

# Importance of measurement for international standards

Sergio Mujica, ISO Secretary General  
Versailles, France, 13 November 2018

THE INSTITUTION OF CIVIL ENGINEERS



# 71 years later...



# The ISO system



**ISO Members**

National standards bodies

**Represent ISO in their country**

**Propose/approve new standards**



**Experts**

More than 100 000 in the world

**Write the standards**

**ISO/CS**

**Coordinates system**

**Increases awareness**



# ISO Strategy



Partnerships are key



# ISO Partners

More than 700 organizations including:

- IEC
- ITU
- WTO
- OECD
- ILAC
- IAF
- United Nations partners
- BIPM
- ...

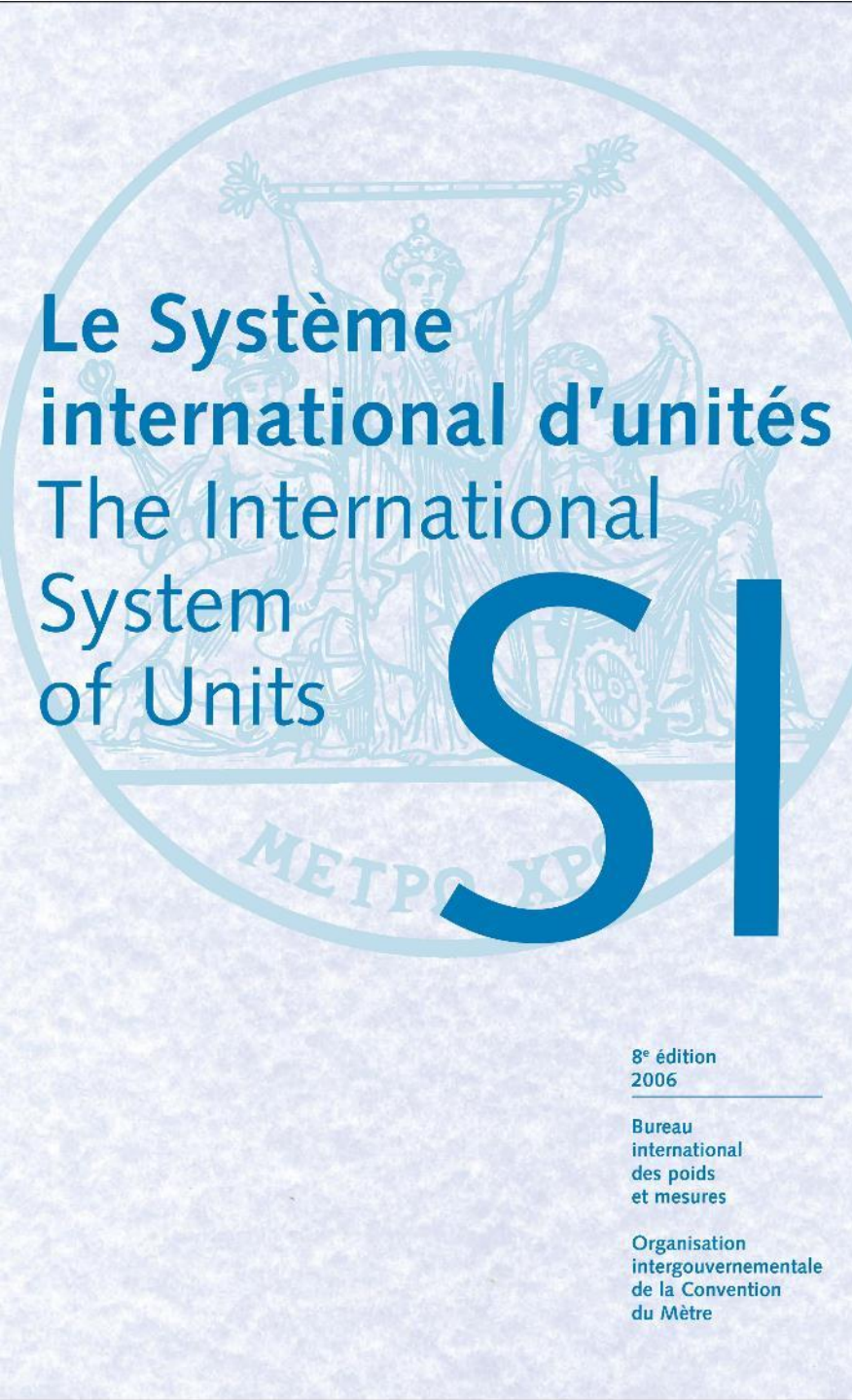


# ISO and BIPM

- BIPM liaises with ISO committees including ISO/CASCO and ISO/Remco
- ISO experts contribute to BIPM consultative committees



# Redefinition of the SI Units





# Redefining the National Quality Infrastructure (QI)

- Complex quality and compliance system to ensure functionality, safety, health
- A weak QI = barrier to trade, public welfare

It relies on **metrology**, standardization, accreditation, conformity assessment, market surveillance”.

# Collaboration in metrology

## Joint Declaration on Metrological Traceability



Organisation Internationale de Métrologie Légale  
International Organization of Legal Metrology



# International Standards and metrology

The image displays three overlapping screenshots of the ISO Online Browsing Platform (OBP) search results page. Each screenshot shows a search bar with a red circle highlighting the search results count and the ISO logo.

- Top Screenshot:** Search for "metrology" yields **639 results**. The top result is "Metrology, standardization and conformity assessment", a four-page introduction.
- Middle Screenshot:** Search for "measurement" yields **12,976 results**. The top result is "Measurement in a pipeline", with reference number X1012.
- Bottom Screenshot:** Search for "testing" yields **20,429 results**. The top result is "ISO/IEC 17025 - General requirements for the...", a free publication.

The screenshots also show a sidebar with categories like Standards, Collections, Publications, Graphical symbols, Terms & Definitions, and Country codes, and a navigation bar with "Search" and "Search results" buttons.

This screenshot shows the ISO Online Browsing Platform (OBP) search results page for the query "metrology". The search bar at the top displays "639 results for metrology". The ISO logo is visible in the top left corner. The top result is "Metrology, standardization and conformity assessment", with a description: "A four page introduction that shows how metrology, standardization and conformity assessment are the three pillars of knowledge for developing a technical infrastructure, and there by enabling sustainable development and full participation in international trade and how they are linked together." A "Buy" button is present next to the result.

This screenshot shows the ISO Online Browsing Platform (OBP) search results page for the query "measurement". The search bar at the top displays "12,976 results for measurement". The ISO logo is visible in the top left corner. The top result is "Measurement in a pipeline", with reference number X1012. Below the search bar, there is a table showing the distribution of results across different categories:

Standards	11674
Collections	
Publications	
Graphical symbols	242
Terms & Definitions	1060
Country codes	

This screenshot shows the ISO Online Browsing Platform (OBP) search results page for the query "testing". The search bar at the top displays "20,429 results for testing". The ISO logo is visible in the top left corner. The top result is "ISO/IEC 17025 - General requirements for the...", with a description: "A free publication about ISO/IEC 17025, and how it ca". Below the search bar, there is a table showing the distribution of results across different categories:

Standards	16929
Collections	
Publications	3
Graphical symbols	28
Terms & Definitions	3469
Country codes	



# Metrology

- Many standards require accurate measurements and thus use SI



# ISO standards and SI units

Rules for writing standards mandate the use of SI units

# Contribution to CASCO

*ISO/IEC 17025 General requirements for the competence of testing and calibration laboratories*





# The ISO 80000 series, *Quantities and units*

- Developed and maintained by ISO/TC 12, *Quantities and units*
- Consists of 11 Parts, complemented with 2 Parts from the IEC 80000.
- Provides the International System of Quantities (ISQ) in a variety of scientific fields



# The SI Brochure and the ISO 80000 series

- Simultaneous revision of the SI Brochure and the ISO 80000
- Collaboration between ISO/TC 12 and CIPM/CCU for alignment
- Both documents reference to each other



# Mars Climate Orbiter

- Used non-SI units (lbf s)
- => passed through upper atmosphere and disintegrated

# Latest priorities



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