EIT SysDaf Data Visualization Tool, Manual/Instructions Version 0.0

1. Quick Start

The steps for installing and running the software are as follows:

1. Unzip the zip file, *EITSysDaf_VisTool_v0_0*.zip
2. Open Matlab and change Matlab's current folder to the folder, *EITSysDaf_VisTool_v0_0*.
3. Run the command, *vistool*, in the Command Window, i.e. type *vistool* and hit enter.
4. Go to File -> Input Data and load a Mat-file from the summary data folder, i.e. *EITSysDaf_VisTool_v0_0\data\summary_data*.
5. Explore data
    1. Choose variables to plot against,
    2. Choose quality metrics and click 'View Data' to make the plots,
    3. Choose quality metric tolerances and view the contours by clicking 'Plot Quality Contours',
    4. Validate/verify quality metrics by viewing individual reconstructions in the top right box. Click 'Plot Reconstruction' to plot a reconstruction.
    (Note that in the included examples only generic_system_Test1_reduced.mat has reconstructions that can be displayed.)

2. What is in the zip file?

The zip file contains a set of files and folders that provide the basis for visualizing the data in the system design analysis framework. The main folder contains the following files and folders in the specified structure:

- *vistool*.fig and *vistool*.m
  Running the m-file, *vistool*.m, in Matlab opens the data visualization tool. These files are the main files for the entire visualization software.

- *data* folder
    - *mesh_data* folder
      This folder contains the mesh data. The data is assumed to be in mat-files, and the only variable in the mesh file that is required is a matrix called *nodes*. This matrix is assumed size N_N x 3, where N_N is the number of nodes of the mesh.

    - *recon_repository* folder
      This folder contains all reconstruction data that was made in some analysis. The visualization software relies on this data to make plots of individual reconstructions.

    - *summary_data* folder
      This folder is the default location for the summary data. The summary data is the main data that is displayed in the GUI, e.g. it represents all the data needed to fill the fields in the GUI and to make the lower three surface plots.

- *mfiles* folder
  - *gui_mfiles* folder
    This folder contains four supplemental functions used for plotting and loading data. The files are named as follows: *plot_2d_sigrec*.m, *plot_contour_atz*.m, *plot_qual_metric*.m, and *ifdec*.m

  - *recon_extract_mfiles*
    This folder contains the functions that are used to extract conductivity values from requested reconstructions.

- *examples* folder
  - *Description_of_examples*.pdf
    This file describes the examples that are avaible.

  - *example_summary_const*.m:
    This m-file constructs the summary information needed for the visualization to run properly. The format for analysis should be of this form.