**Main Objectives of modifying image processing tool**

1. Track the location of the drop as it falls from the injection needle, by following its shape changeable centroid.

2. Prove the repeatability by applying more than three experimental sequences.

3. We would like the program to automatically determine the location of needle and ratchets surface, and display the result to the user. And we would like to have a button where user can choose to fine tune the resultant locations if they want.

4. Before we used an image with only needle and ratchet surface as base image to determine the location of the needle and ratchet surface. Is there a way to determine the location of the needle and ratchet surface directly from the images in the sequence? This way we skip scanning the base image.

5. Obtain drop volume based on its lateral size and kinematic quantities such as positon, velocity, acceleration.

6. Output all result into an excel table, with information about the frame number and other similar data with one excel table representing one complete set of images

7. Generate various plots such as velocity or acceleration profile as a function of time or horizontal/vertical position.