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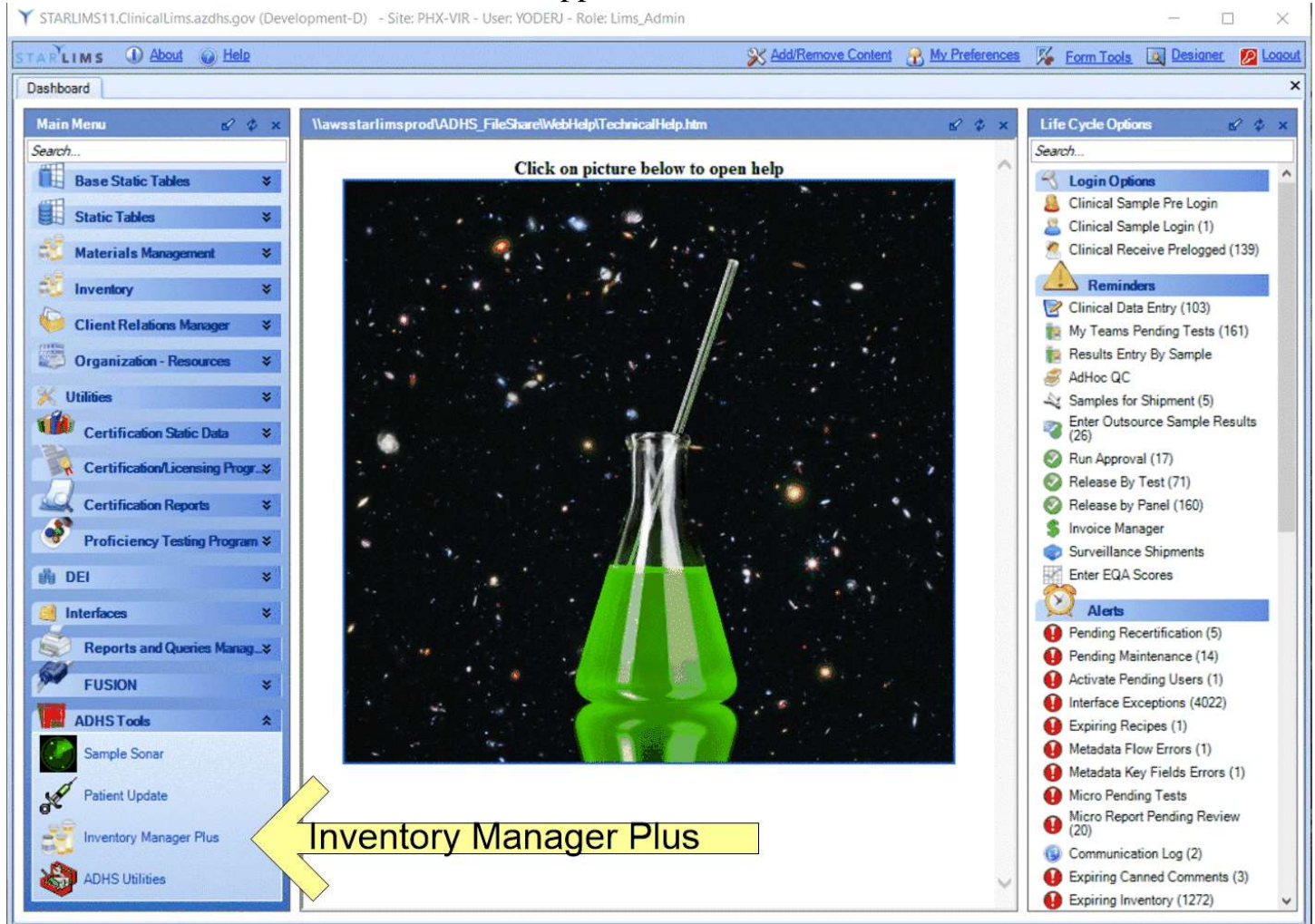
Inventory Manager Plus



Introduction

While the **Inventory Manager** application is quite useful in entering and tracking inventory it can be a little difficult locating existing inventory. The **Inventory Manager Plus** application is a modification of the Inventory Manager with a section dedicated to locating inventory (**Material Search**).

STARLiMS Application – Main Dashboard



The **Inventory Manager Plus** application is accessed from the main Dashboard under | **Main Menu** | **ADHS Tools** | **Inventory Manager Plus** |. When selected the **Inventory Manager Plus** tab will open and appears similar to the screen shot below.



Inventory Manager Plus



Using Inventory Manager Plus

ADH Inventory Manager Plus application

Material Search

Inventory myAccess myInventory This Dept

Test:
 Type:
 Name/Code/Synonym like: Sterile

Inventory Locations

- BAC Department
- PHX-BAC
- BT Department
- PHX-BT
- PHX-CRIME
- PHX-EM

Total Amount: 200.00 **Materials Count:** 23

Search Results Grid

MATNAME	Material Type	DEPT	Material Code
0.85% Sterile Saline	-Retired		.85% Sterile Saline
0.85% Sterile Saline	Reagent		0.85% Sterile Saline
0.85% Sterile Saline (BT)	-Retired		0.85% Sterile Saline (BT)
1x Sterile PBS	-Retired	PHX-BT	1x Sterile PBS
4% Sterile NaOH	Reagent	PHX-TB	4% Sterile NaOH
PBS (non-sterile)	-Retired		PBS (non-sterile)
Sterile DI H2O (TB)	-Retired		Sterile DI H2O (TB)

Inventory List

Inventory ID	Lot #	Default	UPC Code	STARDOCID	Opened Date
16636	428218				
16637	429386				

Total Inventory

Receive Date: 2019-01-17 Supplier Code: HD
 Expire Date: 11/21/2019 Purchase Order:
 # Of Items Received: 4 Invoice Number:
 Amount Left: 80.00 Tube Item Size: 20.00 Tube

Locations

Modif...	Locat...	Status	In Possession Of	# Items	Amount Left	Unit
<input checked="" type="checkbox"/>	61	PHX-...	Rele...	4	80.00	Tube

Standard Amount

Test Name	Analyte	Amount	Units	Low	High

Inventory History

Date	Changed By	Reason	In Possession Of	Amount	Balance	Unit Code	# Items	# Pakt
1/17/2019	SCHUESR	N/A - Review Translation		0.000	80.00	Tube	0	0
1/17/2019	SCHUESR	N/A - Review Translation		80.000	80.00	Tube	4	1

As noted earlier, this application is identical to the **Inventory Manager** with the exception of the **Materials Search** section at the top of the form. In this document we focus on the additional functionality and refer the user to the STARLiMS documentation for the **Inventory Manager** application.



Inventory Manager Plus



Materials Search Section

The screenshot shows the 'Material Search' window. On the left, there are search criteria: 'Inventory', 'myAccess', 'myInventory', and 'This Dept' checkboxes; 'Test' dropdown (2019 Novel Coronavirus rRT-PCR); 'Type' dropdown; and a 'Name/Code/Synonym like' text box with a 'Search' button. In the center, there is an 'Inventory Locations' list box with checkboxes for PHX-BAC, PHX-BT, PHX-CRIME, PHX-EM, PHX-SER, and PHX-TB. On the right, there are 'Total Amount' (8.00) and 'Materials Count' (2) input fields, and 'Labels' and 'Reports' buttons. Below these is a table with columns: MATNAME, Material Type, DEPT, and Material Code. The table contains two rows: 'MGP 96 External Lysis Buffer' (Reagent, PHX-VIR) and 'MGP 96 Small Volume Kit' (Testing Kit, PHX-VIR).

Online Help is accessed by selecting the icon located in the top left of the screen. When selected this PDF document should appear.

Search Criteria

The left half of the Materials Search section (**Search Criteria**) is dedicated to presenting the user with various search criteria they can use to locate the material of interest and executing the search for the material. All search criteria are optional and additive.

The following search criterion is available to the user:

- Checkboxes along the top include the following:
 - **Inventory** checkbox – Search results will only include items with an active inventory.
 - **myAccess** checkbox – Search results will only include items that the current user has access too.
 - **Inventory Manager Plus** checkbox – Search result will only include items the current user has added inventory for.
 - **This Dept** checkbox. – Search results will only include items with inventory associated with the department the user is currently logged into.
- **Test** selection box – Search results will only include materials that have been associated with the selected test.
- **Type** selection box – Search results will only include materials of the type that has been selected.
- **Name/Code/Synonym like** textbox – This very flexible box is used to enter text for matching Material Name, Material Code and/or Material Synonym. Search against these fields is not case sensitive, and utilizes wild cards both before and after the text you have entered. For example if you has entered “Sterile” in the text box and performed a search, matches would include:
 - 0.85% Sterile Saline
 - 1x Sterile PBS
 - PBS (non-sterile)
 - Sterile DI Water
 - Any other material Name, Code or Synonym that contains Sterile text within it.
- **Inventory Locations** list box – Search results will be restricted to materials that are associated with the department(s) checked.

Once all selection criteria has been entered, selection of the **[Search]** button will retrieve all materials that match the selected criteria. Result from the search will appear in the **Search Results Grid**.



Materials Search Section

Material Search

Inventory myAccess myInventory This Dept

Total Amount: 2.00 Materials Count: 23

Labels Reports

Test:

Type:

Name/Code/Synonym like:

Search

Inventory Locations:

- BAC Department
- PHX-BAC
- BT Department
- PHX-BT
- PHX-CRIME
- PHX-EM

MATNAME	Material Type	DEPT	Material Code
Sterile DI H2O 2mL tubes	-Retired		Sterile DI H2O 2mL tubes
Sterile DI H2O- 4.5 mL	Reagent	PHX-TB	Sterile DI H2O- 4.5 mL
Sterile DI Water	Reagent	PHX-BAC	Sterile DI Water
Sterile DI water	-Retired	PHX-BAC	Sterile DI water
Sterile DI Water 2mL	Reagent	PHX-BAC	Sterile DI Water 2mL
Sterile Saline (TB)	Reagent		Sterile Saline (TB)
Sterile Saline 0.85% (BT)	-Retired		Sterile Saline 0.85% (BT)

Search Results Grid

The **Search Results grid** is where the list of Materials that meet the provided Search Criteria will appear. This grid contains the following columns:

- **MATNAME** – Material Name.
- **Material Type** – Material Type classification assigned to the material.
- **Location** – Inventory Location for material.
- **DEPT** – Department the material has been associated with.
- **Material Code** – Material Code assigned the item.

Selection of any row in the Search Results grid will cause the information for the material to be filled out in the remainder of the form.



Technical Discussions



Inventory Manager Plus



Application Promotion/Migration

The following information is provided for promoting/migrating the **Inventory Manager Plus** to a different environment or system.

The screenshot shows the STARLIMS Export dialog box. The main area is a tree view of components to be exported, organized into folders. The components are:

- Export package
 - Applications
 - ADHS_LIMS
 - ADHS_InventoryManagerPlus
 - XFD Forms
 - InventoryManagerPlus
 - HTML Forms
 - Phone Forms
 - Tablet Forms
 - Server scripts
 - Client scripts
 - Data sources
 - ds_Get_TotalAmount_of_Material
 - ds_GetMaterialList
 - ds_InventoryLocations
 - ds_MaterialTypes
 - ds_TestList
- Attachments
 - Attachments
 - XFD Forms
 - HTML Forms
 - Phone Forms
 - Tablet Forms
 - Server scripts
 - Client scripts
 - OpenAttachments
 - Data sources
- Client scripts
- Images
 - ADHS
 - ADHS_Logo
 - Help2_16x16
 - InventoryManagerPlus

On the right side of the dialog, there is a vertical list of buttons for selecting components to export: Applications, Server Scripts, Client Scripts, Data Sources, Reports, Images, Tables, and PMDOs. At the bottom, there are buttons for '< Back', 'Next >', and 'Cancel'. Below the tree view, there are links for 'Export tagged items', 'Add pre-import script', and 'Add post-import script'.



Inventory Manager Plus



Project Package Elements

Class	Element	Description	Path
Application: Form	InventoryManagerPlus	Main Application Form	Applications ADHS_LIMS ADHS_InventoryManagerPlus XFD Forms InventoryManagerPlus
Application Form	InventoryManagerPlus_ADHS	Custom Application for ADHS	Do not use this form. Use InventoryManagerPlus form. This customized form for ADHS only.
Application: DataSource	ds_Get_TotalAmount_of_Material	Calc Quantity of material.	Applications ADHS_LIMS ADHS_InventoryManagerPlus Data Sources ds_Get_TotalAmount_of_Material
Application: DataSource	ds_GetMaterialList	Materials datasource for datagrid.	Applications ADHS_LIMS ADHS_InventoryManagerPlus Server scripts ds_GetMaterialList
Application Datasource	ds_Inventory_List	Inventory List Panel Datasource	Applications ADHS_LIMS ADHS_InventoryManagerPlus Server scripts ds_Inventory_List
Application Datasource	ds_InventoryLocations	Datasource for Inventory Storage Locations	Applications ADHS_LIMS ADHS_InventoryManagerPlus Data Sources ds_InventoryLocations
Application: DataSource	ds_MaterialTypes	Material Type datasource for Type selection box	Applications ADHS_LIMS ADHS_InventoryManagerPlus Data Sources ds_MaterialTypes
Application: DataSource	ds_TestList	Material Type datasource for Test selection box	Applications ADHS_LIMS ADHS_InventoryManagerPlus Data Sources ds_TestList
Client Script	OpenAttachements	Open Online Help PDF doc	Applications Attachments Client Scripts OpenAttachements
Image: Group Icon	ADHS_Logo	Icon for ADHS Tools Group	Images ADHS ADHS_Logo
Image: Help Icon	Help2_16x16	Help icon	Images ADHS Help2_16x16
Image: Form Background	Inventory Manager Plus	Shortcut icon for application	Images ADHS Inventory Manager Plus

Dashboard Menu Addition

The following information is provided for adding the Inventory Manager Plus to a menu in the main form using the [Part Designer](#).



Inventory Manager Plus



The screenshot shows the STAR LIMS Part Designer interface. On the left, a tree view shows the menu structure with 'Inventory Manager Plus' highlighted under 'ADHS Tools' (marked 01). The right pane shows the configuration for this item:

- Item Type:** Item, **Position:** 4
- Item Name:** Inventory Manager Plus (marked 02)
- Image:** No image
- Captions:** A table with columns 'Language ID' and 'Caption'. All captions are 'Inventory Manager Plus'.
- Command Settings:** Type: Application, Window: Applications Tab, Name: ADHS_InventoryManagerPlus.InventoryManagerPlus (marked 03)
- Roles:** A table with columns 'Role' and 'Has Access'. Roles include Admin_Trainee, Analyst, Clerical, Emri Analyst, Epi, EpiAdmin, Lims_Admin, Mgmt, myCounty, MyLims, and PHScientist1. All have 'Has Access' checked (marked 04).

Item	Description
Menu Placement	Main Menu ADHS Tools Inventory Manager Plus
Item Name	Inventory Manager Plus
Application Icon	ADHS InventoryMangerPlus
Command Settings	Type: Application Window: Unique Tab Name: ADHS_InventoryManagerPlus.InventoryManagerPlus
Role Access	To be determined by LIMS administrator

Online Help Integration



Inventory Manager Plus



Since this application is not currently part of STARLIMS Core product, native online help is not available. To circumvent this issue, and to make sure documentation on how to use this application is readily available to the end user, we have added a help button located in the top right of the application.

When the user selects this icon this documentation (PDF) will be displayed.

Accessing Application Documentation

The screenshot shows the STARLIMS interface with the 'Inventory Manager Plus' tab selected. A yellow arrow points to a 'Help' icon in the top right corner, labeled 'Online Help'. The interface includes a 'Material Search' section with filters for 'Inventory', 'myAccess', 'myInventory', and 'This Dept'. Below this is a table of materials with columns for 'MATNAME', 'Material Type', 'DEPT', and 'Material Code'. The table lists various sterile DI H2O and Saline (TB) materials. At the bottom, there is an 'Inventory List' table with columns for 'Inventory ID', 'Lot #', 'Default', 'UPC Code', 'STARDOCID', and 'Opened Date'. The 'Total Inventory' section shows 'Receive Date: 2013-07-16', 'Expire Date: 7/12/2014', and '# Of Items Received: 1'.

Unfortunately, since PDF files cannot be added and packaged with an application the LIMS administrator will have to do some prep work to get this functionality to work. Step-by-step instructions on how to accomplish this is provided below.

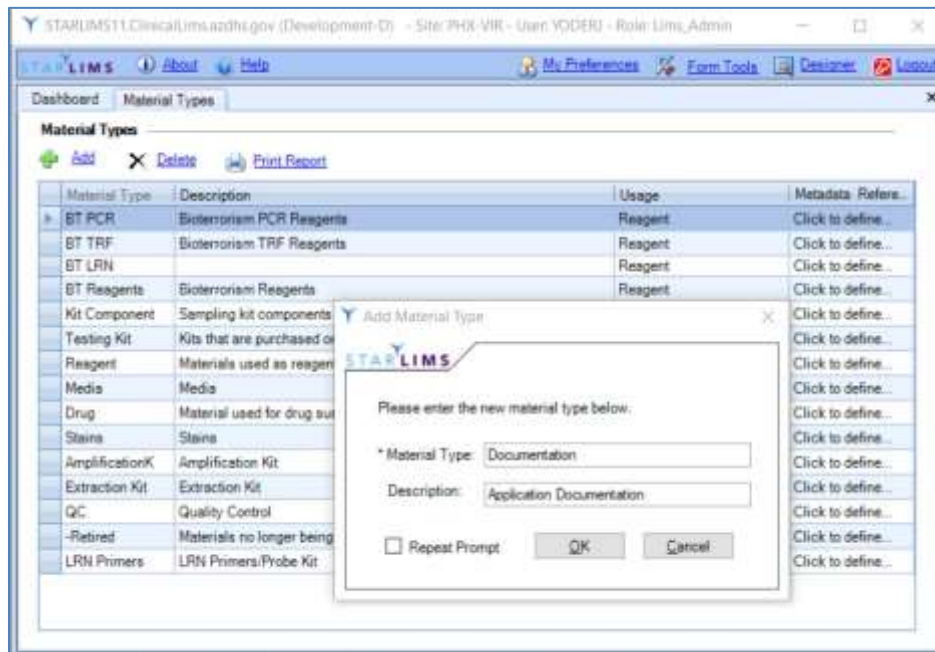
What’s happening on the front end? When the user selects the help icon in the HL7 Generator application, the application will query the MSDSID table for a record with the MSDSID of “**Inventory Manager Plus**” and display the document that is returned from this query. The steps detailed her outline the process of adding the MSDS document in the **Materials Manager** application. While we detail the process of adding a new material type along with a new material, ultimately that is not important, what is key is that we add the **Inventory Manager Plus Docket.pdf** file in one of the materials MSDS and assign it a MSDSID of **Inventory Manager Plus**.



Inventory Manager Plus



Adding a new material type



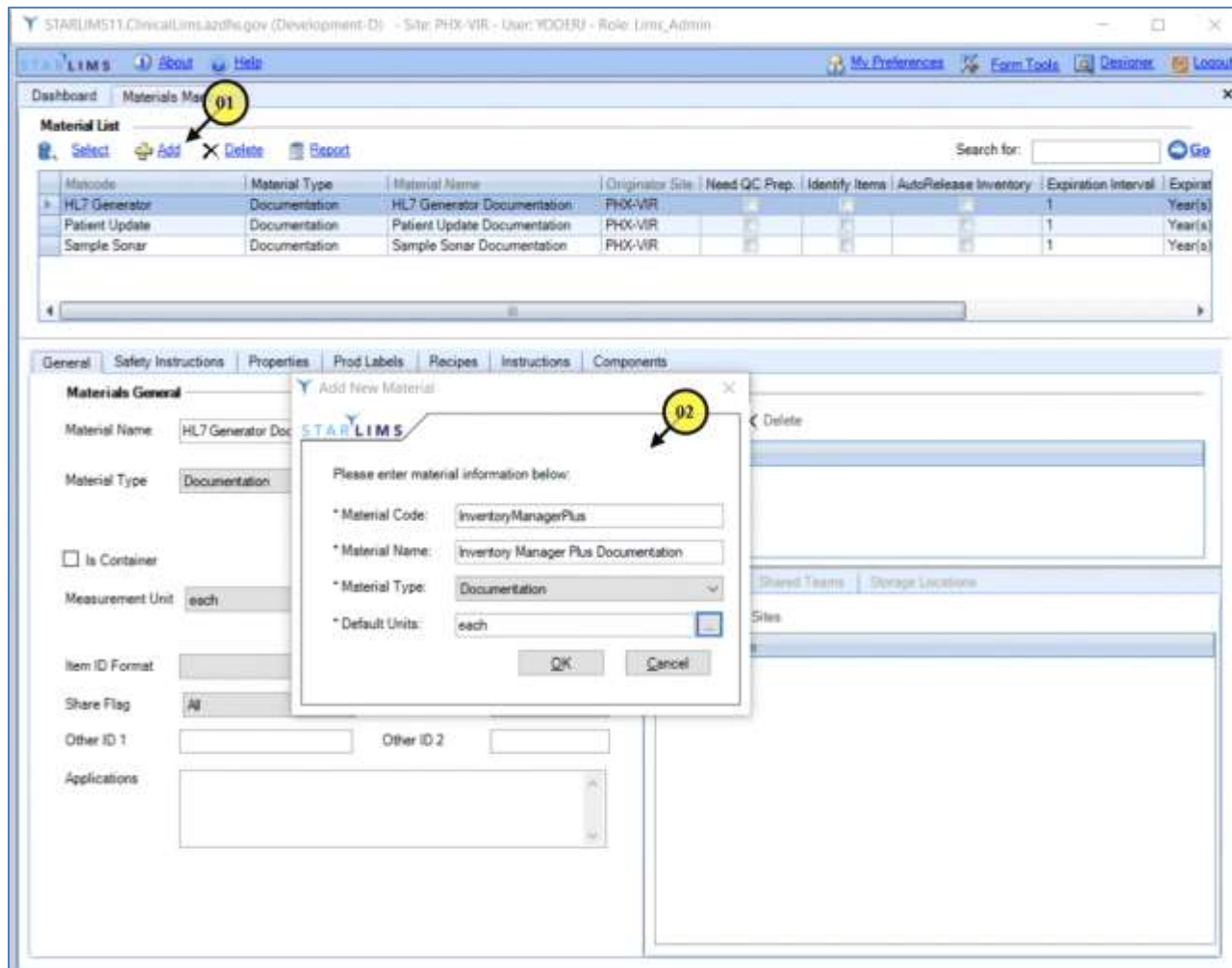
1. Create a new Material Type of **Documentation**.
 - a. Open the **Material Types** application.
 - b. Select the **Add** button. The **Add Materials Type** pop-up window will appear. Enter the following field values:
 - i. Material Type: **Documentation**
 - ii. Description: **Application Documentation**
 - iii. Select the [OK] button to add the material type.
 - c. Close the Material Types Application.



Inventory Manager Plus



Adding the new Material



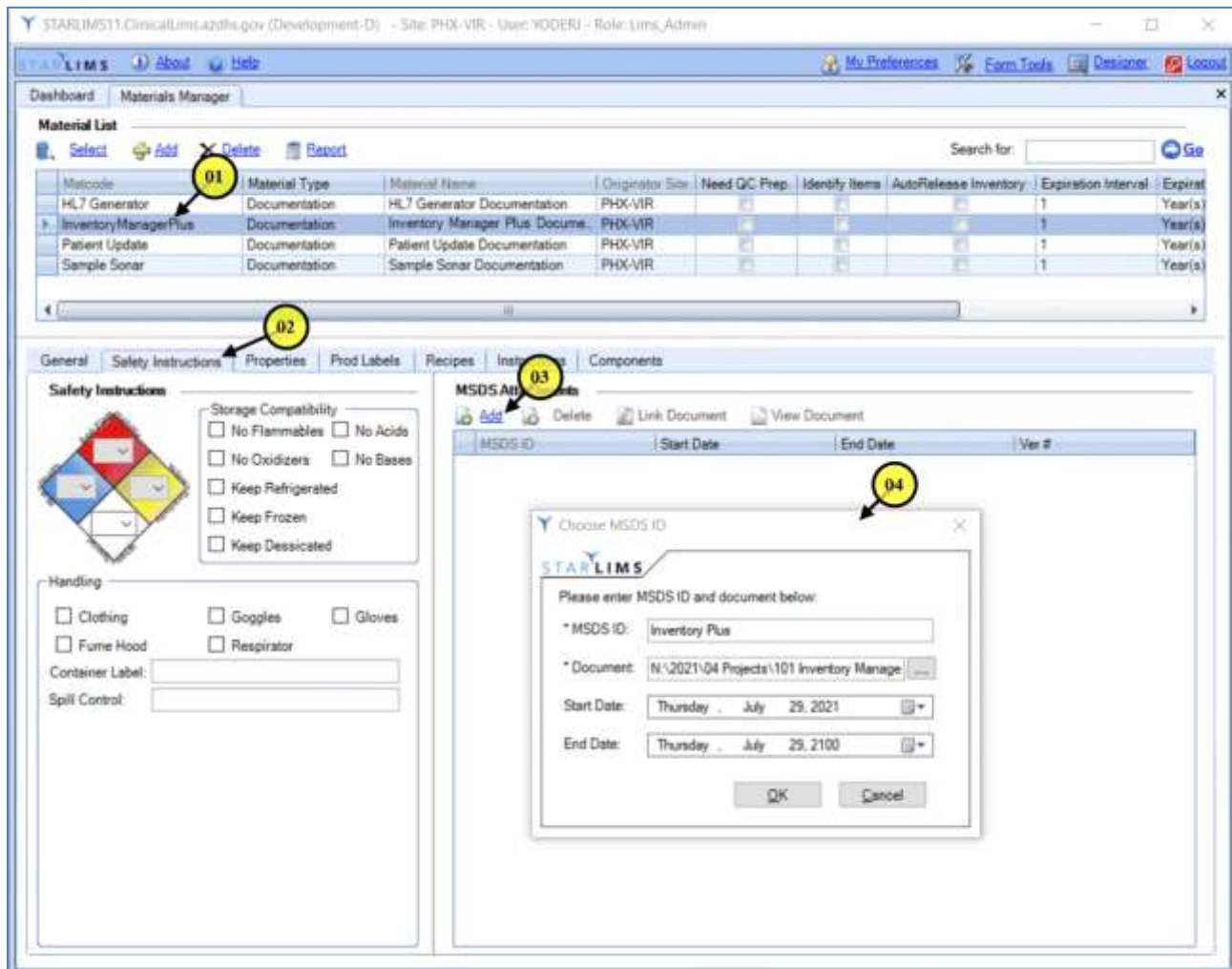
2. Add New Material **HL7 Generator Documentation** in the **Materials Manager**
 - a. Open the **Materials Manager** application
 - b. Select the **Add** button (**01**). The **Add New Materials** pop-up window (**02**) will appear. Fill in the following field values:
 - i. Material Code: **InventoryManagerPlus**
 - ii. Material Name: **Inventory Manager Plus Documentation**
 - iii. Material Type: **Documentation**
 - iv. Default Units: **each**
 - v. Select the **[OK]** button to complete addition of the new material.



Inventory Manager Plus



Add Application Documentation to Material



3. Add Application documentation as an MSDS Attachment
 - a. In the **Materials Manager** application, select the **InventoryManagerPlus** material (01).
 - b. Select the **Safety Instructions** tab (02)
 - c. In the **MSDS Attachments** section select the **Add** button (03). The **Choose MSDS ID** pop-up window (04) will appear. Fill in the following fields:
 - i. MSDS ID: **Inventory Plus** (**Very important you enter this exact**)
 - ii. Document: {*Browse to the Inventory Manager Plus Docket.PDF file and select it*}
 - iii. Start Date: {*Default value is fine*}
 - iv. End Date: {*Select some date far in the future, I select 2100*}
 - v. Select the [OK] button to complete linking the document to the material.
4. Done!

Provided you follow the steps outline above, the Help button in the HL7 Generator application should display the **Inventory Manager Plus Docket.PDF** file when it has been selected.



Inventory Manager Plus



Developers Design

Developers who are interested in utilizing Inventory Manager Plus in their system should consider the following:

- **Compatibility/Version Requirements** - The Inventory Manager Plus application was created in STARLiMS V10.8 with 11.3 technical versions. I see no reason the application would not work for most systems based in the 10.x versions and higher.
- **Database Considerations** – This application was written with an Oracle database but utilized data sources are quite simple in nature, and will probably migrate to MSSQL without issue.

The main focus of development of this application is on the search capabilities. Other functionalities should be identical to the **Inventory Manager**, since I just copied that application and added the search capabilities on top of the application.



Inventory Manager Plus



Credits

- James Yoder: Developed application

Document Update History

Update history for this document.

Date	Person	Description
2021.07.29	James Yoder	Minor typo updates and image updates
2021.07.22	James Yoder	Update to include InventoryManagerPlus_ADHS form.
2021.07.14	James Yoder	Updated to include more data sources
2021.07.13	James Yoder	Created Documentation