

## **Appendix A   Data Dictionary**

### **Vessel Table**

<b>Field Name</b>	<b>Field Type</b>	<b>Data Format</b>	<b>Length</b>	<b>Comments</b>
<b><u>V_Imo_No</u></b>	<b>Number</b>	<b>Long Integer</b>	<b>12</b>	<b>Primary Key – Unique - Indexed</b>
<b>V_Name</b>	<b>Text</b>	<b>Alphanumeric</b>	<b>25</b>	
<b>V_Type</b>	<b>Text</b>	<b>Alphanumeric</b>	<b>25</b>	
<b>V_Bow</b>	<b>Number</b>	<b>Long Integer</b>	<b>12</b>	<b>This is set to 0</b>
<b>V_Bridge</b>	<b>Number</b>	<b>Long Integer</b>	<b>12</b>	<b>Distance from bow in feet</b>
<b>V_Stern</b>	<b>Number</b>	<b>Long Integer</b>	<b>12</b>	<b>Distance from bow in feet</b>
<b>V_Length</b>	<b>Number</b>	<b>Long Integer</b>	<b>12</b>	<b>Distance from bow in feet</b>
<b>V_Beam</b>	<b>Number</b>	<b>Long Integer</b>	<b>12</b>	<b>Width</b>
<b>V_Draft</b>	<b>Number</b>	<b>Long Integer</b>	<b>12</b>	<b>Maximum draft</b>
<b>V_Status</b>	<b>Text</b>	<b>Alphanumeric</b>	<b>25</b>	<b>In-Port / Expected Planned / Expected Unplanned</b>

### Standard Position Table

<b>Field Name</b>	<b>Field Type</b>	<b>Data Format</b>	<b>Length</b>	<b>Comments</b>
SP_Imo_No	Number	Long Integer	12	Secondary Key
SP_Berth_No	Text	Alphanumeric	25	
SP_STQ	Text	Alphanumeric	12	STQ or PTQ
SP_BowB	Number	Long Integer	12	Bow bollard
SP_BowD	Number	Long Integer	12	Distance from bow bollard
SP_BrB	Number	Long Integer	12	Bridge bollard
SP_BD	Number	Long Integer	12	Distance from bridge bollard
SP_StB	Number	Long Integer	12	Stern bollard
SP_StD	Number	Long Integer	12	Distance from stern bollard
SP_DMS	Text	Alphanumeric	25	In-Port / Expected Planned / Expected Unplanned
SP_Verify	Logical	Boolean	2	Verification of standard position
SP_Notes	Text	Alphanumeric	200	Extra notes on position

### **Fenders Table**

<b>Field Name</b>	<b>Field Type</b>	<b>Data Format</b>	<b>Length</b>	<b>Comments</b>
<b><u>F_Num</u></b>	<b>Number</b>	<b>Long Integer</b>	<b>12</b>	<b>Primary Key – Unique - Indexed</b>
<b>F_Type</b>	<b>Text</b>	<b>Alphanumeric</b>	<b>25</b>	<b>Wood / Pneumatic / Tube / Pole</b>
<b>F_Size</b>	<b>Number</b>	<b>Long Integer</b>	<b>12</b>	<b>Length</b>
<b>F_Posboll</b>	<b>Number</b>	<b>Long Integer</b>	<b>12</b>	<b>Bollard No.</b>
<b>F_Berth</b>	<b>Number</b>	<b>Long Integer</b>	<b>12</b>	<b>Berth No.</b>

### **Bollard Table**

<b>Field Name</b>	<b>Field Type</b>	<b>Data Format</b>	<b>Length</b>	<b>Comments</b>
<b>B_ID</b>	<b>Number</b>	<b>Long Integer</b>	<b>12</b>	<b>Primary Key – Unique - Indexed</b>
<b>B_Number</b>	<b>Number</b>	<b>Long Integer</b>	<b>12</b>	<b>Bollard No. on Berth</b>
<b>B_Berth</b>	<b>Number</b>	<b>Long Integer</b>	<b>12</b>	<b>Berth No.</b>
<b>B_Distance</b>	<b>Number</b>	<b>Long Integer</b>	<b>12</b>	<b>Distance from next bollard in feet</b>
<b>B_Fender</b>	<b>Number</b>	<b>Long Integer</b>	<b>12</b>	<b>Fender</b>

## **Appendix B USER INSTRUCTIONS**

### **BERTHING TOOL**

Note1 – Data used in this is wholly imaginary, and not always consistent, although some approximates actual positions

Note2 – All windows can be closed by clicking X in upper-right corner.

The instructions below are appropriate to the role of berthing officers.

1. Open Berth by double-clicking *berth.mdb*. Main user screen will appear, (picture of ship and buttons)
2. Click on *Standard Positions* – small window will appear titled *Vessel*.
3. Click on horizontal scroll to record no. '5' (*Enterprise*). Alternatively click on *Find Record*, then, in Find window, 'start of field' in Match, type 'e' in Name field, then Find First. Close window – on *Vessel* window 'Enterprise' appears.
4. Click on *Standard Position* (*Vessel* window). The *StdPos* window will appear. A list of standard positions are shown, with notes. The *Berth in Use* button gives a list of berths in use and planned. Choose either a standard position available, click on *FendersF* (gives a list of free dummies) then highlight record (triangle)e.g. berth '45'
5. Click on *View* button. This opens *StdPos* window which approximates berthing slip used by berthing officers – a printout of this may be used by clicking on printer button.
6. If new standard position is needed then free berth with fenders, e.g. '201', can be determined graphically by clicking on *VBGraphics* button.
7. Form *Vessels* appears. (This is a test case and the same vessel will appear at whatever point this is implemented including pre-programmed bollards and fenders. A vessel is automatically drawn alongside berth (201) to rest against fenders (black), regardless of beam of vessel, in this case 70 ft in a PSTQ position. Draft aft and draft forward (metres) are also included. Vessel can be fine tuned by clicking on *Forward* or *Back* repeatedly. This will calculate positions relative to bollards in feet for bow, bridge and stern. The short lines between bridge and stern are maximum fender length to account for curvature

of vessel. Presumably fenders should be in between these two points. Berth no. (201) is indicated and bollards are set 50 ft apart.

8. This graphics screen used VGA 640x480 screen so for higher resolution graphics will not fill whole screen. In later version position can be exported back to database.

The above instructions approximate the role of berthing officers. To return to main menu (database), close windows. Other buttons on Switchboard are queries for large-scale graphics to come. *Port View (Sub)* will open second switchboard, with In-Port, Planned and Unplanned vessels. Click *Return* for main screen.

To return to main menu (database), close windows. Other buttons on Switchboard are queries for large-scale graphics to come. *Port View (Sub)* will open second switchboard, with In-Port, Planned and Unplanned vessels. Click *Return* for main screen.

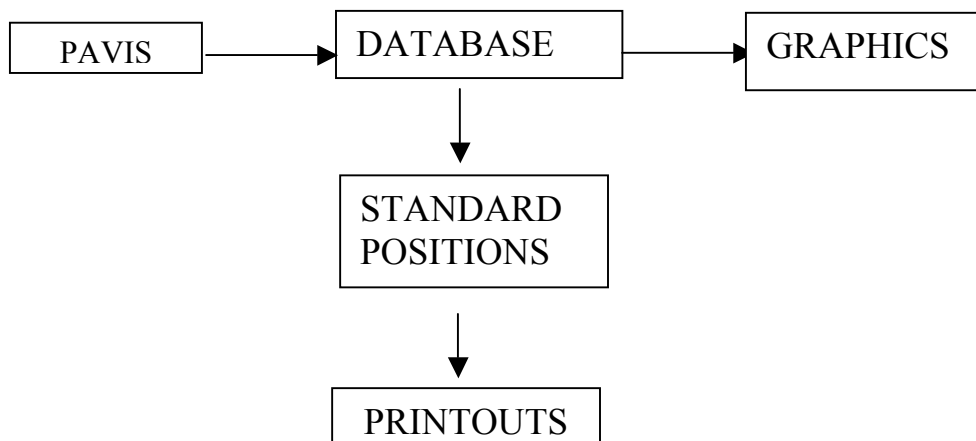
## Appendix C    Presentation Script

### BERTHING TOOL (OVERVIEW)

- DATABASE
- GRAPHICS
- BERTHING VIEW
  
- FUTURE DEVELOPMENTS
- APPLICATION POTENTIAL

### BERTHING TOOL

- FLEXIBLE (PARAMETERS CAN BE MODIFIED)
- ADAPTABLE (CAN BE USED FOR ANY BERTH)
- DATABASE INDEPENDENT OF GRAPHICS
- APPLICABLE WITHOUT MAPS



## **DATABASE**

- **ADAPTABLE**
- **FLEXIBLE**

### **Features:**

- **STANDARD POSITIONS FOR VESSEL**
- **REQUIRED FENDERS AND BERTHS**
- **STAND ALONE SYSTEM**
- **COULD READ FROM PAVIS**
- **INDEPENDENT OF GRAPHICS**
- **RELATIONAL DATABASE MANAGEMENT SYSTEM**
- **USES REFERENTIAL INTEGRITY**

## **GRAPHICS**

- **OVERALL VIEW OF PORT**
- **VIEW OF GROUP OF BERTHS**
- **BERTHING VIEW**
- **VESSEL CHARACTERISTICS EXPANDED**

## **BERTHING VIEW**

- **DIMENSIONS OF VESSEL**
- **BRIDGE POSITION**
- **OPENINGS ON VESSEL**
- **RAMP POSITIONS**
- **POSITION OF VESSEL RELATIVE TO BERTH**
- **DISTANCE FROM BOLLARDS**
- **DRAUGHT**
- **OPTIMUM FENDER POSITIONS**

## **FUTURE DEVELOPMENTS**

- **TIME PLANNING FOR SPECIFIED DATE**
- **VIEW OF BERTHS AT A SPECIFIED DATE**
- **DETAILS OF VESSELS ENHANCED**

## **WIDER POTENTIAL**

- **TAILOR BERTHING TOOL TO ANY ABP PORT**
- **TAILOR BERTHING TOOL FOR SMALLER PORTS**

# SYSTEM STRUCTURE

