

Measurement Advisory Committee Meeting Summary
The Sheraton Columbia Hotel
Columbia, MD

Saturday, April 12, 2008
(08:00 AM – 5:00 PM)

Meeting Minutes

1. Introductions – MAC Chair and Recording Secretary

D. Leaman introduced herself and explained that Jim Ingram will not be serving as the committee chairperson, and that Doug Cowles, the Vice Chairperson, would now serve in the capacity of chairperson. She further noted that Doug was not yet present due to his flight schedule but once he arrived he would take over the meeting from her. Dana then introduced the A2LA calibration staff.

2. Review and approval of agenda

- a. A question was raised regarding whether or not the agenda should be modified to discuss the vacant position of vice chair. D. Leaman indicated that this would be addressed under membership.
- b. **MOTION 1** – D. Leaman – motion to review and approve agenda – *passed*.

3. Membership

- a. **MOTION 2** – D. Leaman – motion to form a nominating committee to replace the vacant position (Vice Chairperson). This committee will also propose members for the 2010 Chairperson and Vice-Chairperson positions. *Passed*.

ACTION ITEM 1: Nominating sub-committee [Mike Suraci, Gerold Blossey, and Ray Gil with Dana Leaman as the staff contact] to present the candidates for the open Vice Chairperson position by June 30, 2008.

D. Leaman reminded present members that to join the Measurement Advisory Committee you only need attend one meeting and to maintain your membership must attend one meeting every two years. Dana further noted if a member fails to attend within those two years they will be contacted noting their removal from the membership. Should they wish to remain a member a letter explaining their situation would be needed to remain on the committee.

4. Approval of last meeting minutes

- a. **MOTION 3** – Tom Smith– motion to accept meeting minutes –Jeff Gust second – *Passed*

5. Old Business – Status of Previous Action Items

- a. Previous Action Item: H. Moody & B. Ellis to present a revised draft document outlining what should be included in an uncertainty calculation for hardness[SEE ATTACHMENT 1]:

Mr. Ellis presented on this issue and indicated that the goal of the document was to develop uniformity and consistency in the application of uncertainty budgets by all assessors and to simplify the factors which laboratories are able to claim in their uncertainty budgets. The sub-committee then proposed that all assessors agree to accept repeatability, resolution, and the uncertainty of the block as the minimum elements required in an uncertainty budget for hardness.

There was a discussion regarding whether the uncertainty of the block should be the only factor listed on the budget or whether something larger than the uncertainty of the block should be required. The assessors were reminded that two decimal places are the best that you can claim on the scope and that you should always round up. Another member indicated that you should always be 0.01 higher than the block. It was pointed out that there is a new ILAC document that indicated new rounding procedures but it was determined that since there is no current ILAC document A2LA's policy will stand. There was some discussion that if a laboratory includes repeatability there is no need to also include the resolution and we would be requiring the laboratories to double their uncertainty.

MOTION 5 – B. Ellis: To accept the current proposed document and agree that the minimum factors required for hardness uncertainty budgets are repeatability, resolution, and the uncertainty of the block. – *Approved*

MOTION 6– Jim Salsbury, Ted Doiron second – To form a sub-committee to review the proposed requirement for inclusion of both repeatability and resolution for hardness in laboratory uncertainty budgets in an effort to determine whether both are needed or whether the laboratory would be allowed to include one or the other. The finding would then be presented to the committee in an effort to amend the consensus regarding hardness uncertainty budgets.

ACTION ITEM 2 – **Create a task group to review the consensus for inclusion of both repeatability and resolution for hardness in laboratory uncertainty budgets to determine whether both are needed or whether the laboratory would be allowed to include one or the other. Volunteers for the sub-committee are: Ray Gil, Ted Doiron, Jim Salsbury with Vincent Pugh as the staff contact. Report of findings/proposal due January 1, 2009.**

- b. Previous Action Item: John Wehrmeyer – PT Subcommittee [P. Wright will send the draft PT document to the MAC members by July 31, 2007, allowing for a 2 week comment period]

D. Leaman presented for J. Wehrmeyer regarding this proposal and indicated that due to the revision of 17043 the work of the committee is on hold. She further noted that the information compiled by the task group was forwarded to the ILAC committee for consideration and that their hard work did assist A2LA in presenting some recommendations for the ILAC committee. It was pointed out that there is an ILAC document that indicates a move away from the one size fits all for all areas of accreditation and a move to doing different things in different areas to suit the needs of that area. It was also indicated that in the ILAC P9 document the requirement that all major sub-disciplines must be completed in four years may be removed and instead every field would have their own

requirement. D. Leaman indicated that the work of the committee is on hold, with nothing else to report and requested that this be closed. – **CLOSED**

- c. Previous Action Item: J. Ingram – *Generating RH with Salts: SRM or Intrinsic Standards?* [SEE ATTACHMENT 2A AND 2B]

P. Wright provided the update due to Mr. Ingram's absence. Pam indicated that Mr. Ingram's paper was circulated in 2007 with numerous comments provided, particularly that humidity salts are not intrinsic standards. Pam reiterated that the real issue was that we had laboratories using salts and they were unable meet the A2LA traceability requirements. She noted that the interim policy from A2LA was to allow the laboratory to either treat the salts as an intrinsic standard or provide reverse traceability information, which is virtually impossible. The purpose of this issue was to gain consensus among the members to agree to the interim policy in an effort to assist the laboratories to meet the traceability policy.

The discussion included clarification that we are speaking about humidity salts that are mixed by the laboratory and not pre-mixed solutions since the pre-mixed solutions are traceable. Further discussion indicated that since it is not possible to complete proficiency testing for humidity salts this portion of the requirement for intrinsic standards should be amended to be in alignment with the Calibration Program Requirements. A2LA staff indicated that we would be able to add a paragraph indicating that for salts the laboratory would not have to meet this part of the Calibration Program requirements.

MOTION 7 – For the committee to agree that laboratories will be able to treat salts used in humidity calibrations as intrinsic standard with the caveat that an exception is made for the PT portion of A2LA's requirements. **Approved.**

ACTION ITEM 3 – **P. Wright to create language for an application of 17025 with a provision that laboratories are able to treat humidity salts like an intrinsic standard without the need to meet the PT portion of the A2LA Calibration Program Requirements and forward to A2LA staff for review and comment before sending to the Criteria Council for approval. Due Date: June 30, 2008.**

- d. Previous Action Item: Dana Leaman – durometer proposal

D. Leaman reported that this was still open and being worked on and noted upon completion and approval, the document will be incorporated into an annex for the revised Mandatory Guidance document [currently under revision and to be renamed the Applications document for Calibration Scopes of Accreditation].

- e. Previous Action Item: D. Leaman to discuss with A2LA management further guidance on traceability for the valid calibration on the coils.

D. Leaman indicated that there are no issues regarding traceability for these items because we have worked with Fluke to get their traceability documents. Since we have this on file now this is not an issue for most of our labs.

The MAC discussed how this is still a non-accredited calibration and it was noted that A2LA staff is aware of this but since we do have the traceability information from Fluke this is not a concern because the laboratories are able to meet our traceability requirements through the reverse traceability process. The concern was how to handle those laboratories whose calibration certificates pre-date the information provided by Fluke to A2LA. The MAC also discussed that the coils are stable and there is no reason to require a recalibration unless the laboratory cannot establish traceability (i.e. the laboratory has lost the certificates for the item).

MOTION 8 – Merrill Duffin, second by Jim Miner – To allow the laboratory to meet section T9 of the A2LA Traceability policy in lieu of the calibration certificate for cases where the calibration certificate pre-dates the information provided from Fluke. *Approved.*

Amendment to Motion 8 – To amend the motion to indicate when conducting an in-house calibration it should be limited to the range from the initial original calibration certificate for the coil. *Approved*

- f. Previous Action Item: D. Leaman to discuss with A2LA management further guidance on whether or not these [calibration] kits should have an accredited calibration.

D. Leaman reported on this and indicated that we need a proposal to be brought to management before they can come to a decision regarding this issue. A2LA staff reiterated that we wanted to have a policy regarding this issue for our own internal use. It was also noted that this was a larger issue because, by allowing an item to not be calibrated, we would be going counter to the current A2LA Traceability Policy. A2LA staff indicated that we needed to decide if the use of the calibration kit is an important component for the performance of the calibration in accordance with 17025 section 5.5. If it is not an important component then we do not need to require it to be calibrated. It could be that the cal kit is immaterial because of the required calibration of the verification kit.

STRAW VOTE 1 – should the calibration kits be required to have an accredited cal?

1. 2 for accreditation
2. 4 against accreditation

ACTION ITEM 4 – Dana Leaman to report to A2LA management that the MAC indicated that the calibration kits do not require an accredited calibration. Due Date: June 30, 2008

- g. Previous Action Item: Ray Kletke, S. Dizor, D. Deaver, and M. Duffin - Artifact Calibration task group: focus on the performance enhancement offered by artifact calibration for the Fluke 5700A and 5720A calibrators [SEE ATTACHMENT 3A & 3B].

It was indicated that if the laboratory takes advantage of the artifact calibration then they should be required to provide documented evidence. It was also mentioned that when the final calibration is done on the instrument the provider

does not indicate if it falls within the 90 day specification, only that it meets the one year specification. It was also noted that many laboratories are increasing the calibration interval of this equipment based on the 90 day specification and this is not necessarily appropriate. A question was raised regarding whether the circuitry would degrade in a situation where there is a full calibration after 1 year and then only 90 day artifact calibrations are completed for the following two years. R. Kletke explained that current research indicated that this should not be an issue. There was also a discussion regarding the fact that a laboratory probably can go over two years between full calibrations, but Fluke did not want to do the statistical analysis to prove this. A question was also raised as to information regarding artifact calibration for the Fluke 3458 and the Fluke 8508. R. Kletke also noted that there is a paper to go along with his power-point presentation.

ACTION ITEM 5 – Liz Smith to work with Pam Wright to get a copy of the paper sent to the members by May 31, 2008.

ACTION ITEM 6 – Dana Leaman to supervise the inclusion of an article in the A2LA newsletter regarding artifact calibration as guidance for our laboratories and will work with R. Kletke and his group to get the article together by September 30, 2008.

ACTION ITEM 7 – Dana Leaman to contact Bill Sorrells regarding working on a study of artifact calibration for the HP 3458 and the HP 8508 per committee recommendation. Due Date: 2009 MAC Meeting.

6. New Business:

- a. H. Nielsen – Why You Cannot Extrapolate Uncertainty Estimates [SEE ATTACHMENT 4]

H. Nielsen presented a refresher course on extrapolation of uncertainty estimates and indicated he did this due to an AC appeals vote that sided with the laboratory. He further noted that during the appeals process this type of information was never requested by A2LA so that he could present his argument to the members of the AC appeals panel.

There was a discussion within the MAC that it would be nice if the assessor could explain their position to the AC. There was also a discussion regarding the appeals process. Those members within the committee that are also AC members noted that they feel like they are more referees at some point and are required to come up with a decision regarding a deficiency in a very gray area. The appeals process with regard to how the assessor is not requested to provide additional information to the AC was discussed and it was noted that the assessor should have a larger role in defending their deficiency. A2LA staff indicated that this should be discussed with the AC committee meeting on 4/13/08.

ACTION ITEM 8 – Dana Leaman to review the A2LA appeals process regarding why the assessor is not contacted for his rebuttal and to speak with the operations manager regarding our guidance provided in the AIM and A2LA SOP for the appeals process. Due Date: September 30, 2008.

- b. H. Nielsen – Cardinal Point Calibration and Resolution. [SEE ATTACHMENT 5]

H. Nielsen presented a refresher course on Cardinal Point Calibration and Resolution and indicated that this was also as a result of an AC appeals vote that sided with the laboratory.

There was a discussion regarding the uncertainty claim having to reflect the calibration process, therefore there should not be a requirement that certain items be included in the uncertainty budget if it does not come into play during the calibration process. One size budget does not fit all calibration methods. Therefore the requirement to include the influence of the unit under test is dependent on the calibration. It is dangerous to have some blanket policies for all budgets whether it applies to the process or not.

- c. W. Schaefer – Clarifying Technical Information for MRF Scopes. [SEE ATTACHMENT 6]

W. Schaefer presented information regarding Microwave and RF technical information that should be included with the method on scopes of accreditation in order to make it transparent as to the exact capabilities of the laboratory. It was noted that laboratories should be required to include the network analyzers, connector family, and the device in the comments section of the scope.

There was a discussion regarding parameter based scopes for MRF, as certain members did not feel that this is appropriate and indicated that the specific standards need to be listed. They indicated that where a published standard is available it should be listed in the comments sections of the scope. One member felt that that this should be left up to the customer (laboratory) regarding how they want to address this on the scope. Another member indicated that this does need to be addressed because in certain instances it leaves a question regarding exactly what the laboratory is doing and the proposal would allow uniformity with other laboratories. They also indicated that this just needs to be clarified in the comments so that the scope is more transparent. Staff pointed out that we do not want to require more from our laboratories than other Accrediting Bodies require when it comes to how this information is reported on the scope of accreditation.

There was also a discussion regarding the best measurement capability, a member indicated that a laboratory should not be allowed to provide on their scope the theoretical achievable value, but the actual best achievable value. D. Leaman reminded them that when the BMU is determined, the laboratory may use their ideal equipment to make this determination but it must actually exist and cannot be theoretical information. One member indicated that the laboratory should be required to explain on the scope that they are using an idealized unit under test or another device and that this would lead to a clarification of the uncertainty.

ACTION ITEM 9 – D. Leaman to research with other Accreditation Bodies to determine their requirements for listing information on the scope of accreditation for Microwave Calibrations in an effort to determine whether they require the listing of network analyzers, connector family, and the device. Due by June 30, 2008.

The members also indicated that the scope should reflect the ability of the lab and therefore should be required to include the network analyzers, connector family, and the device in the comments section to make this transparent. Everyone should apply this equally across the board. Pam Wright noted that perhaps a newsletter article to educate the laboratories on the value of presenting their information on the scope for Microwave Calibration in this way could be created.

- d. G. Zerlaut - Clarifying Technical Information for Color and Gloss Scopes. [SEE ATTACHMENT 7]

A tutorial was presented by G. Zerlaut on technical information for Color and Gloss Scopes.

- e. K. Jaeger – Electrical equipment listed on scopes of accreditation. [SEE ATTACHMENT 8]

K. Jaeger recommended that we include in the comment field on the scope the instrument the laboratory is using and the 90 day specifications to make sure that the artifact calibration has been done.

Tom Smith proposed a motion to have a separate requirement that they provide an additional scope with the equipment listed on it. A request was also made for a revision to the application process for a more clarified equipment list. There was further discussion as to how specific the comments section and the equipment section should be. While this is something that laboratories should have the option of doing, equipment can be considered to be proprietary information and therefore the laboratories should not be required to list this on their scope. A2LA staff indicated that the equipment is always listed in the comments section in a generic way such that it is left to the lab to determine how specific it is.

MOTION 9 – Jim Miner second by Ray Kletke – Request to add a presentation by Ray Kletke regarding Linear transducers to the agenda. *Passed.*

- f. D. Lorenzen – What is the “standard method” for calibrating granite surface plates? [SEE ATTACHMENT 9]

Dave Lorenzen indicated that it is hard to assess a laboratory for surface plates in regards to what is considered the standard method. He is seeking consensus for the committee to define the standard method for surface plates. It is noted this also was born from an AC vote that went against the assessor.

D. Lorenzen’s proposal is: The MAC should adopt a definition/criteria of a Standard Method for Calibrating Surface Plate. The method used must sample eight lines as specified in Federal Specification GGG-P-463C, paragraph 4.5.9

(sometimes referred to as *Union Jack* or *Moody* methods) to calibrate granite surface plates. This procedure must incorporate a process to tie all eight lines together relative to a common reference plane to determine the maximum vertical displacement upward and the maximum vertical displacement downward as required to arrive at the overall flatness error. For other methods the lab must comply with A2LA policy for using non-standard methods.

There was a discussion regarding this proposal. A concern is that there are several labs that have heard of this method and say that they use it but don't have a copy of it and don't really follow it. The members indicated that all of the "standard" methods and variations use the same equipment; they just don't necessarily take the same number of data points nor do the same data analysis process. The members also indicated that the laboratory should have to participate in PT tests to show that this is acceptable. The members also discussed how there are generally two accepted method, union jack also called moody method, and the grid method. The members agreed that the star pattern does not establish flatness and that any pattern should have to tie all of the lines into a single plane to prove flatness.

MOTION 10 – To clarify the standard method for surface plate flatness calibration.

ACTION ITEM 10: Task group to provide clarification as to how A2LA assessors determine what a standard method is for surface plate flatness and to determine whether there is any current publication available to the public for this standard method. Volunteers include: Dave Lorenzen, Carl Haynes, Henrik Nielsen, Bob Brown with Samantha Dizer as staff liaison. Due Date: December 31, 2008

- g. D. Leaman – Applications Document. [SEE ATTACHMENT 10]

D. Leaman discussed the updates to the document with the committee and invited questions. A member proposed that the length-generate should be removed because it no longer applies.

ACTION ITEM 11 – D. Leaman to review the use of the term generate on page 9 item 1a by May 31, 2008.

D. Leaman requested a consensus on the alphabetizing of the scopes of accreditation.

MOTION 13 – Consensus agreed with the approach to alphabetize the scopes during the renewals process for existing laboratories and immediately for new laboratories. *Passed*

D. Leaman noted that the Calibration Measurement Capability portion of the document may be on hold because we don't know how ILAC plans on utilizing this right now.

ACTION ITEM 12 – Pam Wright to send the applications document to the MAC by May 31, 2008 and seek a 2 week comment period.

- h. D. Leaman – “Uncertainty from calibration certificate versus manufacturer specifications.” [SEE ATTACHMENT 11]

Dana noted that if you have no history or data of the device and all you know is that the item is in tolerance, can you use either the manufacturer specifications or the uncertainty from the calibration certificate in the uncertainty budget? If you can use one or the other, when would you use one over the other?

There was a discussion regarding if this can be done. One member indicated that they are not one and the same and should not be used interchangeably. It was also indicated that there are fundamentally two cases, if you are only told that something is in specification then you can ignore the very low calibration uncertainty. You also have beta only which is when you don't calibrate to a specification; you only provide the uncertainty and then it is up to the user to define what they need to use. It was also noted that the calibration should always be lower than the manufacturer specification. For compliance calibrations the calibration laboratory should provide the customer with a better uncertainty than manufacturer's specification or else you really cannot provide the customer with the requested calibration.

ACTION ITEM 14 - Dana Leaman to get a consensus via further discussion through email of the members regarding how uncertainty versus manufacturer's specifications should be applied. Item tabled for now. Due Date: 2009 MAC Meeting

- i. D. Leaman – “Zero Guard-banding” and *R205 – Specific Requirements: Calibration Laboratory Accreditation Program* section 2.1.3.b.3. [SEE ATTACHMENT 12]

The members indicated that the USA would have to go back over 80 years of tolerances and either change industry or put the laboratories out of business if we require a minimum tolerance. The laboratories present agreed and indicated that you normally talk to the customer to discuss statements of compliance. They also indicated that it is the customer's job to take the uncertainty into account to determine what is acceptable. It was determined to maintain status quo on this issue. It was noted, however, that there is a discrepancy between the calibration program requirements that states when making a statement of compliance the uncertainty must be taken into account and allowing the laboratory to essentially take no uncertainty into account due to the common and usual practice in the USA.

- j. Ray Kletke – Linear transducers are not addressed often and there is a lot of inconsistency on the scope.

Ray presented information regarding inconsistency on scopes for linear transducers.

MAC members indicated that they want to see additional ranges to really understand what is occurring. One member needed to know if the scope would be listed in mV. It was noted that the scope could be listed in units of volts, etc

since the laboratory really isn't calibrating temperature. It was also indicated that a laboratory really could simulate any parameter with this type of information on the scope and that it should not be listed on the scope since it is already listed elsewhere. Members indicated that the options are to either add ranges or to eliminate it and go back to basic units. No consensus was made.

- k. P. Wright – notification of new handbook [SEE ATTACHMENT 13]

P. Wright noted that the information has been sent out, since there is an issue regarding how measurement uncertainty is applied from assessor to assessor but due to the time constraints of the meeting she will submit the paper for comment by the members via email.

ACTION ITEM 15 – Pamela Wright to send out new draft handbook document for comment by May 31, 2008.

Motion 11 – Pam Wright– To adjourn the meeting. *Passed*

Minutes prepared by Samantha Dizor, A2LA Accreditation Officer.

Attendees:

Last Name	First Name	Email
Alexander	Helga	halexander@keithley.com
Allred	Jim	wla@ida.net
Ball	John	johnb@knology.net
Bennett	Keith	kbennett@transcat.com
Blank	Charles	chuck.blank@trw.com
Blossey	Gerold	gblossey@rcn.com
Blythe	Barb	labcal2000@aol.com
Combs	Terry	tercombs2001@yahoo.com
Cowles	Douglas	cowlesdl@sbcglobal.net
DeGroot	Gaylord	gdegroot@comcast.net
Dizor	Samantha	sdizor@a2la.org
Doiron	Ted	doiron@nist.gov
Duffin	Merril	mduf@cableon.net
Ellis	Robert	sandcastcb750@gmail.com
Fischer	David	jfischer@fischercc.com
Fisher	Jeffrey	jcfconsulting@rochester.vv.com
Gil	Ray	metrologia1027@yahoo.com
Goodson	Sheila	sgoodson@quest-technologies.com
Gust	Jeff	jgust@rjbagan.com
Haynes	Karl	khaynes@electrent.com
Jaeger	Klaus	jaegerenterprises@comcast.net
Jones	Thomas	tom.s.jones@alcoa.com
Keep	Paul	pkeep@simco.com
Kletke	Ray	raykletke@yahoo.com
Knake	Robert	rknake@a2la.org
Kokal	Keith	keith@microlabs-inc.com
Leaman	Dana	dleaman@a2la.org
Lehmus	Walt	wlehmus@aol.com
Lorenzen	David	dave@lorenzen.com
Mason	Shawn	shawn.mason@bsci.com
Merlo	Kimberly	merloobx@aol.com
Miner	James	jamesminer@bellsouth.net
Moody	Harry	harryjmoody@cs.com
Nielsen	Henrik	hsnielsen@hn-metrology.com
Ouimet	Thomas	touimet@rodestar.rr.com
Pugh	Vincent	pvincent@a2la.org
Rasinski	Tim	trasinski@metlabs.com
Robinson	Roxanne	rrobinson@a2la.org
Salsbury	James	jim.salsbury@mitutoyo.com
Schaefer	Werner	wsemc@cisco.com
Shah	Dilip	emc350lu@aol.com
Smith	Elizabeth	esmith@a2la.org
Smith	Thomas	tom@metrologyconsulting.com

Stimpfle	Frederick	fredazus@yahoo.com
Suraci	Michael	mikesuraci@aol.com
Tramel	Woody	woodyt3673@yahoo.com
Van Wie	Randy	randy.vanwie@tektronix.com
Wheeler	James	wheeler513@cox.net
Williams	Daryl	Daryl.Y.Williams@us.army.mil
Wright	Pamela	pwright@a2la.org
Zerlaut	Gene	gzerlaut@cox.net
Unger	Peter	punger@a2la.org