

# Metrology, accreditation and standards set the framework for infrastructure, transport and smart city developments

In celebration of the World Metrology Day, World Accreditation Day and World Standards Day, a forum was held recently in Hong Kong, enabling participants to have a deeper understanding of the various aspects of metrology, accreditation and standards, and how they contribute to the quality infrastructure at large.

Quality infrastructure is the totality of the institutional framework that establishes and implements standardisation, metrology, accreditation and conformity assessment services. It supports the effective functioning of a society through enhancing confidence in goods and services, fostering innovation and competitiveness, improving the quality of life, as well as facilitating communication between different parties. A sound quality infrastructure is the cornerstone of a smart, modern city.

As such, different administration and industry bodies in the three areas of metrology, accreditation and standardisation come together every year to share experiences and exchange ideas for the betterment of trade and infrastructure.

The World Metrology Day (WMD), World Accreditation Day (WAD) and World Standards Day (WSD) Forum 2017 was jointly organised by the Hong Kong Council for Testing and Certification; Government Laboratory; Hong Kong Accreditation Service, Standards and Calibration Laboratory, and Product Standards Information Bureau of Innovation and Technology Commission.

## WMD – measurements for transport

Transport is a key element of the modern world, not only taking people from one place to another, but also conveying the goods we use. Doing so safely and efficiently with minimal environmental impact requires an astonishing range of accurate and comparable measurements. As the science of measurements, metrology therefore plays a crucial role in the development of effective and trustworthy means of transportation.



“I would say metrology is like the air or atmosphere, in which scientific research and development lives upon. Its importance may not be noticeable to citizens, but when accidents happen, it matters,” noted Dr Toshiyuki Takatsuji, Chairperson of Asia Pacific Metrology Programme (APMP). “Logistics and transportation, for example, stress the importance of accuracy, efficiency and safety, as we can’t afford any errors. Metrology plays a significant role to make sure everything is under control.”

“The International System of Units (SI) is widely used in our everyday measurements from length and weight to electrical and chemical contexts. The SI will see a major change (redefinition) shortly to adapt to world changes,” he said.

Recognised by the International Committee for Weights and Measures (CIPM), APMP is an inclusive, representative and transparent regional metrology organisation set up for the purpose of worldwide mutual recognition in measurement standards, as well as calibration and measurement certificates. Its mission is to promote and support measurement infrastructure in the Asia-Pacific, and provide solutions to meet measurement challenges.

Meanwhile, WMD is an annual celebration of the significant Metre Convention – the international treaty on uniformity of measurement signed on 20 May 1875 by representatives of 17 nations. The Convention set the framework for global collaboration in the science of measurement and in its industrial, commercial and societal applications.

## WAD – delivering confidence in construction and the built environment

The construction sector has always been an important ‘building block’ of the society and its economy. With population growing, the need for infrastructure increases rapidly. For a safer, cleaner and smarter construction, accreditation and conformity assessments are essential.

“Accredited testing and certification services help assure the well-being of workforce on-site, the quality of construction products and raw materials, the energy efficiency of designs, as well as the safety and sustainability of buildings,” explained Ms Chang Kwei-fern, Chairperson of Pacific Accreditation Cooperation (PAC). “Accreditation also enhances the reliability, and hence, acceptance of products and services across national borders, thereby creating a framework for international trade, and propelling economic growth.”

To achieve the above, mutual recognition between accreditation bodies around the world is needed. In the Asia Pacific region, such mutual recognition arrangements are managed by both the PAC, which is an association of accreditation bodies that provides service to certification bodies, and the Asia Pacific Laboratory Accreditation Cooperation (APLAC), whose members accredit mainly laboratories and inspection bodies.

As a global initiative, WAD (on 9 June) aims to raise public awareness of the importance of accreditation and demonstrate the value of accreditation in supporting different sectors of the society.

## WSD – standards make cities smarter

Smart City is not just a buzzword, but also a major development vision that cities around the world pursue according to their own direction. Yet, building a Smart City is highly complex and every city may face different challenges.

Underpinning the implementation of Smart City, international standards strive to deliver tailor-made solutions that suit the particular circumstances of any given city. They are important guidance to the development of information and communication technologies that enable data collection and information security, intelligent transport system that facilitates mass transit, smart energy and waste management that are essential to sustainable communities, and much more. They are also essential enablers in ensuring the quality of products and services. In addition, harmonised standards drive compatibility between technologies, and help users compare and choose the best solution.

“We often take standards for granted,” said Mr Adrian O’Connell, Chairperson of Pacific Area Standards Congress (PASC). “A world without standards will be one in chaos. As such, PASC works on promoting trusted international standards, and engaging our member countries to adopt them.”

He added that to tackle problems and concerns that arise from the ever-changing world of Internet of Things (IoT), international standards bring stakeholders together with expert knowledge and best practices, and provide a mutually agreed solutions or specifications in a timely manner.

Celebrated internationally each year on 14 October, WSD honours the efforts of the thousands of ‘unsung’ experts who develop international standards. The aim of WSD is to raise awareness among regulators, industry and consumers of the importance of standardisation in the global economy.



## 世界計量日、世界認可日及世界標準日論壇2017 World Metrology Day (WMD), World Accreditation Day (WAD) and World Standards Day (WSD) Forum 2017

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(From left to right) Mr Adrian O’Connell, Chairperson of PASC; Mr Wong Wang-wah, Executive Administrator of Hong Kong Accreditation Service; Ms Chang Kwei-fern, Chairperson of PAC; and Dr Toshiyuki Takatsuji, Chairperson of APMP