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1 Preface

This Document is intended for Technical, Support or IT engineer.
It concerns new, need to know, features and information concerning Instructor™ 3.7 support.
For other documents, please review below:

- Instructor™ 3.7 Release Notes
- Instructor™ 3.7 Installation Guide
- http://www.youtube.com/user/SarinTechnologiesLtd/videos

2 Operating System

2.1 Supported Operating Systems

Instructor™ 3.7 only supports Windows 7 32/64 bit and Windows 8.1 64 bit operation system.

Instructor™ 3.7 does not Support Win XP Operating System

2.2 64 bit installation

Instructor™ 3.7 is installed under, Windows 7/8.1 – 64 bit, as a 32 bit application.
3 Hardware Support

3.1 Officially supported Sarine machines

Instructor™ 3.7 supports **only** the following Sarine machine:

- DiaMension™ AXIOM
- DiaMension™ HD
- DiaScan™ S+
- DiaExpert™
- DiaExpert-Eye™
- DiaMobile™ XL
- DiaMension™ Lab Edition Domino (Melody) - See [Domino Official support](#) section

It is highly recommended for users to only work with these machines.

3.2 Unsupported Sarine machines

Instructor™ 3.7 does not support the following Sarine machines:

- DiaExpert-XL™
- Old DiaMension (Metror2 grabber, old systems)
3.3 Changes for Axiom 2.0

Reflector Cup safety

Below warning message will appear on application's start up, if the reflector cup is still inside of the Axiom. The reflector cup must be removed in order to not harm the machine. As a precaution, the Axiom machine will be launched in station mode. To start the machine in HW mode, the cup must be removed and then the user will need to relaunch the application:

![Error message]

Vacuum timeout

The vacuum timeout, for Axiom machine, is now set to stop 5 minutes after measure is finished.

Stabilizer end process affirmation

Once the Stabilizer process finishes setting the tip onto the stone, below message will appear, alerting the user to exit the Stabilizer mode:

![Stabilize Stone]

Unsupported features on wide stage

The Center Stone, Stabilizer and Axiom scan are not supported for wide stages. This also goes for Lens 1, who currently only comes with a wide stage.

Axiom measure's Table/Stage precondition error

When the measured stone's table width is equal or smaller than the stage width this error will be shown:

"Stone table is too small for current stage"
New error will be displayed if Axiom measure is selected with wide stage.

New error will be displayed if Axiom measure is selected with a wide stage.

“Axiom measure supports narrow stage only. Please replace the stage or select HD Scan level”

Lens 1 support

Lens 1 is supported on AXIOM-2016 machine. However, the lens does not support the Axiom measure, center stone and stabilizer features.

Lens 1 is not supported for Axiom 1.0 machines.

3.4 Exposure parameter changes for Basler camera

These newly researched Basler parameters, for HD and Axiom, will improve measure time:

<table>
<thead>
<tr>
<th>Lens #</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gain</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Offset</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Exposure</td>
<td>20</td>
<td>20</td>
<td>10</td>
</tr>
</tbody>
</table>

3.5 Driver updates

- Hasp 7.32
- uEye 4.60/4.61 + Frame grabber Testers
- CP210 Bridge 6.7.2.200

3.6 USB issues

See Appendix A

3.7 Supported NVidia cards

The installed NVidia card’s Compute Capability needs to be greater than or equal to 2.0.

Click below link to check Compute Capability for your NVidia Card –

CUDA-Enabled Products

- Notice: The H&A feature has been updated, which means that the customer’s current NVidia Card, which worked with Instructor™ 3.5, won’t necessarily work with Instructor™ 3.7. See the links above in order to check if your card supports the current H&A feature.

See Appendix B
4. Software Support

4.1 XCaliber support

The Instructor™ 3.7 Installation will support the install an XCaliber version, based on the machine the user will be installing for:

<table>
<thead>
<tr>
<th>Machine type</th>
<th>XCaliber version</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Axiom 2016 models</td>
<td>XCaliber 2.7</td>
<td>AXIOM-2016 comes with girdle light and an additional bottom light</td>
</tr>
<tr>
<td>Other</td>
<td>XCaliber 2.5</td>
<td>No Axiom features support</td>
</tr>
</tbody>
</table>

4.2 Borderline

The user can set a different borderline through the Grading Editor. Go to the desired shape/Institute/Cut grade and change the borderline value for the desirable parameter:

```
1. *Image from the Grading Editor under Settings menu

4.3 Accessors for Borderline

New Borderline Accessor keyword. The Borderline indication accessors are now available and show both direction and upgrade/downgrade. To use them, just add the suffix ‘.borderline’ to the accessor supported by the borderline. For example:

<table>
<thead>
<tr>
<th>Export Template</th>
<th>Result on export</th>
</tr>
</thead>
<tbody>
<tr>
<td>[mnf.stone.height.perc]</td>
<td>60.8+-D</td>
</tr>
<tr>
<td>[mnf.stone.height.perc.borderline]</td>
<td></td>
</tr>
<tr>
<td>[t:mnf.girdle.height.grade]</td>
<td>Ex+-D</td>
</tr>
<tr>
<td>[mnf.girdle.height.grade.borderline]</td>
<td></td>
</tr>
</tbody>
</table>
INSTRUCTOR™ 3.7
DIAMOND STUDIO

Technical Notes

4.4 AGS (PGS) new feature

Instructor™ 3.7 supports AGS Round recut:

<table>
<thead>
<tr>
<th>Lab</th>
<th>AGS 2015</th>
<th>Cut</th>
<th>10</th>
<th>Source</th>
<th>Original</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limits</td>
<td></td>
<td>Sym</td>
<td>EX</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stage</td>
<td>Polished</td>
<td>Type</td>
<td>Asymmetric</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4.5 Support for saving ASC files

You can now save measured or loaded stones as ASC files. Under the Save as dialog and in Automation.

4.6 New accessors

The new accessors are listed on the Instructor 3_7 New Accessors report.

Here’s a list of the new accessors:

<table>
<thead>
<tr>
<th>New Fancy</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Polish.table.offcenterwidth.perc</td>
<td>Polish.table.offcenterwidth.mic</td>
</tr>
<tr>
<td>Polish.table.offcenterlength.perc</td>
<td>Polish.table.offcenterlength.mic</td>
</tr>
<tr>
<td>Polish.table.offcenterwidth.mic</td>
<td>Polish.table.offcenterlength.mic</td>
</tr>
<tr>
<td>Polish.table.offculetlength.perc</td>
<td>Polish.table.offculetlength.mic</td>
</tr>
<tr>
<td>Polish.culet.offcenterwidth.perc</td>
<td>Polish.culet.offcenterwidth.mic</td>
</tr>
<tr>
<td>Polish.culet.offcenterlength.perc</td>
<td>Polish.culet.offcenterlength.mic</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Shapes Backward Compatibility</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>general.facetarrangementbymainscount</td>
<td>general.shapebymainscount</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Length Direction</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Polish.stone.lengthdirection</td>
<td>Polish.stone.lengthdir</td>
</tr>
</tbody>
</table>
4.7 Hearts & Arrows 2.5

Instructor™ 3.7 comes with an improved Hearts & Arrows feature.

Round Improvements

In above example, left side is before the change and right side is after.

As you can see on the left:
- The arrows’ side is missing every second arrow, although the shape’s symmetry is excellent.
- Every second heart is partially missing
Fancy shapes support

You can now use the H&A mechanism for Fancy shapes:

![Fancy shapes examples](image1)

Alpha channel

H&A can now be saved with a transparent background. If the file format supports alpha channel, you can insert any color or image you desire as the background:

![Alpha channel example](image2)
4.8 Changes in Reports mechanism

Print Preview
The new Print Preview does not need reopening in order to update new or removed report.

Reports Editor 3.0
The new report editor is supported only from Instructor™ 3.7.

New movie clip add, under:
C:\ProgramData\Sarin Technologies\Instructor\Docs\User Guide Movies\Instructor 3.7\Clip 13 - Reports Editor.mp4

Support for Reports
The new reports mechanism supports reports/labels created on both Reports Editor 3.0 and 2.2.

Note:
In order to view defined preset of Facet information each time you load the report, it should be saved in the report file.

Report Editor – path change
Report editor 3.0 files placed at a different path:
C:\Program Files\Sarin Technologies\Instructor\Editor\Instructor

Instead of:
C:\Program Files\Sarin Technologies\Instructor\Editor\Instructor

4.9 Changes in cut identification mechanism
We’ve returned the favored behavior, which existed on Instructor™ 2.6, to the header,
With the following adjustments:

Measure stone using AutoShape
Round and symmetric fancy shape’s cut will be determined by their symmetry, for instance – If we have a round stone with only 7 completed mains, it will be still given a P8 cut as its stage.
Pseudo-Round shapes will continue to be identified as they were on 3.5.
i.e. - an oval with 7 mains will be given a P7 cut as its stage.
Measure stone using shape and cut selection

If a user chooses to force the shape’s identification, the cut and shape will be displayed by the user’s selection.

Load SRN stone, previous to Instructor™ 3.5

As on previous version, you could receive a stone without any cut stage, loading such stone will also present no cut stage on Instructor™ 3.7, even if you could see it on Instructor™ 3.5.

Mismatch identification

When a user forces a shape instead of the Instructor recognized one, the shape that will be displayed at the header will be the forced shape but an asterisk (*) will be shown to the right of the shape.

For example – If the user forced Round C8-P8 on a Pear shape:

<table>
<thead>
<tr>
<th>Shape</th>
<th>Crown</th>
<th>Pavilion</th>
<th>Measurements (mm)</th>
<th>Weight (ct)</th>
<th>Cut</th>
<th>Symmetry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Original</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scanned</td>
<td>(*) Round</td>
<td>C8</td>
<td>P8</td>
<td>7.06 - 10.04 x 52.0 %</td>
<td>1.801</td>
<td>NA</td>
</tr>
</tbody>
</table>

Note: will appear on-

a. New forced measure.

b. Load of saved SRX file with forced shape.

4.10 Support for IIDGR

IIDGR institute is now supported by Instructor™ 3.7. Including: Accessor mechanism, Template views, Reports, Labels and Exports.

Recut is not supported.
6 Known issues

6.1 Axiom Machine fails to start on initial connection (‘Station’ mode)

Instructor fails to either find the AXIOM machine or move its engines then alerts and starts in Station mode. Mostly occurs on first system setup, and first connection to the electric power. The workaround is either wait a few minutes before starting the Instructor or close and reopen the Instructor once or twice. It will eventually start and you won’t experience this issue until the next time the machine will be disconnected from the power grid.

6.2 Fix for idle camera on Windows 8.1

The Camera timeout key has been added under the SarinData.cnfg.

6.3 Xcaliber_Org.exe file for Windows 8.1 64 bit OS

The Xcaliber_Org.exe is now part of the XCaliber folder, under
C:\Program Files\Sarin Technologies\Instructor\XCaliber
XCaliber will not be able to initiate if this file is missing.
6.5 HW disconnections

The symptom: First time opening the Instructor, the HW is working properly. On the next attempts, none of Sarine’s applications do not start, including Instructor, XCaliber and Advisor.

There are a few solutions:

**CP210 Bridge update**

If the current CP210 bridge version is lower than 6.7.2.200, upgrade the version. See Appendix A for more information.

6.5.1

**Advisor’s USB Reset Key**

The USB Reset key enables Advisor to do a reset to the CP210 Bridge on startup.

If Advisor is installed after Instructor, it will add the key and set the USB Reset key to True. In this case, the user should go to the SarinData.cnfg file, under C:\ProgramData\Sarin Technologies\Common\Configuration, to the Hardware category, and set the key to False.
7 Appendix A - Overcoming USB Issues

How to Disable Power Management for USB Root Hubs

In some cases USB devices may stop working, in worse cases a complete USB hub may stop working. USB problems are always unwelcome, but if things are working fine and suddenly USB devices do not work anymore or are not recognized, troubleshooting can prove difficult. If you have tried rebooting, unplugging and re-plugging, reinstalling all necessary USB device drivers, then you might want to try disabling the power management on the USB Root Hubs in Windows. We’ll use Win7 as an example, but this method works just the same in Windows XP.

1. In the Windows Start menu, select Run.
2. In the Run dialog box, type devmgmt.msc and click OK or press Enter.
3. In the Device Manager, locate and open the Universal Serial Bus controllers branch.
4. You should now see a number of USB Root Hub entries.
5. Right-click the first of the USB Root Hub entries, and in the popup menu select Properties.

6. In the USB Root Hub Properties dialog box, select the Power Management tab.
7. Clear the checkbox named “Allow the computer to turn off this device to save power”, and click OK.
8. Repeat steps 5 till 7 for all **USB Root Hub** entries.
9. Now close the **Device Manager** and restart your computer.

**Computer that works with Prolific USB-to-Serial Com Port:**
1. In the **Device Manager**, locate and open the **Ports** branch.
2. You should now see the entry of **Prolific USB-to-Serial Com Port**.
3. Right-click the first of the **Prolific USB-to-Serial** entry, and in the popup menu select **Properties**.

   ![Dashboard](image)

4. In the **Prolific USB-to-Serial Com Port** dialog box, select the **Power Management** tab.
5. Clear the checkbox named “Allow the computer to turn off this device to save power”.

6. Clear the checkbox named “Allow this device to wake the computer”, and click OK.

**Computer that works with Silicon Labs CP210x USB to UART Bridge**

1. In the Device Manager, locate and open the Ports branch.

2. You should now see the entry of Silicon Labs CP210x USB to UART Bridge.

3. Right-click the first of the Silicon Labs CP210x USB to UART Bridge entry, and in the popup menu select Properties.

4. In the Silicon Labs CP210x USB to UART Bridge dialog box, select the Power Management tab.
5. Clear the checkbox named "Allow the computer to turn off this device to save power", and click OK.

Hopefully the USB problems will disappear after this.

If not, you can turn power management on again.

If the USB problems disappear, you can try to enable the power management for each of the USB Root Hubs again, to save power (especially on laptops and notebooks). By doing it one-by-one, you can try to identify the problematic USB hub. Do keep in mind that this requires you to keep your USB devices plugged to the same USB ports!

No image from camera during idle time (USB connection)

Note: this section refers to users that work with Balanced power plan, if the user will work with Power saver plan or any other customize power plan, he will also need to follow the next prescription.

In case that there is no image from the camera during idle time or calibration time you should do the following steps in order to overcome this issue:

1) In Control Panel go to Power Option.

2) Choose "Choose when to turn off display" -> Change advanced power settings.
3) At **Hard disk** -> turn off hard disk after -> change the Settings to **0 minutes**.

4) At **USB settings** -> USB selective suspend setting -> change the settings to **Disable**.
Uninstall USB 3.0 drivers when using USB cameras

There is a frequent phenomenon when working with USB cameras (alike BDR, uEye, SUMIX), while USB 3.0 drivers are installed. The USB 3.0 drivers may cause video slowness, loss of images (problems with the camera synchronization) and even 'blue screen'.

In order to overcome this issue we recommend uninstalling the USB 3.0 drivers from: Add/Remove programs (control panel):

After the installation in order to be sure that the drivers were uninstalled, check it in the device manager:
Before:

- Universal Serial Bus controllers
  - Generic USB Hub
  - Generic USB Hub
  - Intel(R) 8 Series/C220 Series USB EHCI #1 - 8C26
  - Intel(R) 8 Series/C220 Series USB EHCI #2 - 8C2D
  - Intel(R) USB 3.0 extensible Host Controller
  - Intel(R) USB 3.0 Root Hub
  - USB Composite Device
  - USB Root Hub

After:

- Universal Serial Bus controllers
  - Generic USB Hub
  - Generic USB Hub
  - Intel(R) 8 Series/C220 Series USB EHCI #1 - 8C26
  - Intel(R) 8 Series/C220 Series USB EHCI #2 - 8C2D
  - USB Composite Device
  - USB Root Hub
Appendix B – List of supported NVidia drivers for H&A

The H&A feature will not work with any NVidia card. Please verify that the card you’re using is on this list.

The list of supported cards can be found below, and in the CD, under Documents folder (Instructor support NVidia Cards 2015.pdf).