

# Forum for Metrology and Digitalization

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## CGPM Resolution 2 (November 2022)

## Decisions of the CIPM (March 2023)

→ Transforming the International System of Units  
for a Digital World



Joachim Ullrich (CIPM TG-DIG)

- International **Task Group “SI Digital Framework”** of the CIPM: November 2019
- International **Expert Group** for technical support and expertise

Online Briefing on the establishment of a Forum for Metrology and Digitalization, 22<sup>nd</sup> May 2023

# The Digital World

## The SI Digital Framework

What will cities look like?

How will the **supply** work?

What **measurements** and **metrology** will be needed?

What **Quality Infrastructure** will be needed:

→ How can we guarantee high-quality and reliability in complex interlinked digital systems?



Smart Health

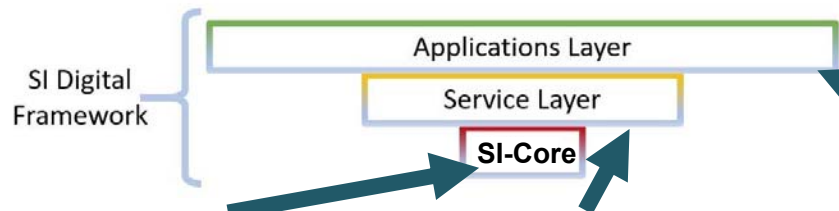
Smart Building

Smart Mobility

Smart Factories

# The SI Digital Framework

Sustainable framework for the SI in a digital world



Endorsed by CIPM!  
(Decision 109-17)

kind of quantity, unit, value, uncertainty

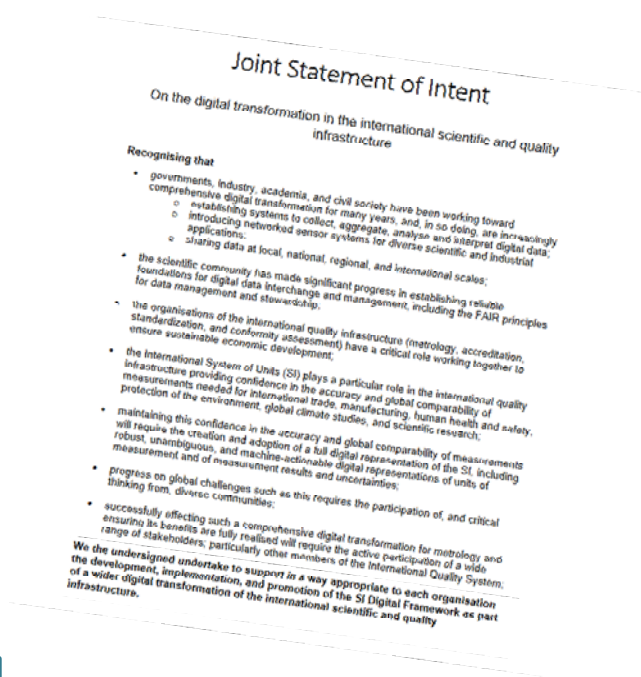
various data, services and tools

Aligned applications

All following FAIR principles (Findable, Accessible, Interoperable, Reusable)

- SI Brochure – 9th edition (2019) – Appendix 2
- Mise en pratique
- SI-defining Constants
- VIM
- SI, VIM, GUM Thesauri, Ontologies, etc.
- GUM
- Digital Calibration Certificates
- Research Data Formats
- Interfaces of measuring sensors in networks
- KCDB (Key Comparison • CMCs)
- unit conversion

# The SI Digital Framework: A Joint FAIR effort!



**We the undersigned undertake to support in a way appropriate to each organisation the development, implementation, and promotion of the SI Digital Framework as part of a wider digital transformation of the international scientific and quality infrastructure.**

**on the SI Digital Framework**

Online Briefing Forum D&M

International Commi

2023-05-22

# Resolution 2 of the 27<sup>th</sup> Meeting of the CGPM



Resolution 2 (2022) ▾

View

## Resolution 2 of the 27th CGPM (2022)

On the global digital transformation and the International System of Units

# Resolution 2 of the 27<sup>th</sup> Meeting of the CGPM

## On the global digital transformation and the International System of Units

The General Conference on Weights and Measures (CGPM), at its 27th meeting,

**considering**

- that governments, industry, academia, and civil society have been working toward a comprehensive digital transformation for many years, and, in so doing, are:
  - establishing systems to collect, aggregate, analyse and interpret digital data,
  - introducing networked sensor systems for diverse scientific and industrial applications,
  - sharing data at local, national, regional and international levels,
- the essential role of the International System of Units (SI) in providing confidence in the accuracy and global comparability of measurements needed for international trade, manufacturing, human health and safety, protection of the environment, global climate studies and scientific research,

# Resolution 2 of the 27<sup>th</sup> Meeting of the CGPM



welcomes

- the recent efforts to articulate guiding principles for a digital transformation in metrology,
- the establishment of a flexible and inclusive governance structure supporting the development and implementation of that transformation,

# 112th meeting of the CIPM (March 2023)



**International Committee for Weights and Measures**

**CIPM Task Group on the SI Digital Framework**



# 112th meeting of the CIPM (March 2023)



## Decision CIPM/112-12

→ Héctor Laiz (INTI, CIPM TG)

The CIPM approved the establishment of a forum on metrology in the digital world and noted the draft mission and structure proposed by the CIPM Task Group on the SI Digital Framework.

→ Daniel Hutzschenreuter (PTB, CIPM EG)

The CIPM adopted the updated Grand Vision for the SI Digital Framework.

# 112th meeting of the CIPM (March 2023)



## Decision CIPM/112-12

The CIPM endorsed the swift further development and implementation of the SI Reference Point (SIRP, working title) by the BIPM Headquarters in close coordination with the Task Group on the SI Digital Framework and its Expert Group.

→ Janet Miles (BIPM-HQ)

# Forum for Metrology and Digitalization

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1. **Welcome**
2. **CGPM Resolution 2 and Decisions of the CIPM**
3. **The CIPM Grand Vision**
4. **Forum Mission and Structure**
5. **Roadmap towards the Forum**
6. **BIPM HQ Activities: the SI Reference Point**
7. **Examples of digitalization in the Consultative Committees: CCL-CCTF, CCT**
8. **Discussion of the needs of CCs and their interaction with the Forum**

**END**