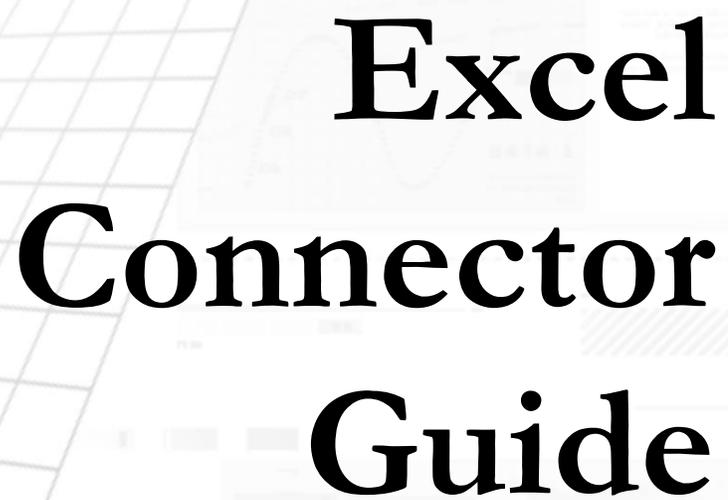


The logo features a stylized 'G' inside a red and black circular gradient, followed by the text 'GENESYS™ 3.0' in a bold, black, sans-serif font.

GENESYS™ 3.0

The title 'Excel Connector Guide' is displayed in a large, bold, black serif font, centered on the right side of the page.

Excel Connector Guide



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GENESYS Excel Connector Guide

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GENESYS Excel Connector Guide

PREFACE

This Excel Connector Guide (ECG) provides information on how to install and use an Excel extension developed to connect the GENESYS™ database to Microsoft® Excel®. The connector is a .NET application that extends the Excel spreadsheet provided in Microsoft Office 2010 and 2013. Figure 1 displays the extended blank excel worksheet.

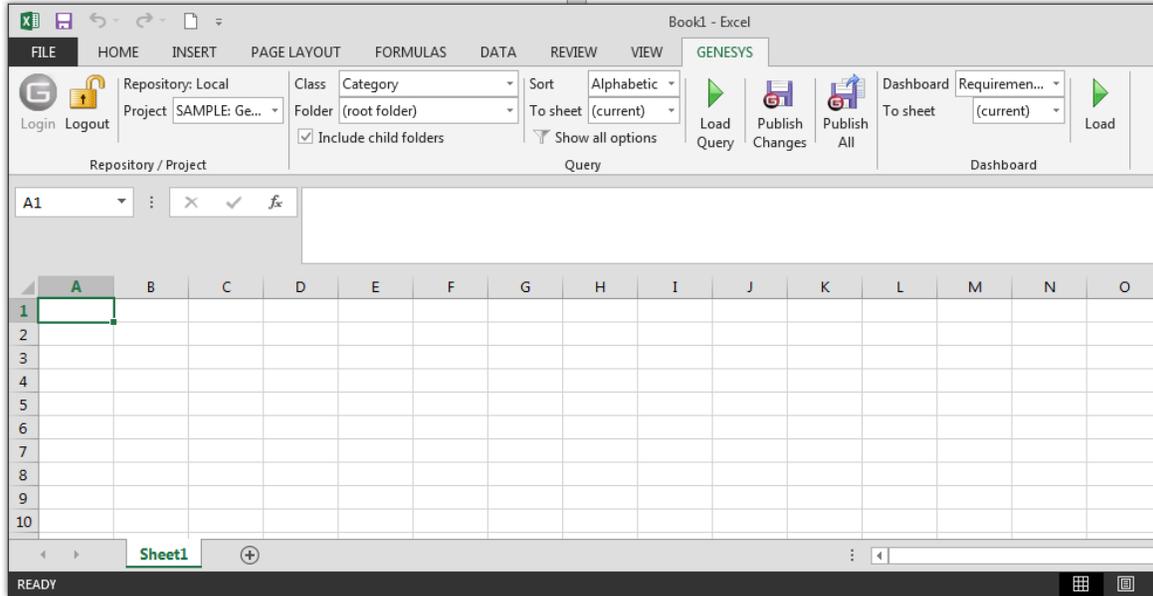


Figure 1 - Sample Excel Connector

This guide describes the process to import and add the extension in Excel, how to interface directly with the GENESYS repository and individual projects in the repository, how to use the features in the Excel extension to import and export data out of the GENESYS data repository, and, how to use the dashboard features coded into the Excel extension.

This guide is intended to augment the Model-Based Systems Engineering (MBSE) with GENESYS training course and the reference material provided with GENESYS. The ultimate goal of this guide is to expose the user to the Excel extension and thereby extend the use and application of GENESYS for both system design and development and project management associated with the system development project.

The following additional resources are available for use with this guide:

- For descriptions of GENESYS including database classes and folders, different views, diagram notation, and the mechanics of entering data into GENESYS, the reader is referred to the GENESYS Help/Documentation folder.
- For the definition of schema terms, the reader is referred to the GENESYS schema, which contains descriptions for each schema entity.
- For application of GENESYS to system and architecture design, the reader is referred to the GENESYS System Definition Guide (SDG) and Architecture Definition Guide (ADG) supplied with the GENESYS software installation.

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GENESYS EXCEL CONNECTOR INSTALLATION AND MANAGEMENT

1.1 Installing the Excel Connector

The GENESYS Excel connector is installed via a standard, familiar Windows setup program. Please note that separate installers are available for either 64-bit or 32-bit Windows and Excel operating environments. The connector runs in Microsoft Excel 2010 and higher versions.

Double-click the installer .exe file to begin the installation. Click “Next.”

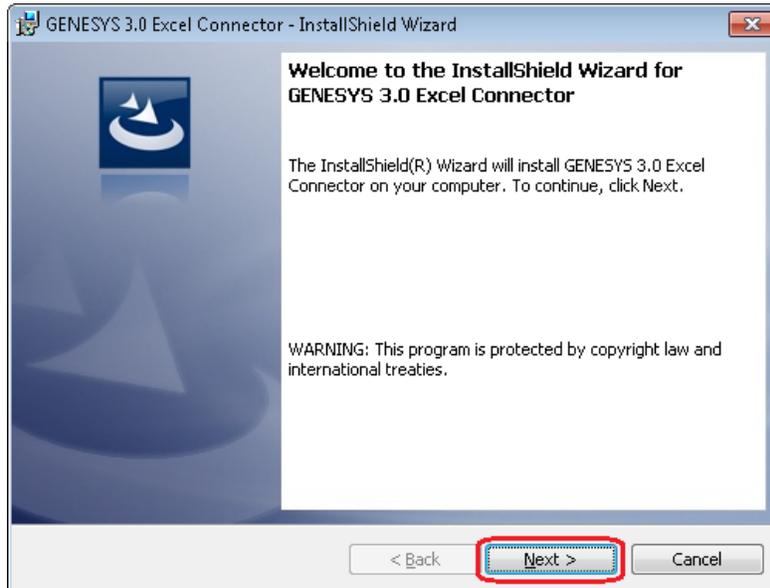


Figure 2 - Excel connector installation, Step 1

Review and accept the licensing agreement terms, and click “Next.”

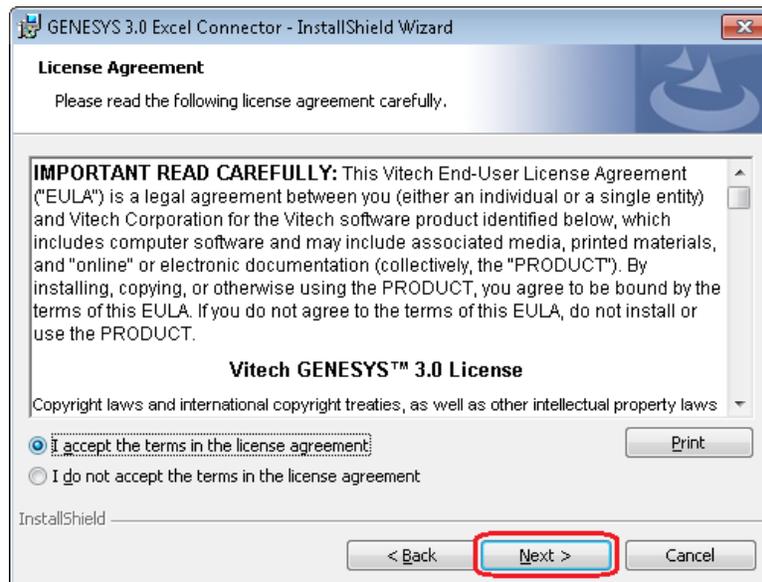


Figure 3 - Excel connector installer, Step 2

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Click “Install” to begin the installation.

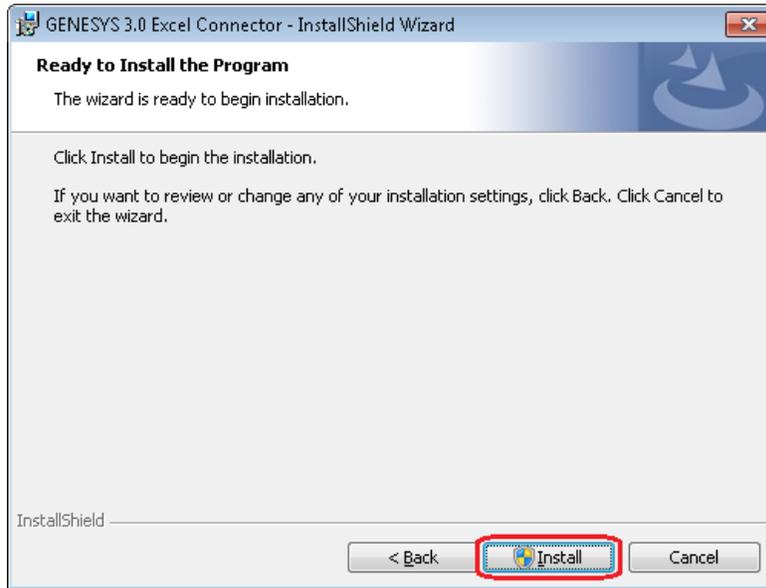


Figure 4 - Excel connector installer, Step 3

The setup program will run and install the Excel connector. When the process completes, simply click “Finish” to complete the installation. The connector will now be available for use in any Excel worksheet.

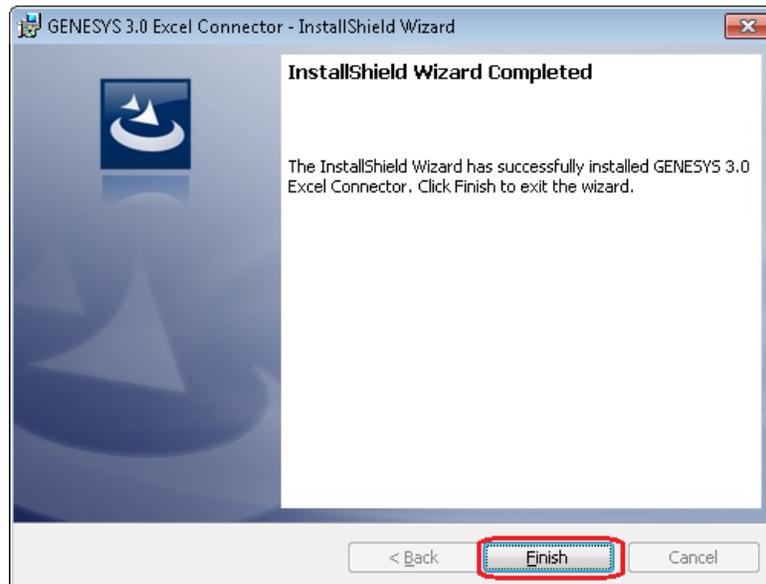


Figure 5 - Excel connector installer, Step 4

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1.2 Managing the Excel Connector

Add-ins to Excel are sometimes disabled by customers. Note that in order for our connector to work, you may be required to adjust your settings.

Once installed, the GENESYS Excel connector can be managed via standard Microsoft Office add-in tools. Note that the steps below apply to Microsoft Excel 2013 installations, and may vary slightly in different versions of Excel.

GENESYS Excel functionality can be accessed via the “GENESYS” tab in an open workbook, as shown below. To manage the connector, first click the “FILE” tab.

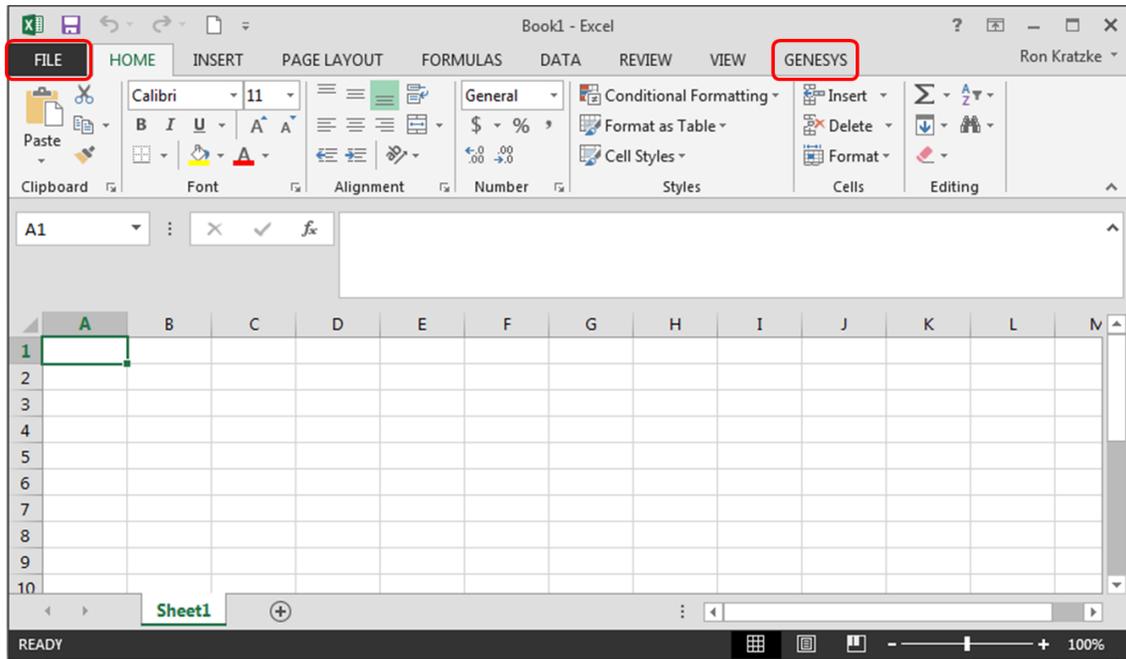


Figure 6 - Excel GENESYS and FILE tabs

Once in the “FILE” tab, click the “Options” item from the menu on the left.

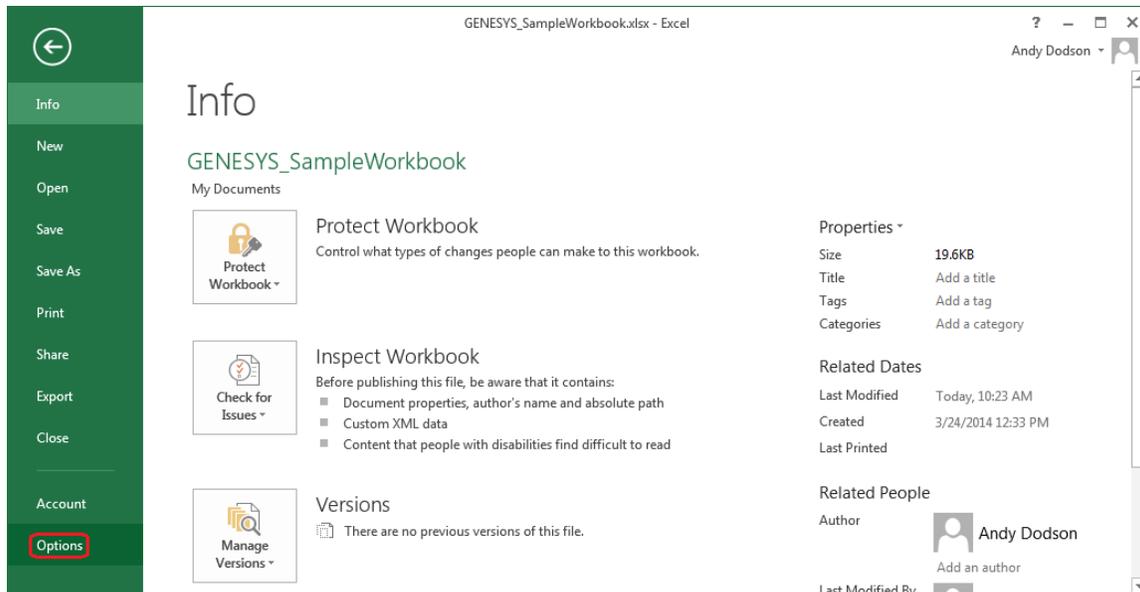


Figure 7 - Excel FILE tab, Options menu item

GENESYS Excel Connector Guide

In the Options dialog that opens, select the “Add-ins” option from the menu on the left.

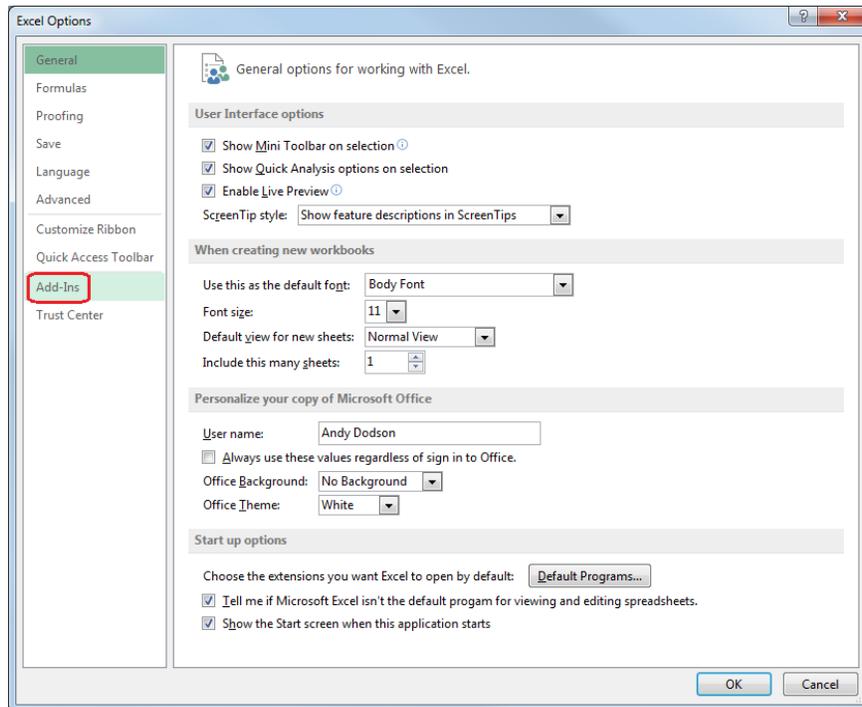


Figure 8 - Excel Options dialog, Add-ins menu item

In the Add-ins dialog that opens, select “COM Add-ins” from the “Manage:” combo box at the bottom, then click the “Go...” button.

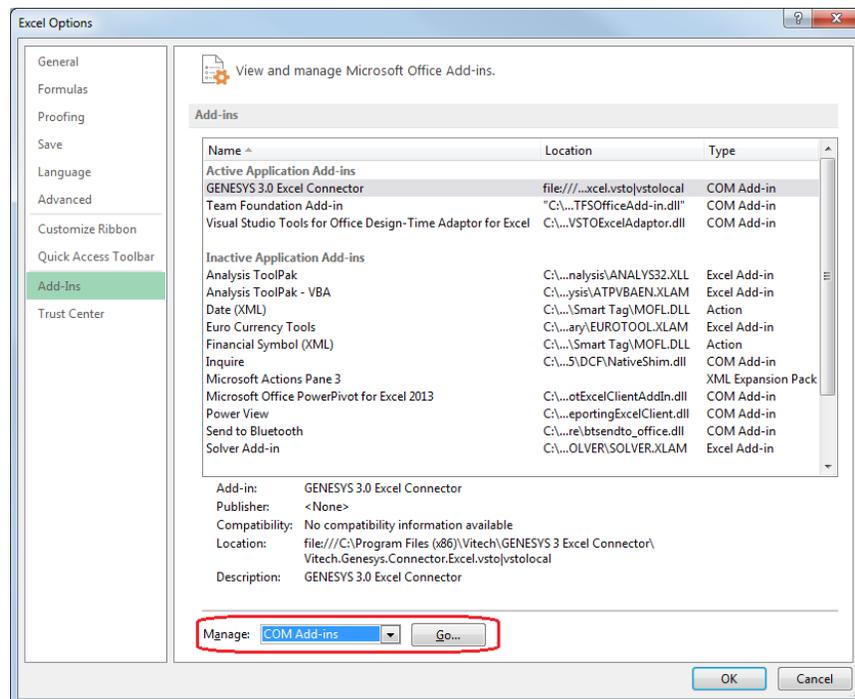


Figure 9 - Excel Add-ins dialog, Manage COM Add-ins option

GENESYS Excel Connector Guide

In the COM Add-ins dialog that opens, select the GENESYS Excel Connector item. Any of three actions can be performed:

- 1) The GENESYS connector can be unchecked. Clicking “OK” will then disable the connector from running in workbooks.
- 2) If the GENESYS connector is unchecked, it can be checked. Clicking “OK” will then enable the connector to run in workbooks.
- 3) The GENESYS connector can be selected, and the “Remove” button can be clicked. The connector will be uninstalled.

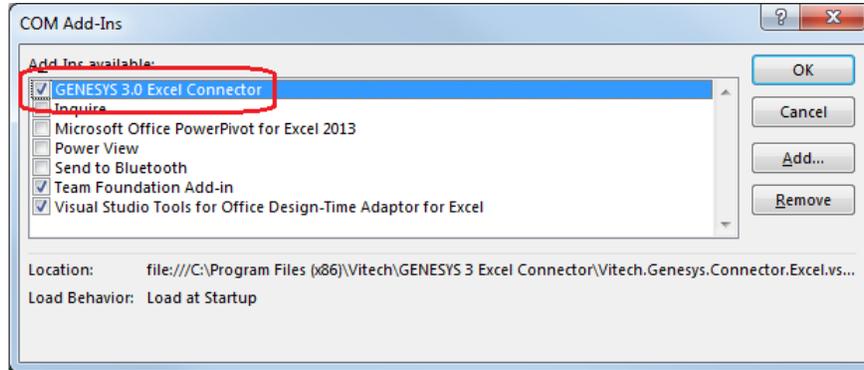


Figure 10 - COM Add-ins dialog, managing the GENESYS connector

CONNECTING EXCEL WITH GENESYS

1.3 Connecting to GENESYS from Excel

With Excel opened on your desktop, navigate to a blank workbook, or open a blank workbook. Select the GENESYS tab on the ribbon bar. You can then ‘connect’ Excel by logging in to GENESYS using the icon on the left-hand side of the ribbon bar.

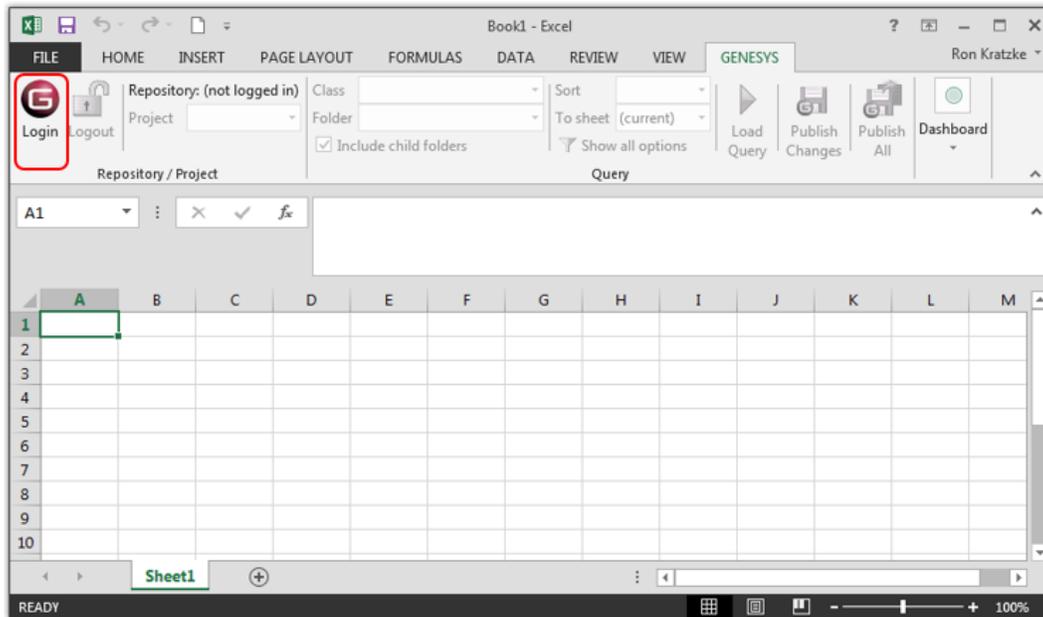


Figure 11 - GENESYS Login using ribbon bar button

GENESYS Excel Connector Guide

Clicking on the GENESYS Login button will launch and bring up the GENESYS login screen.

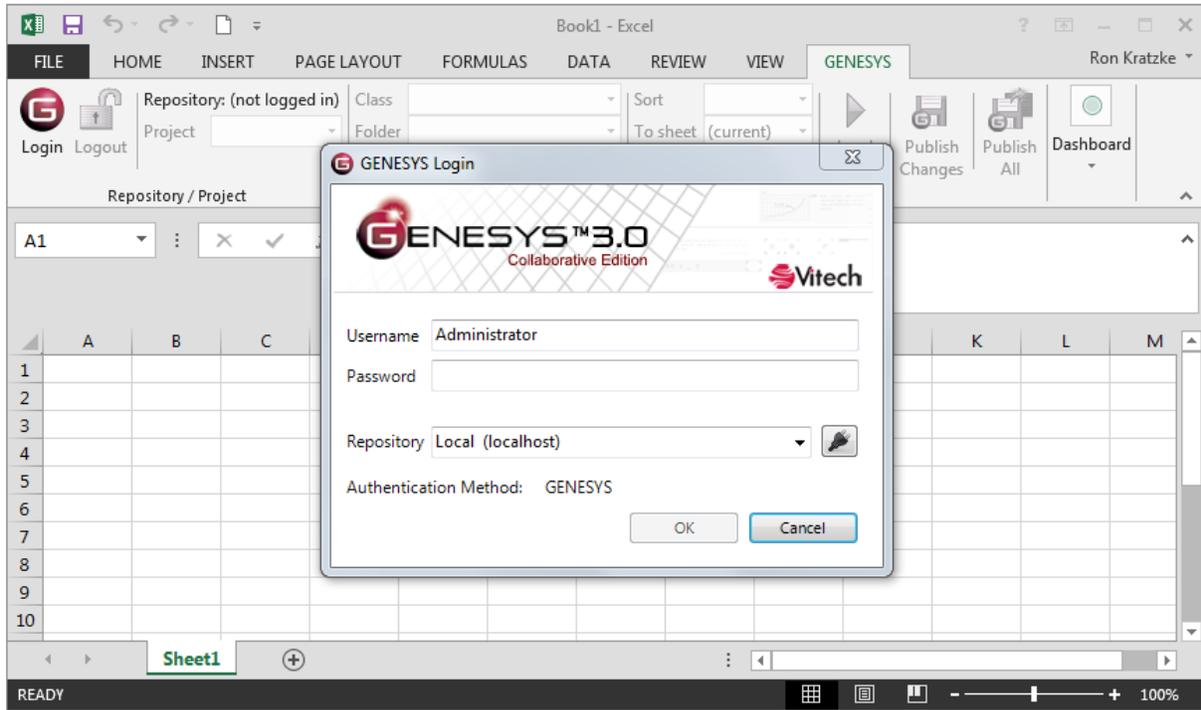


Figure 12 - Excel Spreadsheet with GENESYS Login

Log in to GENESYS using the appropriate Username and Password. This connects Excel with the Repository. Once logged into GENESYS, the controls on the GENESYS ribbon bar will be “active” and no longer be grayed out.

1.4 The GENESYS Ribbon Bar in Excel

There are several sections on the GENESYS ribbon bar in Excel which are used to control access to the GENESYS database.

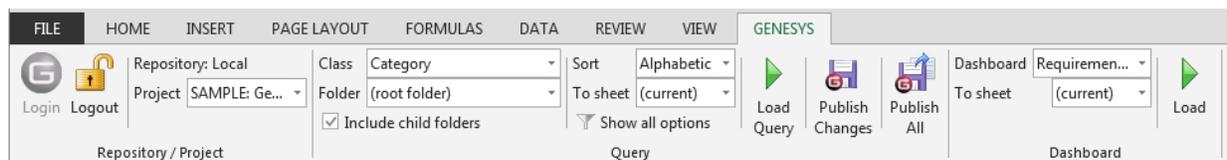


Figure 13 - GENESYS Ribbon Bar in Excel

The Repository / Project section controls access to a particular system design project in the GENESYS repository. Within this section the “Project” selection provides a drop-down menu where the user can select the particular project with the selected repository. This is the project from which all other Queries will be associated in Excel.

The Query section of the ribbon bar allows the user to select specific information for export out of the system design repository in GENESYS. Each control in this section is described below:

- Class: The Class control allows the user to select any Class in the repository from the drop-down menu.
- Folder: If there are individual folders in the repository, the user can select the individual folder on which to do the query.

GENESYS Excel Connector Guide

- Include child folders: When this box is checked, all subfolders of the Class / Folder will be queried.
- Sort: The Sort control allows the user to sort the imported information according to the sort method selected in the drop-down menu.
- To Sheet: This allows the query to be extracted into the current worksheet or to a new worksheet in Excel.
- Load Query: This button allows the query to selected in the ribbon bar to execute and load the data into Excel.
- Publish Changes: When changes are completed to the worksheet, selecting this button publishes the changes made on the Excel worksheet into the project data repository and over writing whatever data is currently in the associated attribute fields in the data repository (in effect pushing or publishing the changes (only) into the data repository). NOTE: only changed cells from the spreadsheet are pushed into the system data repository.
- Publish All: The command pushes or publishes ALL of the data in the worksheet into the GENESYS data repository. All of the information will be imported into the project data repository by overwriting the existing information with the information directly from the Excel spreadsheet.

The Dashboard section of the ribbon bar allows the user to select a particular Dashboard from the drop-down menu and display the information in Excel workbook. Detailed description of the Dashboard functionality is provided in Section 1.7 below.

IMPORTING DATA FROM GENESYS INTO EXCEL

1.5 Querying the GENESYS project from Excel

The user can make a simple query of the selected project using the options provided in the ribbon bar. The user can expand and tailor the query of the project by clicking on “Show all options” to open a full feature GENESYS Query on the right hand side of the worksheet window.

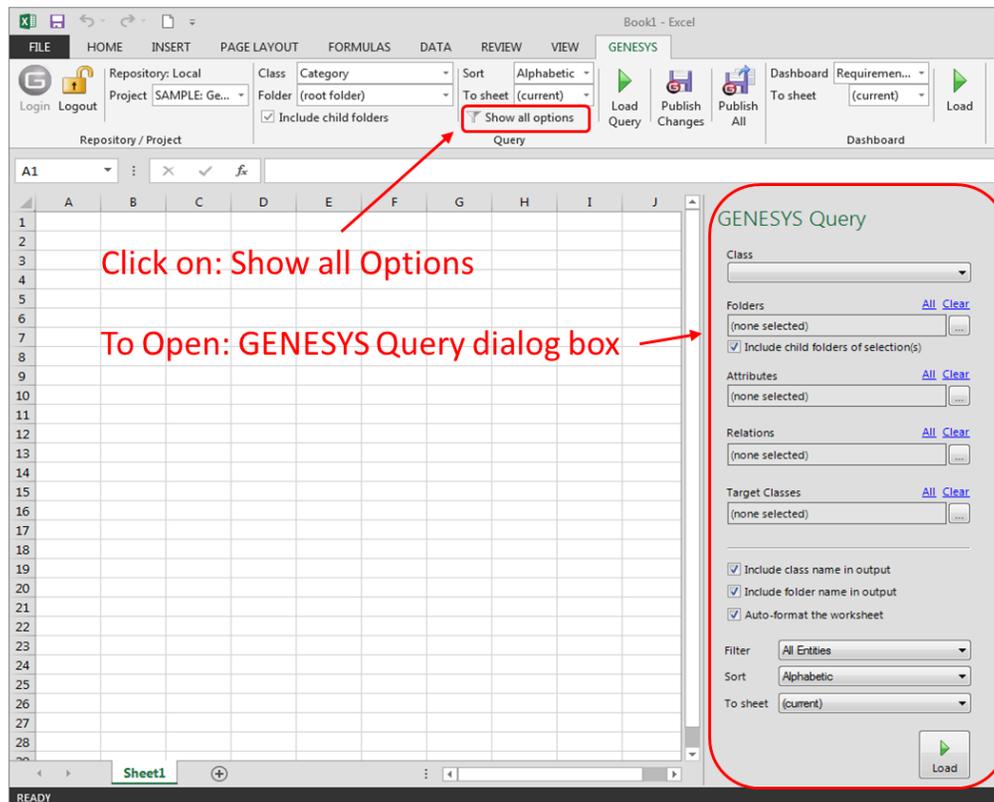


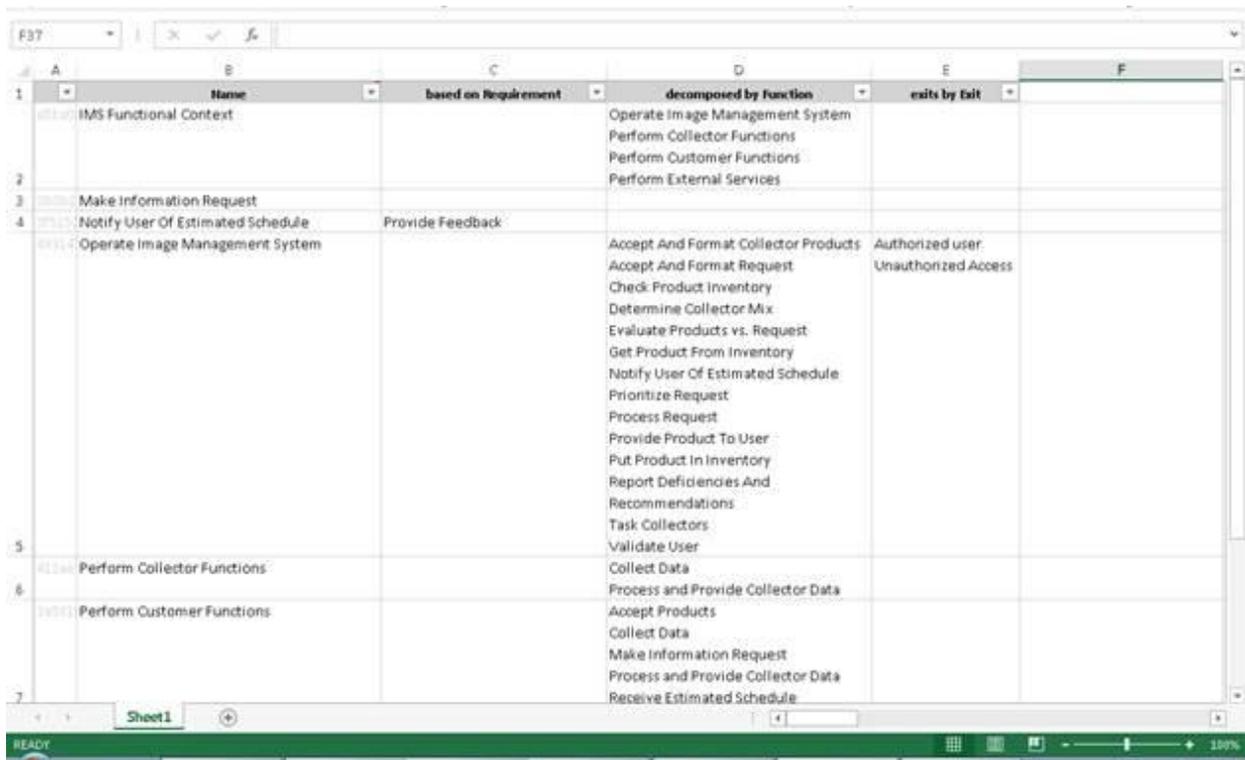
Figure 14 - Expanding the GENESYS Query Menu

GENESYS Excel Connector Guide

The options provided in the GENESYS Query menu are similar to a common windows menu and are described briefly below. The ellipsis box on the right-hand side of the Folder, Attributes, Relations, and Target Classes are used to open a drop-down menu for selection of the appropriate items based on the project schema and class selected. The various options in the overall menu box provide for the following:

- Class and Folders selection allow the user to select the Class from the project and the specific folder on which to conduct the query. The check box allows the option of querying sub-folders.
- Attributes allows for selection of the attributes to include in the query; any attributes selected will populate a specific column in the worksheet.
- Relations and Target Classes allow for selection of particular relationships and specifying the target for the relation.
- Filter drop-down menu allows filtering the export based on particular attributes.
- Sort drop-down menu allows sorting the export based on the sort type selected. Both the Filter and Sort menus use the options from the project selected in the ribbon bar.
- The “To sheet” option allows the export query to populate the current worksheet or a new worksheet in the excel workbook.

Once all the selections have been made, the user will populate the workbook using the LOAD button. An example of a completed query is shown below.



| | Name | based on Requirement | decomposed by function | exits by fail |
|---|-----------------------------------|----------------------|--|--|
| 1 | IMS Functional Context | | Operate Image Management System Perform Collector Functions Perform Customer Functions Perform External Services | |
| 2 | | | | |
| 3 | Make Information Request | | | |
| 4 | Notify User Of Estimated Schedule | Provide Feedback | | |
| 5 | Operate Image Management System | | Accept And Format Collector Products Accept And Format Request Check Product Inventory Determine Collector Mix Evaluate Products vs. Request Get Product From Inventory Notify User Of Estimated Schedule Prioritize Request Process Request Provide Product To User Put Product In Inventory Report Deficiencies And Recommendations Task Collectors Validate User | Authorized user Unauthorized Access |
| 6 | Perform Collector Functions | | Collect Data | |
| 7 | Perform Customer Functions | | Process and Provide Collector Data Accept Products Collect Data Make Information Request Process and Provide Collector Data Receive Estimated Schedule | |

Figure 15 - Example of a completed query

Once the project information is exported out to the Excel worksheet, the display of the information can be changed using the normal features of Excel. The user can format individual cells and columns much you would with any Excel spreadsheet. The file can also be saved as you would with any Excel file (you do not have to use the .csv format).

Note that Column A of the spreadsheet contains the GENESYS Unique ID number. This information should be carried in all worksheets as the index moving any changed information back in to the project repository.

GENESYS Excel Connector Guide

1.6 Manipulating project data in Excel

With the project data in an Excel worksheet, the user can edit the information in any of the cells. Commonly the project team will extract Requirement information providing the Requirement Name, Description, Type, and Origin. An example of this export is provided below.

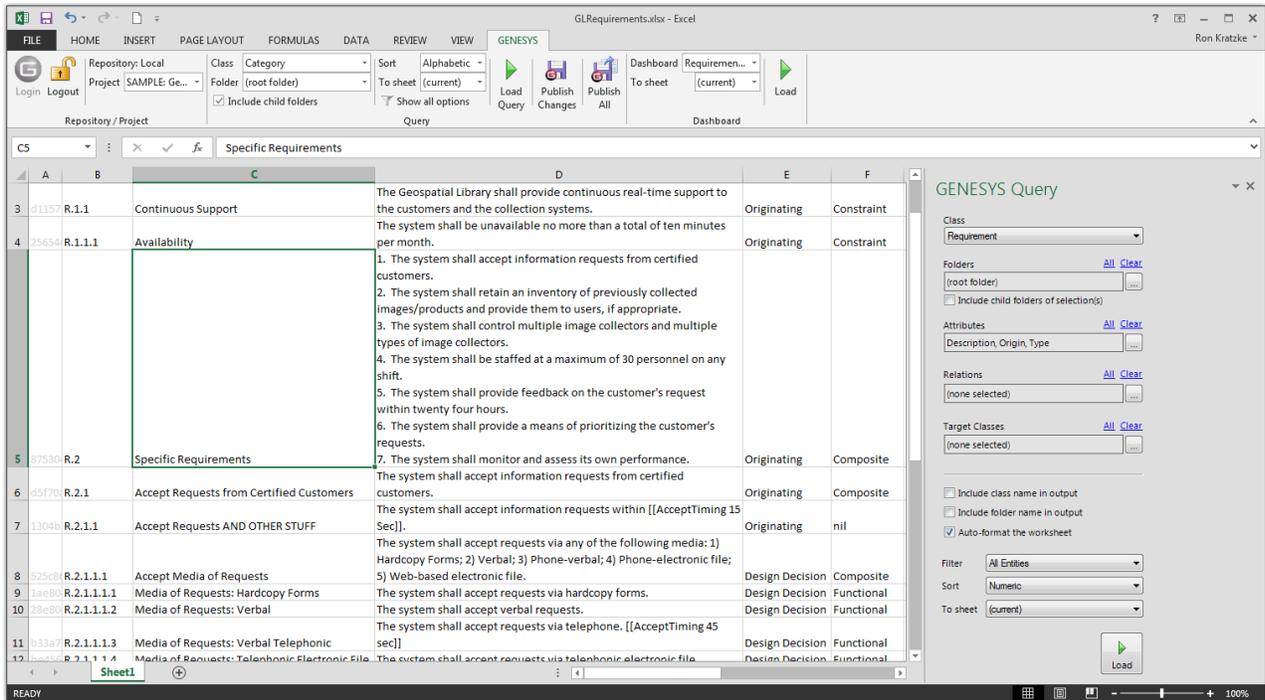


Figure 16 - Requirement Export from a Sample Project

Changes can now be made to items in the spreadsheet. As changes are made to individual cells, the cell is highlighted in yellow to indicate that the text has been edited. The Excel file can be saved with a different file name.

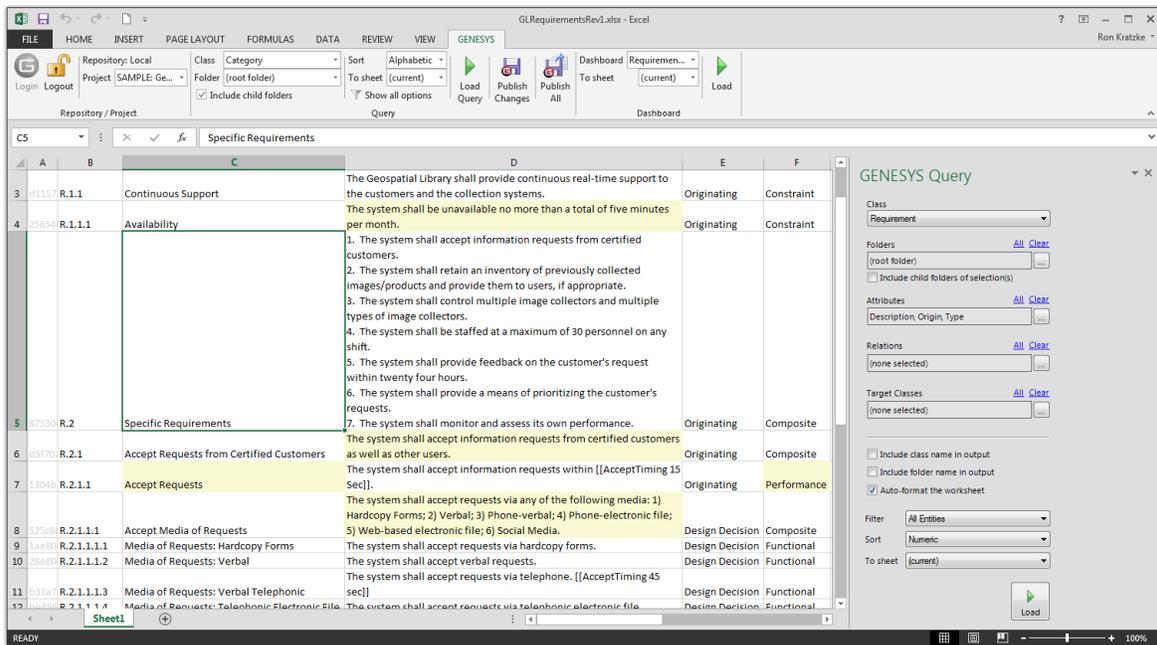


Figure 17 - Excel spreadsheet with edited cells

GENESYS Excel Connector Guide

The worksheet is ready to be published back into the project using the “Publish Changes” or “Publish All” command in the ribbon bar. “Publish Changes” updates just the attributes that have changed, “Publish All” pushes all of the data in the workbook in to GENESYS and overwrites all of the information in the project repository.

GAINING INSIGHT INTO THE PROJECT THROUGH DASHBOARDS

The GENESYS ribbon bar has a section entitled “Dashboard.” This section provides a set of dashboards which have been coded into the ribbon bar. The dashboards are intended as a means for the project leadership to get a high level understanding and status of the project repository maturity on a periodic basis. There are currently three dashboards programmed in to the Excel Connector: Requirement Management; Program Management; and Test/Evaluation Planning.

1.7 Accessing Dashboard information

To access a dashboard the user selects the type of dashboard from the drop-down menu, then selects where the dashboard should be displayed (current sheet or new sheet); then select “Load.” The figure below provides an example of the Requirements dashboard.

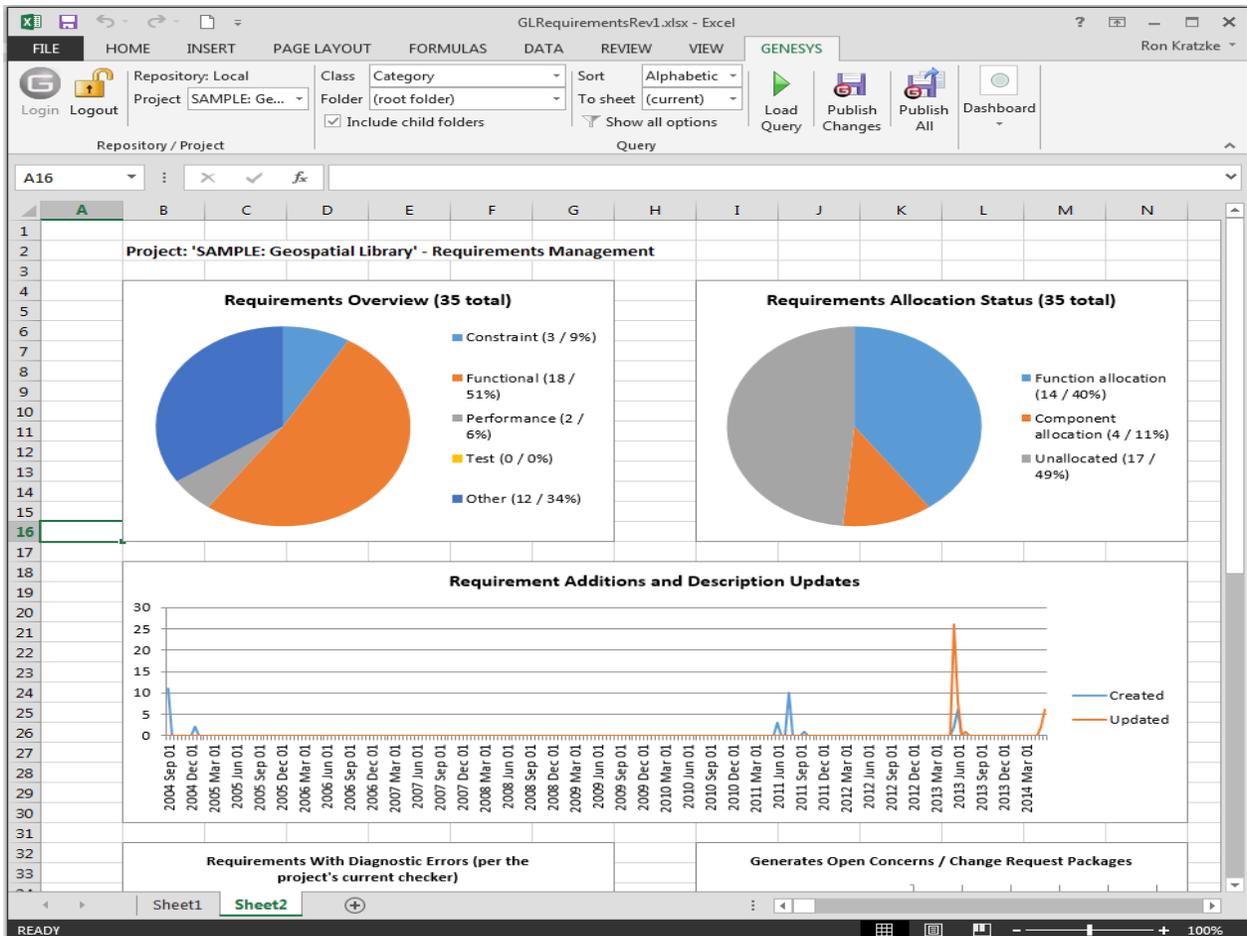


Figure 18 - Requirements Dashboard

Each dashboard has several different graphic representations of information extracted directly from the selected project repository. The entire depth and breadth of the data and graphics is not described in this guide - the user is encouraged to explore the dashboards provided.

1.8 Modifying Graphic Displays on the Dashboard

Gathering the data to display on the dashboard is one part of the dashboard solution, displaying the data in unique ways is another part of the dashboard solution. While the data extracted from the project repository is hard-coded into the dashboard, we have provided an initial set of graphical displays which can be altered in Excel to provide enriched presentation.

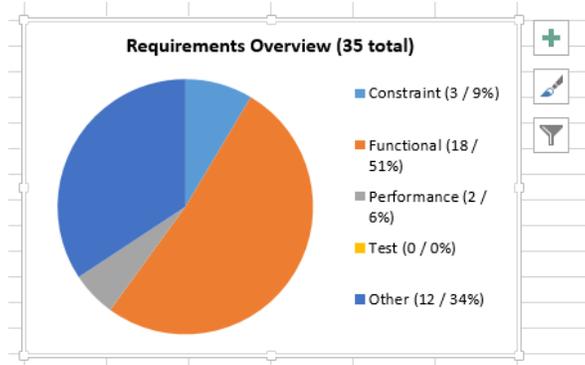


Figure 19 - Select a chart to edit

The user can select a chart, right-click and use the Excel drop-down menu together with the control buttons to modify the information display. Using these options, the first row of the Requirement Overview pie chart has been modified to the options shown below.

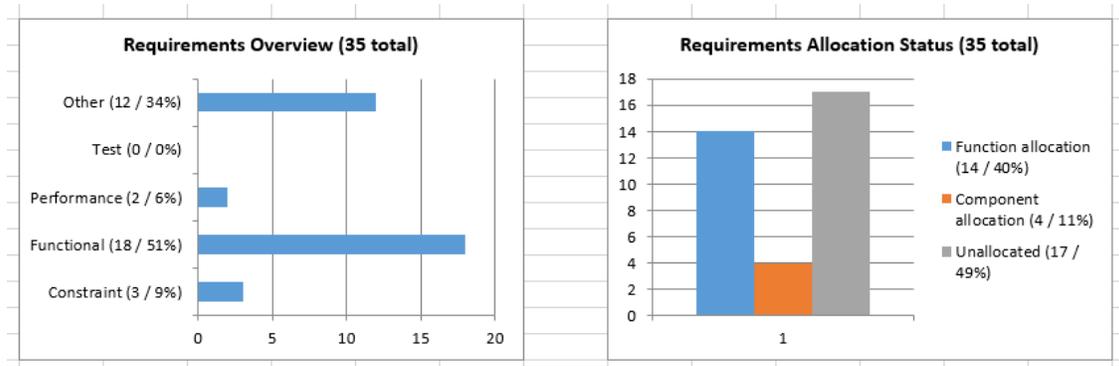


Figure 20 - Modified Dashboard chart views

We have not provided an exhaustive set of dashboards in the Excel connector. We encourage users to provide feedback to us with ideas for additional dashboard concepts. Please email us at support@vitechcorp.com or post your suggestion on our community site, <http://community.vitechcorp.com>. Updates to the Excel Connector functionality and dashboards will be developed and published in service packs for GENESYS.



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