



Axioscan 7 | Slide Scanner

Quick Start

Carl Zeiss
Research Microscopy Solutions

Axioscan 7

Before Scanning



使用須知

- 掃片機因為掃描範圍廣大，通常檔案容量為數十到數百GB，不建議將原始檔案(.czi)輸出成tif, jpg等格式。且轉檔耗時，Power point, Word, PDF等報告格式也無法呈現圖片所有細節。可善用截圖或Crop功能，擷取縮圖概覽以及重點區域圖像，同時保存.czi原始檔案即可。免費版ZEN lite可隨時讓您檢視珍貴的實驗圖檔。
- 只接受標準1mm厚度載玻片，務必再蓋上0.17mm蓋玻片，封片完整，保持玻片清潔，移除多餘殘膠。
- 儘量使用同一個scan profile(掃片設定)掃描雷同的樣品，可減少設定拍攝的複雜度。
- Axioscan 7自動化顯微鏡的拍攝精確度無法媲美手動顯微鏡一張一張的調整拍攝，使用時應以“自動化”、“多玻片”、“節省時間”為使用前提，盡量減少設定機器的時間，把時間留在更多美好的事物上~。

Startup

Startup

Boot Sequence

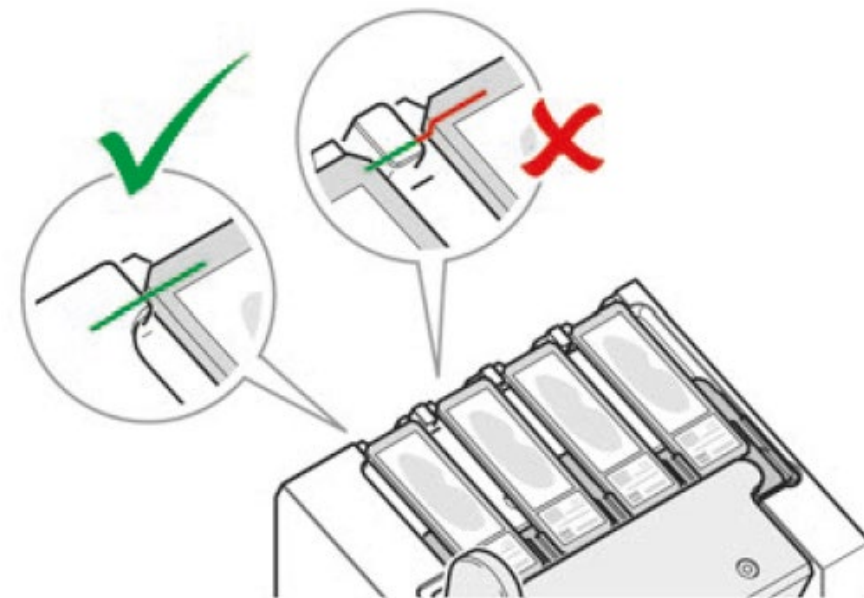
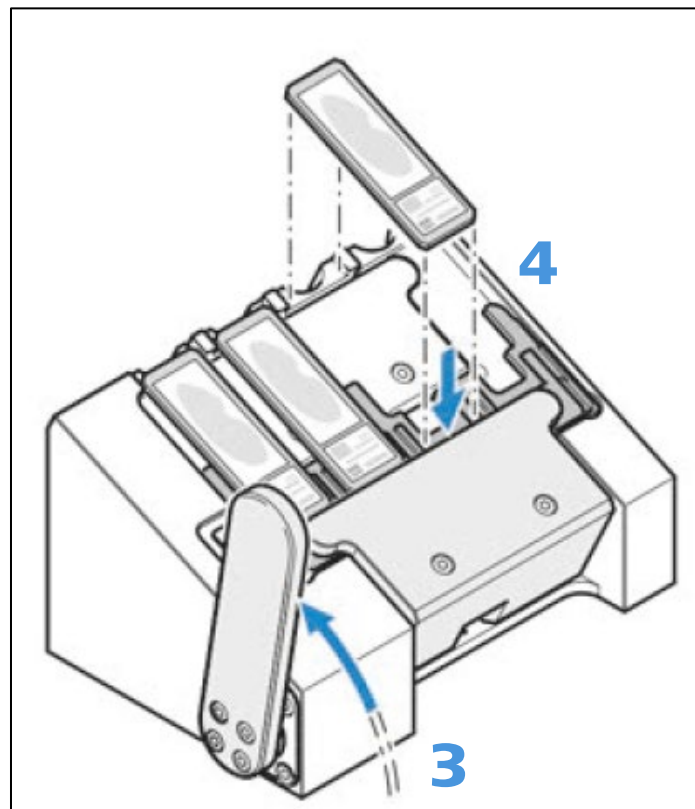
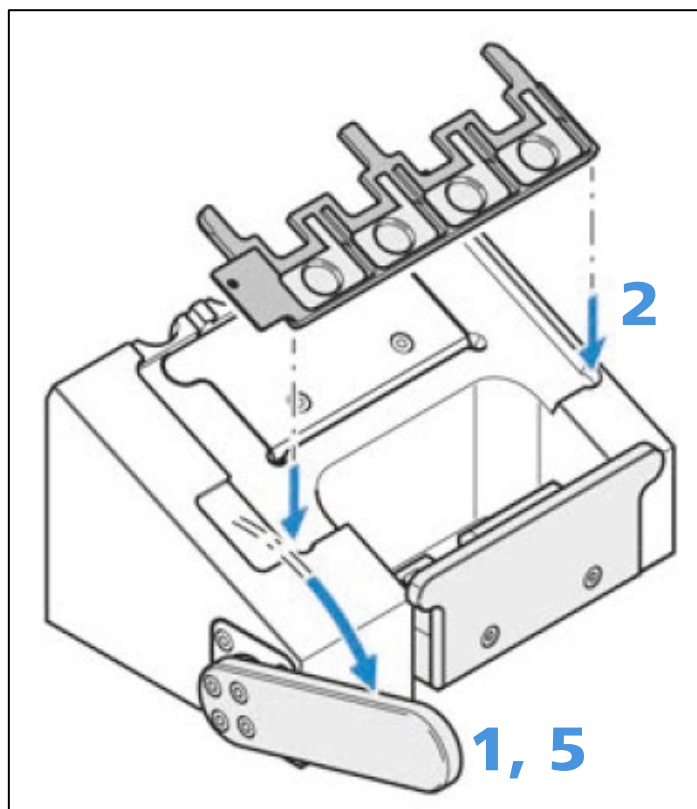


- “1” 延長線開關 (位於右下桌腳)
- “2” Axioscan 7
- “3” 電腦電源



Startup

Prepare Your Slides



*放置玻片時注意玻片需與載具齊平，
玻片勿翹曲

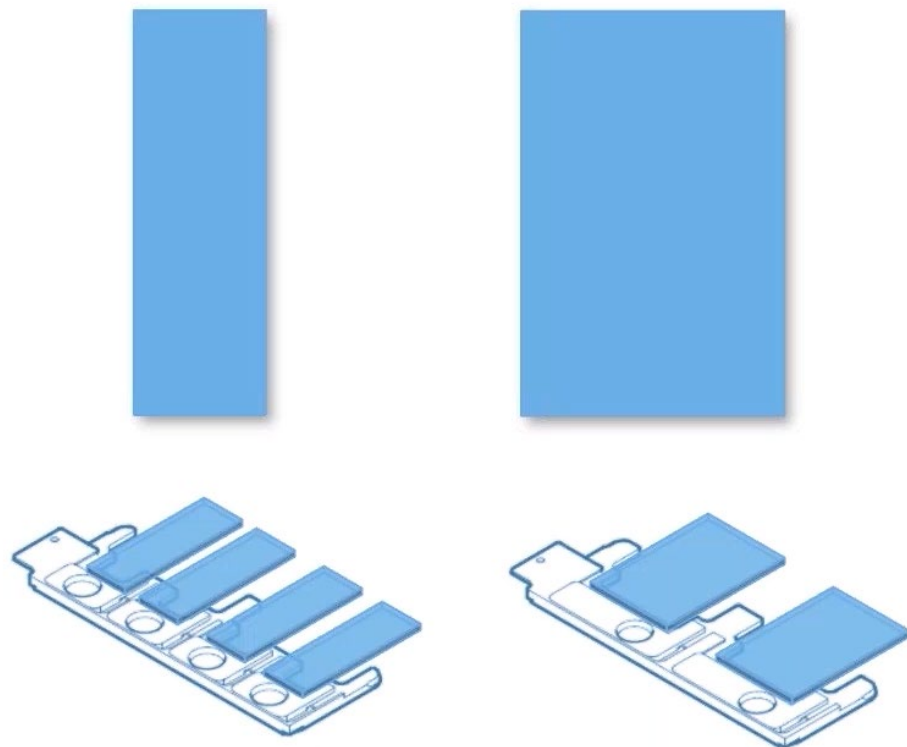
1. 解開板手

2. 放好玻片夾“Frame”

3. 上推板手

4. 放好玻片，蓋玻片朝上，玻片標籤在下方

5. 解開板手，取出玻片夾“Frame”



適用玻片規格:

標準玻片

寬: 24.0 ~ 26.3 mm

長: 73.5 ~ 76.5 mm

厚: 0.8 ~ 1.3 mm

務必使用蓋玻片

最大長*寬: 50 * 22 mm

厚: 0.16 ~ 0.19 mm (No.1.5)

*推薦使用0.17 +/- 0.005 mm

寬玻片

寬: 50.0 ~ 52.0 mm

長: 73.5 ~ 76.5 mm

厚: 0.8 ~ 1.3 mm

務必使用蓋玻片

最大長*寬: 50 * 48 mm

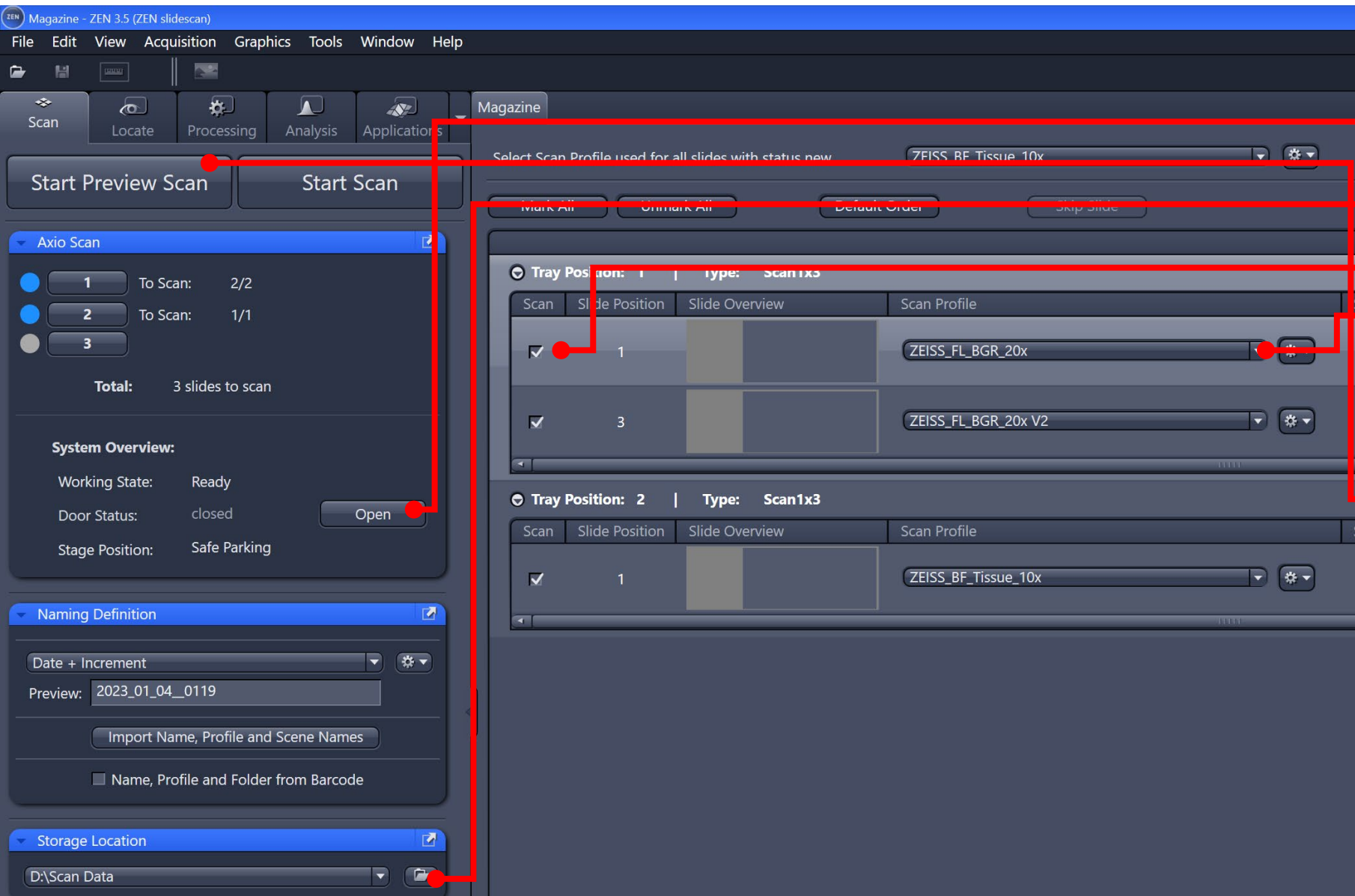
厚: 0.16 ~ 0.19 mm (No.1.5)

*推薦使用0.17 +/- 0.005 mm

Brightfield Scanning

Brightfield Scanning

Insert Slides & Select Profile



- 按“ Open” 打開艙門，放入已經夾好玻片的Tray
- 設定存檔位置
- 勾選要掃描的玻片
- 依需要的倍率選擇scan profile (掃片設定檔) ZEISS_BF_Tissue_10x或 ZEISS_BF_Tissue_20x
- 按“ Start Preview Scan” 建立玻片預覽圖以及掃片區域

Brightfield Scanning

Tissue Detection



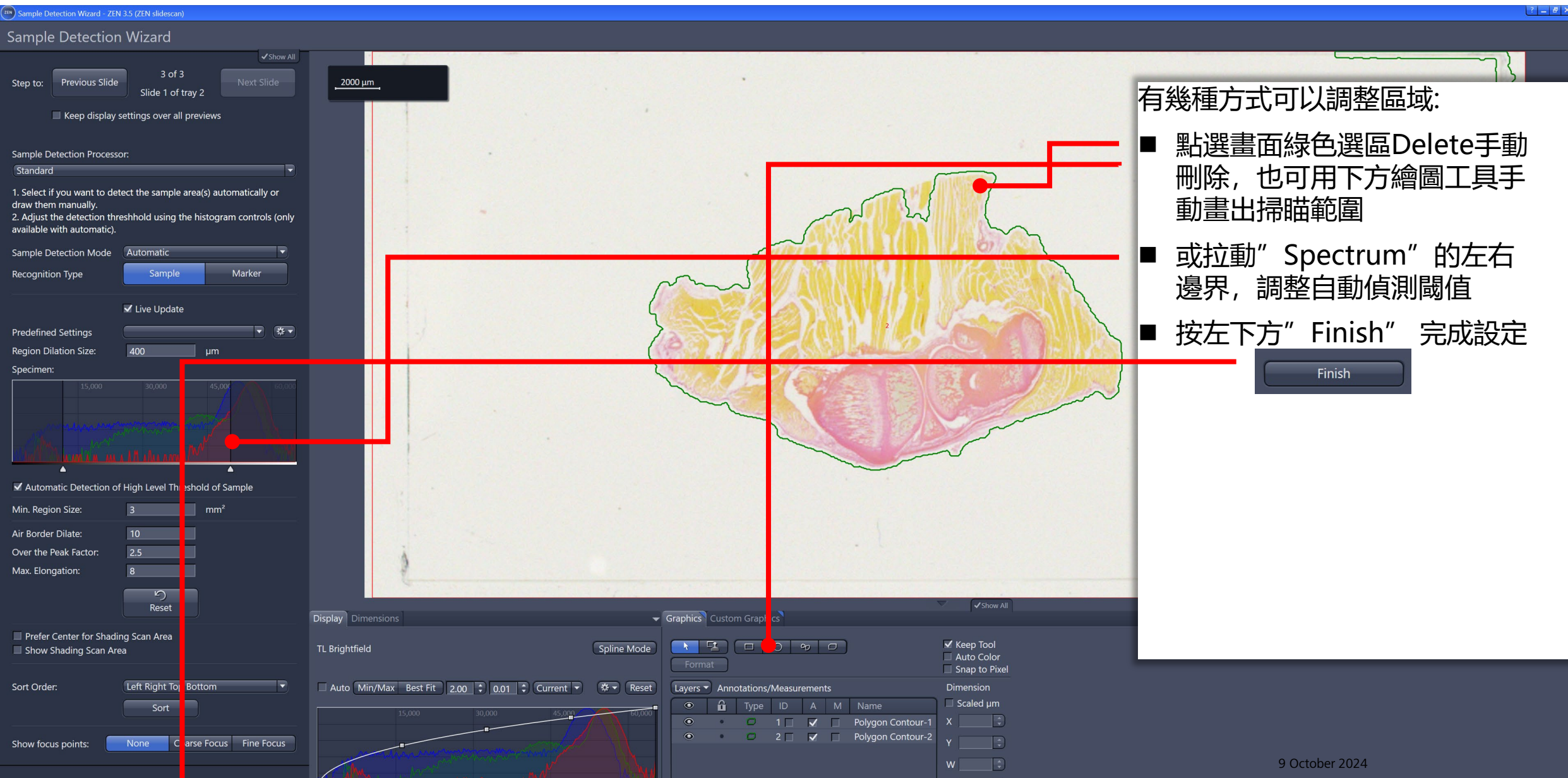
The screenshot shows the Zeiss software interface for Brightfield Scanning. The main window displays a list of scan profiles for two tray positions. The first tray position (Tray Position: 1) contains two scan profiles: ZEISS_FL_BGR_20x and ZEISS_FL_BGR_20x V2. The second tray position (Tray Position: 2) contains one scan profile: ZEISS_BF_Tissue_10x. A red line highlights the gear icon next to the ZEISS_BF_Tissue_10x profile, which has opened a context menu with three options: "Adapt selected profile for scan of this slide ...", "Check and correct sample detection results ...", and "Show profile content as xml (view only)".

Tray Position	Type	Scan	Slide Position	Slide Overview	Scan Profile	Scan Status	Time
1	Scan1x3	✓	1		ZEISS_FL_BGR_20x	00m 14s	Preview Done 14m 53s
		✓	3		ZEISS_FL_BGR_20x V2	00m 02s	Preview Done 14m 53s
2	Scan1x3	✓	1		ZEISS_BF_Tissue_10x	00m 20s	Preview Done 26m 57s

如果不滿意電腦自動偵測的掃片區域，或想手動變更掃描區域

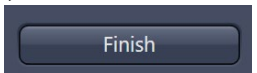
- 點選“齒輪”
- “Check and correct sample detection results”

Brightfield Scanning Tissue Detection



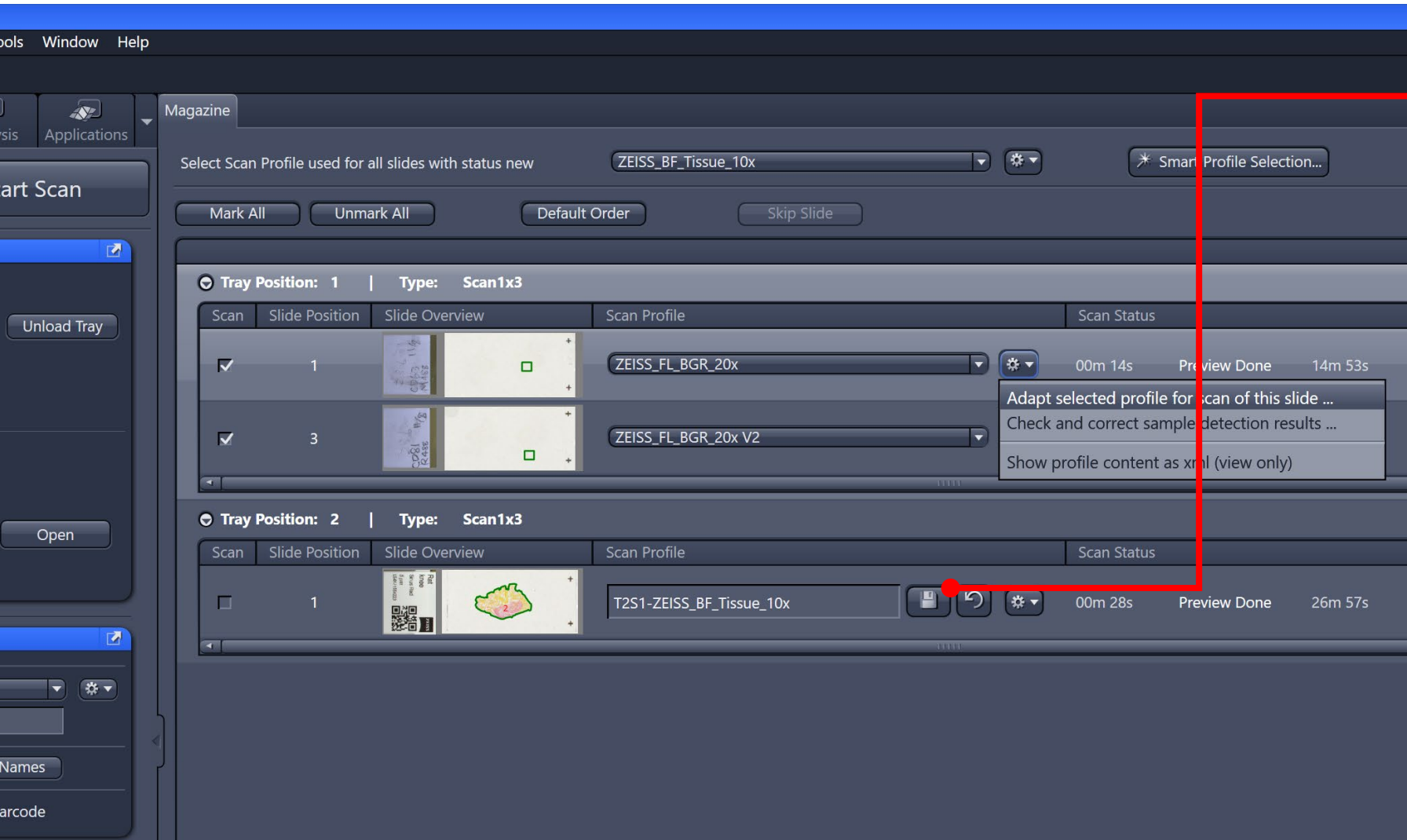
有幾種方式可以調整區域:

- 點選畫面綠色選區Delete手動刪除, 也可用下方繪圖工具手動畫出掃描範圍
- 或拉動" Spectrum" 的左右邊界, 調整自動偵測閾值
- 按左下方" Finish" 完成設定



Brightfield Scanning

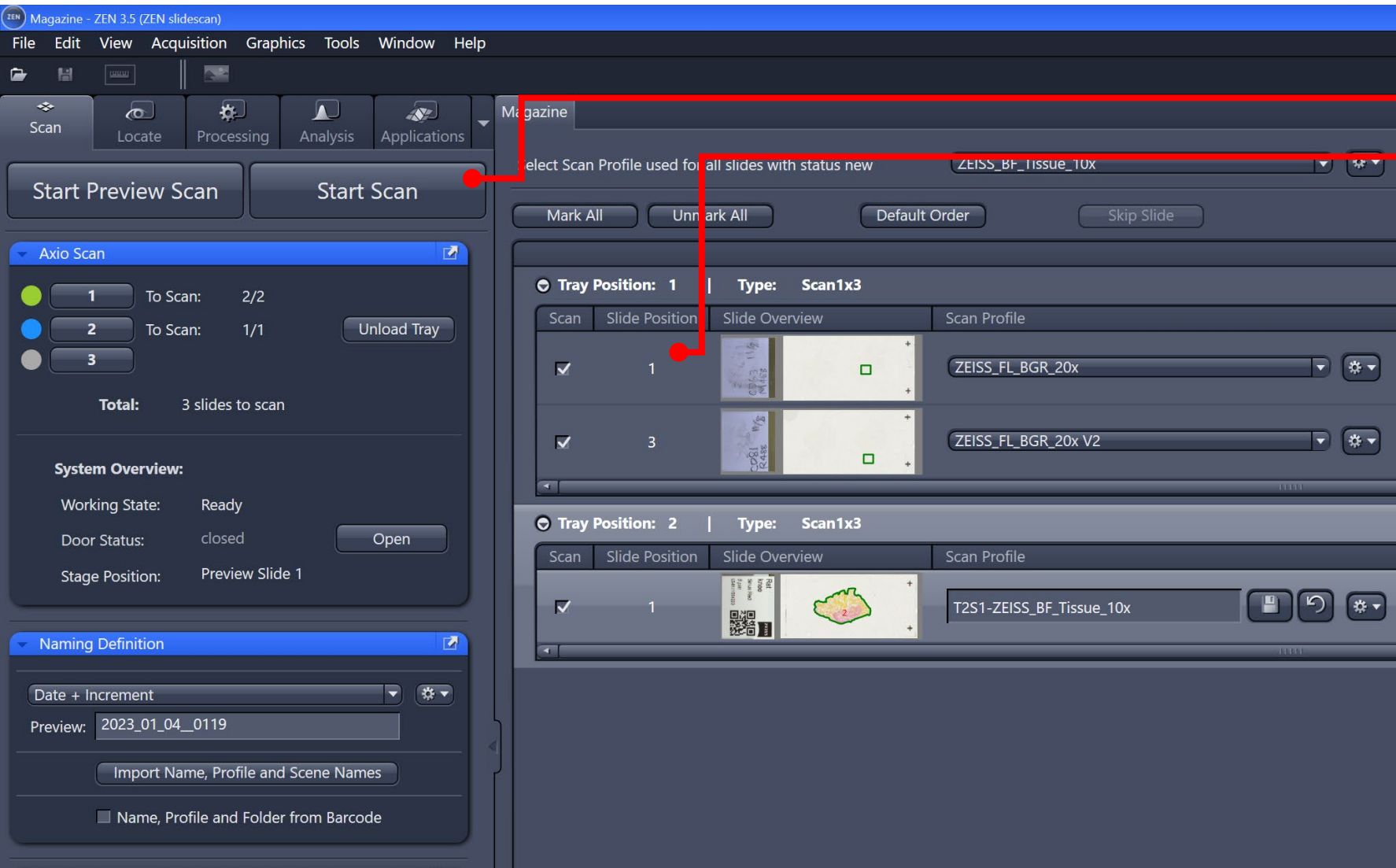
Save Your Scan Profile



- 若想保存此次的Scan profile 設定，點選“儲存”即可

Brightfield Scanning

Start Scanning



- 按“ Start Scan” 即可開始掃圖
- 掃圖完成後點選編號即可檢視完整圖像

Fluorescence Scanning

Fluorescence Scanning

Before Scanning

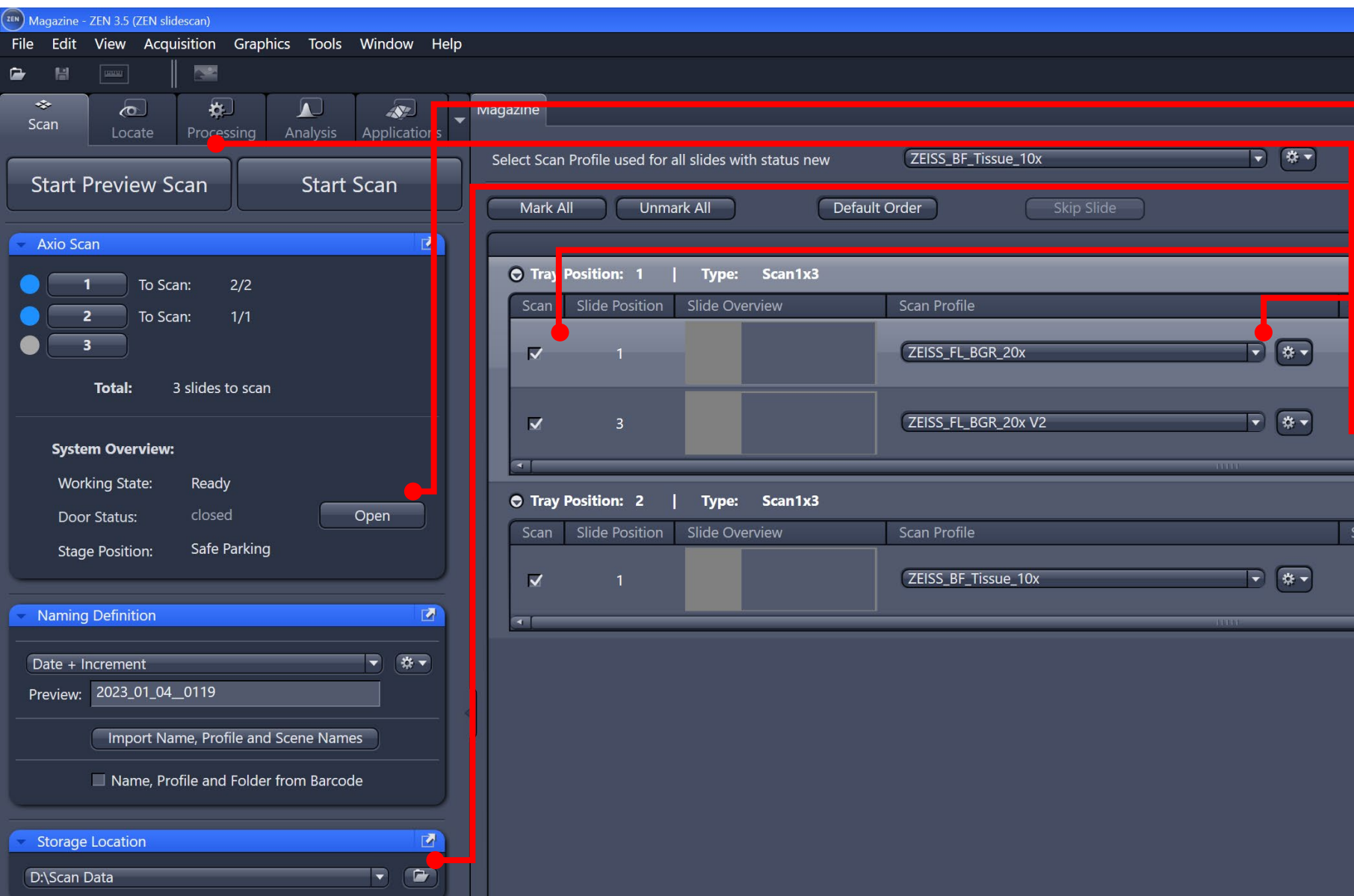


使用須知

- 多數螢光玻片為透明樣本，掃片機不易辨識掃圖區域，可事先用麥克筆在玻片上圈出掃圖區域，可更快幫助掃片機辨識樣品。
- 只接受標準1mm厚度載玻片，務必再蓋上0.17mm蓋玻片，封片完整，保持玻片清潔，移除多餘殘膠。
- 螢光掃描比穿透光花費更多時間，可先設定一小塊掃描區域測試掃描效果。
- Axioscan 7 自動化顯微鏡的拍攝精確度無法媲美手動顯微鏡一張一張調整拍攝，使用時應以“ 自動化”、“ 多玻片”、“ 節省時間” 為使用前提，盡量減少設定機器的時間，把時間留在更美好的事物上~

Fluorescence Scanning

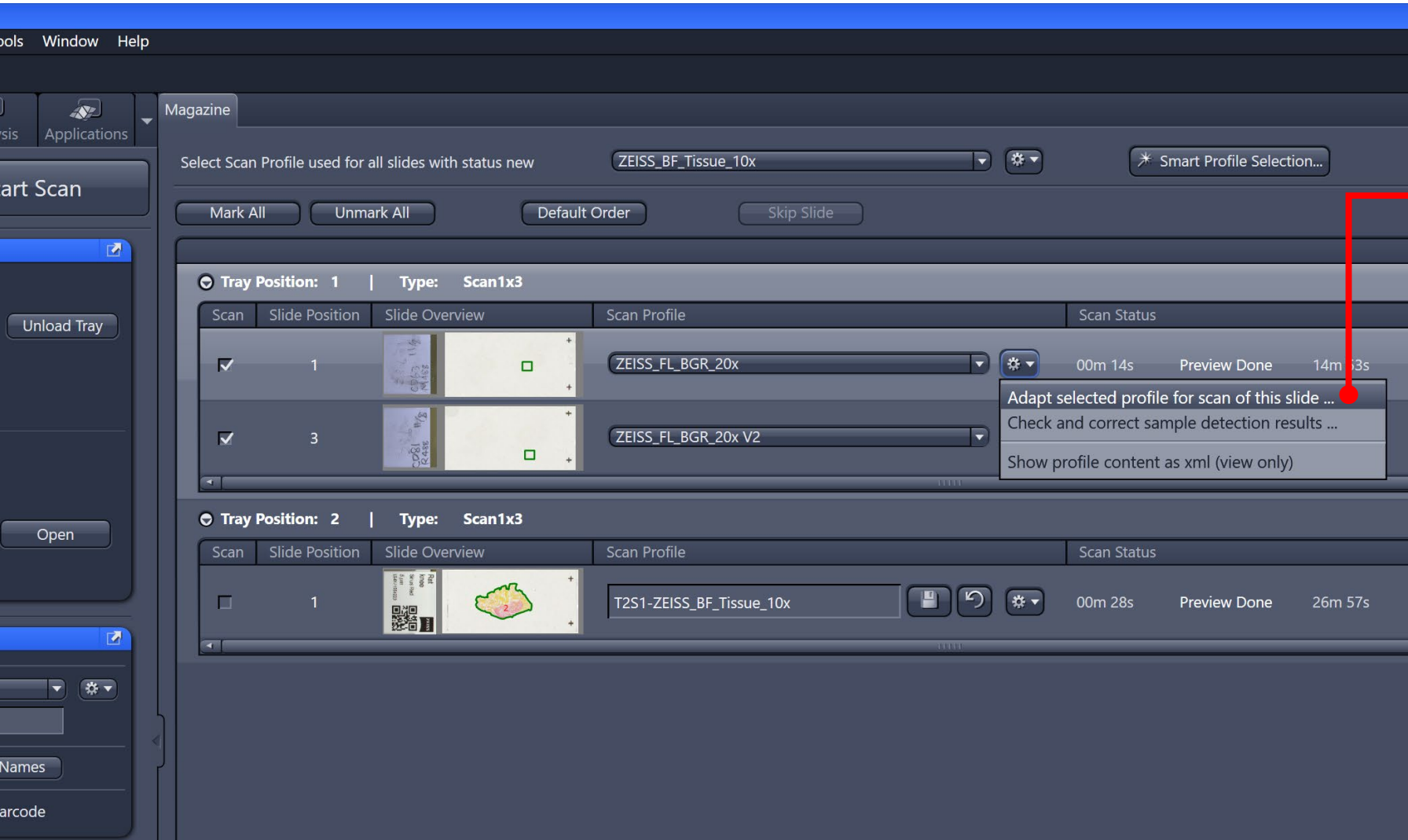
Insert Slides & Select Profile



- 按" Open" 打開艙門, 放入已經夾好玻片的Tray
- 設定存檔位置
- 勾選要掃描的玻片
- 依需要的倍率選擇scan profile (掃片設定檔) ZEISS_FL_(螢光)_(倍率)x
- 按" Start Preview Scan" 建立玻片預覽圖以及掃片區域

Fluorescence Scanning

Scan Area



通常螢光樣品需要手動圈選掃瞄範圍

- 點選“齒輪”
- “Adapt selected profile for scan of this slide...”

Fluorescence Scanning Scan Area



Advanced Scan Profile Editor - for tray 1, slide 1, profile ZEISS_FL_BGR_20x.czspf - ZEN 3.5 (ZEN slidescan)

Advanced Scan Profile Editor - for tray 1, slide 1, profile ZEISS_FL_BGR_20x.czspf

1 Overview Show All

2 Label

3 Preview

4 Sample Detection Settings

Sample Detection Processor:
Standard

1. Select if you want to detect the sample area(s) automatically or draw them manually.
2. Adjust the detection threshold using the histogram controls (only available with automatic).

Sample Detection Mode: Automatic

Recognition Type:

Live Update

Predefined Settings: [dropdown]

Region Shrink Size: 200 μm

Marker:

Automatic Detection of High Level Threshold

Min. Region Size: 3 mm^2

Prefer Center for Shading Scan Area
 Show Shading Scan Area

Sort Order: Left Right Top Bottom

Display Dimensions

TL Brightfield

Graphics Custom Graphics

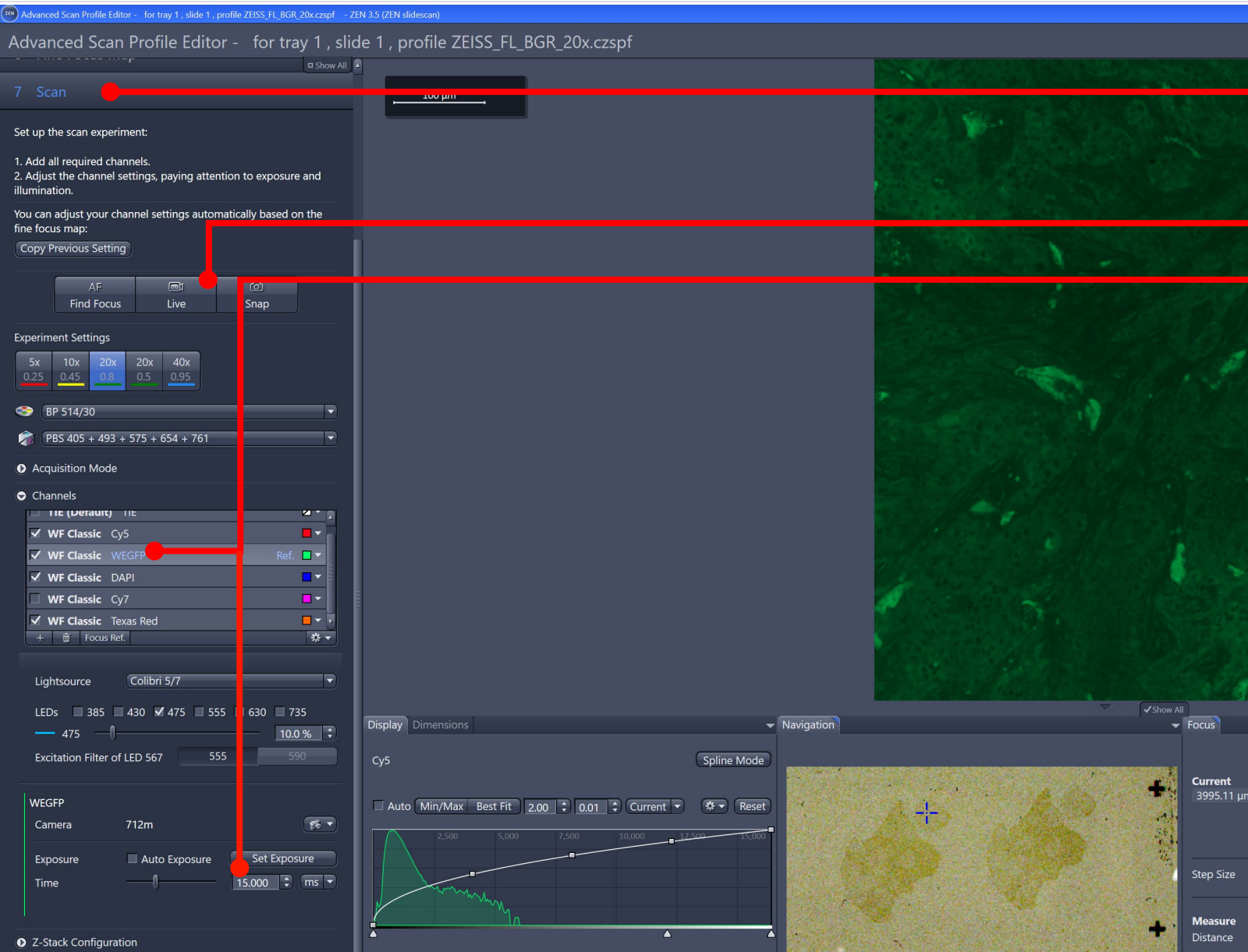
Spline Mode

Format

如果事先已經用麥克筆圈選範圍

- 點選“ Automatic” , “ Marker”
電腦會自動找出拍攝區域
- 若沒有麥克筆, 就選擇 “ Manually” / “ Draw Graphics”
- 使用下方繪圖工具, 在預覽圖上圈選出掃片區域

Fluorescence Scanning Scan Channels



■ 雙擊“ 7 Scan” 進入螢光設定步驟

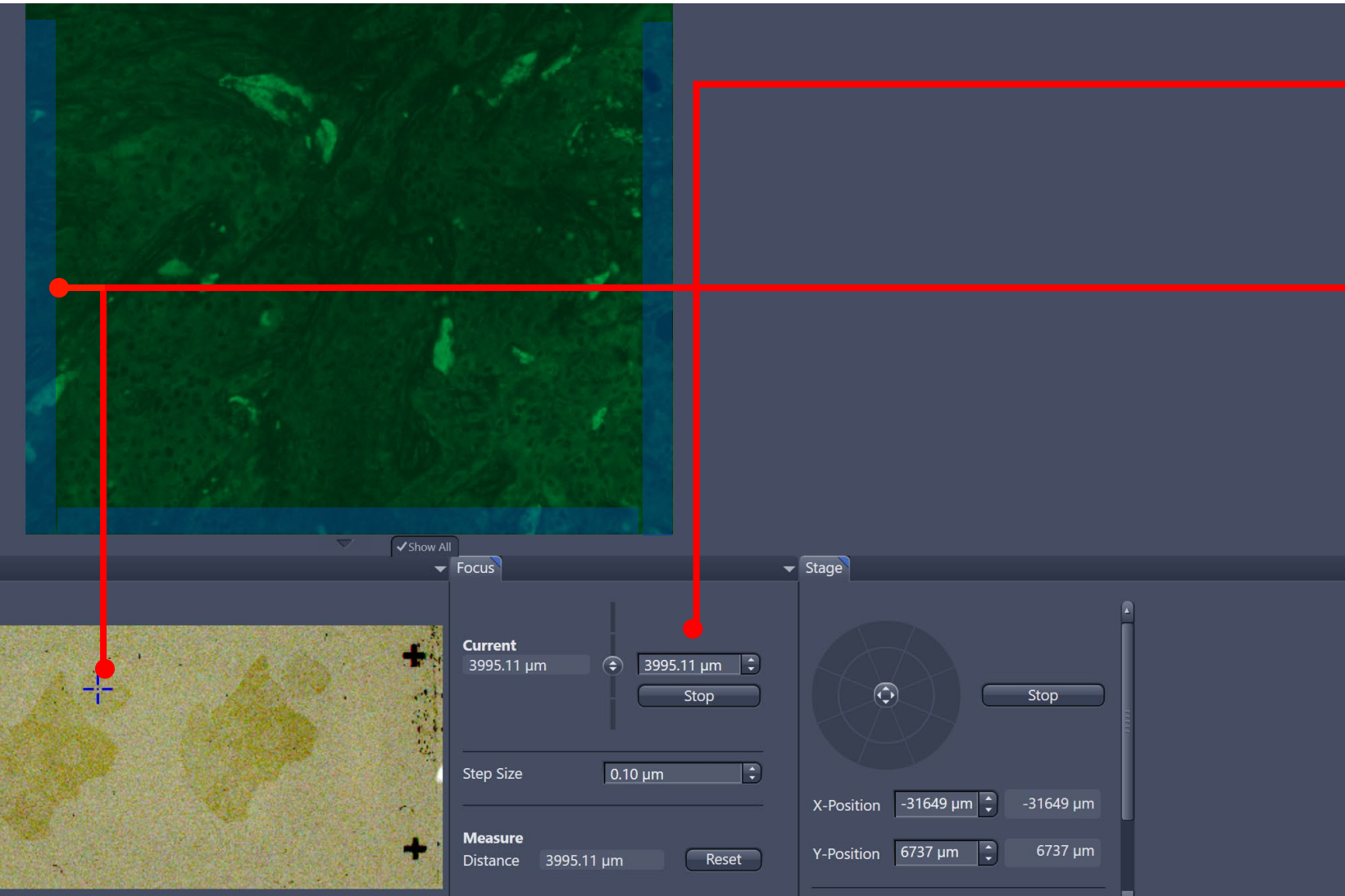
■ 按“ Live” 檢視螢光樣品

■ 如同一般螢光顯微鏡，勾選需要的螢光Channel，點選Channel名稱，設定適當的曝光時間“ Time”

* 軟體預設以DAPI自動對焦，若需更改請洽儀器管理員

Fluorescence Scanning

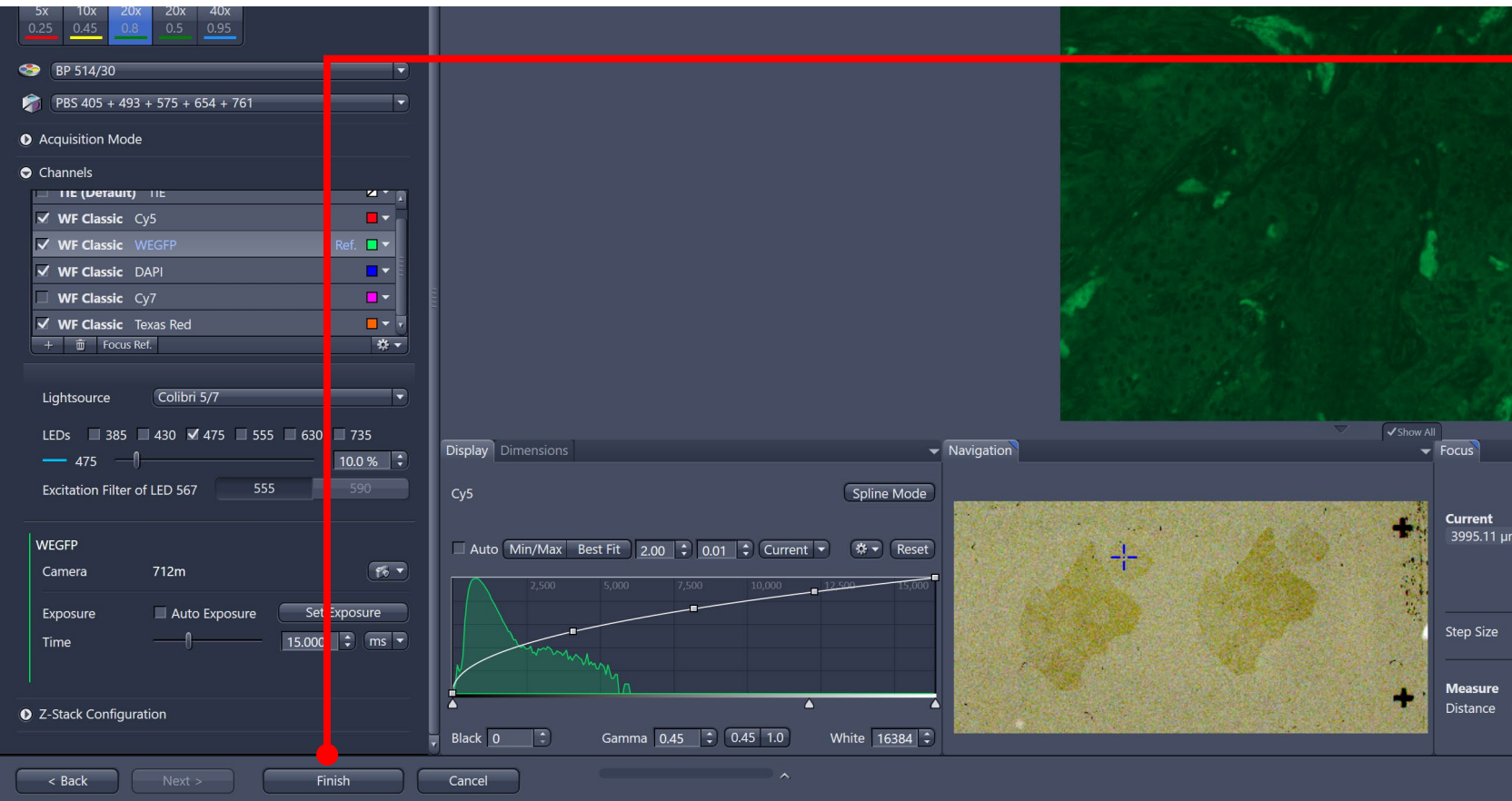
Focus Tricks



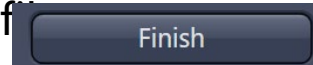
- Z position 設為 " `4000 um" 較容易對焦。
- "Ctrl+滑鼠滾輪" 可改變焦距, **務必保持在" 3600~4200 um" 範圍找焦距, 以免物鏡碰撞玻片。**
- 點選" Navigation" 預覽圖或Live視窗周圍藍條可移動視野

Fluorescence Scanning

Scan Channels

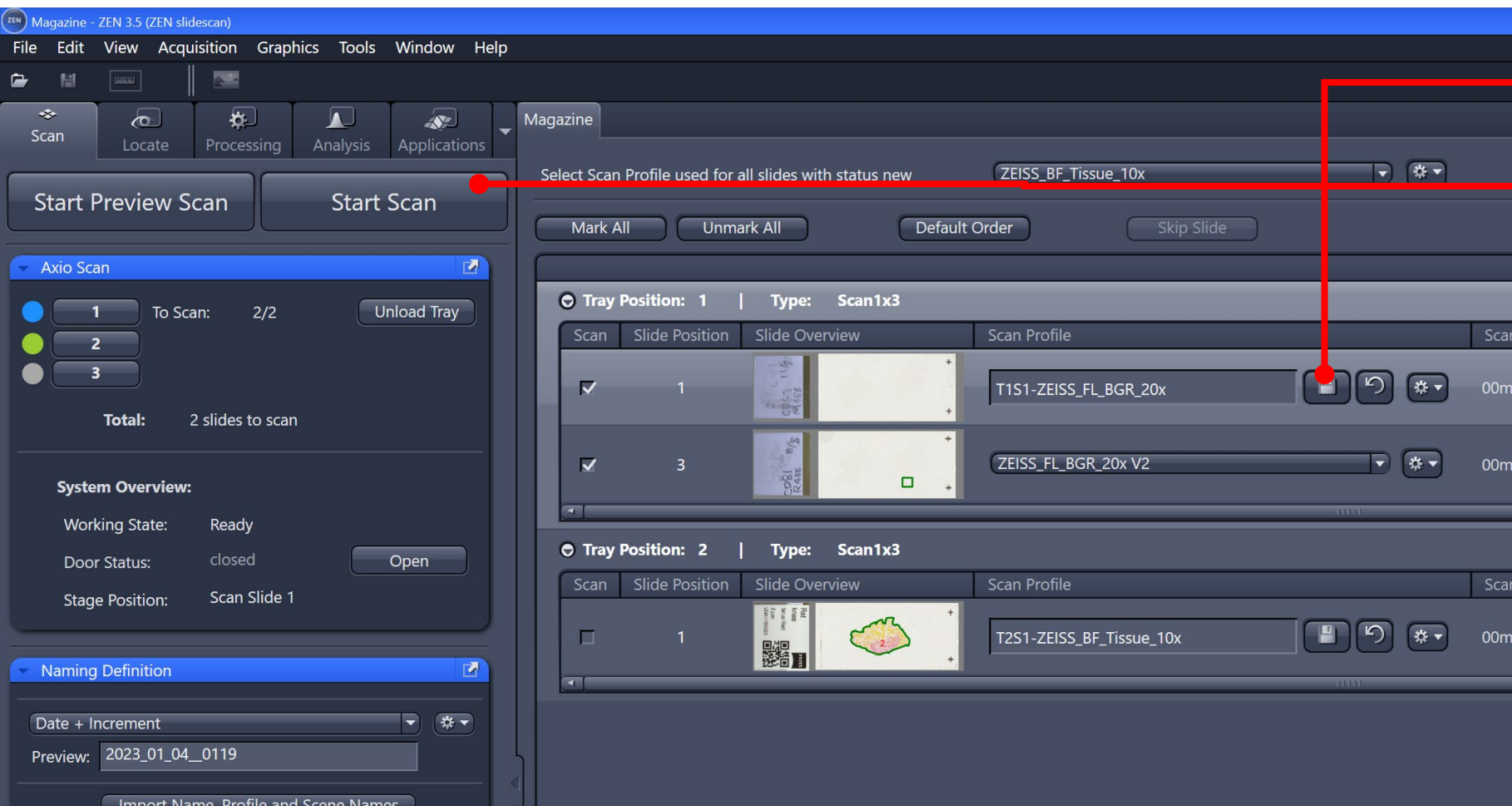


按最下方“Finish”完成設定scan profile



Fluorescence Scanning

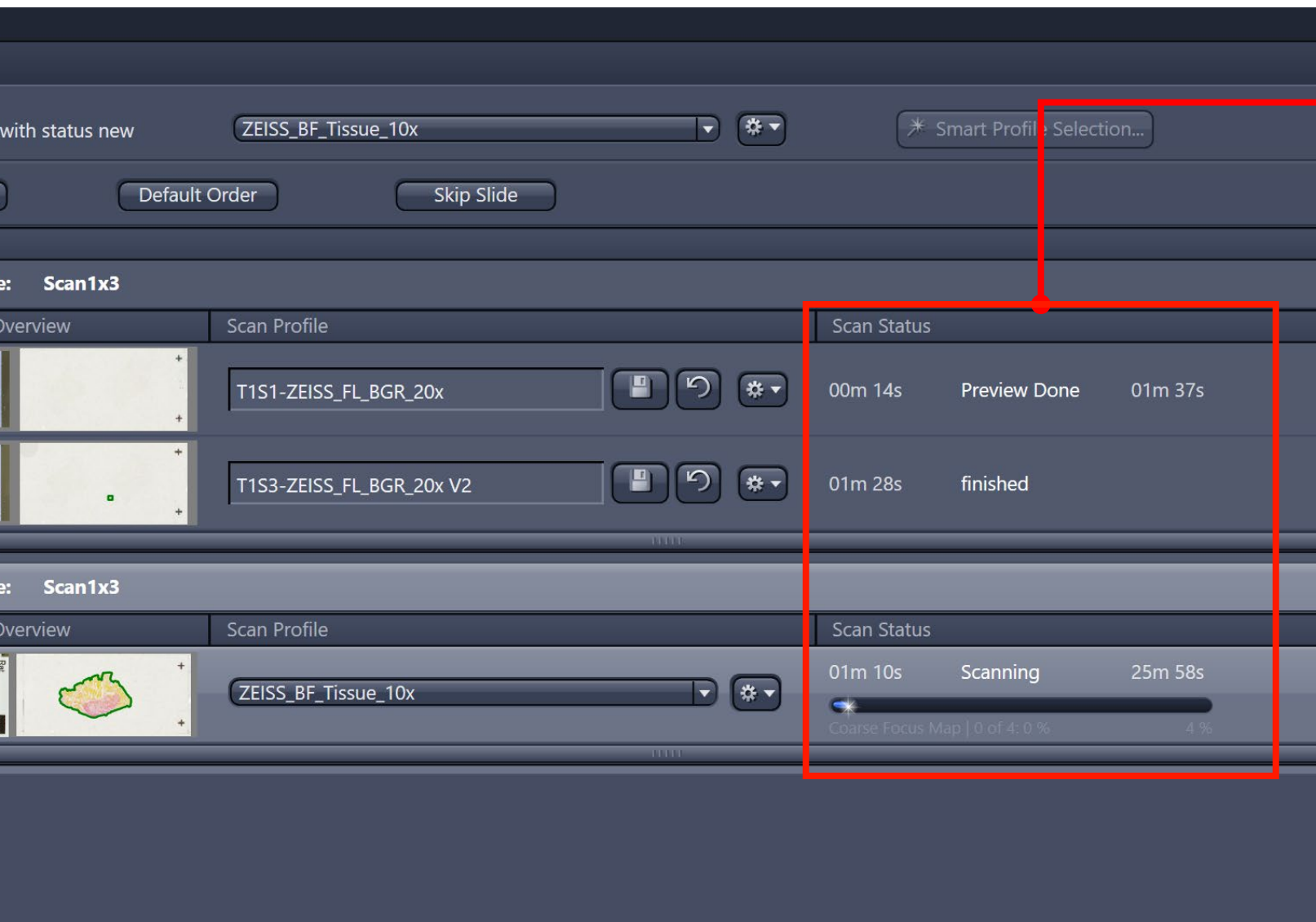
Save Your Own Profile



- 若想保存此次的Scan profile 設定, 點選"儲存" 即可
- 按" Start Scan" 即開始掃描

Scan Status

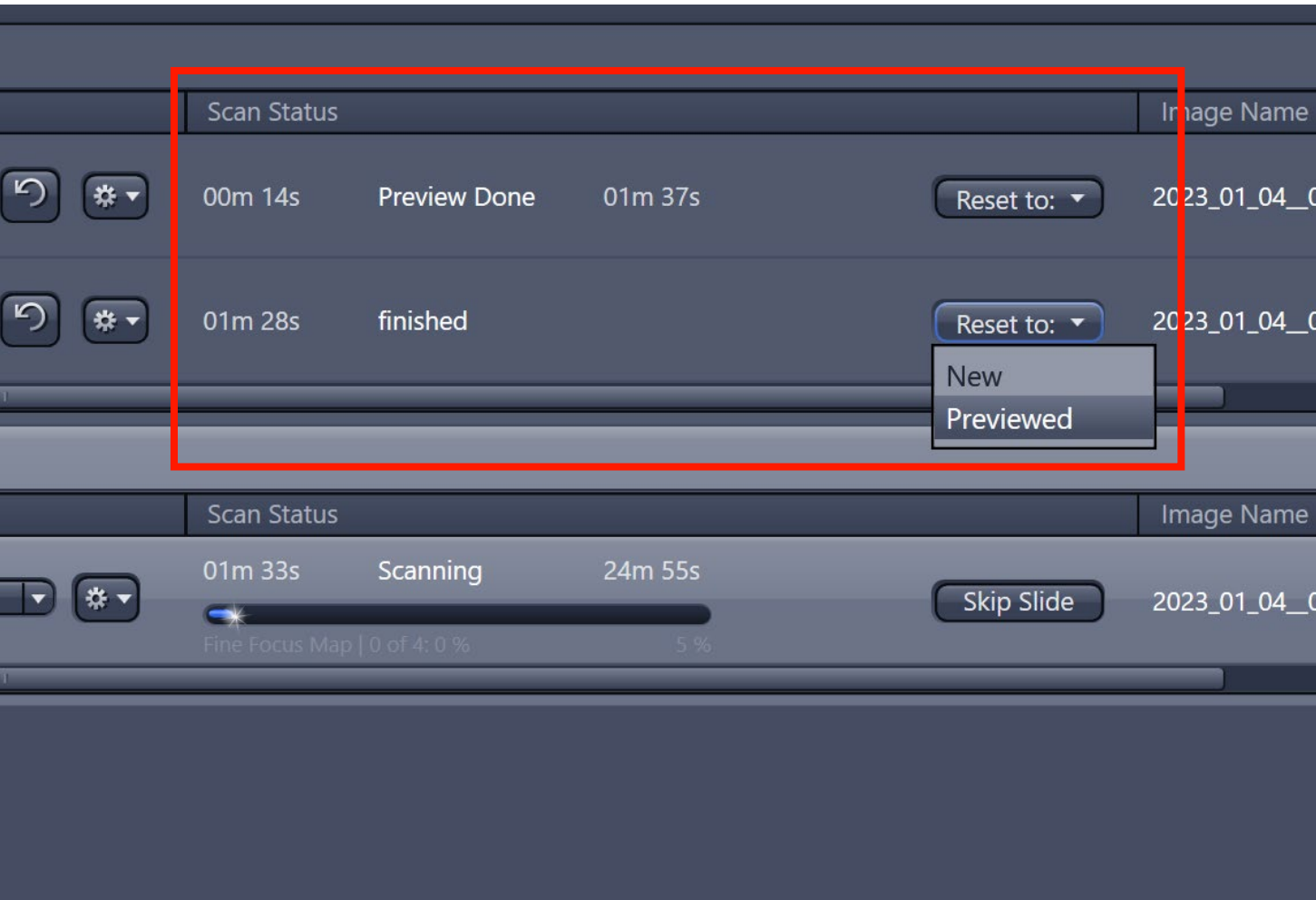
Scan Status



Axioscan 7 會將玻片分為幾種狀態:

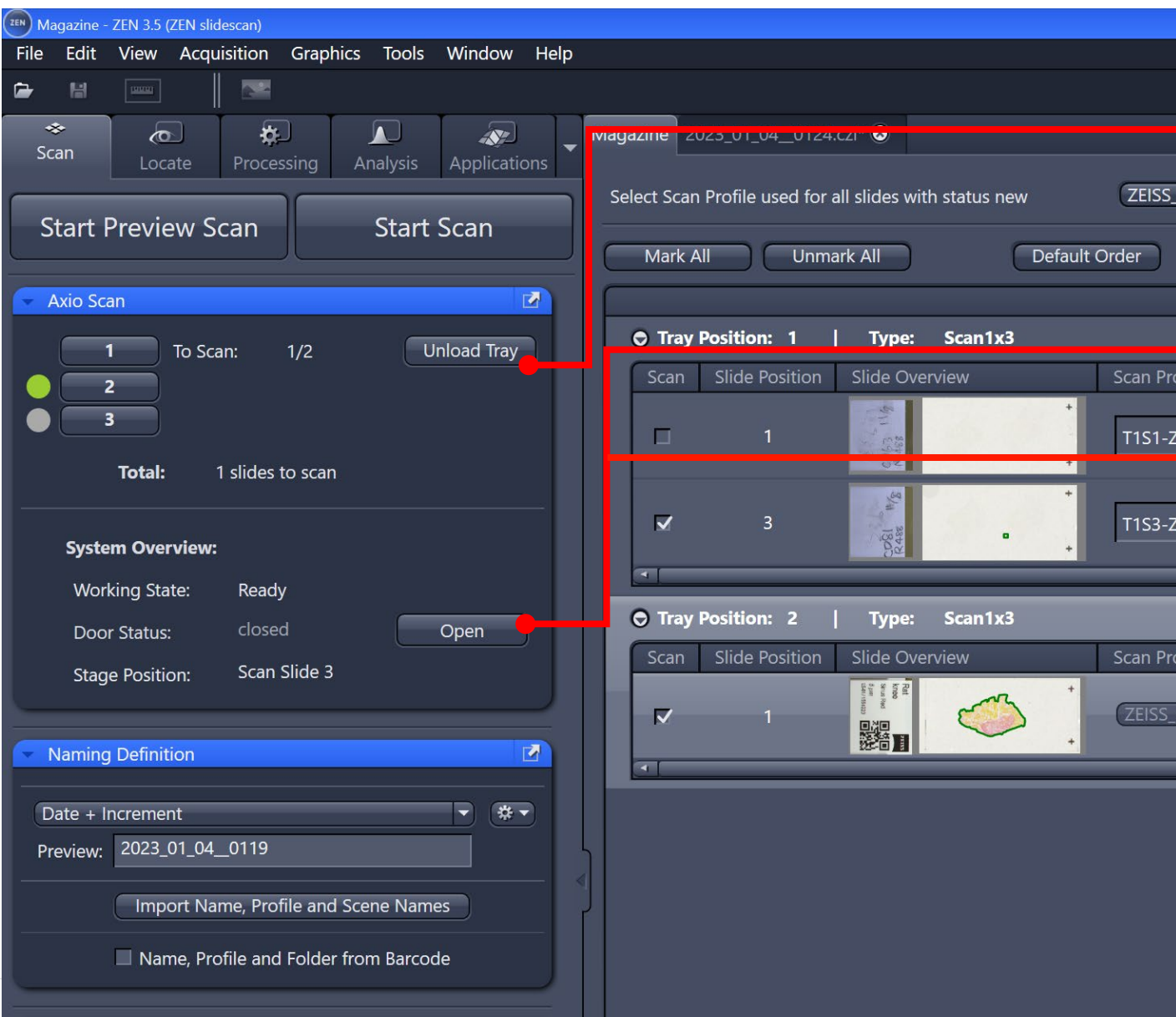
- **New** 剛放入尚未預覽
- **Preview Done** 已完成預覽, 可看到小圖
- **Scanning** 正在掃描
- **Finished** 完成掃描

Scan Status



- 只有“ Preview Done” 的玻片可進行掃描
- “finished” 狀態的玻片無法進行掃描，可按“ Reset to”， “Previewed”， 即可重新掃圖

Unload Tray

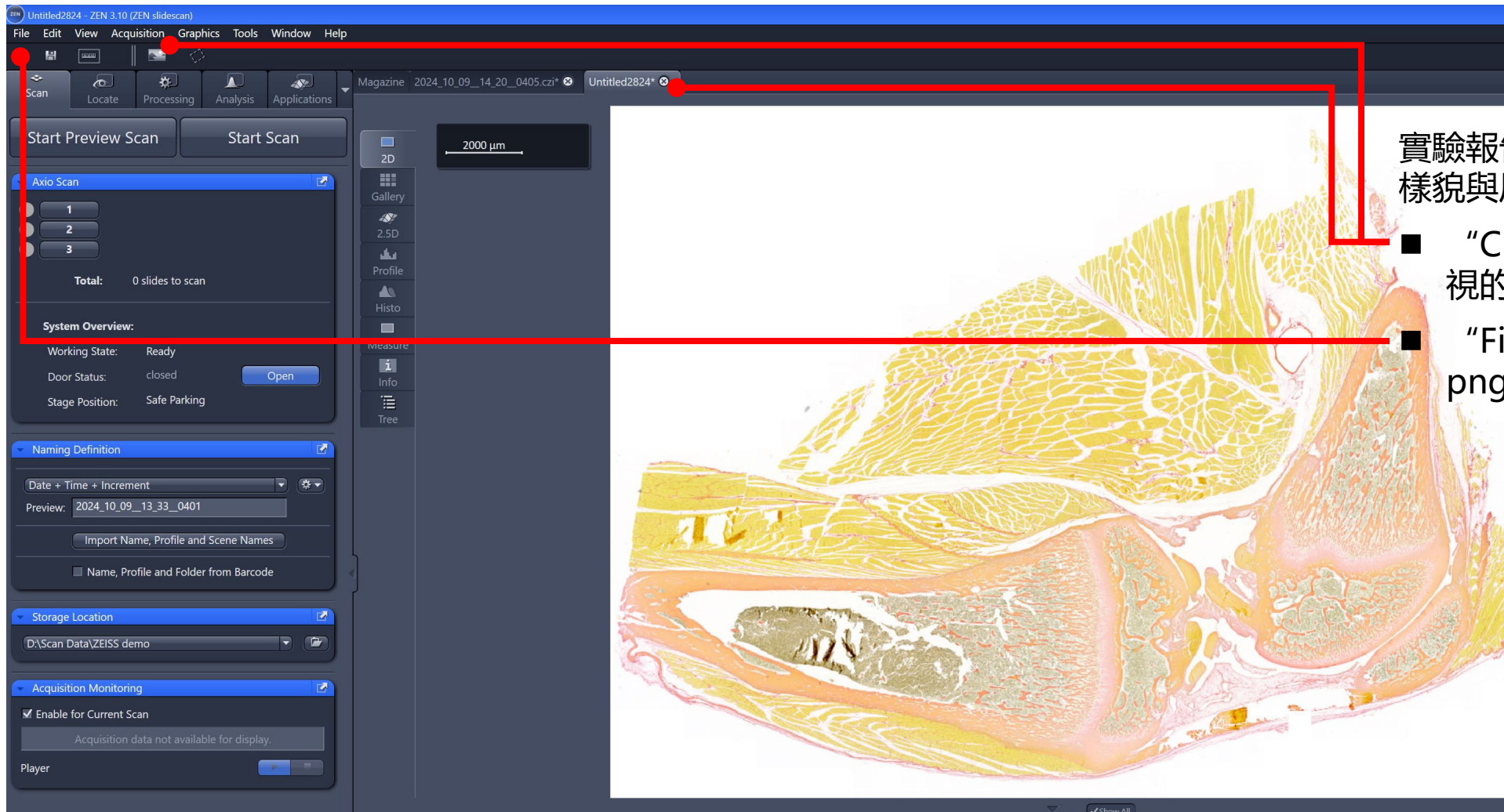


- 完成所有掃圖後，若“Unload Tray”按鈕出現在此處，表示玻片並未退回待命位置。**務必按“Unload Tray”**將玻片組從掃圖位置移動到艙門旁待命位置 (需要數秒運作時間)
- 待“Unload Tray”按鈕消失才能“Open”艙門取出Tray
- 取出Tray後，記得“Close”艙門

Create Image & ROI

裁切局部圖片

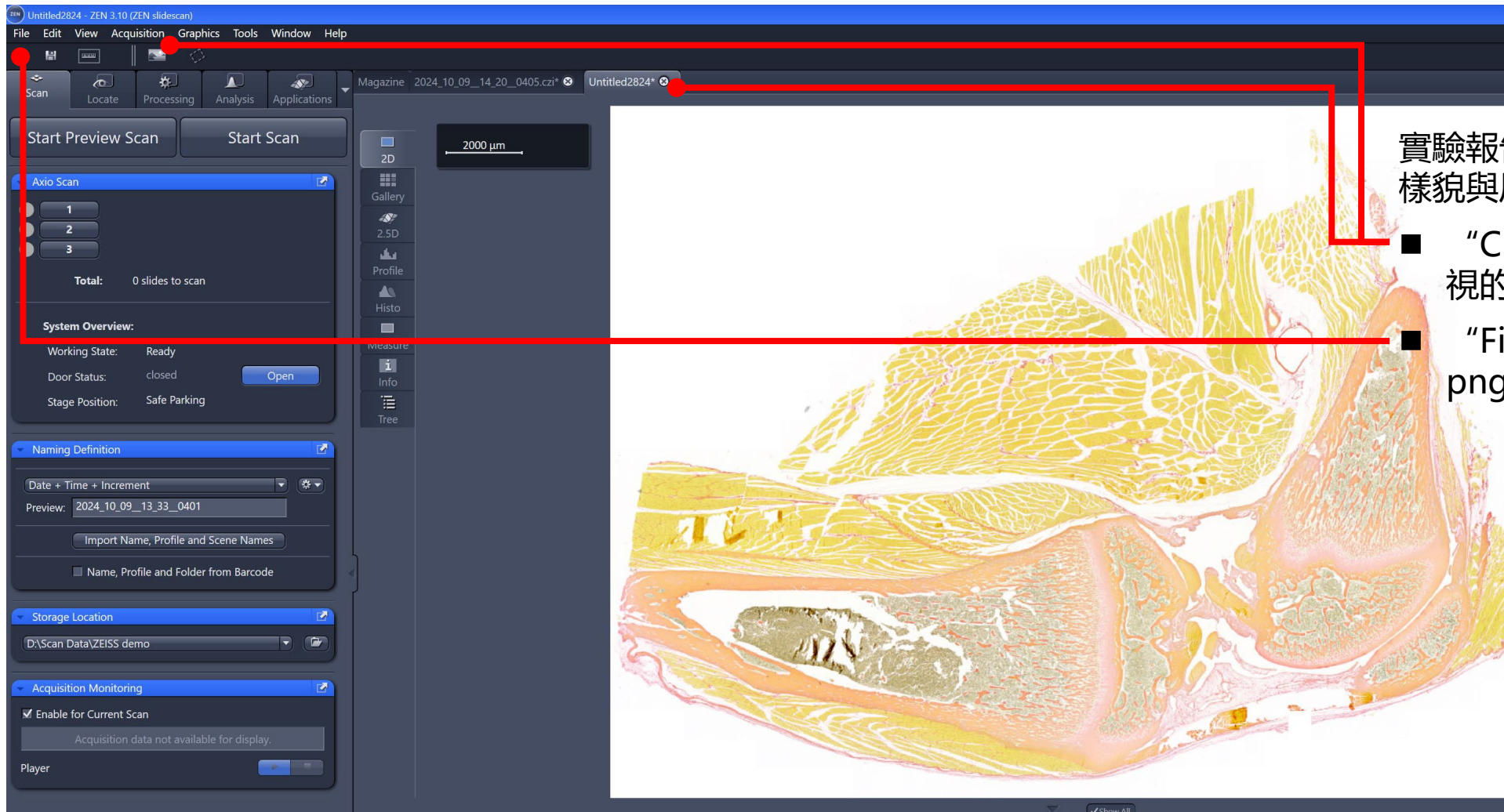
Create Image



實驗報告通常需要製作組織的整體樣貌與局部裁切圖片:

- “Create Image” 可依現在檢視的畫面快速截圖
- “File/ Save as...” 可另存成jpg, png 等影像格式

Create Image

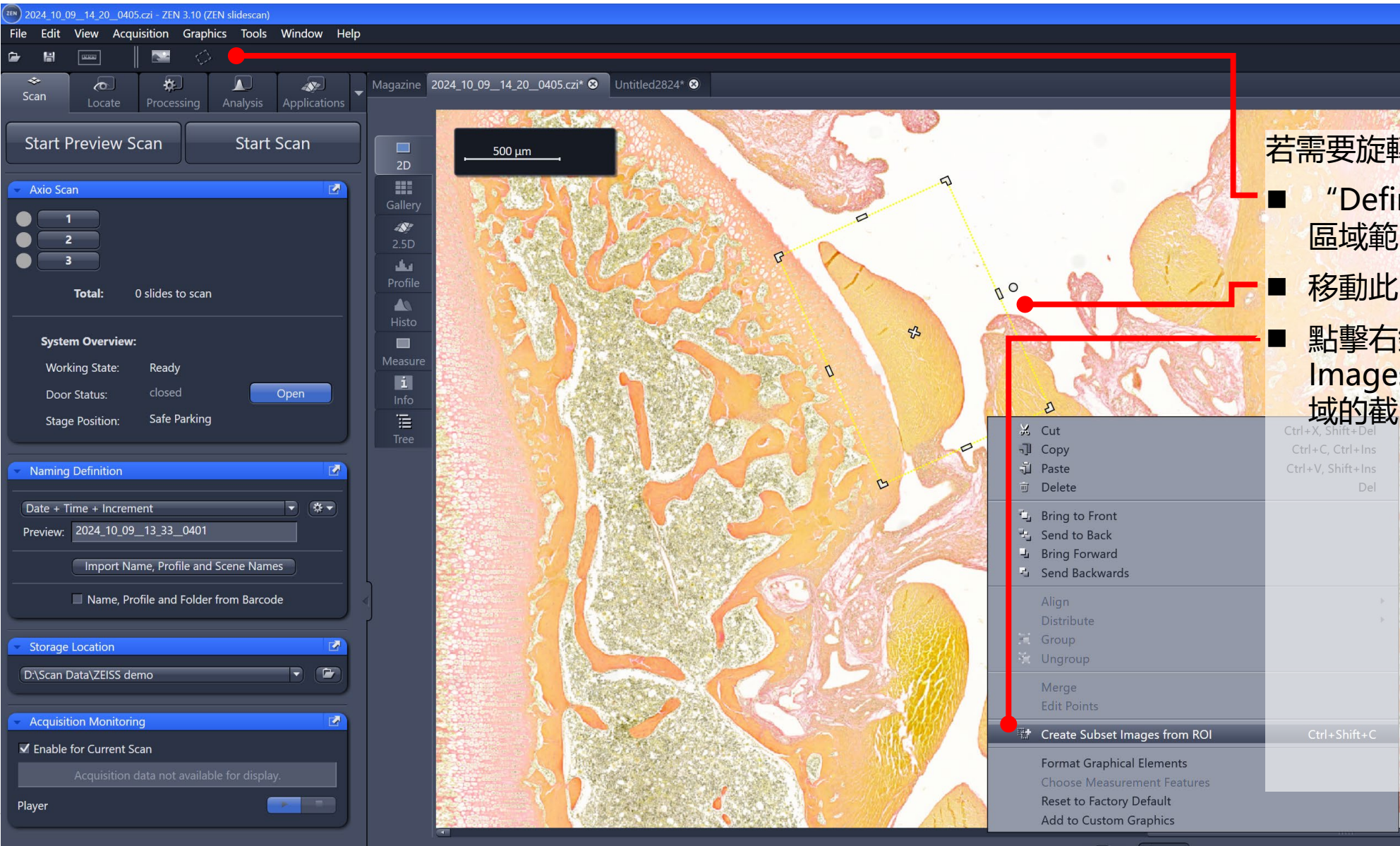


實驗報告通常需要製作組織的整體樣貌與局部裁切圖片:

- “Create Image” 可依現在檢視的畫面快速截圖
- “File/ Save as...” 可另存成jpg, png 等影像格式

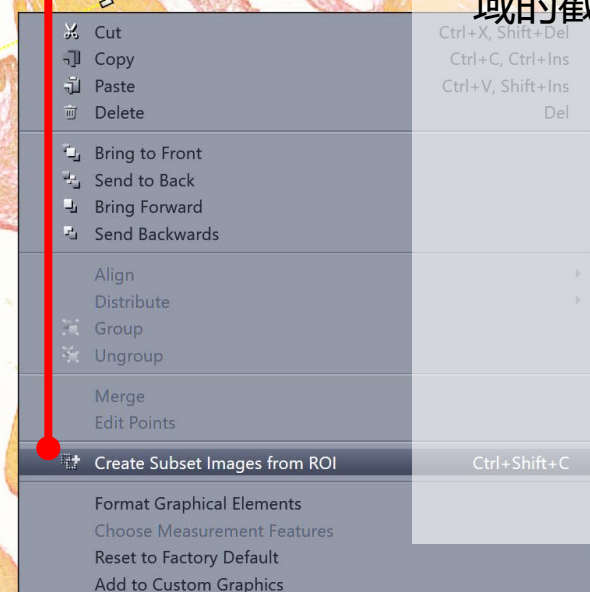
Create Image

Rotatable ROI



若需要旋轉裁切區域可使用:

- “DefineRotatableROI” 選取區域範圍
- 移動此圓點可旋轉ROI
- 點擊右鍵” Create Subset Images From ROI” 可產生此區域的截圖檔案



Shutdown

Shutdown Sequence



- “3” 關閉電腦
- “2” 關閉Axioscan 7
- “1” 關閉延長線開關 (位於右下方桌腳)





Seeing beyond