



Martin Milton
Director of the BIPM

Measurements in a dynamic world

When we reflect on the rapid pace of change in the 21st century, we may say that “the only thing that is constant is change itself”. The needs for metrology, and how these needs are met, are no exceptions; it is a challenge to bring the benefits of a stable and accurate measurement system to a dynamic world.

Many of the needs of society are met by new technologies, and it is essential that stable and accurate measurements are available to underpin them.

The accurate knowledge of dynamic quantities is pivotal to progress in high technology whether it is the high-speed movements in a disk drive, the variations in supply and demand from renewable energy sources on electricity grids, or the drive for environmental improvement and fuel efficiency in the aerospace industry. Dynamic quantities also play an increasing role in established industries, such as the dynamic weighing of trains and trucks, and the monitoring of vibration and impact arising from the tyres and engines of cars.

These applications of dynamic measurement bring particular challenges. Linking highly accurate long-term stable standards to dynamic *in situ* measurements in everyday applications is difficult and itself requires great innovation.

Adapting our measurement capabilities to a dynamic world requires other steps too. The need to ‘future proof’ the International System of Units (the SI) is one of the key drivers for the redefinition planned for 2018. The changes will ensure the benefits of greater universality of the world’s measurement system, and open new opportunities for scientific and technological advances in the future.

We all need dynamic people in dynamic organisations to address the challenges of measurement in a dynamic world.