

**Report on the
National Institute of Standards and
Technology
Standards in Trade Conference for the
Association of Southeast Asian Nations
(ASEAN) Economies**

**Conformity Assessment for the
Electrical and Electronics Sectors in the ASEAN Region**

March 24-27, 2014

National Institute of Standards and Technology
Gaithersburg, Maryland

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LIST OF ACRONYMS

AB	Accreditation body
ACCSQ	ASEAN Consultative Committee for Standards and Quality
APLAC	Asia Pacific Laboratory Accreditation Cooperation
ASEAN	Association of Southeast Asian Nations
CA	Conformity assessment
CAB	Conformity assessment body
CB	Certification body
IAF	International Accreditation Forum
IB	Inspection Body
IEC	International Electrotechnical Commission
IECEE	IEC System for Conformity testing and Certification of Electrotechnical Equipment and Components
IECQ	IEC Quality Assessment System for Electronic Components
IECEX	IEC System for Certification to Standards Relating to Equipment for Use in Explosive Atmospheres
ILAC	International Laboratory Accreditation Cooperation
IP	Intellectual property
ISO	International Organization for Standardization
MLA	Multilateral recognition agreement
MRA	Mutual recognition agreement
NEMA	National Electrical Manufacturers Association
NIST	National Institute of Standards and Technology
SDoC	Supplier's declaration of conformity
SIT	Standards in Trade
SMEs	Small and medium enterprises
TBT	WTO Agreement on Technical Barriers to Trade
WTO	World Trade Organization

1. INTRODUCTION

This report is a summary and overview of the National Institute of Standards and Technology (NIST) Standards in Trade (SIT) Conference for the Association of Southeast Asian Nations (ASEAN) economies, held at NIST in Gaithersburg, Maryland on March 24-27, 2014. The conference focused on Conformity Assessment for the Electrical and Electronics Sectors in the ASEAN region. It featured speakers from ASEAN member economies, U.S. government, U.S. industry and trade associations, and other stakeholders. Conference sessions included an introduction to the context of conformity assessment, a review of current conformity assessment practices in ASEAN and the U.S., tools and best practices for conformity assessment, and the challenges confronted by regulators and industry stakeholders in the implementation of conformity assessment requirements.

Meeting participants included a delegation of eight of the ten ASEAN member states (Cambodia, Indonesia, Lao, Malaysia, Myanmar, Thailand, the Philippines, and Vietnam), NIST experts and other government agency personnel (representing the Office of the U.S. Trade Representative, U.S. Department of Commerce/International Trade Administration, and the U.S. Consumer Product Safety Commission), manufacturing companies, testing laboratories, trade associations, among others. The list of ASEAN delegation members is in Section 1.1.; the list of Conference participants is in Appendix A. The ASEAN representatives were national delegates to the ASEAN Consultative Committee for Standards and Quality (ACCSQ) Working Group 2 on Conformity Assessment.

The conference opened with welcome and introductory statements from Gordon Gillerman, Chief of the Standards Coordination Office's Standards Services at NIST, and ASEAN delegation representative Mohd. Hamzaini bin Hashim, the Principal Assistant Director of Accreditation at the Department of Standards, Malaysia. This was followed by an overview of the conference and expectations from Renee Hancher, Office of Standards and Investment Policy, and Simon Kim, ASEAN Affairs, International Trade Administration at the U.S. Department of Commerce. ITA serves as the Dialogue Partner for the United States with the ACCSQ; ITA provided the original proposal to NIST for an SIT on the topic of conformity assessment for electrical and electronic products.

Mr. Gillerman noted how conformity assessment and standards can play an important role in facilitating trade and producing more productive economies and societies, and cited various examples. Mr. Hamzaini bin Hashim provided a welcome on behalf of ASEAN, and noted how the delegation was looking forward to learning about how the U.S. manages risk assessment, quality issues, market surveillance, and other aspects of conformity assessment.

Ms. Hancher and Mr. Kim noted how ASEAN member states and the United States are important trading partners; this conference would provide a way for the United States to learn more about current conformity assessment practices and what is being planned in the ASEAN region for the electrical and electronics sectors, for government and private sector conformity assessment experts to share their knowledge through presentations, and to facilitate dialogue between the U.S. and ASEAN.

The conference program was framed on four main sessions – conformity assessment context, conformity assessment for electrical and electronic products, international conformity assessment “tools” in the electrical and electronics sectors, and challenges in conformity assessment. Each of

these sessions is described in the following sections, which include a summary, details on conclusions and discussion topics, and a listing of the presentations. Full presentations are available online at this url:

<http://gsi.nist.gov/global/index.cfm/L1-4/L2-14/A-726>

1.1. ASEAN Delegation

Country	Representative	Title	Organization
Cambodia	Mr. Seng Chhang	Director	Cambodia Certification Department, Institute of Standards of Cambodia
Indonesia	Mr. Ewang Kurniawan	Head of Sub-division for Implementation Infrastructure	National Standardization Agency of Indonesia
Lao PDR	Mr. Souksavath Sihapanya	Director of Quality Management Center	Department of Standardization and Metrology, Lao
Malaysia	Mr. Mohd. Hamzaini bin Hashim	Principal Assistant Director of Accreditation	Department of Standards Malaysia
Myanmar	Mr. Win Khaing Moe	Director General	Myanmar Scientific and Technological Research Department, Ministry of Science and Technology
Thailand	Ms. Chanya Sutthajinda	Standards Officer	National Standardization Council, Thai Industrial Standards Institute
The Philippines	Mr. Ernani M. Dionisio	Officer in Charge	Philippines Accreditation Office
Vietnam	Mr. Hoang Linh Nguyen	Director of Conformity	Directorate for Standards, Metrology and Quality (STAMEQ)

2. SESSION: CONFORMITY ASSESSMENT CONTEXT

2.1. Summary

The session on conformity assessment context provided important background for the conference. The session opened with an overview of conformity assessment activities in ASEAN as a region and within each member country, followed by an introduction to the approach to conformity assessment in the United States.

Mr. Mohd. Hamzaini bin Hashim, the ASEAN representative from Malaysia, described the ASEAN approach to conformity assessment. Mr. Hamzaini bin Hashim described the ASEAN organization, including the different member states and cooperation structures, the organization's activities and goals, and a brief overview of current overall state of and future goals for conformity assessment in the region. He noted that through three key activities in standards and conformance – harmonization of standards, harmonization of regulatory regimes, and development of mutual recognition agreements (MRAs) – ASEAN hopes to reduce transaction costs and facilitate the free movement of goods for over 50% of intra-ASEAN trade.

Presentations on the national standards and conformity assessment infrastructure and practices in the individual ASEAN member states were given by country representatives. Mr. Hamazini bin Hashim presented on behalf of the two countries that were not present, Brunei Darussalam and Singapore. During the country presentations, the country representatives provided an overview of the relevant national authorities (national standards development organizations, national accreditation authorities, and national conformity assessment authorities), current regulations relating to electrical and electronic products, requirements and processes for conformity assessment service providers, current testing laboratories and certification bodies, participation in international electrical products standards development and conformity assessment, and national trends in electrical and electronic product safety and efficiency.

A luncheon presentation was given by Alison McGuigan of The Cohen Group. Ms. McGuigan presented an overview of key trends impacting global commerce and trade, with a focus on the position of the ASEAN region. Trends included increasing importance of ASEAN in world trade (survey results); increase in exports from ASEAN to China versus a decrease in exports to Japan; significant and growing contributions of ASEAN to worldwide GDP; and increasing direct foreign investments in ASEAN economies.

An overview of the U.S. approach to conformity assessment was presented by Gordon Gillerman of NIST. Mr. Gillerman defined the terminology used in conformity assessment, reviewed the different types of conformity assessment used in the U.S. (including supplier's declarations of conformity (SDoC), inspection, testing, certification, registration, and accreditation), and explained how conformity assessment works in practice in the U.S.

2.2. Key Themes

Engagement of Manufacturers and other Stakeholders: During the development of standards and conformity assessment requirements it is important to take into consideration the point of view of manufacturers (of industrial equipment, consumer products, and/or commercial products). Every manufacturing company is impacted by standards as well as testing requirements. The views and experiences of manufacturers can be valuable learning tools.

Laboratory Testing: Testing can be costly and time consuming for the manufacturer and having to test the same product multiple times can be a significant barrier to market entry. When a new generation of product is developed, there is a point in the product development cycle where the manufacturer will send a prototype to independent laboratories for testing. The manufacturer cannot continue to send prototypes to different locations as both the testing and prototypes are expensive. It would be most efficient to test once and have the results accepted everywhere, but there needs to be confidence in the test results so that all conformity assessment bodies use the results.

It would also be beneficial if the testing did not have to be done in country, but rather through an MRA or in the manufacturer's laboratory. ASEAN currently has listed certain laboratories under its Sectoral MRA on Electrical and Electronic Equipment, which are determined by the regulators. At this time there are no laboratories outside of ASEAN on this list. Under the framework of the current MRA, many ASEAN countries are able to accept testing certifications and product certifications from other ASEAN countries who are signatories to the MRA.

Product Labeling: It is costly to the manufacturer to affix the required labels and attestations (and often there is insufficient space on the product). Due to specific regulations that require specific labels/marks for individual countries, a product can be different only because of the required labels. ASEAN is planning on using one conformity mark (instead of eleven separate marks). A final decision on this will be made by the ACCSQ.

Awareness among Regulators of Conformity Assessment: There appears to be a lack of awareness among regulators on the appropriate application of conformity assessment in the regulatory context. One way to raise awareness is to continue to increase communication with regulators, especially through the ACCSQ product working groups (the membership of these groups is mostly regulators). It is also important for the ASEAN member states to improve coordination between the national standards body and the regulators within their individual countries in the development of regulations for electrical and electronic products.

Managing Versions of Standards: It is not uncommon for a country that has adopted an international standard to not adopt newer versions of the standard and to continue to reference the earlier version. This may be because testing services for the new requirements are not available. Vietnam noted that when a standard that is cited in their technical requirements is updated, they will review the new standard and determine if the conformity assessment bodies have the required testing capabilities.

Small and Medium Enterprises: The impact of standards and conformity assessment requirements on small and medium enterprises (SMEs) was a key theme. SMEs are the next wave of internationalization. These types of businesses often are not directly considered when government policies are created and implemented, even though they are equally affected by these policies and

regulations as are larger companies. It was noted that governments want to help SMEs and SMEs want support from the government, but often it is difficult to connect the two. Both the international community, as well as the private sector, can play a role in enabling SMEs.

Types of Required Conformity Assessment: A question was posed on how U.S. trade partners can determine product requirements and specifications for products sold in the U.S. It was noted that NIST is the official U.S. Inquiry Point for the World Trade Organization (WTO) Agreement on Technical Barriers to Trade (TBT). The Inquiry Point provides specific information on products. It was also noted that the type of conformity assessment will vary depending upon the product. Products used in the regulated workplace are required to be certified to specific safety standards by certification bodies, while consumer products may have specific government and/or marketplace requirements. For example, major retailers will not sell a consumer product that has a plug without certification. These requirements will be in technical regulations or laws themselves. Also, U.S. regulators receive and consider feedback from any stakeholder on laws before the regulations are final.

Risk Assessment and the Regulatory Process: A risk assessment is used to help determine the appropriate level of conformity assessment needed for a product.

2.3. Session Presentations

- **Conformity Assessment in the ASEAN Community**
 - *Presenter:* Mohd. Hamzaini bin Hashim, Principal Assistant Director of Accreditation, Department of Standards Malaysia
- **ASEAN Member Economies' National Standards and Conformity Assessment Infrastructure and Practices**
 - **Indonesia**
 - *Presenter:* Ewang Kurniawan, Head of Sub-division for Implementation Infrastructure, National Standardization Agency of Indonesia
 - **Malaysia**
 - *Presenter:* Mohd. Hamzaini bin Hashim, Principal Assistant Director of Accreditation, Department of Standards Malaysia
 - **Myanmar**
 - *Presenter:* Win Khaing Moe, Director General, Myanmar Scientific and Technological Research Dept., Ministry of Science and Technology
 - **The Philippines**
 - *Presenter:* Ernani M. Dionisio, Officer in Charge, Philippines Accreditation Office
 - **Thailand**
 - *Presenter:* Chanya Sutthajinda, Standards Officer, National Standardization Council, Thai Industrial Standards Institute
 - **Vietnam**
 - *Presenter:* Linh Hoang Nguyen, Director of Conformity, Directorate for Standards, Metrology and Quality (STAMEQ)
 - **Cambodia**
 - *Presenter:* Seng Chhang, Director, Cambodia Certification Dept., Institute of Standards of Cambodia

- **Laos**
 - *Presenter:* Souksavath Sihapanya, Director of Quality Management Center, Department of Standardization and Metrology, Laos
- **Brunei Darussalam**
 - *Presenter:* Since this country was not in attendance, this was presented by Mohd. Hamzaini bin Hashim, Principal Assistant Director of Accreditation, Department of Standards Malaysia
- **Singapore**
 - *Presenter:* Since this country was not in attendance, this was presented by Mohd. Hamzaini bin Hashim, Principal Assistant Director of Accreditation, Department of Standards Malaysia
- **Trends in Global Commerce**
 - *Presenter:* Alison McGuigan, Vice President, The Cohen Group
- **U.S. Approach to Conformity Assessment**
 - *Presenter:* Gordon Gillerman, Chief, Standards Coordination Office, Standards Services, NIST

3. SESSION: CONFORMITY ASSESSMENT FOR ELECTRICAL AND ELECTRONIC PRODUCTS

3.1. Summary

The session on conformity assessment for electrical and electronic products covered the issues and challenges currently faced by the ASEAN countries, an overview of the standards activities of the International Electrotechnical Commission (IEC) in the region, and a thorough review of the U.S.'s various approaches to conformity assessment for electrical and electronic products through a series of presentations from testing laboratory and organization representatives. This last group of presenters reviewed how the testing infrastructure, self-declarations, electrical inspections, and product surveillance are used in the U.S. conformity assessment approach.

The session began with an overview of the numerous issues and challenges for conformity assessment that ASEAN as a whole currently faces, presented by Mr. Hamzaini bin Hashim. Some key points include that some issues and challenges are more applicable to only one or two member states, while others are applicable to the whole ASEAN region. Additional helpful information, not directly included in the presentation, is detailed below:

- For some ASEAN member states, there are no national conformity assessment and accreditation and/or accreditation bodies in place. As a result, there are gaps in the levels of competency in conformity assessment among the ASEAN member states – certain member states are more advanced than others.
- There are numerous challenges regarding the relationships between regulators and stakeholders. An accreditation body must have a good relationship with the various regulators and stakeholders in order to help make conformity assessment mandatory and to have it be accepted by companies or conformity assessment bodies. Some regulators may be protective about conformity assessment, and may not have confidence in other parties

outside their nation. Influencing regulators to include conformity assessment in their regulations can be attempted by working with the eight ACCSQ working groups specifically for products, where regulators are the main working group members.

- A third main challenge in the ASEAN region is related to lack of monetary, human, and infrastructure resources. Some member states are lacking the expertise or level of competency for accreditation or laboratory testing personnel and also lack the proper infrastructure for conformity assessment and the funds to establish that infrastructure (e.g., they have no in-country accredited laboratories or national accreditation bodies).
- ASEAN is currently establishing an overall policy on accreditation and conformity assessment. One key strategy is to have this policy established in 2014. Strategies for engaging stakeholders will include: being involved in meetings for the product working groups; increasing regulator awareness and understanding of conformity assessment; and helping the regulators within each specific ASEAN member state understand the role and benefits of accreditation and conformity assessment systems.

Dennis Chew of the IEC Asia-Pacific Regional-Centre provided an overview of electrotechnical standards in the ASEAN region from the perspective of IEC. Mr. Chew noted that standards in general (and IEC standards in particular) facilitate both the interoperability and acceptance of products. Because the ASEAN member states are members or affiliates of IEC and have access to IEC standards, they can consider how they might harmonize using these standards. Also, ASEAN is now moving towards using the same conformity assessment regime, where regulations can be aligned. Once there is a harmonized regulatory regime in place, this can possibly lead to the use of one standard, one test, and one certification, similar to what is done in the European Union. Not every country will regulate every product, but the products being regulated would be based on each country's needs and requirements. IEC is well involved in the region, and working closely with both the industry and regulators, while also providing training sessions.

The session ended with an overview of the U.S. conformity assessment approach. This included presentations from five U.S. speakers representing testing laboratories and various organizations. These speakers provided a thorough summary on U.S. conformity assessment in general, the U.S. testing infrastructure, and how self-declarations, electrical inspections, and product surveillance are used as various parts of conformity assessment. Included in these presentations were views on the various aspects of issues, challenges, and lessons learned for the U.S. approach to conformity assessment and a description of how it reached the current conformity assessment situation.

3.2. Key Themes

Industry as a Key Stakeholder: The importance of engaging industry as a stakeholder in the development of conformity assessment requirements emerged again as an important theme. Industry is directly impacted by these regulations. Current stakeholders in ASEAN are primarily government representatives and regulators; normally the voice of industry is channeled indirectly through the regulators. Each member state has different ways of engaging their regulators, and some member states are learning from others on the best ways to do so. It was noted that the ASEAN delegation thought it was a good idea and would consider having an initiative to have more direct industry engagement in the future. Global manufacturers particularly can provide helpful feedback and beneficial insights in terms of developing regulations that are effective, not overly constraining, and can aid product development and improve trade.

Collaborating and Sharing Capacity: Capacity between ASEAN member states and outside of ASEAN could provide great value in those situations where a member state does not have an accreditation body. It was also pointed out that sharing of capacity and/or resources between member states, even in situations where a national accreditation body is in place, may be necessary when dealing with highly specialized areas or products.

Reviewing the U.S. Approach to Conformity Assessment: Specific topic areas during the presentations on U.S. conformity assessment included consideration of market access, market acceptance, market surveillance, proximity of laboratories to manufacturers, avoiding creating barriers for manufacturers, and creating a transparent, worldwide process. It was suggested that ASEAN member nations should learn from the U.S. experience with conformity assessment, but not necessarily repeat it. For example, the U.S. experience resulted in the creation of many laboratories, but this does not mean that ASEAN should establish many laboratories. Rather, ASEAN can learn from what the U.S. has done so far and ensure that the barriers that exist today are not recreated for manufacturers in the global marketplace.

Testing Laboratory Considerations: It was noted that testing laboratories need to have access to qualified personnel that are able to travel wherever inspections may need to take place. While it can be important for manufacturers to be in close proximity to testing laboratories for convenience and to reduce costs, these factors can be alleviated if there is the ability to share and accept test results. This was a recurring theme. The best situation would be to have one test that is accepted everywhere through the use of a transparent, worldwide process.

Marketplace Effects on Conformity Assessment: It is important to consider the effect of market access and acceptance requirements on conformity assessment for products. In the United States, for example, workplace owners are required to use certified products. In the marketplace, however, many supply chains have their own demands for demonstrations of conformity.

3.3. Session Presentations

- **Issues and Challenges in the ASEAN Region**
 - *Presenter:* Mohd. Hamzaini bin Hashim, Principal Assistant Director of Accreditation, Department of Standards Malaysia
- **IEC Perspective on Electrotechnical Standards in the ASEAN Region**
 - *Presenter:* Dennis Chew, Regional Director, IEC Asia-Pacific Regional Centre
- **Overview of Conformity Assessment for Electrical and Electronic Products**
 - *Presenter:* Jim Pierce, Technical Director of Certification, Intertek Commercial and Electrical
- **The U.S. Testing Infrastructure**
 - *Presenter:* Mike Violette, President, Washington Laboratories, Ltd. and Board Member of the American Council of Independent Laboratories (ACIL)
- **The Role of Self-Declarations in Conformity Assessment**
 - *Presenter:* Brian Scarpelli, Senior Manager, Government Affairs, Telecommunications Industry Association (TIA)

- **Electrical Inspections**
 - *Presenter:* Mark W. Early, Chief Electrical Engineer, National Fire Protection Association (NFPA)
- **Product Surveillance**
 - *Presenter:* Bob Pollock, Director, Market Surveillance, Underwriters Laboratories (UL)

4. INTERNATIONAL CONFORMITY ASSESSMENT “TOOLS” IN THE ELECTRICAL AND ELECTRONICS SECTORS

4.1. Summary

This session included a presentation on the World Trade Organization (WTO) Agreement on Technical Barriers to Trade (TBT) and its relationship to conformity assessment, followed by three presentations on best practices to support conformity assessment from the point of view of different entities – a testing laboratory, an industry organization, and a manufacturing company. The session closed with an overview of accreditation.

Examples of tools that support best practices include the WTO Technical Barriers to Trade Agreement, the IEC System for Conformity testing and Certification of Electrotechnical Equipment and Components (IECEE) Certification Body (CB) Scheme, risk assessment, use of MRAs or multilateral recognition agreements (MLAs), and post-market surveillance, among others.

Jennifer Stradtman of the Office of the U.S. Trade Representative began the session with a presentation on the WTO TBT Agreement, including the requirements for members regarding conformity assessment, an overview of the current activities supporting TBT agreement implementation in the ASEAN region, and some emerging trends and issues related to WTO. Stradtman stressed that in order to reduce complications in industry and trade, WTO members should use the TBT principles to inform other members with as much information as possible and allow sufficient time for implementation regarding new policies and regulations. In addition, Ms. Stradtman posed numerous questions related to the proposed ASEAN conformity mark/label that is under development, including: when and how the WTO will be informed about the mark, whether it would be compliant under the upcoming Trans Pacific Partnership, and how the U.S. stakeholders might be informed or educated about the mark.

The remainder of the session focused on best practices to support conformity assessment from the perspective of the testing laboratory, an industry organization, and a manufacturer. Each presentation showed how the approach to overall conformity assessment must be balanced, and that different types of conformity assessment mechanisms can be used for different types of products and will tend to vary depending on a country’s specific situation. In conclusion, it was noted that a combination of best practices can be used to provide benefits that one best practice alone may not achieve.

Steve Margis of Underwriters Laboratories reviewed the elements of a balanced approach to conformity assessment which includes the use of consensus standards, pre-market assessment and

certification, ongoing factory surveillance, and post-market surveillance. Key themes included the importance of considering market requirements and different market interests to help ensure market access and acceptance, focusing on technical requirements in addition to market requirements, ensuring intellectual property protections, and utilizing science-based risk assessments for conformity assessment. A diagram on transportable conformity assessment was also reviewed, which aligned with the theme of having one test that is accepted around the world. Margis noted that in his view the marketplace seeks solutions that are transportable in nature and allow for the results of one activity of conformity assessment to be leveraged against a variety of global regulations and market requirements. This ensures national sovereignty and market requirements are still honored but allows conformity assessment providers to optimize the use of the results developed through recognized international systems, such as the IECEE or IECEX, and/or by complying with requirements of various schemes via national treatment provisions.

The next presentation on conformity assessment best practices was provided by Joel Solis of the National Electrical Manufacturers Association (NEMA). During the Mr. Solis provided an introduction to and overview of NEMA, reviewed the electrical safety system model (which uses a combination of installation codes, inspection and enforcement, and product standards and certification to ensure safe products and installations) and the role of NEMA in each area. Solis also discussed NEMA's involvement in IEC, and addressed the acceptance of the IEC System for Certification to Standards Relating to Equipment for Use in Explosive Atmospheres (IECEX) by various U.S. organizations.

David Ling of Hewlett Packard described the manufacturer's view on best practices as conformity assessment tools. It was noted that industry is a key stakeholder in the conformity assessment programs and can be a valuable asset for ASEAN to leverage in the conformity assessment process by providing experience and knowledge. Stressing that determining the level of conformity assessment can be a balancing act, Mr. Ling reviewed best practices. These included the WTO TBT agreement, good regulatory practice, being able to accept conformity assessment results from other countries and avoid retesting, and best practices related to different subject matter domains such as information technology equipment safety conformity assessment. Ling also noted some possible problems that should be avoided, and described how the Information Technology Industry Council (ITIC) could help ASEAN in reviewing and providing input to conformity assessment programs.

The session on conformity assessment tools ended with a presentation from Peter Unger, President of the American Association for Laboratory Accreditation (A2LA), on the use of accreditation as a conformity assessment tool in the electrical and electronics sectors. This included a review of the International Laboratory Accreditation Cooperation (ILAC) and the International Accreditation Forum (IAF). As noted by Mr. Unger, accreditation bodies (ABs) are not conformity assessment bodies (CABs); instead, an AB provides recognition of the competence of a CAB to perform specific tasks. A principal goal of ILAC, which covers laboratory and inspection body accreditation, is to achieve "one test that will be accepted anywhere." A goal of IAF, which covers accreditation of certification bodies, is to have accreditation that will be accepted anywhere. IAF and ILAC members are committed to utilizing harmonized approaches and aiming to equalize reliability, while helping economies develop an accreditation infrastructure. These organizations have arrangements based on existing multilateral agreements and mutual recognition agreements, where participating signatories must recognize accreditations and results from other signatories as if their own. These arrangements aim to ensure there is confidence that the results of the accreditations are equivalent. Related

standards for IAF and ILAC include ISO/IEC 17011 (requirements for accreditation bodies), ISO/IEC 17020 (criteria for inspection bodies), ISO/IEC 17065 (requirements for certification bodies), and ISO 17025 (requirements for test and calibration laboratories).

4.2. Key Themes

WTO TBT and Regional Conformity Assessment: Some organizations that offer regional conformity assessment schemes wish to be recognized as observers in the WTO but to date have not been successful. It was noted that being an observer in the WTO has no bearing on acceptance of regional schemes. However, the emergence of regional conformity assessment schemes will certainly be discussed by the WTO in the future.

Involving Manufacturers: It was recommended that all interested stakeholders, including manufacturers, should be included when developing standards and requirements for conformity assessment. Manufacturers are impacted by standards and requirements; they care about the outcomes and should be allowed to participate in the development of conformity assessment programs. Representatives from industry can provide expertise related to domain-specific issues and can work with domestic companies.

Avoiding Overly Stringent Regulations: When regulators are developing a regulatory scheme, they may do so based on complaints about less reliable and lower quality manufacturers and use this as a justification for adding stringent requirements. It was suggested that regulators define sensible requirements and use post-market surveillance to target the problem manufacturers. Whether using SDoCs or 3rd party certification, post-market surveillance is necessary. As a product matures and manufacturers make modifications and changes to it, regulators need to make sure that the product complies with requirements or regulations.

Leveraging Existing Resources: It would be beneficial for countries to leverage competent laboratories that are already in place in order to reduce redundant testing, calibration testing, and certification requirements. Increasing efficiency and making monitoring more effective is essential.

Labeling: Product labelling is an ongoing concern. Manufacturers would likely have an interest in an e-label for a universal mark. Industry stakeholders offered to share knowledge with ASEAN related to e-labeling, including providing information on problems that had been overcome in other regions.

4.3. Session Presentations

- **Applying WTO Obligations**
 - *Presenter:* Jennifer Stradtman, Director, Technical Barriers to Trade, Office of the U.S. Trade Representative
- **Best Practices Supporting Conformity Assessment**
 - *Presenter:* Steven Margis, Vice Chairman of the U.S. National Committee to the IECEE and Director of Certification Programs and Accreditation, UL (Underwriters Laboratories)
- **Best Practices Supporting Conformity Assessment – focus on IEC**

- *Presenter:* Joel Solis, Secretary, U.S. National Committee to the IECEx and Conformity Assessment Manager, National Electrical Manufacturers Association (NEMA)
- **Best Practices Supporting Conformity Assessment**
 - *Presenter:* David Ling, Product Regulation Strategist, Worldwide Technical Regulations, Hewlett-Packard Company
- **Accreditation – Facilitating Global Trade**
 - *Presenter:* Peter Unger, President, American Association for Laboratory Accreditation (A2LA) and Chair, International Laboratory Accreditation Cooperation (ILAC)

5. SESSION: CHALLENGES IN CONFORMITY ASSESSMENT

5.1. Summary

The final session of the conference focused on challenges and implementation issues impacting conformity assessment. Included in this session were two presentations on counterfeit products and intellectual property (IP) rights issues, followed by a presentation on conformity assessment recommendations from an electrical manufacturer’s perspective. To close this session a panel of experts and the audience shared insights on conformity assessment implementation issues.

Dr. Yaw S. Obeng of the Center for Nanoelectronics Device Reliability at NIST and Jose “Bobby” Silva of the National Intellectual Property Rights (IPR) Center gave their views and experience during this session on the challenges of dealing with counterfeit products and intellectual property rights, respectively.

Dr. Obeng provided an overview of how to begin understanding counterfeits, especially when thinking in terms of conformance. He stressed that there are many opportunities for stakeholders to work together, and they must think creatively, innovatively, and collectively to help move towards a solution. ISO Technical Committee 247 (Fraud countermeasures and controls) is developing standards in this area, as are the SAE International, and the IEC Quality Assessment System for Electronic Components (IECQ).

Mr. Silva presented an overview of the United States IPR Center and the IP rights issues it focuses on. One of the important aspects of the IPR Center is that it is a group of government partners working together and with industry to fight counterfeiting and protect intellectual property rights. A wide range of products and industries are affected by counterfeits, including the pharmaceutical industry, airbags, seatbelts, missiles, computer parts. Silva noted that it is important to catch counterfeiters and prevent the products from being sold not only because these products can be unsafe and dangerous, but also because counterfeiters are linked to other areas of crime, such as human trafficking, narcotics sales, weapons smuggling, etc.

Stephen Irving of Lutron Electronics, shared with the group his view on strategies for conformity assessment programs to encourage world-class products.

Irving provided seven important recommendations:

- define a clear and public scope for conformity assessment programs
- use regional and international standards
- keep standards up to date
- harmonize the radio frequency spectrum
- establish a reasonable fee structure
- leverage existing product approvals; carefully consider the need for factory inspections and repeated in-country testing
- educate and enforce conformity assessment requirements.

The Conference concluded with a panel discussion focused on implementation issues, including market surveillance, testing infrastructure, intellectual property rights issues, and administrative challenges. The ASEAN participants were encouraged to leverage the international expertise present at the conference (including manufacturers with experience with conformity assessment challenges) that can assist in different areas.

5.2. Key Themes

Conformity Assessment for Spare Parts vs. New Products: Conformity assessment and spare parts is a common problem in the information technology industry. When parts are not individually certified and are shipped individually as spares they are often stopped in customs and are questioned. This can be an obstacle for manufacturers, because customers may not be happy if they cannot get spare parts. How to deal with spare parts (especially for older products) is often an afterthought. It was suggested that offering an exemption for spare parts might be considered.

Initial Factory Inspections: Two manufacturers described situations where new factories were built but had to remain idle due to delays in initial factory inspections. Products could not be released or shipped without these factory inspections.

Improved Communications: Better communications will benefit the regulators, manufacturers, and end users. Manufacturers face many challenges when they are selling products in multiple markets. Manufacturers must plan two to three years in advance to ensure that a product is approved by all countries. For example, a product may be accepted by a country, but imports/customs may want to test it again. Therefore, individual governments and regions should try to ensure that they have a harmonized system and that there is close communication between all the government agencies that may be involved with products. Each agency should have a clear understanding of regulatory requirements. Transparency about the rules and an appeals process is also important. This information should be accessible on the internet.

Global Scale of Conformity Assessment: Conformity Assessment is a global activity and requirements should be available in multiple languages so global manufacturers can understand them and address them. It was noted that researching standards, certifications, and conformity assessment is an ongoing challenge.

Timeliness and New Requirements: It is important to set reasonable effective dates for regulations. A governments may consider six months to one year to be reasonable; however, in the view of a manufacturer, three to five years is considered to be reasonable and necessary.

Common Terminology: When dealing with conformity assessment on a global scale, it is critical to have clear definitions of terminology. Terms such as surveillance, initial inspection, and the difference between a base product and a modification should be clearly defined.

5.3. Session Presentations

- **Current Counterfeit Parts Response**
 - *Presenter:* Dr. Yaw Obeng, Senior Scientist, Semiconductor and Dimensional Metrology Division, Center for Nanoelectronics Device Reliability
- **Intellectual Property Rights Issues**
 - *Presenter:* Jose “Bobby” Silva, Program Manager, National Intellectual Property Rights (IPR) Center
- **Strategies for Conformity Assessment Program to Encourage World-Class Products**
 - *Presenter:* Stephen Irving, Senior Standards Engineer, Lutron Electronics Company, Inc.

6. FINAL GROUP DISCUSSION AND WRAP UP

6.1. Conclusions

The conference ended with a wrap-up discussion, reviewing the topics that were discussed and suggested future actions planned by the group. It was noted that ASEAN will have a lot to consider from the conference discussions regarding both schemes and conformity assessment systems, especially when establishing a conformity assessment mark. There are many systems already in place, such as the International Accreditation Forum (IAF), Asia Pacific Laboratory Accreditation Cooperation (APLAC), IECEE CB Scheme, multilateral recognition agreements, and others that ASEAN can learn from. It will be important for the participants at this conference to work together as partners to advance conformity assessment in the electrical and electronics sector in the ASEAN region and facilitate trade between the U.S. and ASEAN.

ASEAN representatives expressed the desire for support training activities and assistance in establishing an accreditation infrastructure. Training topics include: ISO/IEC 17050 (requirements for supporting SDoC), in particular for ACCSQ working groups 1 and 2; product awareness training for the regulators in the ACCSQ; and training on ISO/IEC 17050 for manufacturers both within and outside of ASEAN.

For ASEAN, the use of conformity assessment largely depends on acceptance by regulators. ASEAN participants expressed an interest in learning more from the United States on how to implement post-market surveillance mechanisms and how regulators can learn to use risk assessment analysis to help determine which products should be regulated. If U.S. regulators would be able to share their knowledge and experience on conformity assessment, risk assessment, and requirements with ASEAN regulators, then they could better understand these best practices and use them in developing future policies and regulations.

It would be beneficial for both the U.S. and ASEAN member states to better understand conformity assessment policy and requirements for specific products. This could involve establishing resources

(such as a book) with all of this information in one place where industry in the U.S. and ASEAN could find all needed information on products. If industry understands what it needs to do in terms of meeting requirements and standards for products, the availability and accessibility of products should be greater for consumers. A website is being developed by ASEAN that will enable each country's regulators to list regulated products. This website will also contain information on the harmonization of standards and regulations related to MRAs that are being established for the ACCSQ product working groups. Cambodia noted that they would specifically like to learn more about how the U.S. has worked with Canada and Mexico in order to harmonize standards, regulations, and other activities.

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APPENDIX B. PRESENTATIONS

A list of presentation titles and presenters, in order presented and in order of appearance is provided below. All presentations are available online at this url:

<http://gsi.nist.gov/global/index.cfm/L1-4/L2-14/A-726>

- **Conformity Assessment in the ASEAN Community** - *Mohd. Hamzaini bin Hashim*
- **Presentations on ASEAN member economies' national standards and conformity assessment infrastructure and practices**
 - **Indonesia** - *Ewang Kurniawan*
 - **Malaysia** - *Mohd. Hamzaini bin Hashim*
 - **Myanmar** - *Win Khaing Moe*
 - **The Philippines** - *Ernani M. Dionisio*
 - **Thailand** - *Chanya Sutthajinda*
 - **Vietnam** - *Linh Hoang Nguyen*
 - **Cambodia** - *Seng Chhang*
 - **Lao** - *Souksavath Sihapanya*
 - **Brunei Darussalam** - *Mohd. Hamzaini bin Hashim*
 - **Singapore** - *Mohd. Hamzaini bin Hashim*
- **Trends in Global Commerce** - *Alison McGuigan*
- **U.S. Approach to Conformity Assessment** - *Gordon Gillerman*
- **Issues and Challenges in the ASEAN Region** - *Mohd. Hamzaini bin Hashim*
- **IEC Perspective on Electrotechnical Standards in the ASEAN Region** - *Dennis Chew*
- **Overview of Conformity Assessment for Electrical and Electronic Products** - *Jim Pierce*
- **The U.S. Testing Infrastructure** - *Mike Violette*
- **The Role of Self-Declarations in Conformity Assessment** - *Brian Scarpelli*
- **Electrical Inspections** - *Mark W. Early*
- **Product Surveillance** - *Bob Pollock*
- **Applying WTO Obligations** - *Jennifer Stradtman*
- **Best Practices Supporting Conformity Assessment** - *Steven Margis*
- **Best Practices Supporting Conformity Assessment – focus on IEC** - *Joel Solis*
- **Best Practices Supporting Conformity Assessment** - *David Ling*
- **Accreditation – Facilitating Global Trade** - *Peter Unger*
- **Current Counterfeit Parts Response** - *Dr. Yaw Obeng*
- **Intellectual Property Rights Issues** - *Jose “Bobby” Silva*
- **Strategies for Conformity Assessment Program to Encourage World-Class Products** - *Stephen Irving*