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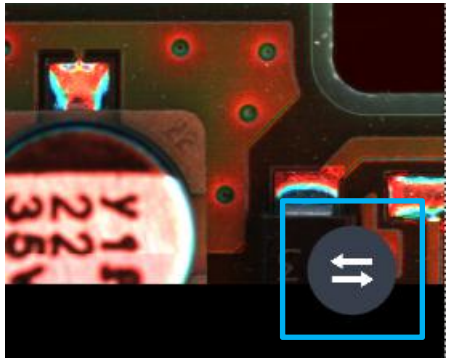
3D AOI Unpopulated Area Inspection

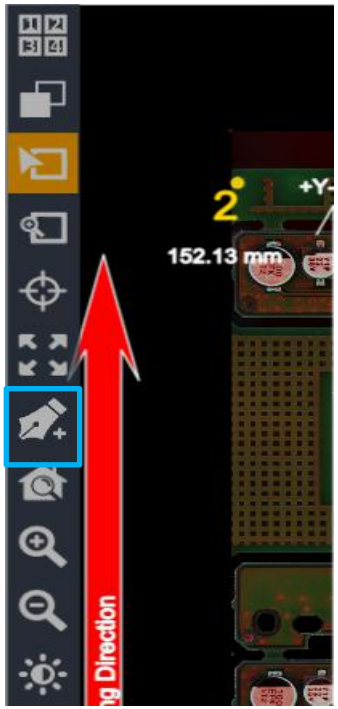
Add Component In Full board view

(1)



(2)

(3)

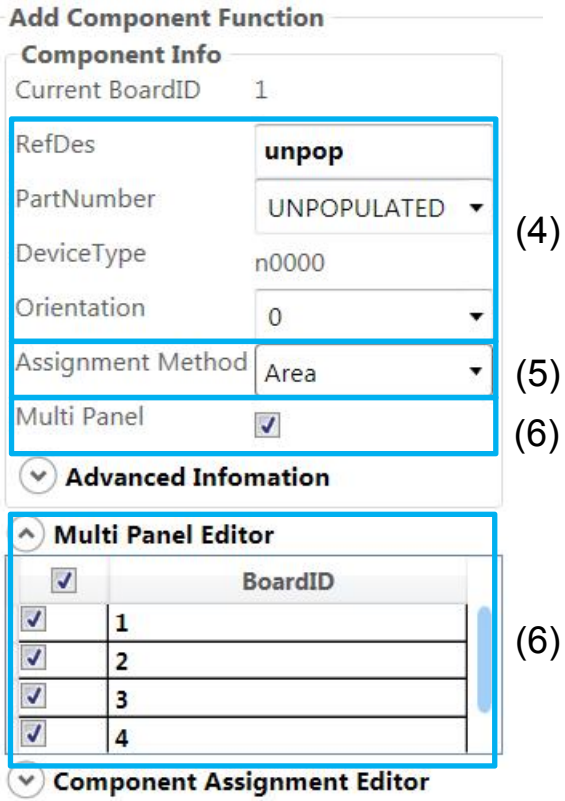


1) Press Scan Board to get the full board image

2) Click bottom right button to switch to full board view

3) Press the button to go to the add component mode

Add Component In Full board view



(4)

(5)

(6)

(6)

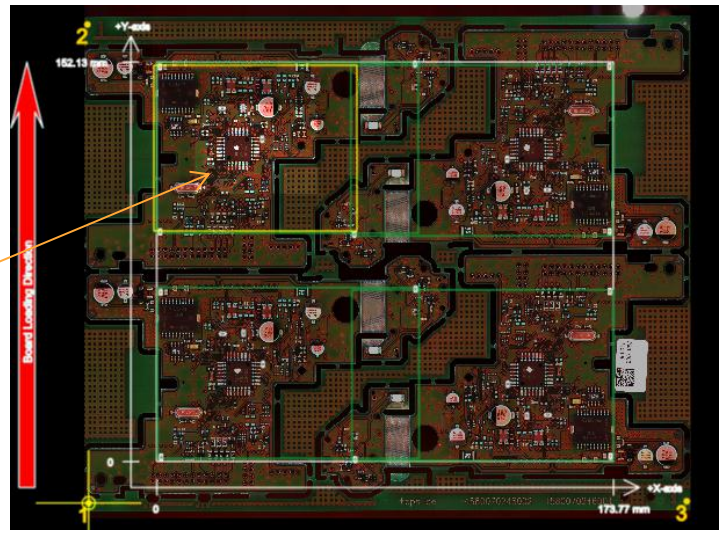
4) Fill in the following value in Component Info
- RefDes
- PartNumber
- Orientation

5) Change Assignment Method from Point to Area

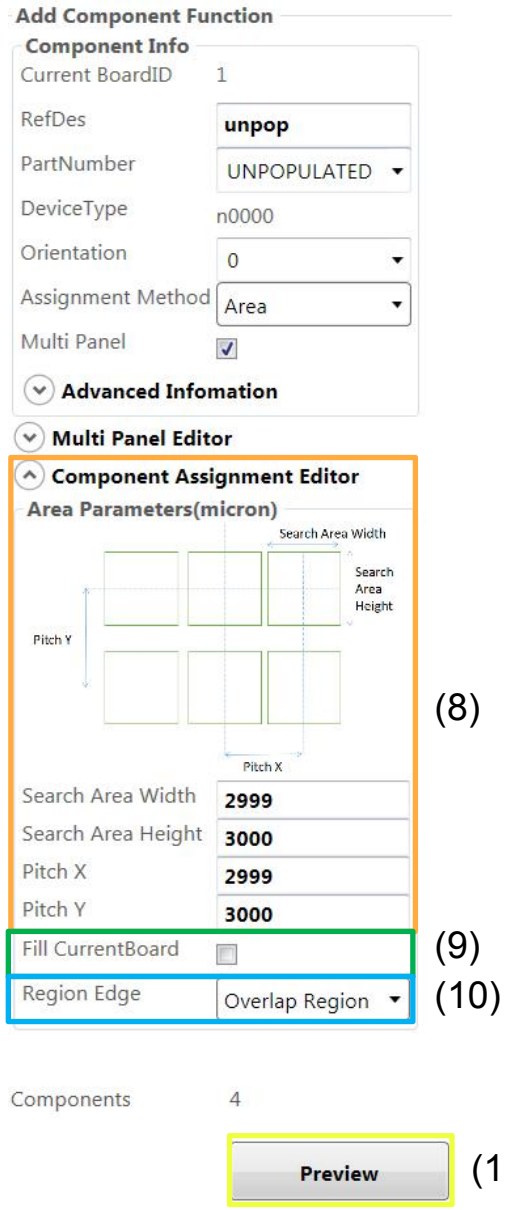
6) Tick Multi Panel To enable the multiple panel assignment. Expand Multi Panel Editor and make sure all board ID are being ticked

7) Go to the Full Board View and drag on a single board boundary

(7)



Add Component In Full board view



(8)

(9)

(10)

(11)

8) Go to Component Assignment Editor. Fill the following infomation

- Search Area Width
- Search Area Height
- Pitch X
- Pitch Y

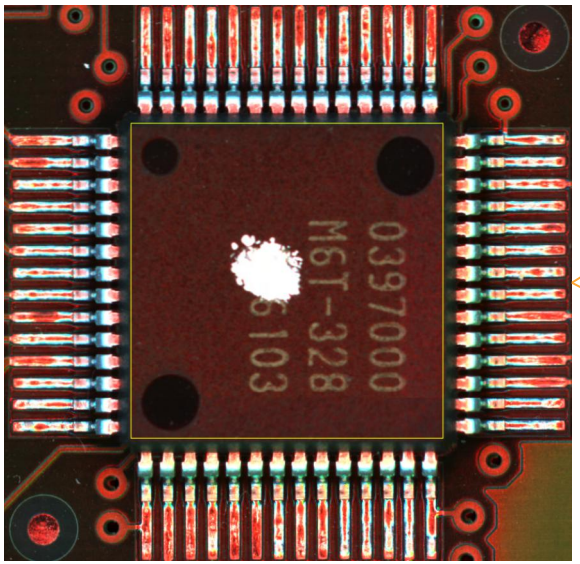
9) Tick Fill CurrentBoard to fill the current search areas with current mouse pointed board

10) In region edge, choose between overlap region and within region to select whether overlap the boundary or within the boundary of the coverage. (See next slide for reference)

11) Press preview if done. Press Next again after check that the locations is correct on the view.

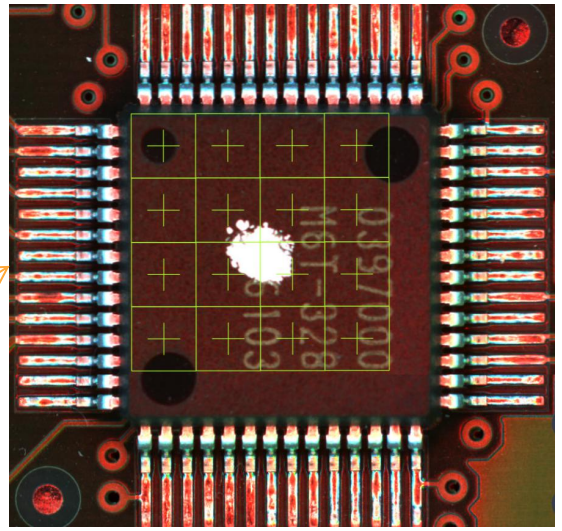
Add Component In Full board view

(10)

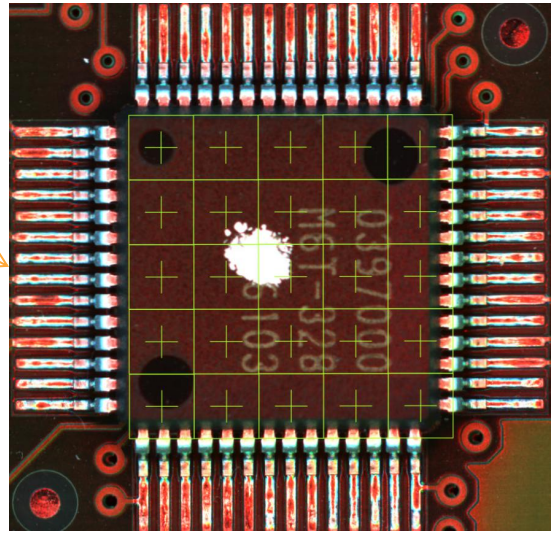


Draw a region

Within region



Overlap region



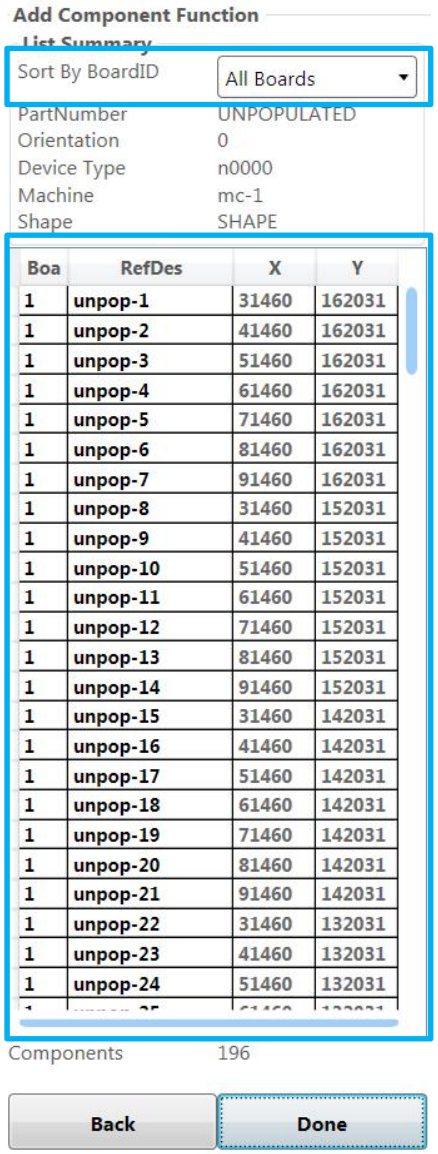
Add Component In Full board view

12) Check on the list to verify if it is at correct position

13) To check for specific board ID list, use sort by board ID and choose selected board ID list.

13) If want to delete unwanted components, drag and highlight the components, right click and press delete. (Refer to next slide for reference)

14) Press Done to save the components to the plx.



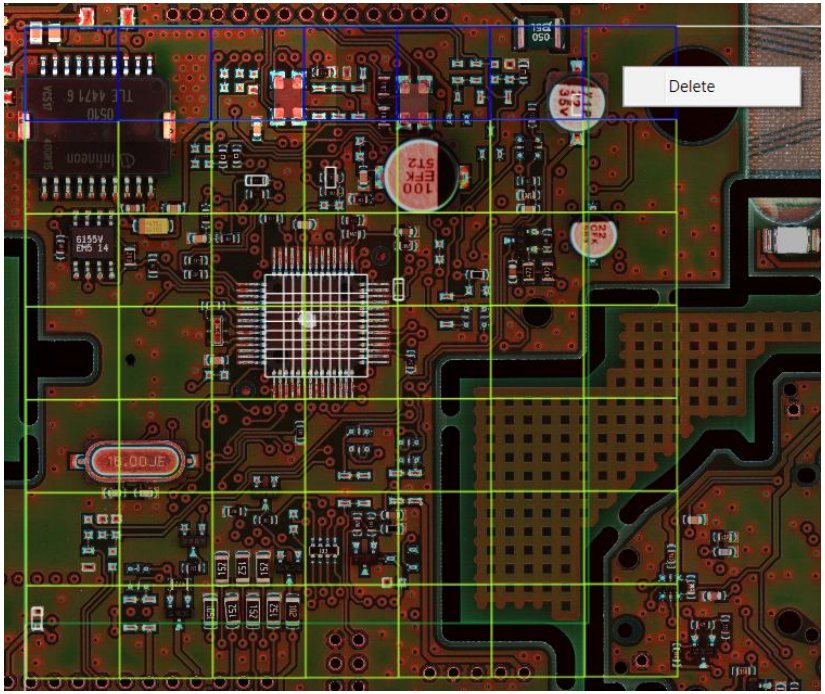
(13)

(12)

(14)

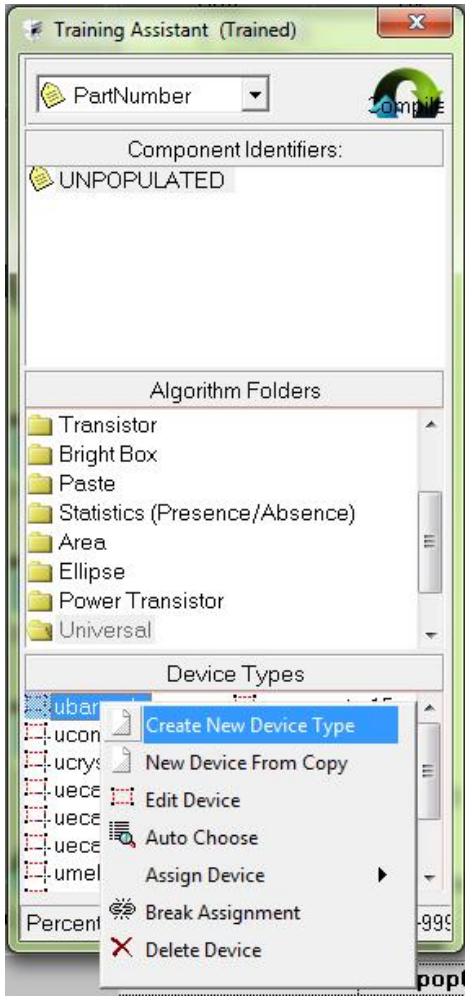
Add Component In Full board view

(11)



(14)

Assign Algorithm

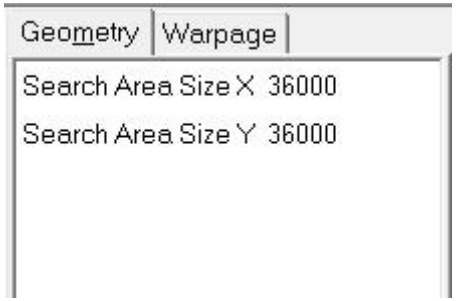


Assign a new U-type to **UNPOPULATED** Part Number.

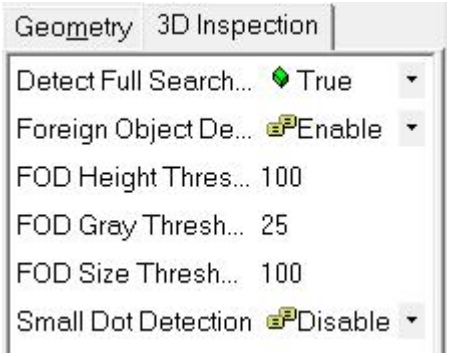
Foreign Object Inspection

Add **3dforeignobject** algorithm.

Foreign Object Inspection

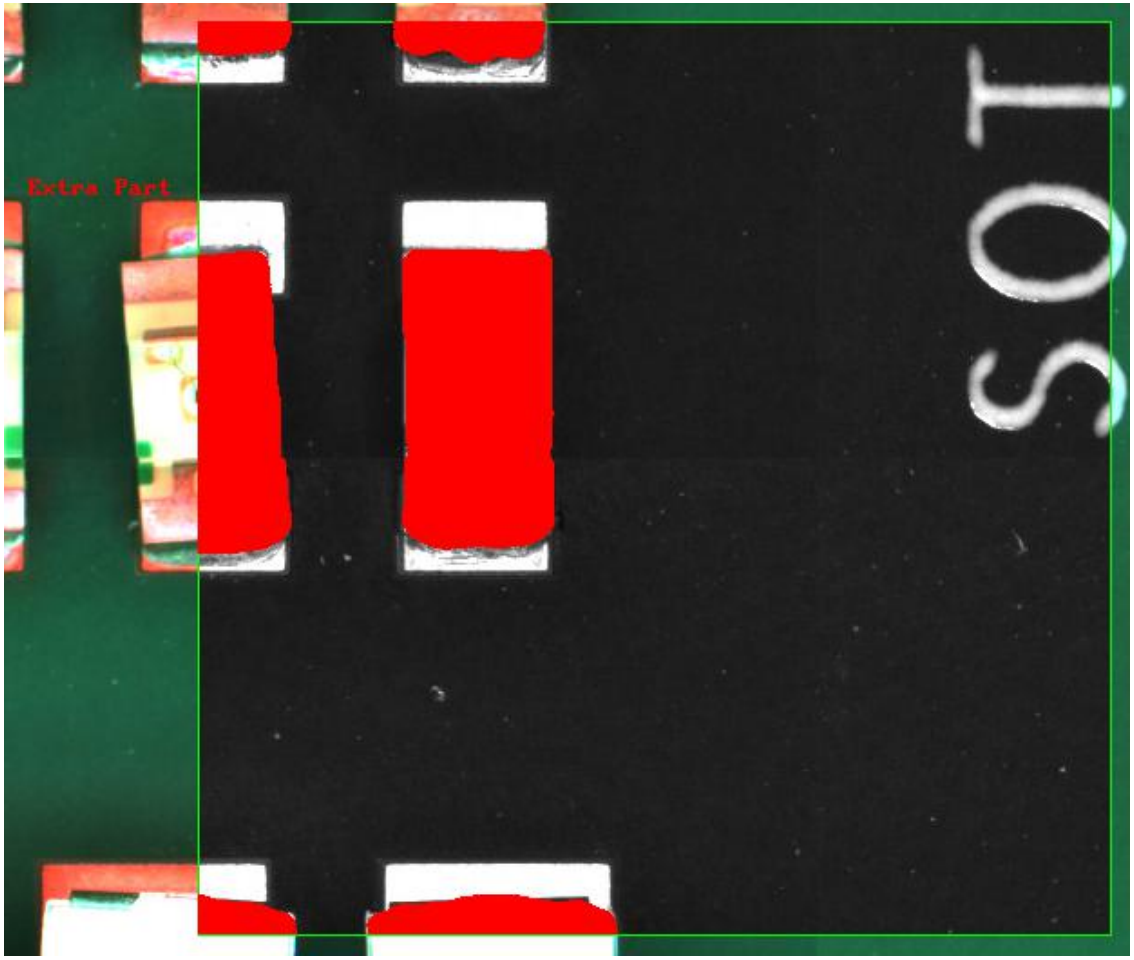


Set Search Area Size X and Search Area Size Y according to previous Pitch XY setting.



Set 3D Foregin Object inspection setting.

Foreign Object Inspection

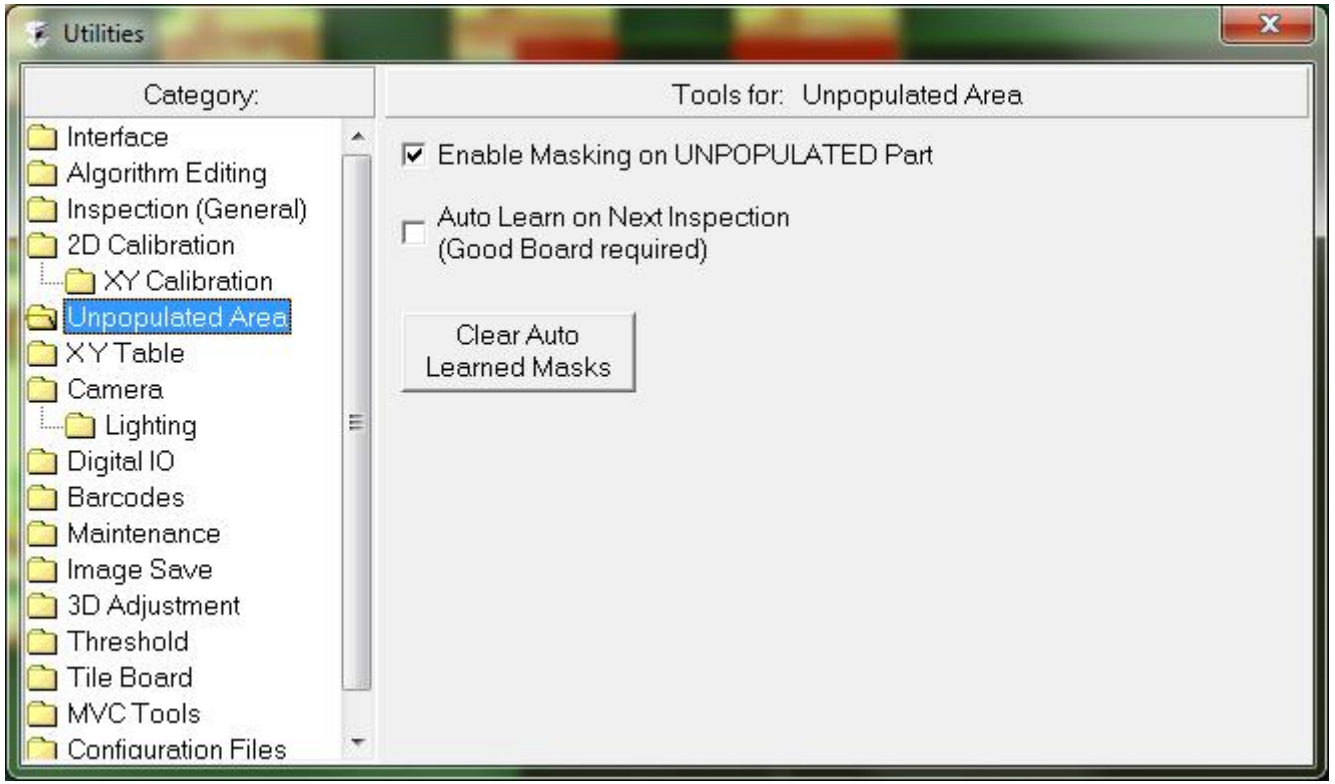


Foreign Object Inspection will detect any object with height.
If any object is detected, **Extra Part** error is reported.

Masking

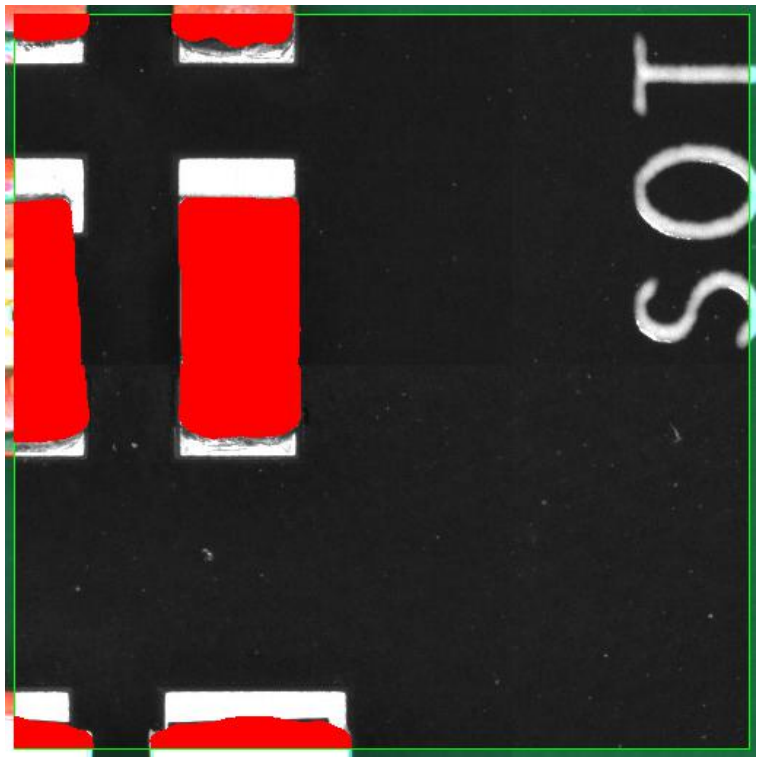
As search areas of UNPOPULATED part always overlap with components, masking is necessary to reduce false calls. There are two types of masking for UNPOPULATED part : **Component masking** and **Auto learned masking**.

To enable masking, check **Enable Masking on UNPOPULATED part** under **Utilities -> Unpopulated Area**.

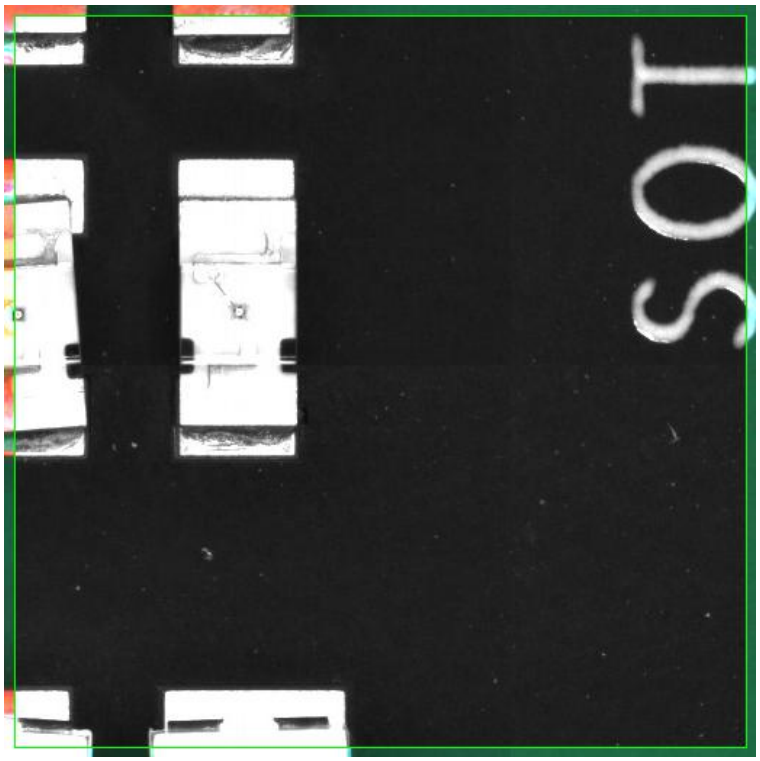


Component Masking

Component masks are based on other components which are not UNPOPULATED part.



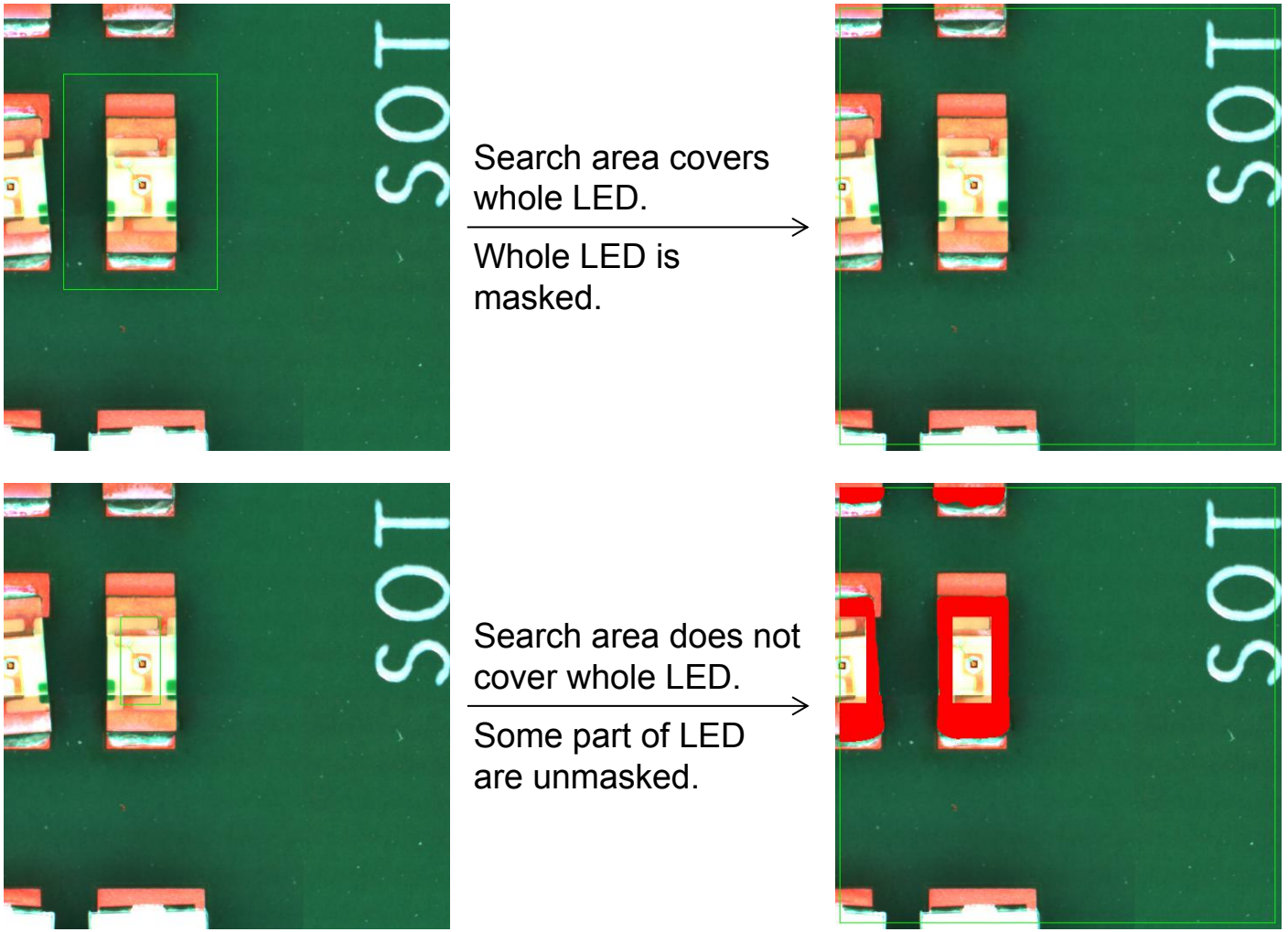
☐ Enable Masking on UNPOPULATED Part



☑ Enable Masking on UNPOPULATED Part

Component Masking

Size of component masks follow exactly size of search area of components.

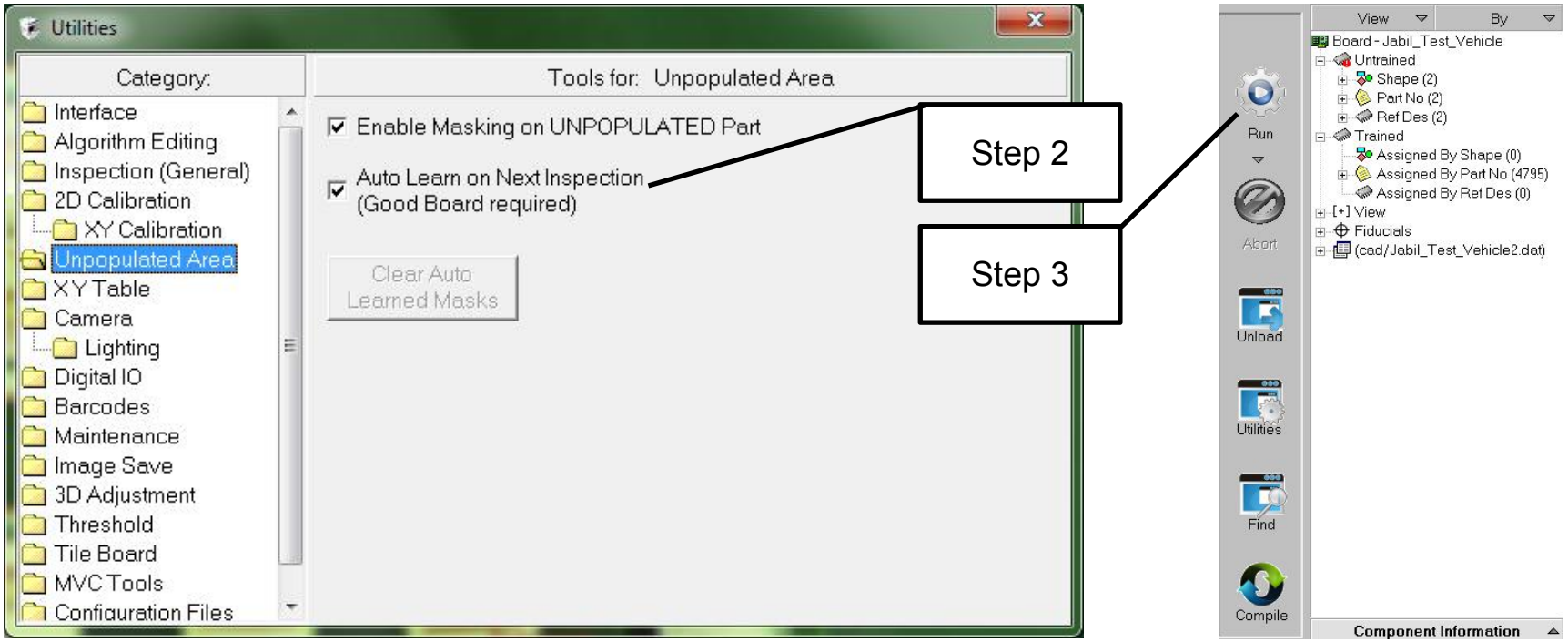


Auto Learned Masking

Component masking is not enough to fully prevent false calls. Some regions on PCB have height but without search area. Therefore, **Auto Learning** on **Good Board** is required to add masking on those regions.

To perform Auto Learning, do following steps :

1. Load a **good board** into V510.
2. Click **Utilites**, select **Unpopulated Area** and check **Auto Learn on Next Inspection**.
3. Close Utlities and click **Run**.
4. Wait until full inspection on board is done.

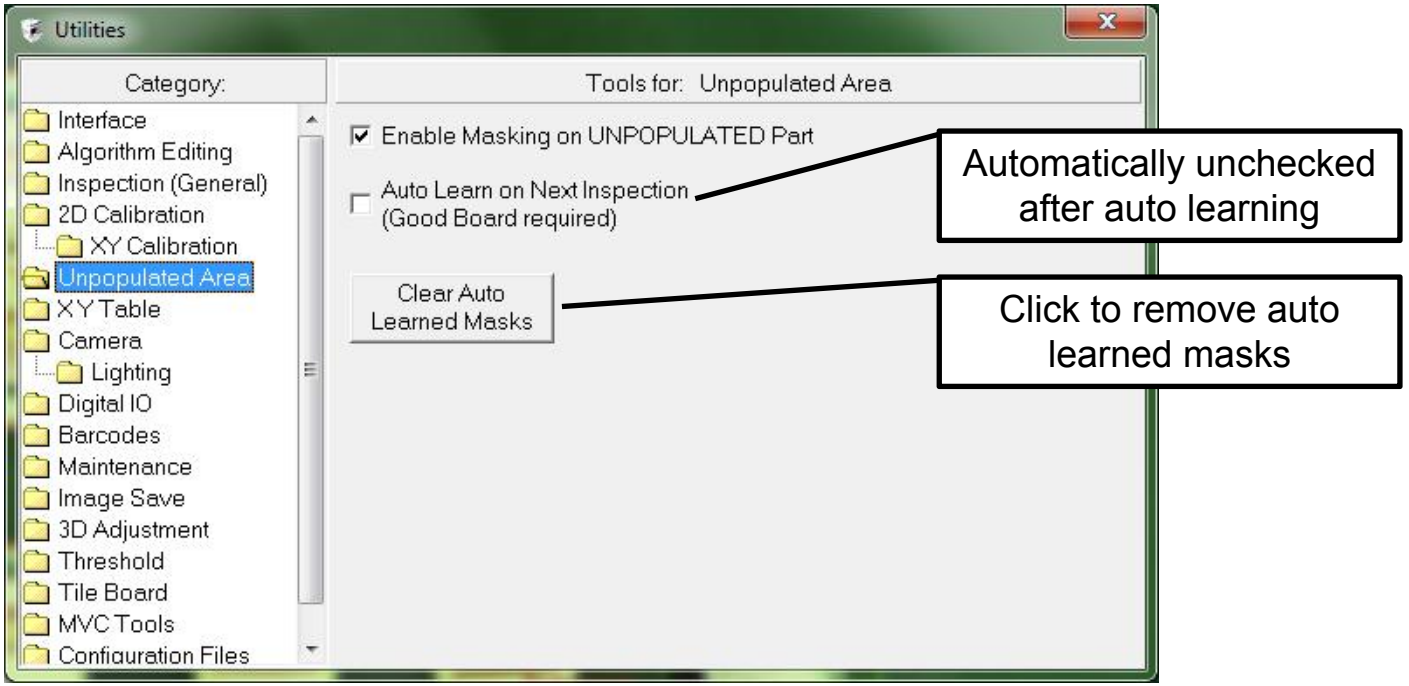


Auto Learned Masking

During Auto Learning, Height Threshold in Foregin Object Detection is overriden by a lower value. With lower height threshold, auto learned masks will have bigger size and thus more robust against height fluctuation.

When auto learning is done, **Auto Learn on Next Inspection** will be automatically unchecked.

In case of auto learning on bad board, auto learned masks can be removed by clicking the button **Clear Auto Learned Masks**.



Thank You