

## TRAINING UPDATE

**Lab Location:** SGMC & WAH  
**Department:** Core

**Date Distributed:** 4/15/2016  
**Due Date:** 5/9/2016  
**Implementation:** 5/10/2016

### DESCRIPTION OF PROCEDURE REVISION

<b>Name of procedure:</b>
<b>Dimension Vista® System Calibration SGAH.C132, WAH.C126 v3</b>
<b>Description of change(s):</b>
<p>Section 5.A3: Remove note concerning vial position Section 5.H: Add more troubleshooting steps Section 5L: Correct numbering to J</p> <p><b>This revised SOP will be implemented on May 10, 2016</b></p>

Document your compliance with this training update by taking the quiz in the MTS system.

**Approved draft for training (version 3)**

Non-Technical SOP

<b>Title</b>	<b>Dimension Vista® System Calibration</b>	
<b>Prepared by</b>	Ashkan Chini	Date: 9/27/2012
<b>Owner</b>	Robert SanLuis	Date: 9/27/2012

<b>Laboratory Approval</b>		
<b>Print Name and Title</b>	<b>Signature</b>	<b>Date</b>
<i>Refer to the electronic signature page for approval and approval dates.</i>		
Local Issue Date:		Local Effective Date:

<b>Review:</b>		
<b>Print Name</b>	<b>Signature</b>	<b>Date</b>

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**1. PURPOSE**

This procedure outlines the calibration process for the Siemens Dimension Vista® System.

**2. SCOPE**

This procedure applies to all Core Laboratory personnel working with the Siemens Dimension Vista System.

**3. RESPONSIBILITY**

Core Laboratory personnel are responsible for performing and complying with this procedure.  
The Core Laboratory Manager/ Supervisor are responsible for content and review of this procedure.

**4. DEFINITIONS**

None

**5. PROCEDURE**

**A. Calibration Data**

**A1. View Calibration Information:** The calibration information can be viewed for each calibrator lot by two different ways: General or Detail Review.

**General Review:** From the Home page → **System** → **Method Summary** → Select method → **Calibration**

**Detail Review:** From the Home page → **Advanced** → **Calibration** → ▼ → select **Calibrations by lot** → Select method

- A2. Calibrator Needs and Inventory:** Automatic calibration requires that calibrators be on the instrument. As the time for processing approaches, the instrument reviews onboard inventory for the appropriate calibrators.
- If a required calibrator is not on board, a red calibrator needs alert appears at the top of the screen.
  - To check the calibrator inventory: From the Home page → **Setup** → **Inventory** → **Calibrator Vials**.
- A3. Unload Calibrators:** Unload calibrators from the system when they expire or are depleted. The carrier with the expired or depleted vial is unloaded to the reagent loading area where it can be removed from the system. Press **Setup** → **Inventory** → **Vial Carriers** → **Unload**.

## **B. Entering Calibrator IFU Information:**

Information from the Calibrator IFU can be entered by scanning the IFU barcode or by typing it onto the screen.

### **B1. Scanning IFU Information:**

1. Press the **Advanced** icon, then the **Calibration** icon. Select **Calibrators** from the menu.
2. Use the handheld barcode scanner to scan the barcode on the IFU. Verify that the screen displays the correct calibrator information.

### **B2. Manually Entering IFU Information:**

If the calibrator information cannot be scanned from the IFU, the data can be entered manually.

1. Press the **Advanced** icon, then the **Calibration** icon. Select **Calibrators** from the menu.
2. From the **Actions** menu on the lower part of the screen, select **New**.
3. Type the appropriate information from the IFU. When finished, press **Save**.

## **C. Order Calibration**

Calibration on the Dimension Vista System takes place automatically from vials onboard the instrument, limiting the need for operator intervention. Make sure to check the current calibrator, QC and reagent's expiration date and volume onboard, if any, before ordering a calibration.

### **C1. Use this procedure to order a calibration manually:**

There are two ways to order calibration:

- a. From the Home page:
  1. Verify that calibrators and reagents are in inventory on the instrument.
  2. From the Home page Press **System** → **Method Summary** → **Calibration**.
  3. Select a method from the sidebar menu. Select the reagent lot for the method to be calibrated. Press the **Order Calibration** button on the screen.

4. Verify that the information on the screen is correct. Verify that the calibrator lot is correct using the drop-down menu, and then press **OK**.
5. The status field in the calibration screen changes sequentially to Awaiting Scheduling, Preparing Calibrators and Processing.

b. From the Advanced page:

From the Home page press **Advanced** → **Calibration** → **Calibrations by lot** → Select the method and lot number → under Order menu bar press **Order Calibration**.

## **C2. Calibration Using a Cup**

Use this procedure for calibrating methods that require calibrator to be supplied in a cup (Hemoglobin A1c and Iron).

1. From the Home page press the **Advanced** icon, then the **Calibration** icon. Select **Calibration by Lot** from the menu.
2. Select a reagent lot for the method to be calibrated.
3. From the Order menu, select **Order Calibration**.
4. Check the **Use Cups** box.
5. Pipette calibrator from the correct lot into a cup.
6. Place the cup in an adapter into position 1 on a rack. For additional cups, use the positions in ascending order. Be sure to use the number of calibration levels and cups as specified in the method IFU.
7. Scan the rack barcode and verify the information on the screen.
8. Press **OK** and load the rack on the instrument.

**Note:** “Run QC With Calibration” is not implemented for calibration from cups. QC must be manually ordered after calibration is completed.

## **D. Review Calibration:**

The Auto Acceptance mode is active on Dimension Vistas. If the acceptance criteria are met, the calibration is automatically accepted and printed. However, if the acceptance criteria are not met, the status area displays a “Waiting Calibration Review” alert.

1. To review calibration statistics, from the Home page press **System** → **Method Summary** → **Calibration**.
2. Press the appropriate method key in the sidebar screen. The acceptance criteria configured for the method is displayed in the table. Review “Overall Acceptance Criteria”. If this criteria fails, a message is displayed in the Accept/Reject Calibration Result dialog box.
  - a. Study the Slope, Correlation Coefficient, percent deviation. The observed value must be within acceptable range. Look at the graph and the points on it to make sure there is no significant shift.
  - b. Evaluate the QC data, make sure there is no significant shift from the QC on the previous lot.
  - c. To get a detailed summary of the calibration: from the Home page → **Advanced** → **Calibration** → ▼ → **Calibrations by Lot** → select the method and appropriate lot number → at the bottom of the page under **Actions** menu select **Show Details**. This page provides every single detail on

- a calibration including: Run Details, Acceptance Criteria Details, Analyte Reports and Statistics.
3. Press the **Accept/Reject Calibration** button if enabled.
  4. Review error messages if displayed and enter comment before accepting or rejecting the calibration.
  5. Press **Finish** and retain the printed report for laboratory records.
  6. Vista Printer
    - a. The Vista printer must be checked regularly during a shift and specifically at the end of each shift to collect the automated accepted calibration papers.
    - b. These calibrations must be reviewed and if they meet the acceptance criteria and do not have a significant shift in the QC ranges, no further investigation is needed.
    - c. The technologists must sign and date the report, and include the reason for calibration. File the calibration report in the appropriate place as assigned by the Supervisor or Group Lead.

## **E. Troubleshooting a Failed Calibration**

To investigate the source of the problem:

1. From the Home page → **Advanced** → **Calibration** → ▼ → **Calibrations by Lot** → select the method and appropriate lot number → at the bottom of the page under **Actions** menu select **Show Details**.
2. If configured criteria fails, then:
  - a. Check the volume and expiration date of the current calibrators onboard.
  - b. Check the reagent inventory for that specific method and lot number, if the number of tests left on that reagent cartridge is low (anything below 10 is considered low), then replace it with a new fresh reagent cartridge.
  - c. Check the volume and expiration date of the QC bottle onboard. Pour fresh QC if needed.
  - d. Repeat the calibration now.
3. If a calibration is pending for review due to the QC failure, check the QC bottles onboard and change them if needed and repeat the failed level of QC again.
  - a. Once QC is within acceptable ranges go to **System** → **Method Summary** → **Calibration** → **Accept/Reject Calibration** to accept the calibration.
  - b. Enter a comment on what has been done and why Calibration is accepted.
  - c. Now go to **System** → **Method Summary** → **Quality Control**. Select the applicable method and press **ALT** and **P** buttons at the same time so it will print a copy of the screen.
  - d. Attach the printed QC page to the calibration page as a proof that the QC was repeated and is acceptable.
4. If failures continue, contact the Siemens Technical Solutions Center.

## **F. Cancel a Calibration Order:**

A calibration order can be cancelled if the status is **Ordered** or **Awaiting Scheduling**. If the status is **Preparing Calibrators**, the calibration has begun and

should not be canceled. The calibration can be rejected if the results are not acceptable.

From the Home page → **Advanced** → **Calibration** → ▼ → **Calibrations by Lot** → select the method and appropriate lot number → at the bottom of the page under **Actions** menu select **Cancel order**.

### **G. Urine Drugs of Abuse Toxicology Calibration**

Urine drugs of abuse are calibrated in semi-quantitative mode using multiple levels of the appropriate calibrator.

- Urine drugs of abuse calibrations are run automatically; the instrument will automatically run QC after calibration.
- The instrument will automatically print the calibration report, which includes the numerical QC results. To get the qualitative QC results go to: **System** → **Method Summary** → **Quality Control**. Choose the applicable method and press **ALT** and **P** buttons at the same time so it will print a copy of the screen. Attach the printed QC page to the calibration page.
- If the calibration fails, the instrument will explain what the cause of failure is. Troubleshoot and repeat the calibration and QC if necessary.

### **H. IMT Calibration**

1. The IMT system is calibrated automatically, using a two-point calibration scheme, in the following situations: (During IMT calibration, IMT test processing stops.)
  - at system startup
  - every four hours
  - if the V-LYTE® sensor temperature changes more than 2°C
  - after successful IMT error recovery
  - after IMT Clean procedure is performed
  - after the V-LYTE® sensor, Standard A or Standard B is replaced
  - after 175 electrolyte samples have been processed
2. To review IMT calibration Details: From the Home page → **System** → **IMT Calibration** → it will show all the details including Slope, Standards A and B, IMT Metrics and IMT pump rate. If all values are within acceptable range and everything is green on the page the calibration is good.
3. To troubleshoot a failed IMT calibration: Always check the IMT consumables and change them if necessary.
  - a. Make sure all IMT consumables: Standard B/Salt Bridge, V-LYTE Diluent and V-LYTE Standard A are pushed all the way down (this is the primary reason most IMT Calibrations fail).
  - b. Then from the Home page → **System** → **IMT Calibration** → **Maintain IMT** → **Prime IMT** → Prime Salt Bridge and Solutions A and B. To prime the V-LYTE Diluent IMT probe will need to be paused. After priming all solutions a few times, recalibrate the IMT.
  - c. If the above actions do not resolve the IMT calibration failure, perform an “IMT Routine Clean” once and then recalibrate.
  - d. If the calibration failure still remains unresolved, do the following: from the Home Page → **Set Up** → **IMT Consumables** → V-LYTE Multisensor.

Check the IMT sensor's "Lot Expiration", "Timing Remaining", and "Assay Remaining".

- If the V-LYTE Multisensor has less than 8 days of stability, perform an "IMT Advanced Clean" a minimum of three (3) times. Then replace the V-LYTE Multisensor and calibrate. If calibration is performed successfully run QC.
- If the V-LYTE Multisensor has 9 or more days of stability contact Siemens Technical Solution Center first before replacing the V-LYTE Multisensor.

e. If failures continue, contact the Siemens Technical Solutions Center.

#### **I. Calibration Schedule Form:**

The Dimension Vista Calibration List (see addenda) is a communication tool. It is placed on each instrument by Group Leads to inform technologists of –

- assays that require recalibration for Quality Control purposes
- assays have recently been received and require calibration followed by Lot to Lot correlation

#### **J. Lot to Lot Correlation:**

Unlike calibration which takes place on every Dimension Vista, the Lot to Lot correlation will only take place on Dimension Vista 1 at both sites (Shady Grove and Washington Adventist). For details on Lot to Lot correlations, refer to Reagent Parallel Testing SOP. For instructions to program the Vista, refer to Appendix A.

- If the result is acceptable, there would be no need to do a lot to lot on the rest of Dimension Vista analyzers.
- Use the "New Reagent Lot or Shipment Comparison Study Form" and attach it to the calibration work up.

### **6. RELATED DOCUMENTS**

Dimension Vista® Sample Processing, Startup and Maintenance, Chemistry procedure  
Quality Control Program, QA policy  
Dimension Vista Calibrator Guide (AG.F205)  
Dimension Vista Calibration List (AG.F207)  
New Reagent Lot or Shipment Comparison Study Form (AG.F217)

### **7. REFERENCES**

Dimension Vista System, Operator's Guide. Siemens Healthcare Diagnostics, Inc.  
Revised 03/2011.



**8. REVISION HISTORY**

<b>Version</b>	<b>Date</b>	<b>Reason for Revision</b>	<b>Revised By</b>	<b>Approved By</b>
000	4/9/2013	Section 5A: Clarified wording Section 5C: Removed Setup and Run, re-numbered subsequent sections Section 5D: Clarified wording, add signature, date and reason for calibration required Section 5E: Clarified wording for troubleshooting Section 5H: Added review and troubleshooting for IMT calibration Section 6: Update Chemistry SOP title	A Chini L Barrett	R SanLuis
001	2/3/2014	Section 5L: Add reference to Appendix A Section 6: Move forms from section 9 Section 9: Add appendix A Footer: Version # leading zero's dropped due to new EDCS in use as of 10/7/13.	L Barrett	R SanLuis
2	3/26/16	Section 5.A3: Remove note concerning vial position Section 5.H: Add more troubleshooting steps Section 5L: Correct numbering to J	A Chini	R SanLuis

**9. ADDENDA AND APPENDICES**

A. Lot to Lot Study on Dimension Vista 1

## Appendix A

### Lot to Lot Study on Dimension Vista 1

To Program a Lot to Lot study on Dimension Vista 1:

1. From the Home Page go to **Advanced** button (on the very top left).
2. Click on **Samples** on far top left.
3. Right under **Samples** click on down arrow ▼ and select **Batch Mode Test Setup**.
4. Right under Batch Mode Test Setup is **Actions** and right under Actions is **Modify Batch Mode Configuration**, click on it.
5. Now on this page (modify batch mode configuration) do the following:
  - a. **Batch ID**: Create a batch name. Make it simple and clear.
  - b. **Sample Fluid Type**: Select the appropriate fluid type
  - c. **Method**: Select the method that is being tested for lot to lot correlation. Choose the method twice since it needs to be run in duplicate.
  - d. **Sample Rack Barcode**: Using the mouse click in the sample rack barcode box and scan the rack barcode. Then click on **Add Sample Barcode**. If there are any previous sample rack barcodes in the box below, high light the rack barcode and then click on **Remove Selected Rack Sample Barcode**, remove them.
  - e. **Save Changes**: On the far left side of the screen under Actions click on Save Changes.
  - f. **Lot Crossover**: Select Lot Crossover in the Batch Mode menu on the far left side of the screen.
6. Load the rack. It does not matter which position on the rack specimens are loaded. The instrument automatically recognizes the number and position of the samples on that rack. On the Top of the screen “**Batch Mode is On**” appears, indicating that the samples are running.

To Print Lot to Lot study on Dimension Vista 1:

1. From the Home Page go to **System** at the far bottom right corner.
2. Choose **Method Summary**.
3. Select the **Method** that a lot to lot study was performed on.
4. On the far right side of the screen (in the middle) click on **Result History**.
5. Hold **ALT** and **P** buttons at the same time to print the results.