPLICATION

PINS REFERENCE TR030007

DFDS SUMMARY OF NAVIGATIONAL SIMUALTIONS – 7 & 8 NOVEMBER 2023

1 Action Point 17 ISH3

1.1 As noted in EV6-012, Action point 17 is directed to the Applicant and DFDS, with the assistance of CLdN and IOT Operators and states:

'*Applicant to engage with DFDS and CLdN and IOT Operators to agree parameters for the undertaking of additional simulations to address DFDS' concerns with respect to the Proposed Development's proximity to the Eastern Jetty, including the effects of current direction on the approach to the proposed berths 2 and 3.*

Applicant to submit not later than D5 a detailed brief and timetable for undertaking any additional simulations, further to discussions to be held with DFDS and CLdN and IOT Operators (see footnote).*

**Additional simulations should be based on what can reasonably be considered as normal operating conditions and vessel types for the Proposed Development and the Eastern Jetty.*'

1.2 On 20 October 2023, pursuant to ISH3 Action 17 to engage on further simulations, the Applicant initiated a chain of correspondence **(Appendix 1)**, DFDS responded on 26 October with a letter setting out its comments on the Applicant's proposal (**Appendix 2),** the Applicant responded with a letter dated 29 October (**Appendix 3**).

1.3 A virtual pre-meeting was held on 31 October.

1.4 DFDS wrote to the Applicant on 2 November 2023, to express its continued concerns following the pre-meeting (**Appendix 4**) and provided detailed requests regarding parameters to be used at the simulations.

1.5 On 2 November, the Applicant wrote to DFDS, enclosing the PowerPoint slides from the pre-meeting and draft minutes of the pre-meeting held on 31 October 2023 and requested any comments on the minutes **Appendix 5**).

1.6 On 3 November, BDB Pitmans, DFDS' legal representatives emailed the Applicant with proposed amendments to the minutes of 31.10.23 meeting (**Appendix 6**). The minutes of the meeting of 31 October as drafted by the Applicant omitted a key discussion, where the representative for the Humber Estuary Services (HES) indicated the tide data had 'recently' changed. DFDS queried this, what was considered 'recent' and sought clarity on this and the implications in terms of updating all published documents and guidance, the HES representative did not provide a response. DFDS has sought to correct the minutes. As of 13 November 2023, DFDS has not received a response to that email and its proposed

amendments on the draft minutes of 31 October 2023, a copy of DFDS' proposed amendments can be seen in **Appendix 6**.

1.7 The further navigational simulations were held at HR Wallingford's offices on 7 and 8 November, attended by those noted above.

Day 1 (7 November 2023)

Attendees:

1. [redacted] on behalf of ABP ('MP')
2. [redacted], ABP
3. [redacted], ABP
4. [redacted], ABP
5. [redacted], ABP (online)
6. [redacted], ABP (online)
7. [redacted], ABP (online)
8. [redacted] on behalf of ABP
9. [redacted], ABP ('HMH')
10. [redacted], ABP
11. [redacted], ABP (online)
12. [redacted], Stena
13. [redacted], Stena
14. [redacted], Stena
15. [redacted], Stena
16. [redacted]- SMS Towage
17. [redacted], DFDS
18. [redacted], on behalf of DFDS
19. [redacted], BDB Pitmans on behalf of DFDS
20. [redacted], APT
21. [redacted], on behalf of APT
22. [redacted], on behalf of APT (online)

2 Introduction by Mike Parr

2.1 Welcomed everyone, provided a health and safety briefing and introduced everyone, noting some attendees are online.

2.2 Noted the purposes of the simulations is to address Action Point 17 of ISH3.

2.3 Acknowledged there are existing points of disagreement between the Applicant and Interested Parties.

2.4 Noted due to time constraints, the simulations would primarily be run on berth 3, option to do some on berth 2 instead.

2.5 Noted wind gusting and wind sheltering effects could be added to some runs, as requested by APT and DFDS. There was discussion between MP and APT regarding the wind data APT collect from its meters on the IOT itself and how often that records high wind speeds which require APT to completely stop all operations per year.

2.6 Noted the simulations would run with the following in situ: a vessel on the eastern jetty, the eastern jetty tug barge, a vessel on the IOT berth 1 and a stationary Stena Transporter vessel on berth 2 or 3 (the opposite berth to that being simulated at the time), however, with the concerns over the inadequacy of using a vessel smaller than the design vessel, as raised as per paragraph 2.9 below.

2.7 Noted the simulations do not include any of the proposed impact protection measures which are currently subject to a separate consultation. APT noted if a change request is made regarding the impact protection measures, additional simulations including those measures should be run for IERRT berth 1 and IOT finder pier berths 8 and 9.

2.8 APT noted that the design shown on the screen (inbuilt to the simulator) differ from the terminal design in the engineering plans submitted as part of the Application [AS-007] and the prospective change request [AS-030] specifically in relation to the size of the pontoons at the back of the IERRT berths and orientation of the linkspan bridge. HR Wallingford noted they were unaware of the design change. There was discussion as to whether or not the difference in the design would affect the manoeuvres to and from the berths. It was unknown, the general consensus was it shouldn't make a difference but should be noted.

2.9 Noted the vessel to be simulated in the Stena Transporter. APT and DFDS both raised objection to the use of this vessel (both prior to and at the simulations) due to its smaller size shallower draught, lower displacement and easier manoeuvrability than the design specification. DFDS reiterated its suggestion that a more appropriate vessel may be the Delphine class (as noted in DFDS's letter to the Applicant dated 26 October 2023), as that vessel is closer to the design specification of the Proposed Development. MP noted that HR Wallingford has undertaken sensitivity testing using the Delphine class and suggested that it was more conservative to use the Jinling vessel than the Delphine and that no simulation report exists. The Applicant has not previously noted that such simulations had been undertaken or provided any documentation or evidence to support the assertation that a vessel larger than the Jinling has been tested and demonstrated to operate safely to/from the Proposed Development.

2.10 Noted HR Wallingford have full confidence in their flow model, but noted they would use a vector in a tidal diamond in the simulator to gradually apply 0.2 knots, to increase or reduce the tide in the area between the Proposed Development and IOT, subject to whether it was an approach or departure simulation run. Asked the interested Parties to confirm they were happy with that approach.

2.11 DFDS expressed they continue to disagree with the tidal model and data used. However, but recognised in the available time at this simulation and the constraints of the simulator, this was the most appropriate work around.

2.12 Noted HR Wallingford provide qualitative assessments, acknowledged DFDS have requested some quantitative analysis, which HR Wallingford will try to incorporate where possible.

2.13 Noted he expected they would be able to accommodate the parameters for what is considered a 'pass', 'marginal', 'fail' and 'abort' as set out in DFDS's letter to the Applicant (dated 02.11.23).

2.14 There was some debate between the Applicant and APT regarding what should or should not be considered 'marginal' for example if a piece of infrastructure was hit, such as a fender.

2.15 Noted the purposes of today is not to discuss the NRA.

2.16 Requested normal bridge etiquette was respected- only 2 people on the bridge at any one time, no changing personnel during a run, no one to interrupt the captains during a run.

2.17 Indicated the proposed format for each run would be: an initial briefing of the run, the execution of a run, followed by a debrief.

2.18 Noted those in the main room would be able to watch the run in real time on the screens at the front.

2.19 All runs on day 1 were to/from berth 3.

2.20 No wind gusting or sheltering was applied to the runs on day 1.

2.21 The tidal vector of 0.2 knots was gradually applied in the tidal diamond (area between the IOT and the Proposed Development) correctly on all runs, with the exception of run 1.

3 **Navigational Runs**

Run ID	Manoeuvre	Wind	Flow	Other details	Conclusion
1	Approach to No 3 berth in normal conditions	SW 15-20 knots	Peak ebb	Tidal vector not applied correctly for this run (Sim operator error). Missing a vessel on berth no.2 (Sim operator error). The level of power to the engines was incorrectly showing 10% higher due to a simulator error, simulator recalibrated after this run.	Success
***2.1**	Departure from No 3 berth in normal conditions	SW 15-20 knots	Peak ebb		Marginal (see below)
***2.2**	Departure from No 3 berth in normal conditions	SW 15-20 knots	Peak ebb	Run was agreed to stop once the vessel was out of the dredge pocket.	Success
3	Approach to No 3 berth in normal conditions	NE 15-20 knots	Peak ebb		Success
4	Departure from No3 berth in normal conditions	NE 15-20 knots	Peak ebb		Success
5	Approach to No 3 berth in normal conditions	NE 15-20 knots	Peak flood		Success
6	Departure form No 3 berth in normal conditions	NE 15-20 knots	Peak flood		Success
7	Approach to No 3 berth in normal conditions	SW 15-20 knots	Peak flood		Success

4 **Debrief**

4.1 **Run 1:**

4.1.1 MP debriefed and concluded it was a success.

4.1.2 HMH indicated he was happy with the run.

4.1.3 APT noted the vessel maintained the desired 150m distance from the IOT but flagged concerns that it was close to that limit and a larger vessel than a Stena T may struggle to maintain a 150m distance. Agreed it could be categorised as a success.

4.1.4 DFDS queried with HMH at what point in the IERRT vessels manoeuvre he would anticipate preventing other traffic coming out/ exiting the harbour and dock. HMH indicated that roughly once the IERRT vessel is south of the IOT, another vessel could safely pass. Agreed it could be categorised as a success.

4.2 **Run 2.1:**

4.2.1 MP debriefed and concluded it was a success.

4.2.2 APT noted that the clearance between the vessel when turning and the IOT was less than ideal, it is likely a vessel berthed an IOT 1 would be disturbed by the IERRT vessel in that position.

4.2.3 HMH concurred with APT, noting he would ideally have gone a ships length further north before beginning the turn south into the river.

4.2.4 DFDS disagreed it should be a 'success', but rather it should be classed as 'marginal'. MP initially disagreed, but then agreed to a rerun of the departure from the dredge pocket.

4.3 **Run 2.2:**

4.3.1 MP debriefed and concluded it was a success. Notes training and pilotage guidance will be needed to ensure Pilots exit safety.

4.3.2 HMH agreed.

4.3.3 APT queried the distance between the vessel and that berthed at berth 2. MP confirmed it was 40ms. Agreed it could be categorised as a success.

4.3.4 DFDS queried if the Pilots were sliding off the fenders. The Pilots indicated they were lifted from the fenders. Agreed it could be categorised as a success.

4.4 **Run 3:**

4.4.1 MP debriefed and concluded it was a success.

4.4.2 HMH agreed success.

4.4.3 APT had no specific comments and agreed it could be categorised as a success.

4.4.4 DFDS noted the bow thruster was used gently but the main engines used hard. Agreed it could be categorised as a success.

4.5 Run 4:

4.5.1 MP debriefed and concluded it was a success.

4.5.2 HMH recommended the stern of the vessel need to be up past the bell mouth for a smoother swing. Agreed success.

4.5.3 APT no specific comments, agreed it could be categorised as a success.

4.5.4 DFDS noted slightly high speed when passing the tug points (7.5water speed) and queried whether there would be any dragging for the tugs. Agreed it could be categorised as a success.

4.6 **Run 5:**

4.6.1 MP debriefed and concluded it was a success.

4.6.2 HMH noted the turn is challenging, with a SW wind will be possibly more challenging. Balance of getting the swing right.

4.6.3 APT agreed it could be categorised as a success.

4.6.4 DFDS moted some power was used, agreed it could be categorised as a success.

4.7 **Run 6:**

4.7.1 MP debriefed and concluded it was a success.

4.7.2 HMH noted the manoeuvre could be refined over time but it was safe throughout.

4.7.3 APT agreed it could be categorised as a success.

4.7.4 DFDS agreed it could be categorised as a success.

4.8 **Run 7:**

4.8.1 MP debriefed and concluded it was a success.

4.8.2 HMH agreed it could be categorised as a success.

4.8.3 APT agreed it could be categorised as a success.

4.8.4 DFDS agreed it was a good manoeuvre, noted high power on the starboard engine for a long time.

End of day 1

Day 2 of ISH3 (28 September 2023)

1. [redacted] on behalf of ABP
2. [redacted], ABP
3. [redacted], ABP
4. [redacted], ABP
5. [redacted], ABP
6. [redacted], ABP (online)
7. [redacted] on behalf of ABP
8. [redacted] Harbour Master, Humber, ABP
9. [redacted], ABP
10. [redacted], Immingham Dock Master, ABP (online)
11. [redacted], Stena
12. [redacted], Stena
13. [redacted], Stena
14. [redacted], Stena
15. [redacted]- SMS Towage
16. [redacted] [redacted] DFDS
17. [redacted], on behalf of DFDS
18. [redacted], BDB Pitmans on behalf of DFDS
19. [redacted], APT
20. [redacted], on behalf of APT

5 Notes for the day 2 simulations

5.1 The majority of runs on day 2 were to/from berth 3, with the exception of run 13 which was an approach to berth 2.

5.2 Wind gusting or sheltering was applied to some of the runs on day 2.

5.3 The tidal vector of 0.2 knots was gradually applied in the tidal diamond (area between the IOT and the Proposed Development) correctly on all runs.

5.4 Two tugs were used in the day 2 runs.

5.5 DFDS representatives had to leave at approximately 3:30pm, whilst run 15 was underway and before run 16 began and therefore cannot comment on the details or conclusions of those runs.

6 Navigational Runs

Run ID	Manoeuvre	Wind	Flow	Other details	Conclusions
8	Departure to No 3 berth in normal conditions	SW 15-20 knots	Peak flood	The level of power to the engines was incorrectly showing 10% higher due to a simulator error, simulator recalibrated after this run.	Success
9	Approach to No.3 berth in extreme conditions	NE 25-30 knots	Peak ebb		Success
10	Departure to No 3 berth in extreme conditions	NE 25-30 knots	Peak ebb	Included wind sheltering.	Success
11	Approach to No.3 berth in extreme conditions	NE 25-30 knots	Peak flood		Success
12	Departure to No 3 berth in extreme conditions	NE 15-20 knots	Peak flood		Success
13	Approach to No.2 berth in extreme conditions	SW 25-30 knots	Peak ebb	Included wind sheltering (accidentally). Stationary vessel was included on berth 3.	Success
14	Departure to No 3 berth in extreme conditions	NE 15-20 knots	Peak ebb		Success
15	DFDS not in attendance for the completion of this run, so unable to comment on the outcome.				
16	DFDS not in attendance when this run was carried out, so unable to comment.				

7 Debrief

7.1 Run 8:

7.1.1 MP debriefed and concluded it was a success.

7.1.2 HMH agreed.

7.1.3 Tug Operator happy with manoeuvre.

7.1.4 APT had no specific comments, agreed it could be categorised as a success.

7.1.5 DFDS noted the use of high power on one engine, good distance from all infrastructure. Captains noted that the lever for the main engine was off set by 10 % and they decreased power when they noticed this, after some minutes. Agreed it could be categorised as a success.

7.2 Run 9:

7.2.1 MP debriefed and concluded it was a success.

7.2.2 HMH agreed.

7.2.3 Tug Operator happy with manoeuvre.

7.2.4 APT had no specific comments, agreed it could be categorised as a success.

7.2.5 DFDS noted caution is needed regarding the tug line crossing the stern. Agreed it could be categorised as a success.

7.3 Run 10:

7.3.1 MP debriefed and concluded it was a success.

7.3.2 HMH agreed, noted the second tug was close to berth 2 (that was the unmanned simulator controlled tug, should be ok in real life)

7.3.3 Tug Operator happy with manoeuvre.

7.3.4 APT had no specific comments, agreed it could be categorised as a success.

7.3.5 DFDS had no specific comments, agreed it could be categorised as a success.

7.4 Run 11:

7.4.1 MP debriefed and concluded it was a success.

7.4.2 APT queried with HMH when he would envisage banning a vessel entering/ exiting the dock whilst an IERRT vessel is swinging in front of the bellmouth. Agreed it could be categorised as a success.

7.4.3 HMH note he wouldn't envisage a delay to vessels coming out of the IOH, on certain tides the DFDS vessels would be able to get out no problem. Noted the current times for the entire manoeuvre wouldn't be the total time another vessel would need to wait- the window of delay to other vessels would be less, maybe only when the IERRT vessel is past the IOT dolphin and when swinging and still in line with the bellmouth. Once south of the bellmouth vessels would be clear to enter/exit the dock.

7.4.4 Tug Operator happy with manoeuvre.

7.4.5 DFDS had no specific comments, agreed it could be categorised as a success.

7.5 **Run 12:**

7.5.1 MP debriefed and concluded it was a success.

7.5.2 HMH agreed.

7.5.3 Tug Operator happy with manoeuvre.

7.5.4 APT had no specific comments, agreed it could be categorised as a success.

7.5.5 DFDS had no specific comments, agreed it could be categorised as a success.

7.6 **Run 13:**

7.6.1 MP debriefed and concluded it was a success.

7.6.2 HMH agreed.

7.6.3 Tug Operator happy with manoeuvre, didn't think a tug was required.

7.6.4 APT had no specific comments, agreed it could be categorised as a success.

7.6.5 DFDS had no specific comments, agreed it could be categorised as a success.

7.7 **Run 14:**

7.7.1 MP debriefed and concluded it was a success.

7.7.2 HMH agreed.

7.7.3 Tug Operator happy with manoeuvre.

7.7.4 APT had no specific comments, agreed it could be categorised as a success.

7.7.5 DFDS noted the bow thruster was used quite hard sometimes, bow to port was used with tug on the side. Tug captain was happy and pilots did place the tugs

behind the thruster tunnels and thereby having minimum wash. Agreed it could be categorised as a success.

8 End of the day debrief

8.1.1 APT: yes have generally been ok with the Stena T, likely in Runs 1 and 2 that a bigger vessel may have struggled, the margins were close but hard to know without testing it.

8.1.2 HMH noted each vessel will be subject to assessment, it doesn't mean the Proposed Development isn't safe. There would be procedures in place.

8.1.3 DFDS reserved its right to comment once the Simulation Report is provided. Nothing further to add at this time.

9 DFDS' Position

9.1 Whilst DFDS agreed the majority of the simulations runs operated on 7 and 8 November were categorised as a success, as clearly set out in the preceding correspondence, the simulations were not conducted as DFDS would have liked. The application of tidal data was the best the Applicant could in the circumstances but is still unsatisfactory and it was inappropriate to only simulate the vessel which is initially intended to use the Proposed Development, rather than also simulating a vessel the size of the design specification (i.e the largest vessel which could operate at the Proposed Development).

9.2 The simulations did not provide DFDS with comfort that a vessel the size of the design specification could safely use the Proposed Development, in a real world situation, with the correct tidal data.

9.3 Other points to note:

9.3.1 DFDS's concerns regarding the Harbour Master's independence remain and were not diminished by the interactions witnessed at the simulations.

9.3.2 ABP noted that the design specification of the proposed berths is for engineering purposes and not necessarily to accommodate vessels of that size.

Archived: 13 November 2023 21:23:02
From: [redacted]
Sent: Fri, 20 Oct 2023 14:51:47 +0000Received: from AM6P195CA0061.EURP195.PROD.OUTLOOK.COM (2603:10a6:209:87::38) by AM0PR06MB6564.eurprd06.prod.outlook.com (2603:10a6:208:1a1::11) with Microsoft SMTP Server (version=TLS1_2, cipher=TLS_ECDHE_RSA_WITH_AES_256_GCM_SHA384) id 15.20.6907.22; Fri, 20 Oct 2023 14:51:45 +0000Received: from AM3PEPF00009BA1.eurprd04.prod.outlook.com (2603:10a6:209:87:cafe::72) by AM6P195CA0061.outlook.office365.com (2603:10a6:209:87::38) with Microsoft SMTP Server (version=TLS1_2, cipher=TLS_ECDHE_RSA_WITH_AES_256_GCM_SHA384) id 15.20.6907.26 via Frontend Transport; Fri, 20 Oct 2023 14:51:45 +0000Received: from eu
To: [redacted]
Cc: [redacted]
Subject: [EXTERNAL] IERRT ISH3 Action Point 17 - DFDS
Importance: Normal
Attachments:
ABP - ISH3 Action Point 17.pdf

CAUTION:This is an external email - check sender address and use caution before you click links or open attachments. Please report suspicious emails.

Dear Jesper

I hope you are well. I write in regards to the Immingham Eastern Ro Ro Terminal DCO examination Action Point 17, which is noted as *"Applicant to engage with DFDS and CLdN and IOT Operators to agree parameters for the undertaking of additional simulations to address DFDS' concerns with respect to the Proposed Development's proximity to the Eastern Jetty, including the effects of current direction on the approach to the proposed berths 2 and 3."*

I have attached a letter outlining proposed Stakeholder demonstration simulations for your review.

Thank you in advance for your response.

Kind Regards

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To IERRT Stakeholder Demonstrations Simulations attendees

By Email Only

Dear IERRT Stakeholder Demonstration Attendee,

Issue Specific Hearing 3 Action Point 17 – Stakeholder Demonstrations

I write in respect of the IERRT development proposal at the Port of Immingham. As part of the Development Consent Order Examination Process, the Examining Authority requested the parties consider further stakeholder demonstrations of navigational simulations. The action as published is below;

Applicant to engage with DFDS and CLdN and IOT Operators to agree parameters for the undertaking of additional simulations to address DFDS' concerns with respect to the Proposed Development's proximity to the Eastern Jetty, including the effects of current direction on the approach to the proposed berths 2 and 3.

ABP has developed the following proposal. Two days of simulations are proposed on the **7th and 8th November 2023**. These dates have been proposed taking into account simulator availability and the requirement for simulations to occur prior to ISH5 on 21st November. This also takes into account time for the reports of the demonstrations to be produced and reviewed.

The demonstrations are to take place at HR Wallingford (Howbery Park, Wallingford, Oxfordshire OX10 8BA) which is consistent with previous demonstrations. It is proposed that attendees arrive at 09.00 for a 09.30 start, with an anticipated finish at 16.30 each day.

The details of the simulation and the agenda can be found in Annex A. Please can I request that you confirm availability for these simulations no later than 27/10/23. We also suggest a 60 minute call on 31st October 2023 to engage and ensure understanding of intent prior to the demonstrations themselves.

Kind Regards

[redacted]

Josh Bush

ABP Immingham Eastern Ro-Ro Terminal Project Development Manager

cc' Brian Greenwood (Clyde & Co)

Annex A - Proposed stakeholder simulations

Introduction

HR Wallingford has been engaged by ABP to support the proposed Immingham Eastern Ro-Ro Terminal, facilitating real time navigation simulations and flow analysis since November 2021.

During Development Consent Order hearings, stakeholders have requested that a short stakeholder demonstration would help them understand several issues:

- The proximity of the Eastern Jetty in relation to the IEERT terminal, in particular during manoeuvres at berth 3
- The effects of the current direction at berths 2 and 3
- The effect of the anecdotal variation observed with the flow speed and direction in the main river area compared to HR Wallingford flow models for the same area.

HR Wallingford, ABP and Stena have developed a short programme of simulations which are considered appropriate to support a better understanding of the situation by stakeholders.

The programme was developed based on the following areas of expertise:

- HR Wallingford – advice on ship simulation and flow modelling
- ABP HES – advice on proposed initial operating procedures at IERRT and general procedures at the Humber
- Stena - advice on aspects of the design vessel intended for initial operations, including manoeuvring characteristics and performance.

Environmental conditions

During previous studies, the manoeuvres have been focussed on understanding the viability of the manoeuvring space and the orientation of the berths in extreme conditions, and it is proposed that some manoeuvres are conducted in more routine conditions to demonstrate the significant difference in levels of power required for day to day operations.

Additionally, runs that consider the extreme cases have been included to demonstrate the full viability of the proposed operating parameters and procedures.

Wind conditions

Berthing manoeuvres at IERRT are most affected by crosswinds; it is proposed that, as for previous studies, the winds will be adjusted in simulation to be either from the northeast or southwest so that on and off berth winds can be considered.

Routine conditions will be considered as 15 to 20 knots (10m above mean sea level), equated to a Beaufort force 5, which is by no means a moderate wind.

Extreme wind conditions will be set at 25 to 30 knots (10m AMSL), equating to a Beaufort Force 7.

Gusts can be added by the simulation team if considered appropriate.

If requested, HR Wallingford can include a sheltering effect if required on some runs. However, their advice is that most manoeuvres are conducted assuming the full wind strength, as available space is the critical issue, and the advantage provided by sheltering may affect the overall understanding of that issue.

Flow conditions

HR Wallingford will provide the Humber peak spring flow model used in previous studies to support the simulations.

The ebb flow will be scaled by 1.2 to account for the known variance in speed experienced in peak flows during the strongest ebb flows.

HR Wallingford will create a vector correction, in line with the observations of DFDS, to the flows in the main part of the river so that the flows 200m northeast of 1 A will be as follows:

- Flood 315 3.5knots
- Ebb 135 3.5 knots

HR Wallingford will return the flows to the modelled speeds and directions once the master of the manoeuvring vessel is steady in a controlled situation southwest of an imaginary line along the line of IOT 1,2 and 3.

Wave Conditions

The prevailing waves do not affect large vessel manoeuvring or tug operations at IERRT. A 0.5m wind wave will be included in the simulation associated with 30 knot winds, and the wave height will be reduced for lower wind strengths.

Design Vessels

Manoeuvres will be undertaken in a Stena T Class RoRo vessel, the initial vessel intended to operate at the IERRT. The same vessel was used for stakeholder demonstrations in November 2022.

Manoeuvres will be assisted where required by a 50t ASD tug.

2 full mission bridges will be available for qualified masters/PECs to control the Tug and the RO-RO.

Manoeuvring policy and procedures

ABP HES will present the initial advice and proposed policy and procedures for operations at IERRT, and these will be used to form the basis of manoeuvres.

It is good practice that safety documents, policies and procedures are constantly reviewed. Further simulations and the experience of initial operations may result in modification of this advice in due course.

The role of the simulation team

The simulation team will be formed of all personnel attending the sessions.

HR Wallingford facilitating staff will manage the session's general flow.

The Humber Harbour Master will advise the procedures for navigation

The manoeuvres will be executed by STENA PEC holders experienced with the class of vessel and operations on the Humber.

The Tug master will be provided by one of the towage companies operating on the Humber.

The simulation team will be able to review the manoeuvres during debriefing, including checking that any assumptions regarding tug power and wash used in the simulation are realistic compared with everyday experience.

Proposed Run Matrix

30 minutes will be allowed for each run. The simulation team will be able to curtail runs once the benefit of the manoeuvre and confidence in the ability of the vessel to operate in the conditions is agreed upon.

Run ID	Manoeuvre	Wind	Flow
1	Approach to No3 berth in normal conditions	SW 15-20 knots	Peak ebb
2	Departure from No 3 berth in normal conditions	SW 15 – 20 knots	Peak ebb
3	Approach to No3 berth in normal conditions	NE 15-20 knots	Peak ebb
4	Departure from No 3 berth in normal conditions	NE 15 – 20 knots	Peak ebb
5	Approach to No3 berth in normal conditions	NE 15-20 knots	Peak flood
6	Departure from No 3 berth in normal conditions	NE 15 – 20 knots	Peak flood
7	Approach to No3 berth in normal conditions	SW 15-20 knots	Peak flood
8	Departure from No 3 berth in normal conditions	SW 15 – 20 knots	Peak flood
9	Approach to No3 berth in extreme conditions	NE 25-30 knots	Peak ebb
10	Departure from No 3 berth in extreme conditions	NE 25-30 knots	Peak ebb
11	Approach to No 3 berth in extreme conditions	NE 25-30 knots	Peak flood
12	Departure from No 3 berth in extreme conditions	NE 25-30 knots	Peak flood
13	Approach to No3 berth in extreme conditions	SW 25-30 knots	Peak ebb
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15	Approach to No3 berth in extreme conditions	SW 25-30 knots	Peak flood
16	Departure from No 3 berth in extreme conditions	SW 25-30 knots	Peak flood
17	Option for gusting conditions (1)	TBC	TBC
19	Option for sheltering conditions (1)	TBC	TBC

Archived: 13 November 2023 21:23:11
From: [redacted]
To: [redacted]
Subject: RE: [EXTERNAL] IERRT ISH3 Action Point 17 - DFDS
Importance: Normal

---

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Can you please confirm that you will respond to our letter in full prior to the meeting 1st October and that you will send an agenda latest by end of business tomorrow to give us a chance to prepare for the meeting.

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KEEPING BRITAIN TRADING

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DFDS Response regarding simulations 26 October 2023

Dear Josh,

1. I write in response to your letter received on 20 October 2023 in respect of the Immingham Eastern Ro-Ro Terminal DCO application at the Port of Immingham. Given the late receipt of your proposal we were unable to properly review and respond to your proposal at Deadline 5. We are however, pleased to engage with you so that we can ensure the continued safety of navigation on the Humber and ongoing success for all port users.

2. We do have concerns regarding the timetable for these simulations. The suggested dates of 7 and 8 November are only 2 weeks away and finding suitable personnel to attend on those dates will be difficult. We will however, in the spirit of cooperation, endeavour to find personnel to represent DFDS. It would be useful to understand if ABP will be providing accommodation for attendees at these demonstrations.

3. Turning to your proposals, can we first clarify the requirements of action point 17 as you appear to have missed the last sentence from it (our emphasis below)?

   "Applicant to engage with DFDS and CLdN and IOT Operators to agree parameters for the undertaking of additional simulations to address DFDS' concerns with respect to the Proposed Development's proximity to the Eastern Jetty, including the effects of current direction on the approach to the proposed berths 2 and 3.

   Applicant to submit not later than D5 a detailed brief and timetable for undertaking any additional simulations, further to discussions to be held with DFDS and CLdN and IOT Operators (see footnote).*

   *<u>*Additional simulations should be based on what can reasonably be considered as normal operating conditions and vessels for the proposed development and the Eastern Jetty</u>".*

4. The last sentence is in the opinion of DFDS key in moving forward with these simulations.

5. We note in your letter you paraphrase Action 17 to be '*the Examining Authority requested the parties consider further stakeholder demonstrations of navigational simulations*'. To clarify, in both written submissions and oral submissions at the examination hearings, DFDS have requested the Applicant undertake further navigational simulations because it considers the simulations the Applicant has done to date to be incorrectly conducted and not fit for purpose; the new simulations are not therefore to 'help [DFDS] understand the issues' as you allege. It is DFDS's view (and apparently that of the ExA) that the Applicant needs to undertake further simulations, using the correct parameters, to provide the ExA with evidence that the Proposed Development is safe to operate.

Vessel Model

6. The Proposed Development has been designed to handle vessels of 240m LOA, 35m beam and a draught of 8m (paragraph 4.5.25 APP-089). It is therefore a reasonable hypothesis that this is ultimately 'what can reasonably be considered (as a) …normal… vessel for the proposed development'. The purpose of simulations is to demonstrate the terminal is safe and fit for purpose, so it seems only sensible that the simulations use vessels similar to this design specification.

7. The proposed vessel 'STENA TRANSPORTER' (212m LOA, 26.7m beam, 6.3m draft) is considerably smaller than the design specification for the terminal. This presents a number of issues:

    7.1. Being of smaller dimensions it does not represent the proportions of the design specification for the terminal and therefore does not reflect the actual complexity of manoeuvring in the constrained location of the IERRT.

    7.2. Being of smaller dimensions gives a much-reduced windage area meaning the vessel is influenced less by the prevailing winds and this reduces the challenge of manoeuvring in the IERRT area.

    7.3. Being of a lesser draft (6.3m) as compared to the design specified vessel (8.0m) means the underwater cross section is reduced and therefore the effect of the tidal flow on the ship's hull is significantly reduced again reducing the challenge of manoeuvring in this area of fast flowing tidal streams.

    7.4. Having a higher length to beam ratio than the design specified model makes this vessel easier to turn and easier to stop turning (directional stability).

    7.5. The maximum sized design vessel should also be used to simulate the other IERRT berths being occupied. Using a smaller and narrower vessel (narrower by 8.3m) would allow considerably more space for navigating to/from IERRT berths than their intended operation.

8. DFDS are of the opinion that vessel models need to be representative of the size and characteristics of the vessel for which the terminal is designed as well as for the vessels that may initially operate to it. Given the Applicant and their customer have yet to decide on what vessel will ultimately operate to this terminal we would suggest using another model of vessel which better aligns with the given design specifications in addition to the limited use of the STENA T class model. As the Applicant has already made extensive use of the DFDS Jinling Class vessel we would propose the use of the 'DELPHINE' class (234m LOA, 35.3m beam, 8.0m draft) operated by CLdN (with CLdN's approval). This vessel already operates safely on the Humber to the Humber Sea Terminal (HST) and your experts confirmed at ISH3 hearing that the tide and wind will be the same at IERRT as it is at HST.

Environment Model

9. DFDS note your reference to:

   '*The effect of the anecdotal variation observed with the flow speed and direction in the main river area compared to HR Wallingford flow models for the same area*.'

10. The 'flow speeds and directions' as described by DFDS masters and consultants are far more than 'anecdotal' as they reflect decades of experience and recorded documentation. As set out in DFDS's Deadline 5 submissions, the approximately 315º/135º tidal flow is confirmed in:

    10.1. Admiralty Chart 3497
    10.2. Humber Estuary Services Annual Survey Chart
    10.3. Humber Estuary Services Pilot Handbook 2017
        10.3.1. Page 107 'Arrival IOT'
        10.3.2. Page 115 'Arrival to IOT 6 & 8'
        10.3.3. Page 118 Image of tidal flow in Immingham Area
        10.3.4. Page 135 'Arrival East Jetty'
        10.3.5. Page 138 'Arrival West Jetty'
        10.3.6. Page 147 'TIDE at IBT'
    10.4. Humber General Notice To Pilots & PECS
        10.4.1. Pilots 16/2008, PECs 12/2008
        10.4.2. Pilots 06/2015, PECs 05/2015

11. None of these documents has been rescinded nor amended by Harbour Master Humber and are therefore, in DFDS's opinion and experience, fully reflective of tidal conditions in the area.

12. The proposed 'workaround' is regrettably unacceptable. The idea that the tide is 'digital' and can change suddenly as a vessel passes an imaginary line is not reflective of real life. It is a hypothetical construct that will only serve to create further uncertainty at a time where certainty is required. At ISH2, Mr Parr of HR Wallingford explicitly noted the tidal flow shown in the simulation for north of the IOT does not represent flows as Pilots experience them. In our expert mariners' experience if the direction of tide does change, it changes gradually, and this should be reflected in the modelling – if indeed the direction should change at all from that known to exist north of the IOT.

13. DFDS understand from the proposed simulations that the ebb flow will be scaled up by a factor of 1.2 and that this would be added to the current speeds of 3.5 knots (hence the simulated ebb flow used would be 1.2 x 3.5 knots = 4.2 knots); however, the tidal flows shown in the documents listed above, including all navigation charts, indicate that the spring ebb is higher still at 4.4 knots. DFDS believe that the 1.2 scaling factor should be therefore be applied the 4.4 knots shown in the documents and charts, not the 3.5 knots listed by the Applicant, to account for tidal variability and future scenarios.

14. We reiterate that DFDS has been challenging the Applicant on the tidal flows as depicted in the simulations for nearly 18 months. The Applicant has had ample time to correct the issues in the modelled environment but has failed to do so.

Wind Conditions

15. DFDS are satisfied that the wind speeds indicated are representative of the area, but believe wind gusts and wind shadowing are valuable additions to the simulations to improve their realism and value. We would prefer these to be assessed earlier in the simulation schedule rather being something of an afterthought, to allow better understanding of their effects as which is better to carry on through the remaining simulations.

The Modelled Berths

16. DFDS are unsure of the current status of the proposed Impact Protection the Applicant is planning to introduce following engagement with APT. We note the Applicant submitted a request to the Planning Inspectorate on 19 October to make several design changes to the Application including to the impact protection, which are currently subject to consultation. DFDS believe that the further simulations should fully reflect the new proposals both in terms of impact protection and the redesign of the finger pier (if agreed by APT). If the Applicant is keeping its options open as to whether it is proposing the original project description or the revised one, it should carry out full simulations on both scenarios, and if it subsequently reaches agreement with APT on a further arrangement it should carry out simulations on that. It would seem pointless to conduct further simulations on any design that is not being taken forwards. Once again DFDS has been calling for impact protection for some time (as have APT) so whilst we fully appreciate the time constraints the Applicant now faces, modelling the proposed protection is, in our opinion, essential for us to be able to confirm the viability of the terminal to operate safely and to allow safe operations to continue at all other nearby terminals.

17. DFDS would once again draw the Applicant's attention to the missing eastern jetty tug barge that is intended to remain on location. DFDS believe this piece of critical infrastructure is essential to demonstrating the viability of manoeuvring safely to the inner two berths. DFDS therefore believe this barge should be present in any future simulations and that it should have the maximum number of tugs moored there to give a full appreciation of the challenges it may create.

18. Finally, DFDS request that the simulations include a tanker vessel of the maximum design specification of the berth moored at the eastern jetty, and that the other IERRT berths are also fully occupied with maximum design vessels.

Simulation Runs

19. Given the above amendments, DFDS believe that adequate runs should be carried out to all the IERRT berths, not just berth 3. Additionally runs into and away from the remodelled IOT should also be carried out to the satisfaction of APT.

20. DFDS believe that placing a 30-minute time limit on the simulations is both unrealistic and unduly pressuring for the participants (stakeholders have not 'requested a short stakeholder demonstration' as alleged in your letter). Whilst we appreciate the issues the Applicant may have with booking simulator time at such short notice, DFDS would again point out that these simulations could have taken place weeks if not months ago had the Applicant properly engaged with IP's when they first raised their concerns surrounding the existing simulations. It is an absolute necessity that the simulations are now conducted in a collaborative way in order to achieve credible results that can meaningfully support the design and safe operations at IOT, IEERT and the Eastern Jetty.

Parameters and Aborts

21. DFDS believe the parameters surrounding what constitutes a 'Success', 'Marginal' and 'Fail' need to be discussed and agreed prior to the simulations being conducted; we suggest this is discussed on the call on 31 October and confirmed in writing thereafter. As DFDS has respectfully pointed out to the Applicant on numerous occasions during this process, simulations should never rely on maximum power output from vessel machinery as this is indicative of an uncontrolled manoeuvre that allows no reserve.

22. Additionally, aborts should be carried out to a successful conclusion rather than simply pressing pause on the simulator. This will demonstrate whether it is possible for participants to remove themselves from the area when things don't go as planned.

Participants

23. As the previous simulations have used a variety of pilots and PECs it would be sensible to continue with this mix since this is likely to reflect how the terminal will operate in the future with pilots still being required when a vessel is not carrying a valid PEC holder.

We look forward to your response once this and the thoughts of the other IP's have been fully considered and hope that through cooperation we can achieve meaningful and reassuring results despite the limited time we have available.

Best regards / Med venlig hilsen

[redacted]

Captain
Jesper Hartvig Nielsen

Archived: 13 November 2023 21:23:19
From: [redacted]
Sent: Sun, 29 Oct 2023 19:52:06 +0000Received: from DU2PR04CA0038.eurprd04.prod.outlook.com (2603:10a6:10:234::13) by E1PR06MB6896.eurprd06.prod.outlook.com (2603:10a6:800:1b0::11) with Microsoft SMTP Server (version=TLS1_2, cipher=TLS_ECDHE_RSA_WITH_AES_256_GCM_SHA384) id 15.20.6907.33; Sun, 29 Oct 2023 19:52:00 +0000Received: from DU6PEPF00009524.eurprd02.prod.outlook.com (2603:10a6:10:234:cafe::af) by DU2PR04CA0038.outlook.office365.com (2603:10a6:10:234::13) with Microsoft SMTP Server (version=TLS1_2, cipher=TLS_ECDHE_RSA_WITH_AES_256_GCM_SHA384) id 15.20.6933.26 via Frontend Transport; Sun, 29 Oct 2023 19:52:00 +0000Received: from eu
To: [redacted]
Cc: [redacted]
Subject: RE: [EXTERNAL] IERRT ISH3 Action Point 17 - DFDS
Importance: Normal
Attachments:
ABP - ISH3 Action Point 17 - Response to DFDS.pdf[redacted]

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Dear Jesper

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I have attached the response to your letter as promised. Please note I have also cc d in my colleague Sophie oung as I will be on leave tomorrow.

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Mob: [redacted] | www.abports.co.uk

ABP | KEEPING BRITAIN TRADING

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To Jesper Hertvig - Nielson

By Email Only

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In response to Point 5, I would like to reaffirm that ABP, as the Applicant, believes the simulations to be fit for purpose and would point to the close engagement with HR Wallingford on this project, as industry leading consultants in this field. We strongly refute that the simulations are "incorrectly conducted and not fit for purpose".

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As you note, the original simulations used the Jinling class to assist in the assessment of the IERRT infrastructure for larger vessels, however the Stena transporter class is representative of the vessels which will use the facility at the start of operation. I note the request to use the Delphine Class however we feel the use of the Jinling class of vessel was appropriate and sufficient for the intended aim of those simulations with the Jinling class (which was to assess the feasibility of the infrastructure design for larger vessels).

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I acknowledge the points you have raised, and we will review these to see if the order can be reprioritised.

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ABP and IOT are currently engaged in without prejudice discussions on the requirements for vessel impact protection, and you have noted that ABP submitted a change notification which is currently

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ABP Immingham Eastern Ro-Ro Terminal Project Development Manager

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cc' Brian Greenwood (Clyde & Co)

Archived: 13 November 2023 21:23:28
From: [redacted]
Sent: Thu, 2 Nov 2023 13:24:12 +0000ARC
To: [redacted]
Cc: [redacted]
Subject: RE: [EXTERNAL] IERRT ISH3 Action Point 17 - DFDS
Importance: Normal
Attachments:
Letter to Josh ABP - 02.11.23.pdf

Dear Josh,

Thank you for initiating the meeting on Tuesday the 1st of October, and do apologies for the short delay in getting back to you.

Please find our comments to the meeting attached.

In addition I can confirm D DS will be present with observers at the simulation session 7th and th of November.
The participants will be:

Jonathan ush
Jessica obbs
Jesper artvig Nielsen

ooking forward to see you next week.

Best re ards Med en sen

esper art e sen

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Josh

Josh Bush | Project Development Manager | Associated British Ports
25 Bedford Street | London | WC2E 9ES
Mob: [redacted] | www.abports.co.uk

From: Jesper artvig Nielsen [redacted] dfds.com

Sent: October :1
To: Joshua ush [redacted] abports.co.uk
Subject: RE: E TERNA IERRT IS Action Point 17 - D DS

CAUTION: This email originated from outside of the organisation. Do not click links or open attachments unless you recognise the sender and know the content is safe.

Dear Josh,

Please see the response from D DS attached.

ooking forward to hearing from you.

Best re ards Med en sen

esper art e sen

From: Joshua ush [redacted] abports.co.uk
Sent: . oktober 1 :
To: Jesper artvig Nielsen [redacted] dfds.com
Cc: reenwood, rian [redacted] clydeco.com Sophie oung [redacted] abports.co.uk
Subject: E TERNA IERRT IS Action Point 17 - D DS

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Dear Jesper

I hope you are well. I write in regards to the Immingham Eastern Ro Ro Terminal DCO examination Action Point 17, which is noted as *"Applicant to engage with DFDS and CLdN and IOT Operators to agree parameters for the undertaking of additional simulations to address DFDS' concerns with respect to the Proposed Development's proximity to the Eastern Jetty, including the effects of current direction on the approach to the proposed berths 2 and 3."*

I have attached a letter outlining proposed Stakeholder demonstration simulations for your review.

Thank you in advance for your response.

Kind Regards

Josh Bush | Project Development Manager | Associated British Ports
25 Bedford Street | London | WC2E 9ES
Mob: [redacted] | www.abports.co.uk

Josh Bush
ABP Immingham Easter Ro-Ro Terminal Project Development Manager
Associated British Ports
Dock Office
Immingham
DN40 2LZ

Date
2 November 2023

Dear Josh

Proposed Navigational Simulations - 7 and 8 November 2023

Thank you for inviting us to the call on Tuesday (31 October 2023) to discuss the proposals for the navigational simulations scheduled to take place next week on 7 and 8 November 2023.

We were disappointed by the discussion and ABP's continued refusal to consider DFDS' requests regarding the approach to the simulations next week. Our understanding of the purpose of Tuesdays call was to discuss and agree the parameters ahead of next week's simulations. However, ABP's approach on Tuesday made it clear ABP is not prepared to genuinely listen to Interested Parties and the entire exercise appears to be a 'tick box' exercise by ABP to appear to address ISH3 Action Point 17. The action requires ABP to '*engage with DFDS and CLdN and IOT Operators and agree parameters for the undertaking of additional simulations to address DFDS' concerns*…', which has clearly not happened so far.

DFDS is conscious of the time constraints involved (of ABP's own making), but does not agree with the approach ABP is taking towards these simulations.

Parameters and aborts

DFDS requests that ABP consider the following parameters when determining if each run is characterised as a 'success', 'marginal' or 'failure':

1. 100% Bow thruster use in excess of 3 minutes (continuously or nearly continuously) should be deemed to be 'marginal' as it indicates a vessel on the very limit of what should be considered a 'safe' manoeuvre.

2. 'Engine use in excess of 60% is deemed 'marginal' as from experience our masters know this is the limit of what should be considered a 'safe' manoeuvre.

3. If either of the first 2 criteria were met whilst working with the assistance of a tug they were deemed a failure due to the danger to the tug and her crew by the excessive wash this amount of machinery use would cause.

4. Tug power in excess of 100% for more than 3 minutes were considered marginal as again they do not represent 'safe' manoeuvres.

In relation to 'aborts'- the master or pilot needs to demonstrate the vessel is in a state where it could safely escape to the river before the simulation can be stopped.

Please confirm if ABP will agree to these parameters?

Environment model

As DFDS has noted throughout this process, and reiterated again in our most recent letter of 26 October 2023 the tidal data ABP used in the previous simulations does not concur with recorded information in the public domain - a list of such publications can be found in paragraph 10 of our letter of 26 October 2023. ABP's repeated references to such published data being 'anecdotal' only emphasises ABP's dismissive attitude towards Interested Parties with significant experience and expertise in navigating various parts of the Port of Immingham.

However ABP have at least proposed modelling DFDS' tidal direction north of IOT but then reverting to the current model south of it. DFDS appreciate this partial accommodation of their view and will accept this approach for next week's simulations given the time constraints, but consider that ideally more measurements should have been taken originally so that the model had been properly constructed and did not jump from one direction to another as a vessel passes IOT.

Additionally, we request that the more appropriate peak tidal speed of 4.4 knots (shown on Admiralty charts 1188 and 3497) is modelled rather than your proposed speed of 4.2 knots

Simulation runs

Further to your letters dated 20 and 29 October 2023 and the discussion on Tuesdays call we request that the simulation runs 1-16 that you propose are run with 315º/135º tidal direction north of IOT, but applying wind gusting conditions and sheltering conditions from the start and throughout, as you agreed to consider in your letter of 29 October rather than as two separate runs at the end.

We would also request the same runs for berth 2 as well as berth 3.

If the project is amended to include impact protection to the finger pier, whether at ABP's discretion or from the start, we believe all berth 1 runs should be re-run with the proposed impact protection measures in place, and vessels visiting the south of the finger pier should also be modelled arriving and departing.

As confirmed in your letter of 29 October 2023, the eastern jetty tug barge will be included in the simulations.

In our letter of 26 October 2023 we requested that the simulations include a tanker vessel of the maximum design specification being moored on the eastern jetty, in your response you noted '*we will consult with the Harbour Master in relation to the tugs and requirement for a tanker vessel.*' Can you

please confirm whether a tanker vessel of the maximum design specification will be moored on the eastern jetty in the simulations?

Vessels

We note from Tuesdays call that ABP intend to proceed to use a Stena Transporter in the simulations.

As noted in our letter of 26 October 2023 the Stena Transporter (212m LOA, 26.7m beam, 6.3m draft) is considerably smaller than the design specification for the Proposed Development terminal. We suggested the use of the 'Delphine class (234m LOA, 35.3m beam, 8.0m draft) operated by CLdN (If CLdN approves), as it is a more appropriate vessel to meet the terminal's design specification, which according to paragraph 4.5.2 of the Navigation Risk Assessment is 240m LOA, 35m beam and 8m draft. We reiterate our view that a vessel closer to the design specification should be used. We note ABP consider they have done so already in the previous simulations using the Jinling class, but DFDS disagrees due to the high maneuverability of the Jinling, compared to other vessels of that size and the fact that only one simulation run to berth 3 using a vessel of that size has been presented to date.

We look forward to your response.

Kind Regards

[redacted]

Jesper Hartvig-Nielsen
Head of Fleet Management

cc Angus Walker (BDB Pitmans LLP)

Archived: 13 November 2023 21:23:36
From: [redacted]
Sent: Fri, 3 Nov 2023 16:10:53 +0000Received: from AS9P250CA0015.EURP250.PROD.OUTLOOK.COM (2603:10a6:20b:532::20) by AM7PR06MB6708.eurprd06.prod.outlook.com (2603:10a6:20b:1a0::20) with Microsoft SMTP Server (version=TLS1_2, cipher=TLS_ECDHE_RSA_WITH_AES_256_GCM_SHA384) id 15.20.6933.23; Fri, 3 Nov 2023 16:10:50 +0000Received: from AMS0EPF000001A3.eurprd05.prod.outlook.com (2603:10a6:20b:532:cafe::1) by AS9P250CA0015.outlook.office365.com (2603:10a6:20b:532::20) with Microsoft SMTP Server (version=TLS1_2, cipher=TLS_ECDHE_RSA_WITH_AES_256_GCM_SHA384) id 15.20.6954.21 via Frontend Transport; Fri, 3 Nov 2023 16:10:50 +0000Received: from eu
To: [redacted]
Cc: [redacted]
Subject: RE: [EXTERNAL] IERRT ISH3 Action Point 17 - DFDS
Importance: Normal
Attachments:
231103 - ABP - ISH3 Action Point 17 - Response to APT .pdf

CAUTION:This is an external email - check sender address and use caution before you click links or open attachments. Please report suspicious emails.

Dear Jesper,

Please see attached acknowledgement of your letter. Due to personal circumstances I will be unable to attend next week s simulations, however my colleague Sophie, who was on our previous call, will be attending instead.

I have added your colleagues to the attendance list.

Kind Regards

Josh

Josh Bush | Project Development Manager | Associated British Ports
25 Bedford Street | London | WC2E 9ES
Mob: [redacted] | www.abports.co.uk

ABP | KEEPING BRITAIN TRADING

From: Jesper artvig Nielsen [redacted] dfds.com
Sent: November 1 :
To: Joshua ush [redacted] abports.co.uk
Cc: Sophie oung [redacted] abports.co.uk reenwood, rian [redacted] clydeco.com A KER Angus [redacted] bdbpitmans.com
Subject: RE: E TERNA IERRT IS Action Point 17 - D DS

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Dear Josh,

Thank you for initiating the meeting on Tuesday the 1st of October, and do apologies for the short delay in getting back to you.

Please find our comments to the meeting attached.

In addition I can confirm D DS will be present with observers at the simulation session 7th and th of November.
The participants will be:

Jonathan ush
Jessica obbs
Jesper artvig Nielsen

ooking forward to see you next week.

Best re ards Med en sen

esper art e sen

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To: Jesper artvig Nielsen [redacted] dfds.com
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Dear Jesper

Thank you for the update. I have sent out email invites for the 1st Oct. to align with your availability. e will let you know if other attendees have challenges making the time.

I have attached the response to your letter as promised. Please note I have also cc d in my colleague Sophie oung as I will be on leave tomorrow.

Kind Regards

Josh
Josh Bush | Project Development Manager | Associated British Ports
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Mob: [redacted] | www.abports.co.uk

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To: Joshua ush [redacted] abports.co.uk
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Dear Josh,

ollowing up on below.

There have been some changes to my calendar and now I am available from to 1 UK Time on the 1st.

Do apologies for these changes.

Best re ards Med en sen

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From: Jesper artvig Nielsen
Sent: . oktober 1 :1
To: Joshua ush [redacted] abports.co.uk
Subject: RE: E TERNA IERRT IS Action Point 17 - D DS

any thanks Josh,

Can you please confirm that you will respond to our letter in full prior to the meeting 1st October and that you will send an agenda latest by end of business tomorrow to give us a chance to prepare for the meeting.

The only time I have available on the 1st of October is between 1 . -1 . hrs UK time.

I hope this works for everyone, otherwise let me know.

I will revert with the names of attendees at the simulations.

Best re ards Med en sen

esper art e sen

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To: Jesper artvig Nielsen [redacted] dfds.com
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i Jesper,

any thanks for your response. I acknowledge receipt and we will consider the points made by D DS and respond to them. hen you are able, please can you confirm proposed attendees for the simulations and also availability for a pre-meet on 1st Oct.

Kind Regards

Josh

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I have attached a letter outlining proposed Stakeholder demonstration simulations for your review.

Thank you in advance for your response.

Kind Regards

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ABP | HUMBER

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Dock Office
Immingham
DN40 2LZ

Telephone: +44 (0)1472 359181

e-mail: immingham@abports.co.uk
www.abports.co.uk

To Captain Nielsen

By Email Only

Dear Jesper,

I write to acknowledge your letter of 2 November concerning the upcoming navigational simulations. I note that you have , in your letter, reiterated the points that you made at our meeting on 31 October and reflected in the meeting minutes sent out for review.

You are, of course, well aware of ABP's views on all of the points that you have raised and I suspect there is little merit in rehearsing them again at this stage. Throughout the IERRT project development process, ABP has sought to take onboard the DFDS feedback and respond constructively, I strongly hope that this set of simulations can assist stakeholders including yourself.

Unfortunately I will be unable to attend the simulation due to personal circumstance however my colleagues look forward to seeing you at the navigational simulations next week when no doubt there will be the opportunity to discuss your concerns further.

Best regards,

[redacted]

Josh Bush

ABP Immingham Eastern Ro-Ro Terminal Project Development Manager

cc' Brian Greenwood (Clyde & Co)

Archived: 13 November 2023 21:23:45
From: [redacted]
Sent: Thu, 2 Nov 2023 21:40:58 +0000Received: from DB9PR06CA0021.eurprd06.prod.outlook.com (2603:10a6:10:1db::26) by DB9PR06MB7818.eurprd06.prod.outlook.com (2603:10a6:10:252::7) with Microsoft SMTP Server (version=TLS1_2, cipher=TLS_ECDHE_RSA_WITH_AES_256_GCM_SHA384) id 15.20.6954.21; Thu, 2 Nov 2023 21:40:42 +0000Received: from DU6PEPF00009523.eurprd02.prod.outlook.com (2603:10a6:10:1db:cafe::6d) by DB9PR06CA0021.outlook.office365.com (2603:10a6:10:1db::26) with Microsoft SMTP Server (version=TLS1_2, cipher=TLS_ECDHE_RSA_WITH_AES_256_GCM_SHA384) id 15.20.6954.21 via Frontend Transport; Thu, 2 Nov 2023 21:40:42 +0000Received: from eu
To: [redacted]
Cc: [redacted]
Subject: [EXTERNAL] IERRT ISH3 AP17 (Navigational Stakeholder Simulations)
Importance: Normal
Attachments:
231031_IERRT-ISH3 AP17- Meeting Minutes 001_ 1.0.doc 231031 - IERRT - ISH3 AP17 Pre meet .ppt

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All,

I hope you are all well. Please see attached draft minutes for your review, alongside the slide pack presented at the meeting.

Kind Regards

Josh

Josh Bush | Project Development Manager | Associated British Ports
25 Bedford Street | London | WC2E 9ES
Mob: [redacted] | www.abports.co.uk

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Minutes of Meeting

Meeting	**Immingham Eastern Ro-Ro Terminal – ISH3 AP17 (Navigational Stakeholder Simulations)**
Purpose	Pre-meet ahead of the further IERRT Navigational Simulations to agree the agenda and approach for the simulations scheduled for 7th and 8th November.
Venue & Date	MS Teams 11.30-12.30hrs, Tuesday 31st October 2023.
Attendees	[redacted] – ABP Project Development Manager [redacted] – ABP Consents Lead [redacted] – HES Pilot Operations Manager [redacted] – HR Wallingford Simulation Lead [redacted] – Stena Port Manager [redacted] – Stena Senior Manager, Port Development North Sea [redacted] – Stena Master [redacted] – APT Marine Supervisor [redacted] – DFDS Seaways MD [redacted] – DFDS Head of Fleet Management, Humber [redacted] – DFDS Captain [redacted] – CLdN General Counsel [redacted] – CLdN Principal Operations Manager
Apologies	[redacted] – HES Harbour Master Humber [redacted] – ABP Dock Master [redacted] – APT Terminal Manager
Distribution	As above

Minutes

Item		Action by
1.0	JB welcomed all attendees to the meeting and requested confirmation that all expected attendees from organisation were present. All attendees confirmed that the meeting could begin and commenced introductions, including name, organisation and role.	
2.0	**Purpose of Meeting** JB explained that during ISH3, the examination hearing included a discussion on the opportunity for further navigational simulations in relation to the IERRT project and that the Applicant had written to all attendees in response to ISH3 Action Point 17. JB referenced the Examining Authority's letter of 27 October 2023 which requested that a report from the further simulations is written up for submission at D6 on 13 November. JB stressed the importance of this being a collaborative process and requested that constructive feedback is provided in the meeting to allow simulations to run as smoothly as possible. JB read the agenda items and reiterated that the purpose was to provide clarity to all parties ahead of the simulations. Agenda: 1. Introductions and apologies 2. Context and Purpose of the Simulations (ISH3) 3. Navigation Simulations – Agreement of House rules and etiquette a. Simulation run pass criteria 4. Items raised in response to ISH3 AP17 invitation letters a. Environmental Conditions (tide states, wind states, shading) b. Modelled Berths (Eastern Jetty) 5. Confirmation of simulation agenda 6. Confirmation of Attendees from Interested Parties 7. AOB 8. Close	
3.0	**Simulator House Rules** MP noted that the majority of attendees have been before and are familiar with the set up and that HR Wallingford (HRW) will be enforcing the simulator rules. MP then outlined the process: Before each brief, HRW will confirm the objective, strategy and	

	conditions. Humber Estuary Services (HES) will then provide a brief which will cover what the manoeuvre will look like and provide necessary information to PEC/pilot. JS agreed that HES will attend and will provide a brief at simulations. MP explained the next step is to start execution and conditions to check sims are working. Whilst running, the simulation team will monitor from observation room the progress until completion. MP noted that discussion is inevitable and will be put to one side until the debrief process which will be formally enforced. MP will lead the debrief, followed by the Harbour Master, then PEC/Pilot, then stakeholder comments for each run in this order. The success criteria will be agreed and then the recorded before moving on. JN questioned how the assessment will be based. MP explained this is on the agenda and requested that all attendees raise hands or feedback if not agreed. No hands raised and MP confirmed the above was taken as agreed.	
4.0	**Success Criteria** MP proceeded to answer JN question, explaining that HRW undertake a qualitative not quantitative assessment – which is the approach strongly advised by HRW and that agreed with ABP. MP shared the criteria for success on screen, noting this is the standard across other simulation studies and requested feedback from attendees that these were reasonable. JN did not agree and explained that DFDS would request hard parameters, for example a definition that using bow thrusters on full power for more than 15 minutes is not safe. MP started to explain that this was an engineering matter and not a simulation parameter. JN interjected that the power reserve was subjective and queried why hard parameters could not be agreed. MP requested time to finish his explanation. MP went on to explain that the parameters described by JN are engineering parameters and dependent on the assessment of the master or pilot, who is trained on the equipment and for the situation. The majority of runs for the feasibility assessment were been done on higher end of limits. This was specifically to understand that the location, design and orientation of berths is feasible for operations.	

	MP explained that HRW have intentionally put more runs into the upcoming simulations based on typical operating conditions and if stakeholders have objective comments during the sessions, which are substantiated with evidence, then HRW will note this in the assessment of each run. JN queried how will this be facilitated and questioned whether there will be a screen where manoeuvres can be seen or presented at the report stage. MP responded that they will be facilitated in the same way as the last simulations, which JN attended, which is consistent with the approach HRW take for all of its clients. MP confirmed that JN and other representatives will be able to make representations at the time. JN raised again that if the bow thruster has to be used 100% of the time, then there is no back up and hard parameters should be set. MP noted that in instances where there is extensive use of bow thrusters at 100% and two tugs, this could be a marginal manoeuvre. JN noted this was done last time, which MP stated was incorrect. JN reinforced that he cannot agree to this and DFDS' view is that hard parameters must be set. MP explained that HRW always run qualitative as opposed to quantitative assessments. The reason for having a simulation team present is to provide the necessary expertise which can be agreed or countered by other marine professionals. MP explained that at the last attendance in November, the marine professionals forming the simulation team agreed with the outcomes documented in the reports. AB added that DFDS are not going to agree or reach consensus on this. JN stated this would be machinery, bow thrusters and tugboats. MP noted the success criteria on screen including that 'the ship remains in full control without resorting to aggressive manoeuvring techniques' but suggested that DFDS set their own parameters. JN confirmed would be provided. MP referred back to success criteria on screen, and requested agreement with other parties that a qualitative assessment for success is that the ship remains under full control at all times without resorting to aggressive manoeuvring techniques. MB agreed, noting that every Captain attending the simulations would consider that they will have to undertake this manoeuvre in real life in the future. Given the number of PEC and pilots in the room, he hoped this can be achieved during the simulations. This is fair and in line with	

	what I have seen in my experience. To put hard and fast parameters in place is not in line with his personal experience at simulations before. MP acknowledged agreement with MB observations. MP gave an example using bow thrusters, stating that if there is disagreement in the room, then the ships engineering handbook would be consulted to agree if the equipment has been used in accordance with this. MB again noted that there are plenty of experts who will be in attendance to agree if it's a safe manoeuvre. These are sensible parameters that HRW are suggesting. With the exception of DFDS, all other parties acknowledged agreement with the HRW success criteria.	
5.0	**Marginal Criteria** MP presented criteria for marginal passes and explained this will be discussed in the room and recorded in the report which goes to ExA. JN suggested that a hard parameter should be 3 minutes of bow thruster use. MP explained again that there are two approaches – both quantitative and qualitative. HRW have intentionally taken a qualitative approach and do this with all clients. There are significant problems with quantitative as there would need to be a definition for all operational circumstances for example operating at 95%m or including a tug but applying no force. MP reiterated that the number of mariners in the room means HRW can undertake a very strong qualitative assessment. MP confirmed that HRW are more than happy to consider your points in the room but stressed that applying the suggested parameter would be a false limit and would lead to forced behaviours in the simulator. For example, not making a realistic manoeuvre because you are trying to work to a set criteria. LV noted that the comments raised by JN are a different way of testing and stressed the importance to trust HRW on their approach. LV noted that HRW are a qualified institute for this that as an experienced Master, he would agree with their recommendations. MP, in response to JN, suggested a proposed approach to consider JN's parameters in the room – whereby JN explains if he thinks a run has broken one of DFDS' parameters. MP noted that in his experience working with mariners, where there is a good point made, attendees do tend to reach a consensus. JN said his parameter would be 3 minutes.	

	MP stressed it is important that there is evidence to underpin this. Fine for this to be suggested and for the simulation team to take a view, however, if they are just numbers for suggestion, they must be supported by evidence. At the moment it is not clear what the evidence for 3 minutes is. JN noted that the parameters are what he believes to be correct. OS noted that he agreed with qualitative approach but flagged that he wants to get comfort that the manoeuvre is doable time after time and repeatable with the human factor, noting the proximity to the Oil Terminal. MP noted that HRW can demonstrate that the HES procedures are being followed and the manoeuvre is repeatable. OS noted that feasibility simulations have been conducted and this further simulation is to provide more detail to stakeholders. MP confirmed that the simulation will be transparent and if the consensus is that it is unrepeatable or high risk, then this will be recorded. If APT or DFDS have a concern about one factor and it's outwith the consensus of the room, this will be noted in the record. JB noted that the purpose of his ISH3 Action was not for the Applicant to agree to every parameter set by DFDS but it was to provide additional simulations. If we can't move forward, it feels futile to proceed. JN noted that DFDS will not agree to what is suggested, that DFDS will uphold our view and prepare a disclaimer. MB commented that the final operator of the berth will not put ships on which are beyond safe parameters. In reality, the operator will wait for conditions to settle and improve, such as wait for wind to ease and will not operate unless safe. MB noted that he would agree that if the manoeuvre requires 100% bow thrusters at 15 minutes every time then this would not be safe and repeatable. MP explained that all simulation manoeuvres have been done at peak flood/ebb with 30 knots of wind. All operators on Humber would agree this is not sensible or representative of typical day to day conditions. In these further simulations, HRW have specifically set out some routine operational parameters to allow a comparison against the exceptional conditions tested at feasibility. MP stressed the goal is to agree something sensible for the operation of the berths. We are allowing everyone the opportunity to comment but stressed importance of parameters being agreed by the simulation	

	team. If other individuals disagree with the simulation team then we will document this but will need evidence. MB noted OK and understood. JN confirmed he will set out DFDS parameters in writing.	**JN to provide DFDS Parameters and evidence base for these parameters.**
6.0	**Environmental Conditions** MP showed a figure of the tidal diamond and flows on the screen and responded to a representation made by DFDS in writing whereby DFDS assert that the flow did not align with the tidal diamonds. MP explained that the model is close, but proposed to make an adjustment to the flows so as to follow the tidal diamond in the area north of the IOT if this is preferred. JN asked where this would take us on the IOT as DFDS do not think it should be parallel. MP explained HRW have set out a proposed direction north of A1 buoy. JN noted publications from HES indicating what the current should be. JS commented that HES publications were prior to the additional modelling work in the vicinity of the IERRT, but have no objection to adjust the model in the area north of IOT for the simulations as requested by DFDS. JN stated that publications should be updated. MP explained that the published material shows variation across the flow and the data shows that there is a variance across tidal cycles. MP noted his professional background as a navigator, hydrographic surveyor and modeller. MP accepts that a flow model does not always predict perfectly but stressed there is nothing more that can be done to improve the model as ABP have responded to every suggestion made by HRW to get this as accurate as possible. MP noted that the model can be tweaked to align with conditions experienced by mariners routinely operating in this area, however, it is already extremely close to where the model and publications expect flows to be.	

	MP again offered that the model alignment north of IOT can be adjusted and tweak if it is agreed by all parties. JN queried what this would mean and what the flow direction would be when passing IOT. MP noted this had been set out already. HRW would make a vector change by applying a vector to whole model – which would result in an exaggerated effect. There would be a point in the manoeuvre where the ship finds a balance position, and when in this position, MP will take off the vector and come back to natural model. This would be in the spatial area of the proposed IERRT infrastructure where HRW have very high confidence in the model. JN commented that it would have been better to have collected more data. JS confirmed that HES are happy to adjust tide to reflect the tidal diamond when passing IOT. When manoeuvring in IERRT area, we will use the modelled data. MP stressed that the model closely aligns with tidal data and the observations. However, despite this and to specifically address the concern from DFDS, HRW are able to artificially adjust the model to anecdotally align with the IOT. HRW hopes this would alleviate the concern from DFDS that the alignment north of IOT does not align with operations and experience on the Humber. MP noted it is not practical or appropriate to do any further modelling as it aligns very closely with all observations and collected data. JN stated that he does not believe this is anecdotal and that DFDS disagree with the model. MP noted that DFDS's response last week referred to tidal diamonds. These correlate closely with model. JN stated that it is north of IOT where the current is wrong. MP reiterated HRW have listened to this and propose to adjust the model to align with DFDS' observations. JN stated an issue that the model would be corrected back once past IOT. MP noted this was correct and the model will be adjusted to respond to the area DFDS are noting. This shifts all of the tides across the entire model. Once the manoeuvre gets into the normal area of operations for IERRT, the model will convert back to natural flow. Otherwise this would have the effect of making the flows by IERRT significantly different to the observed and recorded data. JB stressed need to reach a resolution for the simulations next week.	

	JN noted that DFDS will write a disclaimer that they do not believe it is correct. OS noted that the flows are known to be complex in this area and change throughout the tidal regime. Requested if IGET data has been considered. MP confirmed that both models have been compared and the correlation is high. At the micro-scale, we have to accept there will be effects that can't always be modelled. HRW are trying to incorporate the effects that JN is noting. OS accepted that there are micro-changes in tidal conditions that can never be fully modelled. MP reiterated that the effort gone into modelling flows has been substantial. MB noted that there are always going to be minute changes that could generate small-scale effects which are impossible to model – for example, scouring of the sunk dredged channel could cause an effect. MP summarised that the key focus of efforts has been for flow modelling at the IERRT location to be as precise and accurate as possible, noting that it is difficult to get a precise flow model in a complex area. Work has focussed on aligning berths with flows. The challenges raised from DFDS are because the model does not agree with DFDS experience north of IOT, which has resulted in DFDS saying that IERRT has not been properly simulated. We are trying to create a scenario where the flow is more aligned with the DFDS experience until the point where the vessel enters the area to swing into IERRT. JN stated this is a reasonable summary. MB noted that CLdN are also interested in this but can't see how small changes would make a difference to the outcomes and that subtleties could be argued all day. AB suggested agenda moves onto logistics as meeting is overrunning. JB noted that feedback on Eastern Jetty has been provided in writing.	
7.0	**Simulator Logistics** JB noted that there are spatial constraints at HRW and that all parties confirm attendees with total numbers to be limited to 15. JB requested arrival at 0900 for an 0930 start as outline JN noted that DFDS will send 3/4 attendees. Cannot confirm names yet but will do tomorrow. JB requested that this was 3.	**JB to send out attendance list, keeping to 15 if possible.**

	MB noted he will attend for the second day. Will try and reschedule to attend on 7th. MV noted Stena will have 4 attendees - Ian, Marcel, Geert Jan, and Laas. Important that Stena are fully represented as the operator of the facility. OS confirmed APT will be represented by Olly and Nigel Basset from Nash Maritime. JS confirmed HES will be represented by 3 attendees including Joe, Harbour Master Humber & pilot. JB confirmed ABP will send three attendees from project team. MP noted we will have one attendee from towage. MV noted that Stena must be there with four attendees. Understand the space issue but some from the other parties can reduce number of people as they are not operating the facility.	
8.0	**AOB:** JB opened the floor to AOB. OS commented on the ships being used in the model. JB confirmed it will be the Transit Ship. In terms of larger vessels - this was to demonstrate feasibility for larger ships in the future. Transit is the ship to be used from day 1 which was included in feedback post ISH3. JN noted that he acknowledged that the Stena class is being used because this is the operational vessel but DFDS also want to see the design vessel modelled on all berths. MP asked for confirmation on design vessel. JN confirmed this was 240m, 35m and 8m. MP noted that there is no vessel model for these specific parameters and HRW will model the Transit, which will be operating initially at the Port.	

Immingham Eastern Ro Ro Terminal

ISH3 Action Point 17 (Pre-meet)

31/10/23

Agenda

1. Introductions and apologies
2. Context and Purpose of the Simulations (ISH3)
3. Navigation Simulations – Agreement of House rules and etiquette
    a. Simulation run pass criteria
4. Items raised in response to ISH3 AP17 invitation letters
    a. Environmental Conditions (tide states, wind states, shading)
    b. Modelled Berths (Eastern Jetty)
5. Confirmation of simulation agenda
6. Confirmation of Attendees from Interested Parties
7. AOB
8. Close

HR Wallingford Supporting Slides

Simulation Rythmn

Brief

- Confirm objective
- Confirm start conditions
- Confirm strategy for tugs,
- Harbour master briefs ideal manoeuvre and HES advice

Execute

- Check Conditions
- Check sims working
- Monitor – report problems

Debrief

- Comment from HR Wallingford facilitator
- Comment from harbour master
- Comments from pilot/pec
- Comments from tug master
- Comments from Stakeholders
- Agree on objective assessment
  - Success
  - Marginal (with reason)
  - Fail (with reason)
- Agree record – HR Wallingford facilitator

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Evaluation criteria - Success

Standard manoeuvres:

- The ship remains under full control at all times without resorting to aggressive manoeuvring techniques;
- The ship stays within safe water areas with acceptable clearances to all port and other structures, and other berthed ships;
- Tugs are operating safely and within sustainable limits;
- For berthing manoeuvres, the ship ends the run alongside, or in such a position that lines would be ashore without appreciable difficulty, at zero speed, with an acceptable sway velocity and no appreciable yaw rate;
- For departure manoeuvres the ship exits smoothly, without risk of drifting onto port structures or other ships.

Emergency/failure situations:

- The ship is brought back under full control without encountering significant hazards, with the risk of only minor damage;
- The ship may leave the designated manoeuvring area boundaries, but still has acceptable under keel clearance and maintains acceptable clearances to other ships/structures throughout the recovery;
- Tugs are neither endangered nor asked to operate in an unsafe manner;
- The ship can be moved into safe, deep water or to a position suitable to anchor safely, where the equipment failure can be investigated / resolved.

Evaluation criteria - Marginal

Standard manoeuvres:

- The Pilot considers the ship is at the limit of control during standard manoeuvres;
- The ship stays within the safe water area boundaries, but with unacceptable clearances;
- The ship clears all port structures, and other berthed ships, but with unacceptable clearances;
- Tugs are operating safely, but approaching their sustainable operating limits (e.g. being used at 100% power for more than 15 minutes);
- For approach manoeuvres, the ship ends up alongside, but may have a high approach velocity. The manoeuvre can be concluded, but minor damage may occur;
- On departure, the ship is manoeuvred off the berth but with some difficulty. The manoeuvre is completed with the potential for minor damage only.

Emergency/failure situations:

- The ship is at the limits of control during the recovery from the failure;
- The ship has marginal under keel clearance or marginal clearances to other ships/structures during the recovery;
- Tugs operate at the limits of safety;
- The ship is at the limits of controllability as it is moved into safe, deep water or to a position suitable to anchor safely, where the equipment failure can be investigated/resolved.

Evaluation criteria - Fail

Standard manoeuvres:

- The Pilot loses control of the ship;
- The ship strays outside the safe water area boundaries and/or grounds;
- The ship either contacts, or has a near-miss with port structures and/or other berth ships;
- Tugs are required to operate in an unsafe manner, or exceed sustainable operating limits (e.g. being used at 100% power for more than 30 minutes);
- For approach manoeuvres, the ship cannot get alongside at all, or contacts the berth with sufficient force that severe damage may have occurred;
- On departure, the ship either cannot be manoeuvred off the berth, or encounters significant difficulty in manoeuvring, such that severe damage may have occurred.

Emergency/failure situations:

- The Pilot cannot regain control of the ship before the ship is endangered;
- The ship cannot be prevented from entering dangerously shallow water and/or grounds;
- The ship either contacts or has a near-miss with a known hazard, port structures, and/or other berth ships;
- Tugs are endangered or are asked to operate in an unsafe manner;
- The ship cannot be moved into safe, deep water or to a position suitable to anchor safely.

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Evaluation criteria - Abort

The run was aborted for efficiency reasons, to save wasting any time, due to either:

- The initial manoeuvring strategy or approach/departure manoeuvre was deemed to be inappropriate, so the run would be bound to fail if continued; or,
- Because of the need to test aspects of the ship manoeuvring model.

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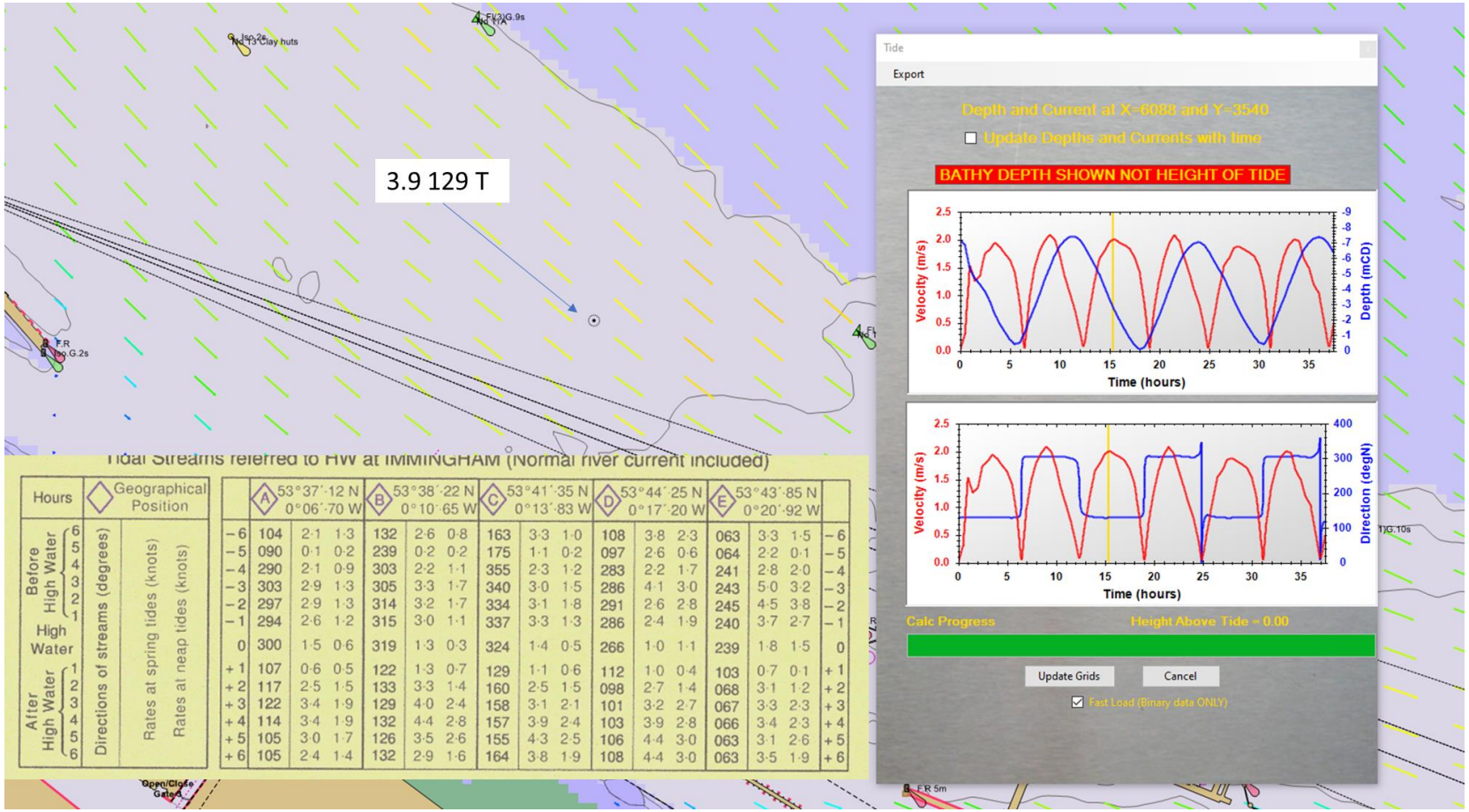
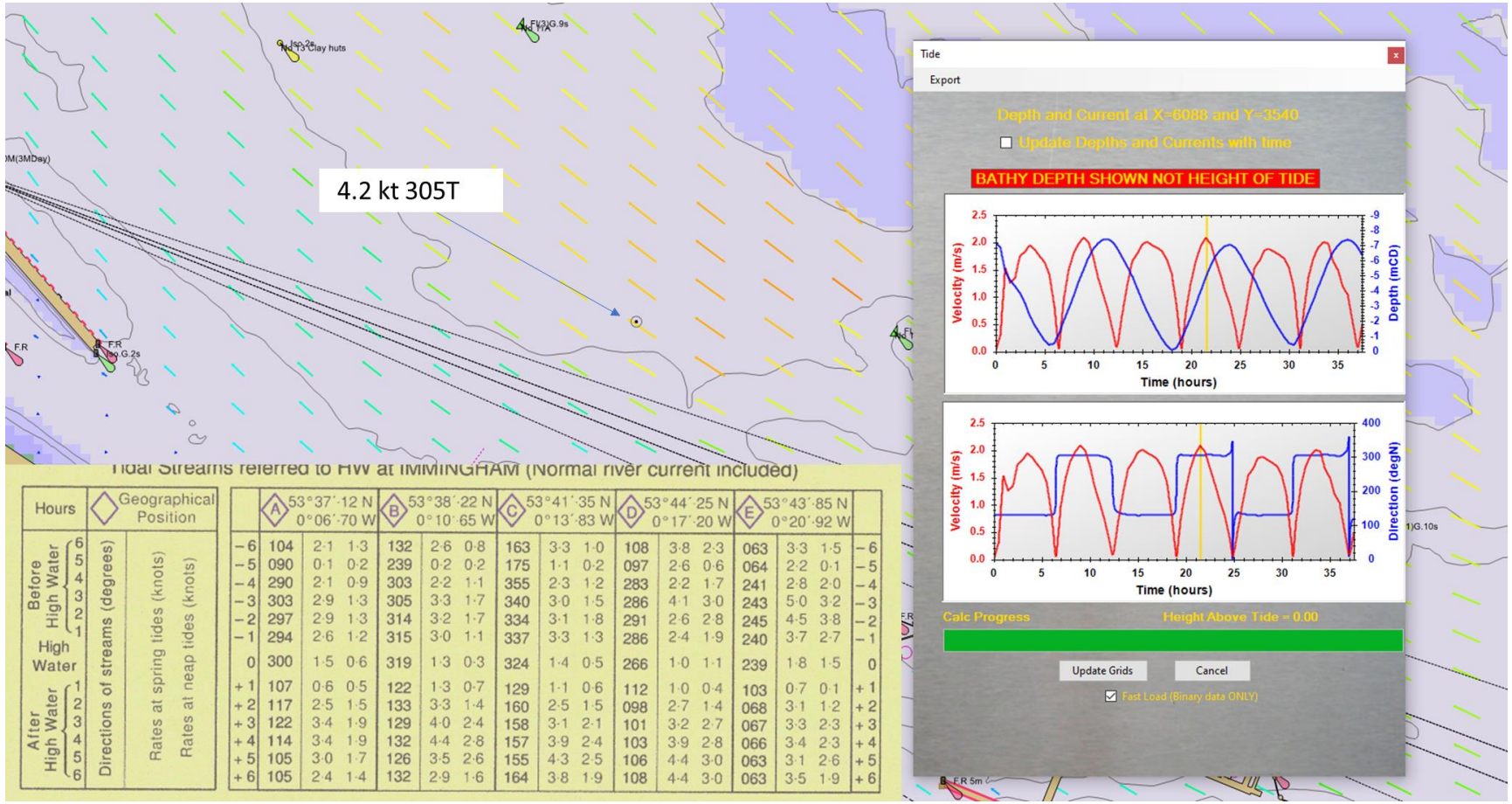
Ebb Flows



Tidal Streams referred to HW at IMMINGHAM (Normal river current included)

Hours	Geographical Position	A 53°37′·12 N 0°06′·70 W			B 53°38′·22 N 0°10′·65 W			C 53°41′·35 N 0°13′·83 W			D 53°44′·25 N 0°17′·20 W			E 53°43′·85 N 0°20′·92 W			
		Directions of streams (degrees)	Rates at spring tides (knots)	Rates at neap tides (knots)	Directions of streams (degrees)	Rates at spring tides (knots)	Rates at neap tides (knots)	Directions of streams (degrees)	Rates at spring tides (knots)	Rates at neap tides (knots)	Directions of streams (degrees)	Rates at spring tides (knots)	Rates at neap tides (knots)	Directions of streams (degrees)	Rates at spring tides (knots)	Rates at neap tides (knots)	
Before High Water	−6	104	2·1	1·3	132	2·6	0·8	163	3·3	1·0	108	3·8	2·3	063	3·3	1·5	−6
	−5	090	0·1	0·2	239	0·2	0·2	175	1·1	0·2	097	2·6	0·6	064	2·2	0·1	−5
	−4	290	2·1	0·9	303	2·2	1·1	355	2·3	1·2	283	2·2	1·7	241	2·8	2·0	−4
	−3	303	2·9	1·3	305	3·3	1·7	340	3·0	1·5	286	4·1	3·0	243	5·0	3·2	−3
	−2	297	2·9	1·3	314	3·2	1·7	334	3·1	1·8	291	2·6	2·8	245	4·5	3·8	−2
	−1	294	2·6	1·2	315	3·0	1·1	337	3·3	1·3	286	2·4	1·9	240	3·7	2·7	−1
High Water	0	300	1·5	0·6	319	1·3	0·3	324	1·4	0·5	266	1·0	1·1	239	1·8	1·5	0
After High Water	+1	107	0·6	0·5	122	1·3	0·7	129	1·1	0·6	112	1·0	0·4	103	0·7	0·1	+1
	+2	117	2·5	1·5	133	3·3	1·4	160	2·5	1·5	098	2·7	1·4	068	3·1	1·2	+2
	+3	122	3·4	1·9	129	4·0	2·4	158	3·1	2·1	101	3·2	2·7	067	3·3	2·3	+3
	+4	114	3·4	1·9	132	4·4	2·8	157	3·9	2·4	103	3·9	2·8	066	3·4	2·3	+4
	+5	105	3·0	1·7	126	3·5	2·6	155	4·3	2·5	106	4·4	3·0	063	3·1	2·6	+5
	+6	105	2·4	1·4	132	2·9	1·6	164	3·8	1·9	108	4·4	3·0	063	3·5	1·9	+6

Flood Flows



Tidal Streams referred to HW at IMMINGHAM (Normal river current included)

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		Directions of streams (degrees)	Rates at spring tides (knots)	Rates at neap tides (knots)	Directions of streams (degrees)	Rates at spring tides (knots)	Rates at neap tides (knots)	Directions of streams (degrees)	Rates at spring tides (knots)	Rates at neap tides (knots)	Directions of streams (degrees)	Rates at spring tides (knots)	Rates at neap tides (knots)	Directions of streams (degrees)	Rates at spring tides (knots)	Rates at neap tides (knots)	
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	−5	090	0·1	0·2	239	0·2	0·2	175	1·1	0·2	097	2·6	0·6	064	2·2	0·1	−5
	−4	290	2·1	0·9	303	2·2	1·1	355	2·3	1·2	283	2·2	1·7	241	2·8	2·0	−4
	−3	303	2·9	1·3	305	3·3	1·7	340	3·0	1·5	286	4·1	3·0	243	5·0	3·2	−3
	−2	297	2·9	1·3	314	3·2	1·7	334	3·1	1·8	291	2·6	2·8	245	4·5	3·8	−2
	−1	294	2·6	1·2	315	3·0	1·1	337	3·3	1·3	286	2·4	1·9	240	3·7	2·7	−1
High Water	0	300	1·5	0·6	319	1·3	0·3	324	1·4	0·5	266	1·0	1·1	239	1·8	1·5	0
After High Water	+1	107	0·6	0·5	122	1·3	0·7	129	1·1	0·6	112	1·0	0·4	103	0·7	0·1	+1
	+2	117	2·5	1·5	133	3·3	1·4	160	2·5	1·5	098	2·7	1·4	068	3·1	1·2	+2
	+3	122	3·4	1·9	129	4·0	2·4	158	3·1	2·1	101	3·2	2·7	067	3·3	2·3	+3
	+4	114	3·4	1·9	132	4·4	2·8	157	3·9	2·4	103	3·9	2·8	066	3·4	2·3	+4
	+5	105	3·0	1·7	126	3·5	2·6	155	4·3	2·5	106	4·4	3·0	063	3·1	2·6	+5
	+6	105	2·4	1·4	132	2·9	1·6	164	3·8	1·9	108	4·4	3·0	063	3·5	1·9	+6

Wind analysis

Return period (years)	Wind speed (10 minute mean, knots) by sector (°N)											
	0	30	60	90	120	150	180	210	240	270	300	330
0.1	20	17	10	10	8	5	14	17	14	12	13	14
1	33	26	23	14	12	9	19	26	20	17	21	26
2	37	28	28	16	14	10	20	29	22	18	23	30
5	42	31	34	18	16	11	22	32	24	20	26	35

Return period (years)	Wind speed (1 minute mean, knots) by sector (°N)											
	0	30	60	90	120	150	180	210	240	270	300	330
0.1	23	20	12	14	12	9	19	20	16	15	15	16
1	38	29	27	22	20	16	25	30	24	22	24	30
2	43	32	32	25	22	17	27	33	26	24	27	34
5	48	35	39	28	25	19	28	37	29	28	31	40

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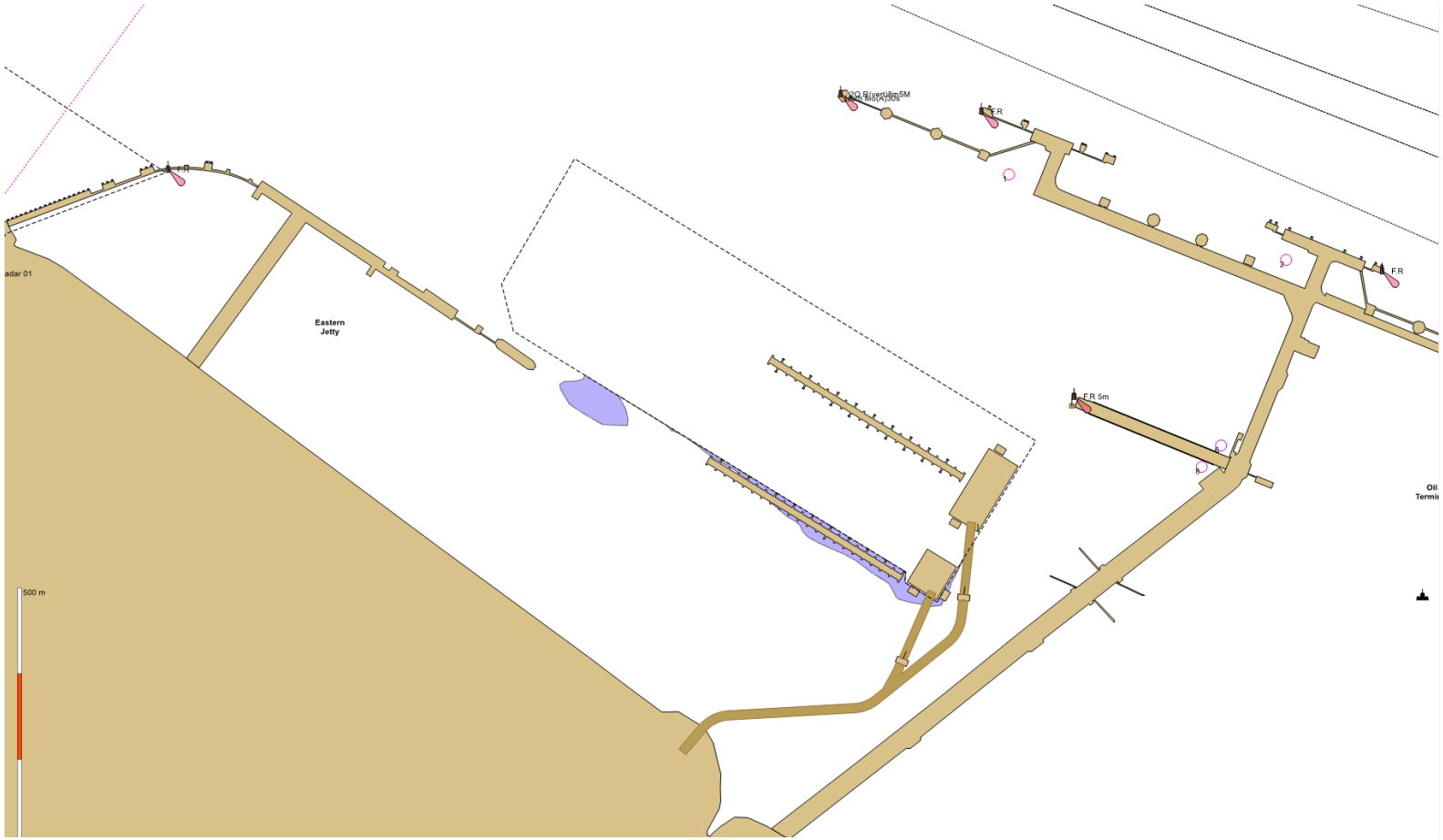
Layout showing eastern jetty and tug pontoon



Simulation Agenda

Run ID	Manoeuvre	Wind	Flow
1	Approach to No3 berth in normal conditions	NE 15-20 knots	Peak flood
2	Departure to No 3 berth in normal conditions	NE 15 – 20 knots	Peak flood
3	Approach to No3 berth in normal conditions	NE 15-20 knots	Peak ebb
4	Departure to No 3 berth in normal conditions	NE 15 – 20 knots	Peak ebb
5	Approach to No3 berth in normal conditions	SW 15-20 knots	Peak flood
6	Departure to No 3 berth in normal conditions	SW 15 – 20 knots	Peak flood
7	Approach to No3 berth in normal conditions	SW 15-20 knots	Peak ebb
8	Departure to No 3 berth in normal conditions	SW 15 – 20 knots	Peak ebb
9	Approach to No 3 berth in extreme conditions	NE 25-30 knots	Peak flood
10	Departure to No 3 berth in extreme conditions	NE 25-30 knots	Peak flood
11	Approach to No3 berth in extreme conditions	NE 25-30 knots	Peak ebb
12	Departure to No 3 berth in extreme conditions	NE 25-30 knots	Peak ebb
13	Approach to No3 berth in extreme conditions	SW 25-30 knots	Peak flood
14	Departure to No 3 berth in extreme conditions	SW 25-30 knots	Peak flood
15	Approach to No3 berth in extreme conditions	SW 25-30 knots	Peak ebb
16	Departure to No 3 berth in extreme conditions	SW 25-30 knots	Peak ebb
17	Option for gusting conditions (1)	TBC	TBC
18	Option for gusting conditions (2)	TBC	TBC
19	Option for sheltering conditions (1)	TBC	TBC
20	Option for sheltering conditions (2)	TBC	TBC

Archived: 13 November 2023 21:23:56
Subject: FW: Simulations on 7 and 8 November [BDB-BDB1.FID10809980]
Importance: Normal
Attachments:
231031_IERRT-ISH3 AP17- Meeting Minutes - DFDS comments 03.11.23.DOCX

From: A KER Angus
Sent: November 1 :
To: Joshua ush [redacted] abports.co.uk
Cc: O S Jessica [redacted] bdbpitmans.com Sophie oung [redacted] abports.co.uk reenwood, rian [redacted] clydeco.com Jesper artvig Nielsen [redacted] dfds.com
Subject: Simulations on 7 and November D - D 1. ID1

ear osh

Thank you for the email last night with the draft minutes of Tuesdays meeting and the PowerPoint slides presented at that meeting and the email and enclosed letter you have sent this afternoon.

ur client is uncomfortable with the minutes as currently drafted, there appear to be some omissions. e have therefore provided the attached copy which includes some additional text (in tracked changes) which we consider provides an accurate reflection of the discussion on Tuesday.

an you please confirm whether or not a recording was made of the meeting

and its consultants have reviewed the minutes and slide pack and would like to note the following

- In the minutes section simulator house rules it is noted o hands raised and P confirmed the above was taken as agreed is of the view that there was substantial discussion, rather than agreement by all parties.
- A key issue is the significant consequences of something going wrong the simulations should be assessing if there is enough of a safety buffer in an adverse scenario to ensure these significant consequences can be averted.
- There needs to be redundancy, additional power reserves, room for error and conservatism to make certain of ability for the ship to get out of a bad situation. This cannot be determined by allowing long usage of maximum power and the use of smaller, shallower draft vessels that are less susceptible to wind and current forces.
- e are concerned with the approach of trying to run these simulations purely with a smaller vessels, as it is expected that these vessels would not have the same challenges or restrictions in getting safely in and out compared to vessels of the si e of the intended design criteria which will ultimately operate to this terminal.
- e are concerned that the use of a smaller vessel than the design specification will not provide evidence that the terminal is safe to be used by vessels of the design specification. hat should be tested is not only vessel types for the operation at start date but also for the future design vessels to meet the design specification, not ust those expected on day .
- If the simulations can prove the terminal is safe for the full si ed design vessel, operating in adverse weather with appropriate redundancy for daily unexpected variables (poor visibility, gusting wind, mis udged manoeuvres, human error, towline failures, or a combination of these) then that would give confidence the significant consequences are less likely to occur.
- lide defines the evaluation criteria for a fail which states a maximum duration of tug usage at , in light of this, does not understand why ABP will not or cannot include this same type of guidance criteria for ship machinery and other parameters.
- lide , bullet point (evaluation criteria abort) suggests that aborts should be classed as fails.
- e were surprised ike Parr ( ) asked for confirmation of what the design vessel is, as according to paragraph . . of the avigation isk Assessment (APP) it is m A, m beam and m draft and it is noted in the revised allingford imulation tudy Part (A) that the Proposed evelopment is considered safe for manoeuvring vessels of m in length.

As you will be aware, the letter sent to you yesterday (ovember) included a number of questions regarding the parameters for the simulations which remain unclear. e note your letter today, however, it does not answer any of our questions. ill you be able to provide a response specifically to those questions ahead of the simulations commencing on Tuesday ovember e note your colleague ophie will be attending in your absence.

egards

Angus

BDB PITMANS

Angus alker artner
T [redacted]
www.bdbpitmans.com

or and on behalf of B B Pitmans P
ne Bartholomew lose, ondon E A B

Minutes of Meeting

Meeting	**Immingham Eastern Ro-Ro Terminal – ISH3 AP17 (Navigational Stakeholder Simulations)**
Purpose	Pre-meet ahead of the further IERRT Navigational Simulations to agree the agenda and approach for the simulations scheduled for 7th and 8th November.
Venue & Date	MS Teams 11.30-12.30hrs, Tuesday 31st October 2023.
Attendees	[redacted] – ABP Project Development Manager [redacted] – ABP Consents Lead [redacted] – HES Pilot Operations Manager [redacted] – HR Wallingford Simulation Lead [redacted] – Stena Port Manager [redacted] – Stena Senior Manager, Port Development North Sea [redacted] – Stena Master [redacted] – APT Marine Supervisor [redacted] – DFDS Seaways MD [redacted] – DFDS Head of Fleet Management, Humber [redacted] – DFDS Captain [redacted] – CLdN General Counsel [redacted] – CLdN Principal Operations Manager
Apologies	[redacted] – HES Harbour Master Humber [redacted] – ABP Dock Master [redacted] – APT Terminal Manager
Distribution	As above

Minutes

Item		Action by
1.0	JB welcomed all attendees to the meeting and requested confirmation that all expected attendees from organisation were present. All attendees confirmed that the meeting could begin and commenced introductions, including name, organisation and role.	
2.0	**Purpose of Meeting** JB explained that during ISH3, the examination hearing included a discussion on the opportunity for further navigational simulations in relation to the IERRT project and that the Applicant had written to all attendees in response to ISH3 Action Point 17. JB referenced the Examining Authority's letter of 27 October 2023 which requested that a report from the further simulations is written up for submission at D6 on 13 November. JB stressed the importance of this being a collaborative process and requested that constructive feedback is provided in the meeting to allow simulations to run as smoothly as possible. JB read the agenda items and reiterated that the purpose was to provide clarity to all parties ahead of the simulations. Agenda: 1. Introductions and apologies 2. Context and Purpose of the Simulations (ISH3) 3. Navigation Simulations – Agreement of House rules and etiquette a. Simulation run pass criteria 4. Items raised in response to ISH3 AP17 invitation letters a. Environmental Conditions (tide states, wind states, shading) b. Modelled Berths (Eastern Jetty) 5. Confirmation of simulation agenda 6. Confirmation of Attendees from Interested Parties 7. AOB 8. Close	
3.0	**Simulator House Rules** MP noted that the majority of attendees have been before and are familiar with the set up and that HR Wallingford (HRW) will be enforcing the simulator rules. MP then outlined the process: Before each brief, HRW will confirm the objective, strategy and	

	conditions. Humber Estuary Services (HES) will then provide a brief which will cover what the manoeuvre will look like and provide necessary information to PEC/pilot. JS agreed that HES will attend and will provide a brief at simulations. MP explained the next step is to start execution and conditions to check sims are working. Whilst running, the simulation team will monitor from observation room the progress until completion. MP noted that discussion is inevitable and will be put to one side until the debrief process which will be formally enforced. MP will lead the debrief, followed by the Harbour Master, then PEC/Pilot, then stakeholder comments for each run in this order. The success criteria will be agreed and then the recorded before moving on. JN questioned how the assessment will be based. MP explained this is on the agenda and requested that all attendees raise hands or feedback if not agreed. No hands raised and MP confirmed the above was taken as agreed.	
4.0	**Success Criteria** MP proceeded to answer JN question, explaining that HRW undertake a qualitative not quantitative assessment – which is the approach strongly advised by HRW and that agreed with ABP. MP shared the criteria for success on screen, noting this is the standard across other simulation studies and requested feedback from attendees that these were reasonable. JN did not agree and explained that DFDS would request hard parameters, for example a definition that using bow thrusters on full power for more than 15 minutes is not safe. MP started to explain that this was an engineering matter and not a simulation parameter. JN interjected that the power reserve was subjective and queried why hard parameters could not be agreed. MP requested time to finish his explanation. MP went on to explain that the parameters described by JN are engineering parameters and dependent on the assessment of the master or pilot, who is trained on the equipment and for the situation. The majority of runs for the feasibility assessment were been done on higher end of limits. This was specifically to understand that the location, design and orientation of berths is feasible for operations.	

	MP explained that HRW have intentionally put more runs into the upcoming simulations based on typical operating conditions and if stakeholders have objective comments during the sessions, which are substantiated with evidence, then HRW will note this in the assessment of each run. JN queried how will this be facilitated and questioned whether there will be a screen where manoeuvres can be seen or presented at the report stage. MP responded that they will be facilitated in the same way as the last simulations, which JN attended, which is consistent with the approach HRW take for all of its clients. MP confirmed that JN and other representatives will be able to make representations at the time. JN raised again that if the bow thruster has to be used 100% of the time, then there is no back up and hard parameters should be set. MP noted that in instances where there is extensive use of bow thrusters at 100% and two tugs, this could be a marginal manoeuvre. JN noted this was done last time, which MP stated was incorrect. JN reinforced that he cannot agree to this and DFDS' view is that hard parameters must be set. MP explained that HRW always run qualitative as opposed to quantitative assessments. The reason for having a simulation team present is to provide the necessary expertise which can be agreed or countered by other marine professionals. MP explained that at the last attendance in November, the marine professionals forming the simulation team agreed with the outcomes documented in the reports. AB added that DFDS are not going to agree or reach consensus on this. JN stated this would be machinery, bow thrusters and tugboats. MP noted the success criteria on screen including that 'the ship remains in full control without resorting to aggressive manoeuvring techniques' but suggested that DFDS set their own parameters. JN confirmed would be provided. MP referred back to success criteria on screen, and requested agreement with other parties that a qualitative assessment for success is that the ship remains under full control at all times without resorting to aggressive manoeuvring techniques. MB agreed, noting that every Captain attending the simulations would consider that they will have to undertake this manoeuvre in real life in the future. Given the number of PEC and pilots in the room, he hoped this can be achieved during the simulations. This is fair and in line with	

	what I have seen in my experience. To put hard and fast parameters in place is not in line with his personal experience at simulations before. MP acknowledged agreement with MB observations. MP gave an example using bow thrusters, stating that if there is disagreement in the room, then the ships engineering handbook would be consulted to agree if the equipment has been used in accordance with this. MB again noted that there are plenty of experts who will be in attendance to agree if it's a safe manoeuvre. These are sensible parameters that HRW are suggesting. With the exception of DFDS, all other parties acknowledged agreement with the HRW success criteria.	
5.0	**Marginal Criteria** MP presented criteria for marginal passes and explained this will be discussed in the room and recorded in the report which goes to ExA. JN suggested that a hard parameter should be 3 minutes of bow thruster use. MP explained again that there are two approaches – both quantitative and qualitative. HRW have intentionally taken a qualitative approach and do this with all clients. There are significant problems with quantitative as there would need to be a definition for all operational circumstances for example operating at 95%m or including a tug but applying no force. MP reiterated that the number of mariners in the room means HRW can undertake a very strong qualitative assessment. MP confirmed that HRW are more than happy to consider your points in the room but stressed that applying the suggested parameter would be a false limit and would lead to forced behaviours in the simulator. For example, not making a realistic manoeuvre because you are trying to work to a set criteria. LV noted that the comments raised by JN are a different way of testing and stressed the importance to trust HRW on their approach. LV noted that HRW are a qualified institute for this that as an experienced Master, he would agree with their recommendations. MP, in response to JN, suggested a proposed approach to consider JN's parameters in the room – whereby JN explains if he thinks a run has broken one of DFDS' parameters. MP noted that in his experience working with mariners, where there is a good point made, attendees do tend to reach a consensus. JN said his parameter would be 3 minutes.	

	MP stressed it is important that there is evidence to underpin this. Fine for this to be suggested and for the simulation team to take a view, however, if they are just numbers for suggestion, they must be supported by evidence. At the moment it is not clear what the evidence for 3 minutes is. JN noted that the parameters are what he believes to be correct. OS noted that he agreed with qualitative approach but flagged that he wants to get comfort that the manoeuvre is doable time after time and repeatable with the human factor, noting the proximity to the Oil Terminal. MP noted that HRW can demonstrate that the HES procedures are being followed and the manoeuvre is repeatable. OS noted that feasibility simulations have been conducted and this further simulation is to provide more detail to stakeholders. MP confirmed that the simulation will be transparent and if the consensus is that it is unrepeatable or high risk, then this will be recorded. If APT or DFDS have a concern about one factor and it's outwith the consensus of the room, this will be noted in the record. JB noted that the purpose of his ISH3 Action was not for the Applicant to agree to every parameter set by DFDS but it was to provide additional simulations. If we can't move forward, it feels futile to proceed. JN noted that DFDS will not agree to what is suggested, that DFDS will uphold our view and prepare a disclaimer. MB commented that the final operator of the berth will not put ships on which are beyond safe parameters. In reality, the operator will wait for conditions to settle and improve, such as wait for wind to ease and will not operate unless safe. MB noted that he would agree that if the manoeuvre requires 100% bow thrusters at 15 minutes every time then this would not be safe and repeatable. MP explained that all simulation manoeuvres have been done at peak flood/ebb with 30 knots of wind. All operators on Humber would agree this is not sensible or representative of typical day to day conditions. In these further simulations, HRW have specifically set out some routine operational parameters to allow a comparison against the exceptional conditions tested at feasibility. MP stressed the goal is to agree something sensible for the operation of the berths. We are allowing everyone the opportunity to comment but stressed importance of parameters being agreed by the simulation	

	team. If other individuals disagree with the simulation team then we will document this but will need evidence. MB noted OK and understood. JN confirmed he will set out DFDS parameters in writing. [Post meeting note: these were provided by DFDS in its letter to ABP dated 2 November 2023.]	**JN to provide DFDS Parameters and evidence base for these parameters.**
6.0	**Environmental Conditions** MP showed a figure of the tidal diamond and flows on the screen and responded to a representation made by DFDS in writing whereby DFDS assert that the flow did not align with the tidal diamonds. MP explained that the model is close, but proposed to make an adjustment to the flows so as to follow the tidal diamond in the area north of the IOT if this is preferred. JN asked where this would take us on the IOT as DFDS do not think it should be parallel. MP explained HRW have set out a proposed direction north of A1 buoy. JN noted publications from HES indicating what the current should be. JS commented that HES publications were prior to the additional modelling work in the vicinity of the IERRT, but have no objection to adjust the model in the area north of IOT for the simulations as requested by DFDS. JS commented that HES have confidence in their model and now believe the tidal flow surrounding the Immingham area and IOT has changed JN queried that if that is the case, why have the publications not been updated. JS stated this was very new information. JN questioned this by remarking that as far as he knew the extra data collection was done around August 2022 which cannot be viewed as 'new'. This remark was not answered. JN stated that publications should be updated. MP explained that the published material shows variation across the flow and the data shows that there is a variance across tidal cycles.	

	MP noted his professional background as a navigator, hydrographic surveyor and modeller. MP accepts that a flow model does not always predict perfectly but stressed there is nothing more that can be done to improve the model as ABP have responded to every suggestion made by HRW to get this as accurate as possible. MP noted that the model can be tweaked to align with conditions experienced by mariners routinely operating in this area, however, it is already extremely close to where the model and publications expect flows to be. MP again offered that the model alignment north of IOT can be adjusted and tweak if it is agreed by all parties. JN queried what this would mean and what the flow direction would be when passing IOT. MP noted this had been set out already. HRW would make a vector change by applying a vector to whole model – which would result in an exaggerated effect. There would be a point in the manoeuvre where the ship finds a balance position, and when in this position, MP will take off the vector and come back to natural model. This would be in the spatial area of the proposed IERRT infrastructure where HRW have very high confidence in the model. JN commented that it would have been better to have collected more data. JS confirmed that HES are happy to adjust tide to reflect the tidal diamond when passing IOT. When manoeuvring in IERRT area, we will use the modelled data. MP stressed that the model closely aligns with tidal data and the observations. However, despite this and to specifically address the concern from DFDS, HRW are able to artificially adjust the model to anecdotally align with the IOT. HRW hopes this would alleviate the concern from DFDS that the alignment north of IOT does not align with operations and experience on the Humber. MP noted it is not practical or appropriate to do any further modelling as it aligns very closely with all observations and collected data. JN stated that he does not believe this is anecdotal and that DFDS disagree with the model. MP noted that DFDS's response last week referred to tidal diamonds. These correlate closely with model. JN stated that it is north of IOT where the current is wrong.	

	MP reiterated HRW have listened to this and propose to adjust the model to align with DFDS' observations. JN stated an issue that the model would be corrected back once past IOT. MP noted this was correct and the model will be adjusted to respond to the area DFDS are noting. This shifts all of the tides across the entire model. Once the manoeuvre gets into the normal area of operations for IERRT, the model will convert back to natural flow. Otherwise this would have the effect of making the flows by IERRT significantly different to the observed and recorded data. JB stressed need to reach a resolution for the simulations next week. JN noted that DFDS will write a disclaimer that they do not believe it is correct. OS noted that the flows are known to be complex in this area and change throughout the tidal regime. Requested if IGET data has been considered. MP confirmed that both models have been compared and the correlation is high. At the micro-scale, we have to accept there will be effects that can't always be modelled. HRW are trying to incorporate the effects that JN is noting. OS accepted that there are micro-changes in tidal conditions that can never be fully modelled. DFDS noted that OS's comment on this point was that tidal flow is very complex and that the simulator is only capable of modelling one tidal current at once. MP reiterated that the effort gone into modelling flows has been substantial. MB noted that there are always going to be minute changes that could generate small-scale effects which are impossible to model – for example, scouring of the sunk dredged channel could cause an effect. MP summarised that the key focus of efforts has been for flow modelling at the IERRT location to be as precise and accurate as possible, noting that it is difficult to get a precise flow model in a complex area. Work has focussed on aligning berths with flows. The challenges raised from DFDS are because the model does not agree with DFDS experience north of IOT, which has resulted in DFDS saying that IERRT has not been properly simulated. We are trying to create a scenario where the flow is more aligned with the DFDS experience until the point where the vessel enters the area to swing into IERRT. JN stated this is a reasonable summary.	

	MB noted that CLdN are also interested in this but can't see how small changes would make a difference to the outcomes and that subtleties could be argued all day. AB suggested agenda moves onto logistics as meeting is overrunning. JB noted that feedback on Eastern Jetty has been provided in writing.	
7.0	**Simulator Logistics** JB noted that there are spatial constraints at HRW and that all parties confirm attendees with total numbers to be limited to 15. JB requested arrival at 0900 for an 0930 start as outline JN noted that DFDS will send 3/4 attendees. Cannot confirm names yet but will do tomorrow. JB requested that this was 3. MB noted he will attend for the second day. Will try and reschedule to attend on 7th. MV noted Stena will have 4 attendees - Ian, Marcel, Geert Jan, and Laas. Important that Stena are fully represented as the operator of the facility. OS confirmed APT will be represented by Olly and Nigel Basset from Nash Maritime. JS confirmed HES will be represented by 3 attendees including Joe, Harbour Master Humber & pilot. JB confirmed ABP will send three attendees from project team. MP noted we will have one attendee from towage. MV noted that Stena must be there with four attendees. Understand the space issue but some from the other parties can reduce number of people as they are not operating the facility.	**JB to send out attendance list, keeping to 15 if possible.**
8.0	**AOB:** JB opened the floor to AOB. OS commented on the ships being used in the model. JB confirmed it will be the Transit Ship. In terms of larger vessels - this was to demonstrate feasibility for larger ships in the future. Transit is the ship to be used from day 1 which was included in feedback post ISH3.	

	JN noted that he acknowledged that the Stena class is being used because this is the operational vessel but DFDS also want to see the design vessel modelled on all berths. MP asked for confirmation on design vessel. JN confirmed this was 240m, 35m and 8m. MP remarked this was done by using on the DFDS Jinling class vessel. JN remarked DFDS does not agree and that only one simulation run of berth 3 using the DFDS Jinling class vessel has been shared. MP noted that there is no vessel model for these specific parameters and HRW will model the Transit, which will be operating initially at the Port.	