**Marine Exposure Capture**

**PLEASE SEE ATTACHED WORD DOC FOR DIAGRAMS**

**Overview**

There are 270 users using the vessel schedule excel spreadsheet for the purposes of compliance screening.

The objective:

1. Automate the upload of the schedule into Blue[i] replacing the need for email submissions.
2. Perform compliance and sanction screening in Blue[i] by calling external APIs.
3. Capture client information, master vessel schedule into Blue[i] from the user and return a screened master vessel schedule.

**Methodology**

1. Blue[i] is the application through which Marine UK Exposure data is captured.
2. The user enters Client Information through Blue[i]. Previously this is captured in the Marine – Standard Vessel Schedule Template.
3. A modified (simplified version) of the Marine – Standard Vessel Schedule, the Master Vessel Schedule template portion will be used to collect the vessel information.
4. Once the user submits the exposure information for screening, Blue[i] calls the relevant APIs and return risk rating and status for each of the IMOs updated in the template.
5. Summary page provided at end of journey. Provides status on submission.

**Application Flow**

Refer to: <https://www.figma.com/board/UOvWbJ9sxmn3ZjUmygW8Mq/Marine-Exposure-Stepper?node-id=0-1&p=f&t=F5SMjmUtvDWzLFS1-0>

**Vessel Review Stepper**

**Wireframe**

Please refer:

Fig jam flow: https://www.figma.com/board/UOvWbJ9sxmn3ZjUmygW8Mq/Marine-Exposure-Stepper?node-id=0-1&p=f&t=ZsONaG6kim5H5w0G-0

Figma flow UX: [Marine Hull Exposure POC - IMO Mock-up (work-in-progress)](https://www.figma.com/proto/WgRXj4b20KQmi9ww0pSBSf/Marine-Hull-Exposure-POC?page-id=4758:42312&node-id=4913-89275&viewport=7925%2c1332%2c0.48&t=U0FYX8dvrWSTIVHG-1&scaling=min-zoom&content-scaling=fixed&starting-point-node-id=6040:89444)

**Data Collection from User**

**What will be collected by Blue[i]:**

1. Client information (see table client information table). Entered by user in Blue[i].
2. Vessel Schedule – Master List (see table Vessel Schedule – Master List). Data entered into a Template in tabular format in Excel and uploaded by the user onto Blue[i].
3. User to check from list of interests showing what interest(s) are part of the policy. We will collect the interest selections on Blue[i] via checklist, but for this version of the build, we will NOT be collecting the Interest Schedules.

**Client Information:**

|  |  |  |
| --- | --- | --- |
| **Client Information** |  |  |
| **Fields in Master List** | **Data Format** | **Data Input Method** |
| Applicant Information |  |  |
| Applicant Name | Freeform Text | BCAMS – Lookup / Editable by user |
| Address 1 | Freeform Text | BCAMS – Lookup / Editable by user |
| Address 2 | Freeform Text | BCAMS – Lookup / Editable by user |
| City | Freeform Text | BCAMS – Lookup / Editable by user |
| Region (State, Province, etc.) | Char or Integer | BCAMS – Lookup / Editable by user |
| Postal Code (Zip Code) | Freeform Text | BCAMS – Lookup / Editable by user |
| Country | Freeform Text | BCAMS – Lookup / Editable by user |
|  |  | BCAMS – Lookup / Editable by user |
| Contact Information | Freeform Text | BCAMS – Lookup / Editable by user |
| Primary Contact Name | Freeform Text | BCAMS – Lookup / Editable by user |
| Role | Freeform Text | BCAMS – Lookup / Editable by user |
| Phone | Number | BCAMS – Lookup / Editable by user |
| Email | Freeform Text | BCAMS – Lookup / Editable by user |
| Policy Information |  |  |
| Risk Reference: | Freeform Text | ENTERED BY USER / Pre-populated if renewal |
| Insured Name: | Freeform Text | ENTERED BY USER / Pre-populated if renewal |
| Marsh Client | Char or Integer | ENTERED BY USER / Pre-populated if renewal |
| Reinsured Name: | Freeform Text | ENTERED BY USER / Pre-populated if renewal |
| Marsh Client | Char or Integer | ENTERED BY USER / Pre-populated if renewal |
| (Re) Insured Country | Freeform Text | ENTERED BY USER / Pre-populated if renewal |
| Submitted By: | Freeform Text | ENTERED BY USER / Pre-populated if renewal |
| Client Executive | Freeform Text | ENTERED BY USER / Pre-populated if renewal |
| Marsh Global Office Location(s) |  | ENTERED BY USER / Pre-populated if renewal |
| Policy Inception Date: | Date format: Month, Day, Year (MM, DD, YYYY) | ENTERED BY USER / Pre-populated if renewal |
| Policy Expiry Date: | Date format: Month, Day, Year (MM, DD, YYYY) | ENTERED BY USER / Pre-populated if renewal |
| Policy Year: | Integer - 4 digit year. | ENTERED BY USER / Pre-populated if renewal |
| Retail: | Freeform Text | SELECTED BY USER / Pre-populated if renewal |
| CE Home | Char or Integer | SELECTED BY USER / Pre-populated if renewal |
| Wholesale: | Freeform Text | SELECTED BY USER / Pre-populated if renewal |
| CE Home | Char or Integer | SELECTED BY USER / Pre-populated if renewal |
| Other(s): | Freeform Text | ENTERED BY USER / Pre-populated if renewal |

**Vessel Schedule – Master List**

|  |  |  |
| --- | --- | --- |
| **Vessel Schedule – Master List** |  |  |
| **Field Columns in - Master List** | **Data Format** | **Data Input Method** |
| **IMO** | Number | ENTERED BY USER |
| **Vessel Name** | Text | API - IHS DB - LOOK UP |
| **(LLI) Vessel Type** | Text | API - IHS DB - LOOK UP |
| **(LLI) SubType** | Text | API - IHS DB - LOOK UP |
| **(Short) Type** | Text | API - IHS DB - LOOK UP |
| **Built** | Date (Year) | API - IHS DB - LOOK UP |
| **Class** | Text | API - IHS DB - LOOK UP |
| **Flag** | Text | API - IHS DB - LOOK UP |
| **(Short) Flag** | Text | API - IHS DB - LOOK UP |
| **Dead Weight Tonnage (DWT)** | Number | API - IHS DB - LOOK UP |
| **Gross Tonnage (GT)** | Number | API - IHS DB - LOOK UP |
| **(LLI) Vessel Risk Rating** | Text | API - Submit for RISK RATING |
| **Vessel Compliance Risk Rating** | Text | API - LLI - LOOK UP |
| **Currency** | Text | If there is a Vessel Name [S], currency will always be USD. |
| **Active on Policy (Incept)** | Date (Month, Day Year) | ENTERED BY USER |
| **Active on Policy (Expire)** | Date (Month, Day Year) | ENTERED BY USER |
| **Hull & Machinery (H&M)** | Text (Yes / No) | SELECTED BY USER |
| **Increased Value (I.V.)** | Text (Yes / No) | SELECTED BY USER |
| **P&I – Fixed** | Text (Yes / No) | SELECTED BY USER |
| **P&I - Mutual (1)** | Text (Yes / No) | SELECTED BY USER |
| **P&I – Mutual (2)** | Text (Yes / No) | SELECTED BY USER |
| **P&I – Mutual (3)** | Text (Yes / No) | SELECTED BY USER |
| **P&I - Mutual (4)** | Text (Yes / No) | SELECTED BY USER |
| **Freight Interest** | Text (Yes / No) | SELECTED BY USER |
| **Second Seaman's** | Text (Yes / No) | SELECTED BY USER |
| **Kidnap & Ransom** | Text (Yes / No) | SELECTED BY USER |
| **Mortgagee’s Interest (MII/MAP)** | Text (Yes / No) | SELECTED BY USER |
| **Social Responsibility (SRI)** | Text (Yes / No) | SELECTED BY USER |
| **Comments** | Text | ENTERED BY USER |

**API Details:**

* API documentation: Refer to LLI REST API Endpoint Guide.
* List of Marsh Retail and Wholesale office locations for drop down in form intake See SVS LLI API Blue(i) – Supporting Information Excel.

**Refer to Figma:**[**Marine Hull Exposure POC - IMO Mock-up (work-in-progress)**](https://www.figma.com/proto/WgRXj4b20KQmi9ww0pSBSf/Marine-Hull-Exposure-POC?page-id=4758:42312&node-id=4913-89275&viewport=3561%2c133%2c0.3&t=wrBQhWhWs4RhOciZ-1&scaling=min-zoom&content-scaling=fixed)

**Broker Dashboard**

The broker dashboard is a screen that shows all of the client accounts that the broker is responsible for.

The purpose of this dashboard is to show the broker a list of the clients and their placements that the broker is responsible for. It shows the status of each placement and indicates when each is up for renewal.

There are the following elements:

1. Search bar for Company Name or CN.
2. Table showing:
   1. It shows the client’s name and CN number.
   2. It shows the primary contact at the client.
   3. Date of when a placement was created.
   4. Date of when a placement was last updated.
   5. Renewal Date.
   6. Status of the placement, Completed, In-Progress, Draft, Renew (clickable to renew).
   7. Actions: User can view the placement, duplicate the placement, or download the placement.
3. For new applications, user can click on a “Create New Application” button.

**Client Information**

The client information screen contains information about the client.

If this is a “renewal” the client information screen will be prepopulated once the corresponding placement is selected from the client dashboard.

If it is a “New Client Application” the broker needs to search for the customer by name or CN number.

Basic information on the New Client is retrieved from the system and mapped to the corresponding fields as best possible. Where information is not available, the broker will be required to manually enter them in the fields.

There is a list of Marsh Global Office Locations. This is preloaded into the form for search/selection. See attached resources.

**The Vessel Schedule**

**Vessel Review Stepper Block Diagram**

**R**efer to: https://www.figma.com/board/UOvWbJ9sxmn3ZjUmygW8Mq/Marine-Exposure-Stepper?node-id=0-1&p=f&t=F5SMjmUtvDWzLFS1-0

**Vessel Review Stepper**

**NOTE: It is important that the Number Ordering of each vessel be preserved throughout all edits to the tables so that each row number always matches the row number of the Vessel Schedule that was originally uploaded.**

**This means that for:  
  
ADD: Any vessel that is added to the list should be appended to the bottom of the list.**

**DELETE: Any vessel that is deleted from the list, the row that it once occupied should be preserved. Consider flagging that row as “Deleted” to indicate that the row has been deleted. But the row numbering must be preserved.**

**EDIT: Editing a vessel does not change the row numbering.**

**Suggestion: When reading in the vessel schedule that is uploaded by the user, create a column index that is keep track of each row of data so that the order of the vessel list can be preserved.**

**Vessel Schedule Review Stepper STEP 1 – Upload**

**NOTE: If this is a renewal, we Start with STEP 2.**

The Vessel Schedule screen shows a link to a “Vessel Schedule” template. The user can click on the download link to download Vessel Schedule template.

The upload section of the of the Vessel Schedule screen shows a “Upload Schedule” section.

The user uploads the Vessel Schedule template. This template is pre-populated with data imported from Excel.

The Vessel Schedule template may contain only vessel numbers, for example if new client, or it may contain a fully populated spreadsheet if it is a renewal.

The Vessel Schedule template contains the following fields:

All of these fields should be stored in intermediary tables so that the vessel list may be processed during the various stages of the Vessel Review Stepper.

This table shows how the list of vessels uploaded by the user should be segmented as relevant to each step of the Vessel Review Stepper.

A, A.1, A.2, A.1.1, A.1.2, B and C are tables used  handling the data.

**Vessel Numbers**

**IMO Numbers**

IMO are unique vessel numbers issued by the International Marine Organization. The number format is that of a 7 digit integer, no spaces. The numbers are generated such that it is possible to run an algorithmic check on the number to see if the 7 digits are valid or not.

A valid IMO number means that the number conforms to the numerical format and is verifiable by the checking algorithm. A valid number, however, does not mean it is a registered number, i.e. one that has actually be assigned to a vessel by the International Marine Organization. To check for registration status, the Lloyd’s Intelligence List API will be used to look up the IMO number.

**Non IMO Numbers**

These are vessel numbers that do not conform to the IMO number checking algorithm. They are also not registered in the LLI database. Non-IMO vessels can be assigned a number of any format including “#NA.”

**Vessel Schedule Review Stepper – Data Processing Instructions**

**Vessel Review Stepper**

Note: Blue Lines indicates movement of data from individual intermediary data tables to master vessel schedule table for submission.

**Vessel Schedule Sort**

The vessel schedule uploaded by the user may contain both IMO registered vessels and non-IMO registered vessels.

When the list of vessel numbers (IMO column of the vessel schedule) is uploaded, begin by performing the following:

1. Separate the list into two lists, A and B.
2. Group A shall consist of all rows with 7-digit integers, no spaces.
3. Group B shall consist of all other rows of data.

List A:  
List A consists of the list of vessels that potentially can be vessels that are registered with a valid IMO. We need to verify.  
To check for valid IMO, run the vessel number through the IMO number checking algorithm (see: IMO Validity Check). Spilt the results into two groups, A.1 for vessels numbers that pass and A.2 for vessel numbers that fail the IMO check.  
  
   
  
A.1 is used in STEP 2 of the Vessel Review Stepper.  
A.2 is used in STEP 3 of the Vessel Review Stepper.  
**IMO Validity Check** NOTE: Please suggest any other summary statistics and / or indicators to add to the list.

**Vessel Stepper STEP 2 – Possible IMO Vessels**

 Look up A.1 in LLI API and populate all the required fields. The LLI API is a database of registered IMO vessels. If registered IMOs are found there will be information about the vessel.

Refer to API documentation: LLI REST API Endpoint Guide.

Separate A.1 into two lists A.1.1 (registered IMOs found) and A.1.2 (registered IMOs not found).

 A.1.1 is used in STEP 2 of the Vessel Review Stepper.

 Check for duplicate vessels. If duplicates found, put them in Table 2 – Error Table.

 A.1.2 is used in STEP 3 of the Vessel Review Stepper.

**Table 1 – Valid Table**

Display A.1.1 as a table following the tabular format of the vessel schedule template excel.

 The user will be able to review the list of IMO registered vessels.

 Initially, all vessels shown are valid and verified IMO vessels having passed both the algorithmic test and LLI API lookup.

 User will be able to:

1. Delete a vessel
2. Add a vessel

**DELETE:** If the user deletes a vessel the row will be deleted.

**ADD:** If the user adds a vessel, the new number will have to be algorithmically checked. If it passes, then look up the IMO with the LLI API.

If the vessel is found within the LLI API, then populate the required fields in the template and update A.1.1 with the new entry and display in TABLE 1. If the vessel is not found, then add the newly added IMO to Table 2 for resolution.

The checks described here are performed at the very end of STEP 2 after the user clicks “NEXT”.

**Table 2 – Error Table**

The objective here is to get the user to resolve all non-compliant vessel numbers.

The vessels that show up here occur under 2 scenarios:

1. Duplicate vessel numbers found
2. Newly added vessel does not pass IMO number check formula AND/OR LLI API lookup

Display non-compliant vessel additions.  
User will be able to:

1. Delete a vessel
2. Edit a vessel
3. Accept a vessel

to the list.

**DELETE:** If the user deletes a vessel the row will be deleted.

**EDIT:** If the user edits a vessel number, the edited number will have to be algorithmically checked. If it passes, then look up the IMO with the LLI API. If the vessel is found within the LLI API, then populate the required fields from LLI API in the template and update A.1.1 with the new entry and display in TABLE 1. If the vessel is not found, then add the newly edited IMO place the vessel number back in TABLE 2.

**ACCEPT:** If the user believes that a correct vessel number is entered but it is not found in the LLI API database, the user may Accept this vessel. The vessel number must still pass the IMO number checking formula.

This vessel number is added to the master vessel schedule C identified as IMO EXCEPTION.

The checks described here are performed at the very end of STEP 2 after the user clicks “NEXT”.

When all entries in TABLE 2 are resolved move all entries in A.1.1 into master vessel schedule C identified as Valid IMO. Continue to STEP 3.

SAVE & EXIT should preserve all data tables in their current state for future user return so as to minimize redundant calls to the LLI API.

**Vessel Stepper STEP 3 – Invalid IMOs**

This is the vessel list comprising vessels that:

 1. passed the IMO check formula, but the vessel number could not be found in the LLI API

1. 7-digit integer no spaces vessel number but did not pass IMO number checking algorithm.  
     
      
     
   Merge A.2 and A.1.2.  
     
      
     
   Display merged lists as  TABLE 1 – Error Table following the tabular format of the vessel schedule template excel.  
     
      
     
   Check for duplicate vessels. If duplicates found, put them in TABLE 1 – Error Table.  
     
     
     
     
     
      
     
   User will be able to:
2. Edit a vessel
3. Delete a vessel,
4. Accept a vessel,

to the list.

**DELETE:** If the user deletes a vessel the row will be deleted.

**EDIT:**If the user edits a vessel number, the edited number will have to be algorithmically checked. If it passes, then look up the IMO with the LLI API. If the vessel is found within the LLI API, then populate the required fields in the template and update A.1.1 and C identified as Valid IMO with the new entry. If the vessel is not found, then add the newly edited IMO back to TABLE 1 for resolution.

If IMO number is valid and registered, display: “This vessel has been successfully added to the IMO registered list”

**ACCEPT:**If the user believes that a correct vessel number (must pass IMO number check algorithm) is entered but it is not found in the LLI API database, then the user may Accept this vessel.

“Accept” display: “IMO vessel number not found in LLI. By “accepting” you are including this vessel in master vessel schedule.”

This vessel number is added to the master vessel schedule C identified as IMO EXCEPTION.

**Vessel Stepper STEP 4 – Non IMO vessels**

This comprises of a list of vessels that are not registered with the International Marine Organization. Non-IMO vessels can be assigned a number of any format including “#NA.”

 Start with List B.

**Table 1**

Display List B as a table following the tabular format of the vessel schedule template excel.

The user will be able to review the list of non-IMO vessels.

User will be able to:

1. Delete a vessel
2. Add a vessel
3. Edit a vessel

There are no data quality checks for non-IMO vessels other than user inspection.

When this step is complete, the user can:

Save & Exit: The status of the application is saved.

Next: A message is displayed:

“This list of vessels here are not registered with the International Marine Organization.  
Any changes will be reflected as-is in the master vessel schedule. The user must ensure that all entries are correct.”

Users has the option to Cancel or Accept.

If accept, list of vessels added to List C identified as Non-IMO vessels.

If cancel, go back to Table 1.

**Vessel Stepper STEP 5 – All Vessels**

The screen shows a list of all vessels that will be submitted for screening for the user to inspect.

**Summary Screen**

**Summary Status Page:**

1)       Shows number of Valid IMO Vessels, Number of IMO Vessels not registered, Number of non-IMO Vessels.

 2)       Shows Vessel Risk Ratings: A count of vessels for each category of High, Medium, Low and N/A respectively.

3)       Marsh Compliance Screening Status: Show when the master vessel schedule was submitted along with date. Show when the master vessel schedule was cleared along with the date.

4)       Vessel Master Schedule:  
  
  
Show the number of vessels in the master schedule.

Show which interests are selected:

Eg:

* 1. Master List
  2. Hull & Machinery (H&M)
  3. P&I – Fixed
  4. P&I – Mutual (1)
  5. P&I – Mutual (2)
  6. P&I – Mutual (3)
  7. P&I – Mutual (4)
  8. Freight Interest
  9. Second Seaman’s
  10. Kidnap & Ransom
  11. Mortgagee’s Interest (MII/MAP)
  12. Socially Responsible (SRI)

NOTE for this version of the build we will only be uploading the Vessel Master List only. The interest selection lists are not included in this version.

5)       LLI Screened Schedule: Download button allowing the user to download the version of the Master Vessel Schedule being submitted to Marsh Compliance.

6)       Marsh Compliance Cleared Schedule: Download button allowing the user to download the final Master Vessel Schedule as cleared and returned to the platform by Marsh Compliance.

7)       Submit for Screening button. Upon click the master vessel schedule is sent to Marsh Compliance for review.

8)       Go to “thank you screen.”  
**Appendix:**

**IMO number checking algorithm**

**Vessel schedule field template**

IMO – Lloyd’s LLI lookup

The API returns the fields in the diagram above. Internally mapped items are populated and