



Australian Government  
Department of Industry,  
Innovation and Science

National Measurement Institute

## ***CER-ASEAN Integration Partnership Forum***

**CER-ASEAN participation in global  
frameworks for international recognition and  
harmonisation of **measurement****

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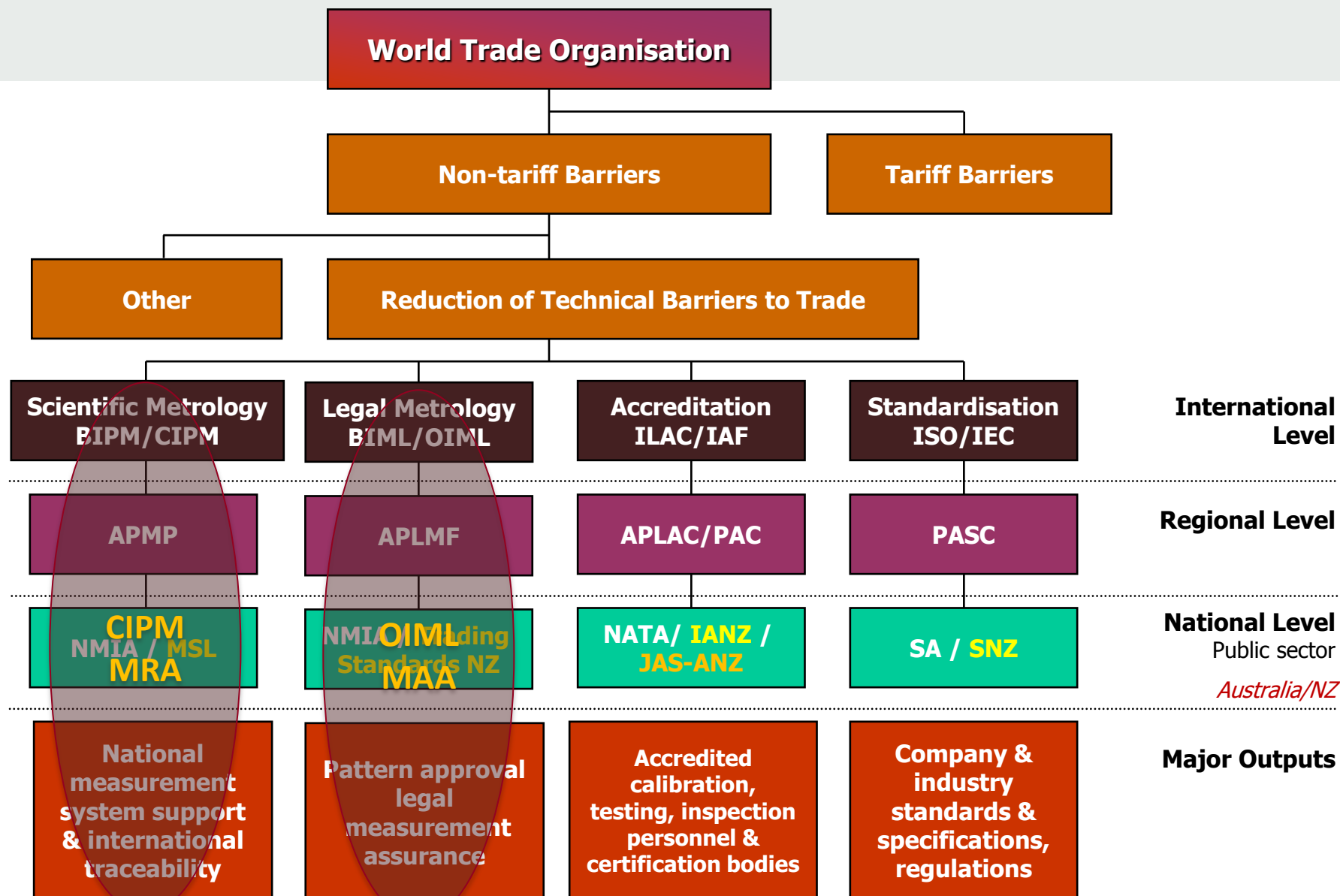
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A/g General Manager, Legal Metrology

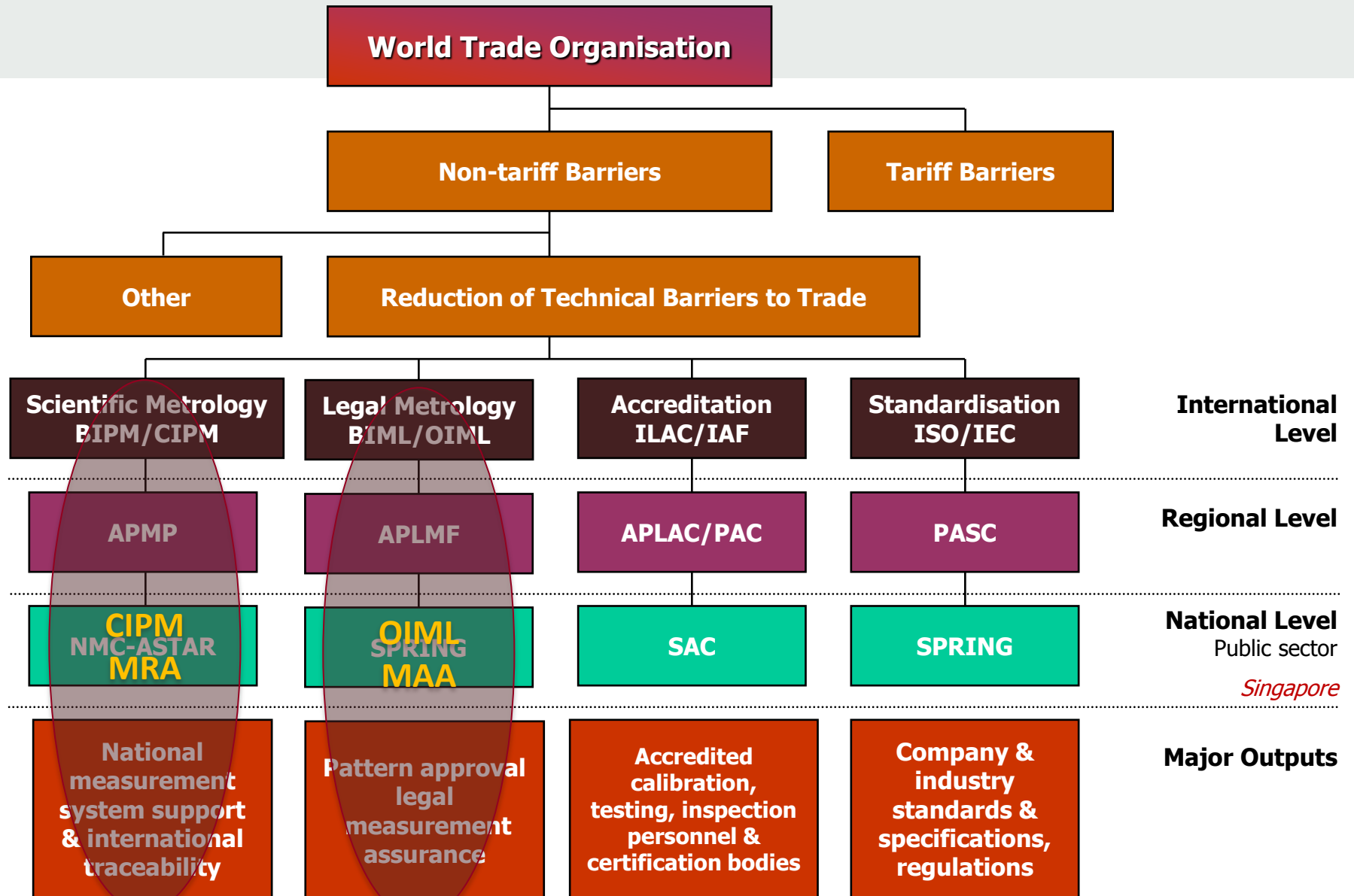
National Measurement Institute, Australia (NMIA)

*15 March 2016*

# International Standards and Conformance Infrastructure



# International Standards and Conformance Infrastructure



# Why measurement?

An effective **standards and conformance** infrastructure underpins almost all aspects of modern life, including fostering **innovation** and facilitating **trade**



Safety

Transport

Resources

Environment

Health

Services

Trade

Energy

Forensics

Food & Agriculture

Manufacturing

Building and Construction

# Metrology and trade

## WTO – TBT Agreement, Article 6: Recognition of Conformity Assessment by Central Government Bodies – Article 6.1.1:

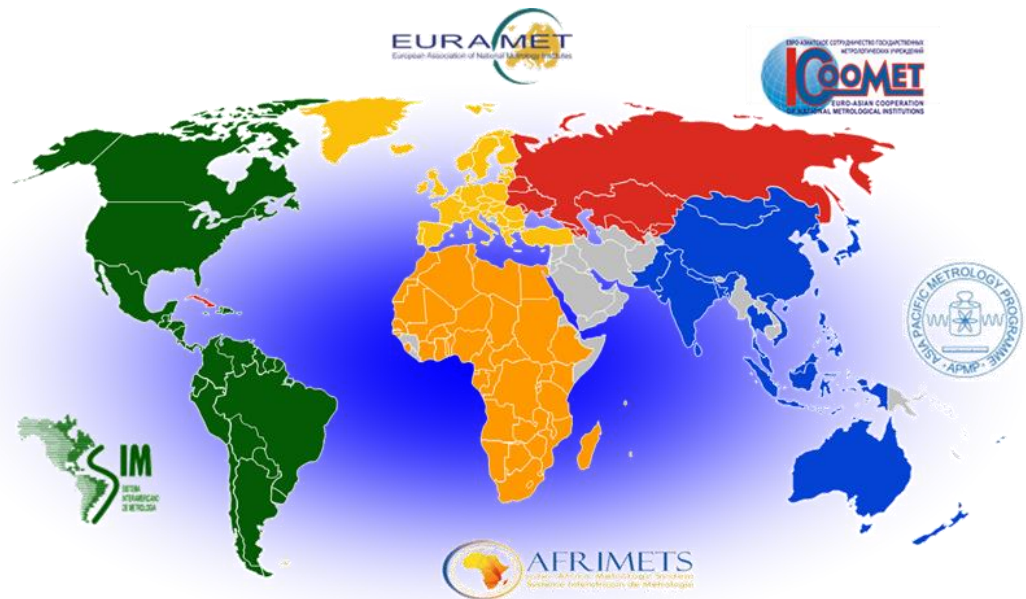
*"adequate and enduring **technical competence** of the relevant conformity assessment bodies in the exporting Member, so that **confidence** in the continued reliability of their conformity assessment results can exist; in this regard, verified compliance, for instance through **accreditation**, with relevant **guides** or **recommendations** issued **by international standardizing bodies** shall be taken into account as an indication of adequate technical competence;"*

Regulators rely on the underpinning metrology base in calling on the use of international standards & accreditation.

# THE CIPM Mutual Recognition Arrangement (CIPM MRA)

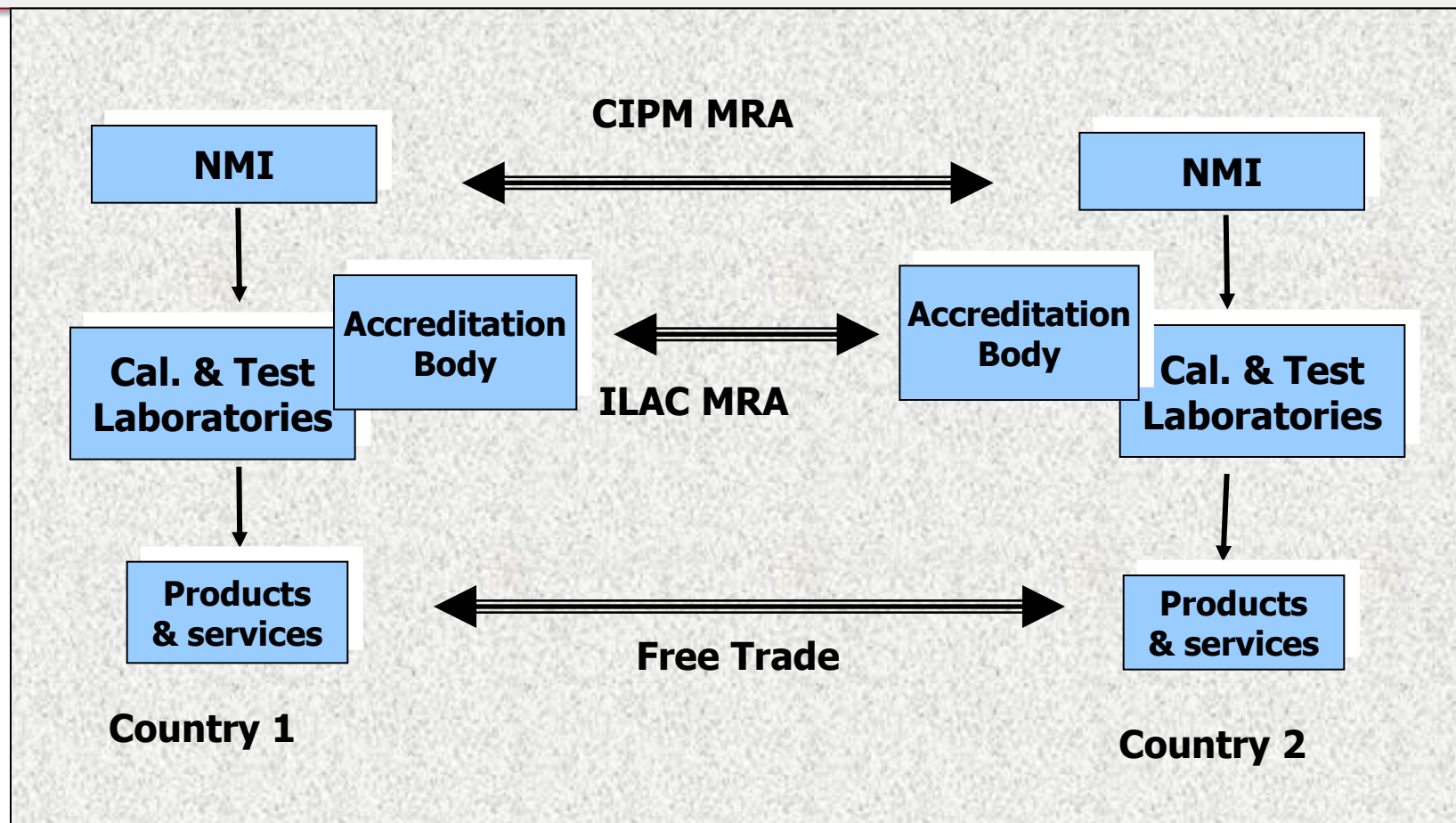
Established in 1999 in support of world trade to provide the technical basis for acceptance of national measurement standards and calibration and measurement certificates of National Metrology Institutes (NMIs):

- to provide greater confidence in, and knowledge of, the measurement capabilities of NMIs, particularly for the regulatory and accreditation communities;
- to **provide international recognition of** and to improve the realisation of national standards by NMIs;
- to **reduce TBTs** caused by lack of traceability and equivalence - “equivalent” calibration certificates accepted world-wide.





# RELATIONSHIP BETWEEN CIPM AND ILAC MRAs



Inclusion in 2013 ILAC Policy on the Traceability of Measurement Results (P10):

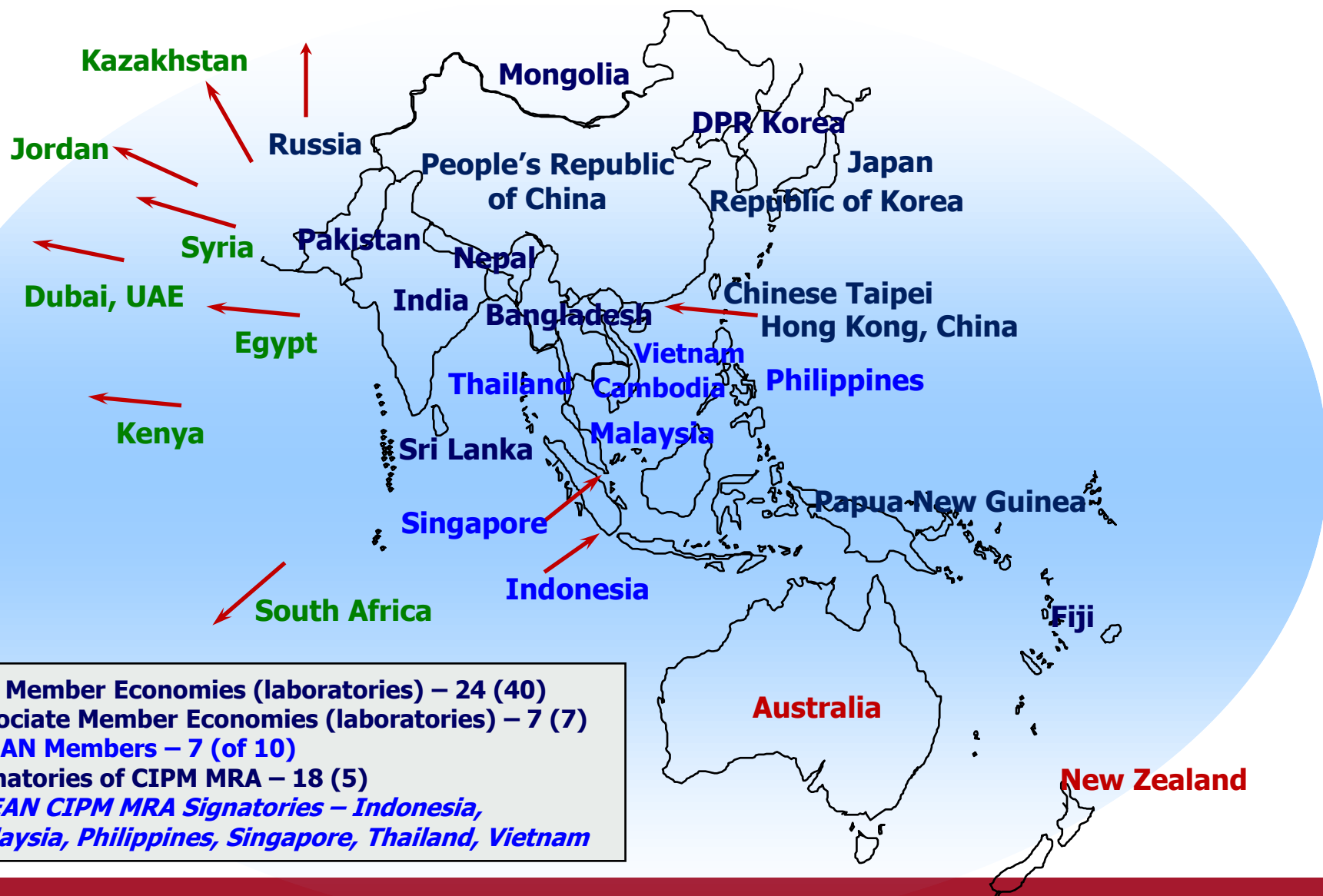
- “49,000 accredited and testing laboratories world-wide are linked back to the international system, helping ensure the unbroken chain of measurements used by industry and wider society to the SI” [BIPM; *SI: International System of Units*]

# EVALUATION OF THE ECONOMIC BENEFITS OF THE CIPM MRA

- Participants cover > 95% of world trade
- Conservative estimates of the impact of the CIPM MRA in reducing TBTs: > US\$4 billion
- Evidence of trade facilitation:
  - **Chinese** NMI as service provider for Ericsson ⇒ significant savings
  - DSME-BP (USA) accepted traceability to **Korean** NMI, savings ~US\$10m
  - Requirement for **Singapore** accredited calibration and testing laboratories to be traceable to CIPM MRA signatories to support Singapore industry



# Asia Pacific Metrology Programme (APMP)



# CER-ASEAN cooperation in measurement

- In May 2015, the Thai Science and Technology Minister announced that ASEAN's COST “has agreed to develop metrology as the fundamental of scientific and technological development in ASEAN” as ASEAN moves towards its single market goal by end 2015/early 2016.
  - In response, the ASEAN Expert Group on Metrology (EGM) are developing an “ASEAN Quality Infrastructure Roadmap”, in which metrology is a key pillar.
- Peak scientific measurement bodies in Australia and New Zealand (NMIA and MSL) work closely with ASEAN counterparts through APMP to facilitate participation in the CIPM MRA as well as supporting capability development through bi- and multilateral engagements:
  - NMIA CEO currently chairs APMP
  - Thai NMI chairs APMP’s Developing Economies’ Committee

# Thank you for your attention

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# The OIML Basic Certificate System & MAA – **an integrated system for the global harmonisation of technical standards**

Malcolm Bartlett

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15 March 2016

# What is legal metrology?

- “Legal metrology comprises all measurements carried out for any legal purpose and includes measurements that are subject to regulation by law or government decree. It has its historical origins in the need to ensure fair trade, but also includes measurements in areas such as health and safety.” Source: *NMIA website*
- “Legal metrology applies not only to trading parties, but also to the protection of individuals and society as a whole (e.g. law enforcement, health and safety measurements).” Source: *OIML D1: 2012 Considerations for a law on metrology*
- “Legal metrology is in particular necessary when forces on the market are not organized and/or competent enough or are unbalanced.”  
Source: *OIML D1: 2012 Considerations for a law on metrology*
- NMIA is the responsible authority for legal metrology in Australia.

# The international context: OIML

- “The International Organization of Legal Metrology (OIML) is an “International Standard Setting Body” in the sense of the World Trade Organization’s Technical Barriers to Trade (TBT) Agreement. The role of the OIML is to develop mutual information and mutual confidence among its Members, and to provide “model regulations” that the Member States commit to using in their national legislation – we call these International Recommendations.”

Source: OIML brochure – *Type Evaluation of Measuring Instruments: Mutual Acceptance Arrangement*

- “OIML is a worldwide, intergovernmental organization whose primary aim is to harmonize the regulations and metrological controls applied by the national metrological services, or related organizations, of its Member States.”

Source: *OIML D1: 2012 Considerations for a law on metrology*

# What is pattern/ type approval?

- The *National Measurement Act 1960* (Australia) subordinate regulations and guidelines establish the legal metrology legislative framework in Australia, including the requirements for pattern/ type approval.
- The pattern/ type approval process involves examining the pattern/ type (design) of an instrument to ensure that it is fit for use for trade or other legal purposes. Examination involves:
  - assessment of relevant documentation
  - assessment of the operation of the instrument against requirements (usually based on international Recommendations published by OIML)
  - performance testing to ensure that the instrument performs as intended (i.e. to within allowable maximum permissible errors) over a range of environmental and usage conditions specified in the requirements



# The OIML Basic Certificate System

- The OIML Basic Certificate System for Measuring Instruments was established in 1991. The system includes approximately 50 categories of measuring instruments.
- The system aims to harmonise the efforts of national and regional legal metrology authorities responsible for pattern/ type evaluation of measuring instruments through the harmonisation of the practices of testing laboratories when assessing and certifying the conformity of types of measuring instruments with the requirements of OIML Recommendations.



# The OIML Mutual Acceptance Arrangement (MAA)

- The OIML Mutual Acceptance Arrangement (MAA) was established in 2005 and includes several categories of measuring instruments. It will be extended to include other instrument categories in the OIML Basic Certificate System.
- The MAA involves the evaluation of testing laboratories responsible for pattern/type evaluation and the approval of measuring instruments. Under the MAA, participants declare that they intend to accept and use each other's test results - the Declaration of Mutual Confidence (DoMC)
- Participation in these systems is voluntary for OIML Members.

# Declaration of Mutual Confidence (DoMC)



*“ declaration by Participants that they have achieved a voluntary mutual arrangement with regard to type evaluation, for a specified category of measuring instruments, to accept and utilize OIML MAA Type Evaluation Reports issued by Issuing Participants*

*Source: OIML B 10: 2011*



# Types of participants in the OIML MAA

- **Issuing Participants** – are OIML Issuing Authorities who issue OIML MAA Evaluation Reports and MAA Certificates of Conformity.
- **Utilising Participants** – National pattern/ type approval authorities from OIML Member States who do not issue OIML MAA Evaluation Reports nor MAA Certificates of Conformity but accept reports issued by Issuing Participants.
- **Associates** – National pattern/ type approval bodies from OIML Corresponding Members who declare that they accept OIML MAA Evaluation Reports issued by the Issuing Participants.
- National pattern/ type approval authority competence is demonstrated by:
  - accreditation by a national accreditation body, signatory of the **ILAC Mutual Recognition Arrangement**, or
  - by peer assessment conducted in accordance OIML policy and procedures

# The international benefits of the systems

- Both the OIML Basic Certificate System and the MAA were designed to assist manufacturers demonstrate that the measuring instruments they manufacture conform to the national requirements in the various countries in which they request pattern/ type approval.
- Through the operation of both systems the OIML provides a framework which assists economies that do not have their own test facilities, thereby allowing these economies to utilise the OIML MAA Evaluation Reports of Issuing Participants.

# Why does Australia participate in these systems?

- The OIML systems offer advantages for manufacturers who intend to apply for pattern/ type approval in OIML Member States that do not have test facilities and also in economies in which the relevant national regulation is not fully aligned/ harmonised with the requirements in OIML Recommendations.
- The OIML systems align with the Australian Government's policies regarding the adoption of trusted international standards, articulated in the Australian Government's *Industry Innovation and Competitiveness Agenda Report: An action plan for a stronger Australia* (October, 2014).
- NMIA has been adopting trusted international standards for a significant period of time.



# The evolution of the systems – Single OIML Certification System (OIML-CS)

- At the 50<sup>th</sup> meeting of the International Committee of Legal Metrology (CML) in October, 2015 a resolution was passed to establish the Certificate System Project Group (CSPG).
- The aim of the CSPG is to create an OIML B-type publication (an International Basic Publication which defines the operating rules of the various OIML structures and systems) containing the framework for a Single OIML Certification System (OIML-CS) including procedures and operational documents.



# A regional framework for cooperation

- The Asia–Pacific Legal Metrology Forum (APLMF) was established in 1994 to develop legal metrology and the promotion of free and open trade in the Asia Pacific.
  - NMIA provided the Presidency and Secretariat from 1994 to 2002
  - Trading Standards New Zealand took on these roles in October 2015.
- APLMF membership includes both CER economies as well as 9 ASEAN members (7 full members, 2 corresponding members))

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**ASEAN - Australia - New Zealand FTA**

## **CER-ASEAN Integration Partnership Forum**

*Economic integration and the standards and  
conformance infrastructure: challenges and  
opportunities*