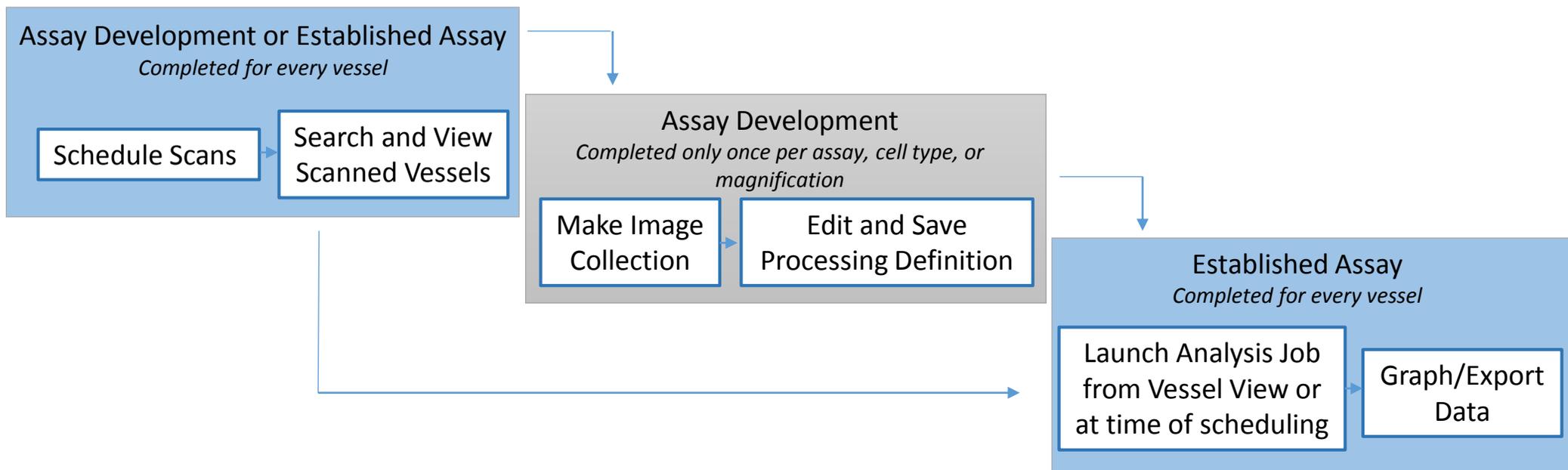


- Use this guide to easily navigate through the IncuCyte™ ZOOM software by following the numerical steps in each diagram.
- Information icons are found throughout the software. Mouse over the ⓘ to find useful hints and tips.
- Consult the User Manual under the Help menu for complete details.
- Modular Data Processing Technical Notes are available on our website <http://www.essenbioscience.com/supportdocs/>
- This quick start guide was created using GUI version 2014A. Check the GUI version under Help→About menu. Contact sales@essenbio.com to upgrade software.

Data Analysis Overview



3. Open the Drawer

- Press the Eject Button
- Carefully place vessel in tray making sure that it is secure and sitting flat
- Do not open if the light is green

1. Check the LCD panel

- Make sure nothing is scanning before opening the incubator
- Check that the objective on the LCD screen matches the objective in step 2.

2. Check the Objective

- Open the optics panel by pushing down and pulling forward
- To change the objective in software, click on the "Administer" → "Optics Reconfiguration" tab.



Follow these tips to ensure high image quality

- Carefully wipe drops of media or other liquid on outside tops/lids of vessels
- Avoid touching the tops or bottoms of vessels. Hold vessels by the sides.
- Avoid using vessels with a lot of scratches/debris on them
- Do not write labels on the tops of vessels. Label vessels on the sides or very edges where imaging will not occur.
- Make sure lids are tightly fastened onto the flasks
- Be sure vessel is securely seated in the tray.
- Allow plate to warm up for about 30min in the incubator before scanning.

Schedule Scans

Search and View Scanned Vessels

Make Image Collection

Edit and Save Processing Definition

Launch Analysis Job from Vessel View or at time of scheduling

Graph/Export Data

Information icons are found throughout the software. Mouse over the  to find useful hints and tips. Consult the User Manual under the Help menu for complete details.

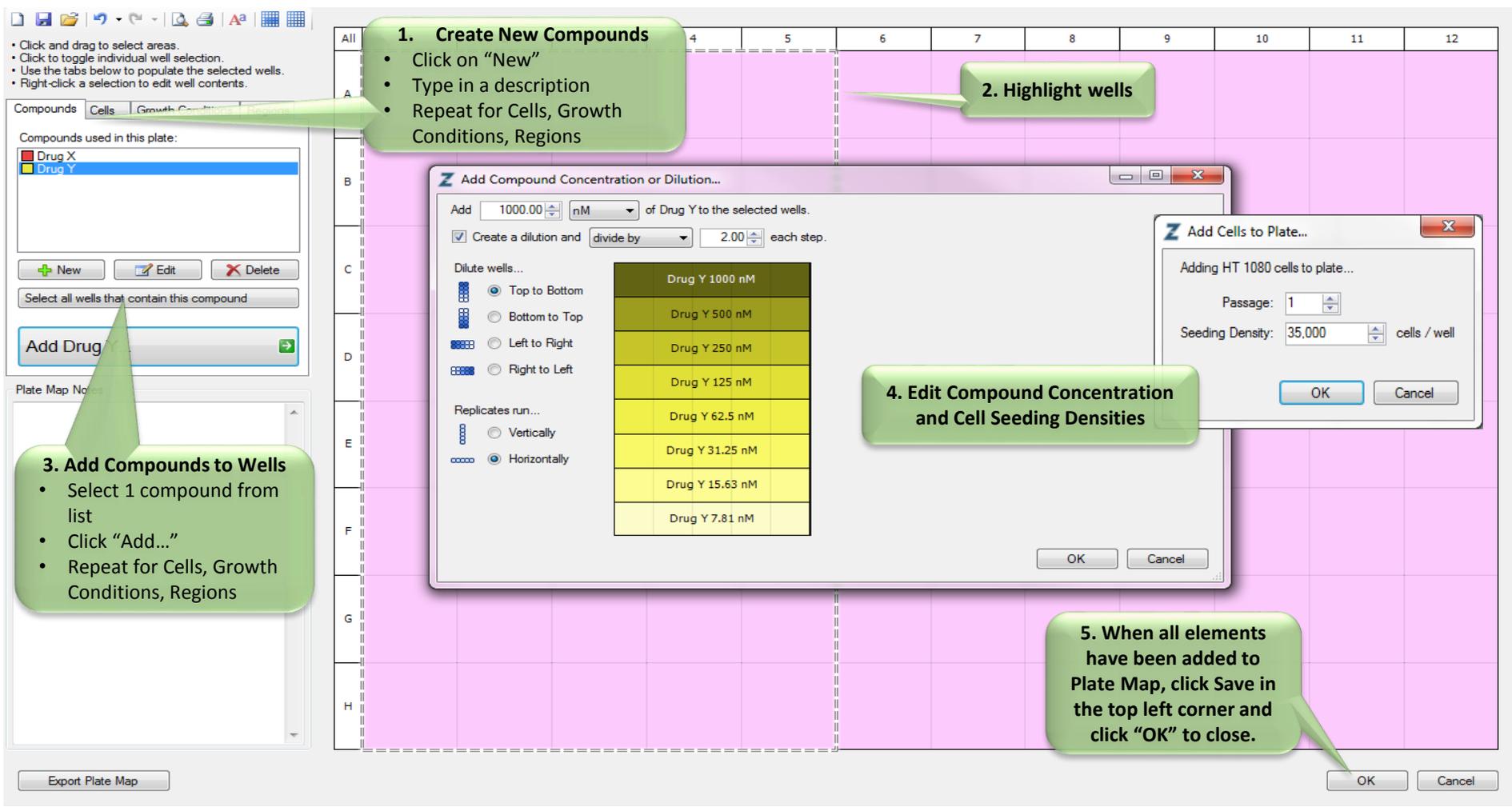
Data Processing Technical Notes are available on our website <http://www.essenbioscience.com/supportdocs/>

This Quick Start Guide was created using GUI version 2014A. Check the GUI version under Help → About menu. Contact sales@essenbio.com to upgrade software.

Open the Plate Map editor using the desktop shortcut icon



or under the properties tab in Schedule Scans or Vessel View



1. Create New Compounds

- Click on "New"
- Type in a description
- Repeat for Cells, Growth Conditions, Regions

2. Highlight wells

3. Add Compounds to Wells

- Select 1 compound from list
- Click "Add..."
- Repeat for Cells, Growth Conditions, Regions

4. Edit Compound Concentration and Cell Seeding Densities

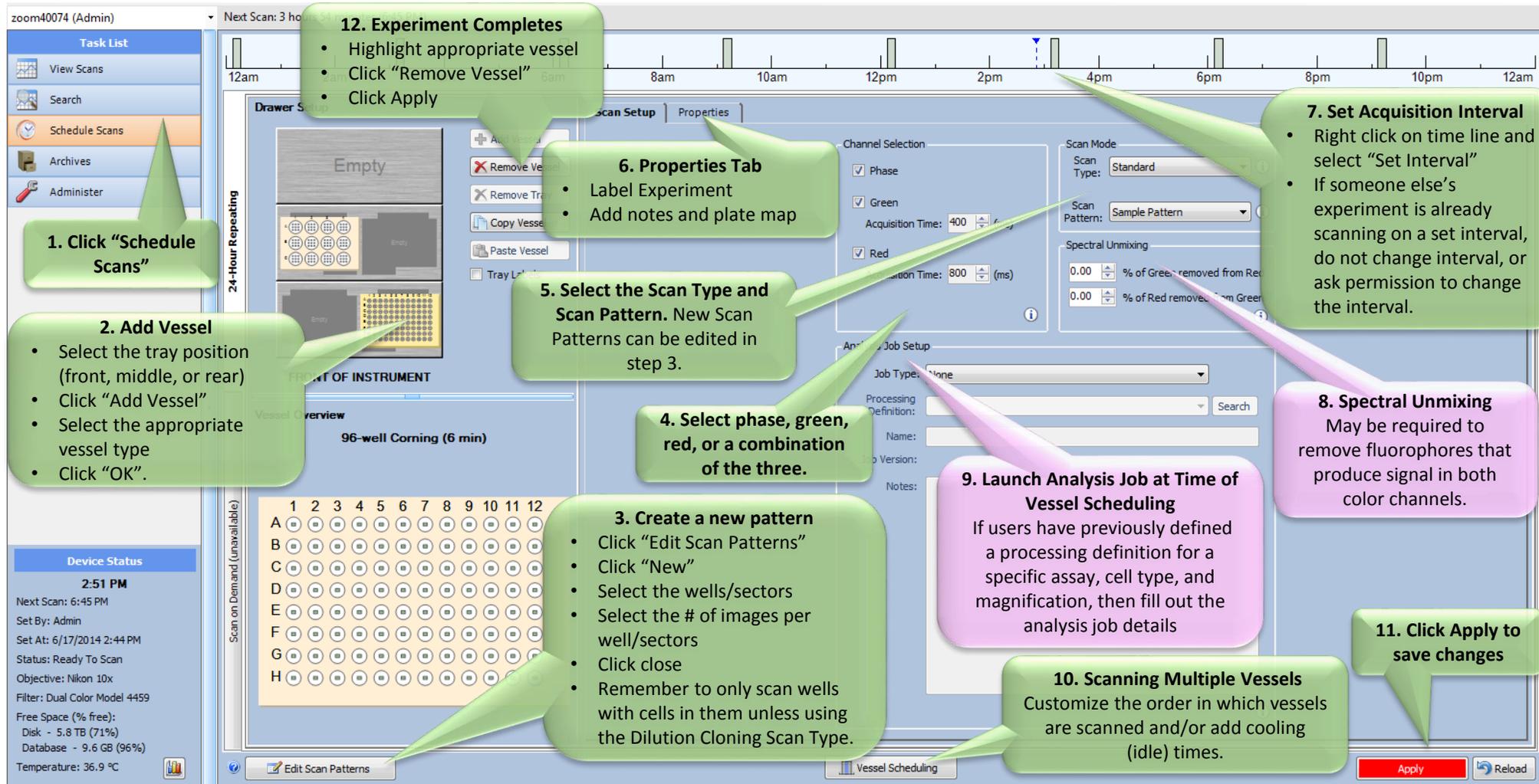
5. When all elements have been added to Plate Map, click Save in the top left corner and click "OK" to close.



Information icons are found throughout the software. Mouse over the  to find useful hints and tips. Consult the User Manual under the Help menu for complete details.

Data Processing Technical Notes are available on our website <http://www.essenbioscience.com/supportdocs/>

This Quick Start Guide was created using GUI version 2014A. Check the GUI version under Help → About menu. Contact sales@essenbio.com to upgrade software.



1. Click "Schedule Scans"

2. Add Vessel

- Select the tray position (front, middle, or rear)
- Click "Add Vessel"
- Select the appropriate vessel type
- Click "OK".

3. Create a new pattern

- Click "Edit Scan Patterns"
- Click "New"
- Select the wells/sectors
- Select the # of images per well/sectors
- Click close
- Remember to only scan wells with cells in them unless using the Dilution Cloning Scan Type.

4. Select phase, green, red, or a combination of the three.

5. Select the Scan Type and Scan Pattern. New Scan Patterns can be edited in step 3.

6. Properties Tab

- Label Experiment
- Add notes and plate map

7. Set Acquisition Interval

- Right click on time line and select "Set Interval"
- If someone else's experiment is already scanning on a set interval, do not change interval, or ask permission to change the interval.

8. Spectral Unmixing

May be required to remove fluorophores that produce signal in both color channels.

9. Launch Analysis Job at Time of Vessel Scheduling

If users have previously defined a processing definition for a specific assay, cell type, and magnification, then fill out the analysis job details

10. Scanning Multiple Vessels

Customize the order in which vessels are scanned and/or add cooling (idle) times.

11. Click Apply to save changes

12. Experiment Completes

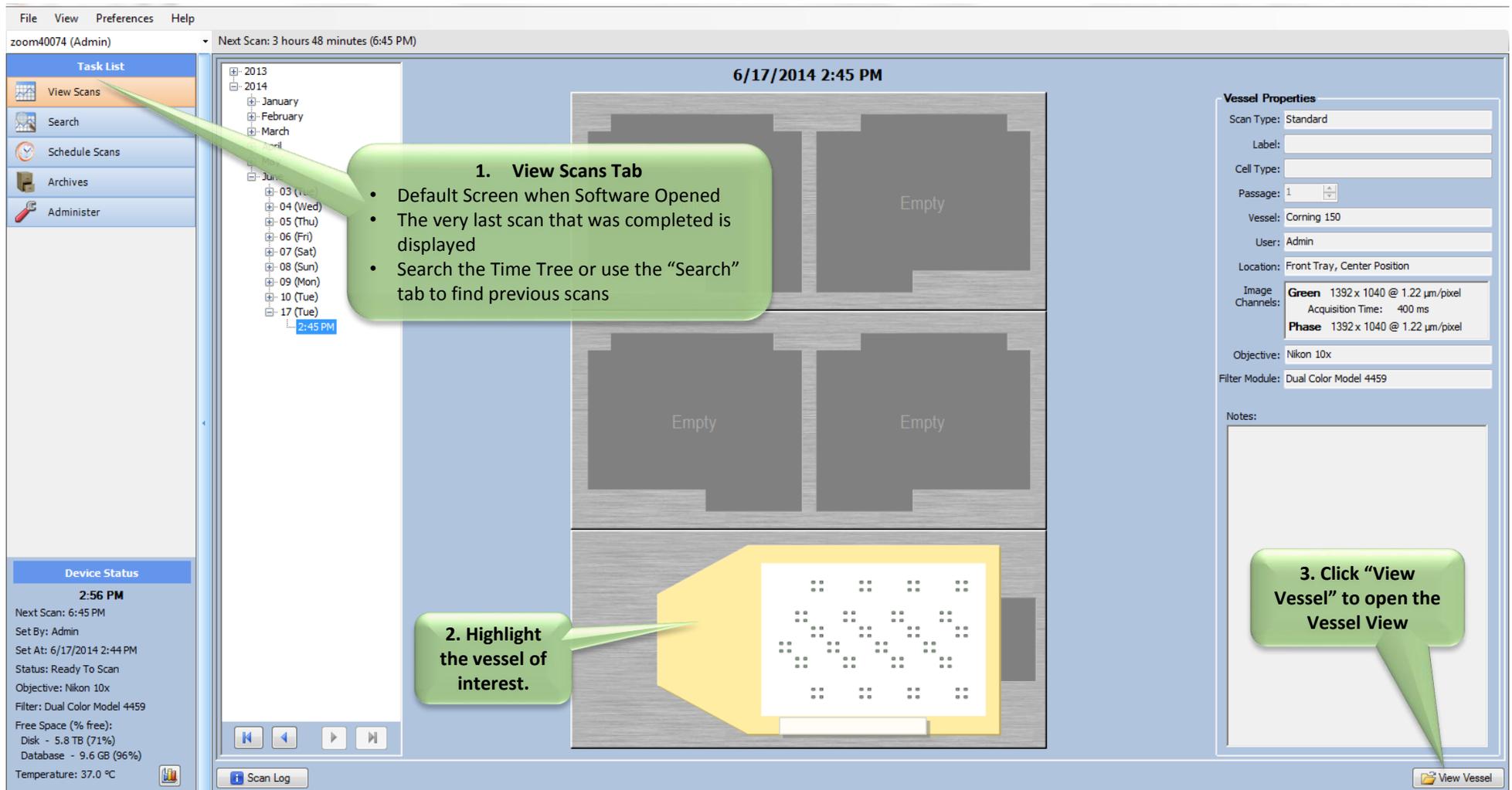
- Highlight appropriate vessel
- Click "Remove Vessel"
- Click Apply



Information icons are found throughout the software. Mouse over the  to find useful hints and tips. Consult the User Manual under the Help menu for complete details.

Data Processing Technical Notes are available on our website <http://www.essenbioscience.com/supportdocs/>

This Quick Start Guide was created using GUI version 2014A. Check the GUI version under Help → About menu. Contact sales@essenbio.com to upgrade software.



The screenshot shows the software interface with the 'View Scans' tab selected. A green callout box points to the 'View Scans' tab in the left sidebar, containing the following text:

1. View Scans Tab

- Default Screen when Software Opened
- The very last scan that was completed is displayed
- Search the Time Tree or use the "Search" tab to find previous scans

Another green callout box points to a highlighted vessel in the scan results grid, containing the text:

2. Highlight the vessel of interest.

A third green callout box points to the 'View Vessel' button at the bottom right of the interface, containing the text:

3. Click "View Vessel" to open the Vessel View

The interface also displays a 'Device Status' panel on the left with the following information:

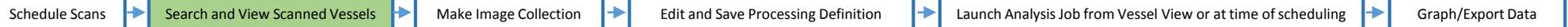
2:56 PM
 Next Scan: 6:45 PM
 Set By: Admin
 Set At: 6/17/2014 2:44 PM
 Status: Ready To Scan
 Objective: Nikon 10x
 Filter: Dual Color Model 4459
 Free Space (% free):
 Disk - 5.8 TB (71%)
 Database - 9.6 GB (96%)
 Temperature: 37.0 °C

The main scan results area shows a grid of vessel images. The top row contains two 'Empty' vessels. The bottom row contains two 'Empty' vessels. A yellow callout box highlights a vessel in the bottom row that contains a pattern of small white dots.

The 'Vessel Properties' panel on the right shows the following details:

Vessel Properties
 Scan Type: Standard
 Label:
 Cell Type:
 Passage: 1
 Vessel: Corning 150
 User: Admin
 Location: Front Tray, Center Position
 Image Channels: **Green** 1392 x 1040 @ 1.22 µm/pixel
 Acquisition Time: 400 ms
Phase 1392 x 1040 @ 1.22 µm/pixel
 Objective: Nikon 10x
 Filter Module: Dual Color Model 4459

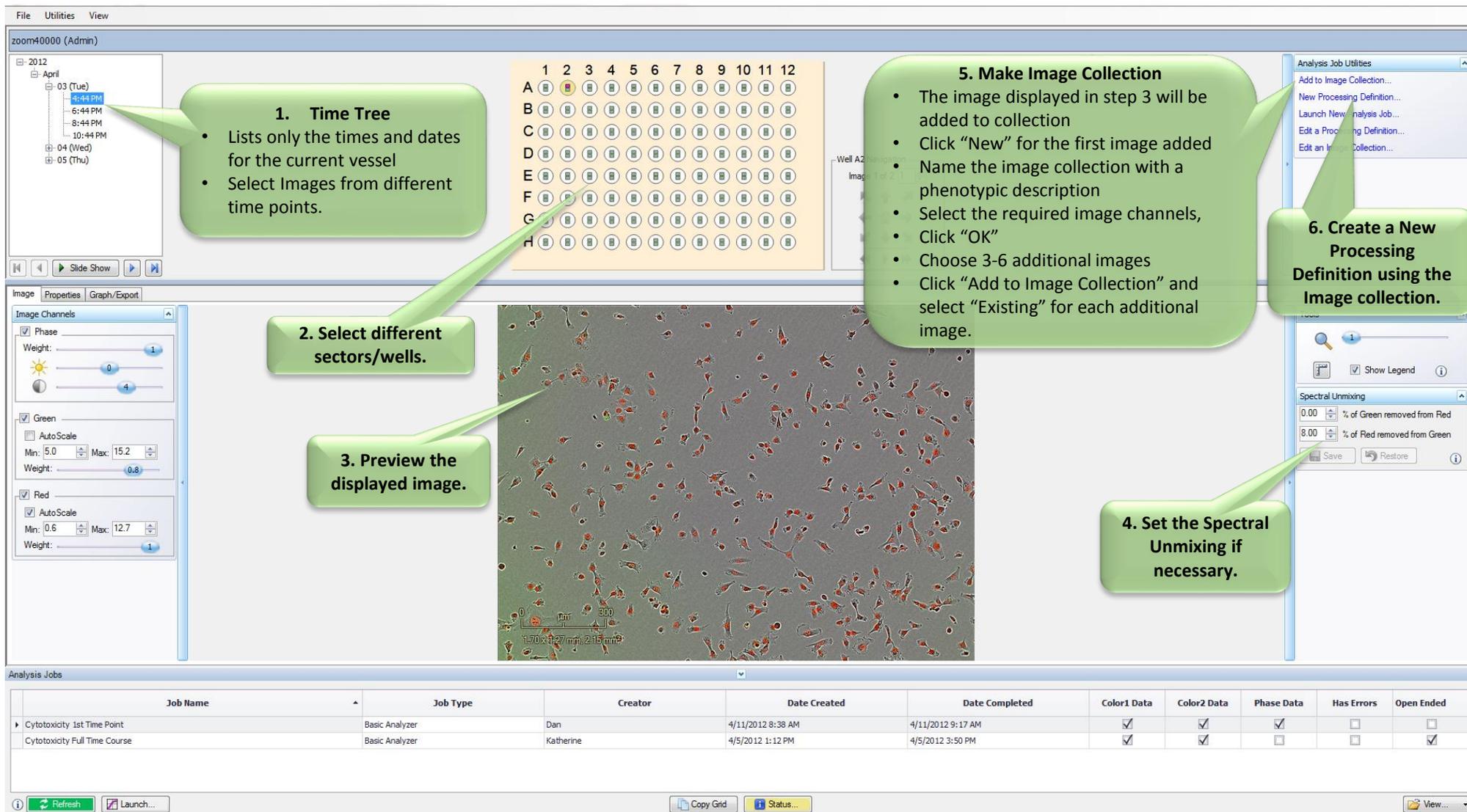
Notes:



Information icons are found throughout the software. Mouse over the  to find useful hints and tips. Consult the User Manual under the Help menu for complete details.

Data Processing Technical Notes are available on our website <http://www.essenbioscience.com/supportdocs/>

This Quick Start Guide was created using GUI version 2014A. Check the GUI version under Help → About menu. Contact sales@essenbio.com to upgrade software.



1. Time Tree

- Lists only the times and dates for the current vessel
- Select Images from different time points.

2. Select different sectors/wells.

3. Preview the displayed image.

4. Set the Spectral Unmixing if necessary.

5. Make Image Collection

- The image displayed in step 3 will be added to collection
- Click "New" for the first image added
- Name the image collection with a phenotypic description
- Select the required image channels,
- Click "OK"
- Choose 3-6 additional images
- Click "Add to Image Collection" and select "Existing" for each additional image.

6. Create a New Processing Definition using the Image collection.

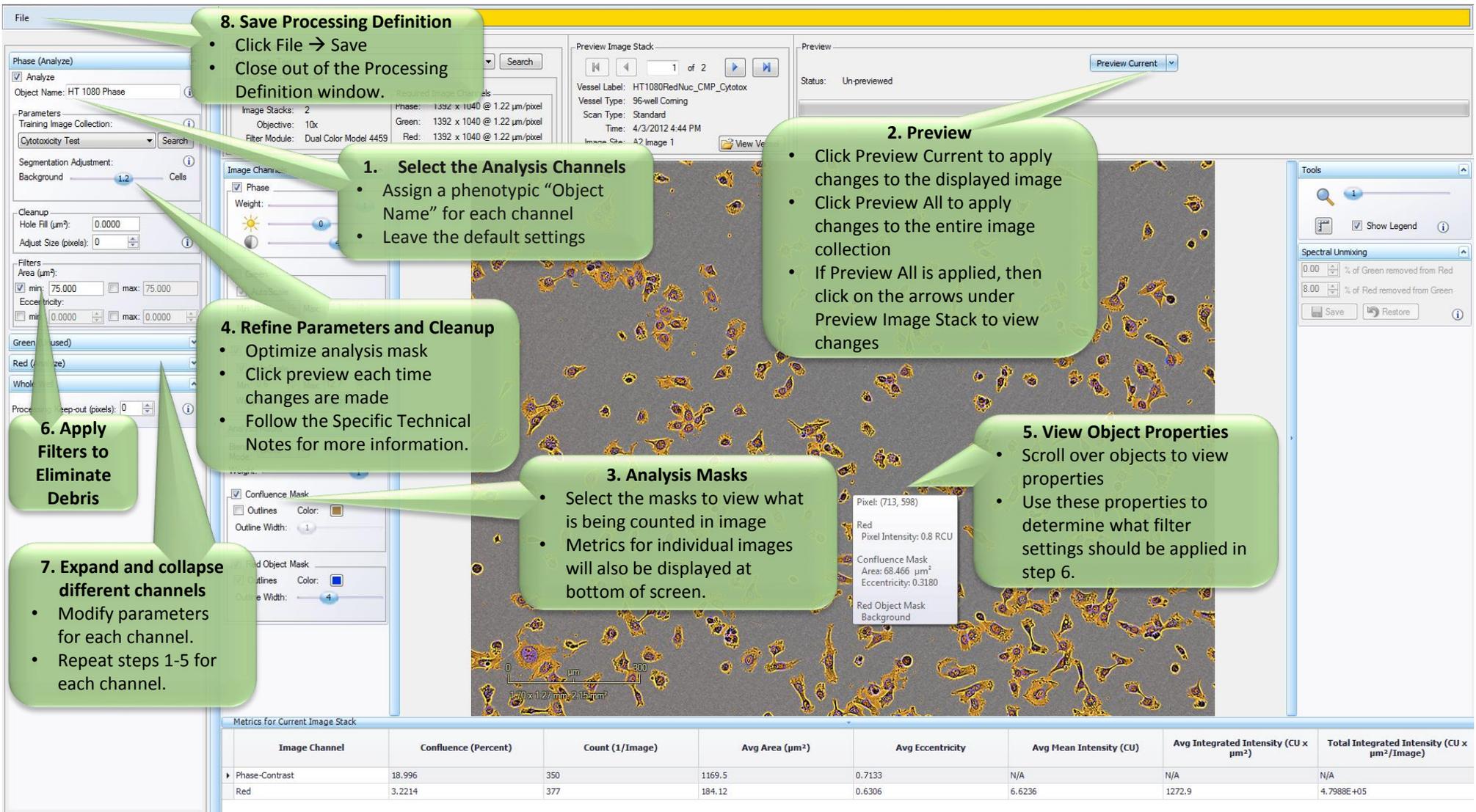
Job Name	Job Type	Creator	Date Created	Date Completed	Color1 Data	Color2 Data	Phase Data	Has Errors	Open Ended
Cytotoxicity 1st Time Point	Basic Analyzer	Dan	4/11/2012 8:38 AM	4/11/2012 9:17 AM	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cytotoxicity Full Time Course	Basic Analyzer	Katherine	4/5/2012 1:12 PM	4/5/2012 3:50 PM	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Schedule Scans → Search and View Scanned Vessels → **Make Image Collection** → Edit and Save Processing Definition → Launch Analysis Job from Vessel View or at time of scheduling → Graph/Export Data

Information icons are found throughout the software. Mouse over the  to find useful hints and tips. Consult the User Manual under the Help menu for complete details.

Data Processing Technical Notes are available on our website <http://www.essenbioscience.com/supportdocs/>

This Quick Start Guide was created using GUI version 2014A. Check the GUI version under Help → About menu. Contact sales@essenbio.com to upgrade software.



8. Save Processing Definition

- Click File → Save
- Close out of the Processing Definition window.

1. Select the Analysis Channels

- Assign a phenotypic “Object Name” for each channel
- Leave the default settings

2. Preview

- Click Preview Current to apply changes to the displayed image
- Click Preview All to apply changes to the entire image collection
- If Preview All is applied, then click on the arrows under Preview Image Stack to view changes

3. Analysis Masks

- Select the masks to view what is being counted in image
- Metrics for individual images will also be displayed at bottom of screen.

4. Refine Parameters and Cleanup

- Optimize analysis mask
- Click preview each time changes are made
- Follow the Specific Technical Notes for more information.

5. View Object Properties

- Scroll over objects to view properties
- Use these properties to determine what filter settings should be applied in step 6.

6. Apply Filters to Eliminate Debris

7. Expand and collapse different channels

- Modify parameters for each channel.
- Repeat steps 1-5 for each channel.

Metrics for Current Image Stack

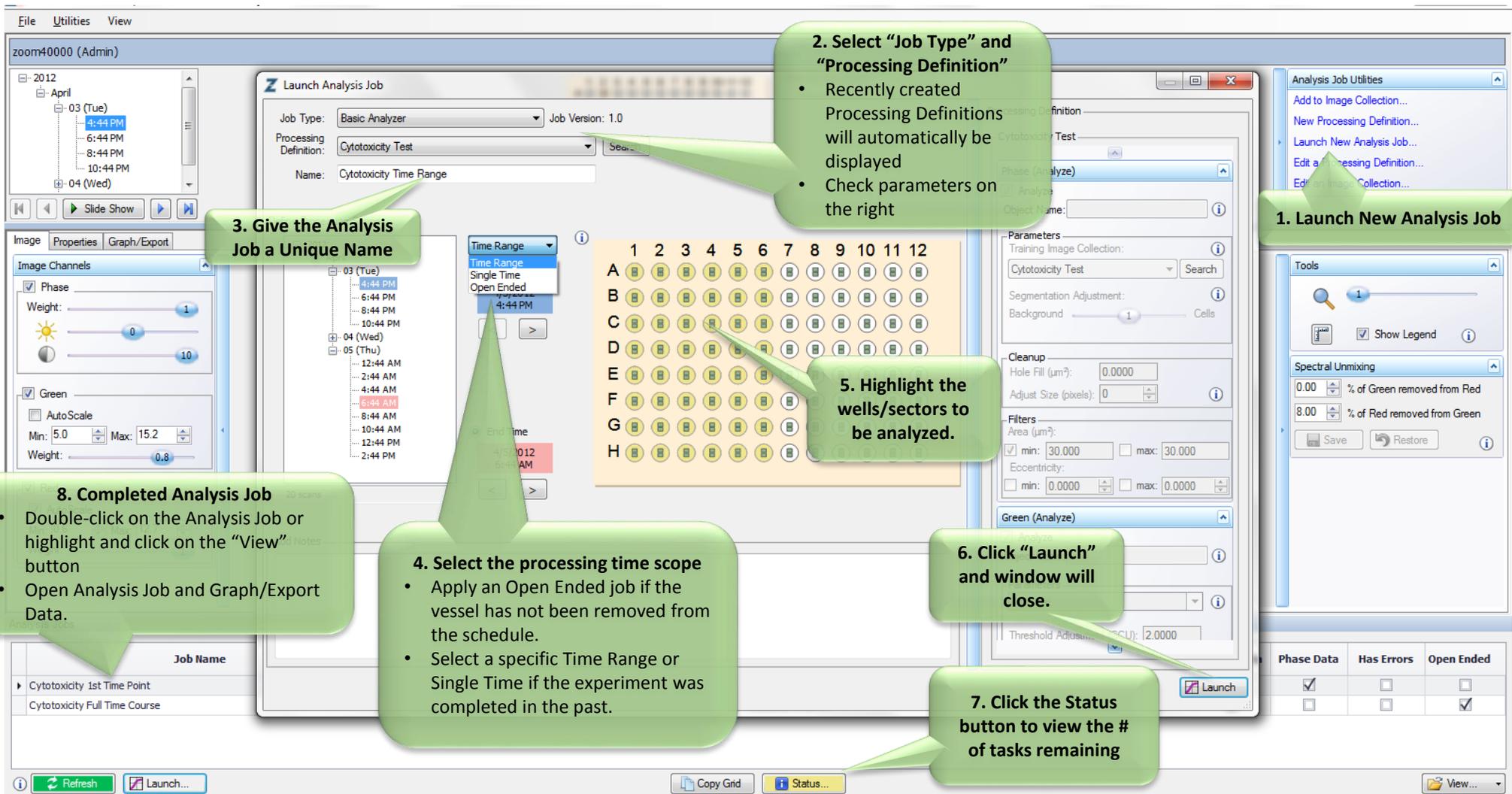
Image Channel	Confluence (Percent)	Count (1/Image)	Avg Area (µm ²)	Avg Eccentricity	Avg Mean Intensity (CU)	Avg Integrated Intensity (CU x µm ²)	Total Integrated Intensity (CU x µm ² /Image)
Phase-Contrast	18.996	350	1169.5	0.7133	N/A	N/A	N/A
Red	3.2214	377	184.12	0.6306	6.6236	1272.9	4.7988E+05



Information icons are found throughout the software. Mouse over the  to find useful hints and tips. Consult the User Manual under the Help menu for complete details.

Data Processing Technical Notes are available on our website <http://www.essenbioscience.com/supportdocs/>

This Quick Start Guide was created using GUI version 2014A. Check the GUI version under Help → About menu. Contact sales@essenbio.com to upgrade software.



1. Launch New Analysis Job

2. Select "Job Type" and "Processing Definition"

- Recently created Processing Definitions will automatically be displayed
- Check parameters on the right

3. Give the Analysis Job a Unique Name

4. Select the processing time scope

- Apply an Open Ended job if the vessel has not been removed from the schedule.
- Select a specific Time Range or Single Time if the experiment was completed in the past.

5. Highlight the wells/sectors to be analyzed.

6. Click "Launch" and window will close.

7. Click the Status button to view the # of tasks remaining

8. Completed Analysis Job

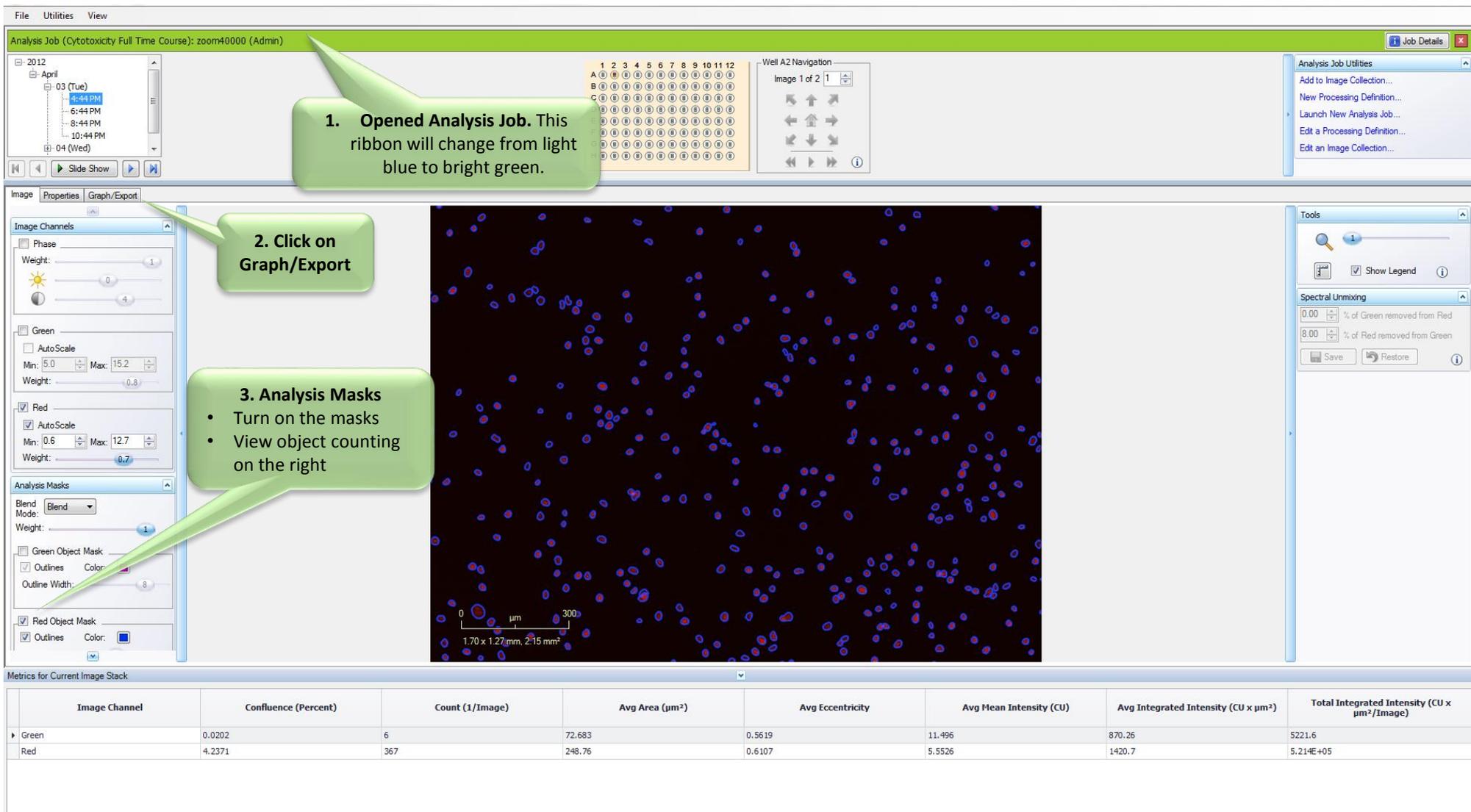
- Double-click on the Analysis Job or highlight and click on the "View" button
- Open Analysis Job and Graph/Export Data.



Information icons are found throughout the software. Mouse over the  to find useful hints and tips. Consult the User Manual under the Help menu for complete details.

Data Processing Technical Notes are available on our website <http://www.essenbioscience.com/supportdocs/>

This Quick Start Guide was created using GUI version 2014A. Check the GUI version under Help → About menu. Contact sales@essenbio.com to upgrade software.



1. Opened Analysis Job. This ribbon will change from light blue to bright green.

2. Click on Graph/Export

3. Analysis Masks

- Turn on the masks
- View object counting on the right

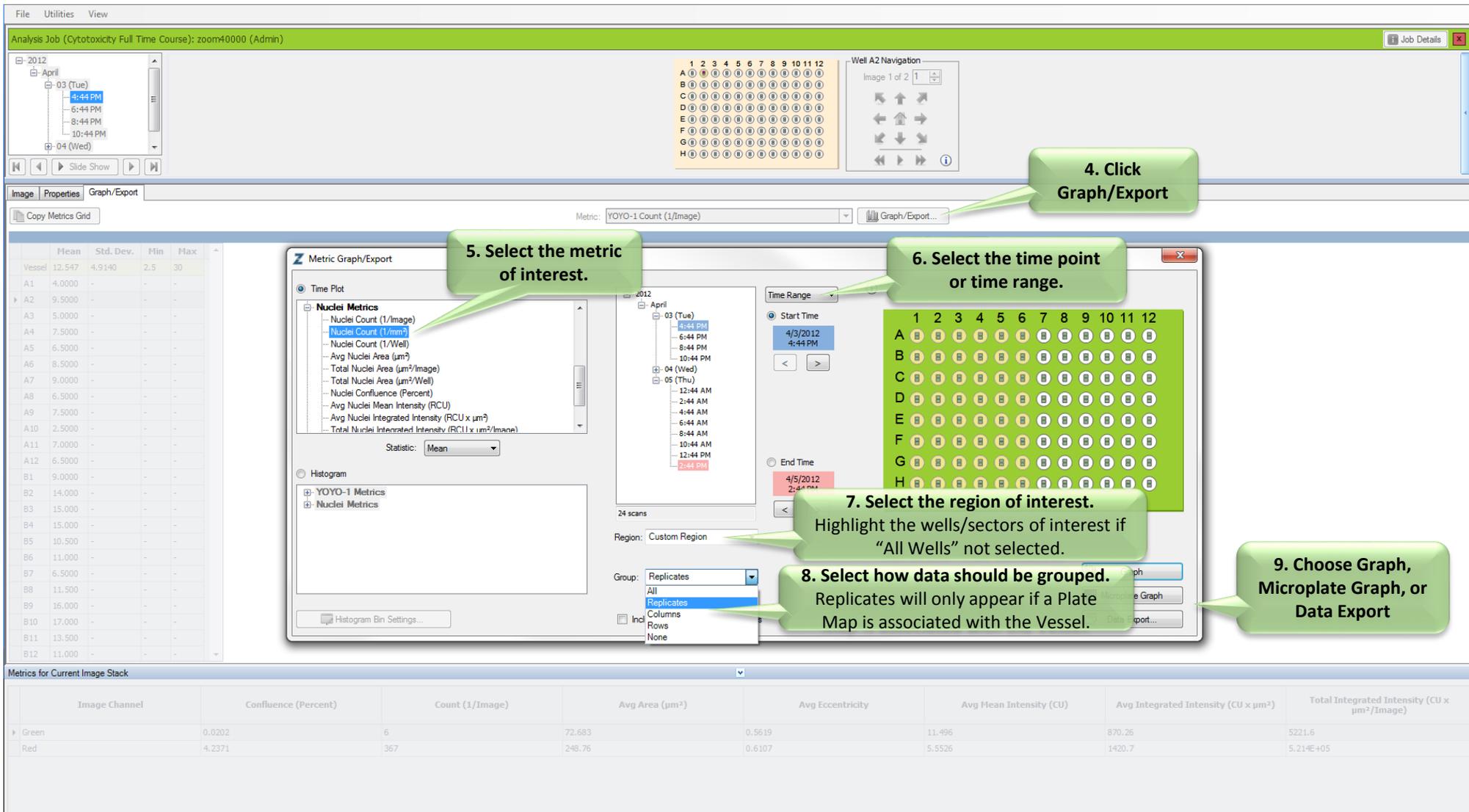
Image Channel	Confluence (Percent)	Count (1/Image)	Avg Area (μm^2)	Avg Eccentricity	Avg Mean Intensity (CU)	Avg Integrated Intensity (CU x μm^2)	Total Integrated Intensity (CU x μm^2 /Image)
Green	0.0202	6	72.683	0.5619	11.496	870.26	5221.6
Red	4.2371	367	248.76	0.6107	5.5526	1420.7	5.214E+05



Information icons are found throughout the software. Mouse over the  to find useful hints and tips. Consult the User Manual under the Help menu for complete details.

Data Processing Technical Notes are available on our website <http://www.essenbioscience.com/supportdocs/>

This Quick Start Guide was created using GUI version 2014A. Check the GUI version under Help → About menu. Contact sales@essenbio.com to upgrade software.



4. Click Graph/Export

5. Select the metric of interest.

6. Select the time point or time range.

7. Select the region of interest.
Highlight the wells/sectors of interest if "All Wells" not selected.

8. Select how data should be grouped.
Replicates will only appear if a Plate Map is associated with the Vessel.

9. Choose Graph, Microplate Graph, or Data Export

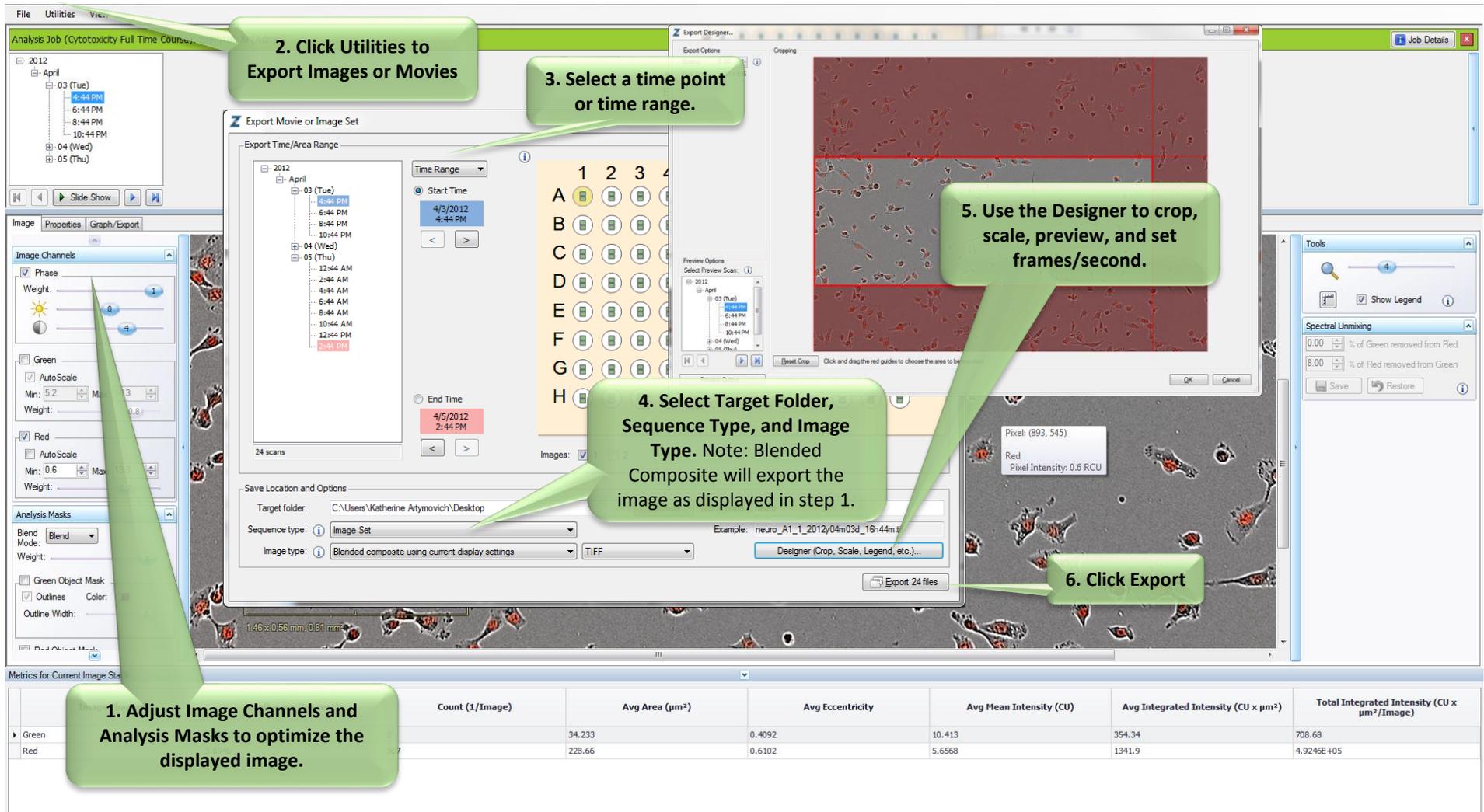
Image Channel	Confluence (Percent)	Count (1/Image)	Avg Area (µm²)	Avg Eccentricity	Avg Mean Intensity (CU)	Avg Integrated Intensity (CU x µm²)	Total Integrated Intensity (CU x µm²/Image)
Green	0.0202	6	72.683	0.5619	11.496	870.26	5221.6
Red	4.2371	367	248.76	0.6107	5.5526	1420.7	5.214E+05



Information icons are found throughout the software. Mouse over the  to find useful hints and tips. Consult the User Manual under the Help menu for complete details.

Data Processing Technical Notes are available on our website <http://www.essenbioscience.com/supportdocs/>

This Quick Start Guide was created using GUI version 2014A. Check the GUI version under Help → About menu. Contact sales@essenbio.com to upgrade software.



1. Adjust Image Channels and Analysis Masks to optimize the displayed image.

2. Click Utilities to Export Images or Movies

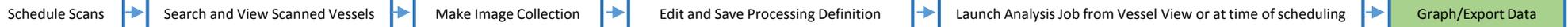
3. Select a time point or time range.

4. Select Target Folder, Sequence Type, and Image Type. Note: Blended Composite will export the image as displayed in step 1.

5. Use the Designer to crop, scale, preview, and set frames/second.

6. Click Export

	Count (1/Image)	Avg Area (μm^2)	Avg Eccentricity	Avg Mean Intensity (CU)	Avg Integrated Intensity (CU x μm^2)	Total Integrated Intensity (CU x μm^2 /Image)
Green		34.233	0.4092	10.413	354.34	708.68
Red		228.66	0.6102	5.6568	1341.9	4.9246E+05

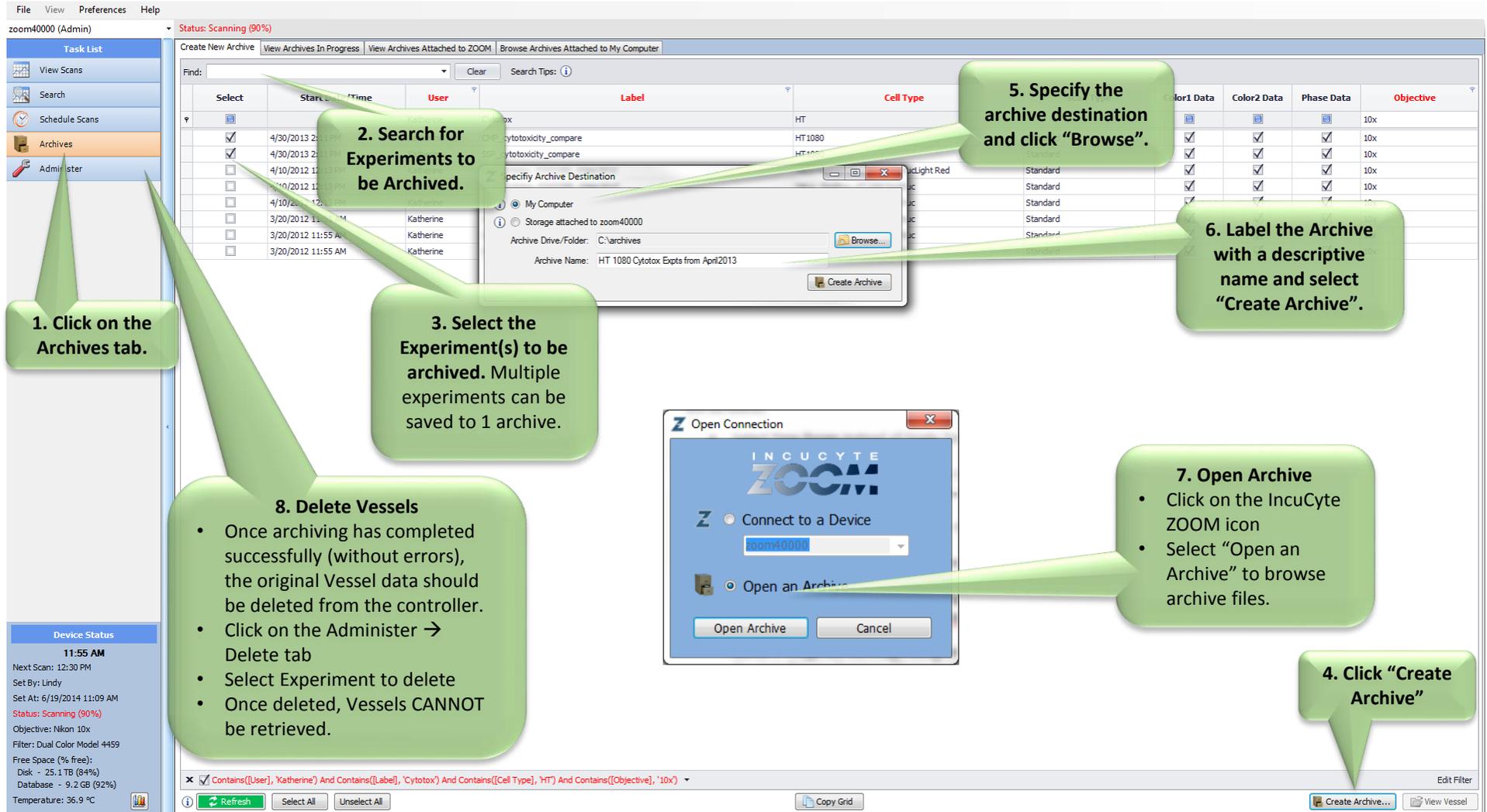


Information icons are found throughout the software. Mouse over the **i** to find useful hints and tips. Consult the User Manual under the Help menu for complete details.

Data Processing Technical Notes are available on our website <http://www.essenbioscience.com/supportdocs/>

This Quick Start Guide was created using GUI version 2014A. Check the GUI version under Help → About menu. Contact sales@essenbio.com to upgrade software.

Make sure all Image Collections, Processing Definitions, and Analysis Jobs associated with Vessel are completed before Archiving/Deleting.



1. Click on the Archives tab.

2. Search for Experiments to be Archived.

3. Select the Experiment(s) to be archived. Multiple experiments can be saved to 1 archive.

4. Click "Create Archive"

5. Specify the archive destination and click "Browse".

6. Label the Archive with a descriptive name and select "Create Archive".

7. Open Archive

- Click on the IncuCyte ZOOM icon
- Select "Open an Archive" to browse archive files.

8. Delete Vessels

- Once archiving has completed successfully (without errors), the original Vessel data should be deleted from the controller.
- Click on the Administrator → Delete tab
- Select Experiment to delete
- Once deleted, Vessels CANNOT be retrieved.

What can be done with an Archive?



Information icons are found throughout the software. Mouse over the  to find useful hints and tips. Consult the User Manual under the Help menu for complete details.

Data Processing Technical Notes are available on our website <http://www.essenbioscience.com/supportdocs/>

This Quick Start Guide was created using GUI version 2014A. Check the GUI version under Help → About menu. Contact sales@essenbio.com to upgrade software.