**A.1. Acceptance testing**

**Acceptance testing for the functional and non-functional requirements, for the project “Web Interface to Interact with Assets**

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**Functional requirements**

**Map Display with Asset Integration**

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| --- | --- | --- | --- | --- | --- |
| **Function** | **Description** | **Input data** | **Expected output** | **Justification** | **Test Result** |
| Map display | Verify map loads with asset markers. | CSV with valid latitude/longitude data. | Map displays assets at correct locations. | Ensures accurate visualisation of asset data. | [Pass/Fail] |
|  | Managing missing latitude/longitude values. | CSV with missing coordinates. | Error message: "Invalid asset location" | Validates system handles incomplete data gracefully. | [Pass/Fail] |
|  | Dynamic map updates. | Updated CSV data. | Map updates with new asset locations. | Ensures real-time map reflects updated asset data. | [Pass/Fail] |

**Asset management**

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| **Function** | **Description** | **Input data** | **Expected output** | **Justification** | **Test Result** |
| Add asset | Verify new asset addition | Asset data: name, category, location | Asset appears in asset list | Confirms the system can register new assets. | [Pass/Fail] |
|  | Invalid asset input | Missing fields (e.g., no category) | Error message: "Missing required fields" | Ensures system handles and reports invalid inputs. | [Pass/Fail] |
| Edit asset | Ensure asset updates are saved | Edited asset information | Updated asset information displayed | Validates user modifications are properly saved. | [Pass/Fail] |
| Approve Modification | Admin approves asset changes | Asset update request | Status changes to "Approved" | |  |  | | --- | --- | | Ensures administrative control over asset changes. |  | | [Pass/Fail] |
| Delete Asset | Verify asset **deletion.** | Asset ID | Asset is removed from system | Confirms assets can be securely and permanently deleted. | [Pass/Fail] |

**Data integration**

|  |  |  |  |  |  |
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| **Function** | **Description** | **Input data** | **Expected output** | **Justification** | **Test Result** |
| CSV upload | Validate asset data from CSV | CSV file with valid data | Data imported successfully | Verifies the system can extract and store asset data. | [Pass/Fail] |
|  | Handle duplicate records | CSV with duplicate entries | Error message: “duplicate record” | Ensures data integrity by preventing duplicate records. | [Pass/Fail] |
| API integration | Ensure external data sync | API request with valid asset data | Database updates with new data | Validates compatibility with external systems. | [Pass/Fail] |
| Data validation | Validate asset input integrity | CSV with invalid fields (wrong format) | Error message: “invalid input format” | Ensures system only accepts valid data. | [Pass/Fail] |

**User Interface**

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| --- | --- | --- | --- | --- | --- |
| **Function** | **Description** | **Input data** | **Expected output** | **Justification** | **Test Result** |
| Search | Verify asset search functionality | Asset name or category | Relevant asset displayed | Ensures efficient retrieval of asset information. | [Pass/Fail] |
| Invalid search | Direct incorrect search terms | Random invalid input | Message: “No results found” | Confirms system can handle invalid queries. | [Pass/Fail] |
| Accessibility check | Ensure compliance with WCAG 2.1 | Screen reader navigation | Accessible and usable UI | Validates system meets accessibility standards. | [Pass/Fail] |
| Responsive design | Justify mobile responsiveness | Access system via mobile, tablet or desktop | Consistent UI across devices | Ensures usability across different devices. | [Pass/Fail] |

**Non-functional requirements**

**Performance & Scalability**

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| --- | --- | --- | --- | --- | --- |
| **Function** | **Description** | **Input data** | **Expected output** | **Justification** | **Test Result** |
| Load speed | Evaluate map rendering time | CSV with 10,000 asset records | Map renders within 3 seconds | Ensures quick data display for large datasets. | [Pass/Fail] |
| System load | Supervise concurrent users | 500 concurrent users accessing system | No performance degradation | Verifies system stability under heavy user load. | [Pass/Fail] |

**Security**

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| --- | --- | --- | --- | --- | --- |
| **Function** | **Description** | **Input data** | **Expected output** | **Justification** | **Test Result** |
| Authentication | Ensure secure login | Valid username/password | Access granted | Approve user identity before granting access. | [Pass/Fail] |
| Unauthorised Access | Restrict access to sensitive areas | Invalid credentials | Error message: “Access denied” | Ensures restricted areas are secure. | [Pass/Fail] |
| Data encryption | Ensure secure data transmission | Simulate data interception | Data remains encrypted (AES-256, SSL/TLS) | Confirms compliance with industry encryption standards. | [Pass/Fail] |