



TreadSpection Feature Description

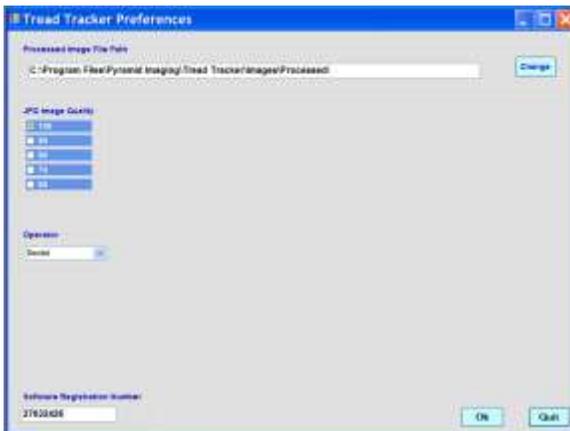
Below are the new screenshots and notes on the current design of the software.



Startup Options:

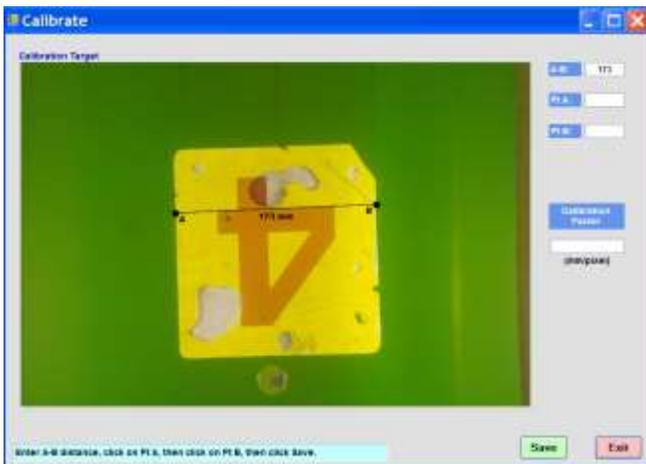
This is the first screen you see when you run the software. It is used to give options to the user. For now the user can choose among four options. More can be added as needed.

In normal operation the user will typically choose the first button to select and process images.



Preferences Screen:

This screen sets options that the software needs, but that don't necessarily change from session to session. Currently the user can set the initial folder where the processed images are stored and the image quality of any processed images (*to save disk space*). The Operator option is used to select who did the processing of the images.

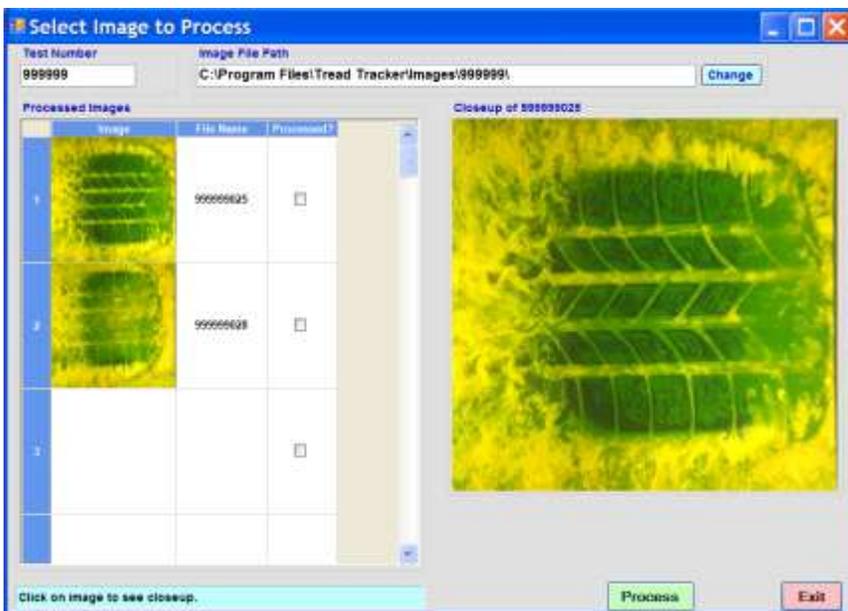


Calibrate Field of View Screen:

This screen is used to find the calibration factor to convert pixels on the screen to square centimeters so that the contact area calculation is in meaningful units.

This operation should only need to be done once initially and then repeated only if the hardware setup (*camera, lens, positioning, etc.*) is changed.

The user clicks the **Save** button to save the value to the database which stores the system variables. That value of the calibration factor will be used whenever an image is processed and a contact area calculated.



Select Images Screen

This is the screen where the user selects the image to process. At the top left is the **Test Number** text box. The user types in the Test Number for the series of images to be processed. The software uses the Test Number to set the **Image File Path** (*which can also be set manually*), and to show the list of images with that Test Number in the grid.

The list of images is taken from the **Image File Path** which is set, either manually by typing in the full path, clicking the **Change** button and navigating to the proper folder, or automatically by typing in a Test Number; there several ways to end up with the proper list of images.

The grid shows a thumbnail version of the image, the File Name of the image, and a checkbox to show if that image has been processed (*which might help the user remember which image to process next*).

The user selects the image to process by clicking on the row of the grid for that image. The full image is shown in the Closeup window. When the user is sure the proper image is selected they click the **Process** button, which brings the user to the **Process Images Screen**.



Process Images Screen

This is the screen where the user finds the contact area of an image. Most of the screen is the image itself.

The user can adjust the **Threshold** and **Granularity** sliders. The software outlines areas of the image in light blue in real time as the operator adjusts the sliders. The Contact Area is also calculated in real time and shown in the Image Stats area.

There is a **Zoom** control on the lower left side of the screen. This can be used to zoom in to show more detail of the image, typically to see the results of the Thresholding and Granularity operations used to find the contact area. The slider ranges from 0% (*the*

entire image visible) to 100% which is the image at its native resolution.

When the Zoom is set to 100, the user can also pan the image by clicking on any point of the image and 'dragging' the image.

If the user checks the **Show Color Image** option, the software shows the image in the original color, instead of grayscale. It doesn't affect the area calculation in any way. It is purely an aid to help set the Threshold and Granularity sliders appropriately.



If the user checks the **Fill Contact Areas** option the software fills in the areas found in the operations instead of outlining the areas as is the default. This shows the actual contact area as calculated by the software. In some cases it may be easier to see the proper values of the Threshold and Granularity settings with this option either on or off.

This screen shows the image zoomed in 100%. It also shows the image with all three checkboxes checked.

When the operator is satisfied that the contact areas are properly isolated, they enter the name for the processed image in the text box and click the **Save** button to save the image.

The user can edit the name as desired before clicking the Save button.

After the image is processed and saved (*or not*), the user has the option to return to the **Select Image** screen to select the next image in the sequence shown on the Select Image screen (click the **Next Image** button), select another image (*click the **New Image** button*) or to go to the **View Processed Images** screen.



View Processed Images

This screen shows images that have been processed.

The left side of the screen has a grid where each row shows the details for one image. The first cell in the row shows a thumbnail view of the image. To the right of the image are other details for that image (*currently Area, Threshold value, and Granularity value*), as well as a Select checkbox.

If the user clicks on the image cell the image is shown larger in the area on the right side of the screen.

At the top left of the screen is a text box that shows the current folder where the processed images are stored. The user can change this folder easily by clicking on the **Change** button and navigating to a different folder.

At the top right of the screen is a text box that shows the current folder where the user can move any or all of the processed images. This is done by clicking the checkbox in the **Select** column for each processed image and then clicking the **Move** button at the bottom of the screen. Any images checked will be moved to the folder. In this example the new folder is called Saved and the images moved are ones that the user wants to use in a report or send to someone else.