TABLE OF CONTENTS

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3 Synaptive Plan
Boot-up and Data Import
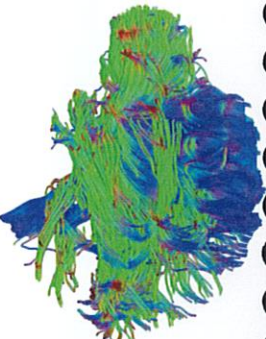
1. Turn on Plan computer.
   Enter **Synaptive123** as the password for the **Operator** user. You will enter this password twice.

2. Import Scan - **Server**

i. Ensure network connection (wireless, or connect Ethernet into the network port)

ii. Select server

Servers

- My Studies
- My Servers
- ImageDrive Clinical
- PACS

iii. Enter patient ID

Search

Patient ID

iv. Click [🔍 Search]

v. Right click desired boot scan and [ⓢ Retrieve]

2. Import Scan – **CD/USB**

i. Insert CD or USB. Click [No] on pop-up

ii. Go to [My Computer] tab

iii. Locate CD or USB drive

iv. Right-click desired folder and [📀 Import]

3. Open the Activity Monitor to view the import status

	Tools
	Help
	Utilities

Activity Monitor ▼

	Status	Status Details
	Complete	98 of 98 images processe...
	Complete	98 Images Retrieved, 0 Fa...

Note: automatic data processing should occur following successful import of compatible study data, unless planning on Guide (see page 4).

---

④ Synaptive Plan
Opening a Study
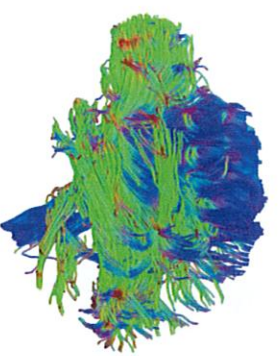
1. To **open a study,** double-click the study in the My Studies list
2. Select workflow type from the dropdown:

   i. Open Craniotomy

   ii. Port Planning: select to plan for NICO BrainPath

3. Click on **Plan**

Servers

Plan

Open Craniotomy
Port Planning

My Servers
My Studies

Open Craniotomy
Port Planning
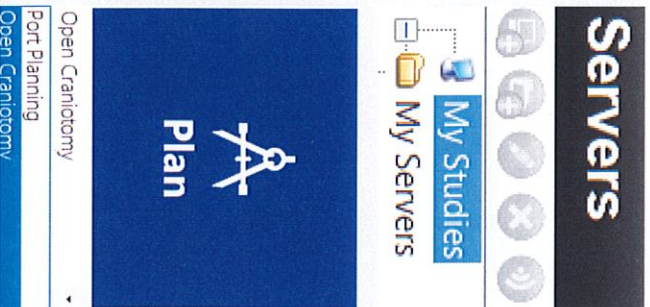
If...
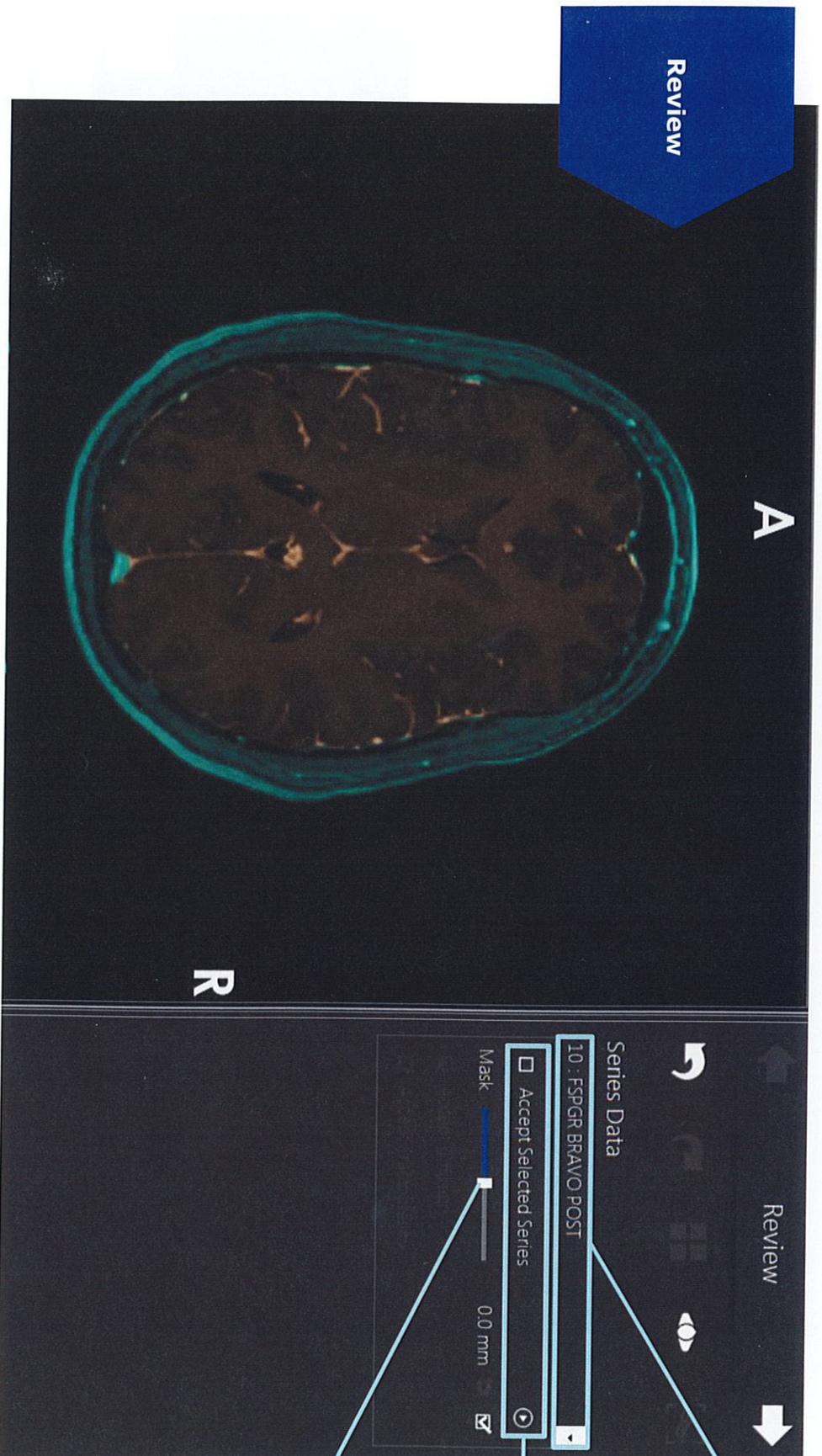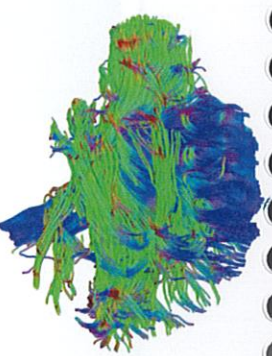When opening the study, **Plan** option is greyed out.
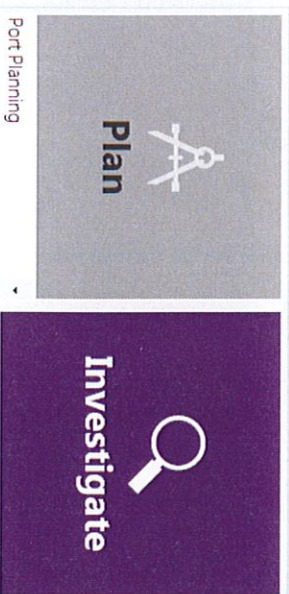
Then...
Study is still importing/processing. Check Tools> Activity Monitor for progress. Wait until all processes are "complete" (see page 3, step 3).

Port Planning

Plan

Investigate

NOTE: If planning on a Guide cart, data processing will **not** trigger automatically following import. To trigger data processing for Plan:

1. Wait for import to complete
2. Select the study in the My Studies list
3. Click 🌐 in the toolbar

33 studies found on My Studies

Patient ID	Last Name	First Name
IDSTUDY2	Anon	John

---
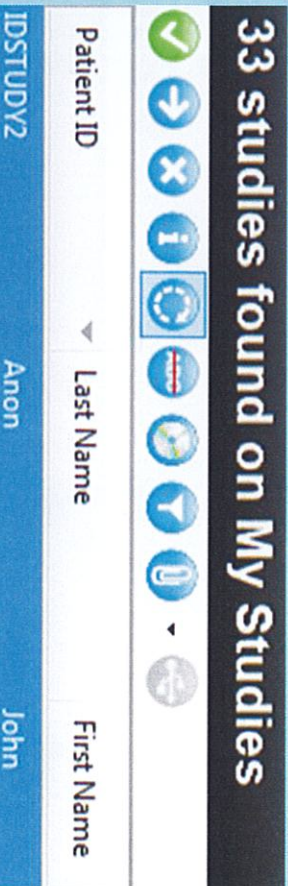
⑤ Synaptive Plan
Review Phase: Brain Mask

Review

A

R

Review

Series Data

10 - FSPGR BRAVO POST

☐ Accept Selected Series

Mask

0.0 mm

Select processed series (bold)

Accept Series and Brain Mask setting

Use slider to adjust Brain Mask

Note: mask can be adjusted later in Trajectories

Synaptive

Call **1.844.GO.BRAIN** for support

6 Synaptive Plan
Review Phase: Diffusion
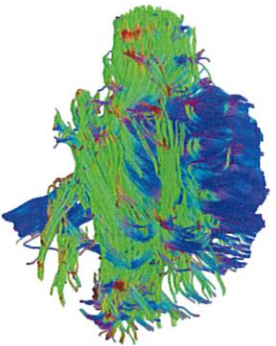
Use crosshair to compare Registration accuracy

Tip: align crosshairs to anatomical points such as the tip of the ventricle or AC/PC

L H P A R

Series Data
10 : FSPGR BRAVO POST

Accept Selected Series

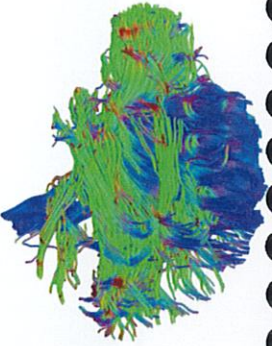Mask
Accept Diffusion

0.0 mm

Review

Warning: You have not accepted diffusion for this series.

Diffusion data (FA, ADC, RGB and tractography) will not be available during the planning process.

Accept Diffusion

Note: co-registration can be adjusted in the next step if inaccurate. Click checkbox to continue.

---

7 Synaptive Plan
Review Phase: Tractography

Use Window/Level to remove tissue from 3D volume and view tractography

LA HA FP RP F H L R P

0.00mm
0.00mm
0.00mm

1.00x LR
1.00x AP
1.00x HF

Overlays
Tractography

Series Data
8 : FSPGR BRAVO

Accept Selected Series

Mask
Accept Diffusion
Accept Tractography

0.0 mm

Review

HF
LR
AP

Whole Brain Tractography

Accept Tractography

Note: tracts not available unless checkbox is accepted

Use adjustment tools to adjust tractography co-registration

Use tools to adjust visualization of tracts

MERGED SERIES

1. In **Merged Series Phase**, click the ⊞ button to view available series

2. Use the dropdown to view and select a different study

3. Select desired series in the list and click [Merge]

4. Close dialog box once all series have been merged

5. For each merged series, complete the following steps:

   i. Click [Auto-Merge] (if button is disabled, step is complete)

   ii. Evaluate quality of merge

   iii. Use checkbox to Accept desired series

Blended Merge Tool

The blended merge tool is active by default.

Toggle ☀ to adjust Window/Level on merged series

Spyglass Tool

Toggle ▣ to use Spyglass Tool

Adjusting Window/Level ☀ in bottom right view pane will apply to merged series

SEGMENTATION

1. In **Segmentation Phase**, select a Region from the list and click 🖐 to access the Region Editing toolbar

2. Build the region using desired tool(s)

Paintbrush or **2D fill:** segment region on multiple slices, then **Build**
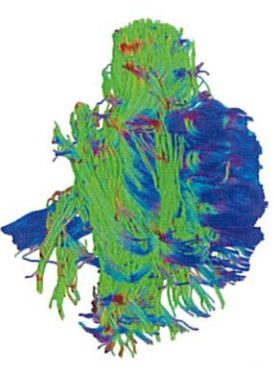
3D fill: segment homogenous regions

Slider: brush/eraser size, or threshold for auto-fill

Click to **Build** volume from defined slices

Brush Size

SEGMENTATION

1. In **Segmentation Phase**, select a Bundle from the list and click [icon] to access the Bundle Editing toolbar

2. Segment bundle using desired tool(s)

Tip: Bundle Editing toolbar button won't display unless a **Bundle** is selected in the list.

For additional bundles, click [+]

**Select tracts** by harnessing them using a ring

Add or **Remove** selected tracts to bundle

Region Intersection: Select tracts that intersect visible regions

Slider: Increase region intersection boundaries

Cancel or **Accept** edits

Margin

Hover over ring for tract selection tools

- Center views
- Move
- Rotate
- Resize
- Delete

Bundles
- Bundle 1
- Unbundled

Change unbundled tract visualization

Show/Hide bundle

HF LR AP
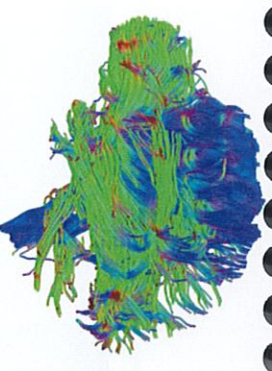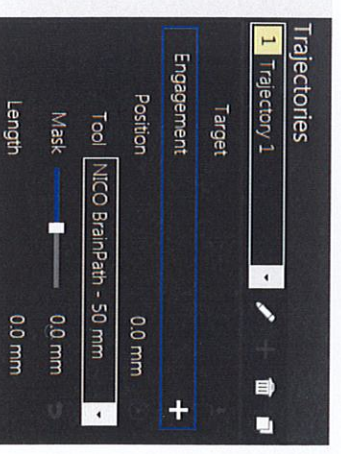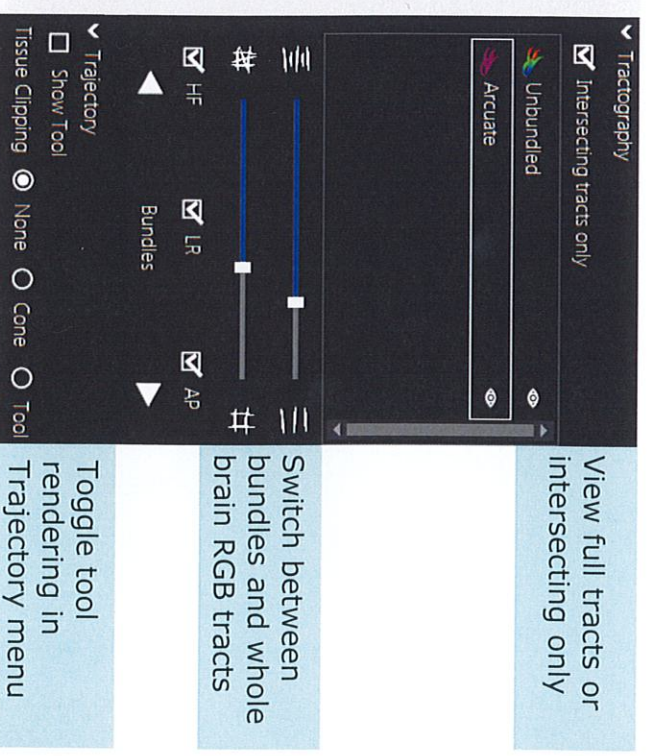

TARGETS

1. In **Targets Phase**, move the crosshair to the desired position and click [+] to add Target point

2. Click Engagement and move the circle locator to the desired position on the cortical surface and click [+] to add an entry point
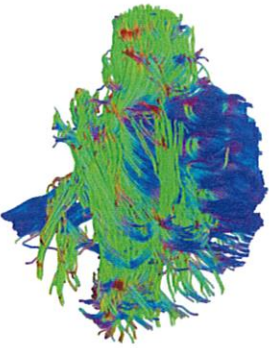
TRAJECTORIES

3. Review planned trajectory:

- Adjust **Mask** at engagement point
- Review **Tractography** intersection
- Show **Tool** graphic
- Edit existing targets and/or engagement points by moving the crosshair and clicking [icon] to reposition point
- Choose between different trajectories with the dropdown menu

Trajectories
1 Trajectory 1
Target
Engagement
Position
Tool NICO BrainPath - 50 mm
Mask
Length
0.0 mm   0.0 mm   0.0 mm

Tractography
Intersecting tracts only
Unbundled
Arcuate
HF LR AP
Bundles

Trajectory
Show Tool
Tissue Clipping
None Cone Tool

View full tracts or intersecting only

Switch between bundles and whole brain RGB tracts

Toggle tool rendering in Trajectory menu

Synaptive

For complete information, including intended use and warnings and precautions, see user manual accompanying Modus V.

Call **1.844.GO.BRAIN** for support

Synaptive Plan
Craniotomy & Export for Guide

(12)

In **Craniotomy Phase**, use the slider to adjust the craniotomy

CRANIOTOMY

Craniotomy — 31 mm ↻
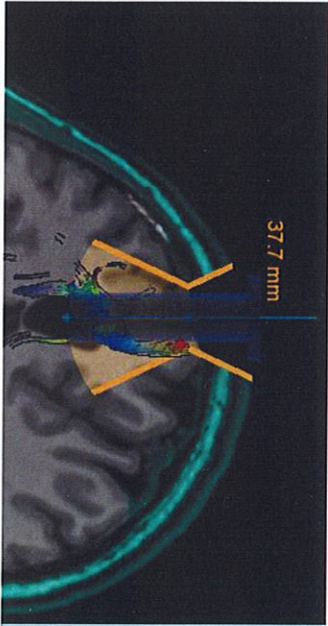
**Tip**: Manipulate the tool projection to predict craniotomy limitation

37.7 mm

EXPORT

1. In **Export Phase**, select desired Trajectory then click [Export]

2. In export dialog, enter a name for the Plan

3. Ensure option ...**for use with BrightMatter™ Guide** is selected

4. Click [Next]

5. Select Export options and click [Export]

Name Plan and Select Export Types

| Lateral Approach |
- ☑ Export enhanced Synaptive plan for use with BrightMatter™ Guide
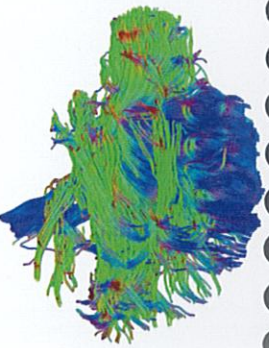- ☐ Export standard volumetric plan for use with third-party systems

My Studies — Data will always be saved in "My Studies".

PACS Server — Select PACS servers to export the plan to. ☑ ImageDrive Clinical ☐ PACS

USB Key — Select USB drives to export the plan to.

Synaptive Plan
Trajectory Export for Third-Party

(13)

EXPORT

1. In **Export Phase**, select desired Trajectory then click [Export]

2. In export dialog, enter name for Plan

3. Ensure option ...**for use with third-party** is selected

4. Click [Next]

5. Select Export options and click [Export]

6. Import into Third Party navigation: merge and set Target and Engagement based on white points burned into export series.

Name Plan and Select Export Types

| Lateral Approach |
- ☑ Export enhanced Synaptive plan for use with BrightMatter™ Guide
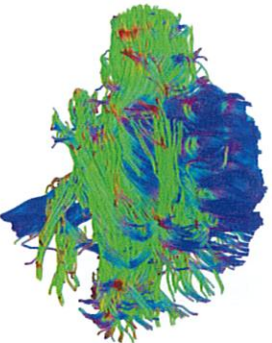- ☐ Export standard volumetric plan for use with third-party systems

My Studies — Data will always be saved in "My Studies".

PACS Server — Select PACS servers to export the plan to. ☑ ImageDrive Clinical ☐ PACS

USB Key — Select USB drives to export the plan to.

The Target and Engagement points will be burned into the anatomical series.
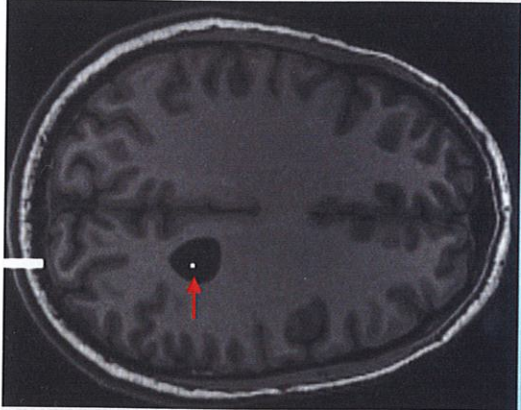
Tractography Export for Third Party

1. In any Phase, expand [∨ Tractography] and toggle on ◈ any bundles desired for export

2. Click [✍] in the top right panel

3. Enter **Series Name**

4. Select **Color Settings:**

   Grayscale or Colour

5. Use preview slider to verify the tracts

6. Click [Next]

7. Select Export Option and [Export]

Tip: Tracts must be visible for tractography export to be enabled

[✍ Unbundled]

If exporting **Bundles**, note that Unbundled Tractography will not be exported.

If exporting **Whole Brain Tractography**, set culling sliders as desired.

SYNAPTIVE PLAN

SURGICAL QUICK REFERENCE GUIDE