SHIL Quick Start Guide

SECTION HALF IMAGE LOGGER (SHIL)

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INTRODUCTION

This guide is designed to help the scientists use the Section Half Image Logger (SHIL) to image core sections, upload the image data to LIMS, and retrieve image data from LIMS. The SHIL takes digital images of the flat face of a split section or the surface of whole round hard rock cores using a line scan camera.

*****Please have a technician give you an overview before using this instrument*****
PLEASE DO NOT TOUCH THE CAMERA or LEAN ON THE TRACK

Section Half Imaging Procedure

Preparing the Section

- Optional: Once cores are split, use a spatula or glass slide to clean the surface of the core to remove any smearing caused by splitting. (It is up to the scientist to determine if this needs to be done.)
- Dab not wipe off excess moisture/mud and make sure ruler is clean!
- Place the section half on the holder with the BLUE end cap against the RED stop at the forward end.
- Rotate the section so that the surface is level with the ruler and perpendicular to the axis of the camera lens. Often the sample will have warped, so make sure the other end is level also. Be aware of badly uneven surfaces. If the sample is raised too high, it will push above what the light is covering making the raised part of the sample appear as a shadow.

Start Imaging Application

Click the **IMS-SHIL** icon on the desktop (Figure 1) and wait for the program to Initialize. The process will include initializing the camera and moving the track into the "Home" position.

Figure 1. SHIL Desktop Icon

Click the **START** button on the main SHIL user interface (Figure 2)**.**

Figure 2. Main SHIL User Interface Window

Enter Sample Information

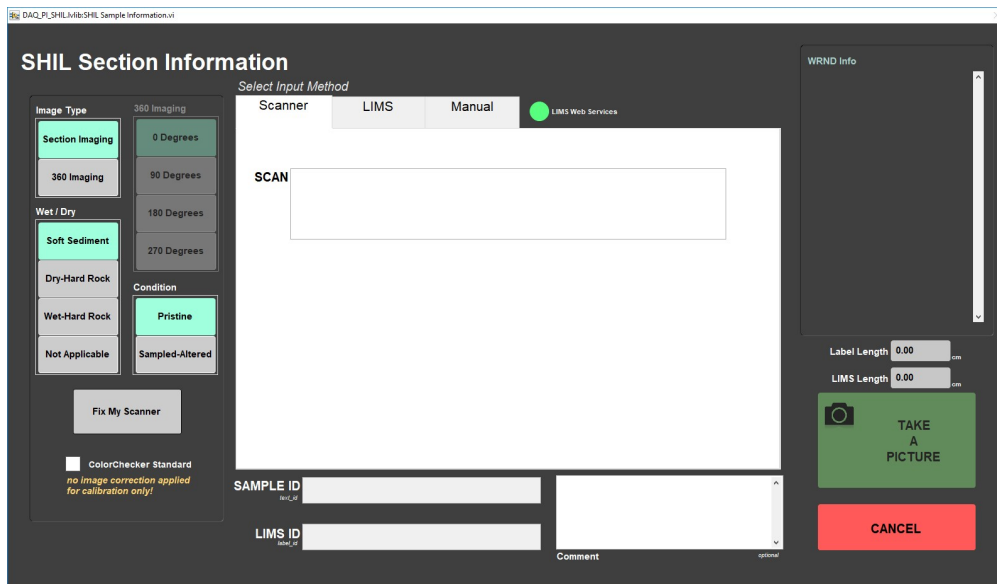The **Sample Information** screen (Figure 3) will appear.

Figure 3. SHIL Section Information window

Make sure that you have set the images attributes in the panel on the left side:

- **Image Type**: Select *Section Imaging* for split cores or *360 Imaging* for whole round cores. When you select *360 Imaging*, the **360 Imaging** control will become available where you will select the angle of rotation. See *360° Imaging* Section.
- **Wet / Dry**: This is for the hard rock folks who like to take images of the outer surface either *Wet* or *Dry* (set accordingly). For everything else, just select **Soft Sediment** or **Not Applicable**.
- **Condition**: Select *Pristine* for cores just split or select *Sampled-Altered* if you have sampled and/or otherwise mucked around with the core.

Once you set these values they will default to the previous values until changed.

Scan section (half) barcode label, make sure cursor is in the SCAN box.

*No scanner or label? Select the tab marked **LIMS** and select you section's ID from the list boxes or use the **MANUAL** tab and enter the values by hand (not recommended).*

Confirm Label, LIMS and physical length are within 2 cm of each other. If not, ask WHY?
Maybe there was some section expansion, whole round sample taken, or a mistake??

By default the instrument is set for imaging the archive half and will not allow you to scan a working label. If you want to take a picture of a **working half** you need to go to the **MANUAL** tab and select **W** (working) into the **Section Half** label (Figure 4). Once you have selected **W** (working), you will not be able to scan an archive half; in order to do that you need to go back into the **MANUAL** tab and re-select **A** (archive).
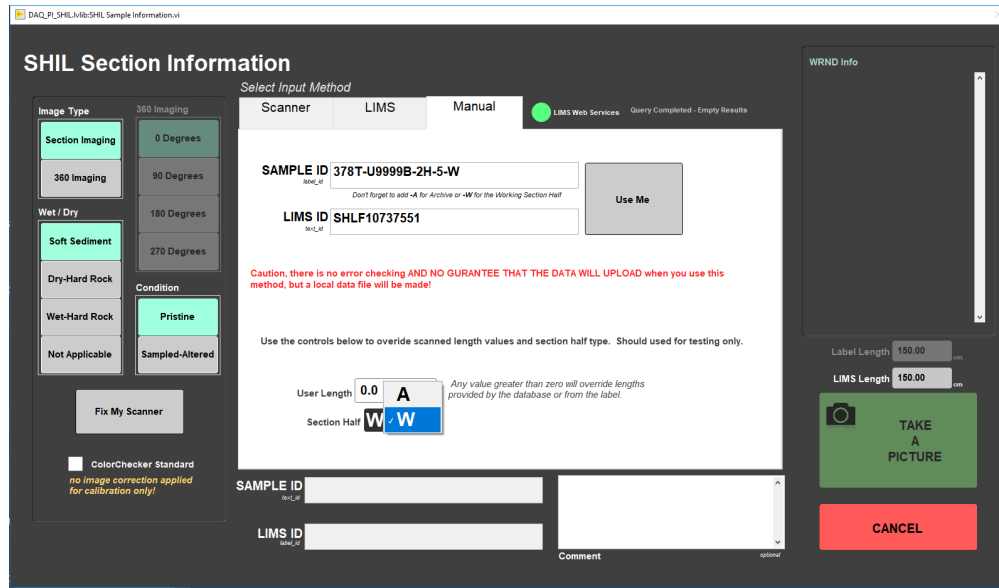

Figure 4. SHIL MANUAL Section Information window

If a whole round sample was taken (IW or MBIO), place whole round spacer where this sample was taken.

Click or touch the **TAKE A PICTURE** (Figure 5) button to start imaging the section.

Figure 5. TAKE A PICTURE button

During the imaging process the **Image DAQ** screen (Figure 6) will display. If everything is going right, there is nothing for you to do. Only use **ABORT** to stop the imaging process for non-emergencies. If a body part has been caught in the track and you face imminent personal injury, use the **EMERGENCY STOP** button just above the track.
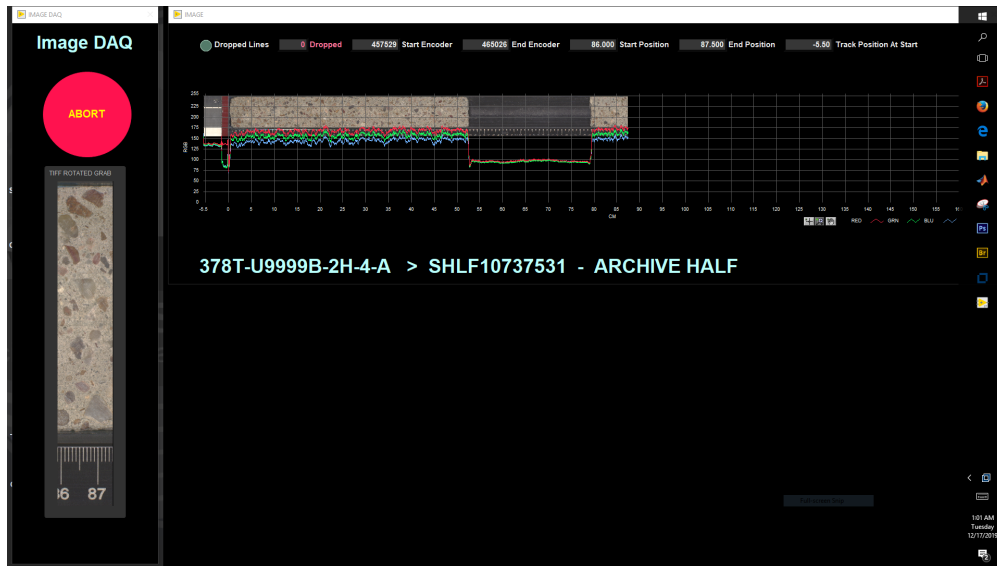
Figure 6. Image DAQ window

The window at the top shows the current image frame and the construction of the full image, and the graph at the bottom displays the RGB data taken from a stripe down the middle of the image.

If the DROP LINES indicator is lit (orange), notify the technical staff. The Acquisition Error indicator usually lights just at the end of the image and that's OK but if it lights before then, we have a problem. Again, notify the technical staff.

Crop and Save

When the imaging process is done, the lights will go off and the track will return to the start position, so stand back.
The **Image CROP** widow (Figure 7) will open and you will have some work to do.

Figure 7. Image CROP window

Check the position of the **<u>GREEN</u>** crop lines by clicking the **Show Top of Image** and then **Show Bottom of Image** buttons. If you used the <u>RED</u> stops and the crop parameters have been set correctly, then the image should be perfectly boxed by the **<u>GREEN</u>** lines. If not, then use the mouse (or finger) and touch the **<u>GREEN</u>** line or corner and drag the lines into position. The goal is to create an image of just the core as one of three images that will be created (the other images are un-cropped). The cropped image is used in LimSpeak and for printing the VCD scratch sheets.

When happy with the crop box location, click/touch **CROP Image** (Figure 8). The display will change to show the cropped image and the **Save Image** button (Figure 9) will be enabled.

Figure 8. Crop Image button

Click **Save Image** and you are finished! Image files are stored in 'C:\Data\in', and the **Section Information** window will be displayed to repeat the process for the next section.

Figure 9. Save Image button

To rescan, click **Discard Image** and confirm when prompted to discard.

If the VCD auto print is enabled (Figure 10), a sheet with the current image will be automatically print. Core Describers can use this sheet as a base for their descriptions.
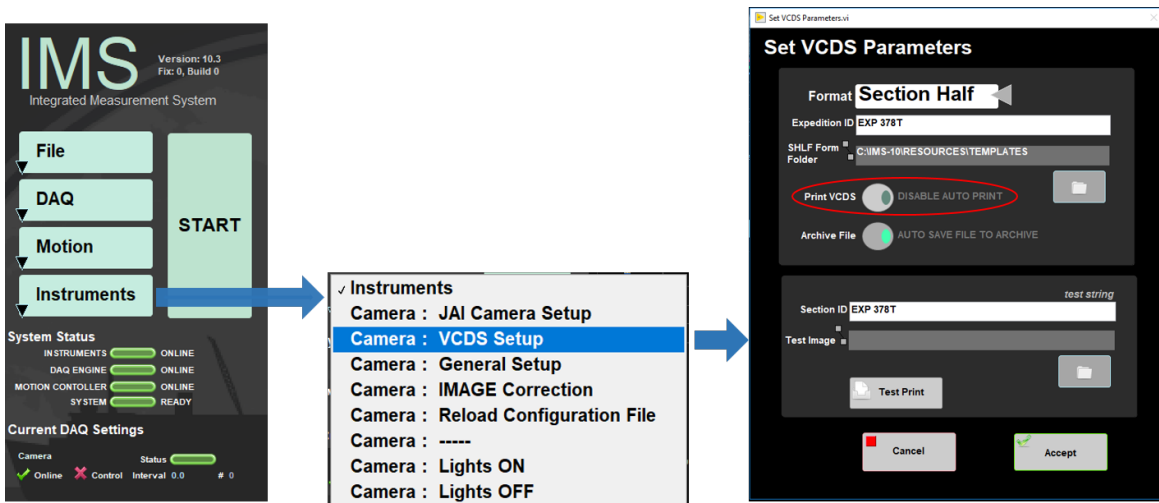

Figure 10. Set VCDS Parameters window

Uploading Image To Lims

To upload the images into the database MegaUploadaTron must be running in background. If not already started do the following:

1. On the desktop, click the **MUT** icon (Figure 11).

Figure 11. MUT icon
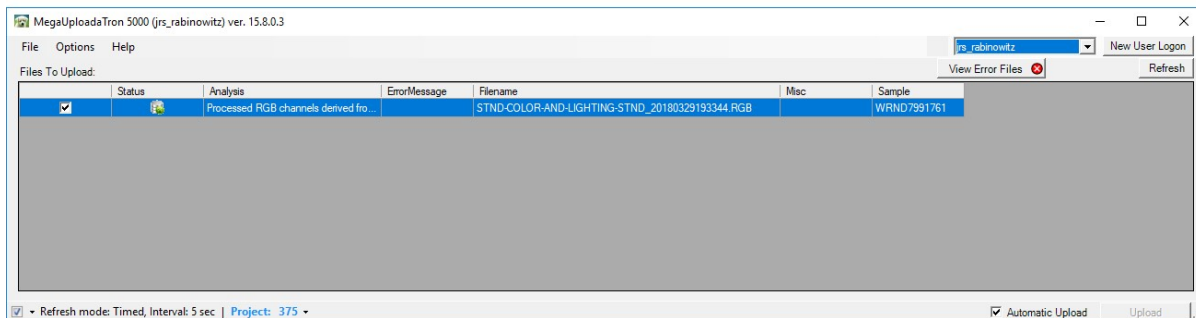
2. The following window (Figure 12) will appear:

Figure 12. LIMS Uploader Window

3. Check **Automatic Upload** in the lower right hand corner and then click the minimize window and MUT will run in background. The uploaded data will be moved from 'C:\Data\in' to 'C:\Data\archive'

Retrieving and Viewing Images from LIMS

1. LORE
   a. Go to *LORE Reports* at http://web.ship.iodp.tamu.edu/LORE/ .
   b. Under **Select Report**, choose **Images** > **Core Section (LSIMG)**.
   c. Under **Hierarchy Search**, specify *Expedition, Site, Hole, Core* and *Section* image(s) to retrieve.
   d. Click **View Data** or **Batch download linked files** and specify if you want the uncropped or cropped .jpg image.
2. LIVE
   a. Open *LIVE* at http://web.ship.iodp.tamu.edu/LIVE/ .
   b. Click **Template** to choose the viewing options for the available templates.
   c. Click **Exp, Site and Hole** to view a drop-down list of available holes, and select a hole.
   d. Select the appropriate template (e.g. PP_LSIMG_SHMSL) , and then click **View Data** to view SHIL images in the *LSIMG* column.
   e. Click on any section in the *Recovery* column to zoom in on the SHIL image.
3. LSIMG QAQC
   a. Open *LSIMG QAQC* at http://ship.iodp.tamu.edu/QAQC/
   b. Click **Exp, Site, Hole, Core** to select the appropriate images
   c. Click **View Report** to generate the report
   d. A list will populate with any errors showing the exact section

Whole Round 360° Imaging Instructions

The SHIL also can be used to image the external surface of whole round hard rock cores in order to assemble a 360° composite image of the whole round. Using the custom whole round scanning tray, the whole round core surface is imaged four times at the 0°, 90°, 180°, and 270° orientation from the splitting line. The Imaging Specialist will download the images and assemble a composite image from the four scans and upload the composite separately.

Sample Preparation

1. Remove the section half scanning tray from the SHIL and replace it with the whole round scanning tray making sure to align the blocks correctly (Figure 13). Note that the rotating section of the tray has 0°, 90°, 180°, and 270° markings on each end and that the rotating section will click and lock into each orientation.
2. Place the split liner section with the whole round core on the tray below the SHIL and align the top with the 0cm on the ruler on the tray.

3. Remove the 0° aluminum strip and one from either side from the scanning tray. Move the dry, oriented pieces into the tray keeping their offsets as close as possible and align the splitting line with the 0° orientation.
4. Replace the non-zero aluminum strip and rotate the tray so that the 0° position is up, facing the camera.
5. Loading of the scanning tray can also be done elsewhere, such as the splitting room, and the tray carried over to the SHIL.
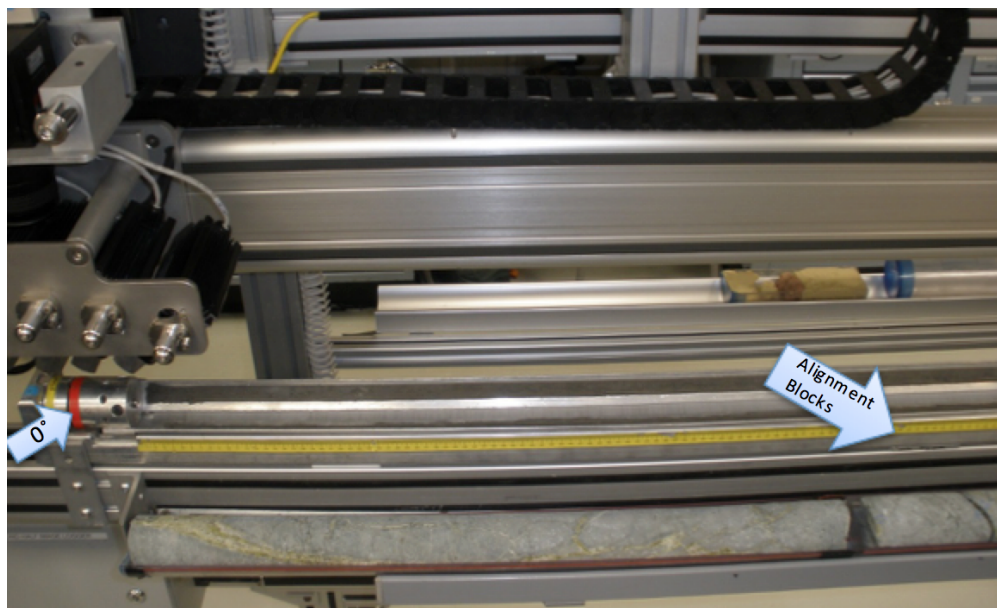

Figure 13. Alignment blocks position for whole round imaging

Enter Sample Information

1. Click START and the **SHIL Section Information** screen (Figure 3) will appear.
2. Scan the section barcode from the endcap.
3. Select the *360 Imaging* type and the default quadrant will be 0°. Select *Dry-Hard Rock*. Click *TAKE A PICTURE*.
4. When the scan is finished, the image cropping window will open. Crop the image along the core liner and save it.
5. The whole round rotation window will open and the rotation angle will default to the next quadrant, in this case, 90°.
6. Replace the aluminum strip and rotate the tray to the next position, remove the aluminum strip facing up. Ensure that the rotation angle setting in the window is that same as on the tray. Click *TAKE A PICTURE*.
7. Continue the cropping, rotating and scanning process until all quadrants are complete. Once the images are uploaded to the database, the Imaging Specialist will create the 360 composite image and upload it to the database. If an image needs to be discarded, the software returns to the main screen and the user will need to start over, however, the user can select which quadrant to start on.

Archive Versions

LMUG-SHILQuickStartGuide-240220-2333-320.pdf