Summary of the A2LA Measurement Advisory Committee Meeting
The Sheraton Hotel Columbia
Columbia, MD

Sunday, March 13, 2005
(8:00 A.M. – 4:00 P.M.)

The annual meeting of the A2LA Measurement Advisory Committee (MAC) was held on Sunday, March 13, 2005, at the Sheraton Columbia Hotel in Columbia, MD.

1. Introduction: (8:10 A.M.)

A. Webb, Chairman of the MAC, opened the meeting by welcoming all attendees and initiating introductions. A. Webb had all in attendance sign and return the conflict of interest forms regarding membership in the MAC.

2. Agenda

<u>Motion 1</u>: Approve the agenda with the addition of S. Steiro to present unacceptable calibrations on Scopes of Accreditation and A. Webb to discuss correction of uncertainty factors. Motion passed.

2a. Membership

A. Webb requested that new members identify themselves and informed them that by attending a meeting they become an MAC member and maintain their membership by attending a meeting once every two years. New members identified included:

a) P. Schoub
b) J. Ball
c) K. Merlin
d) M. Lapinskes

3. Previous Minutes

<u>Motion 2</u>: Approve the summary of the 2004 meeting of the MAC with no amendments. Motion passed.

4. Old Business: The action items from the previous meeting were reviewed. Several remain open.

Agenda item 4.1: Action Item B from the 2004 meeting of the MAC (assigned to T. Smith, T. Doiron, B. Ellis, and K. Schaffer) to draft guidance on what should be in an uncertainty calculation for hardness.

Report: T. Smith spoke with members independently but no formal meeting was held. Considerations are still being made when discussing uncertainties on the Scope. For example, some members feel that when referring to best uncertainty one should begin with the reference standard carried out to the field. This is the one which should be the starting point as the very best the lab can do. Other members felt that it should also include the uncertainty of the block from the accredited calibration provider plus 0.6*R* due to instrument resolution. In addition, it was felt that the lab should own an accredited, profiled indenter and not use one from the calibration provider.

Action Item A: T. Smith to have the committee come up with a draft document outlining what should be included in an uncertainty calculation for hardness. Due 6/30/05

Agenda Item 4.2: Action item C from the 2004 meeting of the MAC assigned to T. Osborne to forward his Excel workbook identifying parameters with regard to the calibration Scopes as well as the ILAC guidance regarding the Scopes to the MAC members for comment.

Report: T. Rasinski indicated that the Excel spreadsheet was not forwarded by T.Osborne upon his departure from A2LA, therefore this remains an open action item.

Action Item B: T. Rasinski to forward T. Osborne's Excel workbook identifying parameters with regard to the calibration Scopes as well as the ILAC guidance regarding the Scopes to the MAC members for comment by June 30, 2005.

Agenda Item 4.3: Action item F from the 2004 meeting of the MAC assigned to T. Osborne to review and submit clarification of the PT document regarding multi-discipline items, such as DMMs, methodologies regarding PT, consideration of the title of section G, and bridging the gap between the PT document and 5.9 to the MAC for review prior to submitting for proposed changes.

Report: T. Rasinski indicated that this action item is not complete.

Motion 3: Address this action item in Klaus Jaeger's portion of the agenda. Motion passed.

Agenda Item 4.4: Action item G from the 2004 meeting of the MAC assigned to T. Osborne to look into the mandatory guidance document regarding the use of the best uncertainty across the range vs. at particular points.

The MAC committee chairperson opened this item for discussion to determine if a policy is still needed.

Discussion: It was determined that an exception was needed in the case of RF microwave where the uncertainty is reported over a range. Some argued that the beginning of the *A2LA Calibration Program Requirements* should contain a clarification statement concerning this issue for the laboratories. Others stated that the mandatory guidance document already covers this and EA-4/02 is already referenced in the *A2LA Calibration Program Requirements* document in Section 3.2. A suggestion was made to move the reference to the beginning of the document. It was determined that the assessors now seem to have consensus in understanding the requirements, however, laboratories do not. It was determined that A2LA should create a policy regarding this issue.

Motion 4: To close this action item and open a new one. Motioned passed.

Action Item C: D. Leaman & T. Rasinski to review calibration program requirements to amend for inclusion of a policy regarding the use of best measurement uncertainty across the range vs. at particular points by June 30, 2005.

Agenda Item 4.5: Action item I from the 2004 meeting of the MAC assigned to P. Stein, M. Duffin and R. Gil to produce a draft document regarding parameters and ranges higher than traceability to NIST can support.

Report: M. Duffin indicated that an appropriate way to address the calibration of two instruments, Fluke 5500 and LCR Meters is needed, as NIST does not provide traceability for the extended ranges.

- LCR Meters: Scope w/ inductance and calibration at upper range is higher than the traceability to NIST can support. Currently the need to cover this range is not high. NIST wants to address the issue but is bowing out due to finances. Fluke, the original equipment manufacturer (OEM), will have uniform capability soon. The committee has suggested when the guidance document is produced, it be modified to include the issue w/ LCR meters.

- High Frequency: Agilent has done an excellent job covering this issue, that could serve as a reference point for these devices. It was recommended that this issue be attached to the issue that M. Duffin and K. Jaeger are working on.

The item was opened for discussion.

Discussion: Ideas were expressed as to how this information should be addressed in the document. Some members felt the upper limits should be allowed on the Scope. Others felt that a table of parameters should be incorporated into the document.

The committee chair reminded the committee that the purpose of the document was to define at what level NIST stops supporting the measurements. Concern was raised that objective evidence was needed from the assessor that demonstrates that the lab can meet the best measurement capability (BMC) being claimed on the Scope. It was suggested that this information could be added to the assessor report but it was pointed out that the assessor guide already calls for the inclusion of a cover letter for this type of information. A suggestion was made for revising section of the assessor guide pertaining to the cover letter to include situations in which the laboratory is claiming BMC higher than NIST. Another suggestion was for the assessor to have the flexibility of including a cover letter or adding the information to the comments section of the assessor report.

Some suggestions for explaining the BMC on the scope were:

- The use of a footnote or placing the required information in the comments section of the Scope;
- Add to comments section of the assessor report.

A question was raised as to whether A2LA could create a body of knowledge to track this issue. The question was discussed, and it was decided that A2LA would need help from the MAC to accomplish this. A suggestion was made for the assessors to collect information regarding this subject all year and then review the situation at next year's MAC to begin building a body of knowledge.

The committee chair then pointed out that the original issue was to determine what is the NIST capability and for a draft document to be created to identify those parameters being exceeded by support to NIST. He posed the question as to whether this document was still needed.

Motion 5: Consider Agenda Item 4.5 (2004 Action Item I) complete. Motion passed.

5. New Business

Agenda Item: 5.1: Formation of a Committee to Draft a Procedure for Replacing Officers.

There is a vacancy in the MAC due to the death of B. Quigley, recently elected vice-chairperson. There is no procedure in the by-laws to address this situation.

Motion 6: Create a committee of three to review this issue. Motion passed.

Comments: A suggestion was made that the MAC simply adopt the A2LA Bylaws with regard to this issue.

Motion 7: Override Motion 6 and simply adopt the approach taken in the A2LA bylaws in regards to this issue. Motion passed.

Discussion: Some discussion ensued that the A2LA Bylaws call for a committee to be formed to determine proposed candidates for a vacant office.

Motion 8: To form a nominating committee as required by MAC bylaws to nominate candidates to fill the recently vacant Vice Chair position. Motion passed

Volunteers for committee: M. Suraci, J. Miner, D. Ruth

<u>Motion 9</u>: Newly formed nominating committee to determine by the MAC's afternoon session a slate of proposed candidates for the Vice Chair position. Motion passed.

<u>Action Item D</u>: Nominating Committee to have candidates for the ballot for the office of vice-chairperson. Due during afternoon session of the MAC meeting.

<u>Motion 10</u>: Table items 5.2 – 5.5 on the agenda at this time. Motion passed.

<u>Agenda Item 5.6</u>: Clarification of Proficiency Testing (PT) Requirements.

The question was raised regarding whether or not A2LA should require laboratories to validate their BMC on their Scope or come as close to it as possible with their proficiency testing (PT). This item was opened for discussion.

Discussion: Some members felt this was an issue of how close do we expect the lab to come and how much cost to pass on to the lab. Others felt that since you can calculate the best measurement uncertainty (BMU) from the PT that we need to address this issue without burdening the lab.

There were concerns that labs do not understand uncertainties and PT, that a lab will claim a lower uncertainty than the reference lab due to its generation of an unreasonable uncertainty in an effort to exempt it from PT. There was a discussion that it is unavoidable that high-end PT capability is not possible.

Some members responded that they wanted clarification of the PT requirements. A statement was made that the PT policy does not require labs to meet BMC and questioned what value is added if the laboratories are not required to do this. Concerns were expressed over the potential of losing business due to more stringent requirements. A clarification was raised that the committee was not looking for a change in requirement but guidance on what to look for in PT. Some members wanted the PT to reflect the laboratory's actual workload. Others requested that assessors be clear on the policy and enforce it uniformly. The issue of some PTs not being available was addressed and that in these cases the labs conduct internal PT. It was mentioned that D. Tholen was to create a checklist for assessors to ensure lab's internal PT meets Guide 43. The discussion further addressed the fact that the purpose of PT is to serve as a tool of competency, not just a requirement and that the education of laboratories is needed to understand importance and benefits of PT.

<u>Motion 11</u>: The document being developed by D. Tholen is to be distributed to and commented on by the MAC before being finalized. Motion failed for lack of a second.

<u>Motion 12</u>: Review the A2LA PT requirements document to determine whether a laboratory's PT must meet the BMC on its Scope. Motion passed.

Discussion: It was suggested that if a lab wants to claim a national metrology institute (NMI) level uncertainty, it needs to prove it. PT by itself does not prove it. A discussion ensued that there are three entities involved (labs, PT providers and assessors) and that they should be involved in the review.

<u>Motion 13</u>: To amend the prior Motion 12. Have the MAC members review the PT document to determine whether a laboratory's PT must meet the BMC on its Scope and provide comments in regards to the issue at hand. After thirty days, those members who responded will have two weeks to suggest wording to A2LA for the revisions to the PT requirements document that addresses the issue at hand. The draft will then be forwarded to the Criteria Council (CC) for review. If no comments are made within thirty days, no changes will made.

Discussion: Some members wanted to have the assessor review the PT to ensure it validates the BMC. A coordinator is needed to forward the draft documents and coordinate committee review.

<u>Action Item E</u>: T. Rasinski to organize the MAC responses and committee input.

<u>Motion 14</u>: To amend Motion 13 to require the MAC to include at least an assessor, a lab representative and a PT provider on committee. Motion failed for lack of a second.

<u>Motion 15</u>: To amend Motion 13 to have J. Ingram chair the PT Committee. Motion passed.

<u>Motion 16</u>: To amend Motion 13 to change two weeks to three months and for the draft document to go to the MAC for review before going to CC. Motion passed.

<u>Action Items F</u>: Those interested MAC members are to submit their revisions to the A2LA PT requirements document to T. Rasinski within thirty days (by 4/13/05).

<u>Action Item G</u>: T. Rasinski to ensure the PT Committee input (if any) for the revision of the A2LA PT requirements is forwarded to the committee chair for coordination and discussion within one week of receipt (by 4/20/2005).

<u>Action Item H</u>: J. Ingram to forward a draft document to T. Rasinski for circulation to MAC within three months (by 7/13/2005).

<u>Action Item I</u>: T. Rasinski to forward the draft document from the PT Committee to all MAC members, and arrange for a vote within one week (by 7/20/2005).

<u>Action Item J</u>: T. Rasinski to forward the approved draft PT requirements document (if any) to CC within one week of the completion of the MAC vote.

<u>Agenda Item 5.2</u>: D. Leaman was charged by the A2LA President with the task of requesting assistance from the MAC in the creation of a Scope Review Panel, consisting of ten volunteers to review every active calibration Scope for consistency in Scope formatting, specifically in

determining areas of variability and creating a guideline for uniformity. D. Leaman requested ten volunteers for this committee.

Discussion: A request was made for an explanation of the process for potential panel members. It was presented that the panel members would be provided all of the Scopes, either electronically or in hardcopy form, based on preference, and asked to determine areas of inconsistency. The panel would then need to agree on and create a guideline for uniformity in these areas. A question was raised about the use of the *Mandatory Guidance for Scopes* document, and it was determined that the document does not address formatting issues, only Scope technical content. An inquiry was made as to whether a sample Scope could be provided to panel members as a starting point to begin the process. Another request was made that the A2LA website searchable Scopes section not be searchable by the comments section. A suggestion was also made for laboratories to be provided with basic metrology terms in an effort to create more uniform Scopes. A question came up as to whether A2LA allowed equipment based Scopes. It was determined that in the dimensional area this is allowed, in the electrical area, with the exception of oscilloscopes, it is not, but that it depends on discipline and what the laboratory's needs are. T. Dorion volunteered for the panel.

<u>Motion 17</u>: Not to create the above-mentioned this panel. Motion passed.

Discussion: There was concern expressed that since the assessors had input into the creation of these Scopes initially that this task would be a conflict of interest. It was discussed that the specifiers are also concerned about the lack of uniformity guidelines in Scope formatting. A suggestion was made that the best way to achieve standardization is to determine how each field and parameter will be arranged in a database with set descriptions for the assessor and the lab to choose from. Many committee members expressed a willingness to help but are concerned by the large amount of time this process would take. A suggestion was made that A2LA take the existing guideline and develop a better guideline that the MAC could review and approve.

There was concern expressed that this task would be in direct conflict with A2LA's view of the lab's freedom for marketability. A recommendation was made to take the MAC comments back to P. Unger as input. A suggestion was made to possibly create a panel to review what the industry needs are and then determine a guideline based on this information.

<u>Motion 18</u>: Request volunteers to create a panel to review the A2LA *Mandatory Guidance Document*. Motion failed for want of a second.

<u>Motion 19</u>: D. Cowles volunteered to supply input in the dimensional area as long as the information provided was put into a database as a one-source stop for standardized Scopes. Motion failed for want of a second.

D. Leaman to take the MAC comments back to A2LA and obtain guidance on the next step.

<u>Agenda Item 5.3</u>: (enforcement issue) T9 - Lack of Required Documentation for Measurement Uncertainty.

The issue was opened for discussion.

Discussion*:* It was determined that A2LA has decided that in-house calibrations are not assessable to ISO/IEC 17025 as these calibrations are not for accredited work and will not be listed on the Scope of Accreditation; however, the members are concerned that since T9d does not specifically call for the laboratory to maintain a record of the uncertainty, it makes T9d very difficult to assess to and seems to undermine the spirit of traceability. A suggestion was made that T9d be changed to include the requirement for a record. A clarification was suggested to include internal calibrations that support an accredited Scope item or are used to calibrate instruments or standards on the Scope. One member proposed that T9d be revised to require a record of the uncertainty budgets called for in the lab's procedure. A suggestion was made to amend it to also include a source document for the uncertainty.

Motion 20: Change T9d to require a record of the source of the uncertainty information. Motion passed.

Action Item K: D. Leaman to incorporate this change once approved by CC (by April 13, 2005).

Agenda Item 5.4: Accredited Calibration of Hardness Indenters.

This topic was opened for discussion.

Discussion: Some members expressed a need for the traceability/accountability of the indenter during the calibration of hardness. It was pointed out that indenters do have serial numbers (s/n), and they can create a bias.

Motion 21: When on-site calibration is performed by a laboratory, the customer indenter needs to have some form of accountability with s/n noted during the calibration. Motion failed for want of a second.

Motion 22: Motion to adjourn for lunch. Motion passed.

Motion 23: A requirement that the identification of the indenter used for hardness testing be included in hardness mandatory guidance document. Motion passed.

Agenda Item 5.5: A2LA Scope Guidance Document for Hardness Calibration.

D. Leaman was tasked by A2LA to review the hardness document in the area of direct verification due to laboratory complaints of the inaccuracy of the document. The document is currently out of circulation pending revision; however, the laboratories are being held accountable to the indirect verification portions of the document. A recommendation was made to open the document for comment and form a group to take care of the correction of errors. Furthermore, the document could be revised to include the revision from Motion 24. This topic was opened for discussion.

Discussion: J. Salsbury was asked to provide his comment on the errors found within this document. He responded with immediate concerns, errors on page 5, table 1 and the requirement to report units in length units instead of in hardness units. A comment was made that with Vickers the measurement is made in length units and then converted to Vickers units and that it is possible to work the math back and come up with a hardness unit number. A request was made for volunteers to help review the document.

Motion 24: Open the *Hardness Mandatory Guidance* document for comment and form a group to take care of the correction of errors. Motion passed.

J. Salsbury., B. Ellis, H. Moody volunteered for the Scope Guidance Document Committee.

Action Item M: D. Leaman to send the mandatory guidance document to the Scope Guidance Document Committee within one 1 week (by April 19, 2005).

Action Item N: Scope Guidance Document Committee has sixty days to provide a revised draft version of the document to the MAC for comment (by June 19, 2005).

Action Item O: MAC members have 30 days to provide comment to D. Leaman (by July 19, 2005).

Action Item P: D. Leaman to forward the draft document to the CC within one week (by July 26, 2005).

The nominating committee has nominated for the vacant office of vice-chairperson: T. Smith and T. Ouimet. Action Item D Closed.

Action Item Q: T. Rasinski to provide a ballot to the MAC that includes biosketches within two weeks (by March 27, 2005).

Report: Committee organized to complete 2004 Action Item B from section 4.1 of today's agenda. T. Smith announced that the committee held an emergency meeting today and is recommending that the position outlined in ASTM E18 for how to create uncertainties for hardness will be used as the default. 2004 Action Item B Closed.

Agenda Item 5.7: Use of GIDEP Procedures.

This topic was open for discussion.

Discussion: A point was made that GIDEP does not write procedures but is merely a repository of them and that they come from a variety of sources, not just from the military, and could contain any number of inaccuracies. The discussion determined that these should really be verified prior to use by the lab but it is hard to write a deficiency against it due to the method vs. procedure memo from A2LA.

T. Rasinski explained that R. Robinson unofficially now supports allowing a deficiency for lack of validation of a method (such as against a GIDEP procedure) after seeking guidance from our international peers for interpretation of method vs. procedure. He further stated that assessors are now allowed to do so and explained that while A2LA is waiting for an official announcement, the assessors may write a deficiency to this section of the standard, and they will not be told that the deficiency is invalid.

J. Wehrmeyer cautioned that this issue is at the level of the board of directors and assessors should not be allowed to informally begin this process. He recommended that the assessors wait until the approval process for this policy change is complete and for an official announcement from A2LA. T. Rasinski was not aware the issue was before the Board and agreed that assessors should follow the advice of J. Wehrmeyer.

<u>Agenda Item 5.8</u>: Use of 0.6*R* to Represent Best Measurement Uncertainty on Scopes.

This topic was open for discussion.

Discussion: Questions were raised as to whether we should allow laboratories to put 0.6*R* alone on their Scope as their BMC or should we require the use of (0.6*R* + floor). It was suggested that T. Adams wrote a white paper that stated this is acceptable. Some members felt that it would be good to see 0.6*R* across a range and in cases of the electrical discipline it would be good to just be able to add 0.6*R* to floor spec on Scope rather than forcing the lab to calculate their uncertainty with this in the budget for every parameter.

D. Leaman mentioned that while she had been instructed by T. Adams (her trainer at the time) that the use of 0.6*R* alone on Scopes was acceptable, she was not aware of any white paper on the issue and posed the question: Does the MAC needed to formulate a policy in this area?

<u>Motion 25</u>: To take a straw poll on whether to create a policy that 0.6*R* only should be allowed on A2LA Scopes for BMC or that it must be reported as (0.6*R* + X). Three in favor of allowing 0.6*R* only. All others (majority) opposed.

<u>Action Item R</u>: D. Leaman to present the result of today's straw poll to A2LA upper management to inform them of the requested policy change within 30 days (by April 13, 2005).

<u>Agenda Item 5.9</u>: Dimensional Testing Calibration Requirements and the Traceability Policy.

Review of this section of the A2LA Traceability Policy was conducted (see page 4 of *A2LA Traceability Policy on Measurement Traceability*, issue date 11/15/2004). T. Rasinski requested that all comments, recommendations and thoughts be forwarded to him.

Discussion: A comment was made that some testing laboratories do not need review by a calibration assessor for "dirt level" calibrations and that a balance is needed. Others felt that the testing laboratories need to follow the same requirements as the calibration laboratory in the cases outlined in the requirement.

Action Item S: T. Rasinski to collect all comments from the MAC on this subject by April 13, 2005.

Agenda Item 5.10: Traceability of IR Calibration and Best Uncertainty.

The issue was outlined as a problem in the area of traceability to a blackbody source with some laboratories being allowed to use a PRT-RTD to conduct this calibration but then claim BMC on their Scope higher that can be supported (see attachment #3 BMCs for Infra-red Thermometry are perhaps being overstated, 19Nov2004 by Dick Turner). This topic was open for discussion.

Discussion: It was felt that this is a traceability issue and questions arose as to whether the laboratories should be required to conduct these calibrations properly. It was determined that some assessors do allow a broad BMC on the Scope to account for lack of sophisticated methods and that other members felt that from the scientific standpoint that the traceability of the calibration should be via blackbody (BB) physical principles. Some members want a level playing field and want A2LA to require labs to conduct these calibrations properly. A suggestion was made to keep this paper handy (attachment #2) and for assessors to not allow the numbers to go below those listed on this document. It was determined that laboratories can use PRT-RTD to conduct this calibration as long as their BMC did not fall below NIST determined capability outlined in the paper.

Agenda Item 5.11: ISO/IEC 17025 section 5.5.10, 5.6.3.3 and Intermediate Checks.

T. Rasinski reviewed this section of the standard to update the MAC on the A2LA policy that these sections alone cannot be used to write deficiencies for laboratories not performing intermediate checks unless it is in the laboratory's own quality system to do so. The assessors were reminded that if the laboratory's own quality system or a specification required laboratories to conduct intermediate checks, they were to write a deficiency against the laboratory's own procedure or against the specification. It was determined that for on-site assessments the laboratory could be cited against the A2LA site requirements document in these cases.

Agenda Item 5.12: In-house Calibration of pH and Conductivity Meters.

This item was open for discussion.

Discussion: Accredited traceable solutions are becoming more available and traceability to them will likely be required by A2LA in the future including uncertainty information.
T. Rasinski noted that in-house calibrations of pH Meters for testing laboratories will need to meet T9 in the future as well.

Agenda Item 5.13: Unacceptable Calibrations on Calibration Laboratory Scopes of Accreditation.

A concern was expressed that A2LA allows calibration laboratories to reference their own procedure as the method used to conduct their calibration and that this may undermine the credibility of A2LA. This item was open for discussion.

Discussion: It was pointed out that ISO/IEC 17025, section 5.4.1 requires the use of the appropriate test method for the activity involved and that if a laboratory should be using it then they should be accredited to it. Example: A recent Scope issued for the calibration to Rockwell hardness, not to E18, but to calibration lab's own procedure. Some members pointed out that if the test lab needs a hardness calibration to ASTM E18 then it should request one in the contract review and that calibration laboratory Scopes are parameter based not test based. The consensus is that this is a threefold issue: 1) Re-writing of the Rockwell document is needed; 2) If a calibration laboratory has a customer that needs it to conduct the calibration to an internal procedure, then it must be allowed to put that information on the Scope as the method; 3) There is more than one way to come up with the correct calibration result, unlike in testing, and the use of an ASTM method is not strictly required in calibration. Calibration laboratories can use the ASTM or use their own process.

<u>Motion 26</u>: To adjourn. Motion passed

The 2005 meeting of the A2LA Measurement Advisory Committee was adjourned at 4:15 P.M.

Minutes prepared by Pamela S. Wright, A2LA Laboratory Services Officer

ATTENDEES
March 13, 2005 Meeting of the A2LA Measurement Advisory Committee (MAC)

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