

## **Appendix C – User Manual for Asset Information Management Platform (AIMP)**

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## 1. Introduction

EMSD manages over 20 systems (level 1) and over 200 sub-systems (level 2). EMSD currently uses an ERP system based on SAP namely CCS to manage all asset attributes through pre-defined spreadsheet template sets. EMSD also manages asset BIM model information in Revit and its data exchange with other asset management applications (BIM-AM) such as Archibus and Planon.

Asset Information Management Platform (AIMP) is a web-based system for EMSD to manage asset information and relationship. It utilises spreadsheet / COBie / COBieLite to exchange information with other system like CCS, Revit, Archibus, and Planon.

### 1.1 Purpose

This document provides information on how to use the Asset Information Management Platform (AIMP).

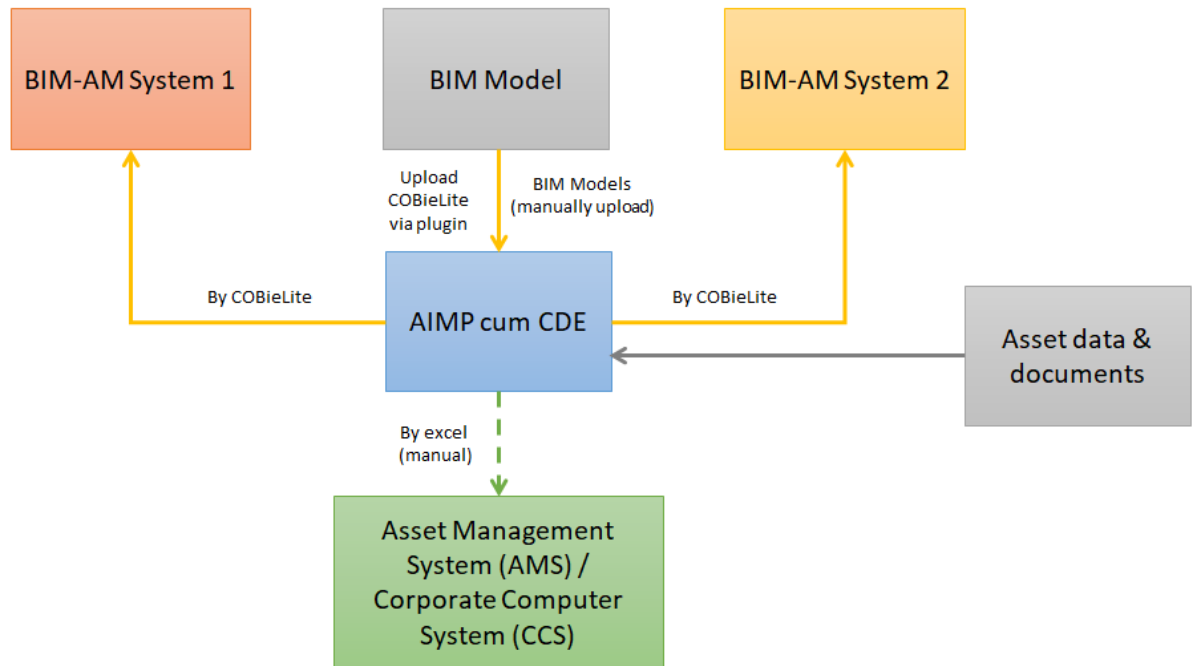
### 1.2 Terminologies

| Terminology          | Description                                                                                                                                                                                                                                                                |
|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Level 1 Asset        | <ul style="list-style-type: none"><li>• System level (e.g. LVSB)</li><li>• Common and specific attributes of system</li></ul>                                                                                                                                              |
| Level 2 Asset        | <ul style="list-style-type: none"><li>• Equipment level of a system (e.g. Switchgear of LVSB)</li><li>• Have equipment level common and specific attributes</li></ul>                                                                                                      |
| Equipment/Asset Type | <ul style="list-style-type: none"><li>• Represent an abstract asset</li><li>• Different meaning with BIM asset type</li><li>• Both BIM asset type data and BIM asset component data are store in AIMP instance level</li></ul>                                             |
| Asset Instance       | <ul style="list-style-type: none"><li>• Represent a physical asset in a particular function location</li><li>• Different meaning with BIM asset component</li><li>• Both BIM asset type data and BIM asset component data store in</li><li>• AIMP instance level</li></ul> |
| Asset Code           | <ul style="list-style-type: none"><li>• Unique identifier of an asset instance in EMSD</li><li>• AIMP identifier</li></ul>                                                                                                                                                 |
| Equipment No.        | <ul style="list-style-type: none"><li>• A unique identifier of an asset instance in CCS which is assigned by CCS for new asset</li></ul>                                                                                                                                   |

| Terminology         | Description                                                                                                                                                                                                                                                                                                              |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Functional Location | <ul style="list-style-type: none"> <li>Physical location identifier, each level 1/2 asset instance has one</li> <li>and only one functional location</li> <li>User can be assigned with more than 1 functional location to manage his responsible assets</li> <li>Example: Room 3, 4/F, Block A in a building</li> </ul> |
| System Topology     | <ul style="list-style-type: none"> <li>Graphical presentation of asset instance relationships (i.e. parent-child, associated, and grouped)</li> </ul>                                                                                                                                                                    |
| BIM                 | <ul style="list-style-type: none"> <li>Building Information Modelling</li> <li>Industrial modelling standard of building information</li> <li>EMSD uses Autodesk Revit to manage BIM model</li> </ul>                                                                                                                    |
| COBie               | <ul style="list-style-type: none"> <li>Construction-Operations Building information exchange</li> <li>International standard for the exchange of information regarding</li> <li>facility assets in spreadsheet format</li> </ul>                                                                                         |
| COBieLite           | <ul style="list-style-type: none"> <li>XML format of COBie files</li> </ul>                                                                                                                                                                                                                                              |
| Autodesk Revit      | <ul style="list-style-type: none"> <li>BIM modelling tool under Autodesk brand</li> <li>Plug-in in Revit to import/export COBieLite files</li> <li>With native export to COBie files via Autodesk Plug-in (i.e. COBie Extension for Revit)</li> </ul>                                                                    |
| Archibus            | <ul style="list-style-type: none"> <li>One of the BIM-AM Systems</li> <li>Support bi-directional data exchange with Revit</li> <li>It supports multiple format such as COBie/COBieLite</li> </ul>                                                                                                                        |
| Planon              | <ul style="list-style-type: none"> <li>One of the BIM-AM Systems</li> <li>Support bi-directional data exchange with Revit</li> <li>It supports multiple format such as COBieLite</li> </ul>                                                                                                                              |
| CCS                 | <ul style="list-style-type: none"> <li>SAP-based Asset Management System</li> <li>Use asset template spreadsheets to communicate with third party applications</li> </ul>                                                                                                                                                |

### 1.3 System Integration

The relationships between EMSD's BIM-AM systems are illustrated as follows:



### 1.4 Function List

Specific access rights to different AIMP functions are assigned to different roles.

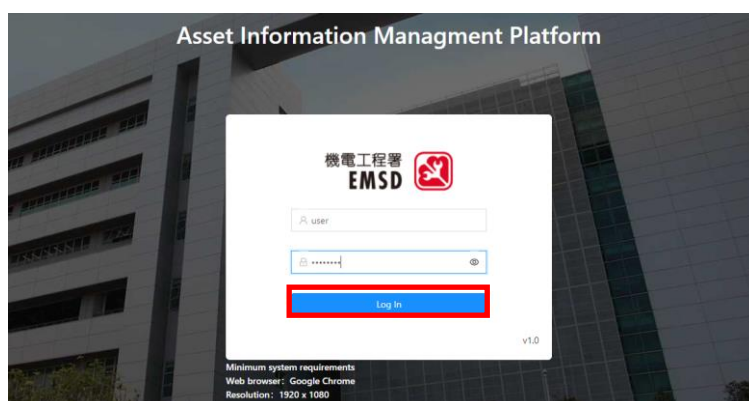
| No. | Function        | Description                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-----|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | Basic Functions | <ul style="list-style-type: none"> <li>• Login / Logout</li> <li>• Change password</li> <li>• Switch function location.</li> </ul>                                                                                                                                                                                                                                                                                                            |
| 2   | Asset List      | <ul style="list-style-type: none"> <li>• List and display asset instance by level 1 and level 2</li> <li>• Search asset</li> <li>• Add/Edit/Delete asset</li> <li>• Add/Remove asset relationship (topology)</li> <li>• Present relationship information in graphical format</li> <li>• Add/Remove asset document</li> <li>• Add/Remove asset photo</li> <li>• Display attribute definition</li> <li>• Download CCS asset template</li> </ul> |
| 3   | Importing       | <ul style="list-style-type: none"> <li>• CCS</li> <li>• COBie</li> <li>• COBieLite (asset code)</li> </ul>                                                                                                                                                                                                                                                                                                                                    |

| No. | Function        | Description                                                                                                                                                                                                                                                                                                                                         |
|-----|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|     |                 | <ul style="list-style-type: none"> <li>• COBieLite (GUID)</li> <li>• Relationship</li> <li>• Relationship (Clear Current)</li> <li>• Asset Tag &amp; Zone Tag</li> </ul>                                                                                                                                                                            |
| 4   | Exporting       | <ul style="list-style-type: none"> <li>• Attributes Definition</li> <li>• CCS</li> <li>• COBieLite (asset code)</li> <li>• COBieLite (GUID)</li> <li>• COBieLite (asset code and GUID only)</li> <li>• COBieLite (Revit)</li> <li>• Revit Checkset File</li> <li>• Unuse Asset Code</li> <li>• Unuse Zone Tag</li> <li>• Unuse Asset Tag</li> </ul> |
| 5   | File Management | <ul style="list-style-type: none"> <li>• Add shared document in equipment-wise</li> <li>• Add/Remove sub folder</li> <li>• Add/Remove/Rename/Search/Download file</li> </ul>                                                                                                                                                                        |

## 2. Function Details

### 2.1 Basic Functions

#### 2.1.1 Logging In

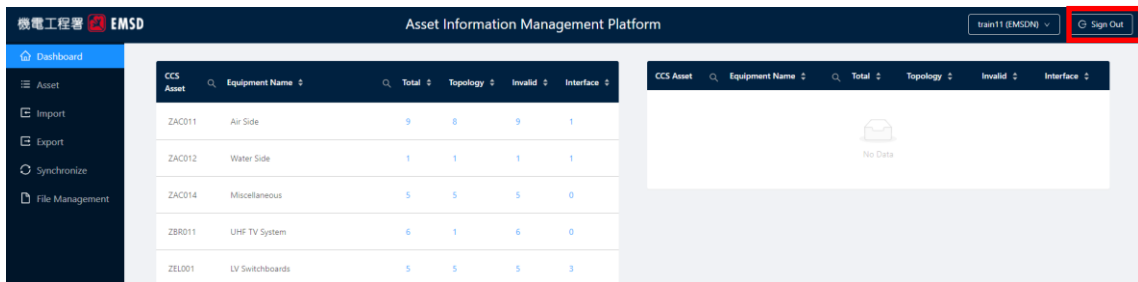


1. Open the web browser.
2. Input <https://utils.bim.emsd.gov.hk/aimp/index> in the address bar.
3. Input your username and password (provided by EMSD). Then click “Log In”.

The minimum requirement to access AIMP are as follows:

- Web browser: latest version of Google Chrome
- Monitor resolution: 1920 x 1080

### 2.1.2 Logging Out



Click “Sign Out” to logout the system.

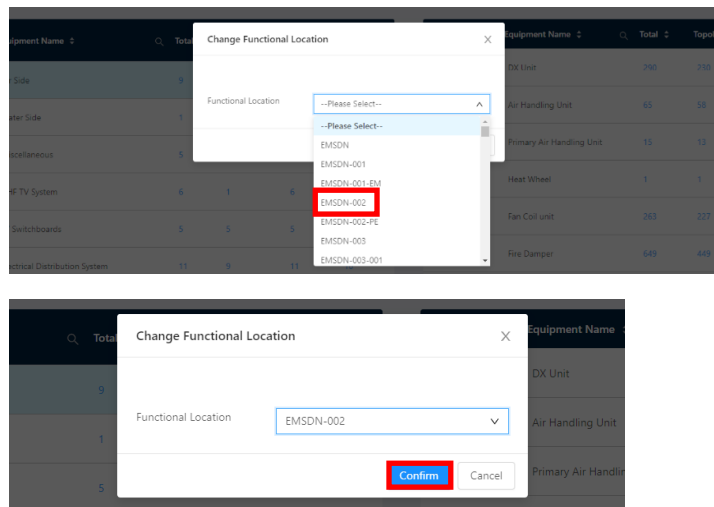
### 2.1.3 Changing Functional Location

Assets are stored by functional locations. A number of functions in AIMP are based on function location such as data import/export.

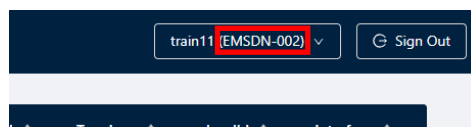


1. Click <Username> (<Function Location>).
2. Click “Change Functional Location” from the dropdown list.
3. “Change Functional Location” dialog box appears. Pick the functional location from the

dropdown list and then click “Confirm”. System is then reloaded and “Selected Function Location” dashboard appears.



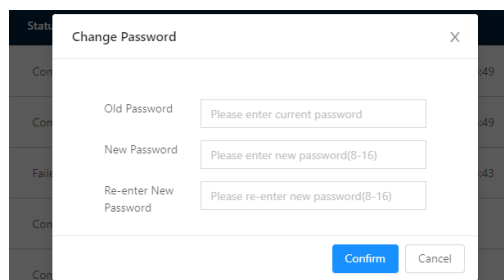
The newly selected Functional Location appears on the top right corner (next to Username).



## 2.1.4 Changing Passwords



1. Click <Username> (<Function Location>).
2. Click “Change Password” from the dropdown list.



3. “Change Password” dialog box appears. Fill in Current Password, New Password and Confirm Password, then click “Save”.

## 2.1.5 Homepage (Dashboard)

1. On the homepage (dashboard), LEVEL1 equipment and corresponding LEVEL2 equipment summary are displayed in the specified Function Location.
2. User can display LEVEL2 equipment summary (on the right) by select corresponding LEVEL1 equipment row (on the left).

| Column Name    | Description                                               |
|----------------|-----------------------------------------------------------|
| CCS Asset      | Asset template ID in CCS                                  |
| Equipment Name | Equipment Name                                            |
| Total          | Total number of assets of the equipment type              |
| Topology       | Total number of assets which have relationship (topology) |
| Invalid        | Total number of assets which pass the validation          |
| Interface      | Total number of assets which have interface               |

3. User can manage asset records in “Asset List” by click on blue color number in LEVEL1 and LEVEL2 equipment row. Corresponding asset page for selected equipment appears.

Asset Information Management Platform

Search asset template (>= 5 characters)

Asset List:

| Functional Location | Equipment Description | Asset Code                   | Acquisition Value | Asset Relationship | Asset Tag No. | Authorization Group |
|---------------------|-----------------------|------------------------------|-------------------|--------------------|---------------|---------------------|
| EMSDN               | cc                    | KT-EMSDN-004-CSC-HVAC-AS-A01 | 3333              |                    |               | aa                  |
| EMSDN               | Air Side              | KT-EMSDN-NA-000-HVAC-AS-001  | 3333              |                    |               |                     |
| EMSDN               | Air Side              | KT-EMSDN-NA-001-HVAC-AS-001  | 222               |                    |               |                     |
| EMSDN               | Air Side              | KT-EMSDN-NA-002-HVAC-AS-001  |                   |                    |               |                     |
| EMSDN               | Air Side              | KT-EMSDN-NA-003-HVAC-AS-001  |                   |                    |               |                     |

Total Count: 9

4) User can sort and search in LEVEL1 and LEVEL2 tables.

Asset Information Management Platform

CCS Asset

| Equipment Name    | Total | Topology | Invalid | Interface |
|-------------------|-------|----------|---------|-----------|
| ZAC011 Air Side   | 9     | 8        | 9       | 1         |
| ZAC012 Water Side | 1     | 1        | 1       | 1         |

CCS Asset

| Equipment Name           | Total | Topology | Invalid | Interface |
|--------------------------|-------|----------|---------|-----------|
| AC1101 DX Unit           | 290   | 230      | 290     | 0         |
| AC1102 Air Handling Unit | 65    | 58       | 64      | 35        |

## 2.2 Asset List

User can Add / Edit / Delete Assets of the underlying system and equipment and their associated relation (topology), photo and documents in the following five sections on this page.

Asset Information Management Platform

Asset List

Search asset template (>= 5 characters)

Buttons: Edit, System Topology, Documentation, Photo, Clear Relationship, Remove

Table C:

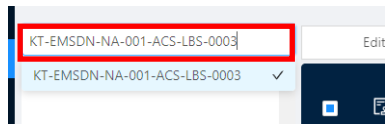
| Functional Location | Equipment Description | Asset Code                   | Acquisition Value | Asset Relationship | Asset Tag No. | Authorization Group |
|---------------------|-----------------------|------------------------------|-------------------|--------------------|---------------|---------------------|
| EMSDN               | Burglar-ACS           | KT-EMSDN-NA-001-ACS-LBS-0001 | NA                |                    | NA            | NA                  |
| EMSDN               | Burglar-ACS           | KT-EMSDN-NA-001-ACS-LBS-0002 | NA                |                    | NA            | NA                  |
| EMSDN               | Burglar-ACS           | KT-EMSDN-NA-001-ACS-LBS-0003 | NA                |                    | NA            | NA                  |

Table D:

| Equipment Name    | Total | Topology | Invalid | Interface |
|-------------------|-------|----------|---------|-----------|
| ZAC012 Water Side | 1     | 1        | 1       | 1         |

### Section A

1. Display by equipment name (e.g Chiller) with asset template ID (e.g AC1201).
2. The red folder icon indicates LEVEL1 equipment type, and the blue folder icon indicates LEVEL2 equipment type.
3. Select a specific equipment type, and Section D appears.
4. Input asset code in the box and press “ENTER” button to search. At least 5 characters are required.

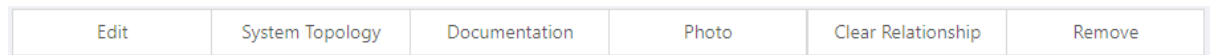


## Section B

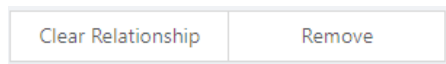
1. Action bar without any asset selection



2. Action bar with only one asset selection



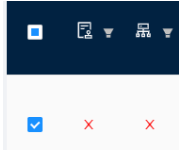
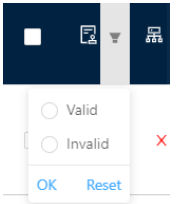
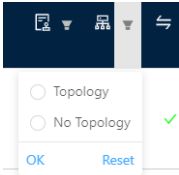
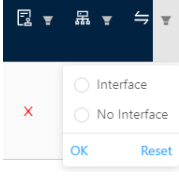
3. Action bar with multiple assets selection



| Action Name        | Without Selection | Single Selection | Multiple Selection |
|--------------------|-------------------|------------------|--------------------|
| Add                | √                 |                  |                    |
| Edit               |                   | √                |                    |
| Remove             |                   | √                | √                  |
| Clear Relationship |                   | √                | √                  |
| System Topology    |                   | √                |                    |
| Documentation      |                   | √                |                    |
| Photo              |                   | √                |                    |
| Attribute Setting  | √                 |                  |                    |

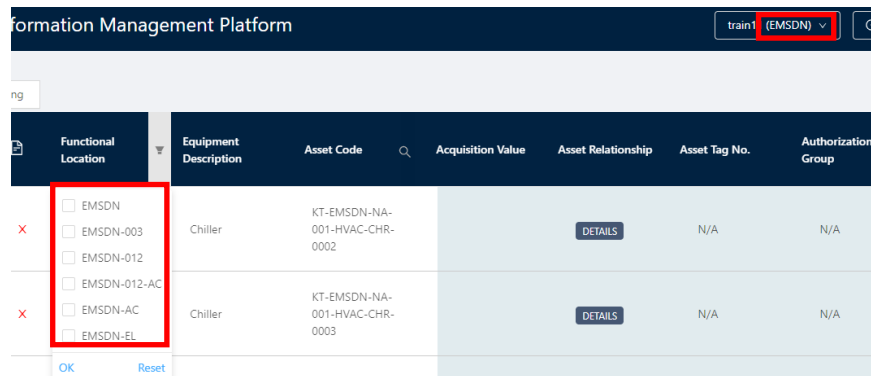
## Section C

The functionalities are as follows:

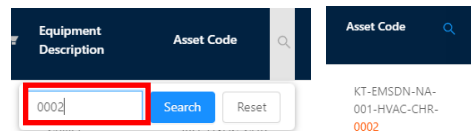
| Filter Name   | Icon / Dropdown List                                                                | Description                                                       |
|---------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| Selection box |    | Available actions will be different for single/multiple selection |
| Validation    |    | To filter asset with/without passing the validation               |
| Topology      |    | To filter asset with/without topology                             |
| Interface     |   | To filter asset with/without interface                            |
| Document      |  | To indicate asset with/without documents                          |

**Section D**

1. The first 3 columns are fixed. They are Functional Location, Equipment Description and Asset Code.
2. Functional Location. Can be filtered by dropdown box. Available options are sub functional location of current functional location shown in the top right corner of the page.



3. Equipment Description appears.
4. Asset Code can be filtered by input text.



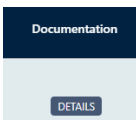
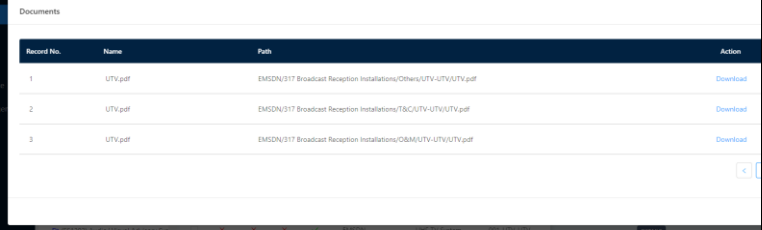
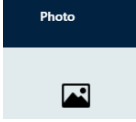
5. The rest of the columns indicate the attribute name of the asset. White texts indicate common attributes. Light blue texts indicate equipment-specific attributes.

| Documentation | Equipment Description (AMTF) | Equipment Location | Equipment No. |
|---------------|------------------------------|--------------------|---------------|
|---------------|------------------------------|--------------------|---------------|

**Section E**

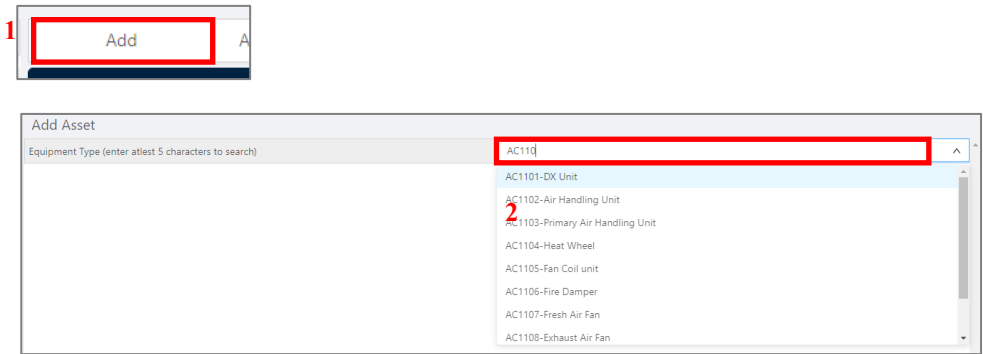
1. Asset attribute values are shown in this section.
2. Three special attribute which will show a pop up with additional information.

| Attribute Name     | Action | Pop up after click “DETAILS” button or photo icon |
|--------------------|--------|---------------------------------------------------|
| Asset Relationship |        |                                                   |

| Attribute Name | Action                                                                            | Pop up after click “DETAILS” button or photo icon                                  |
|----------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| Documentation  |  |  |
| Cover Photo    |  |  |

2.2.1 Adding Assets

1. Click “Add” button.
2. Input asset template and select the target one from the dropdown list.
3. Fill the asset attribute values. Mandatory fields are marked with .



**Add Asset**

Equipment Type (enter atleast 5 characters to search) AC1101

Acquisition Value Please input Acquisition Value

\* Asset Code Please input Asset Code

Asset Relationship Please input Asset Relationship

Asset Tag No. Please input Asset Tag No. 3

\* Authorization Group

\* Catalog Profile

CCS Superior Equipment No. Please input CCS Superior Equipment No.

CCS Superior Equipment Technical ID No. Please input CCS Superior Equipment Technical ID No.

Construction Type Please input Construction Type

\* Cooling Capacity Please input Cooling Capacity

Currency Please input Currency

Customer Warranty End Please input Customer Warranty End

Customer Warranty Start Please input Customer Warranty Start

\* Division

\* Equipment Description Please input Equipment Description

\* Equipment Description (AMTF) Please input Equipment Description (AMTF)

\* Equipment Location Please input Equipment Location

Equipment No. Please input Equipment No.

4 Save Cancel

4. If mandatory fields not all input, system will prompt



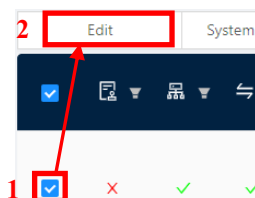
5. Field types are as follows:

|                                |           |    |
|--------------------------------|-----------|----|
| Please input start-up Date     | <b>Da</b> |    |
| Please input Room or Floor     | <b>An</b> |    |
|                                | <b>Dr</b> | ^  |
| Please input Rated Power Input | <b>Nu</b> | ↑↓ |

6. Click “Save” button.

## 2.2.2 Editing Assets

1. Select the asset to be edited.
2. Click “Edit” button.
3. Fill the asset attribute values. Mandatory fields are marked with \*.



| Attributes Name         | Attributes Value                     | Updated Date | Updated By |
|-------------------------|--------------------------------------|--------------|------------|
| Acquisition Value       | Please input Acquisition Value       |              |            |
| * Asset Code            | KT-EMSDT- NA - GF -EMG-GEN- 9999     | 2021-11-20   | train2     |
| Asset Relationship      | ASSO:KT-EMSDN-NA-000-LAS-REL-0010    |              |            |
| Asset Tag No.           | Please input Asset Tag No.           |              |            |
| * Authorization Group   |                                      |              |            |
| * Catalog Profile       |                                      |              |            |
| Construction Type       | Please input Construction Type       |              |            |
| Currency                | Please input Currency                |              |            |
| Customer Warranty End   | Please input Customer Warranty End   |              |            |
| Customer Warranty Start | Please input Customer Warranty Start |              |            |
| * Division              |                                      |              |            |
| Documentation           | <a href="#">DETAILS</a>              |              |            |
| * Equipment Description | Please input Equipment Description   |              |            |
| Equipment No.           | 19999999                             | 2021-11-20   | train2     |
| * Functional Location   | EMSDT                                | 2021-11-20   | train2     |
| Grouped Equipment ID    | Please input Grouped Equipment ID    |              |            |
| Inventory No.           | Please input Inventory No.           |              |            |
| * Main Work Centre      |                                      |              |            |

- If mandatory fields not all input, system will prompt



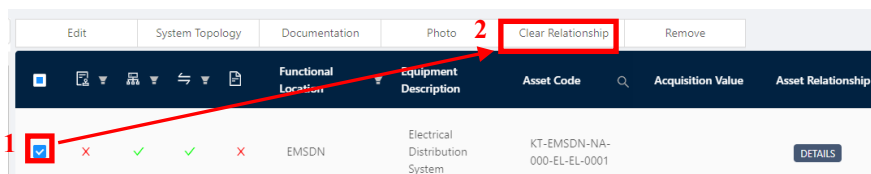
- Field types are as follows:

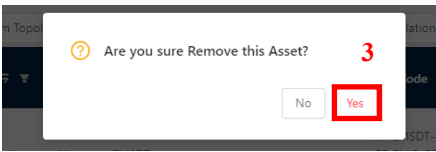
|                                |                  |  |
|--------------------------------|------------------|--|
| Please input start-up Date     | <b>Date pick</b> |  |
| Please input Room or Floor     | <b>Any text</b>  |  |
|                                | <b>Drop down</b> |  |
| Please input Rated Power Input | <b>Numeric</b>   |  |

- Click “Save” button.
- Click “Back” button to cancel the edit.

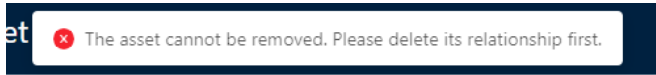
### 2.2.3 Deleting Assets

- Select asset(s) to be deleted.
- Click “Remove” button.
- Click “Yes” button in the confirmation popup.



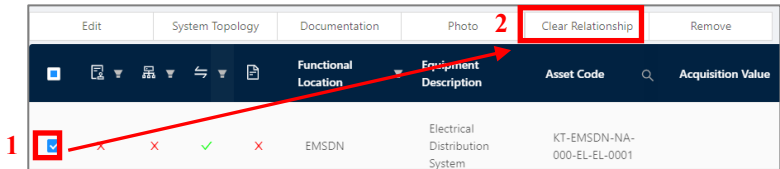


4. If the asset in LEVEL1 has relationship with other LEVEL2 assets, this error will be prompted:



**2.2.4 Clearing the Relationship**

1. Select the asset for which the relationship needs to be cleared.
2. Click “Clear Relationship” button.

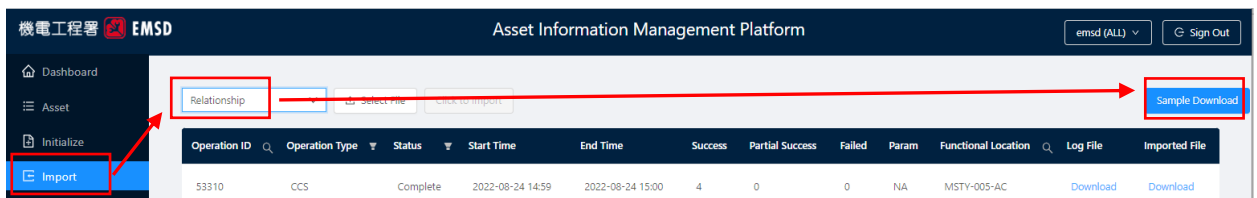


## 2.2.5 System Topology

System topology can be created by either uploading pre-defined excel templates or directly editing the topology on AIMP.

### 2.2.5.1 Creation system topology by uploading pre-defined excel templates

The pre-defined excel templates can be download on AIMP under “Import” tap as shown below.



The excel templates shall be filled based on the following requirement as shown.

Column A: Asset code of Level 1 System

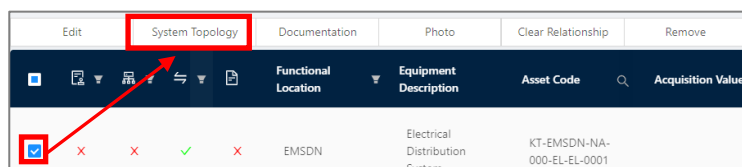
Column B: Asset code of the Level 2 equipment

Column C and beyond: the dependent asset of the equipment in column B and so on

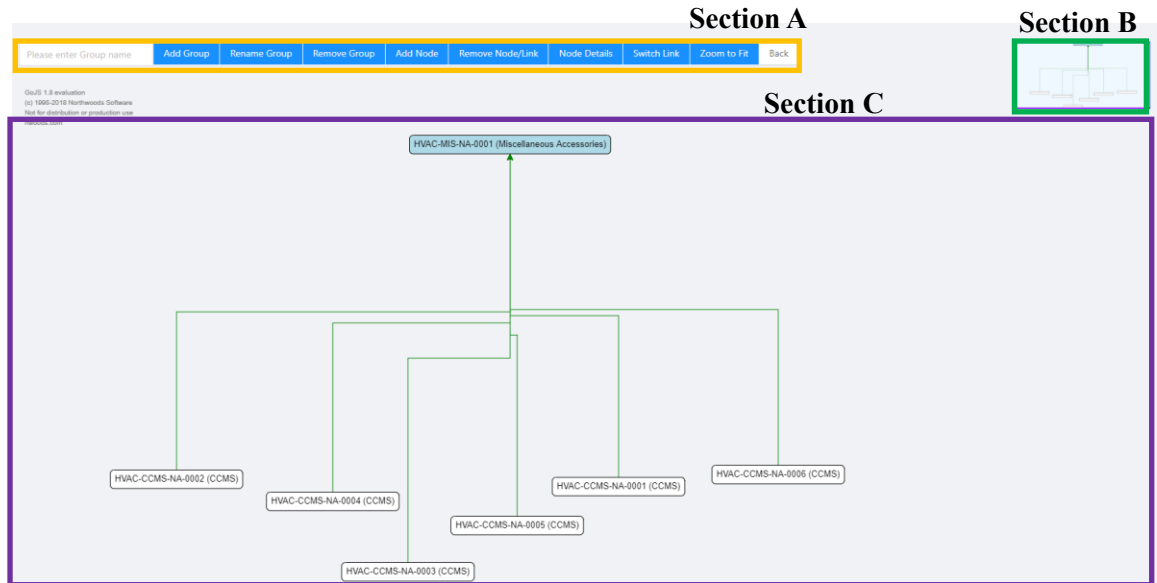
|   | A                           | B                         | C                           | D                           | E |
|---|-----------------------------|---------------------------|-----------------------------|-----------------------------|---|
| 1 | asset code                  | parent                    | asset child                 | asset child child           |   |
| 2 | KT-CCC-008-RXXX-HVAC-AS-003 | KT-ZCB-NA-B00-HVAC-HW-001 | KT-CCC-008-TLT2-HVAC-FD-001 | ST-DSD01-000-LOB-BS-BFD-013 |   |
| 3 |                             |                           |                             |                             |   |
| 4 |                             |                           |                             |                             |   |
| 5 |                             |                           |                             |                             |   |

### 2.2.5.2 Creation system topology by directly editing the topology on AIMP

The procedures are listed as follows.



1. Select the asset.
2. Click “System Topology” button.



## Section A

The available actions are as follows:

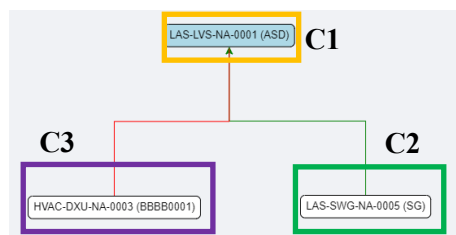
| Action Name      | Description                             |
|------------------|-----------------------------------------|
| Add Group        | Group two or more assets into one group |
| Rename Group     | Rename group name                       |
| Remove Group     | Remove group                            |
| Add Node         | Add asset into this topology            |
| Remove Node/Link | Remove asset/link from this topology    |
| Node Details     | Show and modify asset details           |
| Switch Link      | Switch link                             |
| Zoom to Fit      | Show the topology fit in the screen     |
| Back             | Go back to asset list view              |

## Section B

The topology overview indicates all nodes.

## Section C

The topology view is as follows:

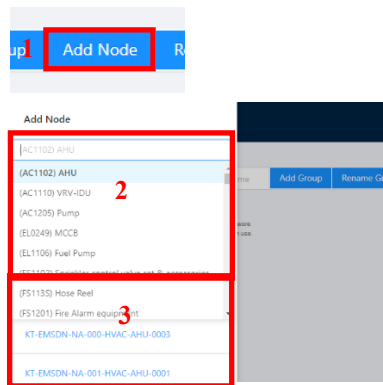


C1 is LEVEL1 assets.

C2 is LEVEL2 asset, which has parent-child relationship with C1, green arrows.

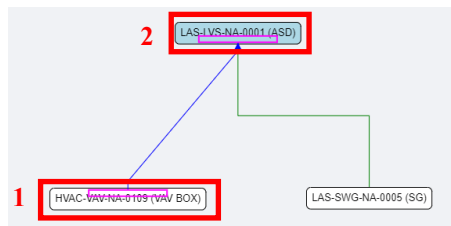
C3 is LEVEL2 asset, which has interface relationship (from other system) with C1 and red line.

### 2.2.5.3 Adding Nodes



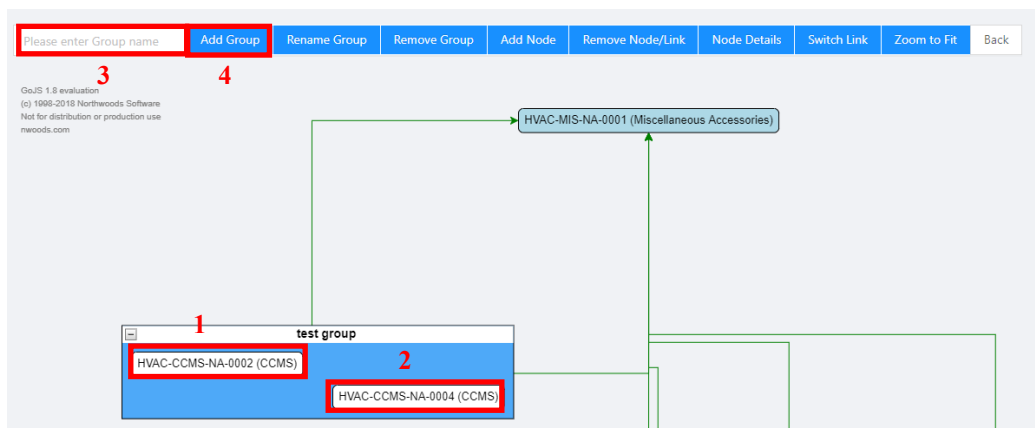
1. Click “Add Node” button.
2. Select the equipment type to be added from the dropdown list.
3. Pick the asset from the result list.

### 2.2.5.4 Adding Relationships



1. Click the top part of the node.
2. Drag to the bottom part of the target node.

### 2.2.5.5 Adding Groups



1. Click on one node.
2. Click another node (can be multiple).
3. Input group name.
4. Click “Add Group” button.

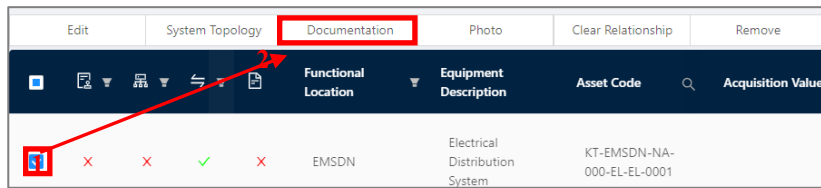
### 2.2.5.6 Viewing/modifying Node Details

Node Details

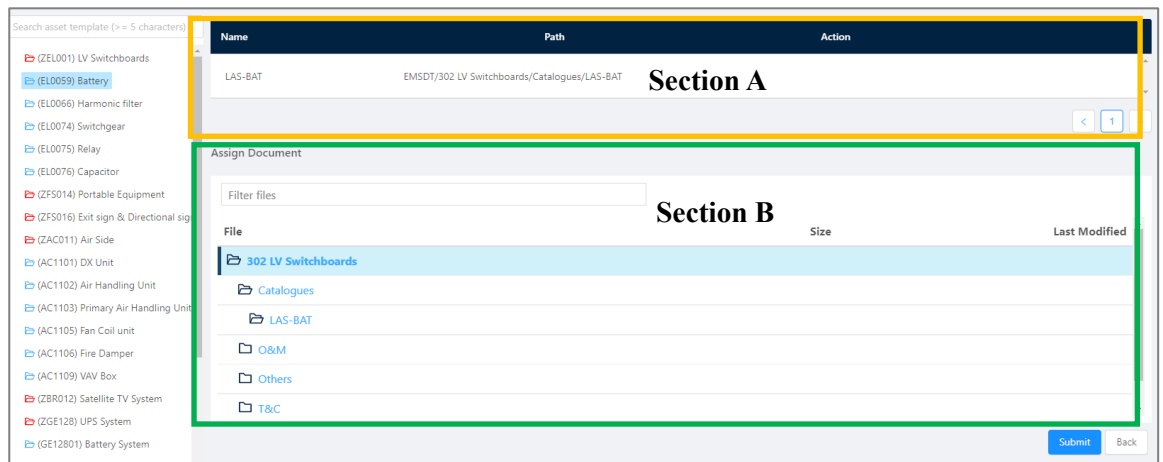
| Attributes Name                         | Attributes Value              | Updated Date | Updated By |
|-----------------------------------------|-------------------------------|--------------|------------|
| Acquisition Value                       | N/A                           | 2020-03-17   |            |
| Asset Code                              | KT-EMSDN-NA-001-HVAC-CCMS-000 | 2020-03-17   |            |
| Asset Relationship                      |                               |              |            |
| Asset Tag No.                           | EMSDN-0400000067              | 2020-03-17   |            |
| Authorization Group                     | N/A                           | 2020-03-17   |            |
| Catalog Profile                         | N/A                           | 2020-03-17   |            |
| CCS Superior Equipment No.              |                               |              |            |
| CCS Superior Equipment Technical ID No. |                               |              |            |
| Construction Type                       | N/A                           | 2020-03-17   |            |
| Cover Photo                             |                               |              |            |
| Currency                                |                               |              |            |
| Customer Warranty End                   | N/A                           | 2020-03-17   |            |
| Customer Warranty Start                 | N/A                           | 2020-03-17   |            |
| Division                                |                               |              |            |
| Documentation                           | CCMS                          | 2020-03-17   |            |
| Equipment Description                   | CCMS                          | 2020-03-17   |            |
| Equipment No.                           |                               |              |            |
| Functional Location                     | EMSDN                         | 2020-03-17   |            |
| Grouped Equipment ID                    |                               |              |            |

1. Click one node.
2. Click “Node Details” button.
3. Asset details section appears on the right side.
4. Modify attribute values and click “Save” button.

## 2.2.6 Documentation



1. Select the asset.
2. Click “Documentation” button.



### Section A

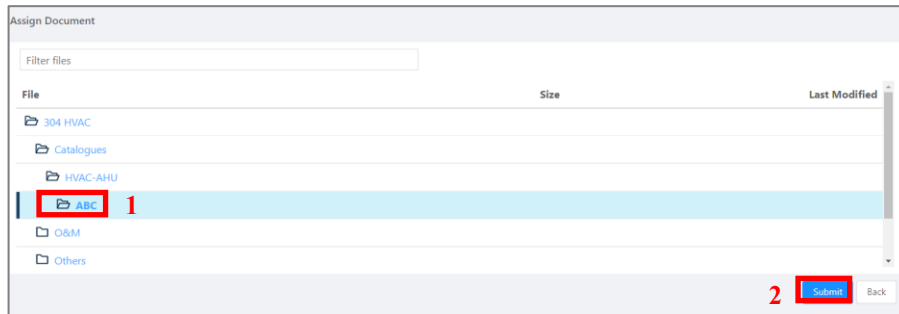
The columns are as follows:

| Field  | Description                                                                                                                    |
|--------|--------------------------------------------------------------------------------------------------------------------------------|
| Name   | If it is pre-defined folder, format is <System name>-<Equipment name><br>If it is non pre-defined folder, it will be free-text |
| Path   | Full path                                                                                                                      |
| Action | Only non pre-defined folder (manually added) button can be deleted                                                             |

### Section B

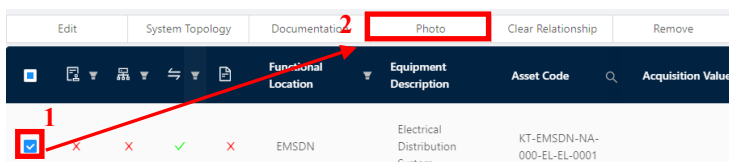
Assigning document folder views.

### 2.2.6.1 Add asset specific document folder

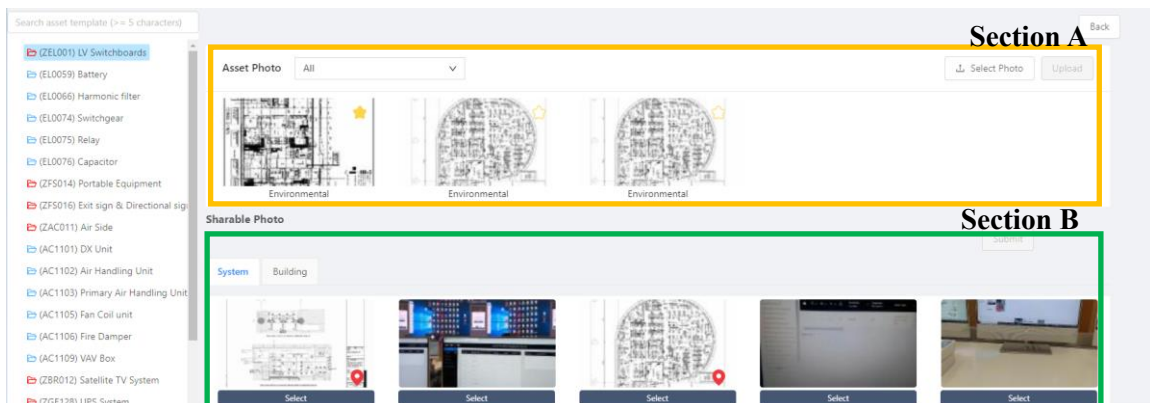


1. Select the folder
2. Click “Submit” button

### 2.2.7 Photo (Asset Images)



1. Select the asset
2. Click “Photo” button.



#### Section A

- Specific photo view

#### Section B

- Shared photo view

#### 2.2.7.1 Adding Asset-specific Photos (Images)



1. Click “Select Photo” button to select the photo from user’s machine.
2. Click “Upload” button.

#### 2.2.7.2 Asset-specific Photos (Image) Details



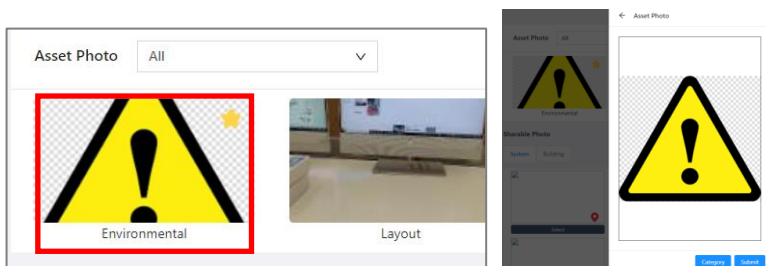
1. Click the top right corner star to view Environmental or Name plate/Equipment details.

#### 2.2.7.3 Filtering by Photo (Image) Types

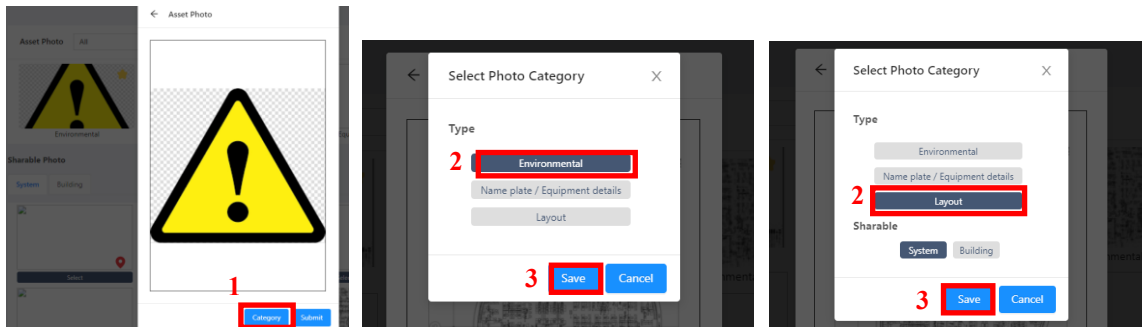
1. The pull-down menu next to “Asset Photo” allows filtering by photo (image) type:



2. Click the photo thumbnail to view the image.

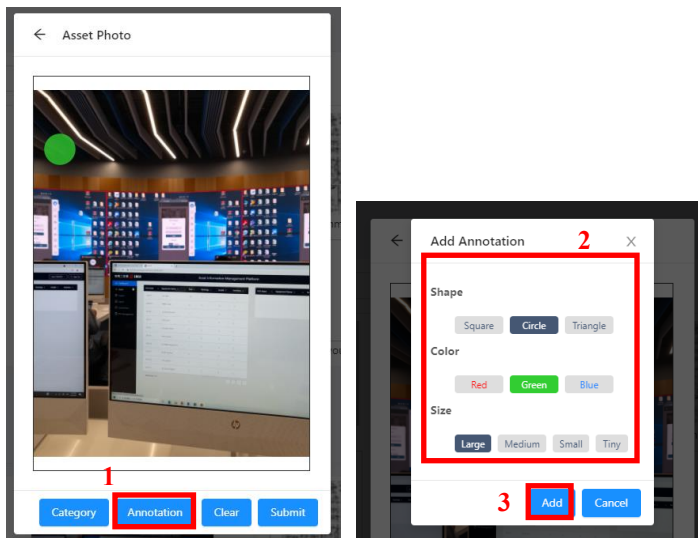


#### 2.2.7.4 Changing Photo (Image) Categories



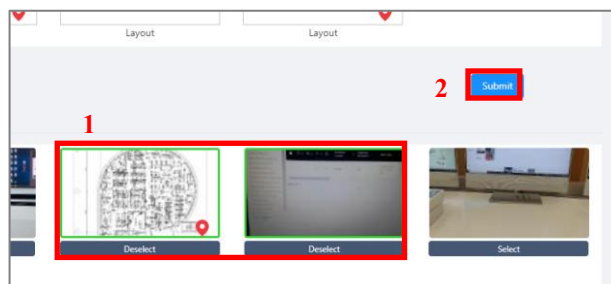
1. Click “Category” button.
2. Select the category type (if type is “Layout, user can select System or Building).
3. Click “Save” button.

#### 2.2.7.5 Adding Annotation (for Layout Only)



1. Click “Annotation” button.
2. Select the Shape, Color and Size.
3. Click “Save” button.

#### 2.2.7.6 Assigning shared photo to the asset



1. Select the photo, can be multiple.
2. Click “Submit” button.

#### 2.2.7.7 Attribute Settings (Downloading Asset Template File)



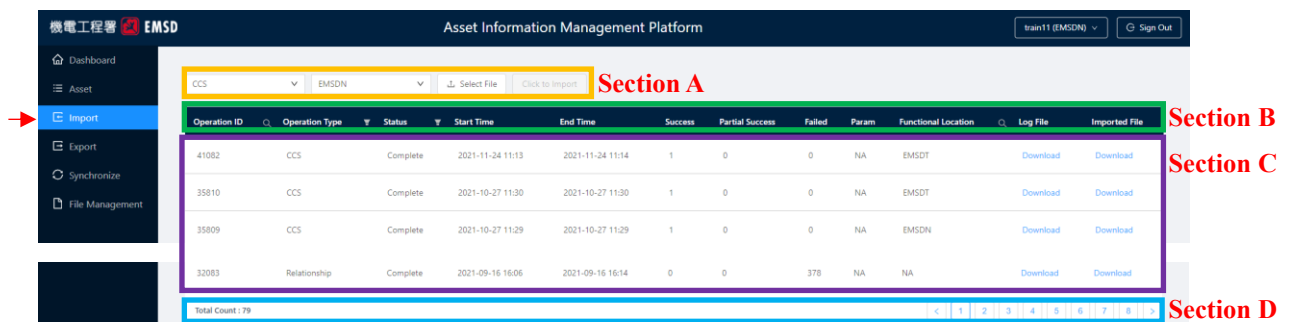
1. Click “Attribute Setting” button.
2. Click “Template Download” button.



3. The sample template file is then downloaded for attribute settings.

### 2.3 Importing

Import operation compromises the first-come-first-served principal.



#### Section A

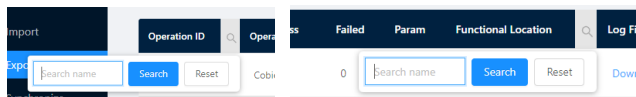
Available import operation type can be triggered are as follows:

| Type Name                 | Description                                                                                                                                                                                                                                                               |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CCS                       | <div> <div>CCS</div> <div>EMSDN</div> <div>Select File</div> <div>Click to Import</div> </div> <p>- Import CCS spreadsheet with specific functional location</p>                                                                                                          |
| COBie                     | <div> <div>COBie</div> <div>EMSDN</div> <div>Select File</div> <div>Click to Import</div> </div> <p>- Import COBie with specific functional location</p>                                                                                                                  |
| COBieLite<br>(asset code) | <div> <div>COBieLite (asset code)</div> <div>EMSDN</div> <div>Select File</div> <div>Select Uploaded File</div> <div>Click to Import</div> </div> <p>- Import COBieLite with specific functional location</p> <p>- asset code will be stored as the Revit external ID</p> |
| COBieLite                 | <div> <div>COBieLite (GUID)</div> <div>EMSDN</div> <div>Select File</div> <div>Select Uploaded File</div> <div>Click to Import</div> </div>                                                                                                                               |

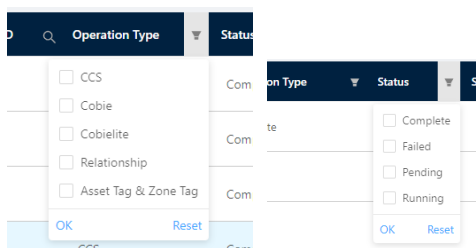
| Type Name                    | Description                                                                                                                                                                                                                                               |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| (GUID)                       | <ul style="list-style-type: none"> <li>- Import COBieLite with specific functional location</li> <li>- GUID will be stored as the Revit external ID</li> </ul>                                                                                            |
| Relationship                 | <div>Relationship ▼ ⬇ Select File Click to Import</div> <ul style="list-style-type: none"> <li>- Import asset relationship with predefined spreadsheet template</li> </ul>                                                                                |
| Relationship (Clear Current) | <div>Relationship (Clear Curr... ▼ ⬇ Select File Click to Import</div> <ul style="list-style-type: none"> <li>- Import asset relationship with predefined spreadsheet template</li> <li>- Remove all existing asset relationship before import</li> </ul> |
| Asset Tag & Zone Tag         | <div>Asset Tag &amp; Zone Tag ▼ ⬇ Select File Click to Import</div> <ul style="list-style-type: none"> <li>- Import asset tag and zone tag with predefined spreadsheet template</li> </ul>                                                                |

## Section B

1. Import operational history record is located on the header row
2. Rows can be searched by 🔍 Operation ID and by Functional Location.
3. Click “Reset” to clear search text and display full result list.



4. Rows can be filtered by 📄 Operation Type and by Status.
5. Click “Reset” to clear search text and display full result list.



## Section C

1. Display the import operation history with status and other information. The latest record is shown on the top of the list.
2. Column definitions are as follows:

| Name           | Description                                                                                         |
|----------------|-----------------------------------------------------------------------------------------------------|
| Operation ID   | Each import action is an operation task.<br>Operational ID is the identifier of the operation task. |
| Operation Type | 5 import operation type listed in section A                                                         |
| Status         | Complete, Failed, Pending, Running                                                                  |
| Start Time     | Operation start time                                                                                |
| End Time       | Operation finish time                                                                               |
| Success        | Success count                                                                                       |

| Name                | Description                                                                                  |
|---------------------|----------------------------------------------------------------------------------------------|
| Partial Success     | Partial success count                                                                        |
| Failed              | Failed count                                                                                 |
| Param               | N/A                                                                                          |
| Functional Location | Import operation for which functional location                                               |
| Log File            | Click “Download” to get the log file, which shows detail information for success and failure |
| Imported File       | Click “Download” to get the imported file                                                    |

To view partial success details:

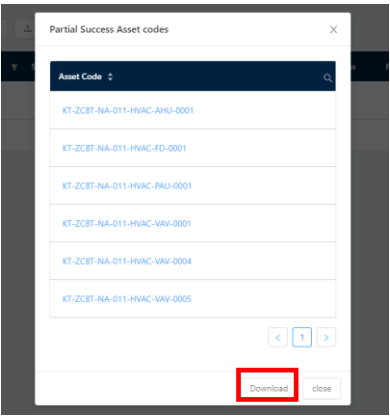
The screenshot shows the BIM-AM interface with a table of operations. A red box labeled '1' points to the 'Partial Success' column. A red box labeled '2' points to a selected asset code 'KT-ZCBT-NA-011-HVAC-AHU-0001' in the 'Partial Success Asset codes' popup. A red box labeled '3' points to the 'Asset Attributes' popup, which displays a summary table and a detailed attribute table.

| Asset code not found | Invalid asset code | Template ID not found | Invalid attribute name | Update attribute success | Insert attribute success |
|----------------------|--------------------|-----------------------|------------------------|--------------------------|--------------------------|
| 0                    | 0                  | 0                     | 18                     | 0                        | 2                        |

| Attribute Name          | Attribute Value              | Status                   |
|-------------------------|------------------------------|--------------------------|
| Area                    |                              | Invalid attribute name   |
| AssemblyCode            |                              | Invalid attribute name   |
| Comments                |                              | Invalid attribute name   |
| EMSD.CommonAsset Code   | KT-ZCBT-NA-011-HVAC-AHU-0001 | Insert attribute success |
| EMSD.CommonZone Tag No. | ZCB-801-000003               | Insert attribute success |

1. Click the Partial Success count.
2. A list of asset codes pops up.
3. Click the asset code. An attribute detail popup. Attribute validation result and a summary table appears.
4. The list of asset code can be downloaded in CSV format.

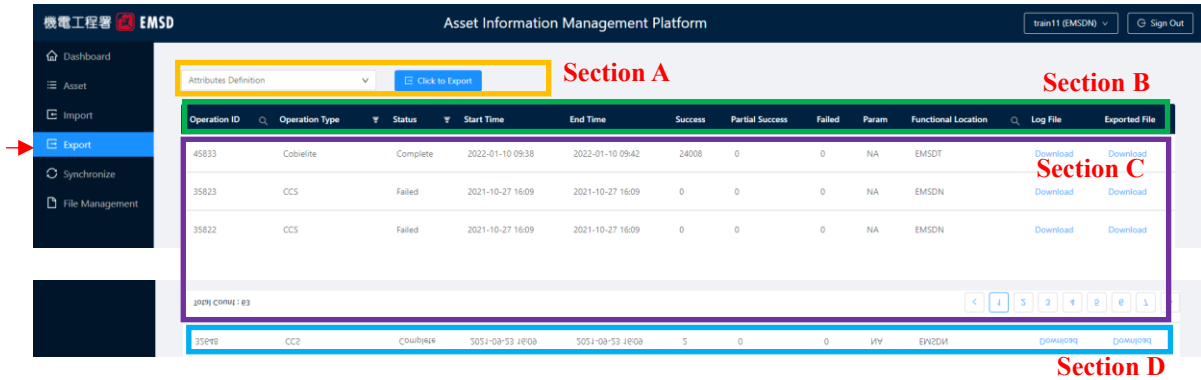


**Section D**

- 1. The total count is shown on the left.
- 2. Pagination (go to previous/next page) is shown on the right.

**2.4 Exporting**

Export operation compromises of the first-come-first-served principal.



**Section A**

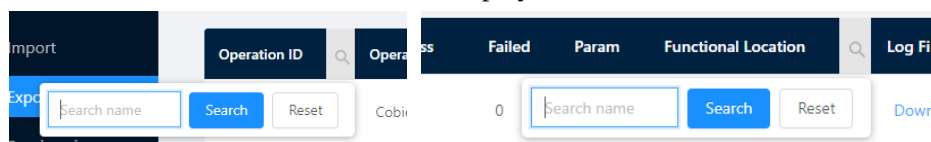
a) Available export operation types can be triggered as follows:

| Type Name             | Description                                                                                                                                    |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| Attributes Definition | <div>Attributes Definition <span>Click to Export</span></div> <p>- Export with attribute name, type, max length, min length, mandatory for</p> |

| Type Name                                     | Description                                                                                                                                                                                                                                                                                                                                                                                                               |
|-----------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                               | BIM-AM validation                                                                                                                                                                                                                                                                                                                                                                                                         |
| CCS                                           | <div>CCS <input type="button" value="v"/> Audio System (AUS) <input type="button" value="v"/> Audio System (AUS) <input type="button" value="v"/> <input type="button" value="Click to Export"/></div> <ul style="list-style-type: none"> <li>- Export Spreadsheet in CCS template format</li> <li>- System and equipment is required to provide</li> </ul>                                                               |
| COBieLite<br>(asset code)                     | <div>COBieLite (asset code) <input type="button" value="v"/> <input type="checkbox"/> Apply Validation <input type="button" value="Click to Export"/></div> <ul style="list-style-type: none"> <li>- Export COBieLite by filling Revit external ID with asset code</li> <li>- System will do validation if option “Apply Validation” is checked</li> </ul>                                                                |
| COBieLite<br>(GUID)                           | <div>COBieLite (GUID) <input type="button" value="v"/> <input type="checkbox"/> Apply Validation <input type="button" value="Click to Export"/></div> <ul style="list-style-type: none"> <li>- Export COBieLite by filling Revit external ID with GUID</li> <li>- System will do validation if option “Apply Validation” is checked.</li> </ul>                                                                           |
| COBieLite<br>(asset code<br>and GUID<br>only) | <div>COBieLite (asset code and GUID only) <input type="button" value="v"/> <input type="button" value="Click to Export"/></div> <ul style="list-style-type: none"> <li>- Export COBieLite without attributes</li> </ul>                                                                                                                                                                                                   |
| COBieLite<br>(Revit)                          | <div>COBieLite (Revit) <input type="button" value="v"/> <input type="checkbox"/> Apply Validation <input type="button" value="Select File"/> <input type="button" value="Start Upload"/> <input type="button" value="Click to Export"/></div> <ul style="list-style-type: none"> <li>- Export COBieLite with uploaded template</li> <li>- System will do validation if option “Apply Validation” is checked.</li> </ul>   |
| Revit Checkset<br>File                        | <div>Revit Checkset File <input type="button" value="v"/> <input type="button" value="Click to Export"/></div> <ul style="list-style-type: none"> <li>- Export Revit checkset file</li> </ul>                                                                                                                                                                                                                             |
| Unuse Asset<br>Code                           | <div>Unuse Asset Code <input type="button" value="v"/> <input type="text" value="Enter Asset Code"/> <input type="button" value="Click to Export"/></div> <ul style="list-style-type: none"> <li>- Export list of unuse asset code</li> <li>- Asset code prefix is required to provide</li> </ul>                                                                                                                         |
| Unuse Zone<br>Tag                             | <div>Unuse Zone Tag <input type="button" value="v"/> <input type="text" value="Enter Building Code"/> <input type="text" value="Enter Building Level"/> <input type="button" value="Click to Export"/></div> <ul style="list-style-type: none"> <li>- Export list of unuse zone tag</li> <li>- Building code and building level are required to provide</li> </ul>                                                        |
| Unuse Asset<br>Tag                            | <div>Unuse Asset Tag <input type="button" value="v"/> <input type="text" value="Enter Building Code"/> Audio Electronics Installation <input type="button" value="v"/> RFID Tag <input type="button" value="v"/> <input type="button" value="Click to Export"/></div> <ul style="list-style-type: none"> <li>- Export list of unuse asset tag</li> <li>- Building code and system type are required to provide</li> </ul> |

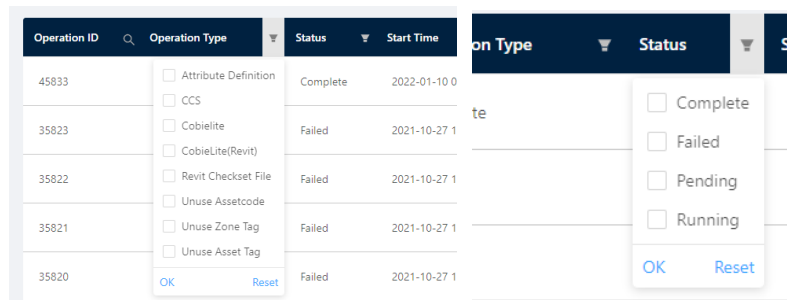
## Section B

1. Export operational history record header row.
2. Rows can be searched by  Operation ID and by Functional Location.
3. Click “Reset” to clear search text and display full result list.



4. Rows can be filtered by  Operation Type and by Status.

- Click “Reset” to clear search text and display full result list.



## Section C

Display the export operation history with status and other information. The latest record will be put on the top of the list.

Column definition

| Name                | Description                                                                                         |
|---------------------|-----------------------------------------------------------------------------------------------------|
| Operation ID        | Each export action is an operation task.<br>Operational ID is the identifier of the operation task. |
| Operation Type      | 10 export operation type listed in section A                                                        |
| Status              | Complete, Failed, Pending, Running                                                                  |
| Start Time          | Operation start time                                                                                |
| End Time            | Operation finish time                                                                               |
| Success             | Success count                                                                                       |
| Partial Success     | Partial success count                                                                               |
| Failed              | Failed count                                                                                        |
| Param               | For type includes unuse asset code, unuse zone tag and unuse asset tag                              |
| Functional Location | Export operation for which functional location                                                      |
| Log File            | Click “Download” to get the log file, which shows detail information for success and failure        |
| Exported File       | Click “Download” to get the exported file                                                           |

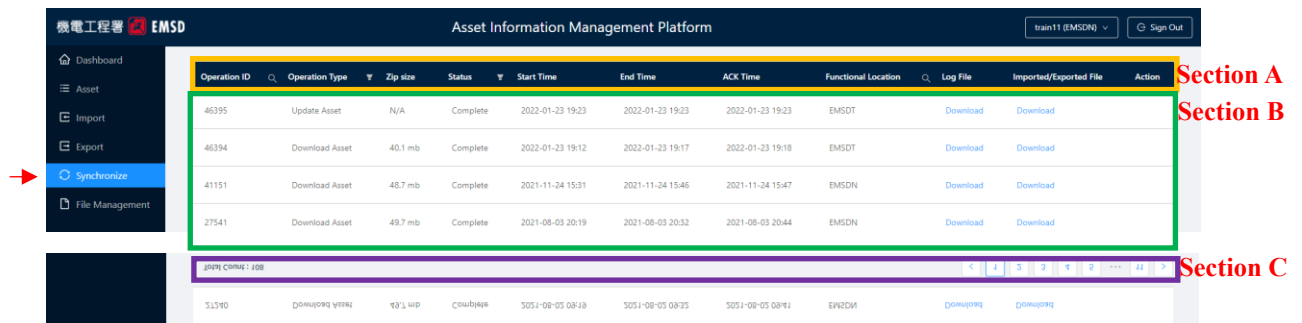
## Section D

Left: Total count

Right: Pagination (go to previous/next page)

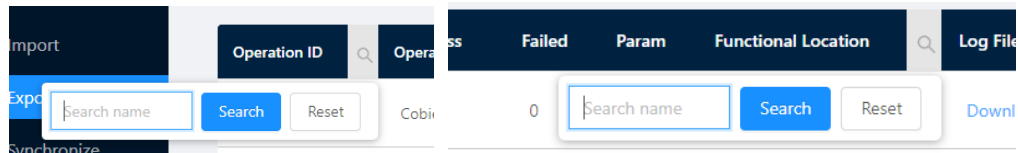
## 2.5 Synchronizing

Synchronize data from mobile app. Operation compromises the first-come-first-served principal.

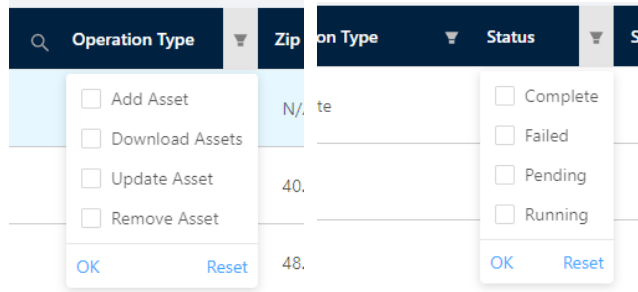


### Section A

- Synchronize operational history record header row
- Rows can be searched by Operation ID and by Functional Location.
- Click Rest to clear search text and display full result list



- Rows can be filtered by Operation Type and by Status
- Click Rest to clear search text and display full result list



- Available export operation type can be triggered from mobile app as below:

| Type Name       | Description                                                  |
|-----------------|--------------------------------------------------------------|
| Add Asset       | - Asset creation with attribute, photo                       |
| Download Assets | - For offline use. Download asset attribute, photo thumbnail |
| Update Asset    | - Asset update attribute, photo                              |
| Remove Asset    | - Asset removal                                              |

### Section B

- Display the synchronize operation history with status and other information. The latest record will be put on the top of the list.
- Column definition

| Name         | Description                                   |
|--------------|-----------------------------------------------|
| Operation ID | Each synchronize action is an operation task. |

|                        |                                                                                              |
|------------------------|----------------------------------------------------------------------------------------------|
|                        | Operational ID is the identifier of the operation task.                                      |
| Operation Type         | 4 synchronize operation type listed in section A                                             |
| Zip Size               | Zip file size                                                                                |
| Status                 | Complete, Failed, Pending, Running                                                           |
| Start Time             | Operation start time                                                                         |
| End Time               | Operation finish time                                                                        |
| Ack Time               | Acknowledge time                                                                             |
| Functional Location    | Synchronize operation for which functional location                                          |
| Log File               | Click “Download” to get the log file, which shows detail information for success and failure |
| Imported/Exported File | Click “Download” to get the imported/exported file                                           |

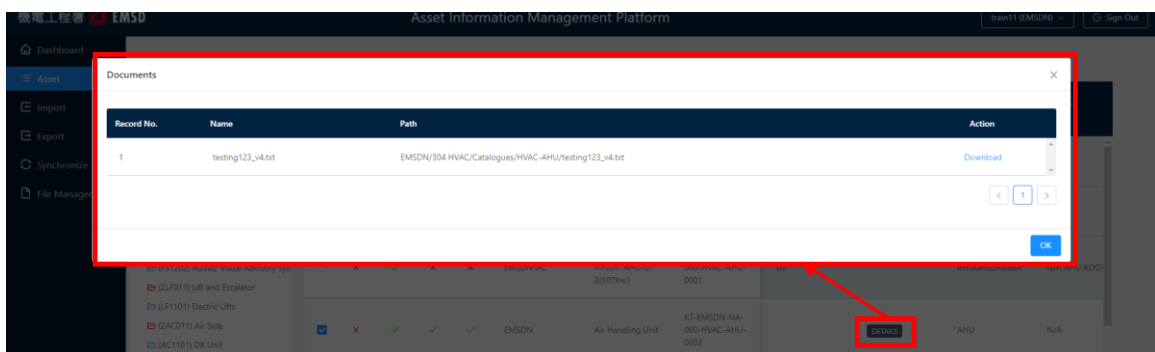
## Section C

Left: Total count

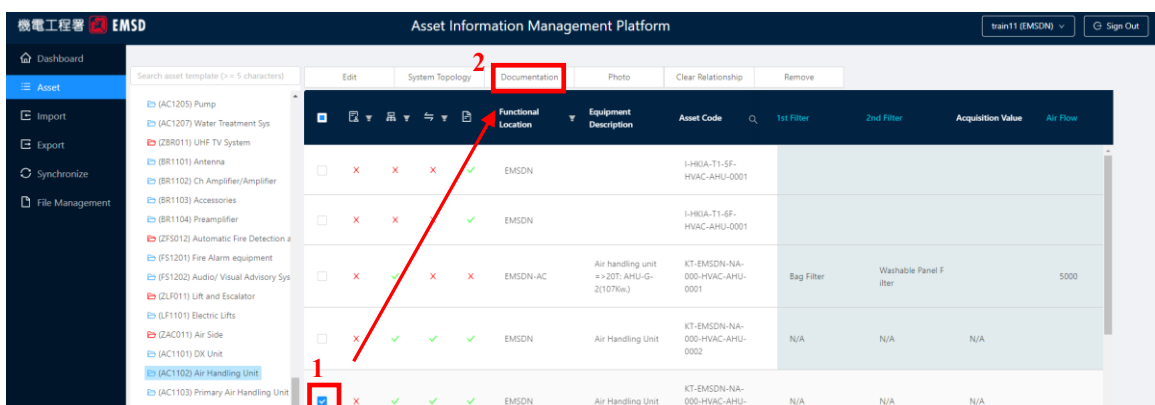
Right: Pagination (go to previous/next page)

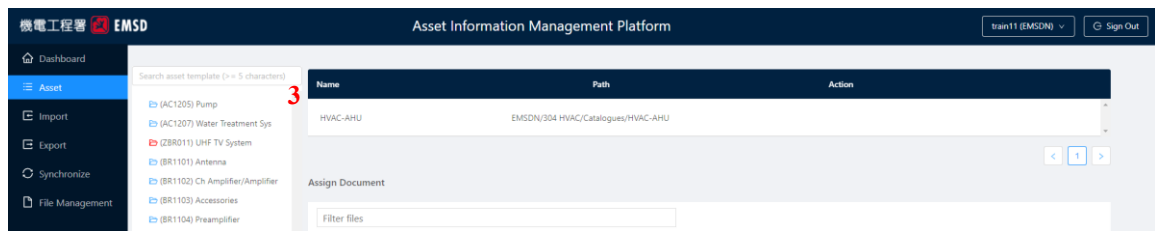
## 2.6 File Management

Shared asset document can be viewed in the asset list popup view after click “DETAILS” button



The same shared asset document can be viewed in the asset document page.



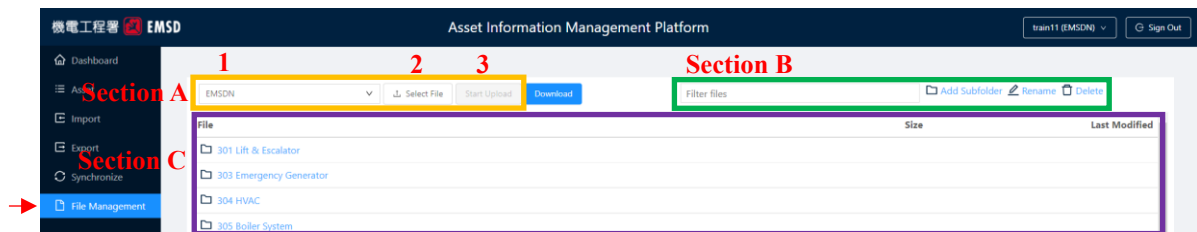


1. Choose the asset by clicking the checkbox.
2. Click “Documentation” button.
3. Asset document page shown. Shared document information shows in upper part.

The following functions of the shared asset document can be managed in this page.

- Adding Files
- Downloading Files
- Adding Folders
- Search for Files
- Renaming files
- Deleting files

The functions are located in three sections and described in details as follows.



## Section A

### 2.6.1 Adding Individual Files

1. Choose the location the uploaded file to be stored
2. Choose the file from local drive
3. Click “Start Upload”

### 2.6.2 Adding Files with Predefined Folder Structures

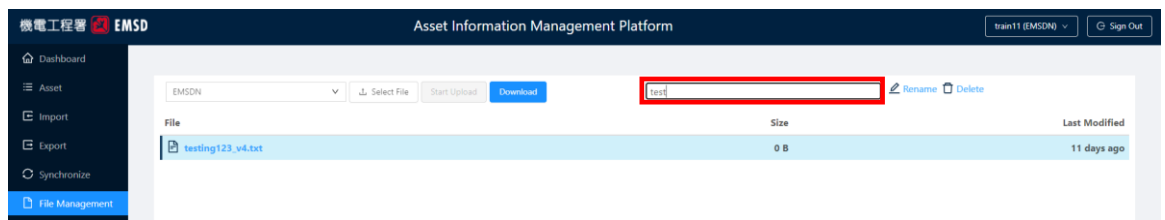
1. Choose the location the uploaded file to be stored.
2. Choose the zip file from local drive (refer to Appendix I – Handover Package and Folder Structure)
3. Click “Start Upload”.
4. The system takes some time for processing after files are added.

5. File(s) will be assigned to the asset if matched:
  - System name (Level 1) e.g 301 Lift & Escalator
  - Predefined folder (Level 2) e.g Catalogues, O&M, Others, T&C
  - <system>-<equipment> (Level 3) e.g HVAC-AHU

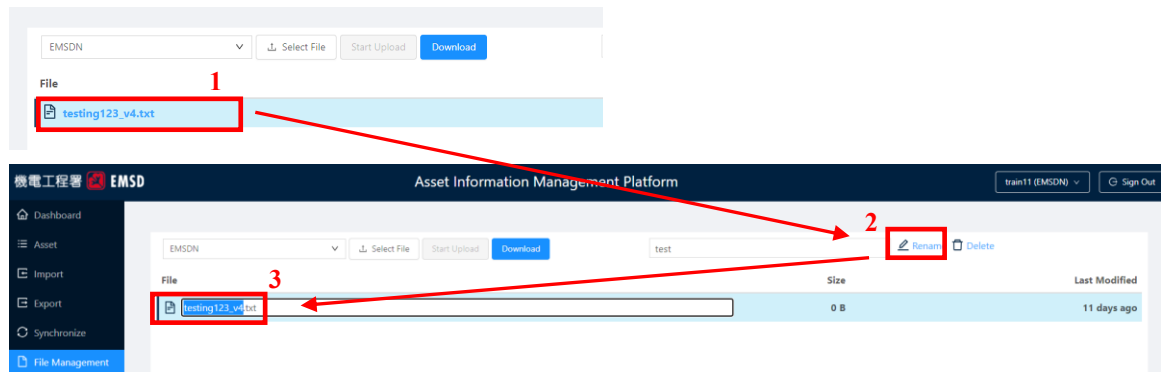
## Section B

### 2.6.3 Searching for Files

1. Input search text and matched file appears.

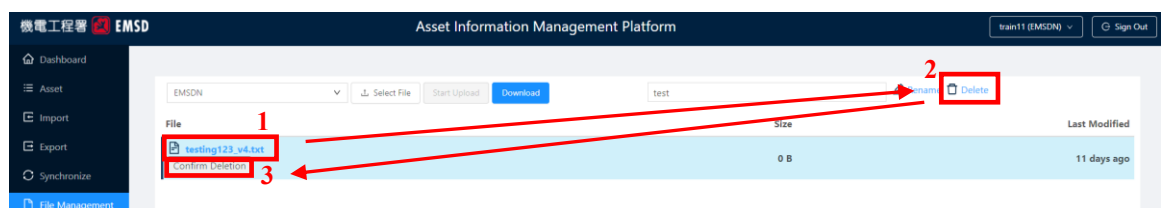


### 2.6.4 Modifying File Names



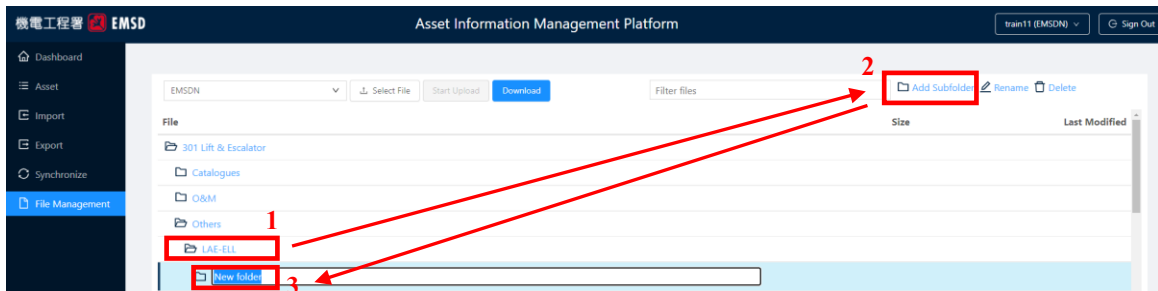
1. Highlight the file to be modified.
2. Click “Rename” button.
3. Input new file name and press “Enter” button.

### 2.6.5 Deleting Files



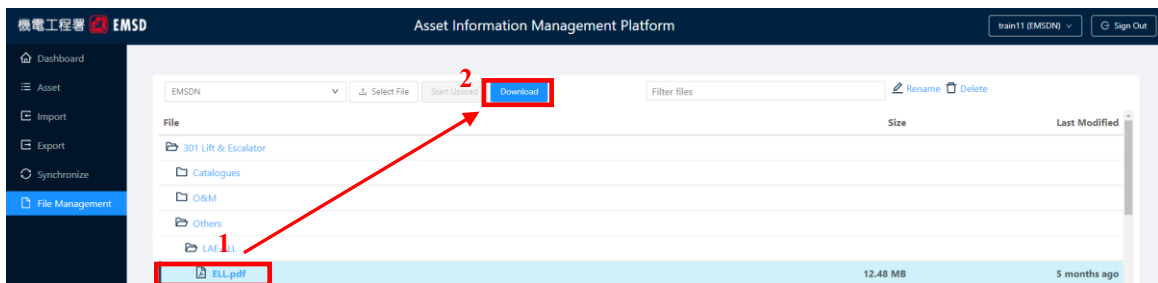
1. High light the file to be modified
2. Click “Rename” button
3. Input new file name and press “Enter” button

## 2.6.6 Adding Folders



1. Select the folder.
2. Click “Add Subfolder” button.
3. Input new sub folder name and press “Enter” button.

## 2.6.7 Download Files



1. Select the file.
2. Click “Download” button.

## Section C

The file information fields are as follows:

| Name          | Description                 |
|---------------|-----------------------------|
| File          | File name                   |
| Size          | File size                   |
| Last Modified | File last modified datetime |

End of this Document