



National Institute of Standards and Technology
100 Bureau Drive, Mailstop 8102
Gaithersburg, MD 20899

Dear Ms. Ballou:

The Scientific Working Group on Digital Evidence, the Scientific Working Group for Imaging Technology, and the Facial Identification Scientific Working Group are pleased to respond to the Notice published by the National Institute of Standards and Technology (NIST) published in The Federal Register on 9/27/2013 regarding Possible Models for the Administration and Support of Discipline-Specific Guidance Groups for Forensic Science. The combined SWG's representing digital and multimedia evidence (DME) will address the Notice in two sections. The first section consisting of an overview that directly correlates to the Notice's request for model perspectives for NIST administration and support as well as the requested approaches for Guidance Group structure. The second section will provide the three SWG's opinions to the questions asked in the Notice. Of note, this response reflects more than thirty-five years of the three SWG chairs' direct experiences with scientific working groups, quality assurance policy and procedure development, and technical assistance.

Section 1 – Overview

Model Perspectives and Structural Approaches

Using dynamic enterprise for modeling the NIST administration and support of the Guidance Groups (GG), the following topic areas are identified and listed with their recommendations:

1) Control

a) Disciplines – Current Scientific Working Groups (SWG's) exist for a reason, they are needed to support the forensic processes which provide information and test results to civil and criminal juries so that they can determine the facts. Whether they are providing technical assistance and/or quality assurance guidance, the existing SWG's work when they serve their existing practitioner base.

(1) The Digital and Multimedia Evidence (DME) disciplines are currently supported by the three SWG's submitting this response. It is extremely important that the DME disciplines are represented as at least one, preferably by three distinctive GG's. While it is understood that DME is much different than traditional forensic sciences, the exclusion of any forensic discipline, especially one which has already been tested and accepted as a science by the judicial system with the need for expert testimony, not only is negligent in its mission of supporting the forensic science community as a whole, but automatically minimizes the NCFS' effectiveness, openness, fairness and trustability in the entire process. It permits exactly what the National Science Foundation's "Strengthening Forensic Science in the United States: A Path Forward" report condemns: a biased representation and treatment of a specific discipline.

(2) Many SWGs are highly successful in their efforts and have been received as authority by numerous courts at all levels of judicial processes, therefore these successful implementations should not be replaced but rather incorporated and enhanced where possible. It would be counterproductive to build a new effort or duplicate what has already been proven successful and tested by the courts as such.

(3) NIST will need to determine to what degree each current SWG is successful in their implementation to determine if they should be brought over whole as a Guidance Group (GG). The metrics for such a decision should be based on the

individual SWG's deliverables to include documents pushed for standard development, relevant and timely technical expertise offered, court acceptance of the SWGs guidelines, and quality assurance guidance to their respective industries.

- b) Membership – practitioners actively engaged in the discipline must make the bulk of the GG structure. This includes international, federal, state and local law enforcement agencies, academia, as well as private organizations that use forensic processes.
- c) Topic identification/submission – The process to identify GG deliverables must be clearly stated and delivered to the GG's primary customers (practitioners and the agencies/companies for which they work). This process can be a combination from both member and external topic identifications; however, the reasoning behind which topics are chosen and prioritized must be made available to all.
- d) Funding – All GG's will require consistent funding for scheduled meetings and administrative expenses (contracted secretary for each SWG and website support). While some GG's may require less, it is recommended that a minimum of three (3) meetings per year be facilitated by NIST to include all travel expenses for all members. Many SWG's vary meeting locations, some hosted by a member or an associate. Any potential cost of the location or venue should be included in the expenses.

2) Function

- a) Deliverables – The submitting SWG's follow a standardized process in the creation of their work product. This process is efficient and it is recommended that the GG follow something similar. The process is as follows: After a topic is picked by the membership for development (based on the needs of the forensic community for that discipline), SWGs use meetings to work on the documents within specific committees, e.g. in SWGDE the forensic committee may work on a new operating system technical document while the Quality Assurance committee works on an error rate document. Once a draft is completed by the technical experts of the specific committee, it is discussed and edited within the general membership. After the general membership has voted to release the document as a draft for public comment, it is then circulated throughout the forensic community via publishing to the SWG website (as a draft) and other means, e.g. list serves, other forensic publications, etc. This public comment period

allows the entire community to have input thereby affecting buy-in. This ‘ownership’ provides for a more complete, representative position. When the comment period has ended, comments are evaluated per the SWG’s published by-laws, changes may be made, and if the document does not go through substantial change, it is released as final. This process works very well as long as the membership is allowed to work within the committee that focusses on their expertise and all members are given open access to all committee documents. This model is relatively close to that used by existing standards development organizations (SDOs), and should be recognized – and approved - as such by NIST. If certain details of this process need to be clarified or modified to meet the requirements of an SDO, the submitting SWGs are more than willing to discuss such modifications.

- b) Scope – The scope of work to be accomplished by all GGs should be directed at a very high level by NIST in order to allow for some consistency across all GGs/SWGs; however, it cannot be mandated at a document-specific level due to the variety of disciplines covered by the GGs, as well as the state of the science for each discipline. It may be possible for NIST to define types of documents that should be developed, such as “Evidence Recovery, Preservation and Handling” and “Reporting Results”, but finer requirements are unlikely to span all GGs.
- c) Enforceability – Guidance Groups are not responsible for enforcement of standards. Accreditation organizations, the legal system, and perhaps the NCFS would be more appropriate groups to address enforcement of GG-developed standards.

3) Process

- a) Meeting logistics – NIST should provide each GG with the administrative support necessary to communicate meeting logistics to all participants (as necessary), including arrangement of meeting space, lodging accommodations, and travel to and from meetings. Sufficient meeting space, a/v equipment and wireless internet must be provided for each GG to complete its work as planned. No single meeting space arrangement is likely to be satisfactory for all GGs, since some smaller ones will work as a single group, whereas others will split work between plenary and multiple committee meetings. NIST should also provide each GG with the ability to perform work through

on-line meetings, including both teleconference and Web-based online sharing capabilities. (Further detail is provided below.)

b) Voting – Issues involving officer positions, document readiness, etc. can become very contentious. Providing a thorough explanation in the GG by-laws will be a necessity. What must be protected is no one agency/company/organization should have an unfair advantage in the voting process merely because it has more representatives working on the GG than any other. Fairness across all representative communities must take priority. As such, the following sections are recommended:

- (1) Regular Member Agency Voting - Each agency represented among the Regular Membership shall have one vote through its designated voting delegate who should be a Regular Member. Member agencies shall identify their designated voting delegate to the Executive Secretary prior to the vote. If the Regular Member voting delegate cannot attend a meeting, then the voting delegate may proxy their vote to another representative from their agency that may or may not be a regular member.
- (2) Proxy Voting - In the event a designated voting delegate is unable to attend a scheduled meeting and is unable to send another representative of that agency, that individual may proxy his/her vote to any Regular Member in attendance. This proxy must be declared in writing to the Executive Secretary prior to the vote.
- (3) Appointed Voting Rights - The Executive Board may appoint voting rights to other relevant organizations/committees whose participation in discipline specific issues is important and valuable. In such cases, each organization/committee shall have one delegate vote only. Said delegate does not have to be a Regular Member, but must be a member in good standing with their sponsoring organization/committee. The participating organization must inform the Executive Secretary whom they have chosen to represent them. If a Regular Member has both an agency delegate vote and an appointed delegate vote, it is incumbent upon the member to vote in the manner according to whom they represent. The Executive Board has the right to withdraw any appointed rights as deemed necessary.

- c) Submission to external SDO's - NIST should make a command decision to either select an external SDO to which all GGs would be required to submit standards, or it should establish document preparation procedures that are consistent with known SDO procedures. The latter option requires that NIST define a specific document standard to which all GG documents must comply. Care must be taken to ensure that all potential documents for preparation have document templates available within the given SDO or NIST-defined standard, lest incompatibilities arise.
- d) Implementation - In order for any developed guidance to be of value, it must be supported with some level of required implementation. This does not necessarily mean forced implementation, but merely an element of required consideration. The way to accomplish this is to make the guidance a component of a standard, which may or may not be incorporated by accrediting bodies in their accreditation programs.

4) Organizational

- a) The roles and responsibilities of GG governing body should be as follows:
 - (1) Provide administrative support to the GGs in terms of meetings, secretarial support, and website support. The GG websites should be standardized.
 - (2) Provide clear direction regarding the types and nature of documents/standards that all GGs need to provide, including providing specific questions/or types of documents that all GGs must produce, in addition to their discipline specific documents.
 - (3) Define when a new GG is needed in order to address an emerging discipline.
(Further detail is provided below.)
- b) The roles and responsibilities of NIST should be as follows:
 - (1) Provide administrative support to operate GG Governing body and support individual GGs, including travel, meetings, and websites. Websites must NOT be subject to shutdown as part of the Federal Government, but must function at all times.
 - (2) Assign personnel to address technical issues and supply technical writers as requested.

Section 2 - Questions and answers

Structure of the Guidance Groups

QUESTION: Given the scope and principles of the Guidance Groups outlined here, what are structural models that could best support the Guidance Groups, taking into account the technical, policy, legal, and operational aspects of forensic science?

ANSWER: Strong leadership with specific detailed requirements will be necessary. From a “structural model” standpoint, there needs to be a Guidance Group (GG) oversight or executive board that directs the general function of all GGs, and can create ad hoc committees from GG members to address issues that affect all (or many) GGs. For example, there needs to be a consolidation of terminology across all pattern evidence (and other?) disciplines, to include the creation of a standard nomenclature for a conclusion scale. No single GG will create a standard that is acceptable to all, so there is a need to have a representative body create one. The oversight board could then mandate all GGs conform or, if they can argue for why they will not conform, explain how their scale relates to the GG standard.

For individual GGs to succeed, all of them will need comparable basic, sustained administrative support. This should include: (1) Travel funding for all members to attend regular meetings; (2) Website creation and full time website support for communication with those involved in the discipline; (3) Telecommunications support (e.g. “GoToMeeting” or “WebEx”) to enable GGs to meet in full or in part when not at a face-to-face meeting, as well as to conduct business on-line via such things as Wiki pages and the ability to utilize on-line voting infrastructure; and (4) Full time secretarial support to provide meeting logistical requirements, meeting minutes, support during the time between meetings and, most importantly, for technical document preparation, to include participation in meetings to create documents that conform to SDO guidelines.

Under the ‘Supplementary Information’ in the Notice, during discussion of the MOU and its requirement to establish the GGs, the following statement is made, “Guidance Groups do not report to DOJ or NIST.” The DME SWGs are concerned that this statement indicates a lack of clarity in roles and responsibilities. If there is no DOJ or NIST oversight, then does this indicate that neither NIST nor DOJ will determine the GG membership? The DME SWGs encourage NIST and DOJ (and any other relevant parties) to make a clear statement regarding oversight and responsibilities regarding the GGs at the earliest possible time.

QUESTION: What elements or models would facilitate the sharing of best practices and uniform practices across the Guidance Groups?

ANSWER: Create an Oversight or Executive Board that provides a common set of requirements for all GGs to address, e.g. by-laws, ethics, website content, etc. These common requirements should include having NIST identify a specific Standards Development Organization, or define an SDO-equivalent process, to which all GG products must conform and be routed.

QUESTION: Are there public policies or private sector initiatives in other countries that have successfully strengthened the nation's use of forensic science by supporting the development and propagation of forensic science consensus documentary standards, identifying needs of forensic science research and measurement standards, and verifying the scientific basis exists for each discipline? If so, what are they?

ANSWER: Yes, a fantastic model for reference is the European Network of Forensic Science Institutes (ENFSI). It's exactly what this effort proposes, but without the SDO portion. Instead they implement mutual agreements to participate and cooperate. While GGs deliverables should include standards production, ENFSI's level of cooperation, information exchange, consensus standards, proficiency test sharing, etc., is one of the best, if not the only, implemented forensic oversight processes for such a huge multi-jurisdictional/legal/community arena, done on a fully voluntary consensus based system. As it is a very successful organization, the DME SWG's learned to work closely with the international partners at ENSFI.

QUESTION: What are the elements which make existing forensic Scientific Working Groups (SWGs) successful? Are there examples of best practices in specific SWGs that ought to be replicated in Guidance Groups? If so, what are they?

ANSWER: SWGIT, FISWG, and SWGDE all have been very productive in their history due to strong leadership, consistent support for meetings, and dedicated members who recognize the importance of their work. Without consistent funding, regularly scheduled meetings, and strong leadership, nothing can get done. Showing no lack of motivation, these groups are regularly planning two or three documents ahead in their given disciplines. In addition, these groups have focused on having the practitioners lead the efforts and have not been distracted by

commercial entities or agency politics hijacking production. As each member is vetted through the application and meeting process before voted as a member, it is ensured that they are technically qualified to be a part of the group. This combined with the fact that membership and voting is by agency, as opposed to individual, the absence of particular individuals does not cause discussions and production to cease. Essentially, non-partisan consensus building work, showing no agency favoritism, all votes consisting of equal importance, drives a community product that is both timely and relevant.

QUESTION: Would partnership with a standards development organization (SDO) in which the standard is issued by the SDO present any obstacle for participation by a broad range of forensics science stakeholders in the development of a standard? If so, why?

ANSWER: Providing a GG with a mechanism for moving its products from consensus to standard is the preferred route; however, the first obstacle to working with an SDO for many agencies engaged in forensic science is the lack of funding to support membership fees or dues. If NIST provided member agencies with financial support to become members of these organizations, then participation could be guaranteed. The second obstacle is that the standard is not free to the forensic community or individual practitioners. This causes an undue burden on financially strapped practitioners who already pay membership dues to belong to forensic groups in their discipline. These facts also limit the audience viewing the documents. Many LEOs are not aware of what an SDO is or that standards in forensic science exist through an SDO. Outreach by the GG would have to be strong to raise awareness. A third obstacle will be choosing with which SDO to partner. NCFS/NIST will most likely have an issue with selecting any one SDO over another as the choice will ultimately provide financial benefit to the chosen SDO. Note - Selecting an SDO such as ANSI will provide the submission of a US based standard into the international realm as well since ANSI is a voting member of the ISO/IEC standards body (which in turn the reverse would be true – NCFS/NIST/GGs would be able to receive international updates and provide opinions).

QUESTION: Would partnership with an SDO in which the standard is issued by the SDO present any obstacle to broad adoption of a standard? If so, why?

ANSWER: Yes, it would be an obstacle because not all agencies who work in a given forensic field would be able or willing to pay for the standard. Only when required by accreditation or other oversight (e.g. state law) would many agencies feel compelled to use, and therefore purchase, the standard. Additionally, an agency/company doesn't typically implement a standard without an accrediting body to enforce that implementation. As there are not enough resources to provide for accreditation of all entities of the forensic community, the broad adoption of a standard is not possible. Without the funding behind it, there will not be a broad adoption. Furthermore, as evidenced by the recent disbanding of the Questioned Documents subcommittee of ASTM, some SDOs are incapable of overcoming the procedural roadblocks that determined individuals can create within the SDO process for certain forensic disciplines.

QUESTION: Would a fee-based membership model run through a not-for-profit organization (similar to the National Conference of Weights and Measures) present a significant obstacle for participation?

ANSWER: Yes, it would be an obstacle because not all agencies who work in a given forensic field would be able or willing to pay the dues or fees. Only when required by accreditation or other oversight (e.g. state law) would many agencies feel compelled to become members. The GGs should be comprised of the best chosen subject matter experts from their disciplines. The fee based membership will automatically result in exclusion of community members, which in turn will result in bias. A truly non-bias system must not be influenced by things such as financial resources. If the government is sincere in its effort to implement an open and truly representative system, then all required resources will be provided.

QUESTION: If the Guidance Groups followed a fee-based membership model, are there appropriately-tiered systems for fees that would prevent "pricing out" organizations, including individuals?

ANSWER: Requiring agencies to "pay to play" is the worst possible idea. Such a system would create a "haves versus have-nots" system in which only the most well-funded agencies would be setting the rules. This is not an appropriate way to create standards for disciplines that must be applied to tens of thousands of organizations within the United States. All international,

federal, state/local law enforcement and academia need to be equally brought to the table for a GG to be successful.

QUESTION: Other than a privatized model, are there other means to maintain a governance or coordinating body in the long term? If possible, please give examples of existing structures and their positive and negative attributes.

ANSWER: The SWGs have maintained coordinating bodies for over 15 years. Clearly the current structure and processes are successful. There is always room for improvement, but the wheel does not need to be reinvented.

Impact of Guidance Groups

QUESTION: Given that the Guidance Groups cannot mandate the adoption of standards, what can they do to best leverage their position and encourage adoption? To what extent does membership and transparency impact possible adoption of guidance at the state and local level?

ANSWER: Having the NCFS accept any GG standards will go a long way to having GG efforts recognized and adopted. Likewise, formal engagement with forensic science bodies such as AAFS and IAI and to have those bodies recognize the work of GGs would also promote their adoption. Inclusion of accreditation bodies, such as ASCLD-LAB, in the GG process would also be a mechanism for encouraging adoption – if practitioners cannot be accredited, then they may be incapable of working. Finally, engagement with the legal community – judges, prosecutors and defense attorneys – through regular meetings and training events at Judicial conferences, ABA meetings, NACDL meetings, and the National Advocacy Center in Columbia SC, would go a long way to educating court officials on the standards under development. NIST should include a significant effort as part of the GG system to have an outreach committee or board that consists of GG members or representatives. The outreach committee members should regularly engage with court officials, discipline specific groups for each SWG, and the law enforcement community (e.g. IACP) as a way of advertizing the standards, which will lead to their widespread adoption.

QUESTION: Are there best practices or models to consider with regard to a structure that would encourage effective communication with the scientific community to explore research gaps and aid in recognizing research priorities?

ANSWER: An oversight board should identify a set of high level “standards” to which all forensic disciplines would adhere. For example, DNA is recognized as the “gold standard” because of the existence of a statistical model that allows nearly unambiguous results to be determined. The oversight board, in conjunction with each GG, should set a standard for all forensic disciplines to define whether such statistical models are possible within their discipline. If they are possible, then they need to define the conditions under which such models can be developed. This would then provide the research community with guidance on what questions need to be answered for the given discipline. For those disciplines which do not lend themselves to an easily defined statistical model, there needs to be a clear definition of that as well as an explanation of what prevents the adoption of a model. That, too, will lead to the identification of research gaps. In some cases, the only statistical model that will be possible will be one of human performance in the given task, such as with the Latent Print Black Box test to establish error rates for latent fingerprint analysis.

All of the above comes back to the need for the GG Oversight Board to establish a set of “foundational questions” that every GG must answer up front before proceeding with other work.

QUESTION: How should NIST researchers engage with the Guidance Groups in support of the goal to strengthen the nation’s use of forensic science by supporting the development and propagation of forensic science consensus documentary standards, identifying needs of forensic science research and measurement standards, and verifying the scientific basis exists for each discipline?

ANSWER: The GG Oversight Board should establish a requirement for all GGs to address the statistical model issue discussed immediately above as well as require that all GGs identify a “living” document on “research gaps and needs.” This gap document would be revisited every two or three years by the GG. NIST researchers should be non-voting participants in given GGs to provide advice on these issues, but also to learn more about how forensic science operates in the real world.

Representation in the Guidance Groups

QUESTION: Who are the stakeholders who should be represented on the Guidance Groups? What steps can NIST take to ensure appropriately broad representation within the Guidance Groups? What does balanced representation mean and how can it be achieved?

ANSWER: Practitioners should hold the most sway in GGs. Laboratories and private practitioners with an established record within the field should be the ones involved. After all, they are the ones who will have to live with the outcomes. Academics will have a secondary role in that they can define the limits of current science and engineering, while also gaining insight into what areas should be subject of future research. Lawyers should not be included in GGs, because the GGs should only be concerned with technical capabilities and limitations of given forensic applications. In the event there are GG issues that require legal answers, then lawyers could be invited on an ad hoc basis, but not as permanent members. Commercial entities should not be involved in GGs because of the potential for undue influence in favor of their commercial products. The DME SWGs exclude commercial entities as members through the use of a disclaimer form.

QUESTION: What is the best way to engage organizations playing a role in forensic science, standards development and practice?

ANSWER: Give them a seat at the table. However, the seat must be given to the appropriate representative from within that agency.

QUESTION: How should interested parties who may not be direct participants in Guidance Groups, engage in a meaningful way to have an impact on issues in front of the Guidance Groups?

ANSWER: Use an SDO or and SDO-comparable process that allows for full engagement in document preparation. Also incorporate an “open door” segment of given GG meetings in which interested parties would be allowed to bring issues before the GG for consideration. Care would need to be taken to preclude commercial entities from using such a segment to sell products. As discussed previously, provide draft document publishing, and the advertising of such, to encourage public comment. This process, along with review and incorporation of those comments, before final publication of any recommendation (preferably external to SDO process

due to financial requirements) is paramount. The outreach board must play an important role: provide a venue for communication with the board; pound the pavement to get the word out for feedback.

QUESTION: To what extent and in what ways must the Federal government, as well as state, local, tribal and territorial governments be involved at the outset?

ANSWER: Efforts should be made to ensure that entities from all levels are included in relevant GGs. However, care must be taken to avoid mandating set percentages from all levels for all GGs. Not all disciplines are equally represented at all levels of government, due to a variety of factors, not the least of which is cost.

Scope of the Guidance Groups

QUESTION: Should all of the current forensic Scientific Working Groups (SWGs) transition to Guidance Groups?

ANSWER: Due to their established history with their disciplines, the quality assurance issues they have encountered, the voluminous standards and best practices that have been initiated by them, and their existing establishment within all relevant communities, productive SWGs should actually be utilized AS the GGs. To not do so only duplicates established efforts, wastes federal resources, and minimizes the ability to produce the best community driven results. If however this is unobtainable, and knowing that productive SWGs will continue their work regardless of a mirror image GG, at a minimum it is recommended that the related SWG's executive boards be invited as members of the related GG. At a minimum, this will ensure a handshaking effort between the two groups so as to not cause conflict and to promote a more effective 'path forward' implementation.

QUESTION: Are there broader groupings of forensic science disciplines that could form the basis of Guidance Groups than the current group of twenty-one SWGs? If so, what are those groupings?

ANSWER: It is possible that broader groupings could be made, for example “patterned evidence”. However, while broader groupings of disciplines could take place, ultimately breakdowns would have to occur in order for standards to be produced specific enough to be

valuable within a discipline. For example, grouping the three DME SWGs within one GG would be problematic as an imaging expert or an audio expert could not write a standard pertaining to a computer forensic process. Unfortunately, it is the nature of why so many disciplines have developed. As one person cannot be an expert across a broad range of disciplines, experts in each area are required for standards to be written in that area.

QUESTION: Is there a need for a cross-disciplinary functional approach (i.e. statistical analysis) and how could the Guidance Groups be structured to best address that need?

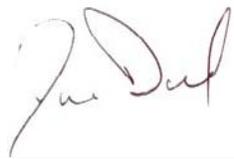
ANSWER: See the above discussions of a GG Oversight Board and ad hoc groups. The “statistics” question absolutely must be addressed by the GGs as a whole, but only from the stand point of defining guidelines (“standards”?) for how individual GGs should address statistical issues. That said, an excellent resource would be a separate “statistical analysis” group assigned to support the work of ALL GGs.

QUESTION: To what extent do Guidance Groups need to support different forensic science disciplines differently from one another?

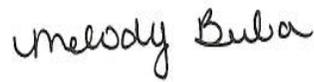
ANSWER: It is fundamental to the success of the GGs that differences be allowed. However, per discussion above, it is incumbent upon NIST or the GG Oversight Board to attempt to standardize forensic science across disciplines to the extent possible. The oversight board would do this by defining requirements for all GGs to meet and by establishing certain standard tasks that each GG must address. In addition, the creation of a standard nomenclature of conclusions should be the number one undertaking by the Oversight Board through an ad hoc committee formed by members from all of the GGs.

The Digital and Multimedia Evidence SWGs are thankful for NIST's Notice seeking input regarding the administration and support of forensic science Guidance Groups. It is our hope that the information provided will be of use to NIST and we would like to offer any future assistance we may provide in improving the quality of our country's forensic sciences.

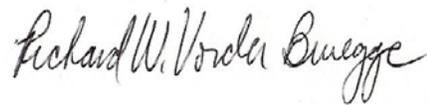
Sincerely,



James Darnell
Chair, SWGDE



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