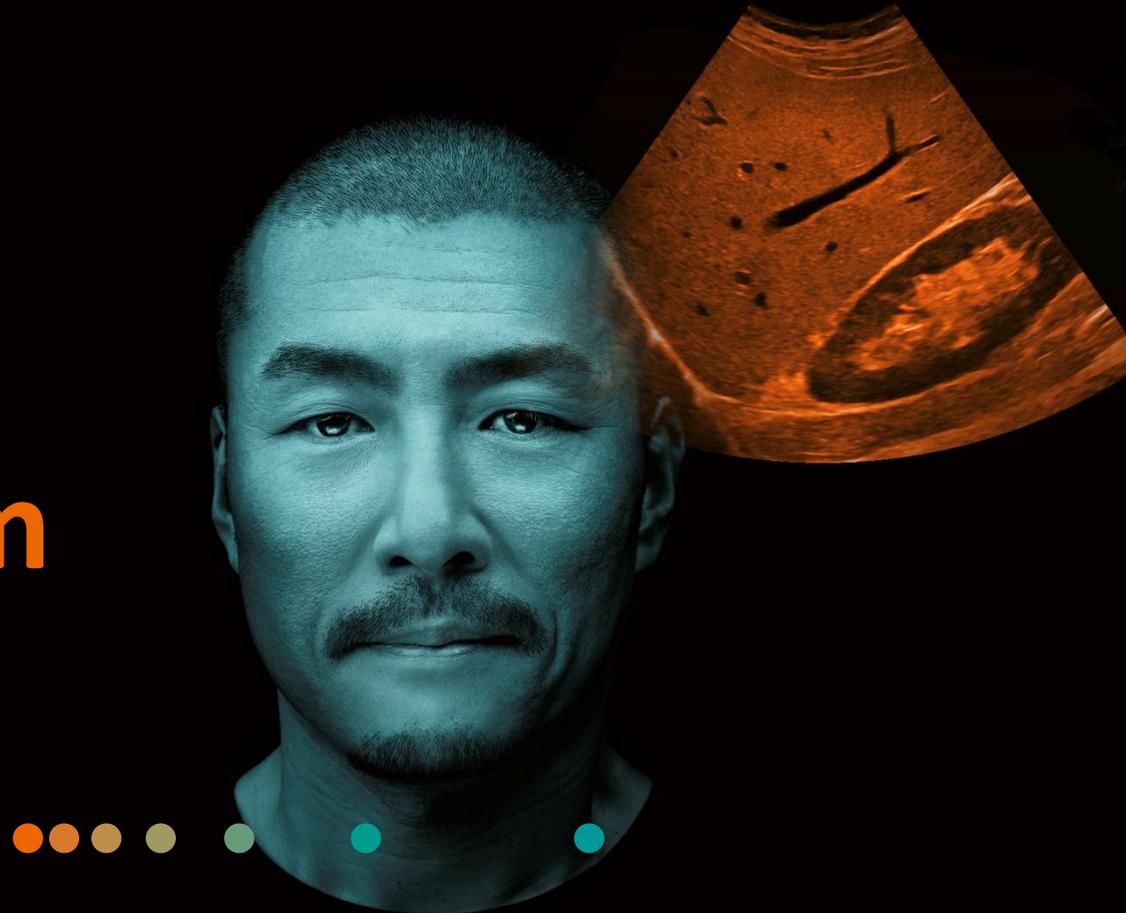


ACUSON Sequoia Ultrasound System

Measurement Configuration
3.5 (VB30)

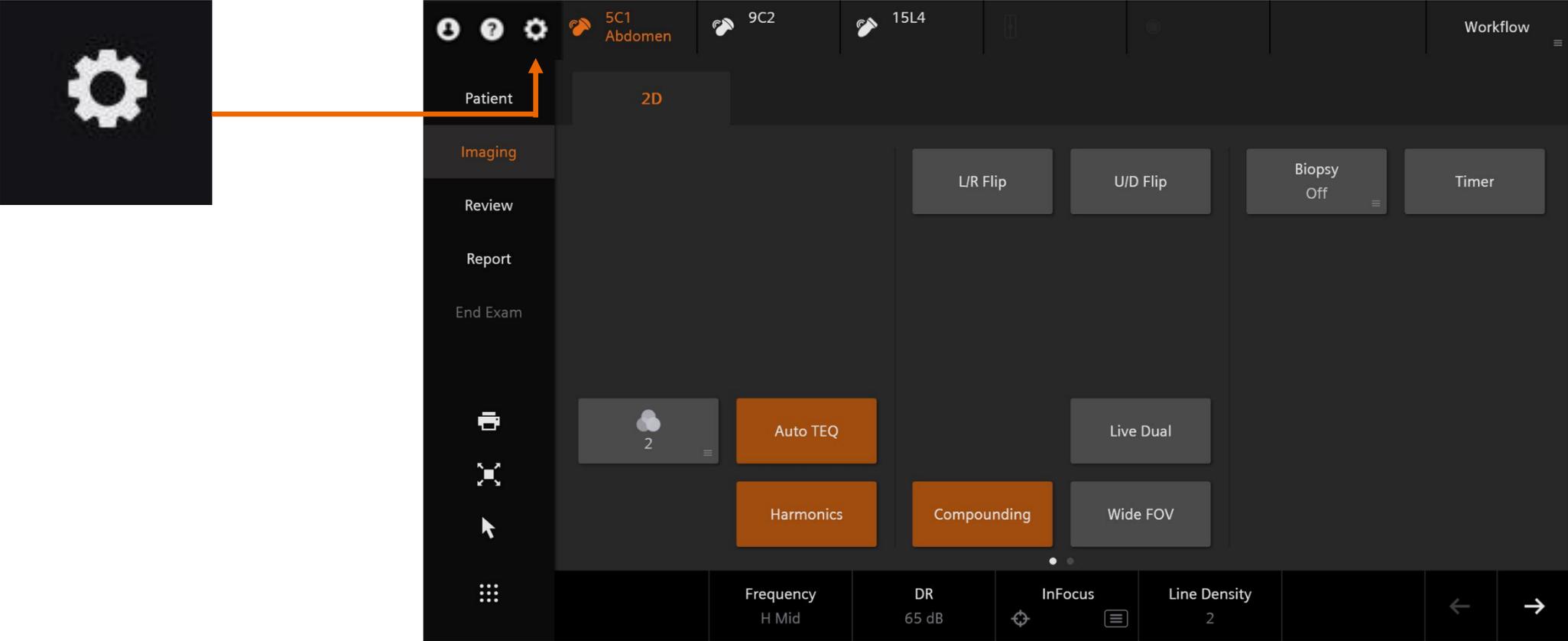


Objectives

- **Identify access to system configuration**
- Outline the measurement subgroup
- Describe the Touch Screen configuration
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 - Steps to define a custom label
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Measurement configuration access



Measurement & Report configuration home page



System Configuration

- System Settings
- Workflow Enhancement
- Imaging Settings
- Measurement & Report
 - Measurement
 - Touch Screen Measurement Config
 - Custom Measurement Label
 - Custom Calculations
 - Report
 - OB Tables
 - Annotations
 - Features
 - Transducer
 - Connectivity & Network
 - Peripheral Devices
 - System Management

General | Exam Package | Exam Specific | Per Label Configuration

2D Mode

2D Calipers

Draw Dotted Lines Between Calipers

Doppler Mode

Velocity

Show Negative Symbol

Heart Rate Tool

Number of Heart Cycles

2

Calculation Display Area

Both	Measured Results	Report	Calculations
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	(Fetal M-Mode)LV CO
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	(Fetal M-Mode)LV EF
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	(Fetal M-Mode)LV Mass
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	(Fetal M-Mode)LV SV
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	(Fetal M-Mode)LV Vol d
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	(Fetal M-Mode)LV Vol s
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	(Fetal)Ao Root/MPA Diam
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	(Fetal)AoV Annulus Area s
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	(Fetal)AoV Area (Vmax)
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	(Fetal)AoV Area (VTI)
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	(Fetal)AoV AT/ET
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	(Fetal)AoV SV
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	(Fetal)AoV/PV Annulus s
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	(Fetal)APADxTAD
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	(Fetal)AR PHT
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	(Fetal)BPDa
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	(Fetal)CCO
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	(Fetal)CI
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	(Fetal)Cor Sinus Length/Diam
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	(Fetal)CTR Area
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	(Fetal)CTR Circum
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	(Fetal)Ductus V SID Vmax

Restore Defaults

Objectives

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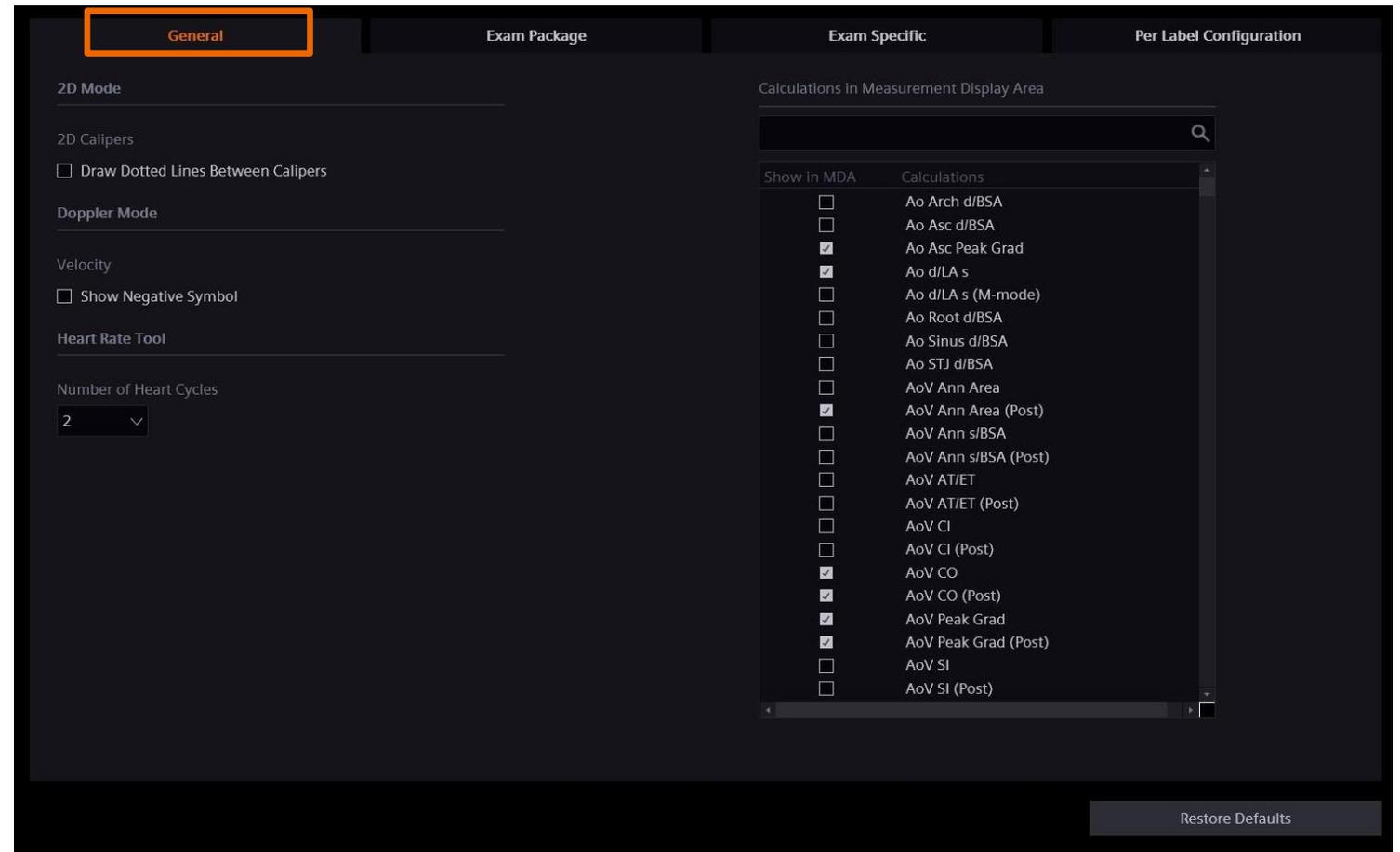


Measurement subgroup

General tab

System wide settings for:

- Dotted line between calipers
- Heart rate tool
- Show negative symbol
- Measurement Display Area (MDA) configuration



Measurement subgroup Exam Package tab

Individual exam package settings for:

- Cine measurement behavior
- 2D measurement tool type
- Doppler default tool type
- Volume Flow Tool
- Individual label precision and unit

Exam Package

Abdomen

CINE Measurement Behavior

- Erase in CINE

2D Tools

Volume Tool

3 Distances

Area %Stenosis Tool

Ellipse + Trace

Generic Area Ratio Tool

Trace

Doppler Tools

Default Tool

Velocity

Volume Flow Tool

Volume

Distance

Flow

Heart Cycle

Result Format	Show	Unit	Precision
IVS		cm	0.00
LVPW		cm	0.00
LVID		cm	0.00
%Stenosis		%	0
A	<input checked="" type="checkbox"/> Show	cm ²	0.00
A (B)		cm ²	0.00
A (E)		cm ²	0.00
Accel	<input checked="" type="checkbox"/> Show	cm/s ²	0.0
Angle		°	0
Area Ratio			0.00
AT	<input type="checkbox"/> Show	ms	0
Average Distance		cm	0.00
C		cm	0.00
C10	<input type="checkbox"/> Show	mm	0.00
D		cm	0.00
D (B)		cm	0.00

Restore Defaults: Abdomen

Measurement subgroup

Exam Specific tab

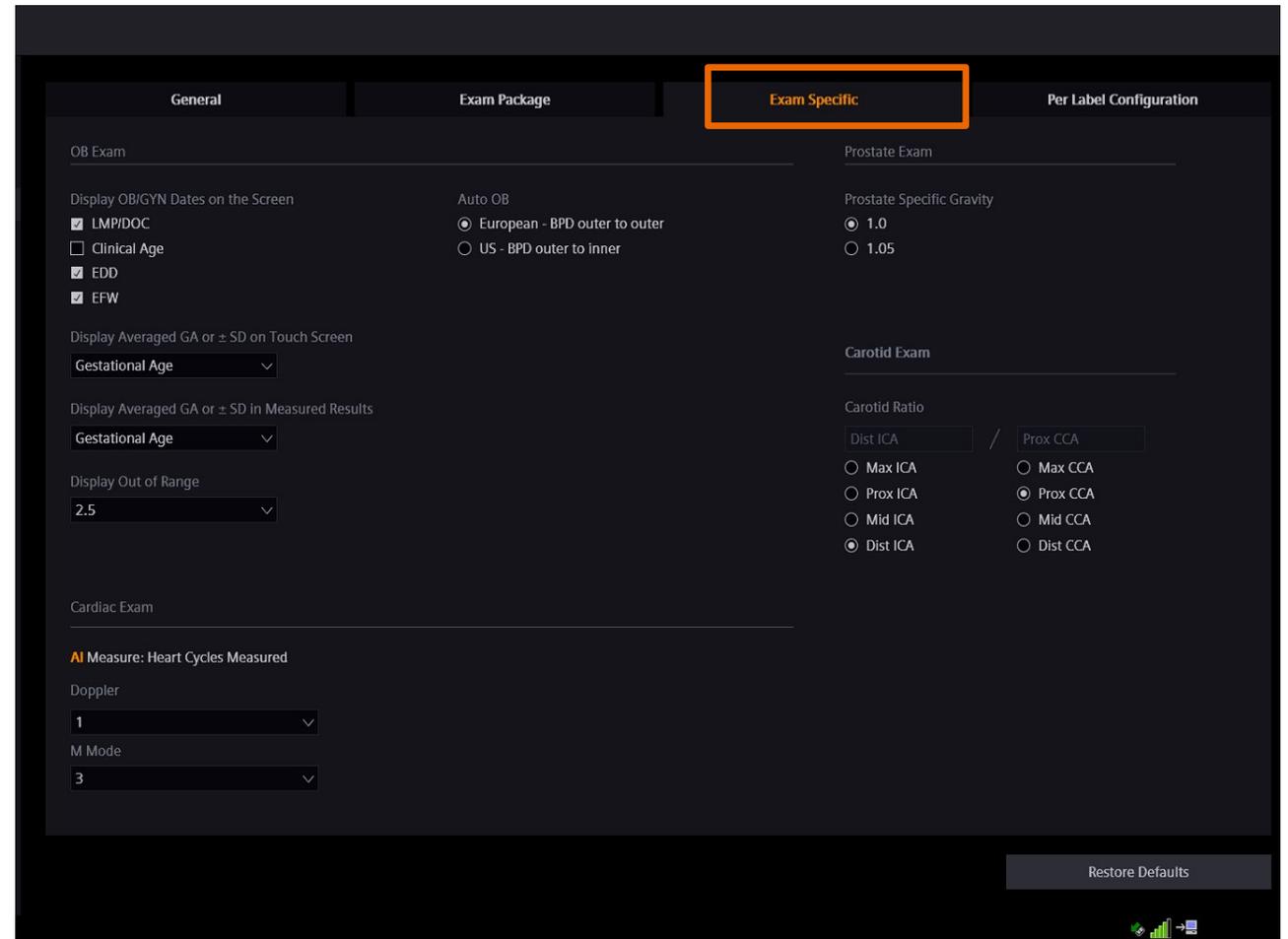
OB exam options for:

- Date display types (screen)
- Standard deviation
- Ratio display types (report)
- Measurement tool types
- Auto OB

Prostate specific gravity options

- 1.0
- 1.05

Carotid Ratio default selections

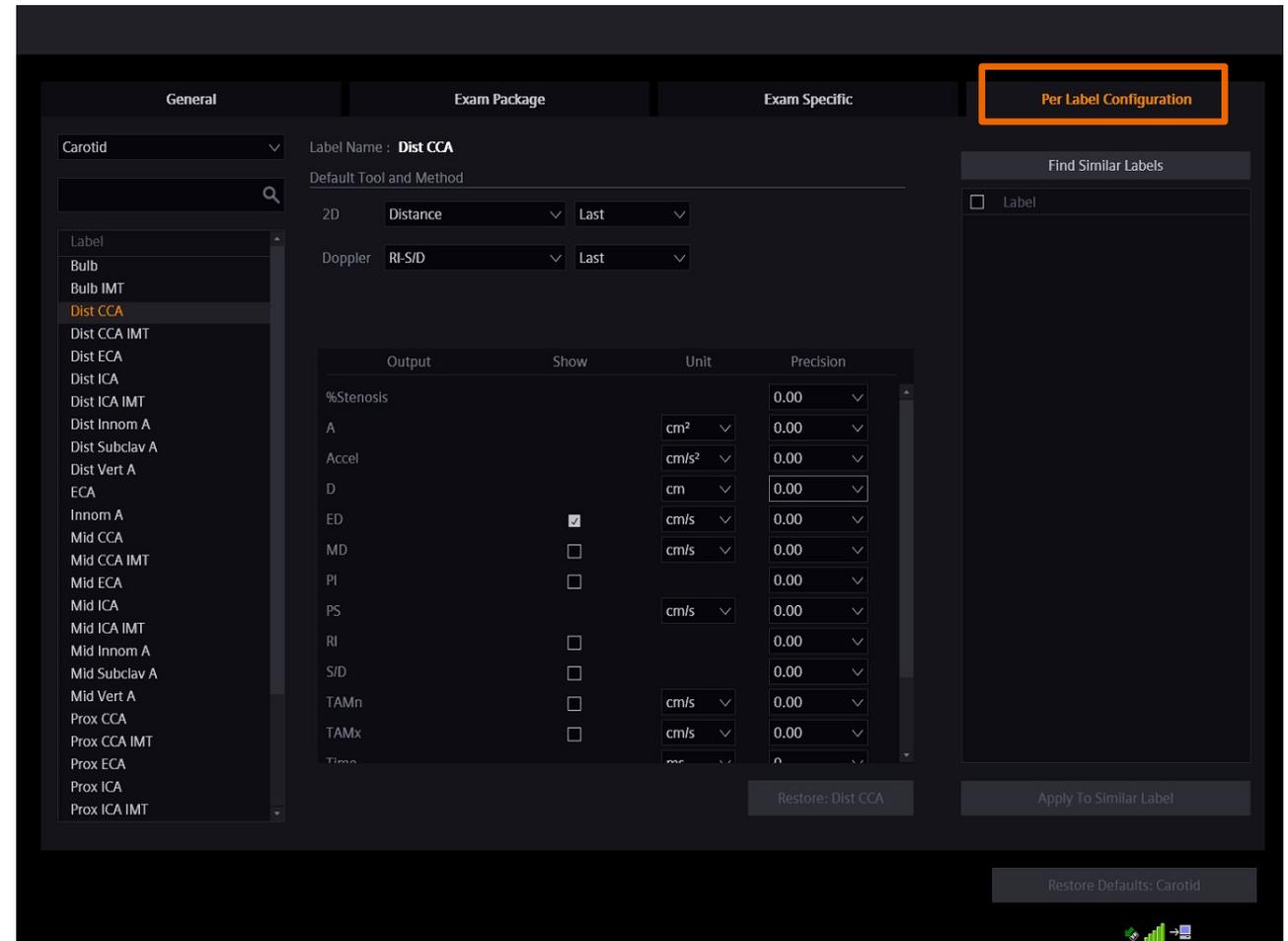


Measurement subgroup Per Label Configuration

Labels can be configured on an individual basis for

- Unit
- Precision
- Default tool type
- Method (Last, Max, Mean, Average)
- Show/Hide in MDA

Use Find Similar Labels option to change multiple labels to the same settings.



Objectives

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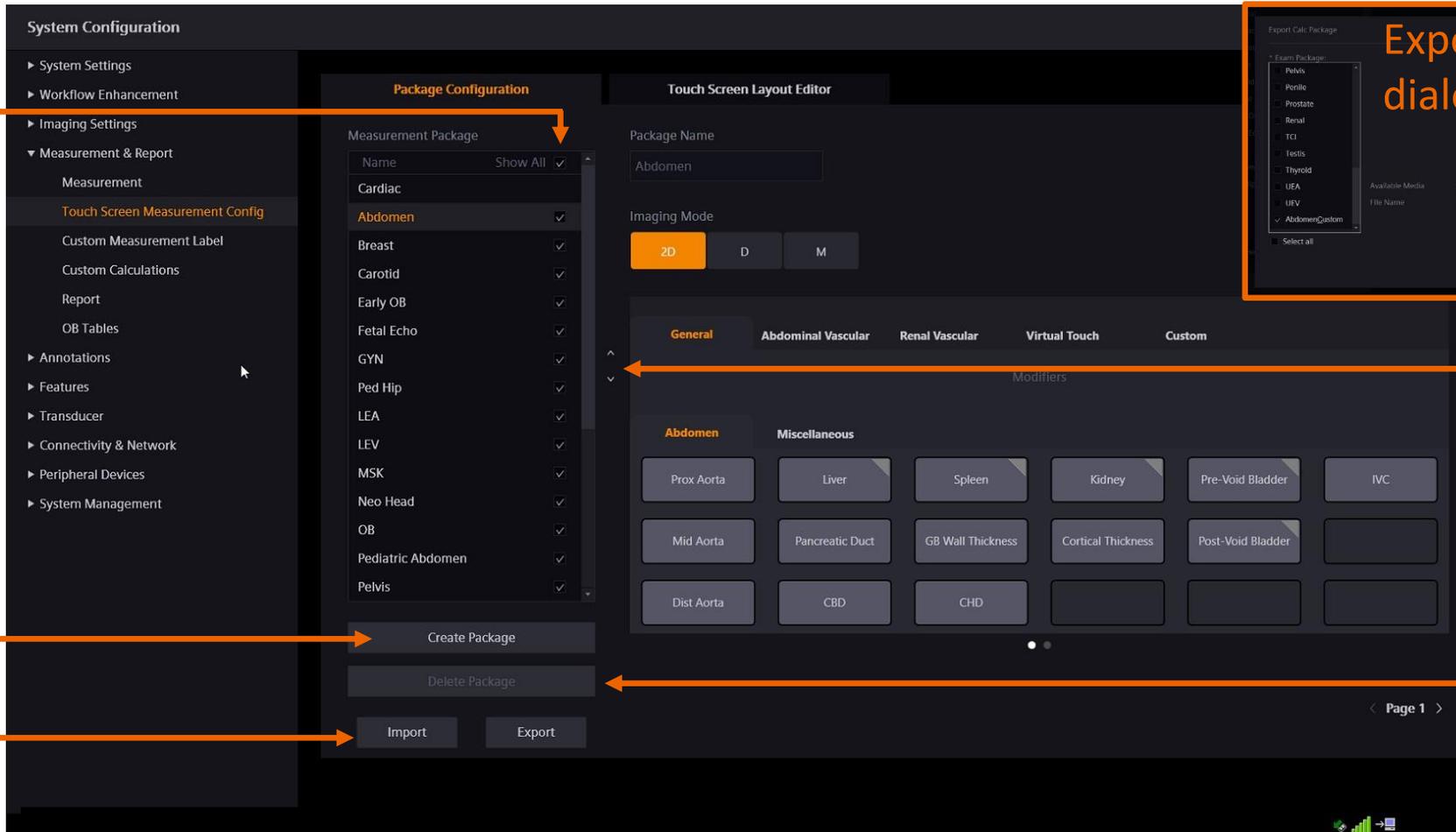


Touch Screen Measurement Config

Show/Hide measurement packages

Create custom measurement packages

Import/Export



Re-order measurement packages

Delete custom packages

Touch Screen Measurement Config

GI example

The screenshot shows the 'Touch Screen Layout Editor' interface. On the left, the 'Package Configuration' panel includes a 'Name' dropdown set to 'Abdomen', a 'Measurement Label Library' dropdown also set to 'Abdomen', and a search field. Below these is a 'Master list of label options' containing items like 'AAA', 'AAA (Post Repair)', 'AAA AP Diam', etc. The main area is the 'Touch Screen layout grid' with tabs for 'General', 'Abdominal Vascular', 'Renal Vascular', 'Virtual Touch', and 'Custom'. Under 'Abdominal Vascular', there are sub-groups: 'Abdomen' (containing 'Prox Aorta', 'Mid Aorta', 'Dist Aorta') and 'Miscellaneous' (containing 'Liver', 'Spleen', 'Kidney', 'Pre-Void Bladder', 'IVC', 'Pancreatic Duct', 'GB Wall Thickness', 'Cortical Thickness', 'Post-Void Bladder'). A 'New Page' button is at the bottom left, and a 'Restore Defaults: Abdomen' button is at the bottom right. The 'Imaging Mode' section at the top has '2D', 'D', and 'M' buttons.

Touch Screen mode

Exam type

Label search field

Touch Screen layout grid

Master list of label options

Add new page

Specialized measurement groups

Sub-groups

Indicates a folder of measurements (i.e., volume)

Restore defaults

Touch Screen Measurement Config

Cardiac example

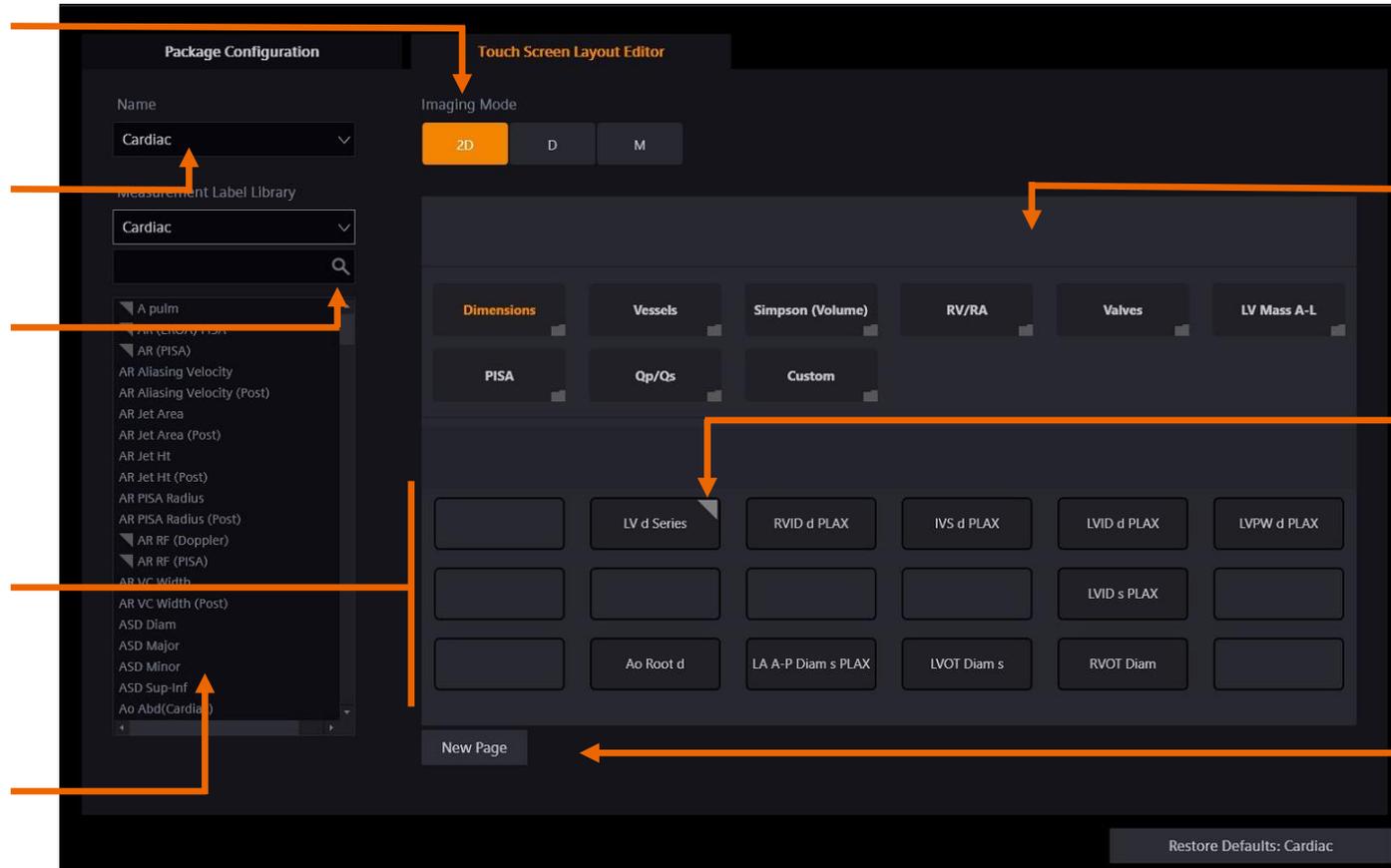
Touch Screen mode

Exam type

Label search field

Touch Screen layout grid

Master list of label options



Anatomy Folders
(two lines)

Indicates a folder
of measurements
(i.e., volume)

Add new page

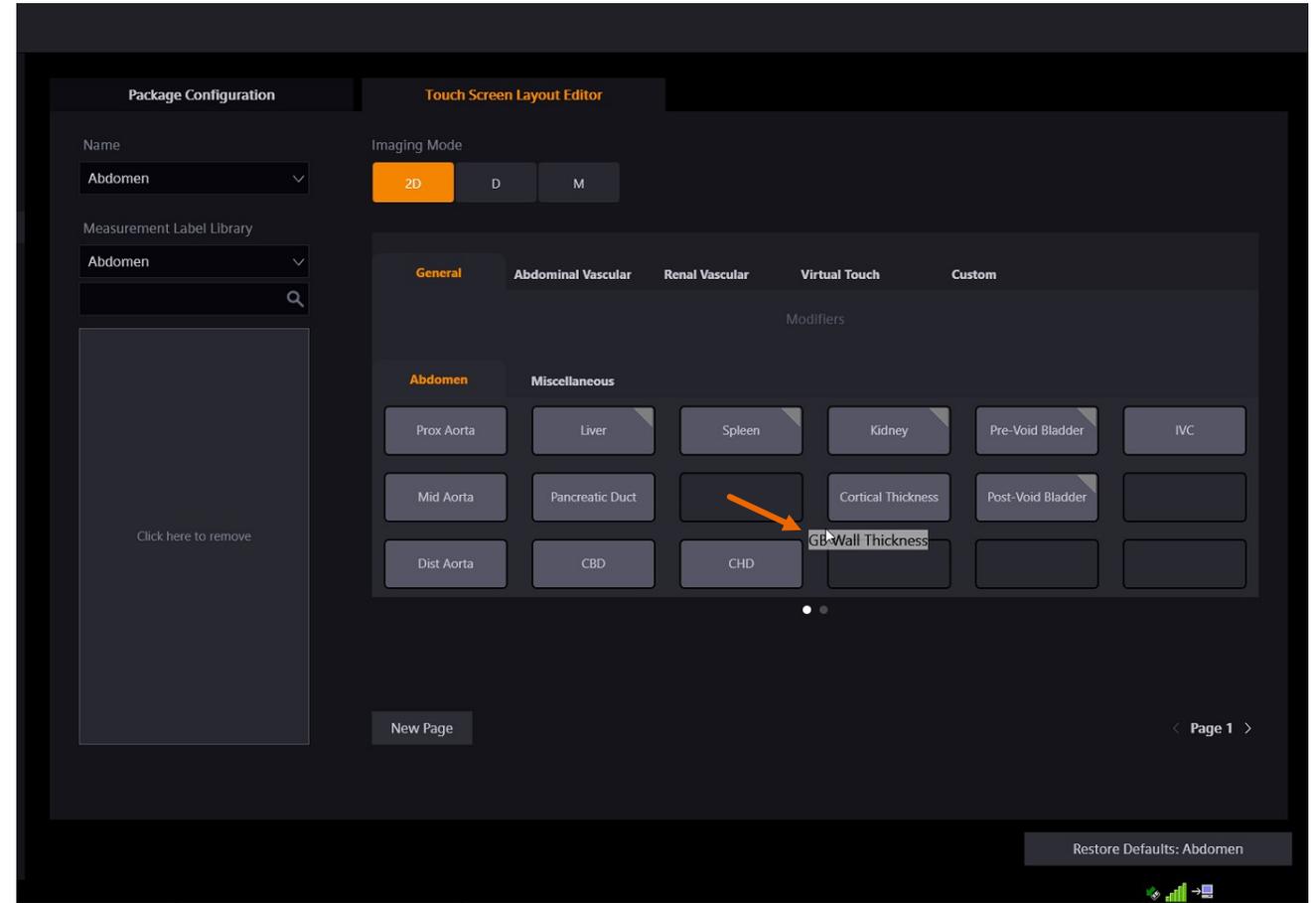
Restore defaults

Touch Screen Measurement Config

Moving labels

To move a label to different blank location on the Touch Screen:

- Use the **Pointer** and **Set** key to highlight and “pick up” the label
- Move the label to the new blank location
- Use the **Set** key to “drop” the label in the new location

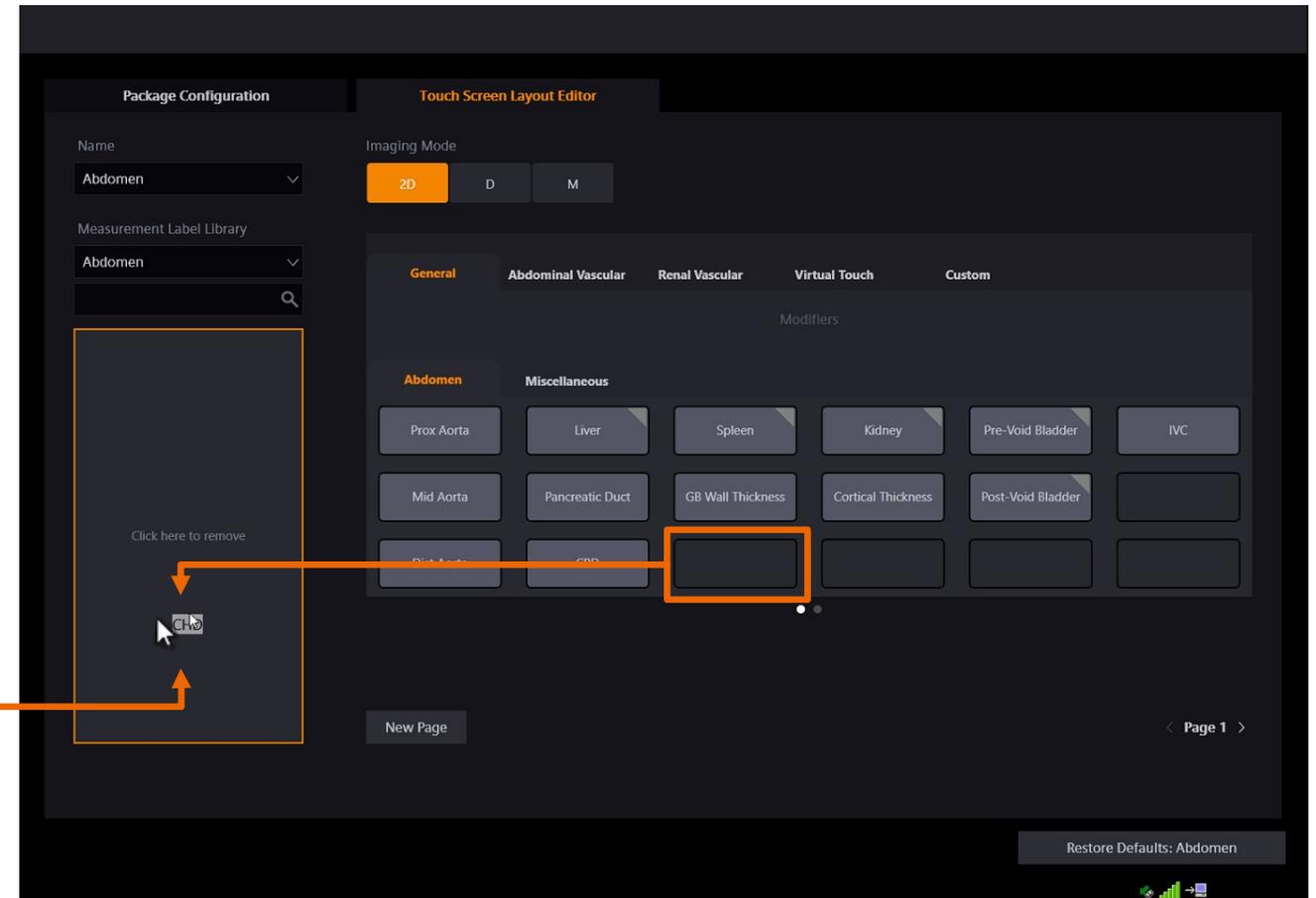


Touch Screen Measurement Config

Removing a label

Two options to remove a label:

- Pick up the label to be removed
- Drag label to master list and drop using the **Set** key, or “Double click” on the Touch Screen label



Touch Screen Measurement Config

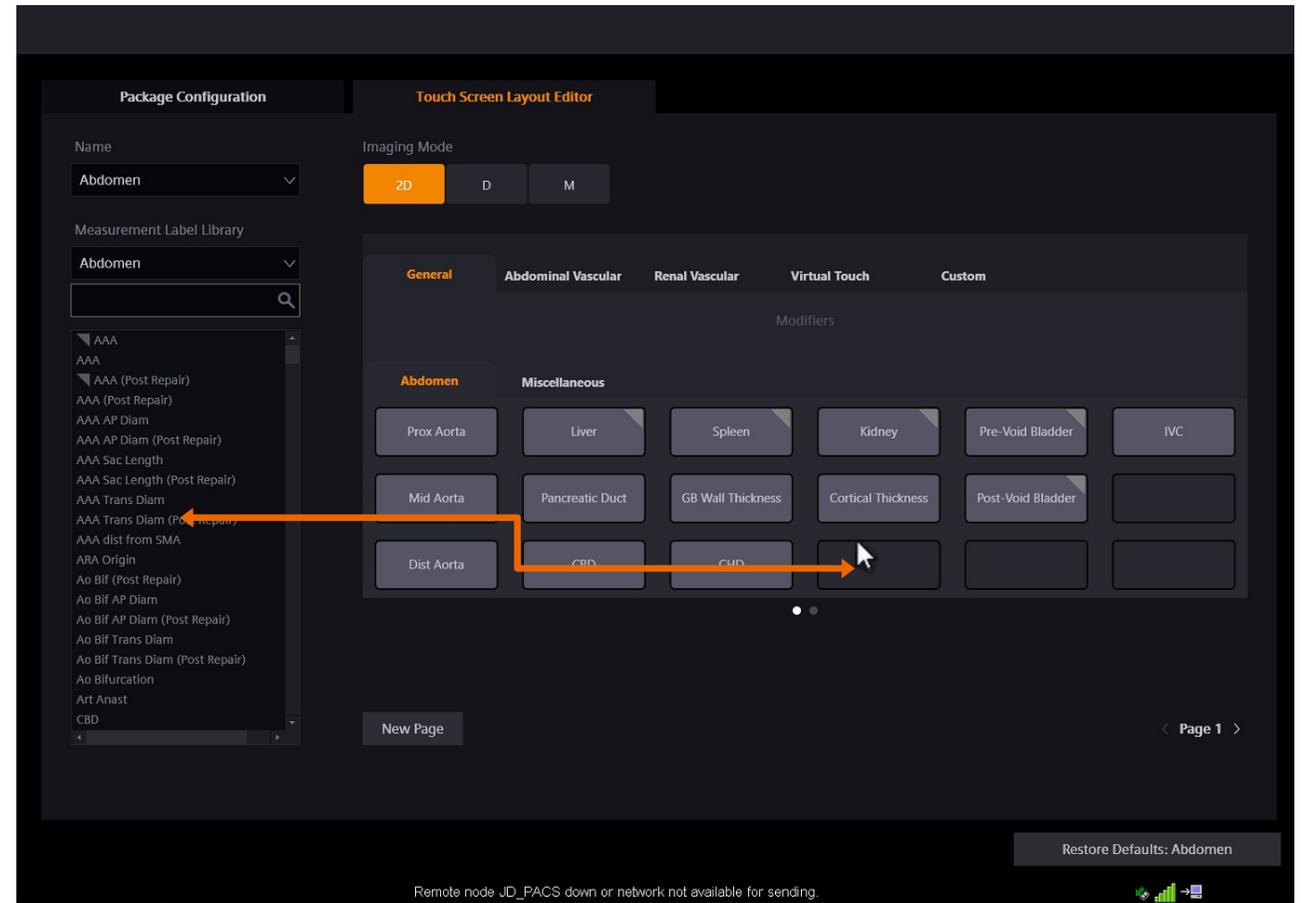
Adding a label

Adding a label:

- Find the desired label in the master list
- Pick up the label using the **Pointer** and **Set** key
- Move to desired location and place the label



To quickly add a label, double-click on the label name in the master list – the label is added to the next available label spot.



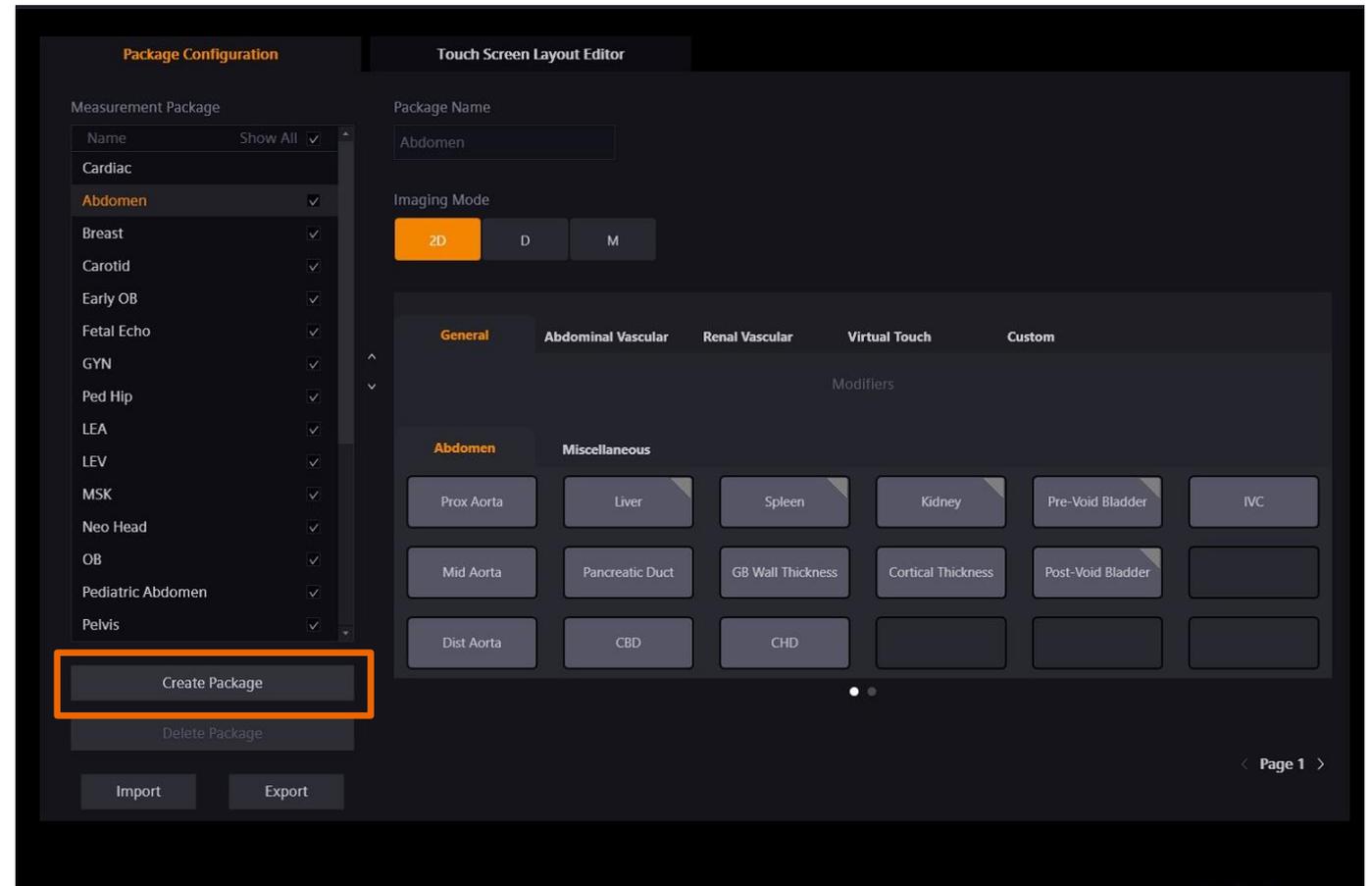
Touch Screen Measurement Config

“Blank” measurement Touch Screens

Not all exam packages have labels populated on the Touch Screen:

- MSK
- Neo Head
- TCI

Custom labels must be created for these exam packages.

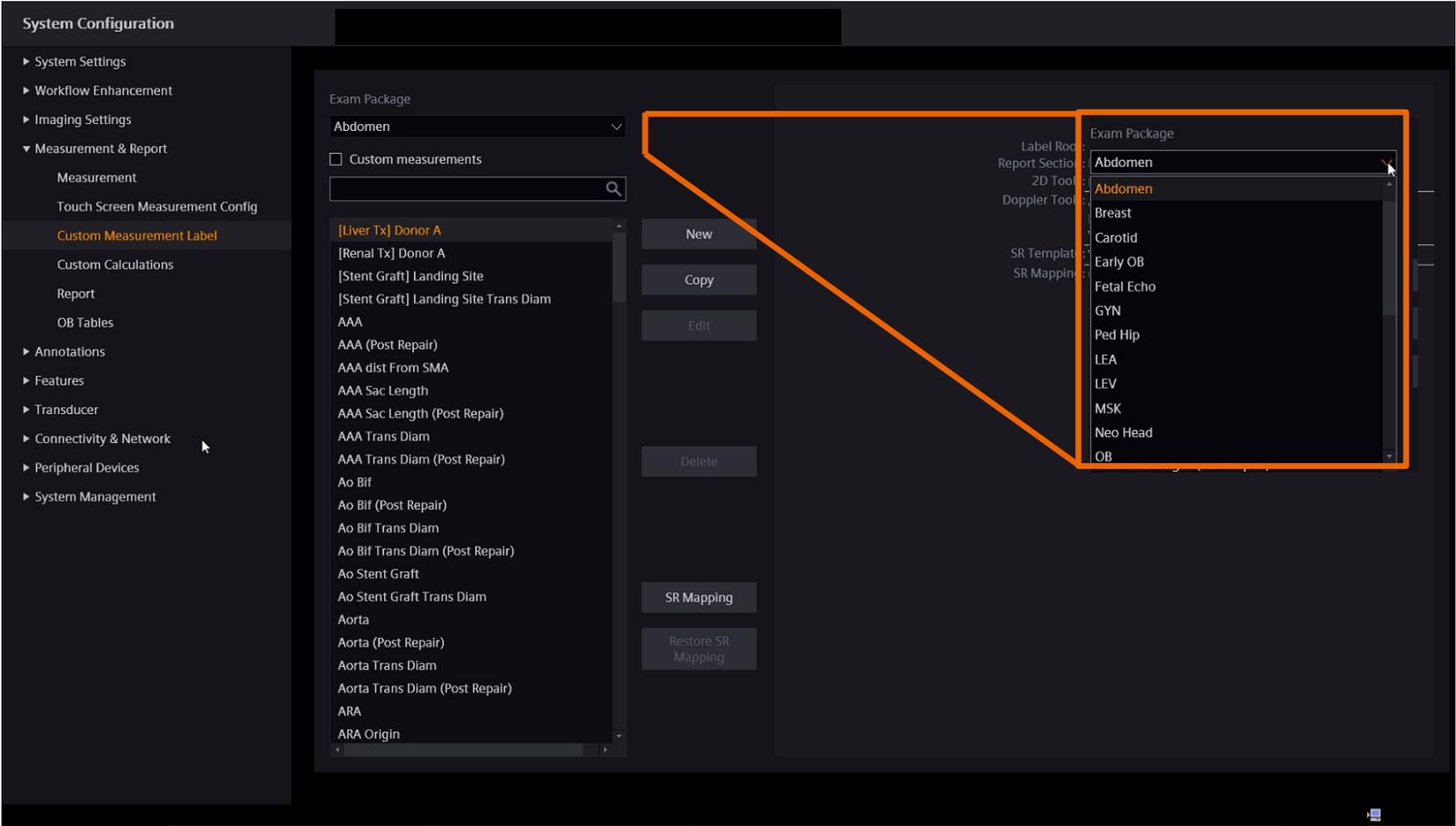


Objectives

- Identify access to system configuration
- Outline the measurement subgroup
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- **Explain custom measurement labels**
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Custom measurement label subgroup Homepage layout



Custom measurement label subgroup

Homepage layout

1. Master list of all labels
2. Label management options
3. Display of label information/content
4. SR Mapping options

The screenshot displays the 'Exam Package' interface for 'Abdomen'. It features a search bar and a list of labels under the 'Custom measurements' section. The labels include various anatomical and procedural terms such as '[Liver Tx] Donor A', '[Renal Tx] Donor A', and 'AAA (Post Repair)'. To the right of the list, there are two sets of management buttons: one set with 'New', 'Copy', 'Edit', and 'Delete' buttons, and another set with 'SR Mapping' and 'Restore SR Mapping' buttons. A detailed view of a label is shown on the right, displaying its root, report section, 2D tools, Doppler tools, SR template, and SR mapping status.

1. Master list of all labels

2. Label management options

3. Display of label information/content

4. SR Mapping options

Exam Package
Abdomen

Custom measurements

[Liver Tx] Donor A
[Renal Tx] Donor A
[Stent Graft] Landing Site
[Stent Graft] Landing Site Trans Diam
AAA
AAA (Post Repair)
AAA dist From SMA
AAA Sac Length
AAA Sac Length (Post Repair)
AAA Trans Diam
AAA Trans Diam (Post Repair)
Ao Bif
Ao Bif (Post Repair)
Ao Bif Trans Diam
Ao Bif Trans Diam (Post Repair)
Ao Stent Graft
Ao Stent Graft Trans Diam
Aorta
Aorta (Post Repair)
Aorta Trans Diam
Aorta Trans Diam (Post Repair)
ARA
ARA Origin

New
Copy
Edit
Delete

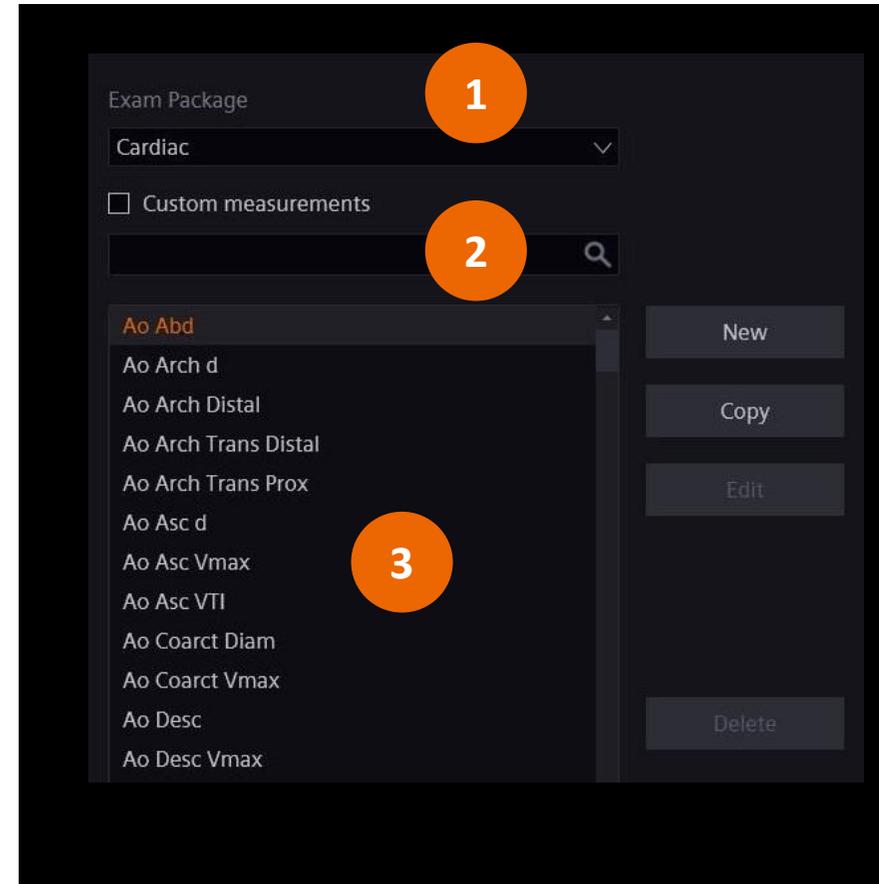
SR Mapping
Restore SR Mapping

Label Root: [Liver Tx] Donor A
Report Section: Liver Transplant
2D Tools: Distance
Doppler Tools: Acceleration
Heart Cycle
Vol Flow
SR Template: Vascular
SR Mapping: Completed

Custom measurement label subgroup

Measurement master list display options

1. Measurement list options display
 - All measurements*
 - Custom measurements
 - Exam type
2. Search box will match any part of the name
3. Measurement master list
 - Display is based on selected list (1)
 - Alphabetical, scroll bar to view list
 - Selected label is highlighted in orange



* Virtual Touch applications, Amniotic Fluid Index quadrants, Mean Sac Diameter, and Volumes labels are currently unavailable for custom structured reporting.

Custom measurement label subgroup

Label management options

New

- Create a new custom measurement label

Edit

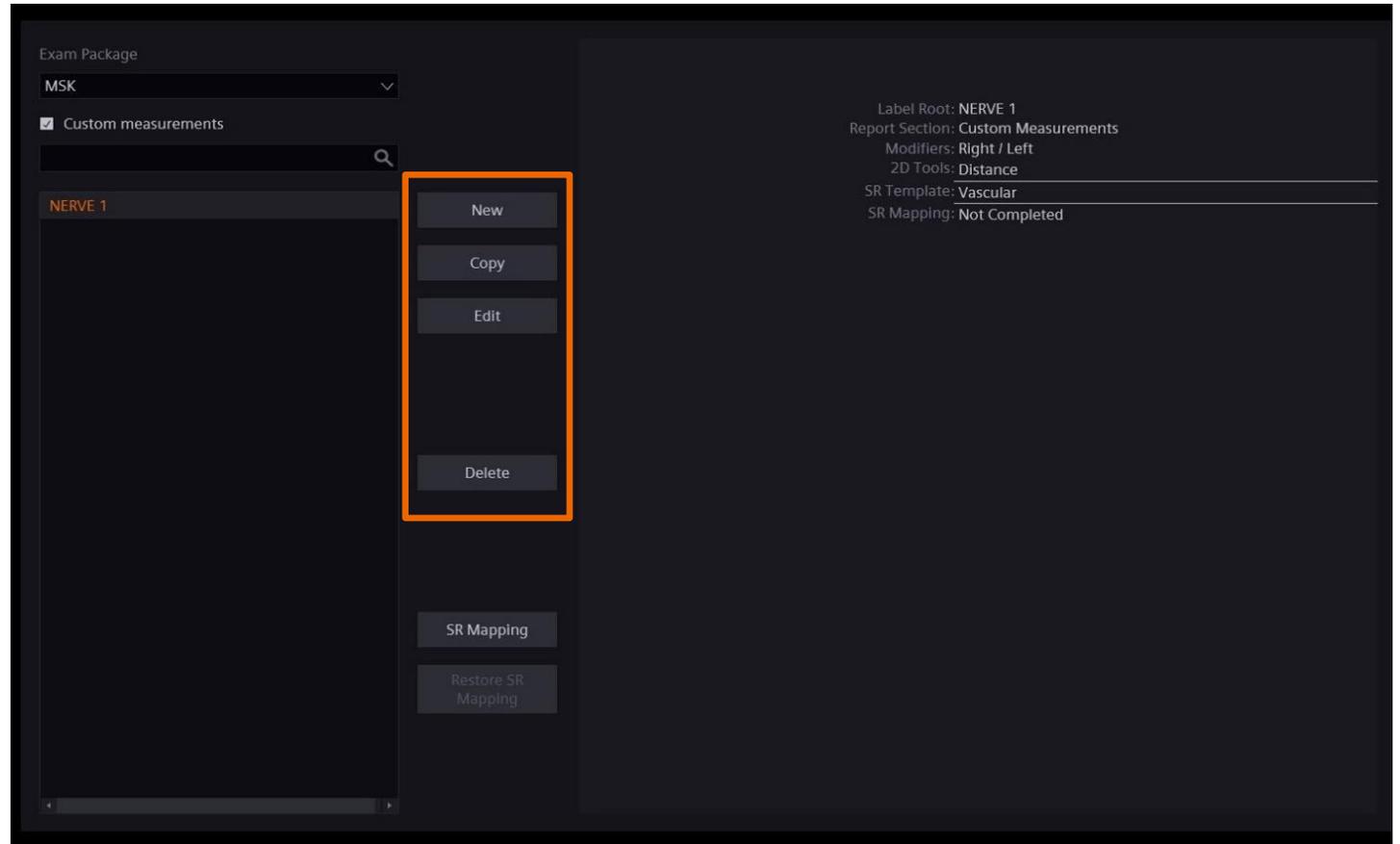
- Edit the selected custom label

Copy

- Copy a selected factory label

Delete

- Delete a custom label



Custom measurement label subgroup

Label information

- Highlighting a label displays a summary of the measurement information
- Use as a quick reference for mode types, attached modifiers, tool types, or report section location
- Displays general SR mapping information

The screenshot displays a software interface for managing measurement labels. On the left, a list of labels is shown under the 'Abdomen' exam package. The label '[Liver Tx] Donor A' is highlighted. To the right of the list are buttons for 'New', 'Copy', 'Edit', 'Delete', 'SR Mapping', and 'Restore SR Mapping'. On the far right, a summary panel (highlighted with an orange border) provides details for the selected label:

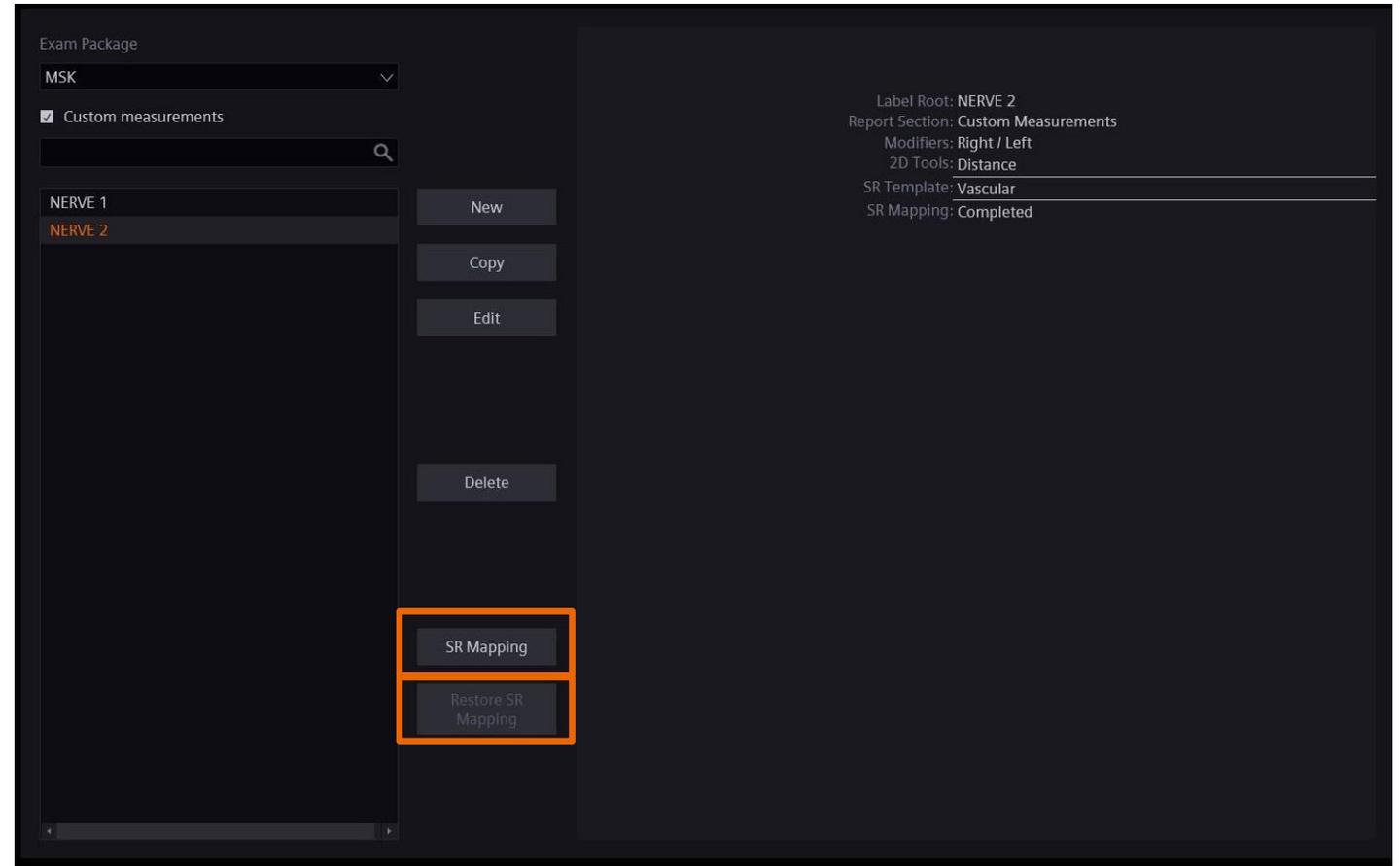
- Label Root: [Liver Tx] Donor A
- Report Section: Liver Transplant
- 2D Tools: Distance
- Doppler Tools: Acceleration, Heart Cycle, Vol Flow
- SR Template: Vascular
- SR Mapping: Completed

Custom measurement label subgroup

Other available functions

Other available functions include:

- SR Mapping “quick access” key
- Restore label defaults to any factory label that has been modified



Objectives

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What is DICOM and DICOM Structured Reporting (SR)?

DICOM is an acronym for ***D**igital **I**maging and **C**ommunications in **M**edicine*

DICOM was the result of manufacturers and users of radiological imaging equipment attempting to standardize image exchange between different systems.

This included:

- Storage of the images and all relevant information
- A network transfer mechanism

These specifications became the DICOM Standard.

The development of DICOM Structured Reporting (SR) was an extension of the initial standard; it was created to help communicate non-imaging information, such as measurements or post-processing results, in a standardized way.

What is a DICOM Structured Report (SR)?

A DICOM SR is *not*:

- A report that can be printed “as is” on the ultrasound system or offline printer
- The customized reporting package
- An “off the shelf” (or predefined) product

A DICOM SR is

- A document consisting of structured or mapped data that defines the file content and organization for ultrasound procedure reports

This data is read by a PACS or offline workstation but requires additional software to translate the data into a format that can be printed as a tangible report.

Ultimately, a DICOM SR is a highly organized transfer mechanism between the ultrasound system and PACS or workstation.

Why is DICOM SR important to the ACUSON Sequoia ultrasound system?

In system configuration, the ACUSON Sequoia ultrasound system will allow the user to define custom measurements and associate a custom SR mapping to it.

This custom data can be transferred as a SR if it matches the mapping expected by the PACS/Offline reporting package.

Expected “mapping” behavior is only achieved if during the creation/mapping of a new measurement label the user follows the DICOM SR template structure.

If the template structure is not followed, the measurement data will not be displayed in an SR, as the PACS or offline workstation will not be able to “read” the data.

DICOM SR template data components

The DICOM SR template has a specific set of rules for “coding” data for a readable transfer.

The ultrasound data is constructed in sections (or “containers”) based on anatomy, which are further separated into “concept names”.

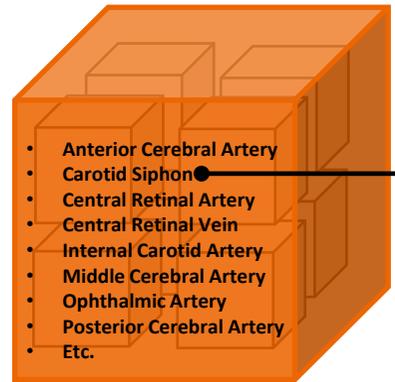
Each concept name is associated with a coded “result” which defines the specifics of that result – measurements and other data – within that concept name.

There are four templates supported by the DICOM standard for ultrasound. They are:

- OB/Gyn
- Vascular
- Adult Echocardiography
- Pediatric and Fetal Echocardiography

Template ID 5100 Vascular Ultrasound Procedure Report	Structured Reporting “coding” rules
--	--

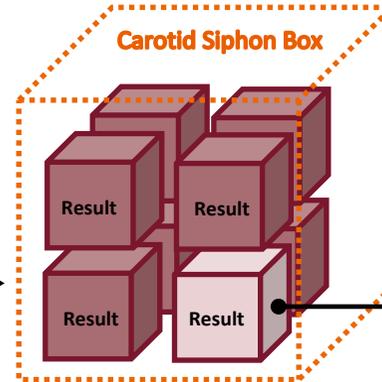
- TID 5103: Blood Vessel of Head, Left
- TID 5103: Blood Vessel of Head, Right
- TID 5103: Blood Vessel of Head, Unilateral
- TID 5103: Artery of Neck, Left
- TID 5103: Artery of Neck, Right
- Etc.



Section or Container

TID 5103
Blood Vessel of Head, Left

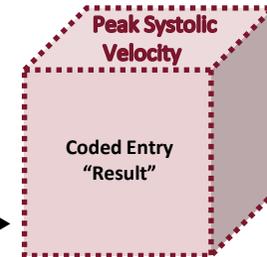
Modifier



Concept Names

Example results for Carotid Siphon such as:

- Peak Systolic Velocity
- End Diastolic Velocity
- Diameter
- Etc.



Context ID

Example:
(11726-7, LN, “Peak Systolic Velocity”)

Code value

Coding scheme designer

Code meaning

Objectives

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Defining custom measurement labels

Creating a custom label

To create a custom label, begin by defining the label basics:

1. Label Root (name)
2. Choose exam package
3. Select modifiers (if applicable)
4. Measurement Type
5. Select segments (if applicable)

The screenshot shows the 'Label Basics' configuration window. The 'Label Root' field is set to 'NERVE 1'. The 'Exam Package' dropdown is set to 'MSK'. The 'Modifiers' section has 'Right / Left' checked. The 'Measurement Type' is set to 'Fetal'. The 'Segments' section has 'None' checked. The 'Tools' section is expanded, showing a list of measurement options: Angle, Area, Circumference, Distance, Vol MOD, Area Ratio, Distance Ratio, Stenosis, Volume, and IMT. The 'Report Section' dropdown is set to 'Custom Measurements'. At the bottom, there are 'Save All & Close' and 'Cancel All' buttons.

Defining custom measurement labels

Creating a custom label

Once the name and package basics have been defined, there are three tabs to complete the label parameters:

- Tools
- SR Template
- SR Mapping

Label Root *
NERVE 1

Exam Package
MSK

Imaging Mode
 2D Mode
 Doppler Mode
 M Mode

Report Section
Custom Measurements

Modifiers
 Right / Left

Measurement Type
 Fetal

Segments
 None Prox Mid Dist Origin

Tools SR Template SR Mapping

2D Mode *
 Tools Label
 Angle
 Area
 Circumference
 Distance
 Vol MOD
 Area Ratio
 Distance Ratio
 Stenosis
 Volume
 IMT

* Required field

Save All & Close Cancel All

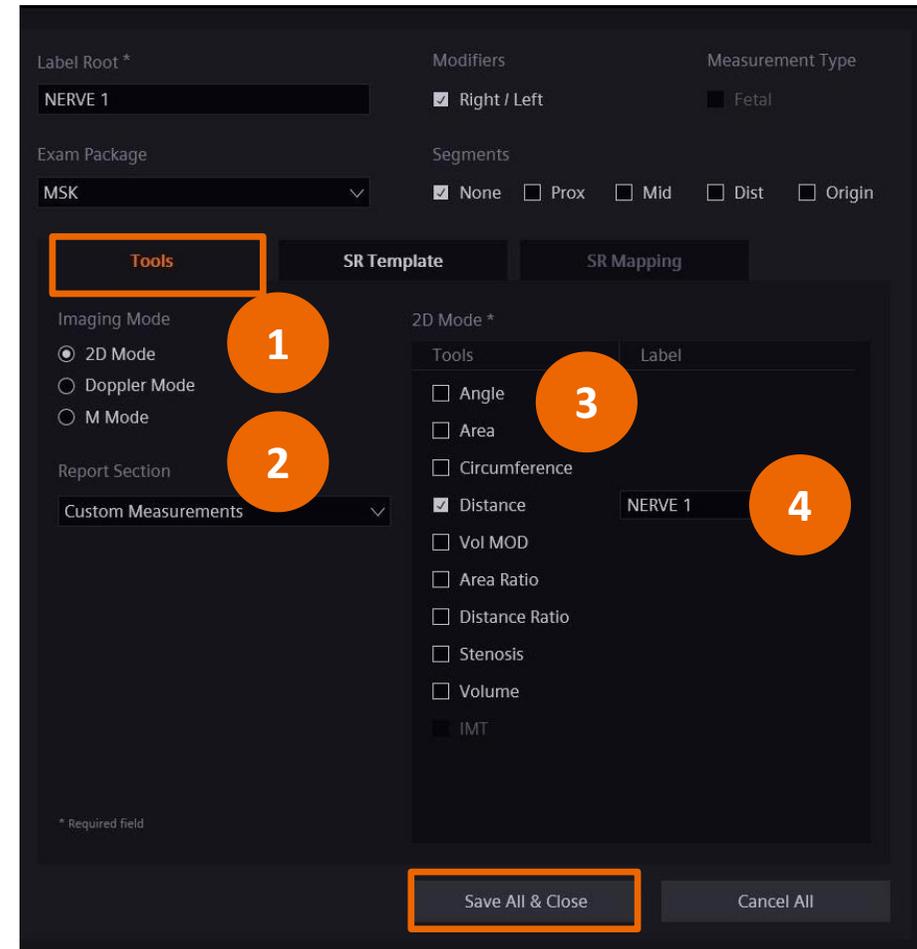
Defining custom measurement labels

Creating a custom label – Tools tab

The **Tools** tab defines:

1. Imaging Mode
 - 2D
 - Doppler
 - M-Mode
2. Report Section
3. Measurement tools associated with the chosen imaging mode, i.e., Distance, Area, etc.
4. Label display name options

Use Save All & Close to complete the tool selections.



Defining custom measurement labels

Creating a custom label – SR Template tab

SR Template tab defines the:

1. SR Template
2. SR Template Section
3. Anatomy or Vessel
4. Coding Scheme Designator
5. Code Value

Use Save All & Close to complete the SR Template selections.

The screenshot shows the 'SR Template' configuration window. At the top, there are fields for 'Label Root *' (CBD3), 'Modifiers' (Right / Left), and 'Measurement Type' (Fetal). Below these are 'Exam Package' (General) and 'Segments' (None, Prox, Mid, Dist, Origin). A navigation bar at the bottom of the top section includes 'Tools', 'SR Template' (highlighted with an orange box), and 'SR Mapping'. The main configuration area contains:

- 'SR Template' radio buttons: OB/GYN, Fetal Echo, **Vascular** (1), and Cardiac.
- 'SR Template Section *' dropdown: Artery of Abdomen (2).
- 'Anatomy or Vessel *' dropdown: (3).
- 'Coding Scheme Designator *' text field: (4).
- 'Code value *' text field: (5).

 At the bottom, there are 'Save All & Close' (highlighted with an orange box) and 'Cancel All' buttons. A legend at the bottom left indicates '* Required field'.

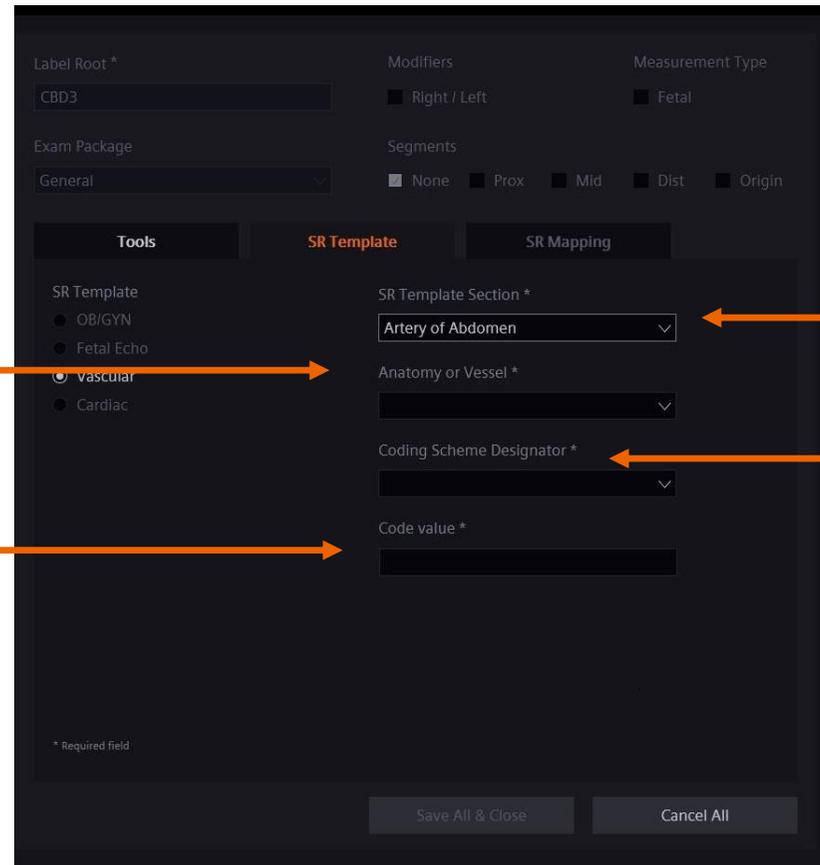
Defining custom measurement labels

Creating a custom label – SR Template options

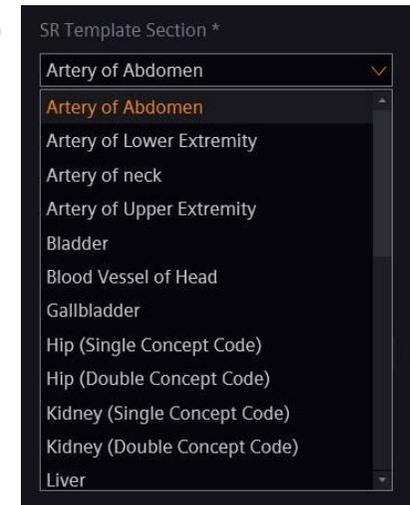
Anatomy or Vessel



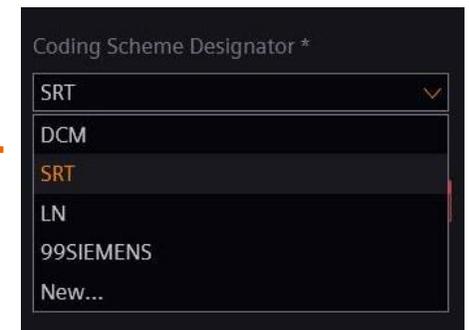
Code value linked to Anatomy or Vessel entry



SR Template Section



Coding Scheme Designator



Defining custom measurement labels

Creating a custom label – SR Mapping tab

SR Mapping defines*

1. Tools & Output
2. Text String for SR
3. Concept Code Meaning
4. Coding Scheme Designator
5. Code Value
6. Measurement Orientation
7. Post prandial

Use Save All & Close to complete the SR Mapping selections.

*Options are for GI label coding – additional options for cardiac include Image View, Cardiac Cycle Point, Flow Direction, Finding Site, and Measurement Method

The screenshot shows the 'SR Mapping' configuration window. At the top, 'Label Root *' is set to 'NERVE 2' and 'Exam Package' is 'MSK'. The 'SR Mapping' tab is selected and highlighted with an orange box. The interface includes several fields and controls:

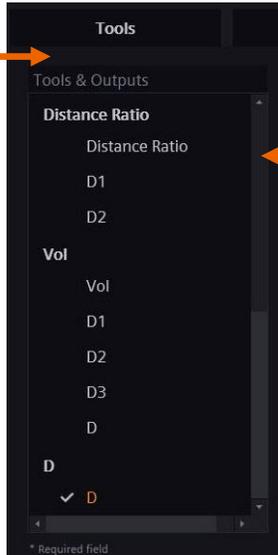
- 1:** 'Tools & Outputs' list showing 'D' selected with a checkmark.
- 2:** 'Text String for SR' text input field.
- 3:** 'Concept Code Meaning *' dropdown menu set to 'Distance'.
- 4:** 'Coding Scheme Designator *' dropdown menu set to 'DCM'.
- 5:** 'Code value *' text input field containing '121206'.
- 6:** 'Measurement Orientation' dropdown menu with a checkmark.
- 7:** 'Post-prandial' checkbox, which is currently unchecked.

At the bottom, there are 'Previous Output' and 'Next Output' buttons, and a 'Save All & Close' button highlighted with an orange box. A '* Required field' note is visible at the bottom left.

Defining custom measurement labels

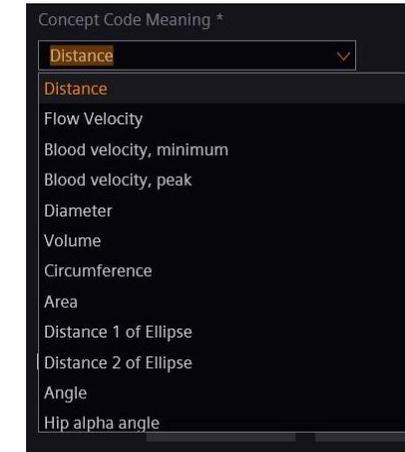
Creating a custom label – SR Mapping options

Each tool output parameter must be defined



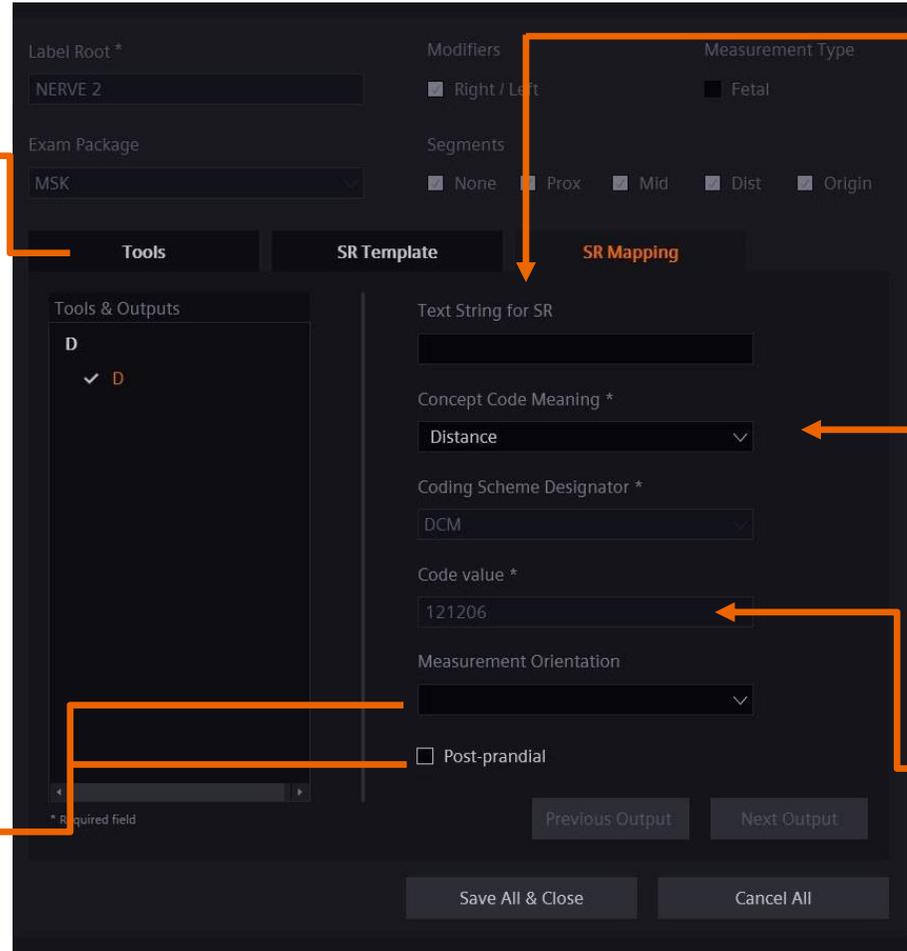
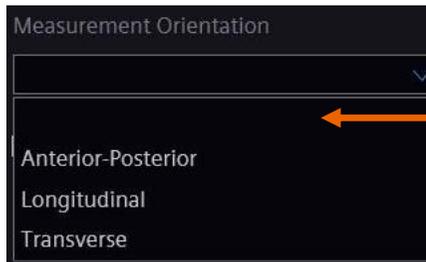
Optional field for a text descriptor

Related to Tool



Concept code meaning choice auto populates the code value

Optional fields



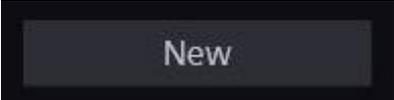
Objectives

- Identify access to system configuration
- Outline the measurement subgroup
- Describe the Touch Screen configuration
- **Explain custom measurement labels**
 - Homepage layout
 - What is DICOM SR?
 - Steps to define a custom label
 - **Create a new custom label**
- Describe Custom Calculations
- Discuss the OB tables
- Review the report



Creating a new label – GI example

- Select the **Exam Package** to add the label to
- Select the **New** option



Creating a new label – GI example

Tools tab

- Enter the unique label name → NERVE 1
- Select the **Exam Package** from drop-down menu → MSK
- Select **Modifiers** → Right/Left
- Select **Segments** → None, Prox, etc.
- Select **Imaging Mode** → 2D Mode
- Select **Report Section** → MSK
- Select **Tool** → Distance
- Select **Save All & Close** if SR Mapping is not required, otherwise select SR Template tab

The screenshot shows the 'Tools' tab in the software interface. The 'Label Root' field is set to 'NERVE 1'. The 'Exam Package' dropdown is set to 'MSK'. Under 'Modifiers', the 'Right / Left' checkbox is checked. Under 'Segments', the 'None', 'Prox', 'Mid', 'Dist', and 'Origin' checkboxes are all checked. The 'Imaging Mode' section has '2D Mode' selected. The 'Report Section' dropdown is set to 'MSK'. In the '2D Mode' section, the 'Distance' checkbox is checked. The 'Label' field contains 'NERVE 1'. At the bottom, there are 'Save All & Close' and 'Cancel All' buttons. A small asterisk indicates a required field.

Creating a new label – GI example

SR Template tab

- Pre-selected SR Template → Vascular*
- Select the **SR Template Section** from drop-down menu → User Defined Results
- Select/input **Anatomy or Vessel** → Wrist
- Select or create new **Coding Scheme Designator** → 99 MAYO
- Enter the Code Value → 1234567890**
- Selecting **Save All & Close** will stop the SR Mapping process***

* Will be automatically selected unless the label is created in OB/GYN or Fetal Echo

** The Code Value is linked to the Coding Scheme Designator

*** SR Mapping will be incomplete

Creating a new label – GI example

SR Mapping tab

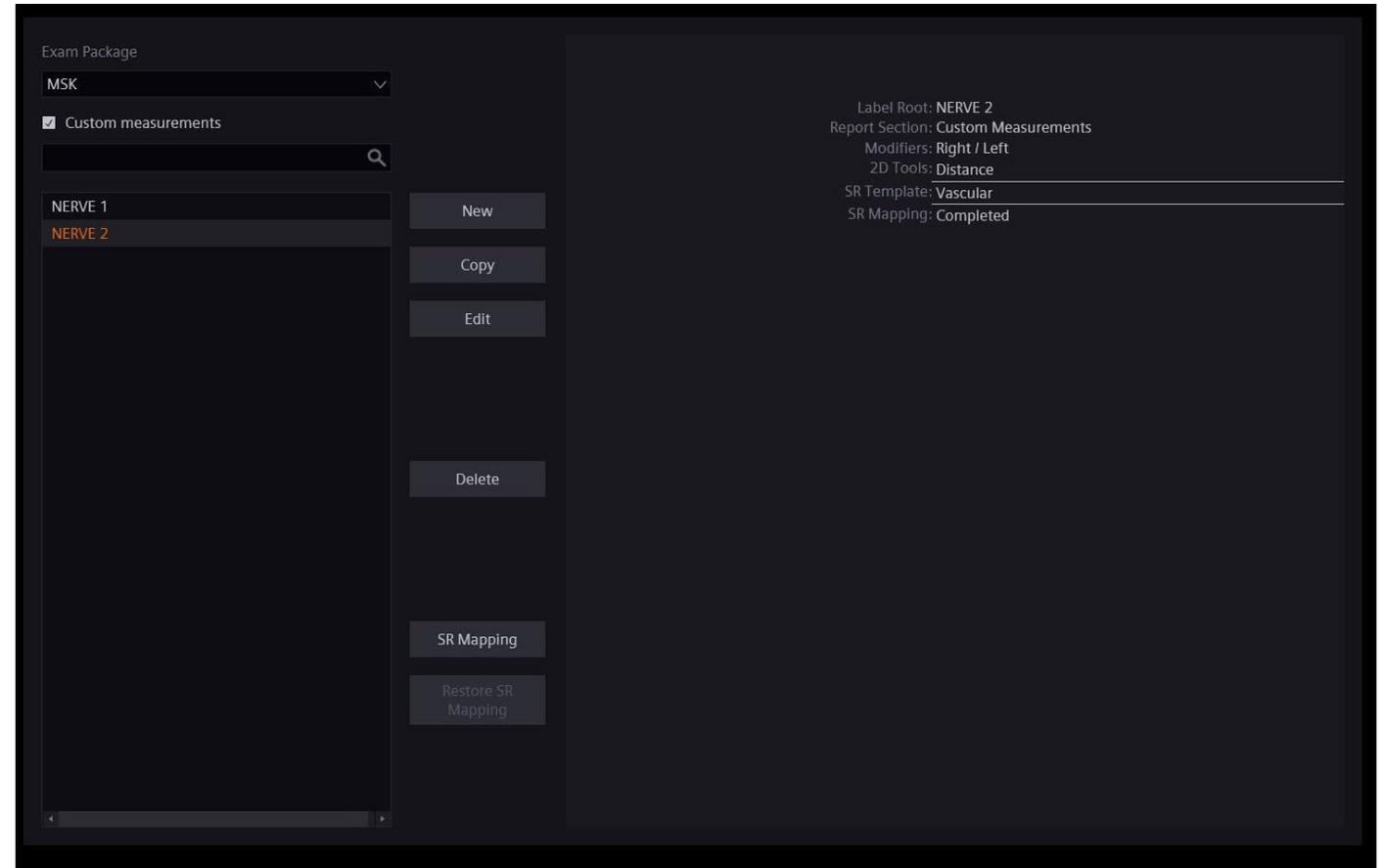
- Tools & Outputs → beside all listed tools*
- Text String for SR → Optional field
- Select **Concept Code Meaning** → Distance
- Coding Scheme Designator → DCM
- Code Value → linked to Concept Code
- Optional fields → None selected
- Select **Save All & Close** to complete

* Each tool will need to be selected and confirmed with the steps listed above. Only then will the SR Mapping be completed for the custom label.

Creating a new label – GI example

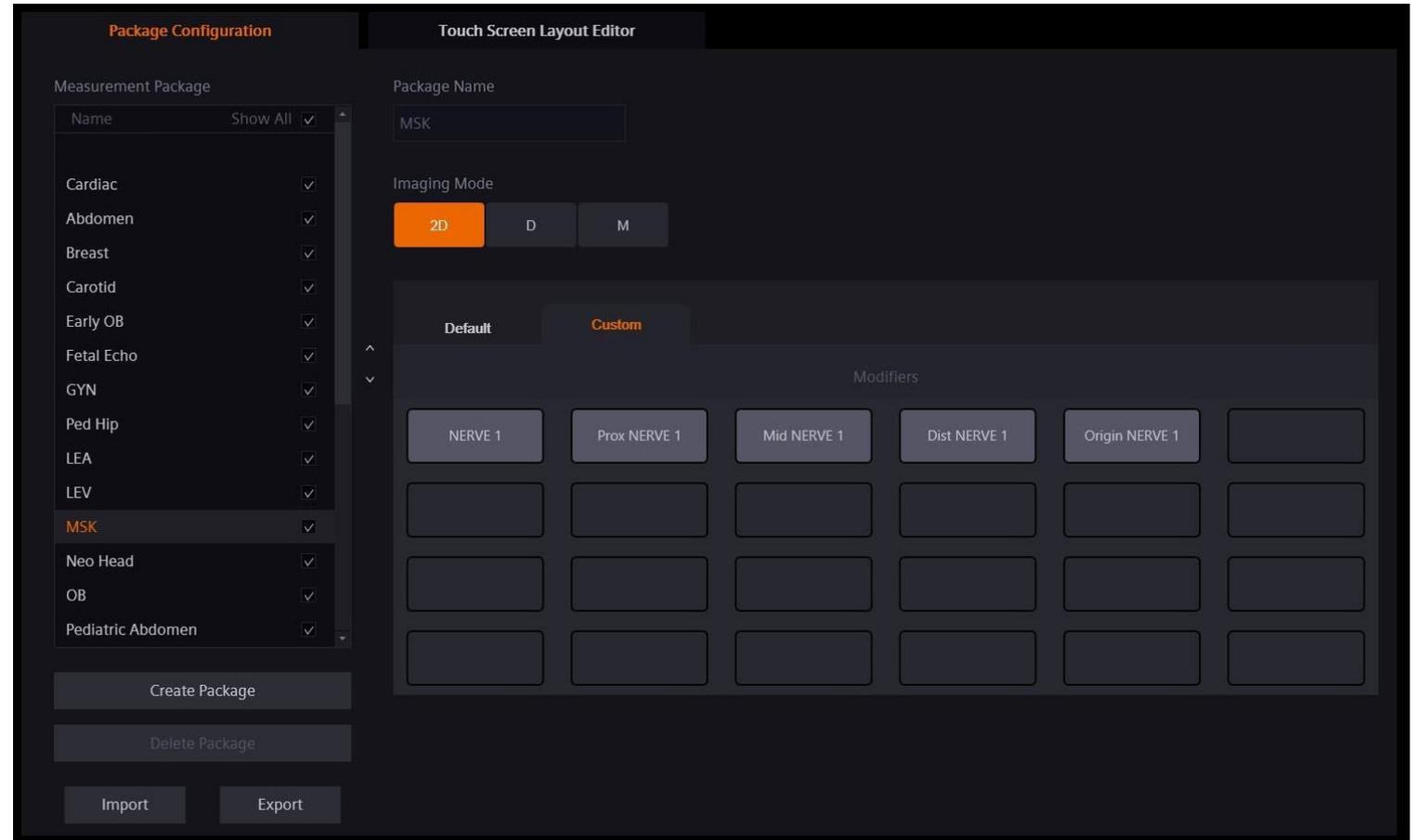
Custom label summary

- Check listed label summary for accuracy
- Label will be listed in the master menu under exam
- Label will be automatically added to the Touch Screen upon completion
- Use the Per Label Configuration to alter units or precision
- Copy, Edit, Delete are all available

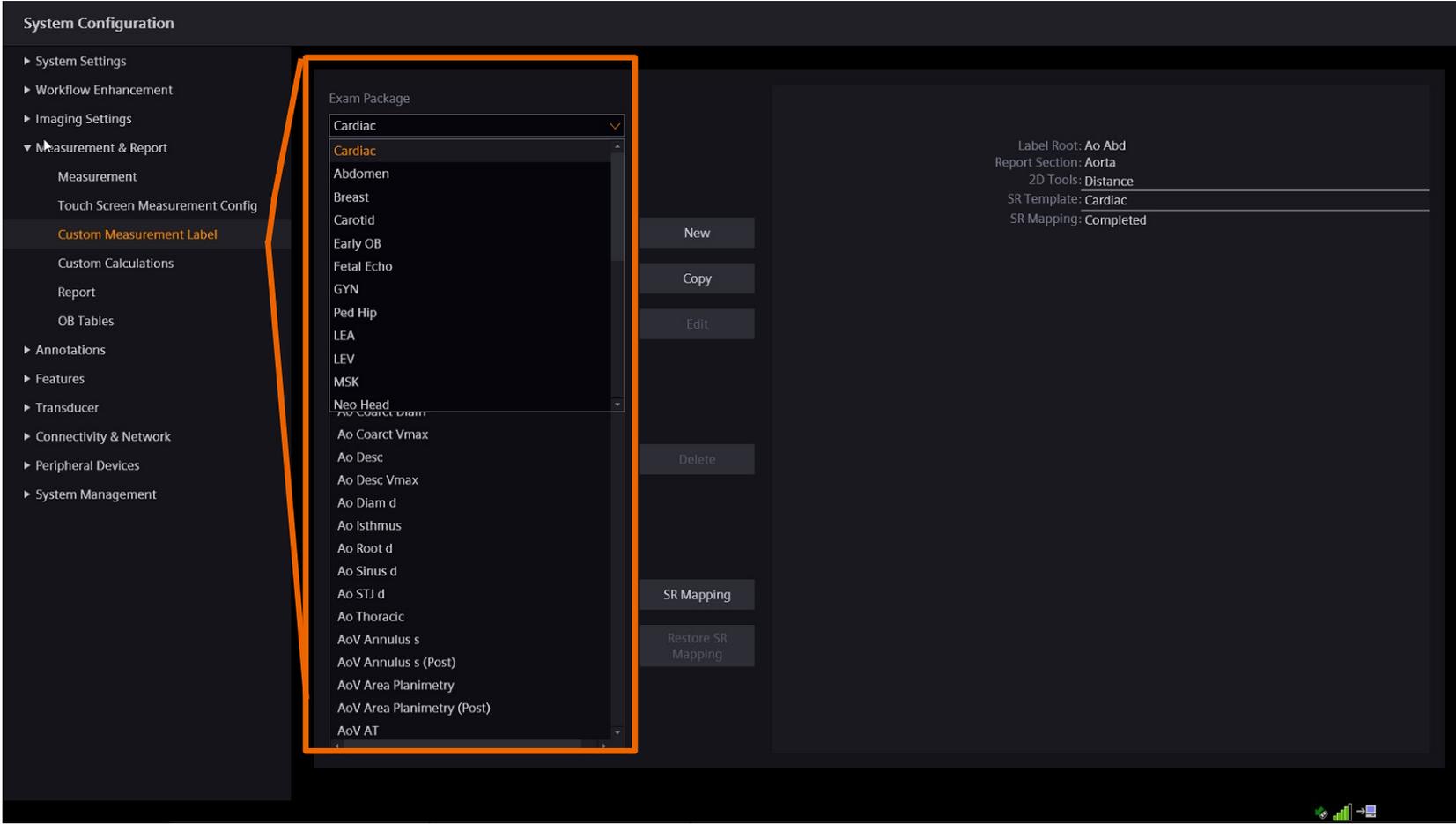


Creating a new label – GI example Touch Screen

- Custom label will automatically be added to the Touch Screen
- Modifiers (if selected) are embedded in the custom label
- Access the Touch Screen Layout Editor touch tab to change label position if necessary



Creating a new custom label using the copy label feature - Cardiac example



Copying a label – Cardiac example

1. Select the label you want to copy from the master list (selected label is back lit in orange)
2. Select **Copy** from the label management options

Summary of selected label parameters

Exam Package
Cardiac

Custom measurements

Ao Abd
Ao Arch d
Ao Arch Distal
Ao Arch Trans Distal
Ao Arch Trans Prox
Ao Asc d
Ao Asc Vmax
Ao Asc VTI
Ao Coarct Diam
Ao Coarct Vmax
Ao Desc
Ao Desc Vmax
Ao Diam d
Ao Isthmus
Ao Root d
Ao Sinus d
Ao STJ d
Ao Thoracic
AoV Annulus s
AoV Annulus s (Post)
AoV Area Planimetry
AoV Area Planimetry (Post)
AoV AT

New
Copy
Edit
Delete

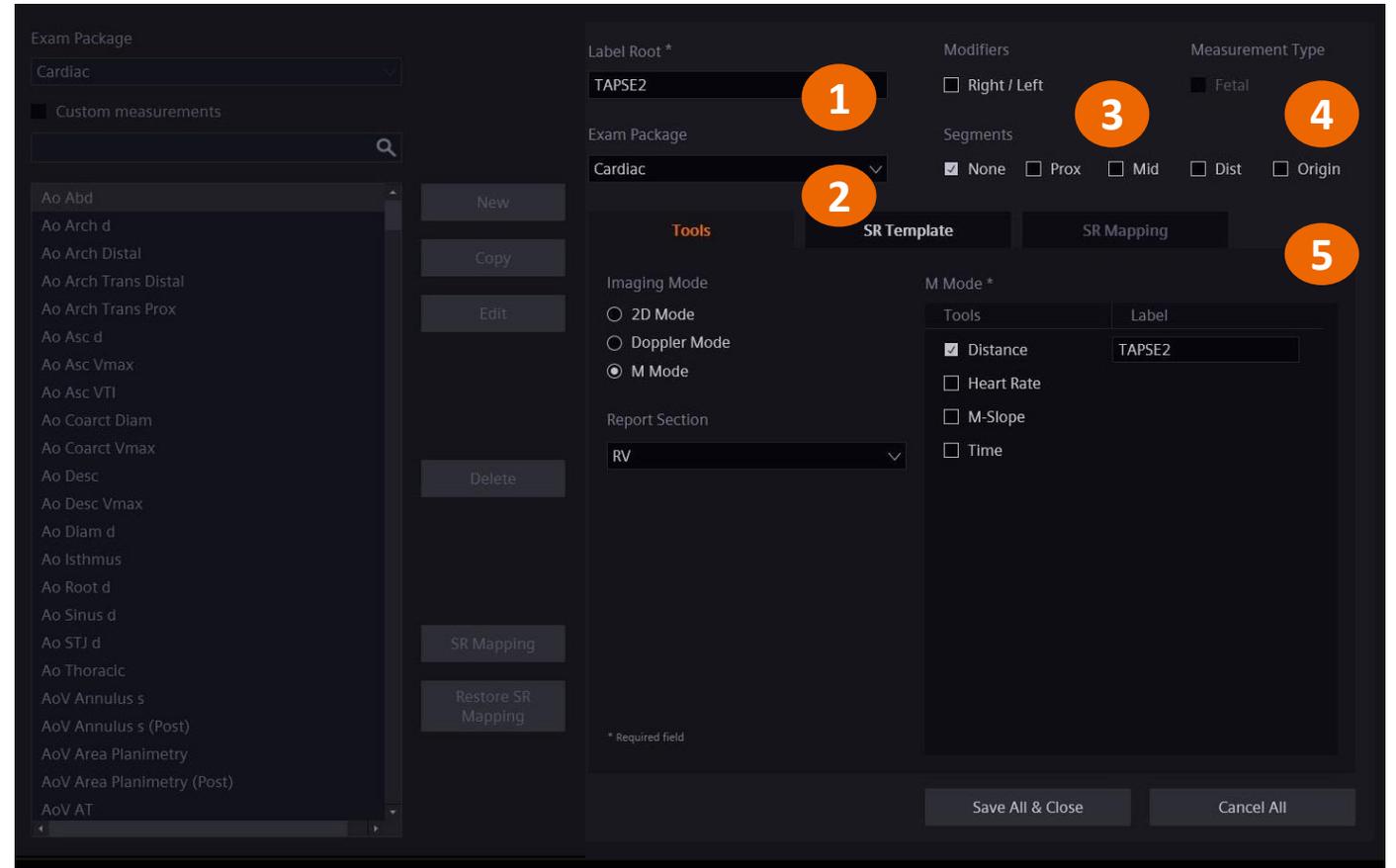
SR Mapping
Restore SR Mapping

Label Root: Ao Root d
Report Section: Aorta
2D Tools: Distance
SR Template: Cardiac
SR Mapping: Completed

Copying a label – Cardiac example

Defining label parameters

1. Define label root (name)
2. Select Exam Package from drop-down menu
3. Select Modifier (if applicable)
4. Measurement Type
5. Select Segment (if applicable)

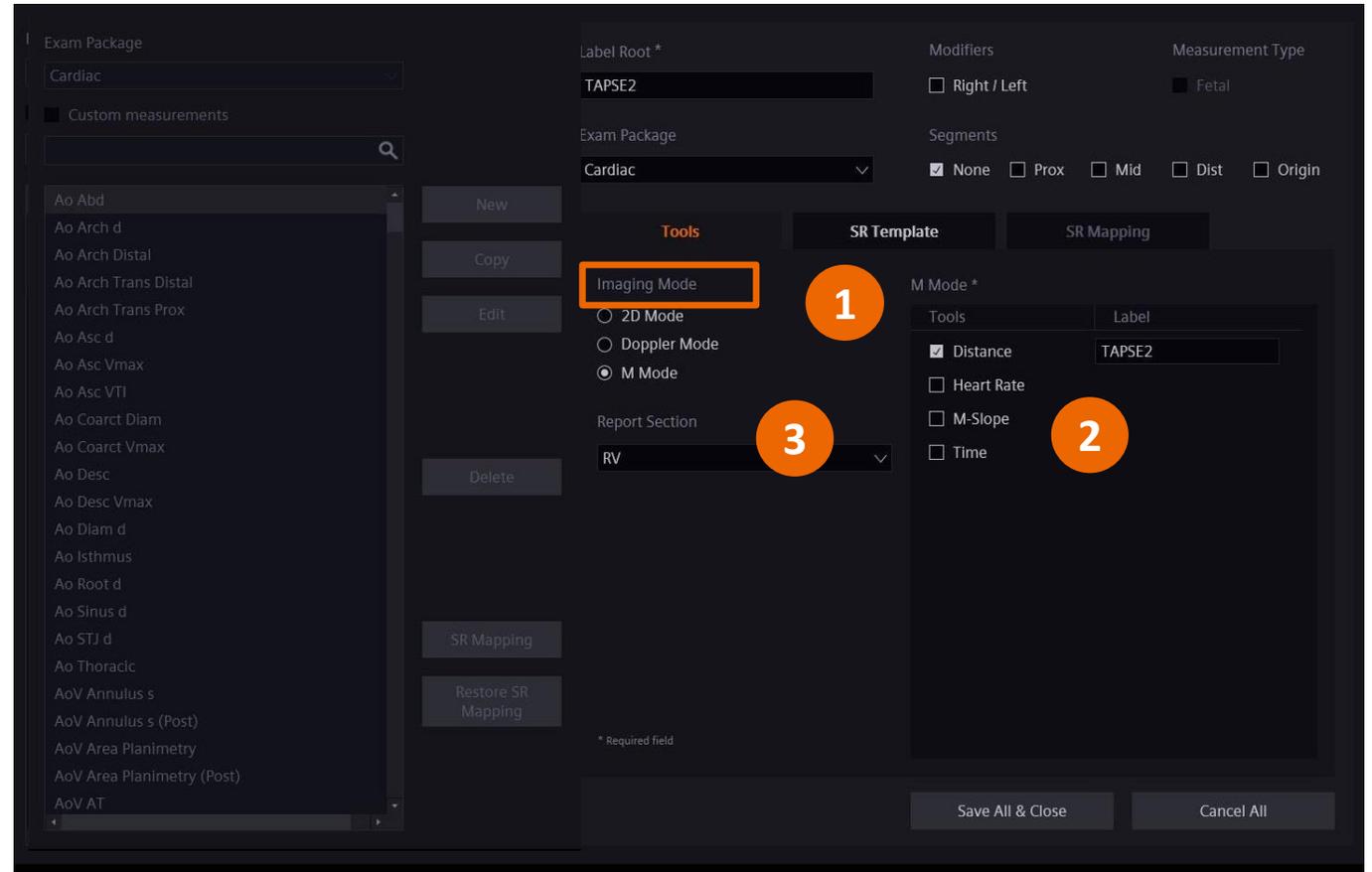


Copying a label – Cardiac example

Tools tab

The Tools tab defines the following label parameters:

1. Select the **Active Mode** for the label (2D, Doppler, etc.)
→ M Mode
2. Select the **Tool** type (distance, time, etc.)
→ Distance
3. Select **Report Section**
→ Right ventricle (RV)

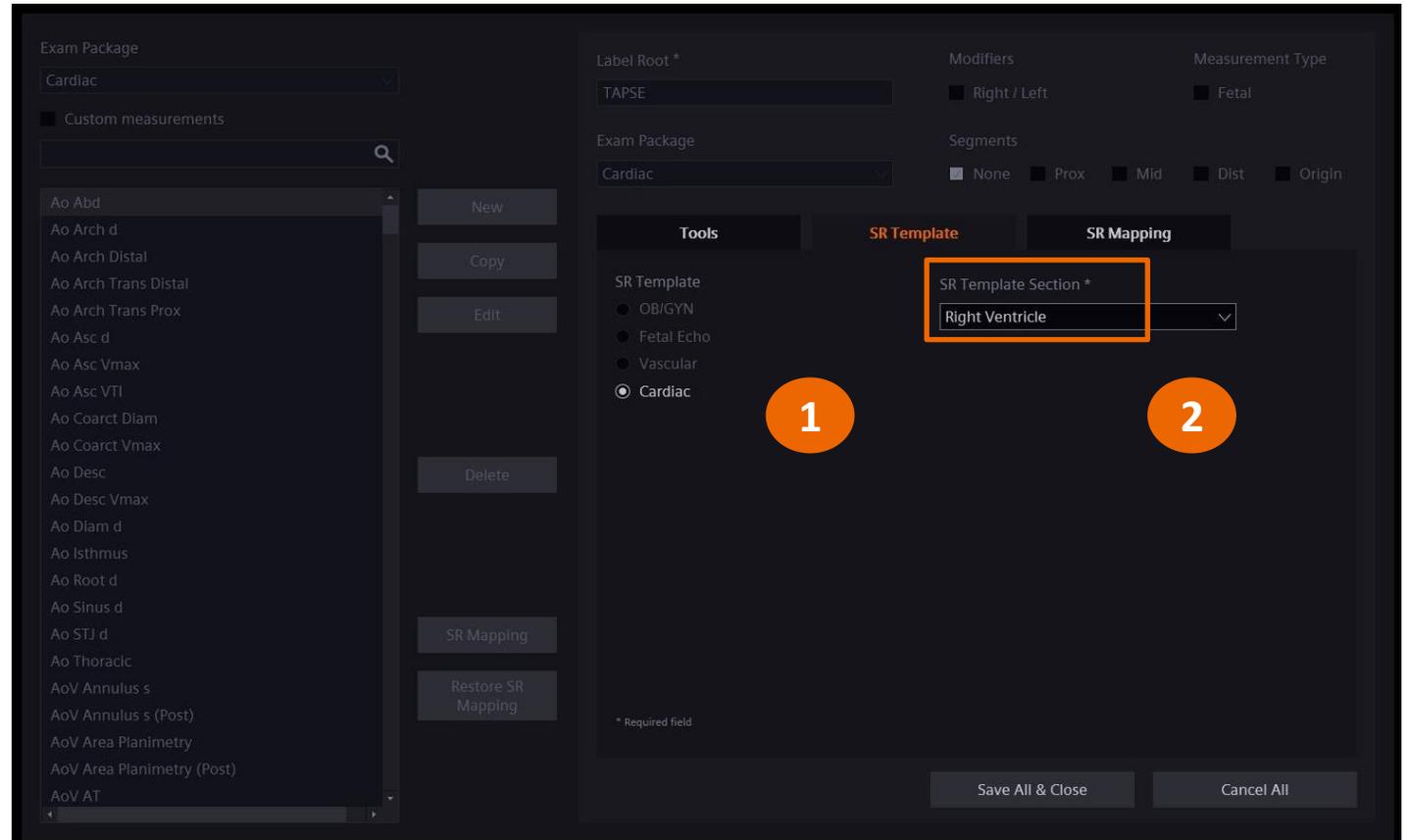


Copying a label – Cardiac example

SR Template tab

The SR Template tab allows the user to edit the copied labels data for the following:

1. SR Template type
→ Cardiac
2. SR Template section
→ Right ventricle

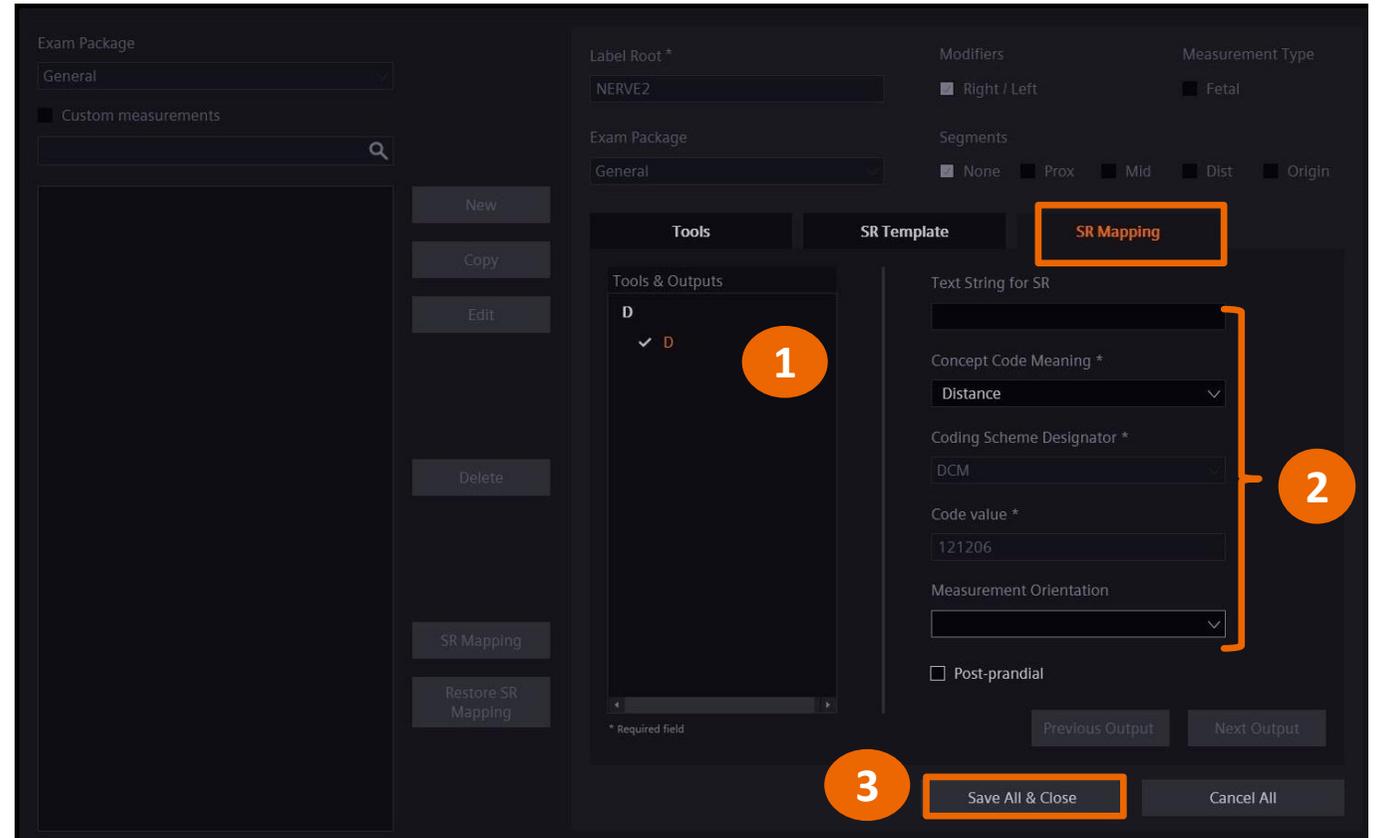


Copying a label – Cardiac example

SR Mapping tab

The SR Mapping tab contains the following:

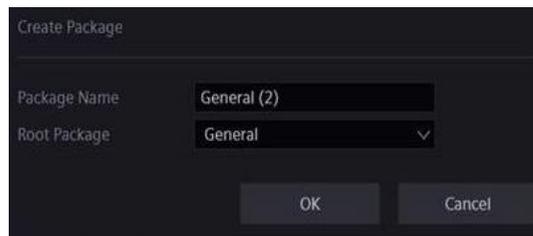
1. Displays the measurement tool and output type
2. Allows edits to copied labels SR mapping parameters for:
 - Concept Code Meaning
 - Coding Scheme Designator
 - Code Value
 - Optional fields such as Text String or Measurement Method
3. Use Save All & Close to complete the SR Mapping selections



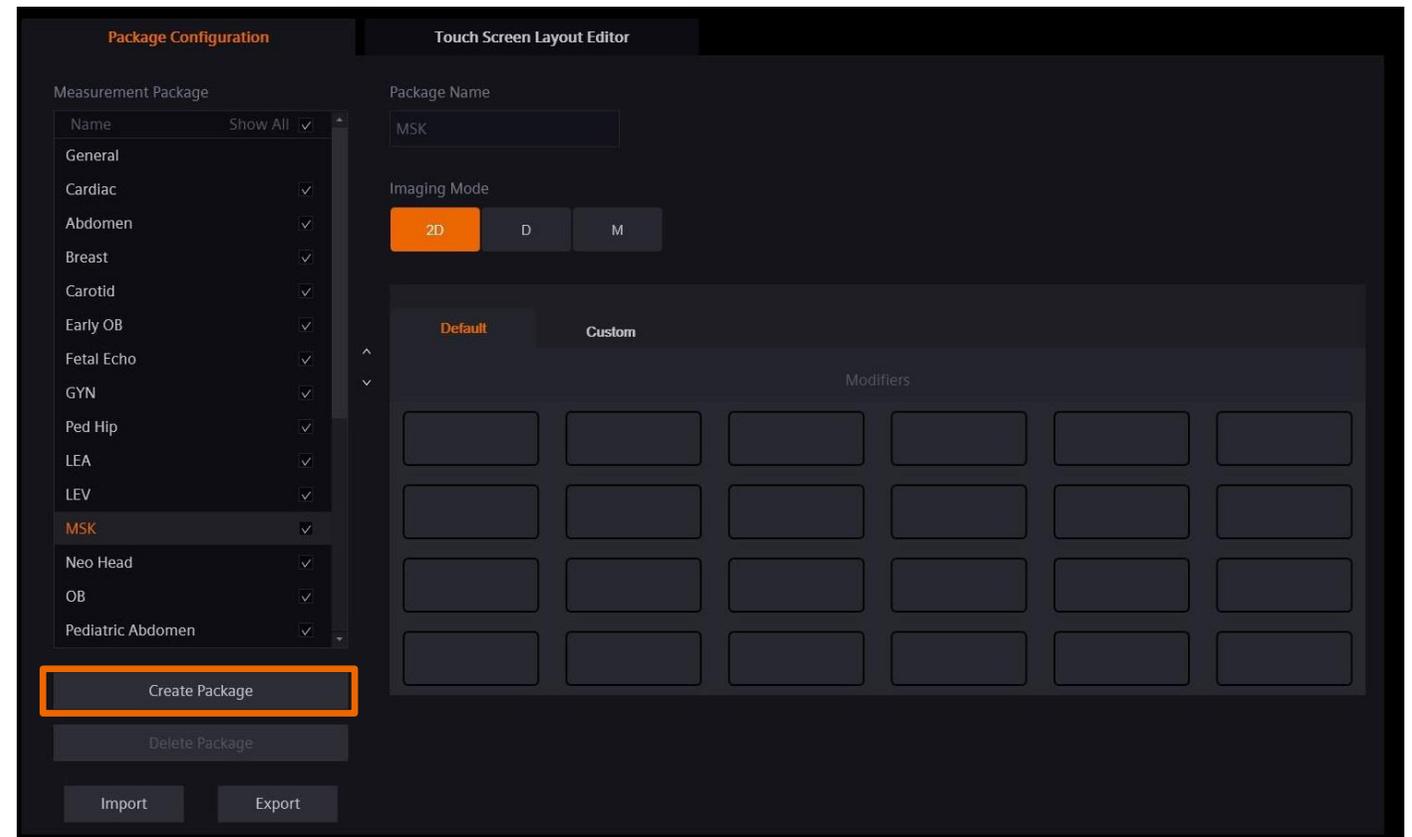
Create new custom calculation package

Custom calculation packages can be created for any exam:

- Select **Create Package**
- A dialogue box will appear
 - Enter Package Name
 - Select specific Root Package or None (empty)



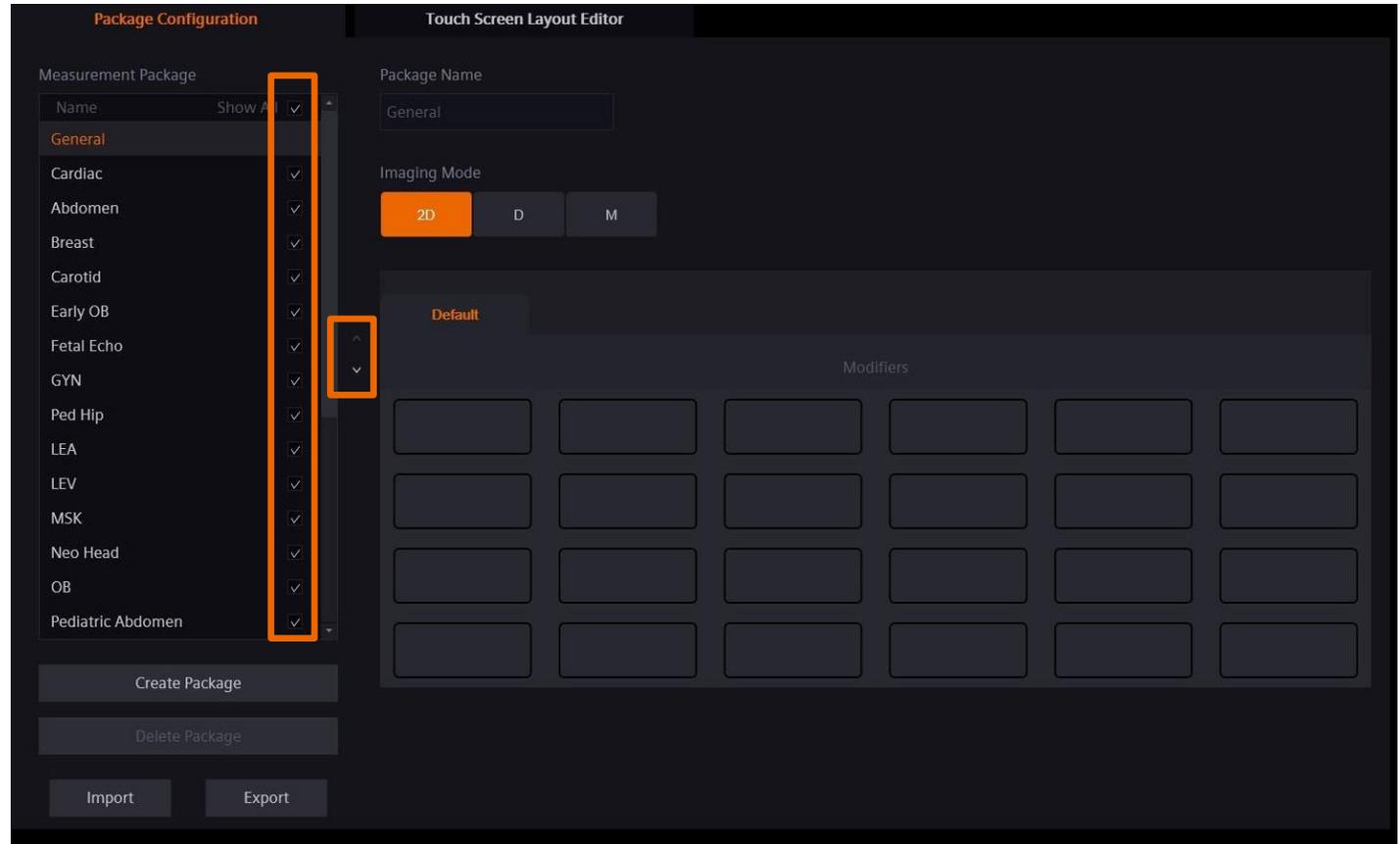
- Select **OK** to save



Calculation package visibility and order

All calculation packages are listed in the master list

- Change the visibility (“hide”) of any package by unchecking the associated box →
- Re-order packages within the list by using the up/down arrows



To display a calculation package, check this tab for visibility.

Objectives

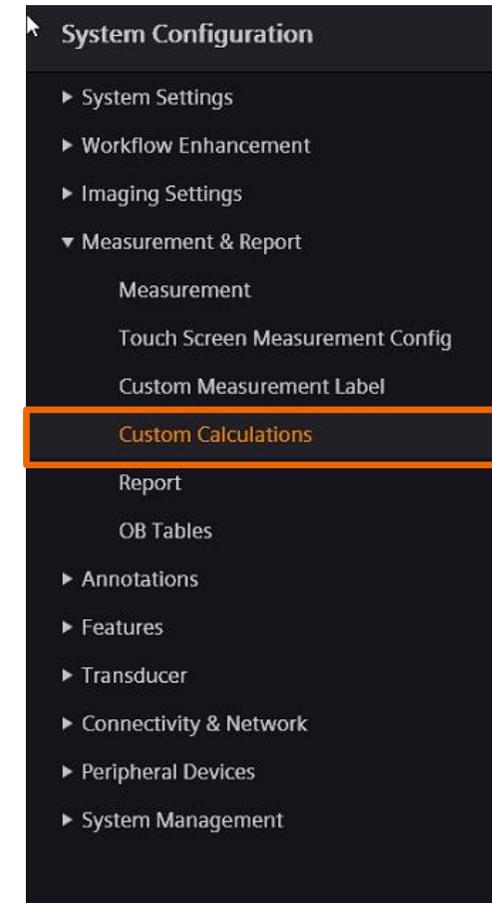
- Identify access to system configuration
- Outline the measurement subgroup
- Describe the Touch Screen configuration
- Explain custom measurement labels
 - Homepage layout
 - What is DICOM SR?
 - Steps to define a custom label
 - Create a new custom label
- **Describe Custom Calculations**
- Discuss the OB tables
- Review the report



Custom Calculations

Custom Calculations are clinical calculations that are specific to a user, department, institution, or region that are not available as factory calculations.

- **System Configuration > Measurement & Report > Custom Calculations**
- The tool will not let users save a mathematically incorrect formula
- Provides utility for a variety of equations from simple volumes to regression formula
- Full accessibility for General Imaging, Cardiac, and Shared Service



Custom Calculations

System Configuration

- System Settings
- Workflow Enhancement
- Imaging Settings
- Measurement & Report
 - Measurement
 - Touch Screen Measurement Config
 - Custom Measurement Label
 - Custom Calculations**
 - Report
 - OB Tables
- Annotations
- Features
- Transducer
- Connectivity & Network
- Peripheral Devices
- System Management

Custom Calculations

Formula 1

New (highlighted)

Copy

Edit

Delete

SR Mapping

Formula | **SR Mapping**

Name	Units	Precision	Report Section
Formula 1	cm	3	Congenital Heart Disease

Max([Ao Arch Distal,cm],[Ao Arch Trans Distal,cm])

Ensure the formula and units are correct and then click Save.

Show in Measured Results

Show in Report

Save Cancel

Exam Package: Abdomen

Result Labels: Accel

ATAN	Min	Min Of Any
TAN	Max	Max Of Any
COS	Abs	Mean Of Any
SIN	.	First

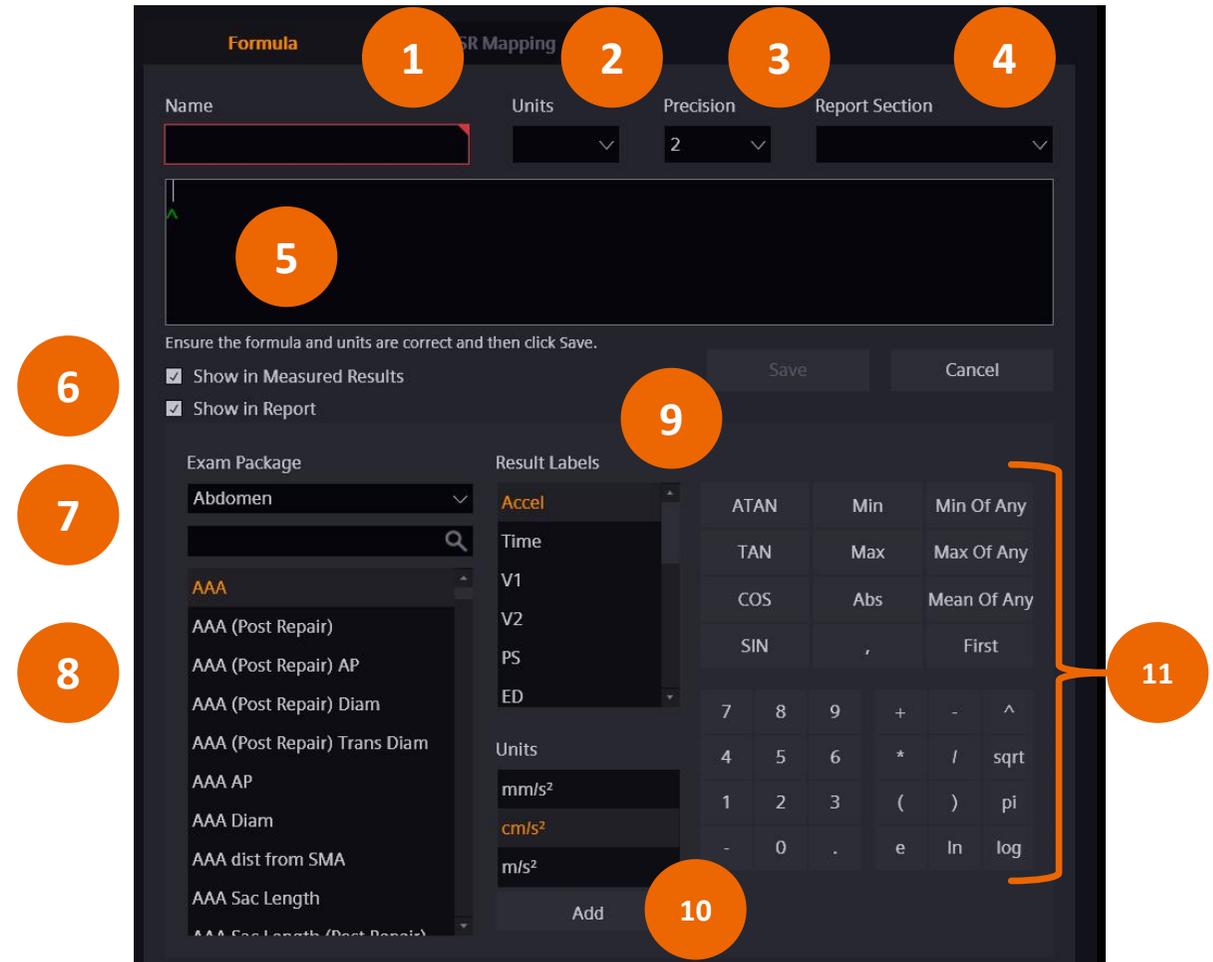
Units: mm/s², **cm/s²**, m/s²

Calculator: 7 8 9 + - ^, 4 5 6 * / sqrt, 1 2 3 () pi, - 0 . e ln log

Add

Custom Calculations

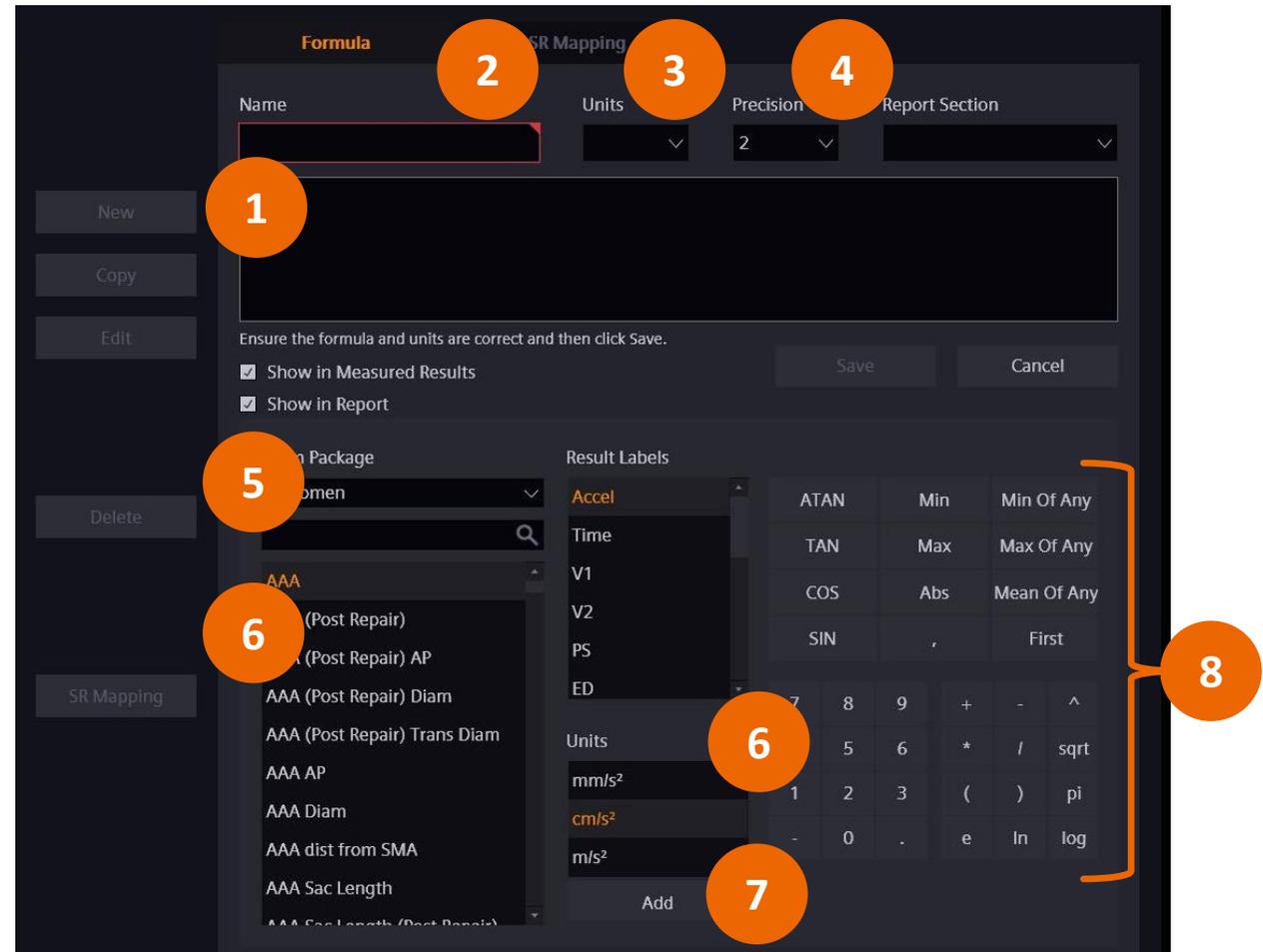
1. Name of equation (14-character limit)
2. Output units of equation
3. Decimal point precision
4. Report display area
5. Area of equation input
6. Display results in onscreen measurement display area or within Report
7. Exam package drop-down
8. Library of labels to create an equation
9. Result labels when type of measurement needs to be specific
10. Input units
11. Mathematical input area



Custom Calculations – entry

Basic entry of a Custom Calculation:

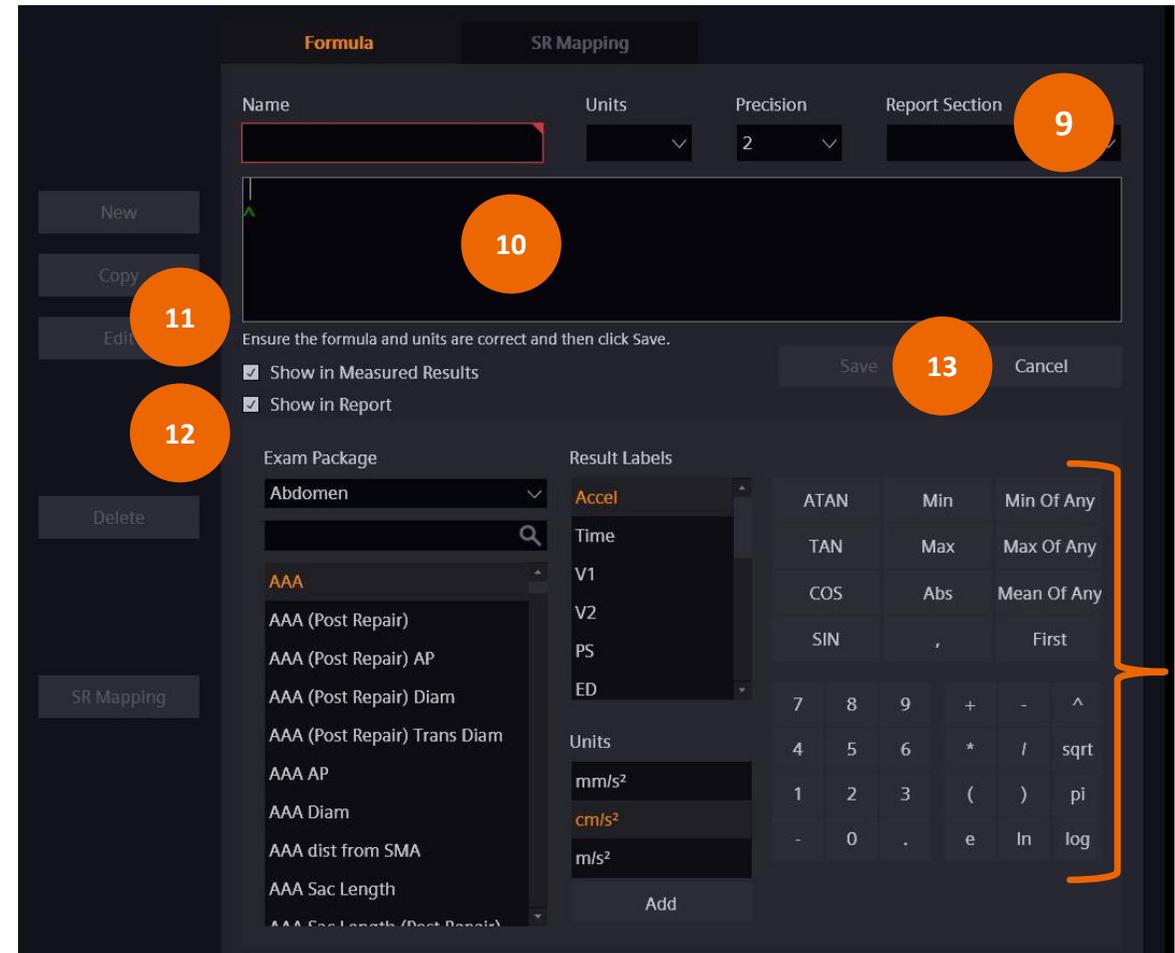
1. Select **New**
2. Enter a unique formula name
(14-character limit)
3. Select output **Units**
4. Select result **Precision**
5. Select appropriate **Exam Package**
6. Select a label from the exam package library and choose the input **Units** and results label for that measurement
7. Select **Add** to add measurement to equation area
8. Use calculator functions to enter mathematical equation



Custom Calculations – entry cont.

Basic entry of a Custom Calculation (cont.):

9. Select **Report Section** area for formula results to display
10. Check for accuracy and no red lines
11. Select **Show in Measured Results** to display results in MDA
12. Select **Show in Report** to display formula results in the report
13. Select **Save**



Custom Calculations

SR Mapping

1. Select **SR Mapping**
2. Select appropriate SR Template
3. Select SR Template section
4. Complete SR Mapping for given equation

Custom Calculations

Lt Lambert
LVOT/BSA
Rt Lambert

New
Copy
Edit
Delete
SR Mapping

Formula
SR Mapping

SR Template

OB/GYN
 Fetal Echo
 Vascular
 Cardiac

SR Template Section *

Left Ventricle

Text String for SR

LVOT/BSA

Concept Code Meaning *

Cardiac Index

Coding Scheme Designator *

SRT

Code value *

F-32110

Measurement Method

Continuity Equation by Velocity Time I

Finding Site

Left Ventricle Outflow Tract

Flow Direction

Antegrade Flow

Cardiac Cycle Point

Peak Systolic

Image View

Apical four chamber

* Required field

Save Cancel

Objectives

- Identify access to system configuration
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 - Create a new custom label
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- Review the report



OB Tables tab Homepage layout

OB tables homepage configurable options:

- Default OB Author
- Custom GA Table
- Custom Growth Curves

The screenshot displays the 'System Configuration' interface for 'OB Tables'. The left sidebar contains a navigation menu with the following items: System Settings, Workflow Enhancement, Imaging Settings, Measurement & Report (expanded), Annotations, Features, Transducer, Connectivity & Network, Peripheral Devices, and System Management. The 'OB Tables' section is highlighted in orange. The main content area is divided into three panels: 'Default OB Author', 'Custom GA Table', and 'Custom Growth Curves'. The 'Default OB Author' panel lists various measurements with their corresponding authors in dropdown menus. The 'Custom GA Table' panel lists measurements with their corresponding authors in dropdown menus. The 'Custom Growth Curves' panel lists measurements with their corresponding authors in dropdown menus. At the bottom, there are two dropdown menus: 'US Age (Ultrasound Age)' set to 'Average' and 'EFW (Estimated Fetal Weight)' set to 'Hadlock (BPD, HC, AC, FL)'.

Measurement	Author
AC	Lasser
APTDxTTD	Tokyo*
BinocD	Tongsong
BPD	Hadlock
Cerebellum	Hill
CRL	Hadlock
EFW Age	Osaka*
FL	Hadlock
Foot	Mercer
FTA	Osaka*
GSD	Rempen
HC	Hadlock
HL	Jeanty
MSD	Rempen
OFD	ASUM 2003
Tibia	Jeanty
Ulna	Jeanty

Measurement	Author
AC	Hadlock
AFI	Moore
AFI 2	Moore
AFI 3	Moore
APTDxTTD	Tokyo
BPD	Merz
Cerebellum	Verburg
Cist Magna	Nicolaidis
Clavicle	Sherer
CRL	Hadlock
EFW	Hadlock
FL	Hadlock
Foot	Chitty
FTA	Osaka
GSD	Hellman
HC	Hadlock
HC/AC	Campbell
HL	Jeanty
Lt CP Ratio	Ebbing

OB Tables tab

Default OB Author

- Select default author from drop-down menu for each parameter
- Custom tables will have an asterisk (*) in the table name
- Factory tables will not have an asterisk (*) in table name

System Configuration

- ▶ System Settings
- ▶ Workflow Enhancement
- ▶ Imaging Settings
- ▼ Measurement & Report
 - Measurement
 - Touch Screen Measurement Config
 - Custom Measurement Label
 - Custom Calculations
 - Report
 - OB Tables**
- ▶ Annotations
- ▶ Features
- ▶ Transducer
- ▶ Connectivity & Network
- ▶ Peripheral Devices
- ▶ System Management

Default OB Author		Custom GA Table		Custom Growth Curves	
Measurement:	Author	Measurement:	Author	Measurement:	Author
AC	Lasser	AC	Hadlock		
APTDxTTD	Tokyo*	AFI	Moore		
BinocD	Tongsong	AFI 2	Moore		
BPD	Hadlock	AFI 3	Moore		
Cerebellum	Hill	APTDxTTD	Tokyo		
CRL	Hadlock	BPD	Merz		
EFW Age	Osaka*	Cerebellum	Verburg		
FL	Hadlock	Cist Magna	Nicolalides		
Foot	Mercer	Clavicle	Sherer		
FTA	Osaka*	CRL	Hadlock		
GSD	Rempen	EFW	Hadlock		
HC	Hadlock	FL	Hadlock		
HL	ASUM 2003	Foot	Chitty		
MSD	Chitty	FTA	Osaka		
OFD	Hadlock	GSD	Hellman		
Tibia	Hansmann	HC	Hadlock		
Ulna	Lasser	HC/AC	Campbell		
	Merz	HL	Jeanty		
		Lt CP Ratio	Ebbing		

US Age (Ultrasound Age): Average

EFW (Estimated Fetal Weight): Hadlock (BPD, HC, AC, FL)

OB Tables tab

Custom GA Table

Two options to create a custom gestational age (GA) table:

1. Manually input a new table
2. Copy an existing table

Measurement

AC

- ASUM 2003
- Hadlock
- JSUM 2003**
- Lasser
- Merz

Author Name: JSUM 2003

Units: cm

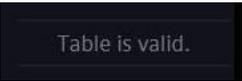
Buttons: New, Copy, Edit, Delete

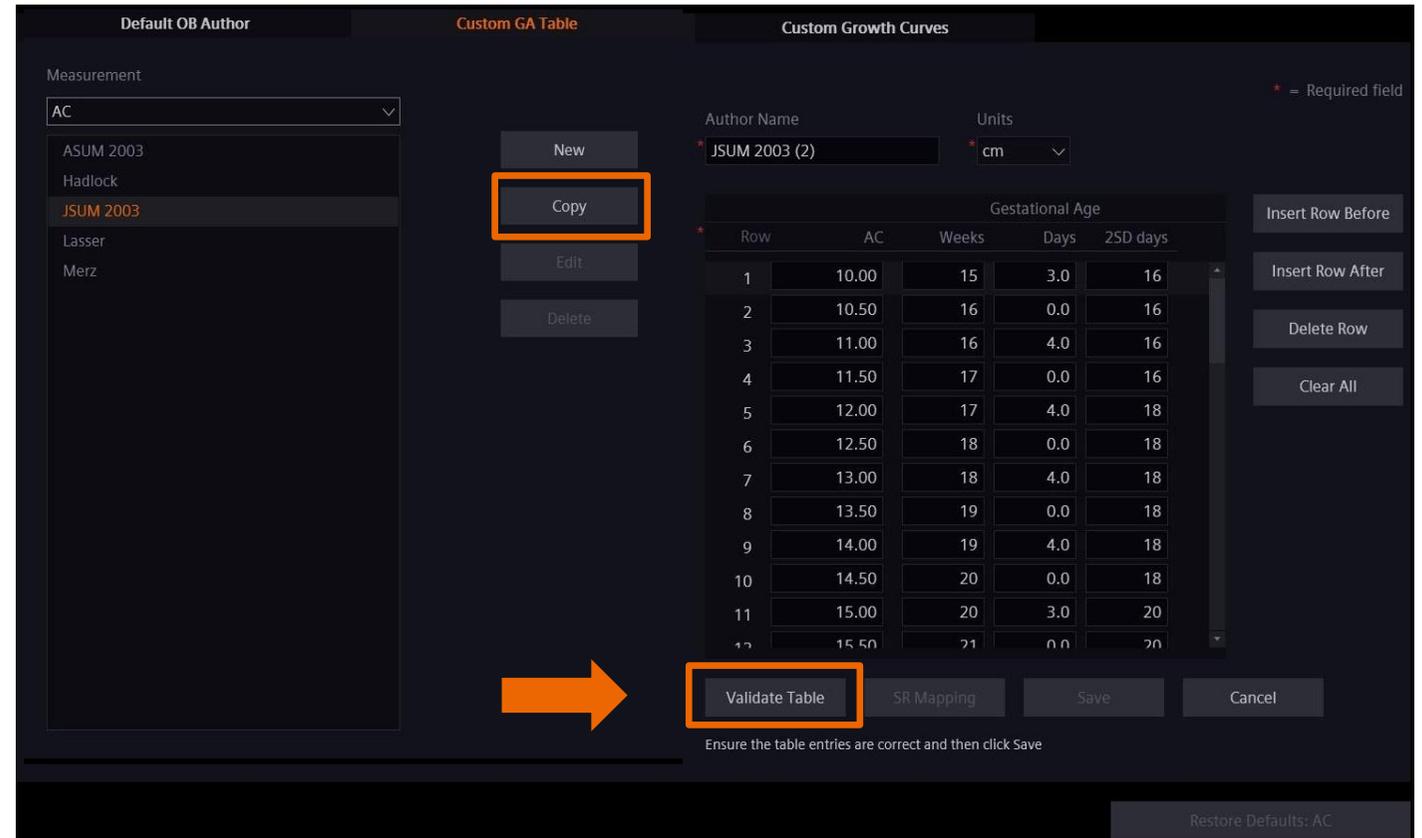
	Gestational Age			
	AC	Weeks	Days	2SD days
1	10.00	15	3.0	16
2	10.50	16	0.0	16
3	11.00	16	4.0	16
4	11.50	17	0.0	16
5	12.00	17	4.0	18
6	12.50	18	0.0	18
7	13.00	18	4.0	18
8	13.50	19	0.0	18
9	14.00	19	4.0	18
10	14.50	20	0.0	18
11	15.00	20	3.0	20
12	15.50	21	0.0	20

Restore Defaults: AC

OB Tables tab

Custom GA Table – copy existing table

- Highlight desired table
- Select **Copy**
- Change Author name or leave copied name with number
- Alter data (if required)
- Validate table 
- If table is valid, select **Save**



Default OB Author | Custom GA Table | Custom Growth Curves

Measurement: AC

ASUM 2003
Hadlock
JSUM 2003
Lasser
Merz

New
Copy
Edit
Delete

Author Name: * JSUM 2003 (2) | Units: * cm

* = Required field

Row	Gestational Age			
	AC	Weeks	Days	2SD days
1	10.00	15	3.0	16
2	10.50	16	0.0	16
3	11.00	16	4.0	16
4	11.50	17	0.0	16
5	12.00	17	4.0	18
6	12.50	18	0.0	18
7	13.00	18	4.0	18
8	13.50	19	0.0	18
9	14.00	19	4.0	18
10	14.50	20	0.0	18
11	15.00	20	3.0	20
12	15.50	21	0.0	20

Insert Row Before
Insert Row After
Delete Row
Clear All

Validate Table | SR Mapping | Save | Cancel

Ensure the table entries are correct and then click Save

Restore Defaults: AC

OB Tables tab

Custom GA Table – create new

- Select **New**
- Name table and select units
- Input table data – use the “tab” key to advance
- Insert/delete rows as required
- Validate table
- Complete the SR Mapping process (if required)
- Select **Save** to complete table

Default OB Author **Custom GA Table** Custom Growth Curves

Measurement: AC

ASUM 2003
Hadlock
JSUM 2003
Lasser
Merz

New
Copy
Edit
Delete

Author Name: Author Units: mm

Gestational Age

Row	AC	Weeks	Days	ZSD days
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				

Insert Row Before
Insert Row After
Delete Row
Clear All

Validate Table SR Mapping Save Cancel

Ensure the table entries are correct and then click Save

Restore Defaults: AC

OB Tables tab

Custom Growth Curves

- Steps to add custom growth curves are like custom GA tables using Copy or New
- Custom growth curves require a Low/High range selection – options are:
 - 5%/95%
 - 10%/90%
 - 3%/97%
 - +/- 1.5SD
 - +/- 2SD
 - +/- 1SE
- Maximum number of weeks that can be entered is 43

Default OB Author Custom GA Table Custom Growth Curves

Measurement: AC

ASUM 2003 (2) | mm | 5%/95%

Row	GA		AC		
	weeks	Days	Low (5%)	Mean (50%)	High (95%)
1	11	0.0	43.8	52	60.2
2	12	0.0	54.8	63	71.2
3	13	0.0	65.8	74	82.2
4	14	0.0	75.8	84	92.2
5	15	0.0	87.8	96	104.2
6	16	0.0	97.8	106	114.2
7	17	0.0	107.7	120	132.3
8	18	0.0	118.7	131	143.3
9	19	0.0	127.7	140	152.3
10	20	0.0	138.7	151	163.3
11	21	0.0	147.6	164	180.5
12	22	0.0	159.6	176	197.5

Buttons: New, Copy, Edit, Delete, Insert Row Before, Insert Row After, Delete Row, Clear All, Validate Table, SR Mapping, Save, Cancel, Restore Defaults: AC

Ensure the table entries are correct and then click Save

OB Tables tab

Custom Growth Curves

Flexibility with input

- Low/High percentile range options
- Custom defined Low/High percentile - 0.1–99.9%
- Auto calculation of Low/High percentile

Custom Growth Curves

Author Name: Units: Low/High Range: % - %

* = Required field

GA AC

Row	weeks	Days	Low (5%)	Mean (50%)	High (95%)
1					
2					
3					
4					
5					

Objectives

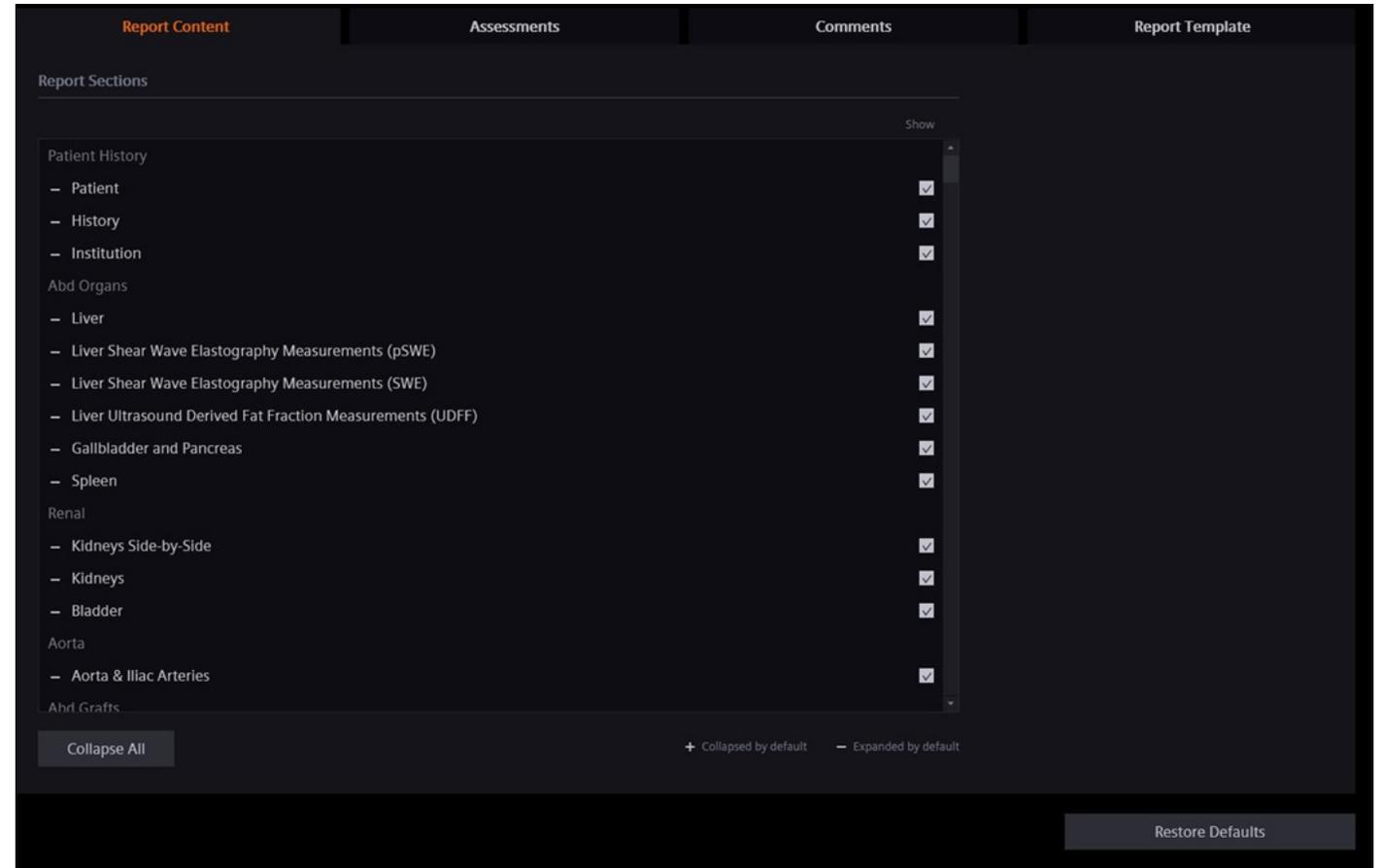
- Identify access to system configuration
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- Discuss the OB tables
- **Review the report**



Report configuration tab

Homepage layout

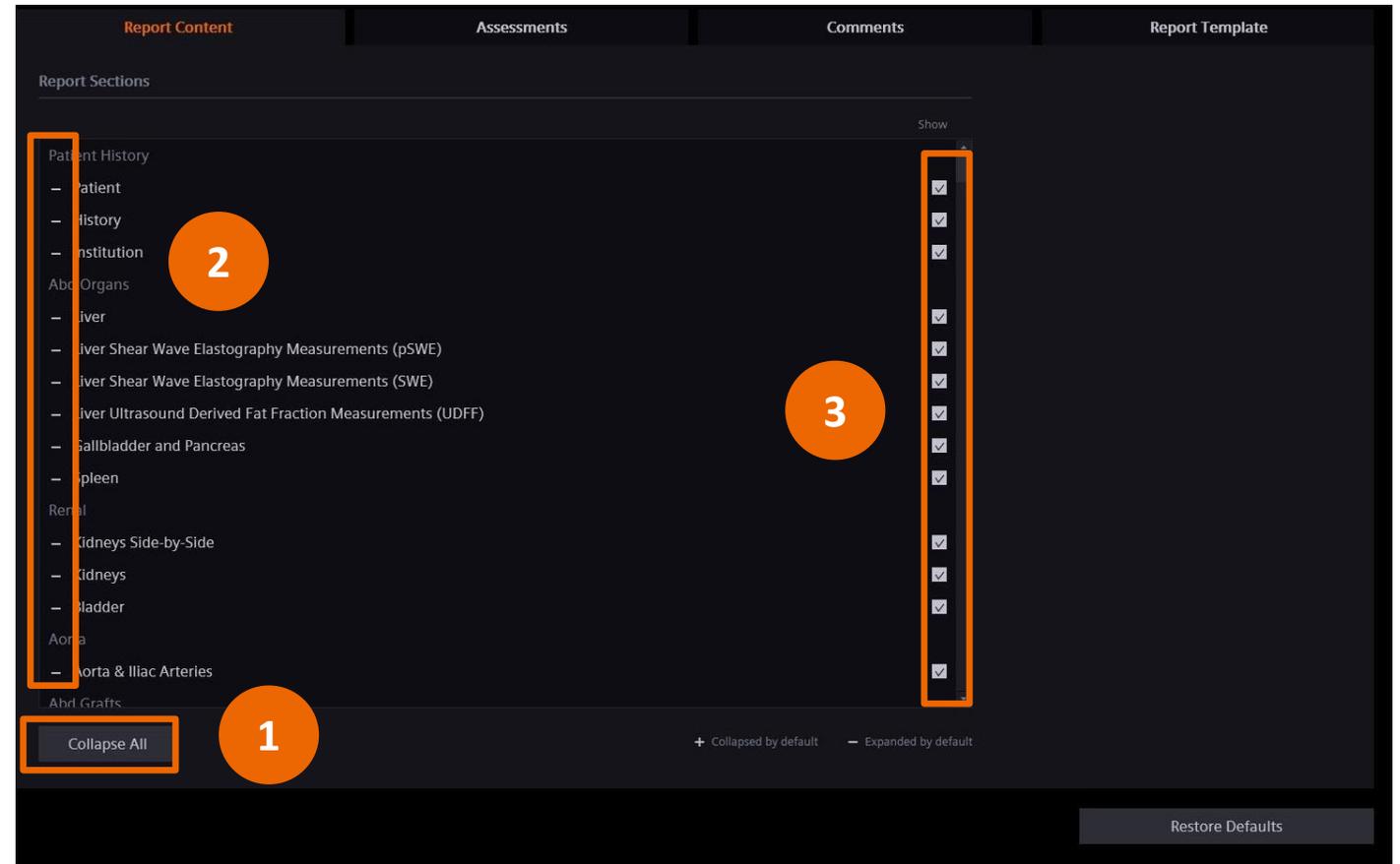
- Organ-based/anatomic reporting structure
- Homepage contains four configurable option areas:
 - Report Content
 - Assessments
 - Comments
 - Report Template



Report configuration tab

Report Content

1. Default option to expand or collapse all report content
2. Expand/collapse option for individual sections
3. Check option to show/hide report sections*



*Hidden sections will not show on a printed report even if a measurement is performed for that section.

Report configuration tab

Assessments

Pre-loaded list of assessments from factory:

- Abdomen
- OB Fetal
- OB Maternal
- Early OB Fetal
- Early OB Maternal
- GYN
- Carotid
- Lt Hip Description
- Rt Hip Description
- Fetal Echo

Check option to show/hide assessment in report.

The screenshot displays the 'Assessments' configuration tab for a 'Carotid' report. The interface is organized into a table with columns for 'Rt' (Right) and 'Lt' (Left) for various vessel types: CCA, BIF, ICA, and ECA. Each vessel type has three rows: 'Plaque Description', 'Diameter Reduction', and 'Comments'. A 'show' column on the right of the table contains checkboxes, all of which are checked. A vertical orange box highlights this 'show' column. Below the table is a 'Delete' button. To the right of the table is a 'Create Custom Assessment Items' section with a 'Type' dropdown (radio buttons for 'Checklist' and 'Comment Text Box') and a 'Label' text input field, followed by an 'Add' button. At the bottom right, there is a 'Restore Defaults: Carotid' button.

Report configuration tab

Add custom assessment item

Two types of custom assessment items can be added:

- Checklist
- Comment text box

To add a custom assessment:

1. Select assessment **Type**
2. Enter label in field
3. Select **Add**

Assessment label can only be moved around custom area of the report.

Create Custom Assessment Items

Type: **1**

Checklist

Comment Text Box

Label: **2**

Test Label

3 Add

Report configuration tab

Delete custom assessment item

To delete a custom assessment item:

- Highlight the desired label
- Select **Delete**

The screenshot shows the 'Assessments' configuration tab in a dark-themed interface. At the top, there are four tabs: 'Report Content', 'Assessments' (highlighted in orange), 'Comments', and 'Report Template'. Below the tabs, the 'Assessments' section is active, showing a dropdown menu set to 'Abdominal'. A list of assessment items is displayed, each with a checkbox on the right. The items are: Liver, Echotexture, Fatty Infiltration, Portal Hypertension, Portal Vein, Focal Lesions, Lesion Elasticity, Liver Comments, Gallbladder, Gallbladder Comments, CBD, CBD Comments, CHD, and CHD Comments. All checkboxes are checked. At the bottom left, a 'Delete' button is highlighted with an orange border. On the right side, there is a 'Create Custom Assessment Items' panel with options for 'Type' (radio buttons for 'Checklist' and 'Comment Text Box') and a 'Label' input field with an 'Add' button. At the bottom right, there is a 'Restore Defaults: Abdominal' button.

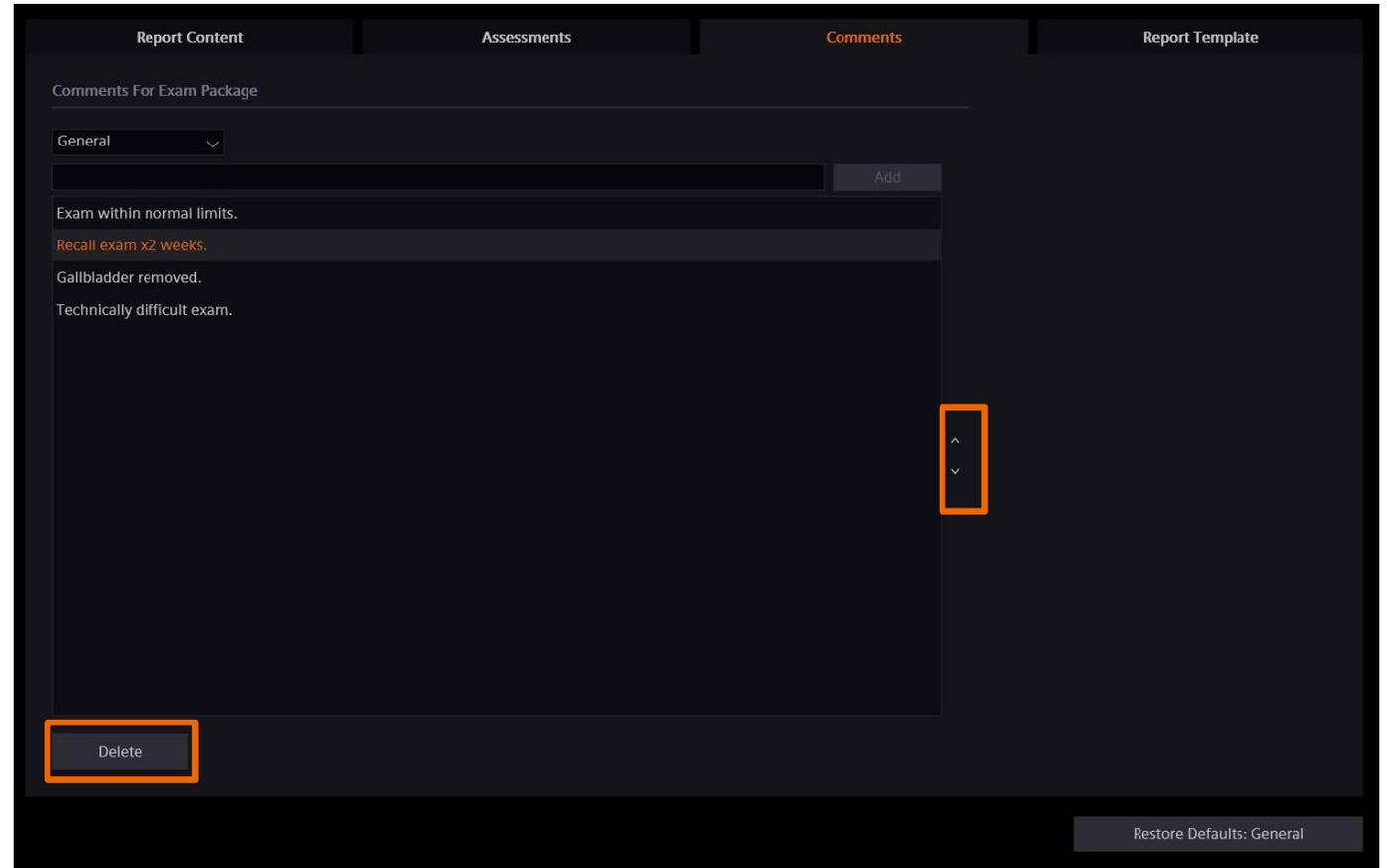
Report configuration tab Comments

Pre-defined comments can be added to the report

- Select the exam package
- Enter comment in the space provided
- Select **Add**
- Re-order (if required) with the directional arrows

To delete a comment

- Highlight comment
- Select **Delete**



Report configuration tab

Report Template

- Customized logo and text can be added to the report via USB
- Three layout options for logo and text
- Logo file must be JPEG or PNG
- Three lines of text can be added and customized for style and font

The screenshot displays the 'Report Template' configuration window. At the top, there are four tabs: 'Report Content', 'Assessments', 'Comments', and 'Report Template' (which is highlighted). Below the tabs, the 'Site Information' section is visible. On the left, there is an 'Institution Logo' area containing a preview of the Siemens Healthineers logo and 'Load' and 'Remove' buttons. To the right of the logo is a 'Details' section with three text input fields labeled 'Line 1', 'Line 2', and 'Line 3'. Each line has a font style dropdown menu; 'Line 1' is set to 'Large Bold', while 'Line 2' and 'Line 3' are set to 'Medium Roman'. Further right is the 'Details Layout' section, which includes a 'Layout' dropdown menu currently set to 'Layout1' and a preview of the layout. At the bottom right of the window, there is a 'Restore Defaults' button.

Summary

- Identify access to system configuration
- Outline the measurement subgroup
- Describe the Touch Screen configuration
- Explain custom measurement labels
 - Homepage layout
 - What is DICOM SR?
 - Steps to define a custom label
 - Create a new custom label
- Describe Custom Calculations
- Discuss the OB tables
- Review the report



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Thank you for your enthusiasm!

Questions?