Documentation

New Eagle Autodoc2Pdf

User Guide
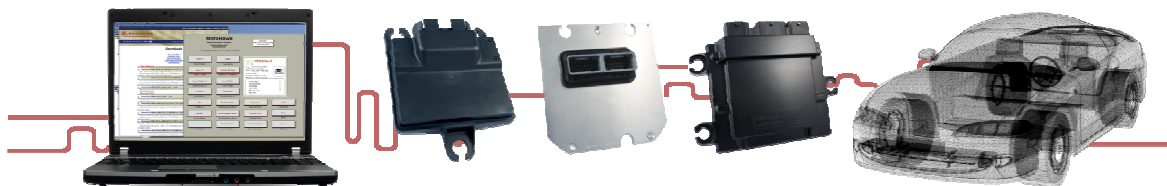
Introduction

This tool is an improvement for the AutoDoc software. It is capable of organizing the output files from AutoDoc and automatically generating documentation in PDF format.

It provides a way to create effective and formatted documentation directly from the Simulink model, saving a lot of time and effort.

The final generated documentation includes:
- A cover page
- Table of contents
- Screenshots of all model pages and state charts
- Calibrations, Probes and Fault summaries

Installation

Double-click the Installer.exe program, then follow the instructions presented. If you already have an older version of Autodoc2Pdf installed, make sure to uninstall it.

Setting up input files

Open MATLAB, and open your Motohawk model. Use the command autodoc_setup. You will notice a new folder named AutoDoc, with a few files inside. There are two important files in there:

RevisionHistory.txt
Blankdoc.pdf

RevisionHistory.txt is a text file where you can enter information to be displayed on the Software Revision History table. The information of each release or version must be separated by a tilde (~) and each will be displayed in a different row in the table. Each row of the table contains a version number/name and notes or comments about that version. The version number/name and notes/comments must be separated by a semicolon (;) character. For this reason, semicolons and tildes shouldn't be used in your text. This is how it should look:

```
Release A;
-First release, for testing purposes only.
~
Release B;
-Added new features and improved the user interface.
~
```

```
Release B-2;
-Fixed bugs from previous versions.
-New features added
```

Blankdoc.pdf is a PDF file that should contain three pages. The first is the cover page of the documentation. The second and third pages should contain the footers and headers to be used on the documentation pages. For better results and convenience, customize the Word file provided in order to generate this PDF (go to File->Save as and choose PDF format in newer versions. For older Word versions, download and install a PDF printer, then print using it to create a PDF file).

A Blankdoc.doc file will also be copied to this folder. Edit this file to generate a custom Blankdoc.pdf file. Most versions of MS Word have a "Save as PDF" option.

Setting up your documentation and running the tool

1. Open the AutoDoc library in the Simulink Library browser, and select the "Autodoc Block" library.

2. Insert the motohawk_autodoc block into the Simulink model. Repeat steps 2, 3 and 4 for each model path page desired to have documentation.

Figure 1 – neweagle_autodoc block

3. Choose title block options.   Double-click the *motohawk_autodoc* block to load the AutoDoc blocks onto the screen. Then, double-click the title block to see the graphical user interface (as in Figure 4) and refer to the following regarding the options

- Documentation Option: Include in documentation indicates that this model path page will be captured as a screen shot and in the table of contents; additionally, the path will be given a documentation number (e.g., 2.1.2.5). Exclude from documentation means that the model path page will not be captured as a screen shot (documentation is only intended to be seen in Simulink).
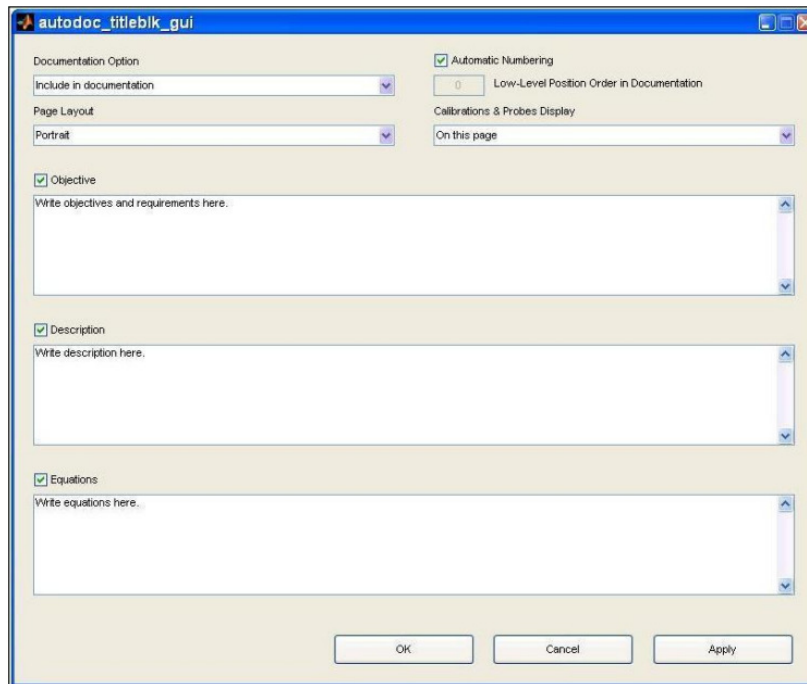
Figure 2 – Title block GUI

- Automatic Numbering: If this checkbox is selected, the documentation number will be automatically assigned based upon that subsystem's physical position relative to other others on the same level (i.e., with the same parent path). If unselected, the Low-Level Position Order in Documentation allows the user to explicitly specify this subsystem's desired order in the documentation. Note that these options are only relevant if Include in documentation is chosen for the Documentation Option.

- Page Layout: Choose Portrait or Landscape such that the model blocks best fit within the documentation boundaries.

- Calibration & Probes Display: The *On this page option* displays calibration and probe data at the bottom of the model path page. *On separate page* displays calibration and probe data on a separate page and should be chosen if space limitations prohibit displaying the data on the same model path page as the model blocks.

- Objectives, Description, & Equations: Write objective, description, and/or equation text as desired. Objectives and Description text can include LaTex commands for italic or bold face font formatting ({\it} and {\bf}, respectively); line spacing is determined through an internal function and thus explicit \newline commands do not have to be specified. Equations text should use LaTex commands for equation formulation (e.g., for subscript, superscript, Greek letters, etc.); in this case, \newline commands should be explicitly used to specify new lines.

4. View and/or update AutoDoc blocks by double clicking the neweagle_autodoc block or through autodoc_load. Double clicking the motohawk_autodoc block will load and/or update the AutoDoc blocks (title block, right-left borders, and calibration-probe display) on the current model path page. Running the autodoc_load function will load and/or update the AutoDoc blocks throughout the entire model.
Execute through the following syntax:
- autodoc_load loads and/or updates AutoDoc blocks in the bdroot model.
- autodoc_load('ModelName') loads and/or updates AutoDoc blocks in the explicitly specified ModelName.mdl model.

5. Close the AutoDoc blocks through autodoc_close. Running the motohawk_autodoc_close function will close (i.e., delete) all AutoDoc blocks throughout the entire model. For instance, this function may be used before a model update (CTRL+D) on a large model to mitigate any contribution from AutoDoc blocks to long update times. Execute through the following syntax:
- autodoc_close closes AutoDoc blocks in the bdroot model.
- autodoc_close('ModelName') closes AutoDoc blocks in the explicitly specified ModelName.mdl model.

6. With your model open, run the neweagle_autodoc function. This will generate the PDF documentation and display it. The function has the following sintaxes:

neweagle_autodoc
neweagle_autodoc(modelName, {<param>, <value>})

The possible parameters and value are:

'Landscape', ('on'|'off')
Show calibration and probe summaries in portrait/landscape orientation

'Autofill', ('on'|'off')
Automatically Fill Model with Title Blocks

'StartPg', <number>
Set the starting page, if desired number is different than 1

Appendices

To add an appendix to your documentation, create a folder named Appendix in your AutoDoc folder. Inside it, add one or more PDF files. These files will be appended at the end of the document, properly numbered. They will also appear in the bookmarks and in the table of contents.

Working with multiple models in the same folder

If your model folder contains multiple model files (for example, different versions of the same project) and you want to have a different cover page and revision history, you can create different versions of the input files, renaming them to RevisionHistory_<ModelName>.txt and Blankdoc_<ModelName>.pdf. For any models that don't have their own input files, AutoDoc will use RevisionHistory.txt and Blankdoc.pdf as default.

Running AutoDoc

To generate PDF documentation of your model, at the Matlab Command Prompt type:

>>neweagle_autodoc(<ModelName>)

Where ModelName is the name of your model or 'bdroot' if your model is currently open.