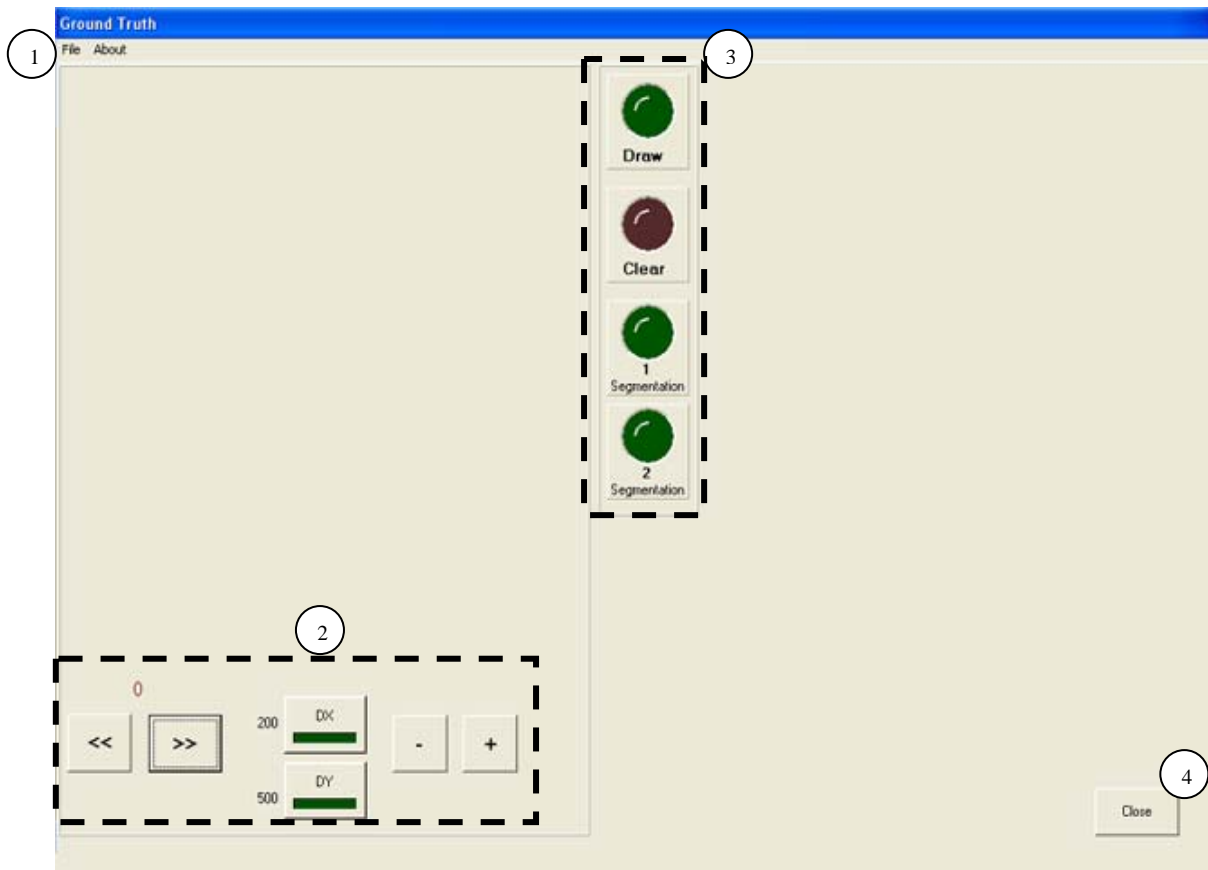
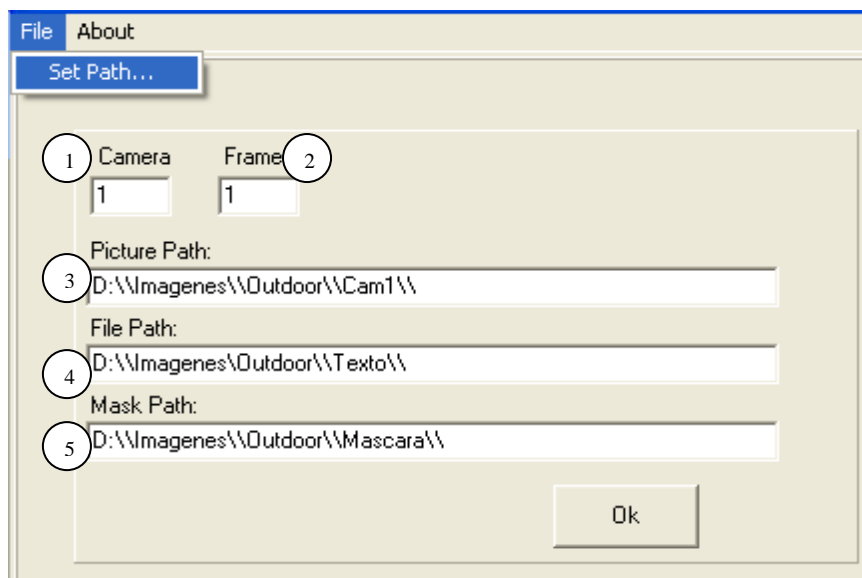




Ground Truth Tutorial



1. File: In this option we have to set the path to the location of our images as well as the paths where the masks are stored. Finally we can select image number and camera number.





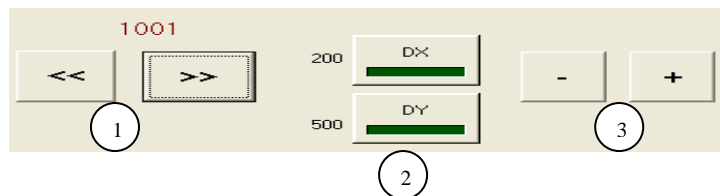
- 1) Camera: Set the camera of the image sequence.
- 2) Frame: Select the frame we want to start with.
- 3) Picture Path: Set the path of the directory that contains the image sequence of a camera. These images must be indexed in a BMP format. They must also have the following name format:

Cam1_1317.bmp
A B

A. The first part is the camera to which the frames belong to: Cam1, Cam2, and Cam3...

B. Next, separated by an underscore “_”, is the frame number: 1, 2, 3...565...1000...

- 4) File Path: Set the path to file in which the application stores some information of the agents, like the position of the agent and the position of its head and floor.
 - 5) Mask Path: Set the directory path in which the application stores each agent's mask.
2. Control panel: in this panel we can select an image and resize the selection box.



- 1) Image selection: with these buttons we can browse in order the frames of the directory selected in the “Picture path”. Above the buttons we can see the frame (image) number.
- 2) X and Y axes select (DX and DY): With these buttons we can select the axis we want to resize to fit the figure in the selection box. To the left of the buttons we can see the size of the selection box in pixels.
- 3) Increase/Reduce: with these buttons we can resize the selection box. If only the DX or DY button is activated we will only modify the horizontal or vertical selection box's size respectively. If both buttons are activated we will modify both sizes.

Original size



Modifying X axis:

348 DX

360 DY



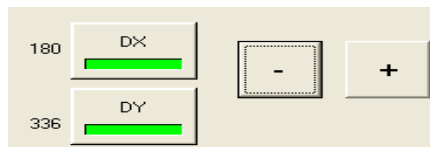
Modifying Y axis:

348 DX

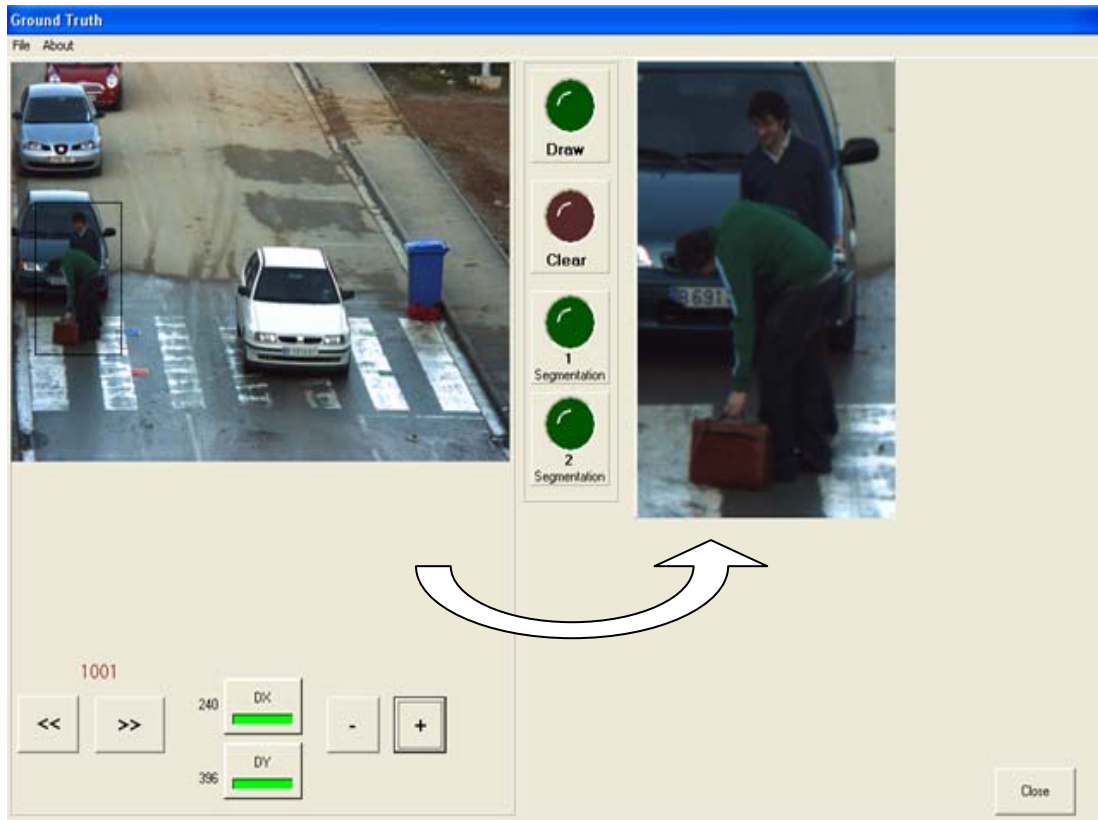
504 DY



Modifying X and Y axis:



Before we use the draw panel, we have into fit in the selection box the agent we want to draw.



With the selection box, we select the part of the frame we want (which is the part that contains the agent we want to draw). If we do a double-click, on the chosen section will appear, ready to be drawn on.

3. Draw panel: In this panel displays the options necessary to draw on our frames. We can select the objects we want to segment.



- 1) Draw: If we activate this option, we can draw on the image, selecting the agent we want. When we draw the agent's silhouette it's recommended not to move the cursor very quickly, because we can produce whitespaces between point and point if we do it.
- 2) Clear: This option is to clear the entire silhouette we have drawn and allows us to start drawing again.
- 3) Segmentation 1: If we activate this option the segmentation of the drawn agent will be performed. If the action is successful we will see the agent's silhouette completely filled. If there are whitespaces that are too big between two points of a silhouette, we will view a vertical or horizontal line without filling. If this happens we'll have to restart drawing the agent.
- 4) Segmentation 2: By clicking this option we will go to the next segmentation step. In this step we can modify the silhouette, and draw and add the occlusions and the face.

Steps:



First of all, we draw the silhouette of an object (in this case we have an occlusion because we want to draw the silhouette of the blue sweater man and the green sweater man is in front of him).



After defining the silhouette, click "Segmentation 1", if the silhouette has been done correctly, the drawn part will be highlighted in red.

Examples of bad done silhouettes:



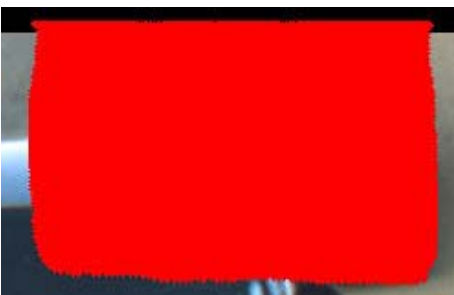
If done quickly, the lines produce whitespaces



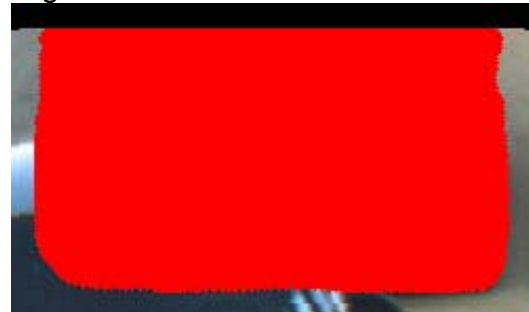
Incomplete silhouettes



Wrong:

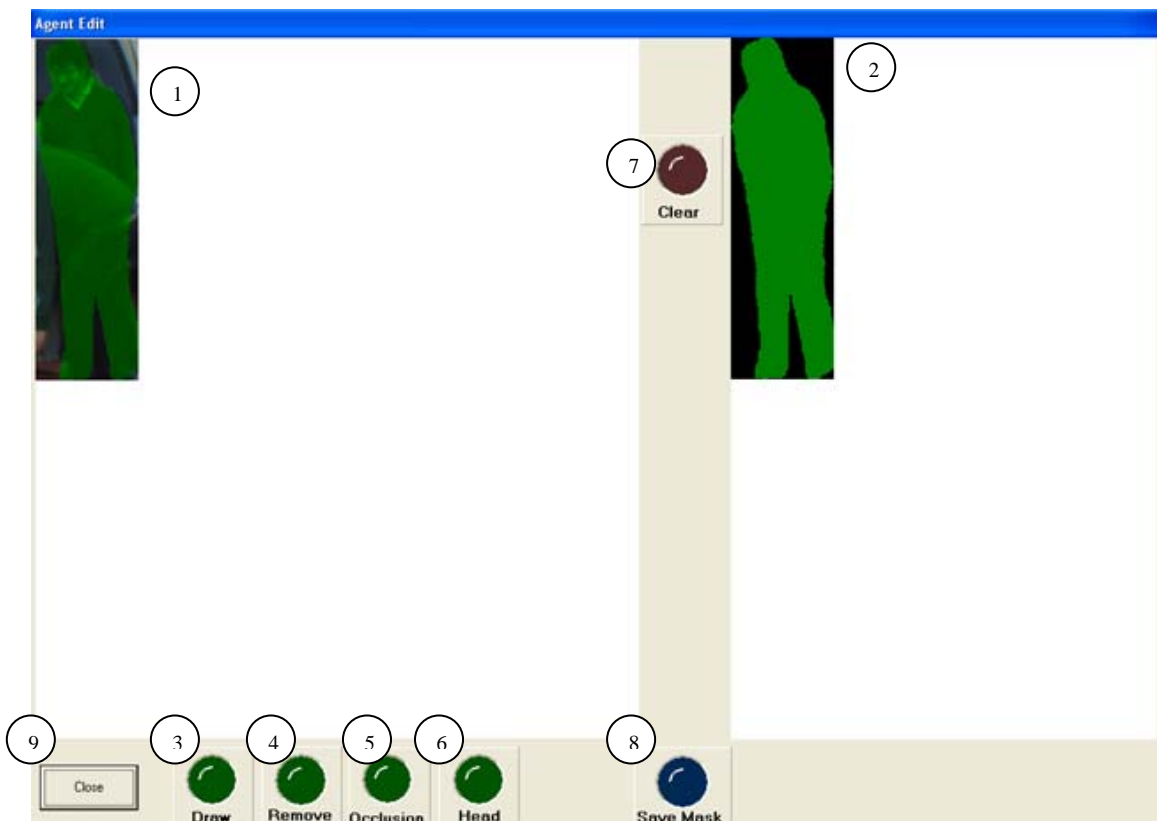


Right:

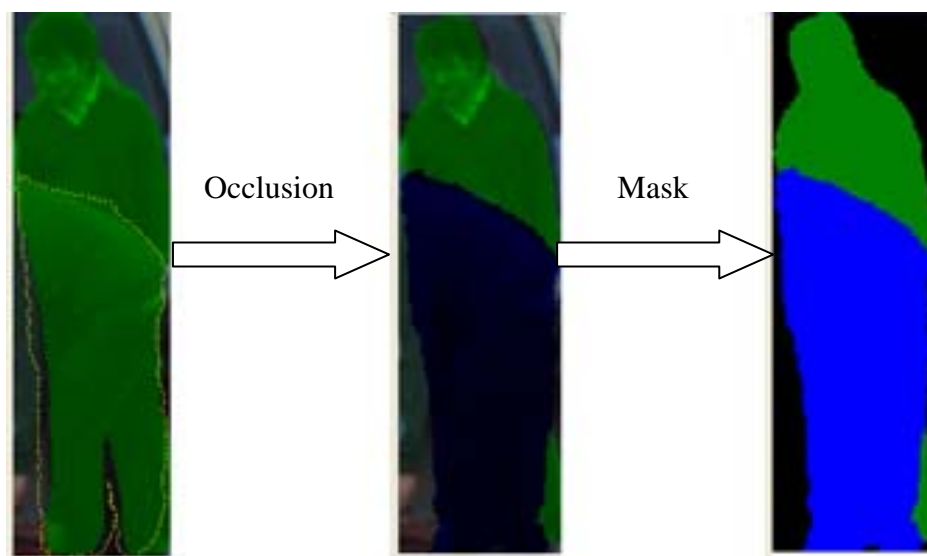


We have to draw the silhouette only inside the picture; if we draw outside the picture there is a possibility to have errors processing the mask. In this case we must draw the silhouette again.

Finally, if we are satisfied with the segmentation result, then click "Segmentation 2".

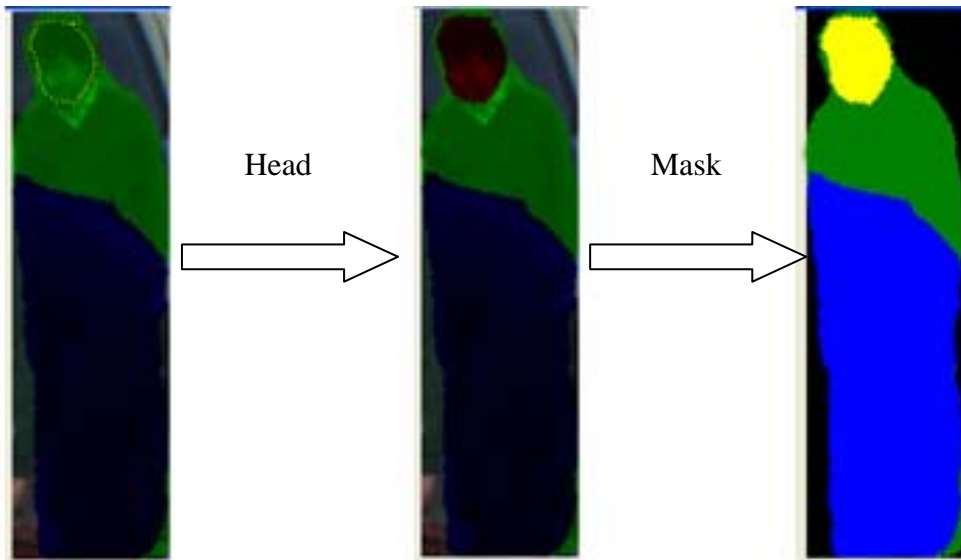


1. This window shows the previously segmented agent.
2. This window shows the mask to be saved.
3. Draw: If we activate this option, we can edit the obtained image, draw the occlusions or draw the face. *Note: Be careful because there's no option to undo an action (remove, occlusion, and head) except the clear option which removes all actions done on the mask.*
4. Remove: With this option, we can delete a selected part from the mask.
5. Occlusion: First of all we draw the silhouette of the occlusion and by clicking this option, we add the selected occlusion to the mask.

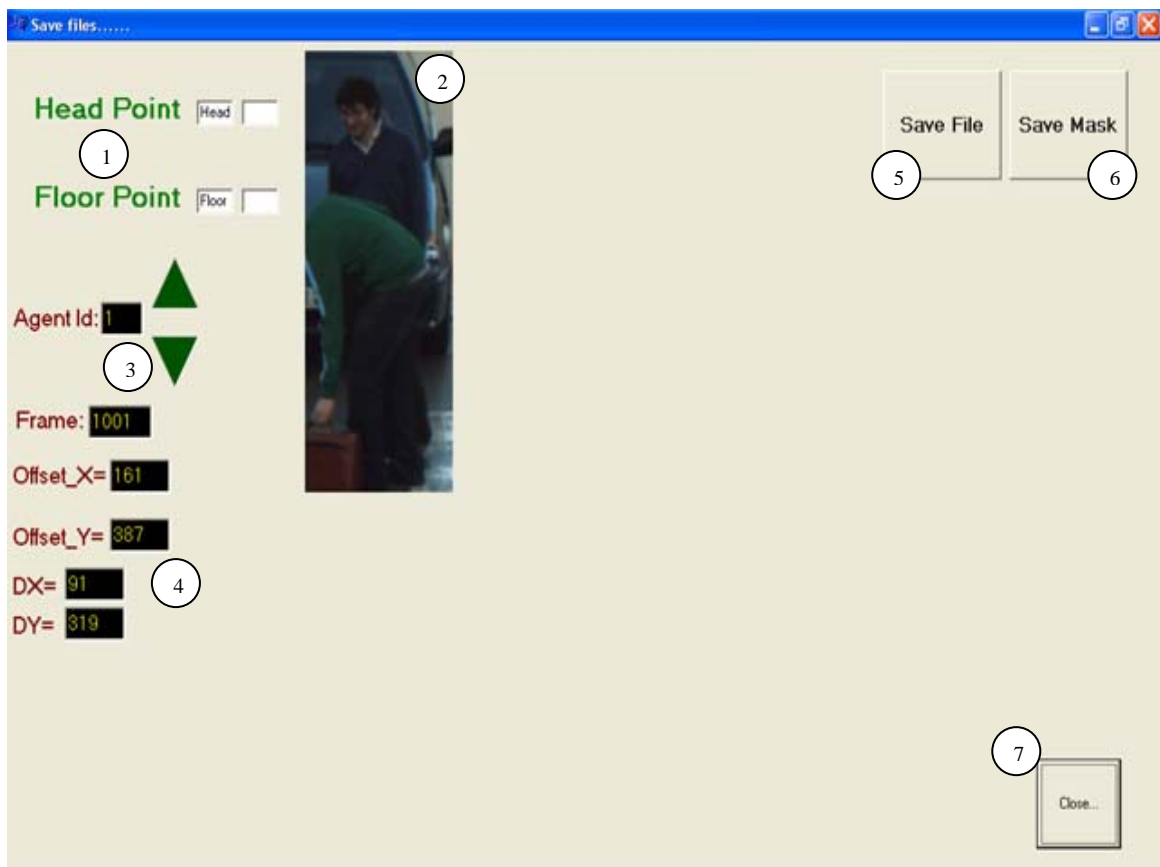




6. Head: We draw the silhouette of the agent's head and by clicking this option; we add the face part to the mask.

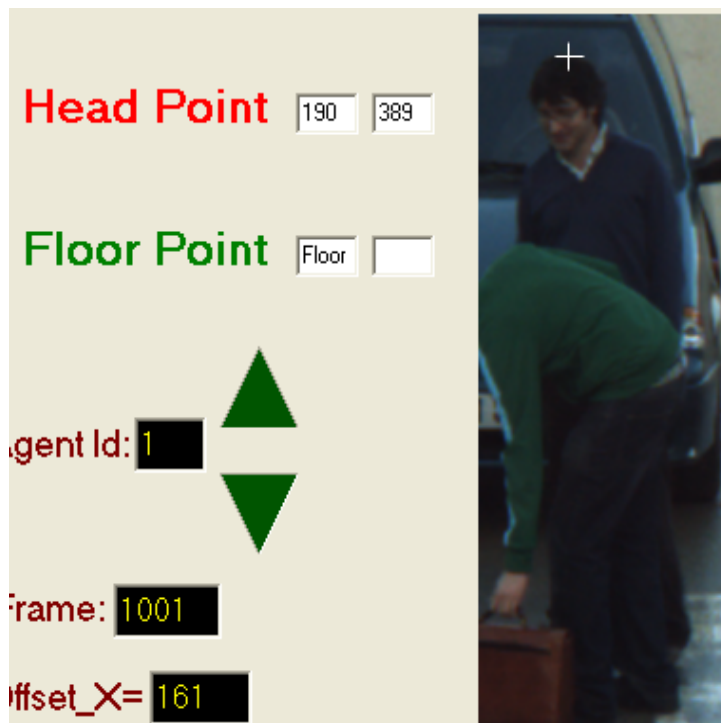


7. Clear: delete any action made on the mask. (The mask returns to the state we had after clicking segmentation 2, that is without occlusions or head)
8. Save Mask: If the mask is ok, click this option to go on to the next and last panel.

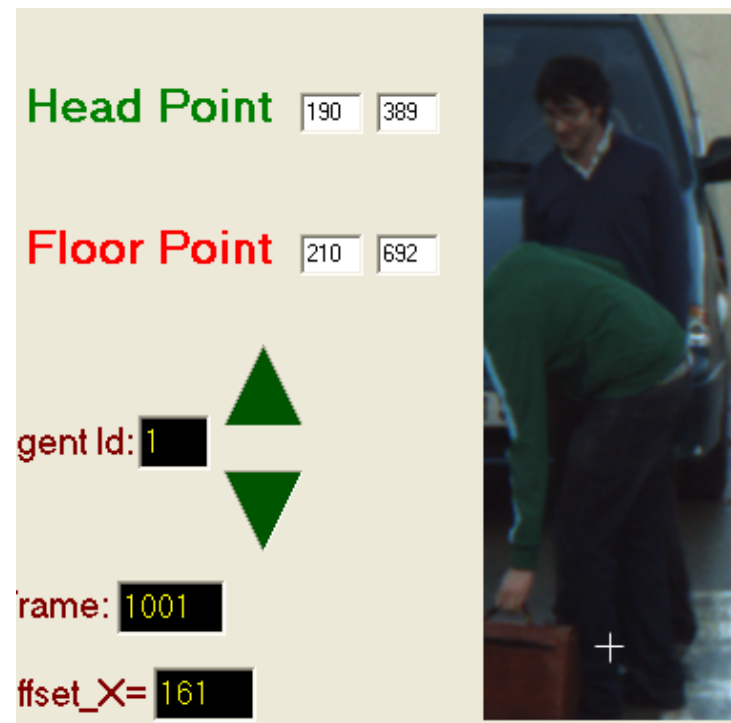




1. Head/Floor Point: These options are used to indicate the head and floor points of the image on the right (2). (Click on the text on the left to select the option, the selected option will be highlighted in red)



Head Point



Floor Point

NOTE: The head and floor point must always be selected, headless objects inclusive. If we don't mark these points, the mask can't be saved and the application will show an error message.



2. Image box: In this box we can see the previously selected image with the selection box. Here we can mark the head and floor point.
3. Agent ID: In this option we can assign a number to the drawn agent. With the arrows in the right, we select the ID number. We have to maintain this ID every time we draw the same agent in the following frames until we finish the entire sequence. For example: if we assign number 1 to the blue sweater man in the first frame he appears, we must assign this number in every frame he appears during the entire sequence. ID's can only belong to one agent during the sequence so we can't reuse an ID when an agent disappears from the image.
4. Information: Shows different details of the image segmentation.



5. Save File: Saves every mask's information in a common file.
6. Save Mask: Saves every mask in a single file.
7. Close: Returns to the initial window to select another agent or frame.