

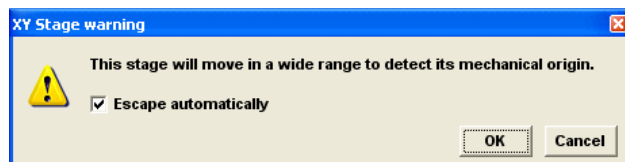
Multi Area Timelapse with ZDC

MATL; Multi Area TimeLapse allows to acquire timelapse imaging at several points using ZDC without focus drift. And newly released “MATL Viewer” enables to view acquired images during the experiment.

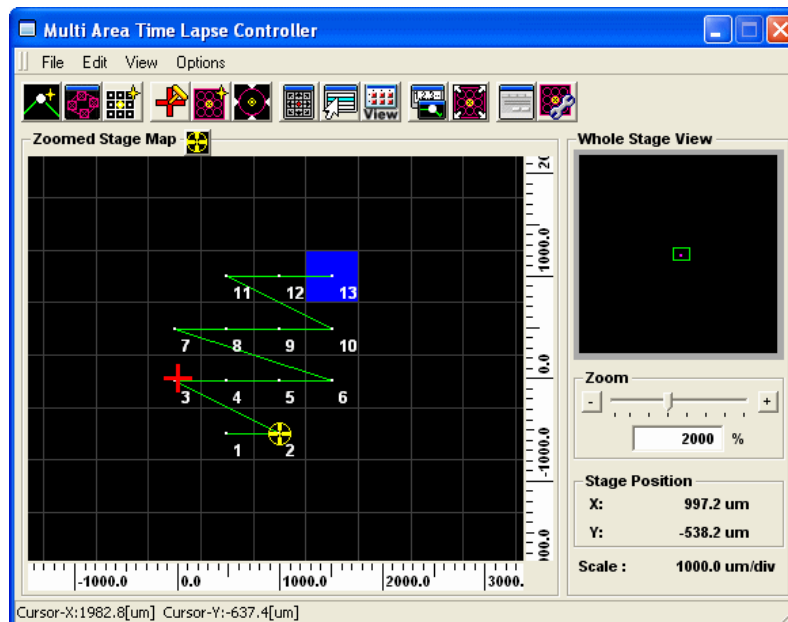
<Procedure>

Image acquisition

1. Select [Multi Area Time Lapse] from [Device] menu on [OLYMPUS FLUOVIEW] window.



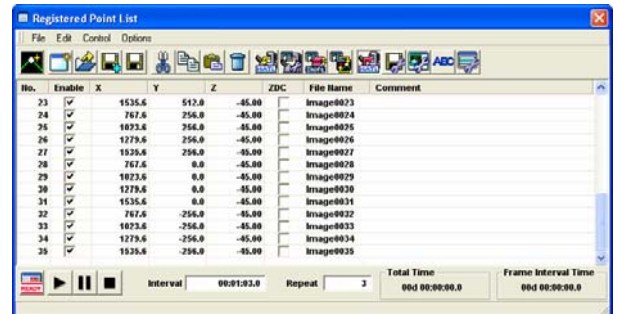
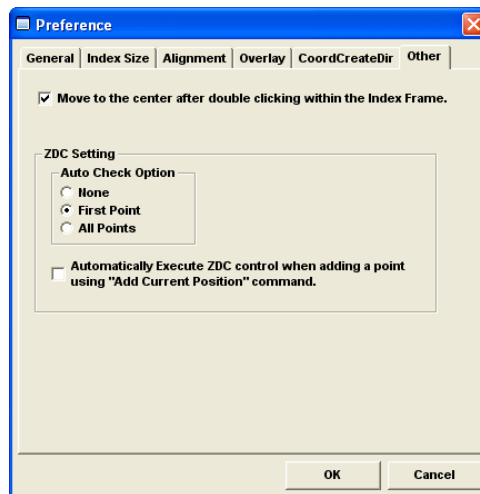
2. Click on <OK> button so that the stage is initialized to mechanical origin.
In case no initialization is required, click on <Cancel> button.
3. MATL will start and [Multi Area Time Lapse Controller] window will appear.



Set up [Preference].

1. [Preference] dialog box is displayed by selecting [Preference] from [Options] menu on [\[Multi Area Time Lapse Controller\] window](#).

2. Select [Other] Tab and set ZDC setting.




Auto Check Option group box

It is to set check or uncheck of [ZDC] check box on [Coordinate] list on [\[Registered Point List\] window](#) automatically when coordinates are registered.

In case [None] radio button is chosen, [ZDC] check box will not be ticked when coordinates are registered.

In case [First Point] radio button is chosen, [ZDC] check box will be ticked off when coordinates are registered. In case coordinates are registered, using [\[Mosaic Outline\] window](#) or [\[Define Matrix\] dialog box](#), the [ZDC] check box will be ticked off for the coordinated of the 1st registration point only.

In case coordinates are set, using  (Add Current Position) button, [ZDC] check boxes for all coordinates will be ticked off.

In case the radio button [All Points] is chosen, [ZDC] check boxes for all coordinates that are newly registered at coordinate registration time will be ticked off.


In case [Automatically Execute ZDC control when adding a point using "Add Current Position" command.] check box is ticked off and, when <Add Current Position> button is clicked, the focus offset position is set by this software and then, the coordinate will be registered.

This function cannot be used for coordinate registration on [\[Mosaic Outline\] window](#) and [\[Define Matrix\] dialog box](#).

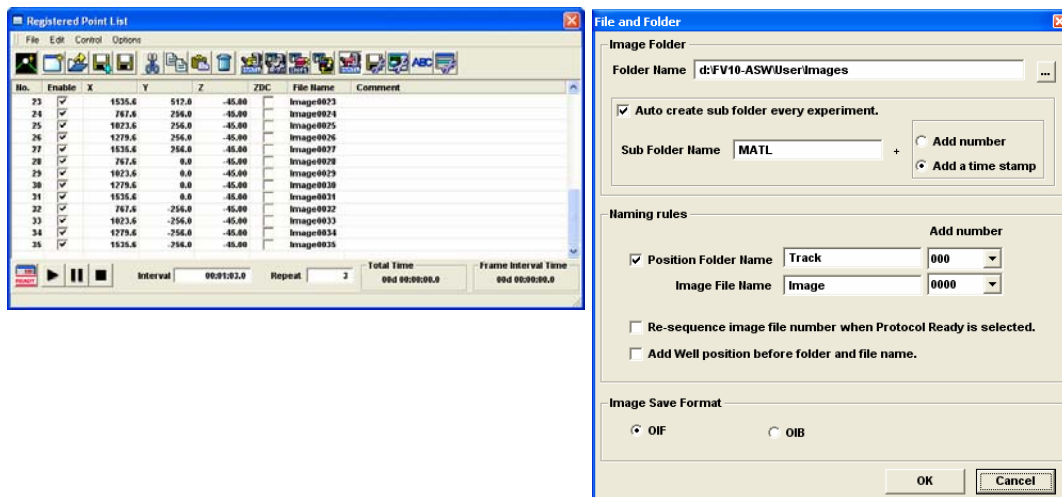
When a focus offset position is set, [ZDC] column of [Coordinate] list will be turned to checked state and the cell will be indicated in white.


In case a focus offset position is not set, the registration of coordinates is done but [ZDC] check box is not ticked off. Since a focus offset position is not set, the [ZDC] check box appears in yellow.

Set up File Folder and Image Processing

1. To open [File and Folder] window, click  [File and Folder] button on [Registered Point List] window.

Define the File name, Image Folder and Image Format to save acquired images.



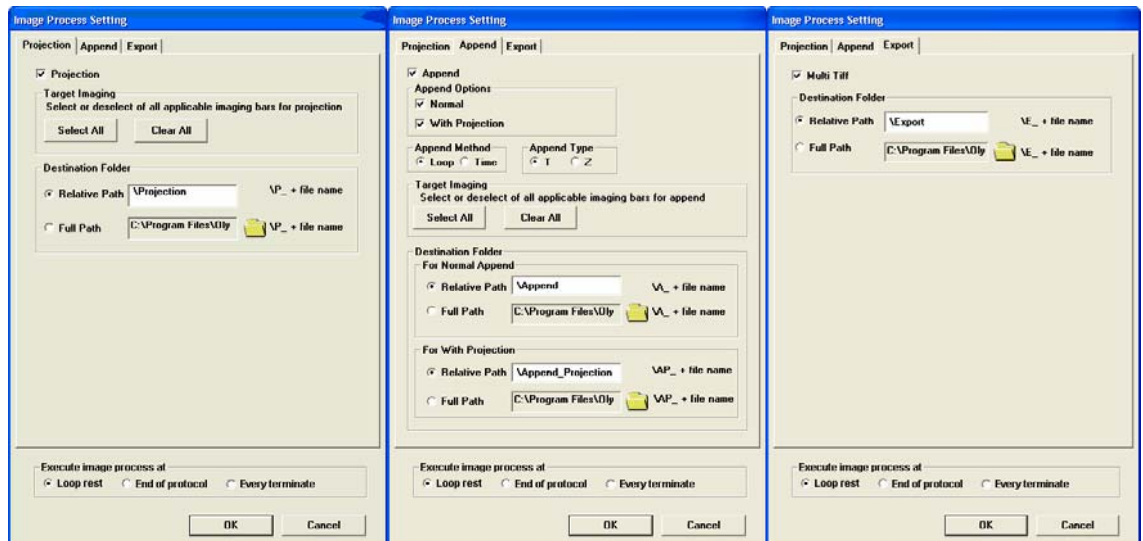
2. To open [Image Processing Setting] window, click  [Image Processing Setting] button on [Registered Point List] window.

On [Projection] tab, when [Projection] is checked, maximum intensity projection image of each image will be created and stored at determined destination folder.

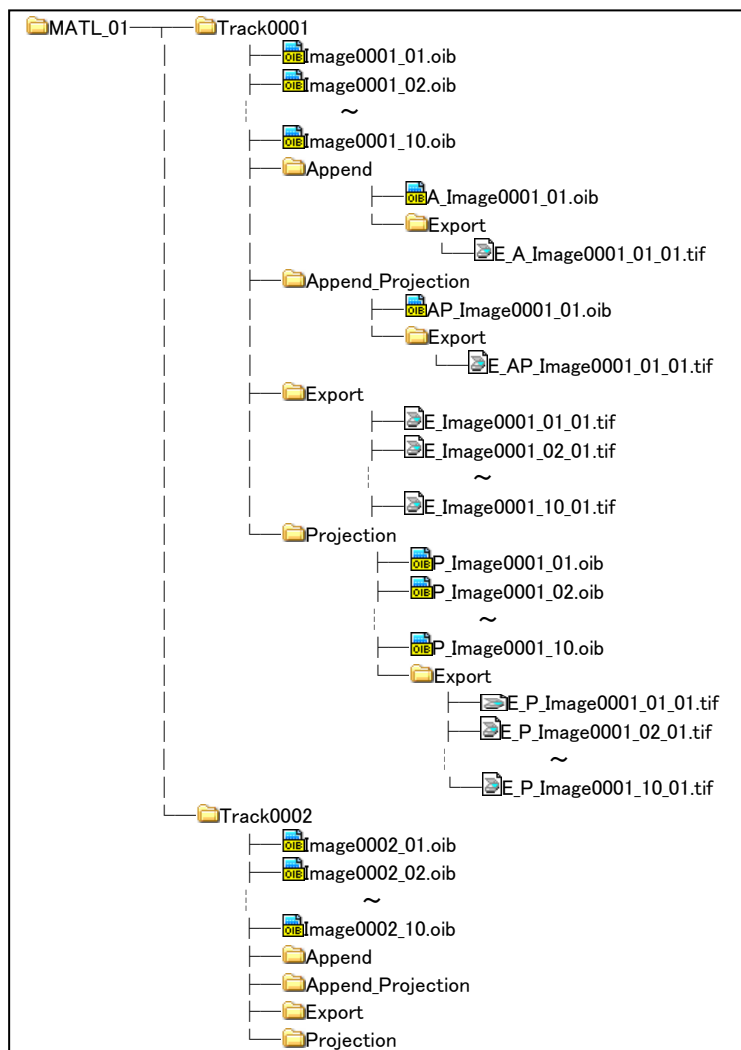
On [Append] tab, when [Append] is checked all images will be appended to one XYT or XYZT file and stored at determined destination folder.

But if the amount of file exceeds 800MB, this procedure will not be executed.

On [Expot] tab, when [Multi Tiff] is checked, each file will be exported as “FV-Multi Tiff” and stored at determined destination folder.




If All is checked and destination folder is set as [Relative Path] images will be stored as follows,



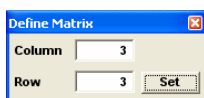
Coordinate Registration


1. Registering separated coordinates


- 1) Move the stage to arbitrarily selected position.
- 2) Clicking on  (Add Current Position) button on tool bar of [Multi Area Time Lapse Controller] window or [Registered Point List] window.
- 3) XY coordinates and information for image acquisition will be added to [Coordinate] list on [Registered Point List] window,.
- 4) For more coordinates that should be added, repeat from step 1 till step 3.

2. Registering adjacent coordinates

- 1) Select [Define Matrix] from [Edit] menu on [\[Multi Area Time Lapse Controller\] window](#). [Define Matrix] dialog box will appear.



It is also possible to display [Define Matrix] dialog box by clicking on  (Define Matrix) button on tool bar.

- 2) Enter number of coordinate points in [Column] and [Row] text box
- 3) Click on  (Set) button.
- 4) Coordinates will be registered to stage map and [Coordinate] list on [Registered Point List] Window.

Set Interval time and number of repeat cycle.

Set [Interval] and [Repeat] on [Registered Point List] window.



Image Acquisition

Click  <Ready> button and then click  <start> button to start image acquisition.

Post View setting


Executing a protocol, it is possible to verify images acquired by aligning (post view function). Also, it is possible to align and view images already acquired.

Displaying images acquired while a protocol is executing

1. Select [Multi Area Time Lapse Viewer] from [View] menu on [Multi Area Time Lapse Controller] window.

[Multi Area Time Lapse Viewer] window will appear.

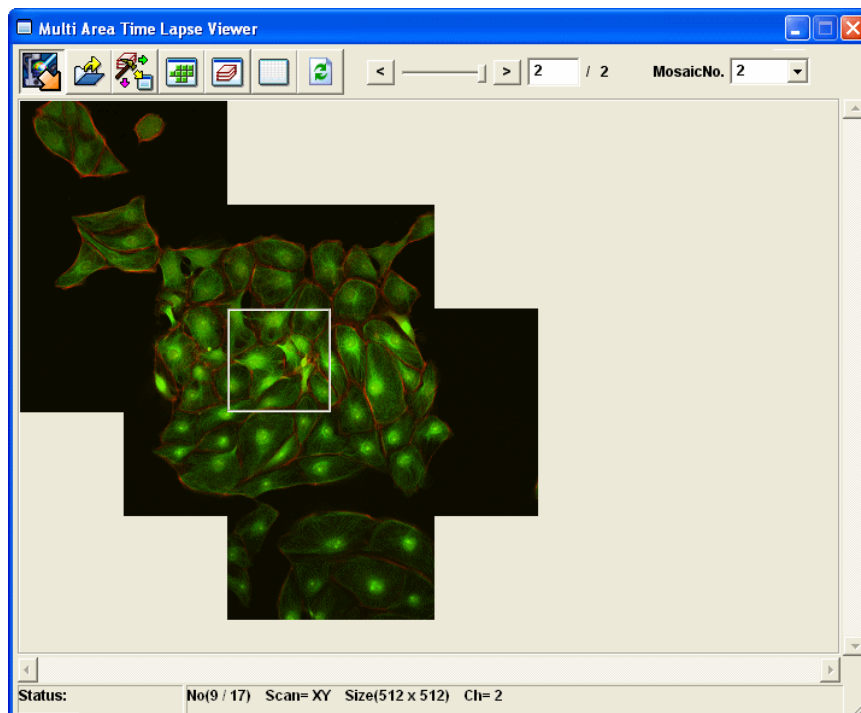


Using  (Multi Area Time Lapse Viewer) button on toolbar, it is also possible to open [Multi Area Time Lapse Viewer] window.



2. Set  (Track) button on [Multi Area Time Lapse Viewer] window to "pressed" state.

The thumbnails of images acquired will immediately be displayed on [Post view display] region.



3. Select View Mode Button
Image displaying method on [Post view display] region is selected.



- 1) (Sequential View Mode) button : Sequential display. Images acquired will be aligned sequentially.



- 2) (Repeat View Mode) button : Repeat display. Images that are repetitively acquired will be aligned and displayed with time axis in lateral direction and every coordinate in perpendicular direction.



- 3) (XY View Mode) button : XY display. Images are aligned in every XY coordinate axis. (This button can be chosen in case an image was acquired by specifying coordinates on [\[Mosaic Outline\] window](#) or [\[Define Matrix\] dialog box](#).)

4. Show 2D View

On the [Post view display region], if one of the thumbnail of an image is double clicked on, the [2D View] of the image will be shown while interval.