SCANTRAINER®

ADVANCING EDUCATION IN ULTRASOUND

Simulation in Transvaginal and Transabdominal Ultrasound

User Manual

MedaPhor Support

Problems or queries regarding your ScanTrainer simulator?

Contact your System Administrator:

Or your Regional Sales Representative:

If problems persist contact the support team:

support@medaphor.com

+44 (0) 2921 680 011 (UK office hours)

+1 (770) 777-8191 (EST office hours)

+(852) 3568-9009 (Asia-Pacific office hours)

Table of contents

ScanTrainer Software Guide

System basics

Logging into ScanTrainer

HP Z4 desktop PC

- First, ensure that all parts of the system are plugged in correctly and that all the plug sockets are turned on.

- Then turn on the ScanTrainer system by clicking the power button:

- The HP Z4 PC power button is on the front.

- The HP ZBook laptop can be turned on from the laptop or via the docking station (if connected).

HP ZBook laptop

- After the system starts up, the ScanTrainer log-in page is displayed on screen (*shown below*).
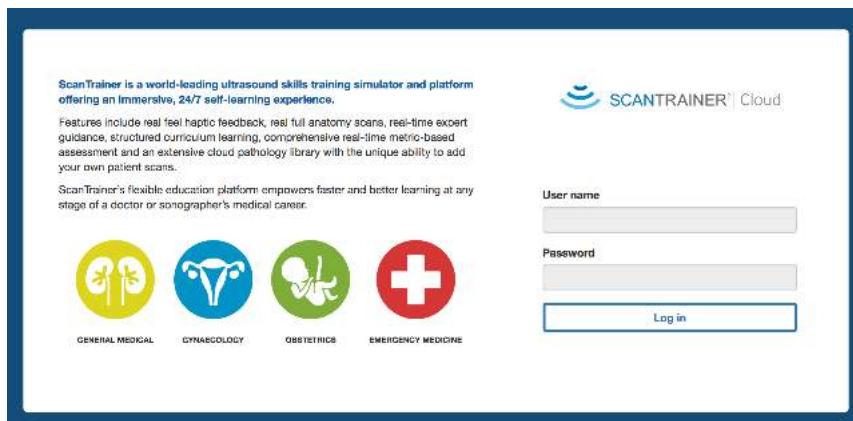
- Enter your personal username and password and click "**Log in**".

Note:

- If you do not have a username and password for the system or if your existing log in details do not work, please speak to your Tutor or System Administrator.

- If the ScanTrainer log in page is not displayed after the PC has finished the boot up sequence, simply double click on the ScanTrainer Icon on the desktop.
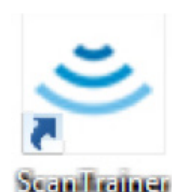
2

The navigation bar

The navigation bar is available at the top of the page.

HOME | MENU | THU 5 | HELP | LOG OUT

- Click **'HOME'** to return to the home page at any time.

- Open **'MENU'** to either edit account details (including language settings and email address), view the video guide or access technical support.

- The **calendar** gives a record of the previous training undertaken by system users. Clicking on a date shows the assignments taken on that day. A ✓ indicates an overall pass and a ✗ indicates an overall failure of the assignment. For practice assignments, a ☺ face indicates an overall pass and a ☹ face indicates an overall failure of the assignment. A 📖 indicates that the user has read the learning resources for the assignment. The trainee's name appears alongside the assignment taken. Clicking on the assignment's name opens a separate review screen showing the detailed results.

- Click **'HELP'** to open a detailed explanation of the page currently open.

- To log out of ScanTrainer click **'LOG OUT'**. It is important to do this at the end of your training session.

3

The home page

The first time a user logs into ScanTrainer an introductory video will play automatically. When the video finishes click the **'HOME'** button at the top of the page to begin.

HOME | MENU | THU 5 | HELP | LOG OUT
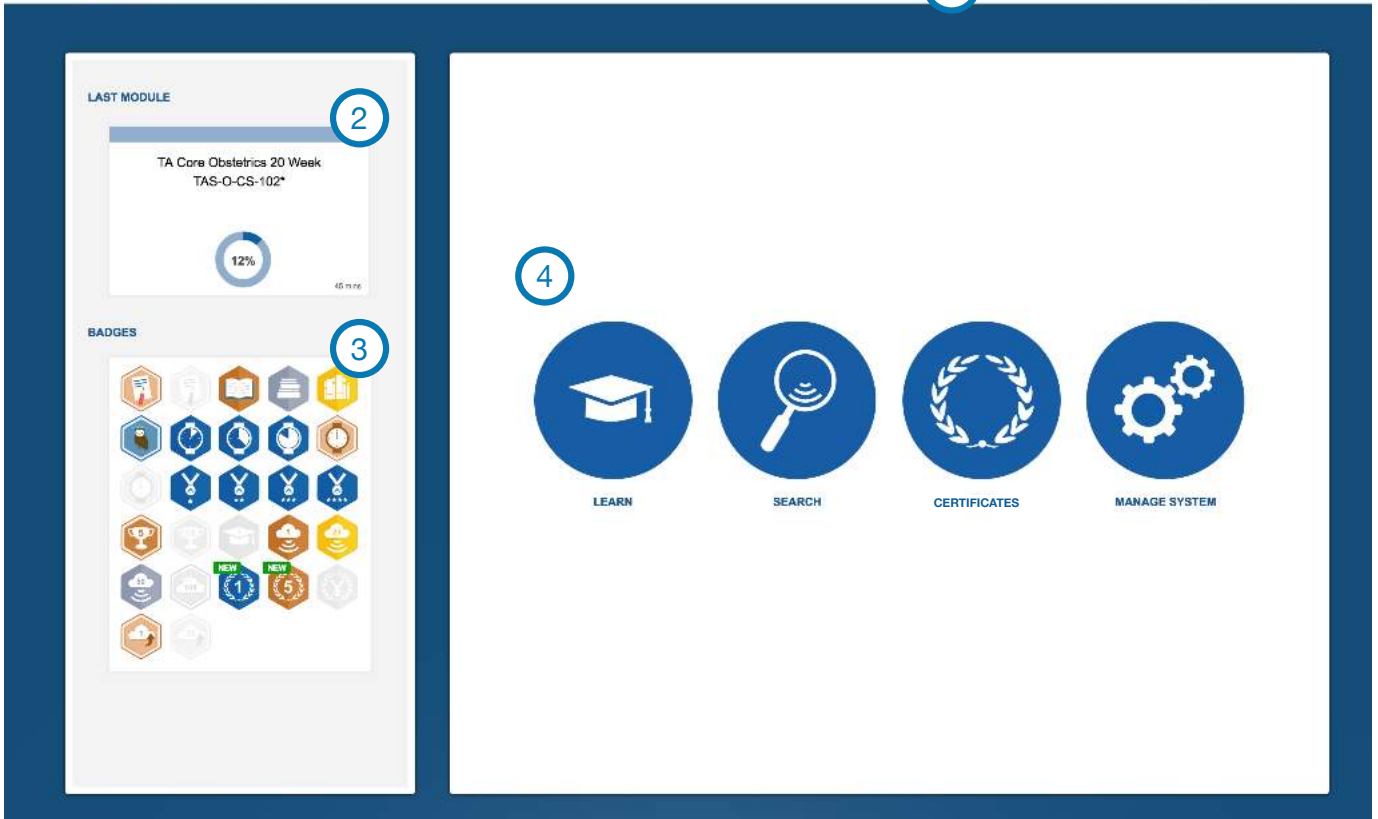
1. The navigation bar is always available at the top of the page (explained on previous page).

2. Once a user begins working through the modules a short-cut to the last module taken will appear here on their home screen.

3. Users can gain badges for reaching milestones within ScanTrainer. These will appear on the bottom left of your screen. Badges that are greyed out have not been achieved yet, hover over these to see when a new badge can be achieved.

4. The three areas of ScanTrainer are accessed from the home page, these are:

Click **LEARN** to take the modules and cases, as well as track their progress through the learning content.

Click **SEARCH** to view and take cases in the case library.

Click **CERTIFICATES** to view and print certificates for completed modules (see page 21).

Note: This is only available on ScanTrainer Cloud systems.

Tutors and administrators can manage users, learning content, and modify default system preferences by clicking **MANAGE SYSTEM**.

Note: Trainees do not have access to the manage system option.

Shutting down ScanTrainer

At the end of the ScanTrainer session, users should always log-out of the system.

- Click the 'LOG OUT' button on the navigation bar.

HOME | MENU | THU 5 | HELP | LOG OUT

- Once logged out of the system, the ScanTrainer PC will display the log-in screen again. If it is a stand-alone system (not on the cloud) click 'CLOSE SCANTRAINER' to close the application.

- If no-one else will be using the system, shut down the PC as normal (hit the start button in the bottom left hand corner of the desktop screen and select 'Shut down' (as shown in image below).

- If you cannot see the start button hit the windows key on your keyboard.
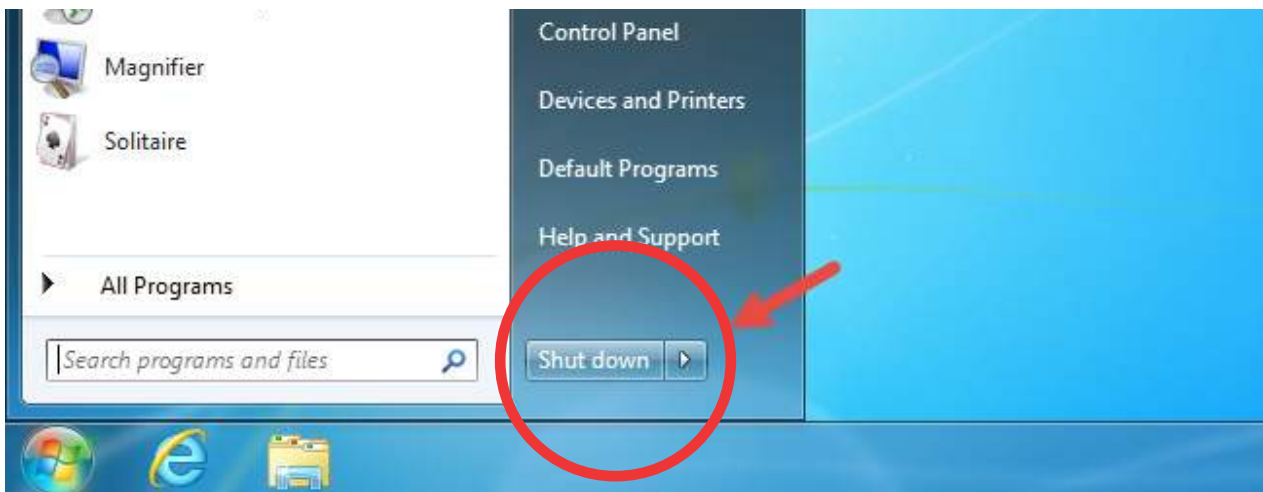
ScanTrainer Software Guide

Learn

1

Learning content overview

The educational content on ScanTrainer is organised within a tiered system, consisting of programmes, courses, modules, tutorials and assignments.

Programme

Course

Module

Tutorial

Assignment

Programmes focus on a specialist area such as obstetrics or emergency medicine. Within each programme are a number of courses, each course follows a different learning approach:

- The skills learning courses cover basic scanning skills and contain core and advanced modules which focus on developing scanning technique;

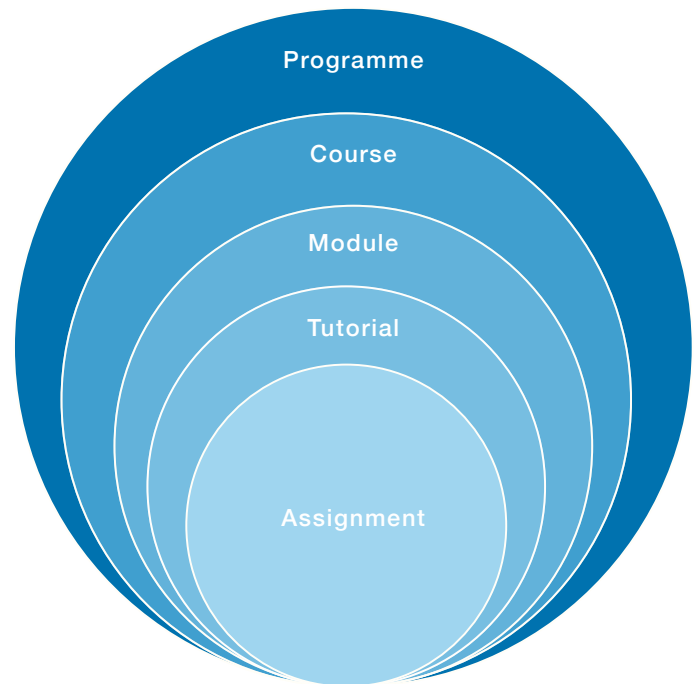- The skills assessment courses assess users on the key aspects of scanning;

- The case learning courses teach the identification of pathologies and anomalies using both normal and abnormal scans; and

- The case exams courses test users' diagnostic skills using single best answer exams.

Skills learning courses also contain learning resources and allows users to practice each assignment before taking the test.

Each course is broken down into modules (except for the case exam course). Each module contains several tutorials which focus on an area of the module, such as the ovaries in gynaecology scanning. Within each tutorial are a number of assignments.

There is detailed feedback available for every assignment and exam on ScanTrainer.

Note: The skills learning and skills assessment courses are part of ScanTrainer, while the case learning and case exam courses are part of ScanTrainer Examine. Which courses are available on the system will depend on the package purchased.

Opening a module

- Open the learn area of ScanTrainer from the home page.

On the page that opens search the courses by filtering the programme at the top of the page, shown in red below.

- Select a course ie. Skills Learning, by clicking anywhere on the box.

- Then click on the desired module on the course page that opens.

- Users can filter the modules shown by status, chose to view modules 'in progress', 'not started', 'completed' or 'all'.

Note: The skills assessment and case exam courses do not contain modules and will open directly to the module summary page.

3

Selecting an assignment

Once a module has been selected the module summary page will open.

This page displays a list of the assignments within a module. Click on an assignment title or the icon to view the learning resources, practice the assignment or to take the test. To start a super assessment, click on the super assessment graphic, or hover over it for more information.

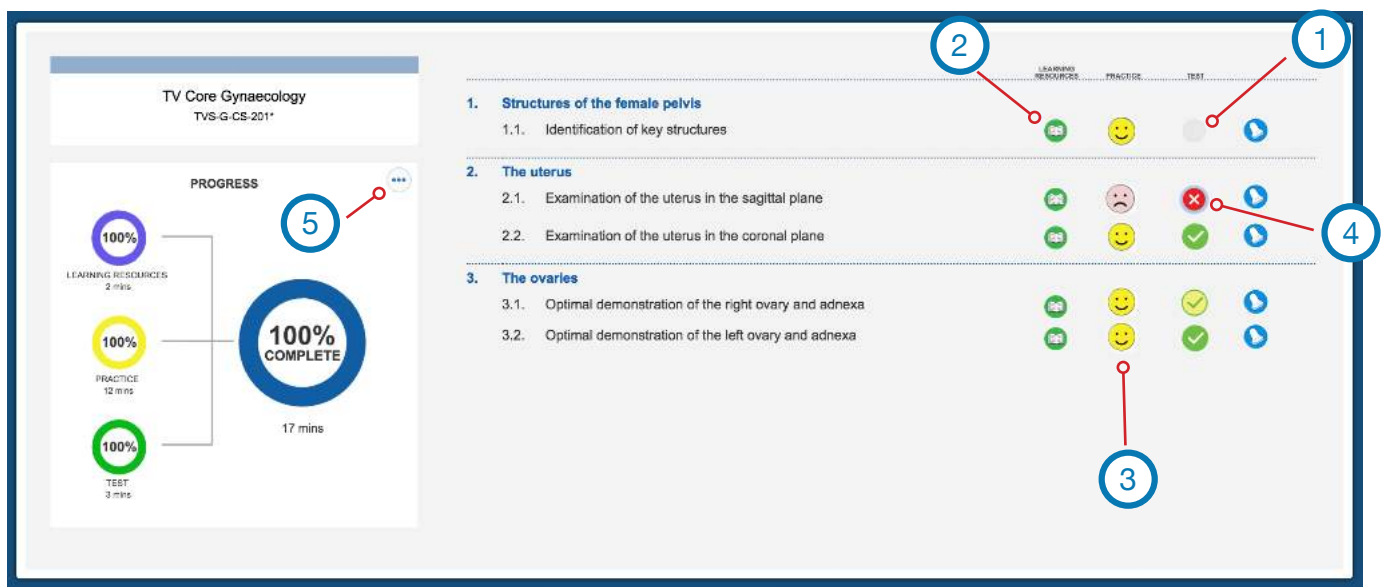If there are no learning resources or practice assignments for the module, only the test option will be available.

The module summary page is explained in detail below:

1. If the assignment has not yet been attempted a blank circle ⚪ will be shown beside the assignment title.

2. Once the assignment's learning resources have been reviewed this will change to a 📖 icon.

3. If the assignment has been practiced either a 🙂 pass or 🙁 fail icon will appear, click on the happy/sad icon to view the results.

4. If the test has been taken a ✅ pass or ❌ fail icon will appear with a surrounding progress bar. The progress bar reflects the percentage of tasks passed in a failed assignment, for passed assignments the progress bar will be full. Click on the pass/fail icon to view the results.

5. Users can monitor module progress on the left-hand side of the screen. View information relating to the scan as well as detailed graphs tracking progress by clicking ••• . If the module has not yet been started information about the scan will appear first.

Launching an assignment

- Once an assignment has been selected from the module summary page, the assignment launch page (image shown below) will open.

- On the assignment launch page users can launch the assignment in either practice or test mode or look through the learning resources. MedaPhor recommends that users first look at the learning resources, then run the assignment in practice mode before attempting the test. The options are explained in detail below:
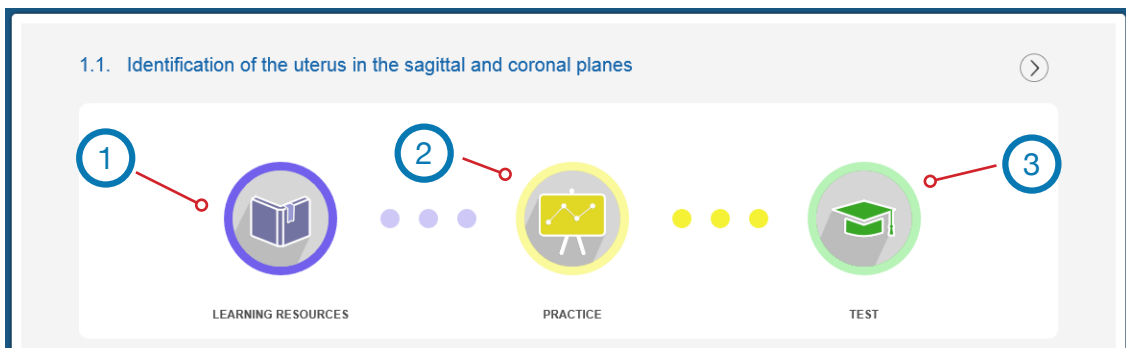
1. **Learning Resources** mode does not start the simulator. It provides additional background information to help complete the assignment and a video of an expert completing the assignment with commentary. This section also contains additional information on the assignment (e.g. required images, common variants, and difficulties in scanning).

2. In **Practice** mode, there are tasks to follow and the user's performance is assessed by the system at the end of the attempt. In this mode users have access to ScanTutor, a virtual expert tutor which provides the user with colour guidance and traffic-lighting of the controls during the assignment.

   - Additionally, users can run the assignment in Guided Practice mode (where available). This allows users to scan the patient and simultaneously watch the expert video. There are no tasks to follow and no feedback is given.

3. **Test** mode is the same as Practice mode (there are tasks to follow and the user's performance is assessed), but all support is turned off. *Note: Only assignments passed in assessment mode will count towards a certificate.*

- Tutors are also able to view the assignment summary which contains an overview of the tasks in the assignment.

Note: Assessments and exams do not have learning resources or the option to run the assignment in practice mode.

The simulator screen

- Once the assignment or case has finished loading, the following screens will appear :

Main Monitor   Secondary Monitor
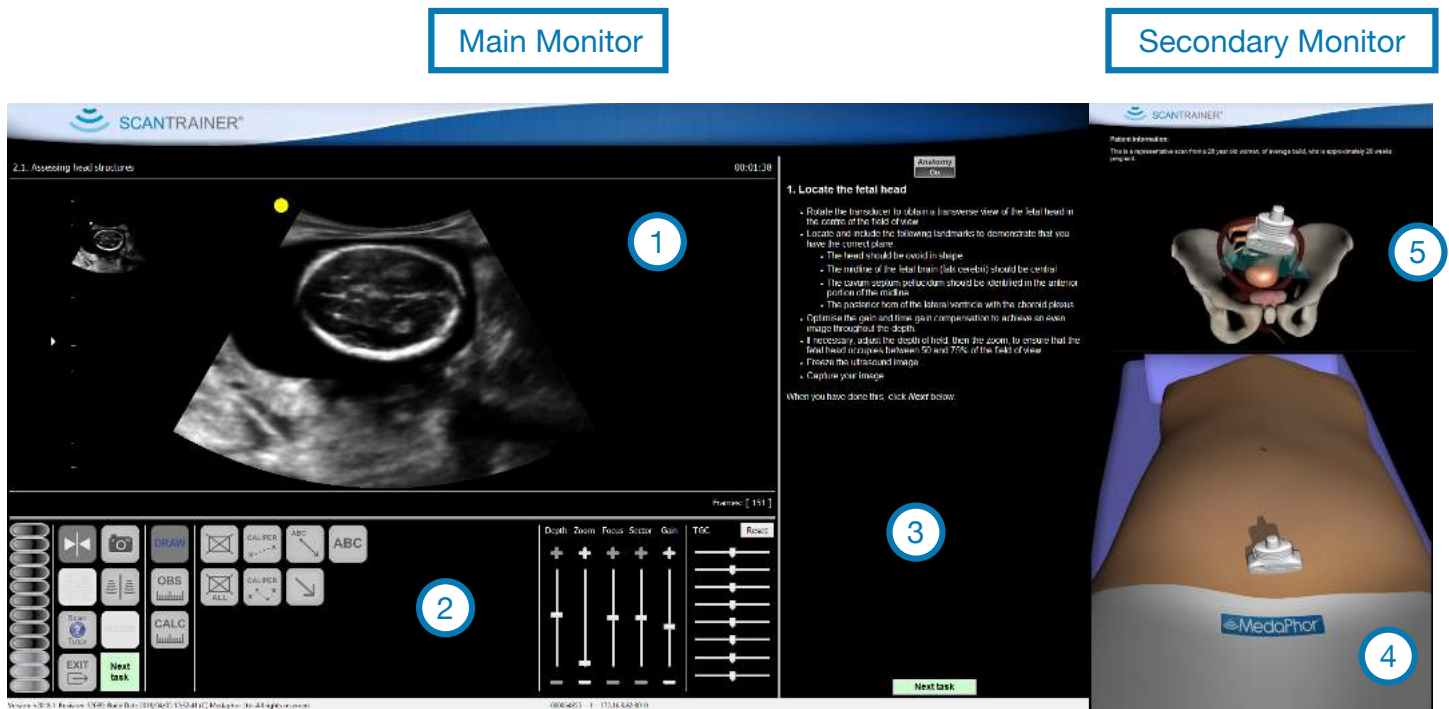
1. **The Ultrasound Image** – images from the real patient scans.

2. **The Generic Ultrasound Control Panel** – has all the basic controls that would be found on an ultrasound machine (e.g. freeze, capture, depth, zoom, gain, and measurement callipers). Users can use these controls to optimize the image, measure and annotate during an assignment.

3. **The Task instructions** – All ScanTrainer assignments have been written by medical professionals and are based on sonography guidelines. Users simply follow the intuitive bullet point instructions using the haptic device and virtual patient. Once all the instructions on screen have been completed, click the Next Task button (in green in the bottom right and left of the screen) to move to the next task. At the end of the assignment, the Next Task button will change to "Review Results".

4. **Virtual Patient** – The position of the virtual probe on the virtual patient is shown here.

5. **Cut-away Virtual Anatomy** – This additional virtual view shows the ultrasound beam interacting with the anatomy of the patient. This view can help with understanding orientation and gaining specific ultrasound images.
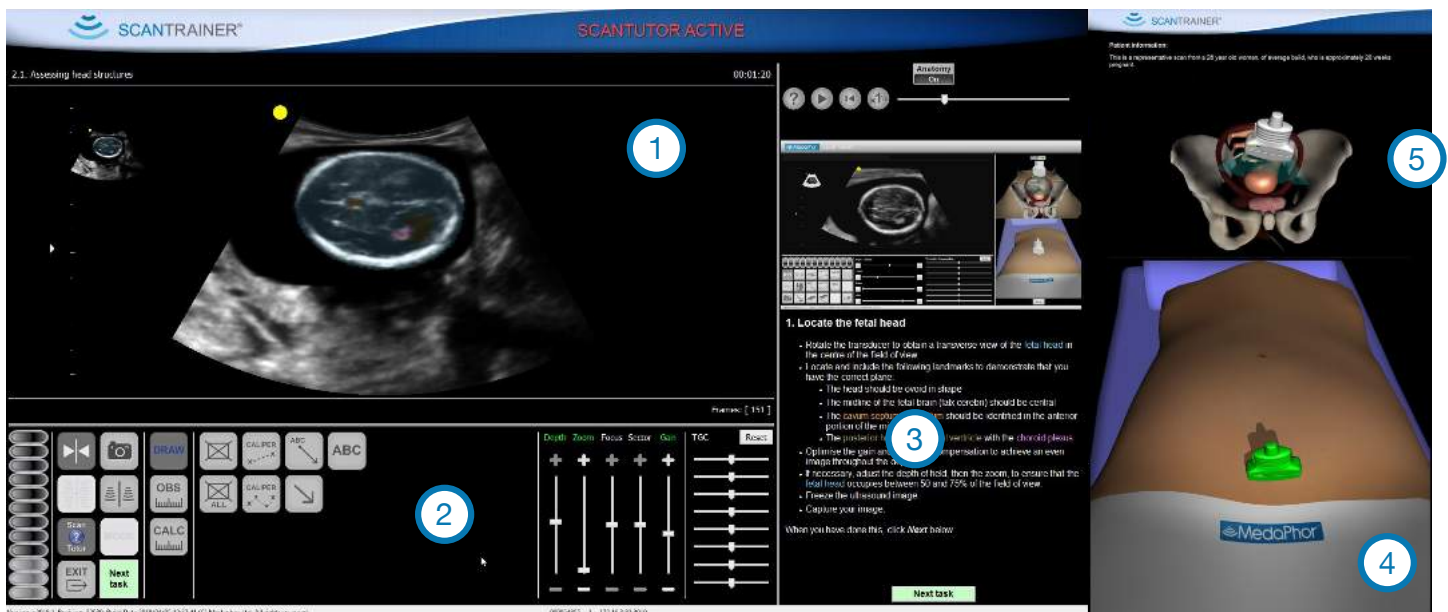
ScanTutor

- When running the assignment in Practice mode users have access to '**ScanTutor**', the virtual tutor, at any point during the lesson.

- To start ScanTutor mode, click the ScanTutor button in the left ultrasound control panel.

Main Monitor   **Secondary Monitor**

- When ScanTutor is activated there are several modes of help on the screen, which are described below:

1. **Real Time Colour Guidance** - The structures in the ultrasound image (those that the task is asking the user to identify) are highlighted in various colours, in real time. The names of the structures are also highlighted in the task instructions (in the same colour) to aid identification. In addition, yellow orbs will appear on the image which identify best places to make measurements.

2. **Traffic Light Ultrasound Control Panel** - The image optimisation controls are highlighted in traffic light colours. Red means that the setting is not correct and would be marked as a fail, yellow means that the setting is close to the correct setting and would be marked as a pass. Finally, green means that the setting is optimum and would be marked as a pass.

3. **Expert Video Guidance** - A video of an expert performing the assignment appears in the top right hand corner of the screen (the same video seen in learning resources).

4. **Traffic Light Probe Orientation** - The virtual probe on the secondary monitor will be highlighted in traffic light colours. Red means that the probe is not in the correct orientation and the user would fail the assignment on probe orientation. Yellow means the probe is almost in the correct orientation and finally green means that the probe is in the correct orientation.

Assignment/case feedback screen

- The LMS screen is displayed after every attempt and shows the results of users' assignment attempts.

1. All the tasks that the user was asked to complete in the assignment are displayed on the left-hand side of the screen. Click the arrow ∨ to open the detailed results for each task.

2. Results are displayed in a vertical column with a date and time stamp on the top (most recent attempts are always shown on the left). The overall pass or fail for the assignment is shown under the time at the top of the column for that assignment. For assessment, this is shown as either a ✔ tick or a ✖ cross, for practice this is shown as a 🙂 happy or 🙁 sad face. If nothing is shown next to the task it wasn't attempted (the user may have clicked next before completing the task). An exclamation mark icon, ⓘ means that the user didn't complete a measurement or annotation. A yellow tick icon, ✓ indicates that the action was close to the limit of acceptability. The system marks this as a pass and indicates possible improvements to improve technique.

3. Hover the mouse over a tick, cross or exclamation mark to view more information (e.g. congratulations for a pass or an explanation about why the task was failed and in some cases an example image).

4. Click on the 🖼 icon to see a comparison of the image taken against the expert example image. Note, only available when an image is captured in an assignment.

5. Click on the ↻ icon at the bottom of the screen to replay and watch the whole scan attempt.

6. If there is more than one result for the assignment click the grid ▦ icon to view all results. To only view the most recent attempt, click the grid ▦ again.

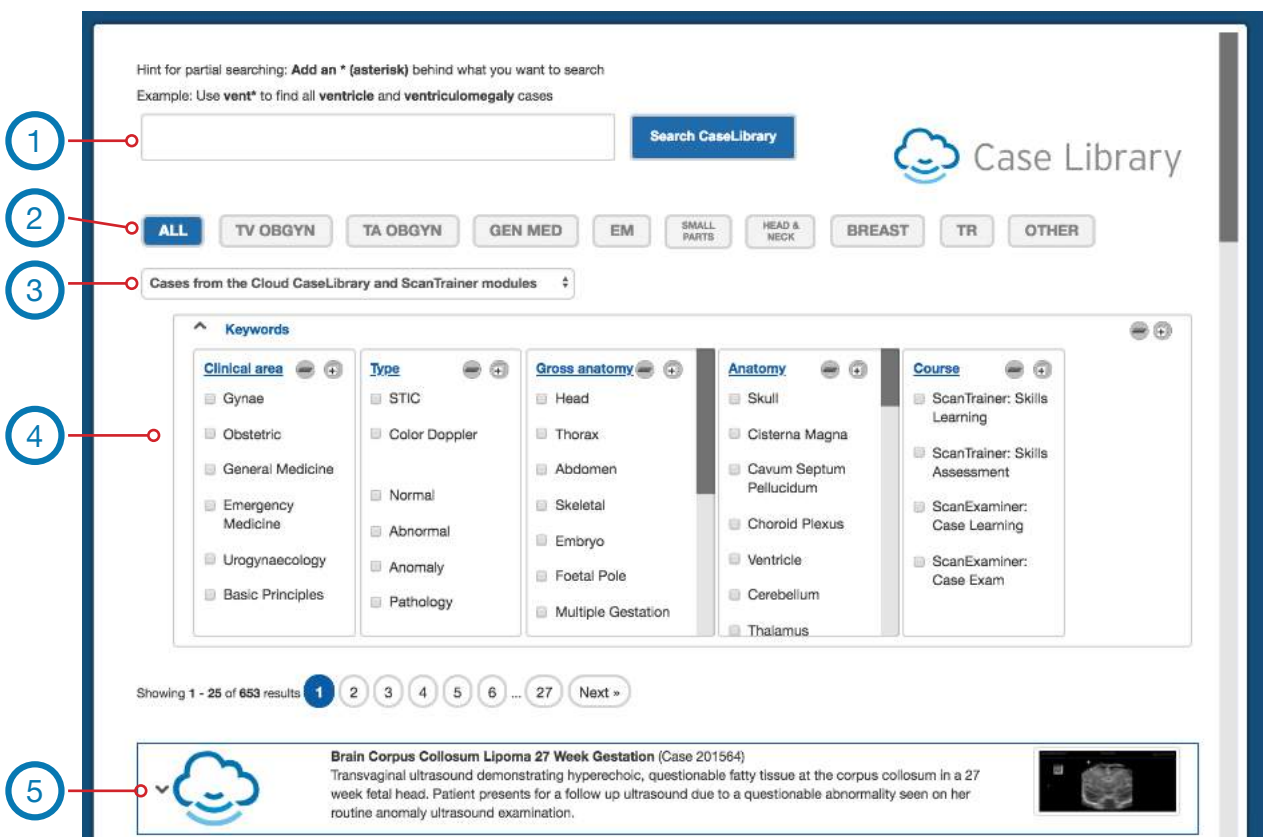7. To retake the assignment click on the ↻ icon.

Once finished reviewing the results, either take the next/another assignment or log out of the system.

ScanTrainer Software Guide

Search

Running cases from the Case Library

- As well as running the various ScanTrainer assignments and assessments (detailed on the previous pages) users can also run any of the cases on the ScanTrainer system from the Case Library. These cases do not contain any lesson content and simply allow users to scan the case.

- Navigate to the Case Library by clicking on the '**Search**' button on the home screen.

- A list of the available cases is displayed on this screen. As well as browsing this list of cases users can search the cases using any or all the search options:

1. Search for keywords using the search box, including partial words by adding an asterisk. Example: Use vent* to find all ventricle and ventriculomegaly cases.

2. Only show the search results for one of the speciality areas, by clicking on the chosen speciality.

3. Choose to only view cases from the ScanTrainer modules or the Cloud Case Library (if a cloud system with a subscription to the Cloud Case Library) or both. Select either of these options from the drop-down menu.

4. Use any of the suggested keywords, click ⌄ to show all the selectable keywords in the four sections: Clinical area; type; gross anatomy; and anatomy.

To obtain more details about the case click ⌄ . Users can then run the case by clicking the '**Take case**' button.
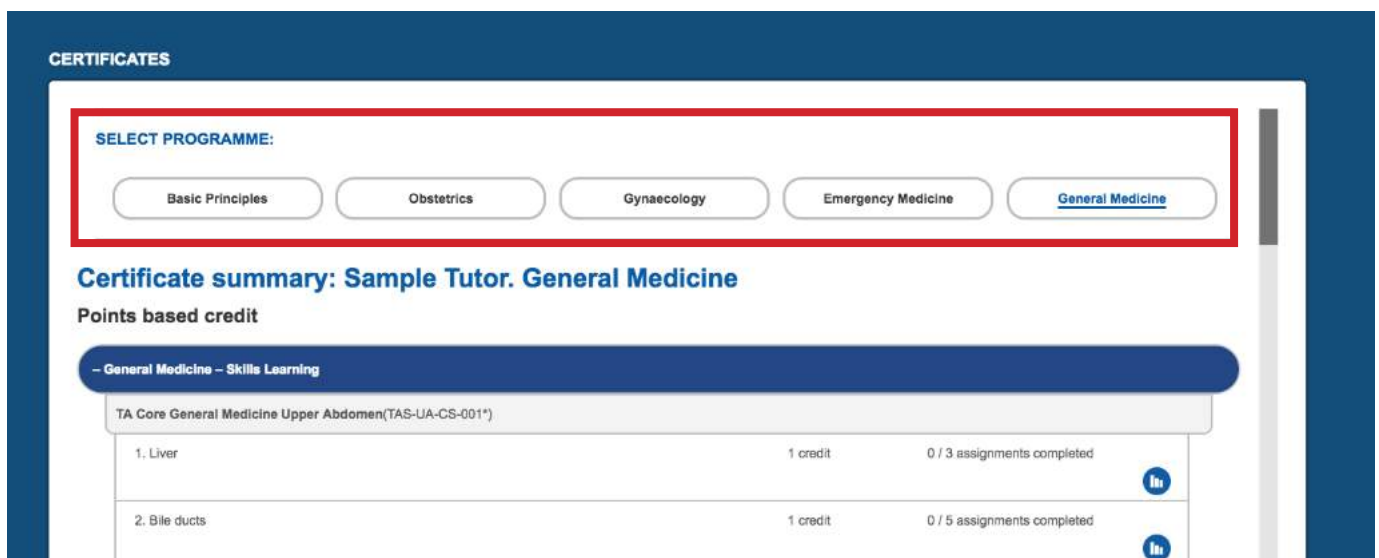
ScanTrainer Software Guide

Certificates

1

Locating your certificates

- Cloud users are awarded certificates for completing modules in 'Test' mode.

Please note that, certificates are only available on ScanTrainer Cloud systems.

- To view a summary of your certificates go to the 'CERTIFICATES' section on the home page.

- If you want to receive your certificates via email, ensure that there is an email address linked to your account by clicking 'MENU' and selecting 'EDIT MY DETAILS'.

- The system displays your module progress and will only display a certificate when that module has been completed.

2

Certificates summary

- Certificates are awarded in two ways: points based and time based. The Skills Learning and Skills Assessment content is worth a set number of points. While the Case Learning and Case Assessment content contributes to time based credit.

Points based credit
- A star icon next to the content indicates that the user has completed the section and gained the certificate. If there is no star, click on the progress icon to view progress in that module. Click on the star to view the certificate.

- To open all points based certificates click on the star icon at the start of the points based credit section, shown in red below.

Certificate summary: Sample Tutor. Obstetrics

⭐ **Points based credit**

– Obstetrics – Skills Learning			
TV Core Obstetrics with NT(TVS-O-CS-201*)			
1. The uterus and adnexa	1 credit	1 / 2 assignments completed	📊
2. The gestational sac, fetus and placenta	1 credit	Passed on 02 June, 2016	⭐

2018-08-22 12:32:02   EMAIL   CLOSE

Certificate of Completion

This is to certify that

Sample Tutor

Has completed the following activity:

Core skills: Obstetrics with NT (TVS-O-CS-201)
Final examination

- Certificates can then be sent to the email address associated with that account by clicking the '**EMAIL**' button.

Time based credit

- Click on the ⭐ star icon at the start of the time based credit section to view the self study log which contains a record of time based credit. From there users can send the self study log to the email address associated with the account, in the same way as for the certificates.

⭐ **Time based credit**

– Obstetrics – Case Learning Core OB			
Early Pregnancy (OB)			
1. Early Pregnancy	6 mins	Time-based self-study credit	📊
2. First Trimester Ultrasound - Normal	12 mins	Time-based self-study credit	📊
3. First Trimester Ultrasound - Abnormal		Time-based self-study credit	📊

2018-08-22 12:35:35   EMAIL   CLOSE

Self Study Log

Sample Tutor
22 August, 2018

- The log can then be sent to the email address associated with that account by clicking the '**EMAIL**' button.

December 2017	2 mins
Advanced GYN - Uterine Pathology TV Uterus Isthmocoele/Cervical Niche With Saline Infusion	2 mins
November 2017	**16 mins**
Advanced Fetal Syndromes TA Face Goldenhar Syndrome Gestation 33 Weeks	9 mins
Early Pregnancy TV Embryo Gestation 6 Weeks (Full Volume)	7 mins
May 2017	**2 mins**
Core OB Case Examination 2 - TA Cases TA Brain Hydrocephaly Gestation 32 Weeks	1 min
General Medical Case Examination 1 TA Liver Dilated Bile Ducts due to Ampullary Lesion	

ScanTrainer Software Guide

Manage System

The Manage System area overview

- The final area of ScanTrainer is the manage system area, which is only accessible by tutors and administrators.

- The manage system area is where tutors and administrators can manage all user accounts, the learning content, and modify the default system preferences.
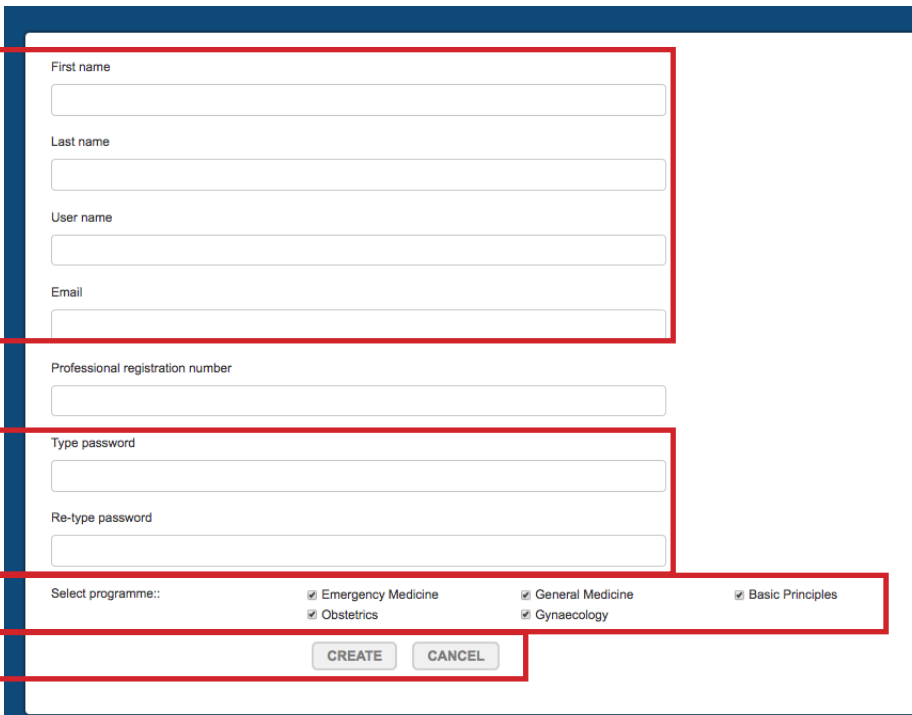
The manage system options are separated into three sections:

1. **Manage users**
2. **Manage content**
3. **System settings**

- Each of the options are explained in detail over the next pages of the guide.

2

Adding a new trainee account

- To add a new trainee account, go to the Manage System area, and select the '**ADD NEW USER**' option.

1. Enter the new user's details.

2. Enter the users password. ScanTrainer passwords must be at least 6 characters long and contain at least one capital letter and one number.

3. Complete the remaining fields and select which programmes they will be able access using the tick boxes. Note that, by default, a user is assigned to all available programmes.

4. Once everything is complete, click on the '**Create**' button at the bottom of the screen.

- If the user account is successfully created the fields will go blank and a message which reads: 'Successfully Created User' will appear at the top left of the screen (under the ScanTrainer logo). If there is a problem creating the account the message will also show here.

- You can set a users language preferences once an account is created. Click user management from the manage system menu, click on the edit icon next to the user's name and click on the flag to change the language.

Editing/Removing a trainee account

A list of the existing trainee accounts is displayed under 'USER MANAGEMENT'.

☐ Show deactivated trainees

- Any of the trainee accounts on the system can be deactivated (deactivating hides the account and it can be reinstated at any time) by ticking the 'show deactivated trainees' on the top left of the screen.

- Tick Boxes will then appear next to every user. Untick the box next to a trainee account to deactivate their account.

To the right of every trainee account, there are the following three buttons:

Review the students progress through the courses.

Edit the account information and set a users language.

To permanently delete the account from the system.

Note: Permanently deleting an account will remove all their results from ScanTrainer database. These cannot be recovered. Deactivate a user if you need to retain their results.

- If appears next to a user's name, this means that the trainee has images for a tutor to review. Click on the icon to review these results.

- When clicking on the edit account button the user's details will be displayed and can be edited.

First name

Sample

Last name

Tutor

User name

Sample Tutor

Email

sample@tutor.com

Professional registration number

Select programme::
☐ All   ☑ Emergency Medicine   ☑ General Medicine
☑ Basic Principles   ☑ Obstetrics   ☑ Gynaecology

Select language

SAVE   CANCEL   CHANGE PASSWORD

Changing a trainee password

If lost or forgotten, trainees' usernames can be found on the '**USER MANAGEMENT**' screen.

Note: Only tutors and administrators have access to this page.

- Tutor and administrators can also change trainees' passwords from the account details page (select the edit option next to their account on the User Management screen to get to this page).

- From this page, click the '**CHANGE PASSWORD**' button at the bottom of the page.

- To authorise the password, change the tutor or administrator making the change will have to enter their ScanTrainer password into the top field. Then add the new password for the trainee and confirm.

- Once complete, click the '**CHANGE PASSWORD**' button.

5 Reviewing trainee results

There are two ways to review trainees' ScanTrainer results: from the 'USER SUMMARY' where the results for all trainees are shown, or, from each trainee's learning page.

1. **User Summary**

   - The best way to review the results for all trainees at once is to open the 'User Summary' in the manage system area.

   - The summary screen shows the progress and time spent on each of the modules for every trainee. This is shown in two graphs (progress and time spent), as well as the statistics for each trainee further down the page. These results are shown for one module at a time, which must be selected from the drop-down menus at the top of the page.

   - Click on the trainee's name to view their detailed results for that module.
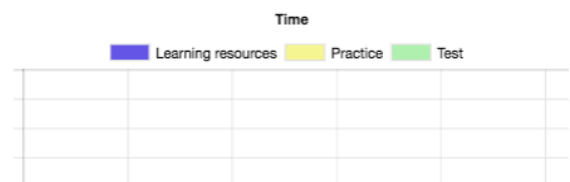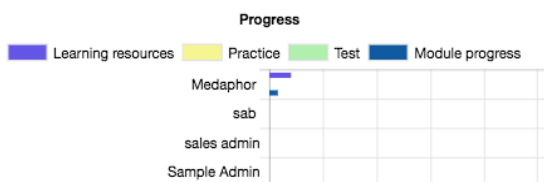
   - Further detailed results for the probe manipulation module are available by clicking the 'Probe manipulation results' button from the top right of the page when probe manipulation has been selected from the modules drop-down. On the page that opens the graph shows the percentage of the task completed at each point along the time axis.
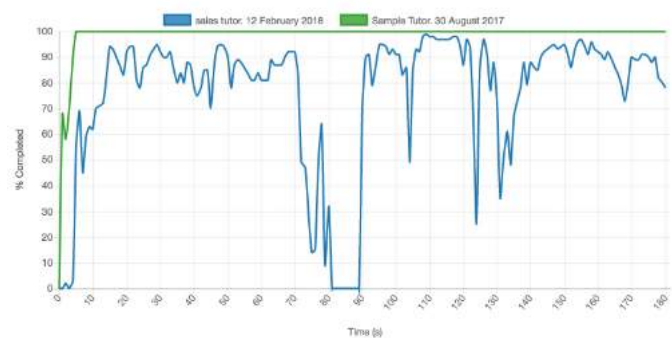
2. **Trainee's learning page**

   - To view all the results of any trainee it may be preferable to go to their learning page. To go to a trainee's learning page, open User Management and click the icon next to that trainee. Their progress through all the courses and modules can be viewed by navigating through the programmes and opening any of the courses by clicking on the box for that course.

Note: Trainee results are also shown in the calendar on the navigation bar at the top of the screen. Click on a date to see the assignments taken on that day.

Assigning trainees to a programme

- To tailor the learning content for trainees they must be assigned to the correct programmes. To edit programme content open 'EDIT PROGRAMMES'.

- To assign trainees to any of the programmes, open 'PROGRAMME MEMBERSHIP' from the Manage System area.

Note: Trainees can be a member of multiple programmes. For example, some trainees should be a member of both the gynaecology and obstetrics programmes.

- Select the programme to change the membership of from the drop-down menu at the top of the page.

- To assign trainees to the programme, click the 'EDIT PROGRAMME MEMBERSHIP' button.

- Tick boxes will appear next to every trainee, simply tick the box next to a trainee to be added to that programme, or untick the box next to a trainee to be removed from the programme.

- To edit the membership of more than one programme, simply change the programme selected from the drop-down.

- Once complete, click 'HIDE PROGRAMME MEMBERSHIP' to finish editing programme membership.

Uploading your own cases

ScanTrainer enables users to create their own cases using 3D volumes captured on their ultrasound machines. This means that users can share cases they find in their practice with their trainees, colleagues and the MedaPhor community.

Note: Users must have a subscription to the Cloud Case Generation to be able to upload cases.

The online conversion process converts 3D volume files into a format that can be used in the simulator, stripping out all confidential/patient information that was in the original file in the process.

Once the conversion is complete, the user positions the volume within a virtual patient and configures the machine settings using a special version of simulator. Users can also add ScanTrainer style labels to the case to highlight key structures or pathology.

When happy with the case, the last step is to publish the case to the global community or just to the local institution.

Users can then use the uploaded cases (or any other case from the Cloud Case Library) to create custom case studies.

The steps to create a case are:

> Open Case Generation and click 'create case', accept the terms and conditions.

⬇

> Enter the case information, select the virtual patient, upload the file containing the 3D sweep and finally, submit.

⬇

> MedaPhor will now review the case, ensuring that the file has uploaded correctly and there is no patient information present.

⬇

> Position the case within the virtual patient and save the representative image.

⬇

> Finally publish the case!

For full instructions on how to export 3D sweeps from an ultrasound machine, upload to ScanTrainer and position within the virtual patient please see the **Case Generator Guide**.

Creating a case study

- Open 'CASE MANAGEMENT' from the Manage System area.

- To create a new case study, click the icon.

- On the next page, name the case study and select the appropriate product area (e.g. TA General Medical).

- Then choose the assessment type, either standard or super assessment. Standard assessments have all the assignments visible to the trainee. While super assessments automatically select an assignment (in order or at random) for the trainee to take once they run the case study. When creating a super assessment case study a pass percentage must be entered. As an example, for MedaPhor created super assessments this is 80% (8 out of 10 cases must be passed to achieve an overall pass for the case study).

- Then add the tutorial to a new or existing custom module. This module can also be added to a course, or this can be done later once the content is finished from the 'Course Content' page.

- Once all details are complete hit the 'CREATE CASE STUDY TUTORIAL' button. The case study will now appear in the list of case study tutorials on the right-hand side of the page.

- At this point, there are two options for the case study: delete the case study (only possible when the case study is empty) and to edit the tutorial name, type and custom module, etc.

- The case study is now ready to have cases added.

Adding cases into a case study

- To add cases to a case study, select the '**CASE STUDY**' from the list on the right-hand side of the page.

  It will open to show the cases already added (if any) and the title box will be highlighted.

- A list of the available cases is displayed on the left-hand side of the case study page. Either browse through the list of cases, or to find a specific case, search a term using the search box or filter by product area (e.g. TV OBGYN, TA OBGYN, GM, etc.).

- Once a case has been found, click on the icon to show the detail and example image for that case. To scan the case, click the '**RUN CASE**' button (remember this is not possible if working on a remote PC/tablet).

- To add the case to a case study, click the '**CREATE CASE STUDY**' button and the case will be copied to the selected case study. It is worth double checking that the correct case study is selected in the list on the right-hand side of the page before clicking this button.

- To prevent trainees from seeing a case that has been used in a case study, hide it by clicking the tick box under the '**CREATE CASE STUDY**' button. The case will then no longer appear in the list of cases that the trainee can see and search.

9

Adding questions to a case study

- Case studies can be created without any questions, or users can add either (or both) of the two types of question available: multiple choice, or image review. Image review require the trainee to capture a specific image to be reviewed by their tutor.

- Please note that both standard and super assessment case studies can contain both multiple choice and image review questions.

- Next to a case study there are four options:

  Add/modify questions.

  Anonymise the case study title. *Note: This hides any labels that have been added to the case.*

  Remove the case study from the case study tutorial.

  Upload the case study to the cloud. *Note: This option appears to cloud customers only*.

- Once ready to add questions click the edit icon. On the edit case study page that opens, click '**ADD QUESTIONS**.' The text boxes for the question title and text will then open:

Q 1:

Question text

Answers   1:
           2:
ADD ANSWER

Explanation:

- To create an image review question, do not add any answers and ensure that the 'question text' box clearly explains to the trainee what image is required.

- To create a multiple-choice question, select the 'add answer' button to add multiple choice answers. Tick the box to indicate the correct answer. Finally, add the explanation as to why the ticked answer is correct.

- To delete an answer or a question click the delete icon.

- Once all questions and answers have been added, click the '**SUBMIT**' button. Alternatively, click the '**RESET**' button to start again or the '**CANCEL**' button to cancel any changes.

SUBMIT   RESET   CANCEL

Case Studies - final steps

- For the case study tutorial to be available for trainees it will need to be added to a custom module, within a course. If this was not done when the tutorial was created it should be done once the tutorial is complete.

- If the case study tutorial contains only multiple choice questions, the assignment feedback page will show the trainee if they have passed or failed directly after the attempt, with either a tick or cross.

- If the tutorial contains image review questions, then the feedback page will display a question mark following the attempt.
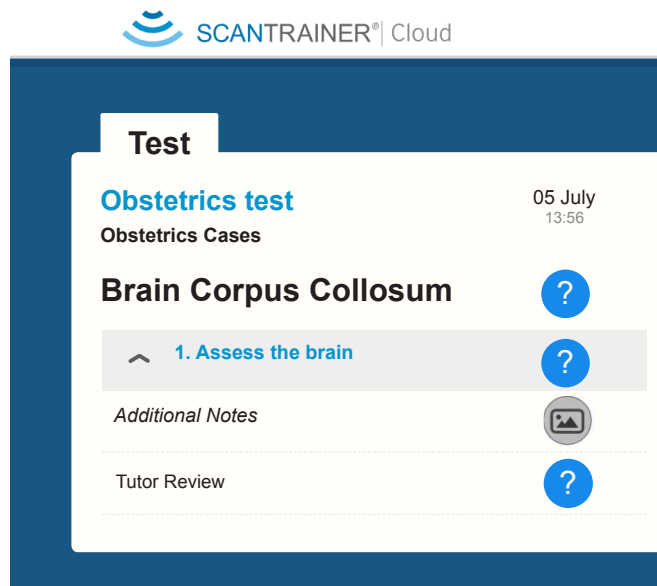
- The next time any tutor logs onto the system, a 'review' box will appear on the navigation bar to notify them that the case study has been attempted and requires review:

- When the tutor opens the 'review', they must review the image, select pass or fail, add comments, and then hit the 'submit review' button. The trainee will be notified of the result via a system message the next time they log-on.
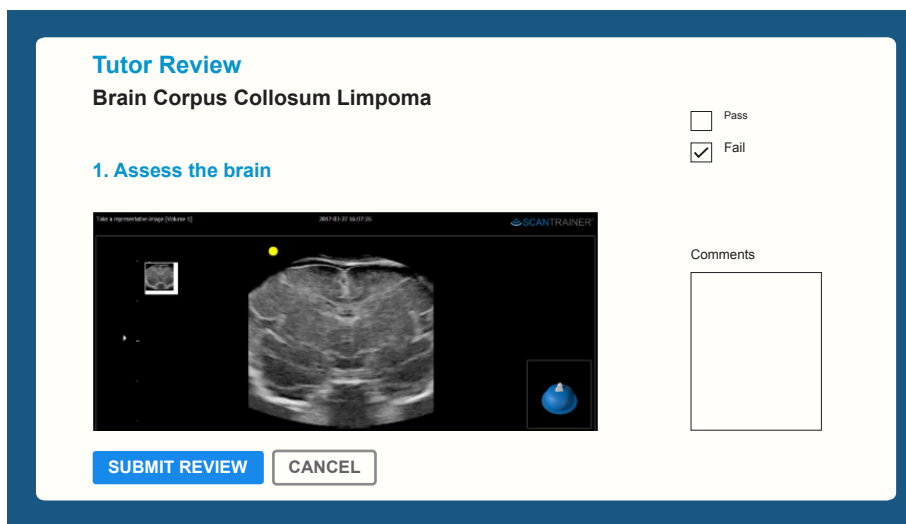
Creating a custom module

- ScanTrainer enables users to create customised modules made from parts from the standard ScanTrainer modules as well as case study tutorials.

Note: Case study tutorials modules must be added to a custom module for them to be accessible for trainees.

- To create a custom module, open '**CUSTOMISE MODULES**' from the manage system area.

- To create a new customised module, click the button.

- On the next page, name the module, then hit the '**CREATE CUSTOM MODULE**' button.

- The new custom module will now appear on the right-hand side of the screen in the list of customised modules.

- There are three buttons next to each of the custom modules:

  To edit the module name.

  To customise or disable the metrics in the module. Note that, it is only possible to customise or disable metrics in a custom module.

  Will delete the customised module (only possible if the module is empty, delete all the contents to then delete the custom module).

- The standard ScanTrainer courses are displayed on the left-hand side of the screen. Click on the course to display the modules in that course. Then click on the module to see the tutorials within that module.
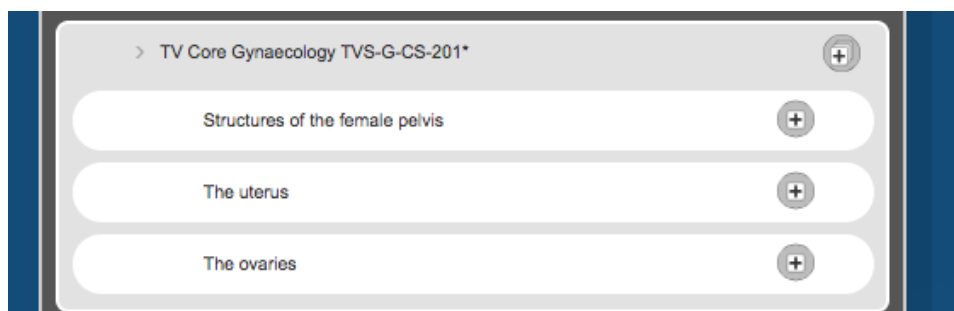
- To add/remove tutorials into the custom module, click   /   next to the tutorial.

Note: Clicking   will add all the tutorials in the module into the custom module.

Disabling Metrics

- A metric is the criteria the system uses to pass or fail a user during a lesson (e.g. a measurement must be between 12.0 and 13.5mm to pass).

- Tutors can disable any of the metrics on the system. However, it is not possible to disable metrics directly in any of the standard ScanTrainer modules, the content must first be added to a custom module. See page 44 for the instructions to create a custom module.

- To disable a metric, open 'CUSTOMISE MODULES' from the manage system area.

- Click the ⚒ next to the custom module.

- A page will then be displayed which shows the tutorials and assignments in the selected module. Select an assignment (click on the text) and the metrics in the selected assignment will be displayed.

- To disable a metric, simply hit the DISABLE button, next to the metric (shown in red on image below).
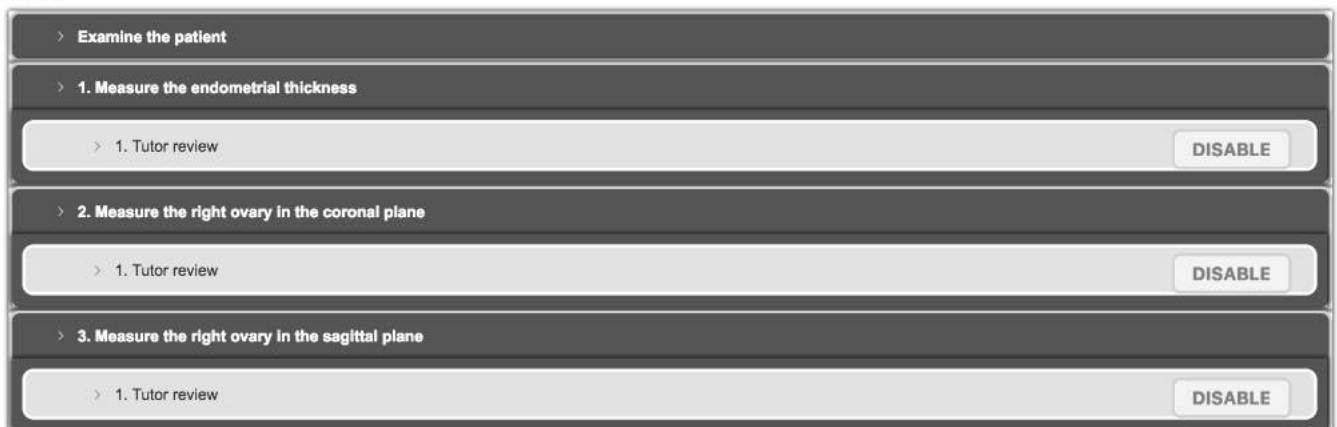
- The button will then show ENABLE and a line will be crossed through the metric.

- To re-activate the metric, simply hit the button again.

Customising Metrics

- A metric is the criteria the system uses to pass or fail a user during a lesson (e.g. a measurement must be between 12.0 and 13.5mm to pass).

- Tutors can customise any of the value metrics on the system. However, it is not possible to customise metrics directly in any of the standard ScanTrainer modules, the content must first be added to a custom module. Go to page 44 for the instructions to create a custom module.

Note: The option to 'customise metrics' must be enabled when you configure system settings (page 49).

- To change a metric, open '**CUSTOMISE MODULES**' from the manage system area.

- Click the 🛠 next to the custom module (location highlighted below in red).

- A page will then be displayed which shows the tutorials and assignments in the selected module. Select an assignment (click on the text) and the metrics in the selected assignment will be displayed.

- Click on the metric name. If the metric is configurable, the current metric values will be displayed (location highlighted below in red).

- Change the metric value, then click the '**UPDATE METRIC VALUES**' button to save the changes.

Creating a new course

- To create a new course with specialised content open '**COURSE CONTENT**' from the manage system area.

- Click the ⊕ icon to create a new course.

- On the next page, name the course and add a description if desired. Then select whether to create an empty course or use one of the existing courses as a starting point, this is useful if only minor changes to an existing course are needed.

- Check the auto update box if relevant new content should be added to the course automatically when published by MedaPhor.

Name

Description

Create an empty course   ⬍

☑ Auto update when new content is published by Medaphor

[CREATE COURSE]   [CANCEL]

- The new course will now appear in the list of courses on the right-hand side of the page, it will be empty until modules are added.

- To edit the name or description of the course click the edit ✎ button, alternatively to delete click the 🗑 button, and then click '**DELETE COURSE**' in the dialogue box that opens.

- The list of available modules (standard and customised modules) is shown on the left-hand side of the page. To add modules to the course, select the ⊕ button next to the desired module. The module will now appear in the selected course.

- To remove modules from the course, select the ⊖ button.

Standard modules available for course		Courses	
✦ Gynaecology Case Exam Advanced GYN	⊕	DIU 2017 - 2018	✎ 🗑
✦ Gynaecology Case Exam Core GYN	⊕	ISUOG basic training workshops 2017	✎
✦ Core OB Case Learning Early Pregnancy OB	⊕	ISUOG workshop module August 2016	✎ 🗑
✦ Core OB Case Learning Second Trimester OB	⊕	Japanese tutor group とちとかなもち	✎
✦ Advanced GYN Case Learning Adnexa GYN	⊕	QST course (26-03-2018)	✎
✦ Advanced GYN Case Learning Early Pregnancy GYN	⊕	Sample Tutor's trainees	✎ 🗑
✦ Advanced GYN Case Learning Other Pelvic Structures GYN	⊕	TA-NT	✎
✦ Advanced GYN Case Learning Contraceptive Devices GYN	⊕	Test (26-08)	✎ 🗑
✦ Advanced GYN Case Learning Uterus GYN	⊕	Ultrasound Trainee Singhealth	✎ 🗑
		gynaecology class 2017 course	✎
		kidneys	✎ 🗑
		v2016 tutor group	✎

15

Modifying Programme content

- To create a new programme of courses open 'EDIT PROGRAMMES' from the manage system area.

- Click the ⊕ icon to create a new programme.

- On the next page, name the programme and click 'CREATE PROGRAMME'.

- To edit the name of the programme, click the edit ✎ button, alternatively to delete click the 🗑 button, and then click 'DELETE PROGRAMME' in the dialogue box that opens.

- The list of available courses (standard and customised courses) is shown on the left-hand side of the page. To add courses to the programme, select the ⊕ button next to the desired module. The course will now appear in the programme.

Standard modules available for course		Courses	
✱ Gynaecology Case Exam Advanced GYN	⊕	DIU 2017 - 2018	✎ 🗑
✱ Gynaecology Case Exam Core GYN	⊕	ISUOG basic training workshops 2017	✎
✱ Core OB Case Learning Early Pregnancy OB	⊕	ISUOG workshop module August 2016	✎ 🗑
✱ Core OB Case Learning Second Trimester OB	⊕	Japanese tutor group とちとかなもち	✎
✱ Advanced GYN Case Learning Adnexa GYN	⊕	QST course (26-03-2018)	✎
✱ Advanced GYN Case Learning Early Pregnancy GYN	⊕	Sample Tutor's trainees	✎ 🗑
✱ Advanced GYN Case Learning Other Pelvic Structures GYN	⊕	TA-NT	✎
✱ Advanced GYN Case Learning Contraceptive Devices GYN	⊕	Test (26-08)	✎ 🗑
✱ Advanced GYN Case Learning Uterus GYN	⊕	Ultrasound Trainee Singhealth	✎ 🗑
		gynaecology class 2017 course	✎
		kidneys	✎ 🗑
		v2016 tutor group	✎

16

System summary

- To view a summary of the system, including the number of users and modules installed, open the 'SYSTEM SUMMARY' from the manage system area.

My details

Sample Tutor

Details for	Sample Tutor
Professional registration number	-
Last logged in at	2018-07-04 12:23:45 +0100
Role	Tutor
Product areas	TV Obstetrics and gynaecology, TA Obstetrics and gynaecology, TA General Medical, Emergency medicine, Small parts, Head and Neck, Breast, Transrectal and Other
Course	General Medicine Skills Learning

ScanTrainer [68 active users]

Summary statistics

	Jul to date	Jun	All
Total session time	50m	2h 33m	287h 48m
Time in simulator	15m	34m	93h 11m
Assignments attempted	8	36	6082
Assignments passed	5	18	4184
% Assignments passed	63%	42%	68%
Sessions	3	13	455
Average session time	17m	12m	38m
Average assignments per session	2.7	1.9	12.9
Users on ScanTrainer	3	6	28
Average sessions per user	1.5	2.6	18.2
Attempts per assignment	1.1	1.8	12.4

Configuring system settings

- The system settings on ScanTrainer are configurable and can be turned on or off by opening 'CONFIGURE SYSTEMS' from the manage system area.

- Then check/uncheck the box next to the feature to turn on/off.

Configure system

- ☑ Allow creation of tutor approval case studies
- ☑ Allow tutors to disable metrics
- ☑ Allow tutors to unpublish cases
- ☑ Allow users to choose their language
- ☐ Do not delete activation entry
- ☐ Don't display the splash screen on login
- ☑ Email certificates
- ☑ Enable messaging
- ☑ Enable personal ScanTutor hints
- ☑ Enable personal ScanTutor videos
- ☑ Enable sector width controls
- ☐ Extended logging

- Users can change the default force feedback for the transvaginal haptic on this page. To prevent the haptic over-heating MedaPhor recommends using the Minimal setting when running the transvaginal simulator for long periods.

Default force feedback set to:

Minimal force feedback	CHANGE

- To change the time zone of the system, click on the current time zone and chose the desired time zone from the list.

System timezone:

(GMT+00:00) Dublin

- To add the institution's logo to the ScanTrainer insert a USB stick with the logo and simply drag and drop the file into the box around the 'upload new logo'. Alternatively, click 'upload new logo' and locate the file on the USB stick.

Logo

Upload new logo   Drag & Drop Files

UPDATE

- Click 'UPDATE' to save any changes.

Sending a system message

Using this function tutors can send messages to system users. The message will be shown to the recipient the next time they log-on to the system.

- To send a system message, open 'SYSTEM MESSAGE' from the manage system area.

- Click the 'NEW' button to create a new message.

- Compose the message and select the intended recipients, either send to users by course (click the button next to the course) or to individual users, using the tick boxes. Once complete click 'SUBMIT'.

- The system message will now show on the system messages page and will be seen by the selected users when they next log-on.

- The message can be edited by selecting the ✏ icon and deleted by selecting the 🗑 icon.

ScanTrainer Software Guide

Appendix

1

System warning messages - Haptic not found

Below are some of the messages that may be displayed on the ScanTrainer system:

No Haptic Found

Please check that the haptic device is switched on and correctly attached to the computer.

If you are unable to resolve this problem, please contact your support representative.

The simulator will now exit.

OK
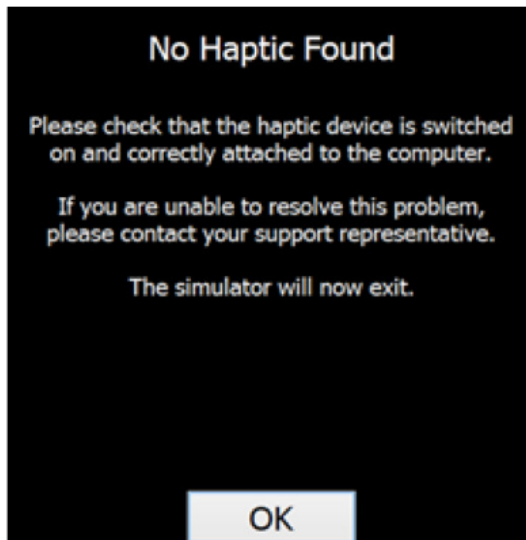
- The ScanTrainer PC cannot detect a haptic device.
- Check that there is power going to the haptic device, make sure the haptic device is turned on (TA only) and check that the USB or LAN cable is connected to the PC.
- Then restart the lesson.

Haptic Device Problem

An error occurred while communicating with the haptic device.

If you are unable to resolve this problem, please contact your support representative.

The simulator will now exit.

OK
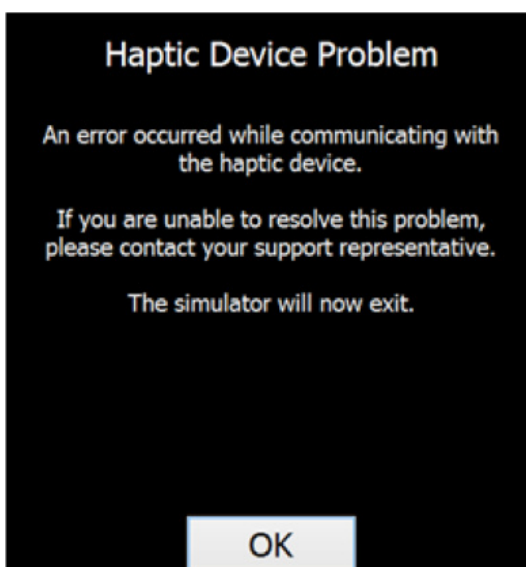
- The haptic device has encountered a problem during a lesson.
- This usually means that the power cable or communication cable (USB/LAN) has been removed from the haptic device while it is active.
- Re-connect the power or communication cable and re-start the lesson.

Wrong Haptic Found

Found a Sensable Omni haptic, but no calibration exists for this haptic in the current lesson.

If you are unable to resolve this problem, please contact your support representative.

The simulator will now exit.

OK
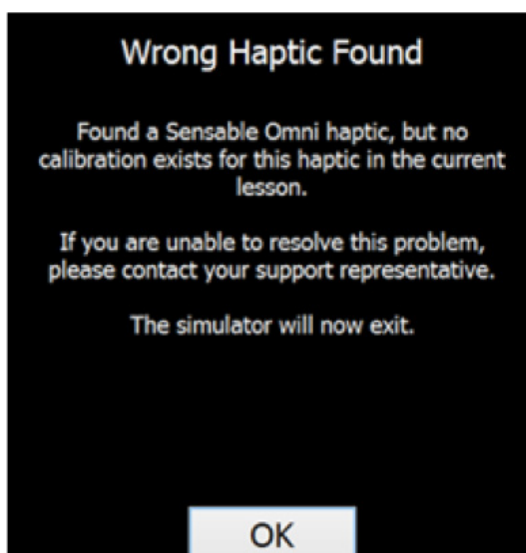
- The ScanTrainer PC is detecting a haptic device, but it is the wrong type (i.e. you have tried to start a TA lesson, but it can only detect the TVS haptic).
- Check that there is power going to the required

  haptic device, make sure the haptic device is turned on (TA only) and check that the USB or LAN cable is connected to the PC.
- Then restart the lesson.

System warning messages - Haptic alignment required
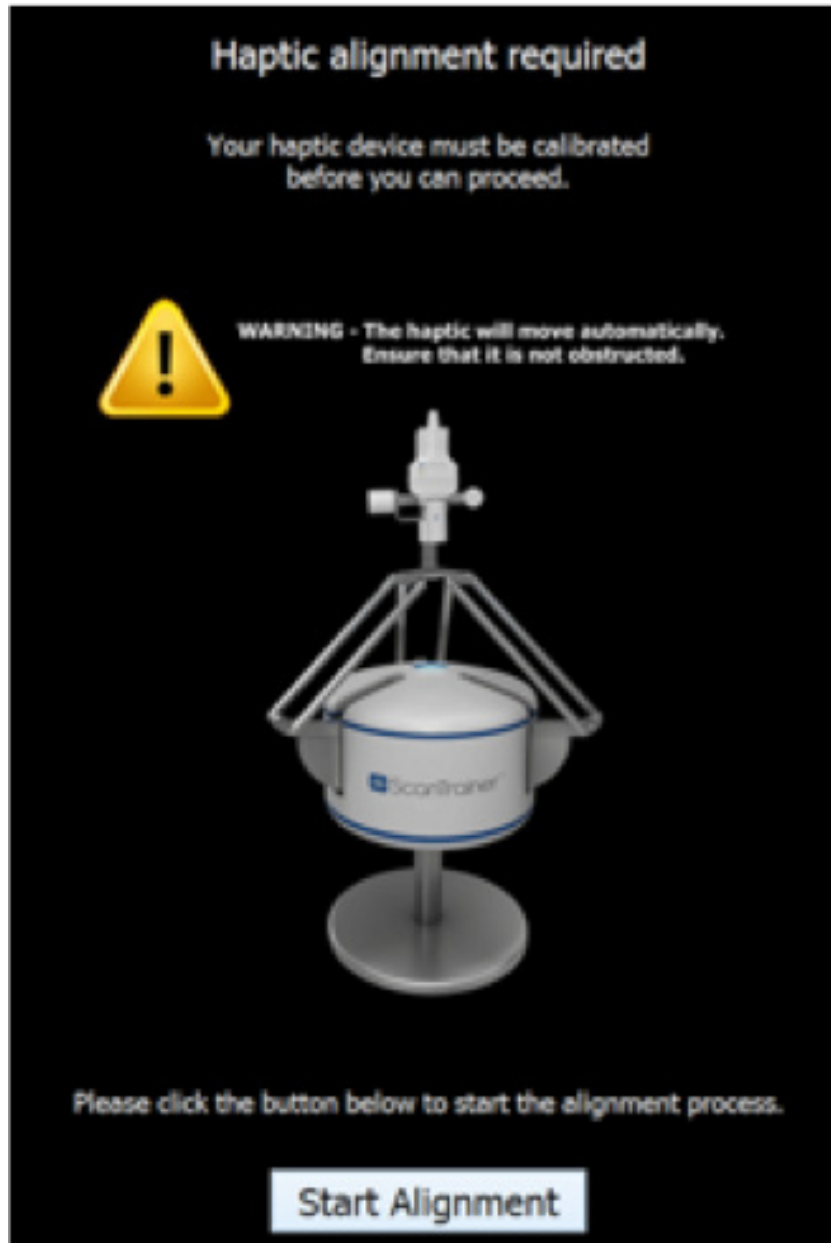
- The arms of the Transabdominal haptic device needs to be aligned.

- Simply follow the on-screen instructions to complete the alignment.

- When aligning, make sure that the ScanTrainer Logo on the front of the haptic device is facing away from the table / desk not towards the user.

- This message will only be displayed the first time the TA haptic is used after the system is powered up. Once it has been aligned you will not need to do it again (unless the TA haptic is turned off).

3

System warning messages - Operating temperature

The system is approaching the limit of its operating temperature.

To protect the motors, haptic feedback has been reduced.

You may continue to use ScanTrainer in Low Force mode. Your results will still be marked.

This may take up to 20 minutes

You may wait for the haptic to cool, or

continue in Low Force mode.

The system is reaching the limit of its operating temperature.

To protect the motors, they have been turned off to allow them to cool.

You may continue to use ScanTrainer, without force feedback, but this assignment will not be marked.

To exit at any time, use the "LMS" button to return to the LMS.

This may take up to 20 minutes

You may wait for the haptic to cool, or

continue without force feedback.

- These messages are only displayed when using the Transvaginal Haptic Device.

- The motors in the Transvaginal Haptic are small and can heat up for several reasons (e.g. prolonged use, using a high force feedback setting, using the system in a hot room).

- When these messages are shown, it means that the ScanTrainer PC has detected that the motors in the TVS haptic have begun to overheat.

- To stop the haptic device from being damaged, the system automatically reduces the force feedback of

  the haptic to its minimum setting (to allow the motors time to cool).

Note: This is not an error message, this has been put in place by MedaPhor to stop your TVS haptic device motors from becoming damaged due to overheating.

You can continue with the assignment if required.

SCANTRAINER® Icon Summary

Icon	Description	Icon	Description	Icon	Description	Icon	Description	Icon	Description	Icon	Description
Freeze		MODE	Scanning Mode sub-menu	CALC	Calculations Sub-Menu	DRAW	Draw Sub-Menu	OBS	Obstetric Measurements Sub-Menu	ROTATION ONLY	Rotate Sweep
Capture Image		DOPPLER	Colour Doppler	ELLIPSOID VOLUME	Ellipsoid Volume	ERASE	Erase Selected Annotation/Caliper	AC	Abdominal Circumference (Ellipse)	POSITION	Position Sweep
Choose Fan Orientation		M MODE	M-Mode	ADD	Add Measurements Together	ERASE ALL	Erase All Annotations/Calipers	AC	Abdominal Circumference (Multi-Point)		Flip Orientation
Split Screen		DEFAULT	Restore Default Settings	AVERAGE	Average of Measurements	CALIPER	Measurement	HC	Head Cirumference (Ellipse)	DISABLE FORCE FEEDBACK	Enable/Disable Force Feedback
ScanTutor		VOLUME SLICE	Volume Slice	ANGLE	Compute Angle of Measurement	CALIPER	Multi-Point Measurement	HC	Head Cirumference (Multi-Point)		
EXIT	Exit Simulation		Curvilinear Probe				Draw arrow	BPD	Biparietal Diameter		
Next task	Go to the next task		Cardiac Probe			ABC	Add text	FL	Femur Length		
						ABC	Add label	OFD	Occipital Frontal Diameter		
								CRL	Crown Rump Length		
								AFI	Amniotic Fluid Index		

MedaPhor

TA haptic calibration process

SCANTRAINER® Transabominal haptic calibration process

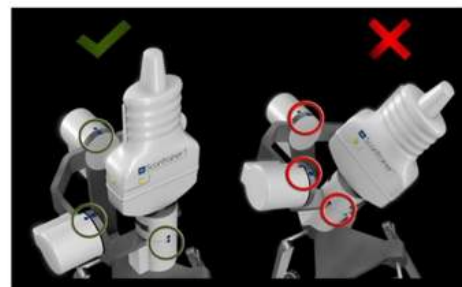The haptic must be calibrated after powering it up, using the following process:

1. Motor calibration

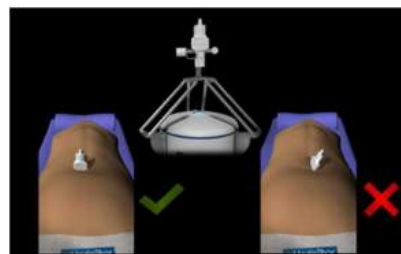The motors are first automatically callibrated

2. Orientation alignment

Align the blue markers on all three axes as shown

3. Confirm alignment

Confirm the alignment using the virtual anatomy on the right-hand screen

MedaPhor

MedaPhor is proud to work closely with healthcare educators from around the world to develop market leading simulators and learning systems that will help better prepare and support clinicians in the care of their patients.

GYNAECOLOGY   OBSTETRICS   EMERGENCY   GENERAL
                                          MEDICINE   MEDICINE

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