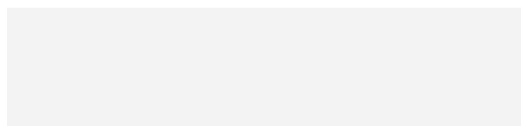
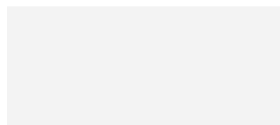
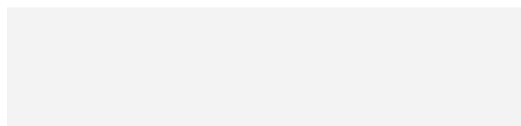




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MINISTERIO
DE ECONOMÍA, INDUSTRIA
Y COMPETITIVIDAD



Introduction

CEM

and National Metrological
Infrastructure



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Scientific Metrology and dissemination

General State Administration

Centro Español de Metrología and
Associated Laboratories

Development and materialization of
national standards and the first step
of dissemination

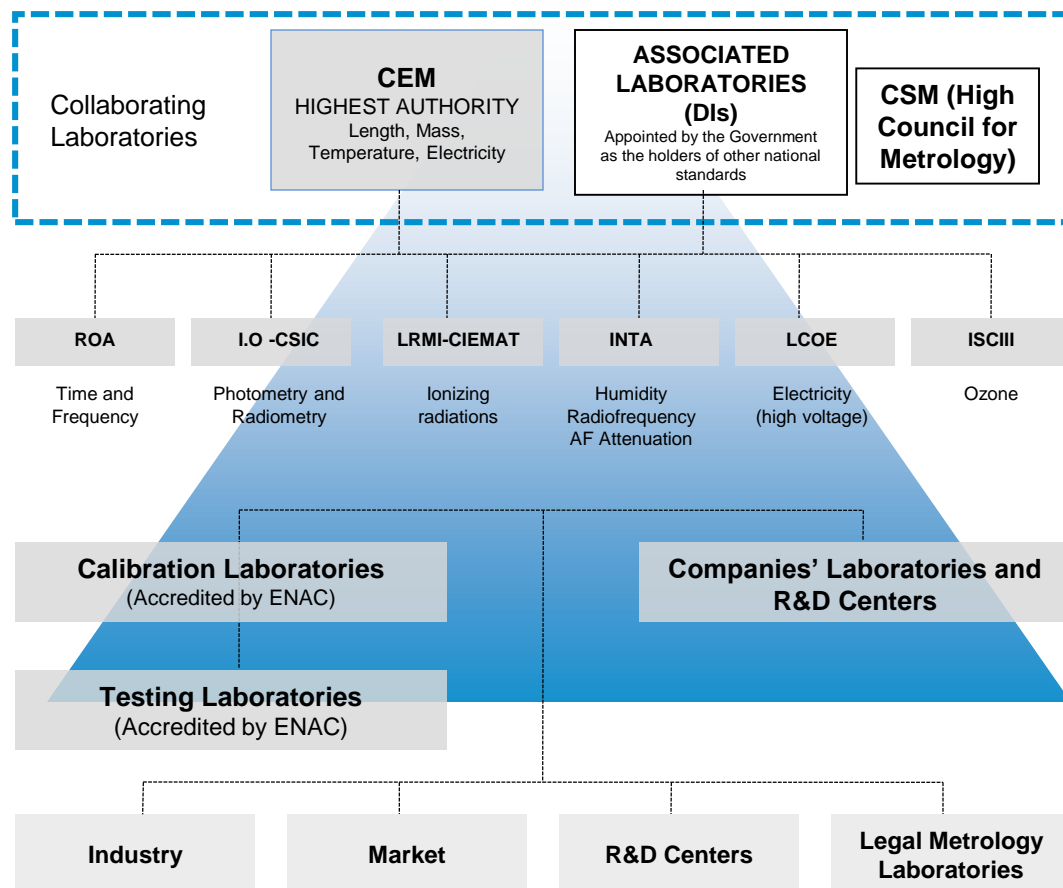
→ First level calibration of
infrastructure (collected in BIPM
database)

Business Sector

Accredited laboratories

→ Calibration
→ Tests

Spanish Metrological Infrastructure





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Spanish Metrological System

Agents

CENTRO ESPAÑOL DE METROLOGÍA

- Spanish National Metrology Institute
- Created by the Act 31, 1990
- Highest body of the General State Administration in the field of metrology
- CIPM-MRA Signatory
- Member of EURAMET

Associated Laboratories (DIs)

- Responsible of certain areas for expertise and technical competence reasons
- Appointed by the Government by Royal Decree
- Work in coordination with CEM
- Participate as Designated Institutes in EURAMET
- Recognized by the CIPM-MRA

National Standards

SI Base Units

- kilogram (CEM)
- meter (CEM)
- kelvin + EIT 90 (CEM)
- ampere (CEM)
- second + UTC (ROA)
- candela (IO-CSIC)

SI derived units

- CEM: Various units related to the quantities: pressure, force, volume, density, angle, flatness, resistance, intensity and other electric quantities, etc.
- I.O-CSIC: Various units related to the quantities: luminous flux, luminance, spectroradiometric scales, spectrophotometry and quantities associated to fiber optics.
- INTA: high frequency Electric quantities, humidity.
- LMRI-CIEMAT: Ionizing Radiations
- LCOE: High tension electric quantities
- ISCIII: Ozone concentration



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Legal Metrology and State Metrological Control

General State Administration

Centro Español de Metrología

- Regulations and coordination
- Technical support

Territorial Administration

Autonomous Regions

- Enforcement and control
- Market surveillance
- Inspection and sanctions

Business Sector

Different types of bodies

- Conformity Assessment
- Verifications

State Metrological Control

- Spanish Constitution, Art.149.1.12
- Constitutional Court, rulings 100/1991 and 236/1991
- Law 32/2014
- Royal Decree 244/2016

Legislation

Enforcement

State (CEM)

Autonomous
Regions

Notified Bodies
Metrological Control Bodies
Authorized Metrological
Verification Bodies



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HIGH COUNCIL FOR METROLOGY (CSM)

(Maximum consultative body on metrological politics. Inter-ministerial character)

Defines the metrology and
cooperation policies strategies

PLENARY

Technical Secretariat

CEM

Commission of Associated
Laboratories (DIs)

Discusses and coordinates
scientific politics

Commission of Legal
Metrology

Looks at draft regulations and harmonizes
the implementation of the State
Metrological Control



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CENTRO ESPAÑOL DE METROLOGÍA



Our vision is to be a National Reference in the development and application of measurement, helping Spain to be competitive and sustainable through knowledge and innovation.



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TASKS

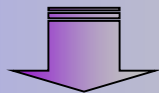
**NATIONAL STANDARDS OF
MEASUREMENTS**

**TRACEABILITY TO SI
METROLOGICAL CONTROL OF
THE STATE**

R&D&i PROJECTS

METROLOGICAL ADVICE

TRAINING ON METROLOGY



OUR VALUES

Vocation and dedication to the
service of society

Highly equipped laboratories

Professionalism and experience

Independence and Integrity

Personalized service

Commitment to the
environment

Centro Español de Metrología (CEM) is a governmental organism attached to Industry General Secretariat of Economy, Industry, and Competitiveness Ministry. It was created by the Law 31/1990

Under article 149 of the Spanish Constitution, the CEM is the technical institute in the field of metrology in Spain.



Founding member of CGPM

Member of EURAMET – EMRP/EMPIR; WELMEC, OIML

CIPM-MRA signatory

Secretariat of standardization committee CTN 82-AENOR of Metrology

Spanish representative at the EU on Metrology

Total area: 70 000 m²
Built area: 18 000 m²
Laboratories: 10 000 m²



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MISSION

- **Develop and support an appropriate, cost effective and internationally recognized national measurement infrastructure, based on robust and high quality science and R&D and taking into account the needs of end users in industry, business, and Government**
- **Promote, disseminate and training in Metrology**
- **Support an harmonized application of the Legal Metrological Control ensuring the protection of environment and health and interests of citizens**
- **Represent national interests in the EU and abroad**



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Area

Total 70 000 m²

Built 18 000 m²

Laboratories 10 000 m²



Assembly Hall

250 seats capacity

Museum

Complete collection of legal weights and measures of Spain until the adoption of the Decimal Metric system in 1849

Main Building

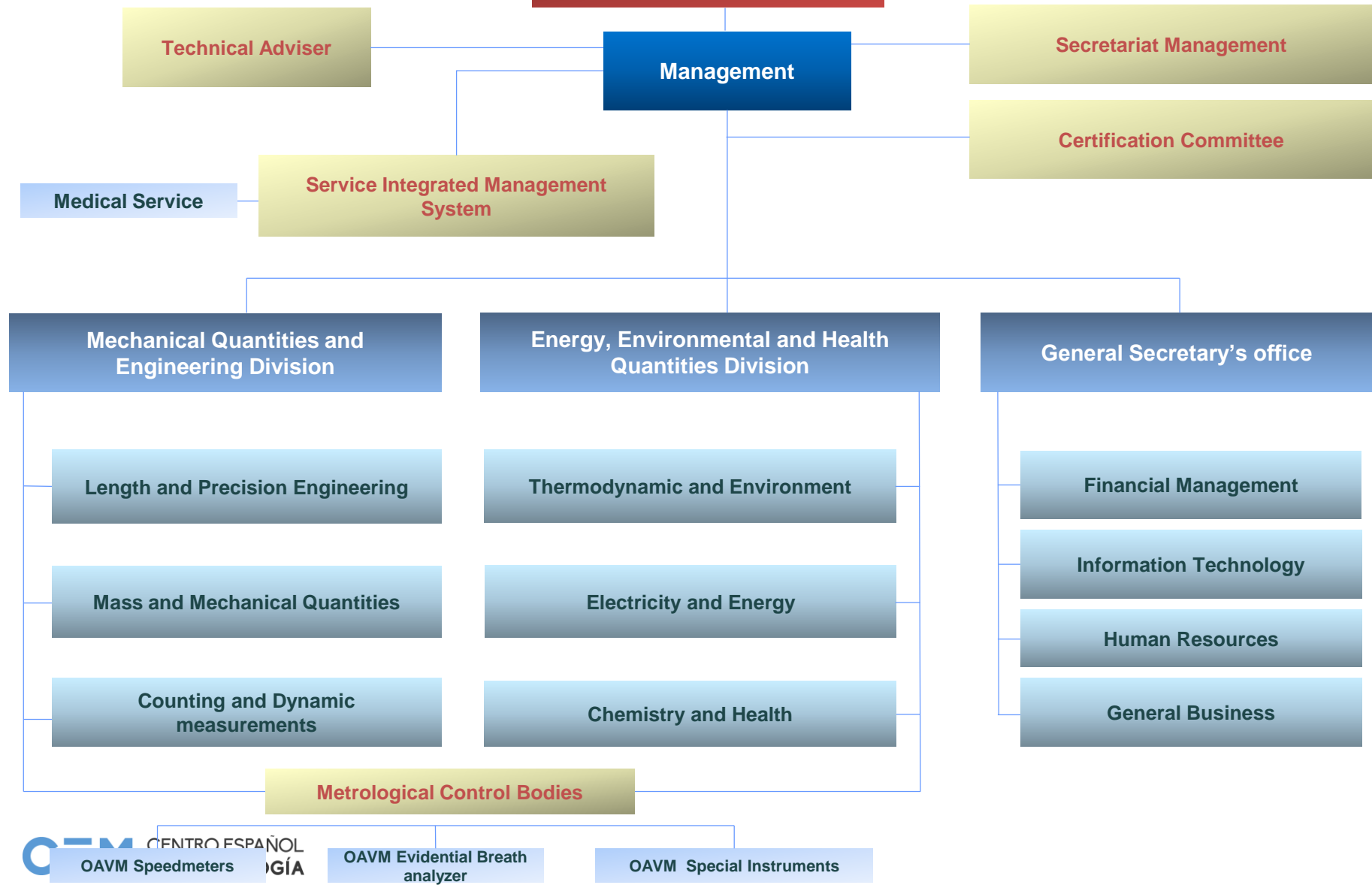
General services, Administration, head leader offices, Director board, training rooms, library, ...

Laboratories

6 buildings of two floors

Facilities

Power plant, garage, air conditioning, apartments, heliport, sport facilities, ...



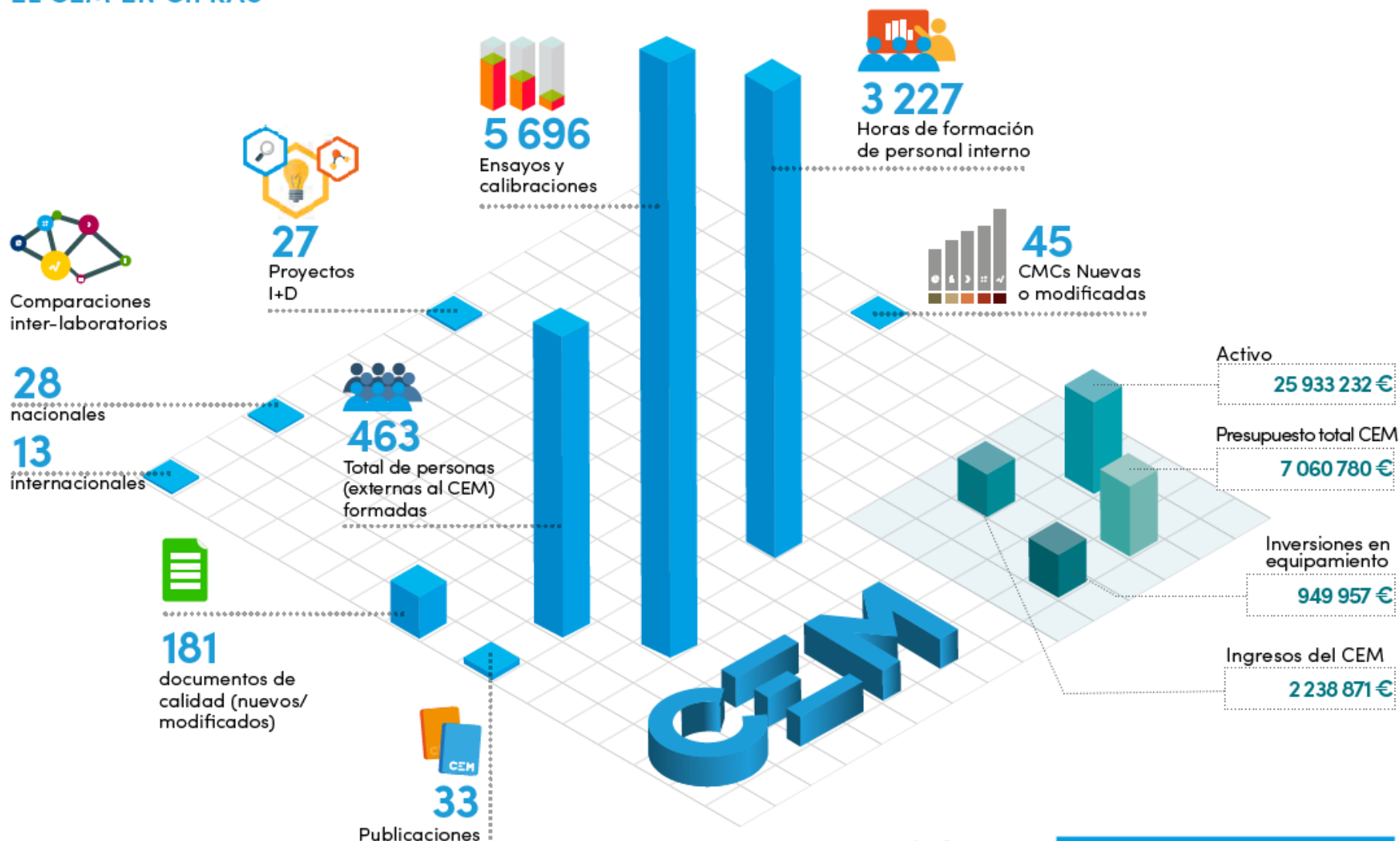


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EL CEM EN CIFRAS

MEMORIA 2015





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ISO 17025 / ISO 34

(Testing and calibration laboratories)

ISO 17021

(Quality management systems)

ISO 17020

(Inspection bodies)

Integrated Quality Management System

ISO 14001

(Environmental)

EN 45011

(Product certification)

OSHAS 18000

(Occupational prevention system)

ISO 26000

(Corporate social responsibility)



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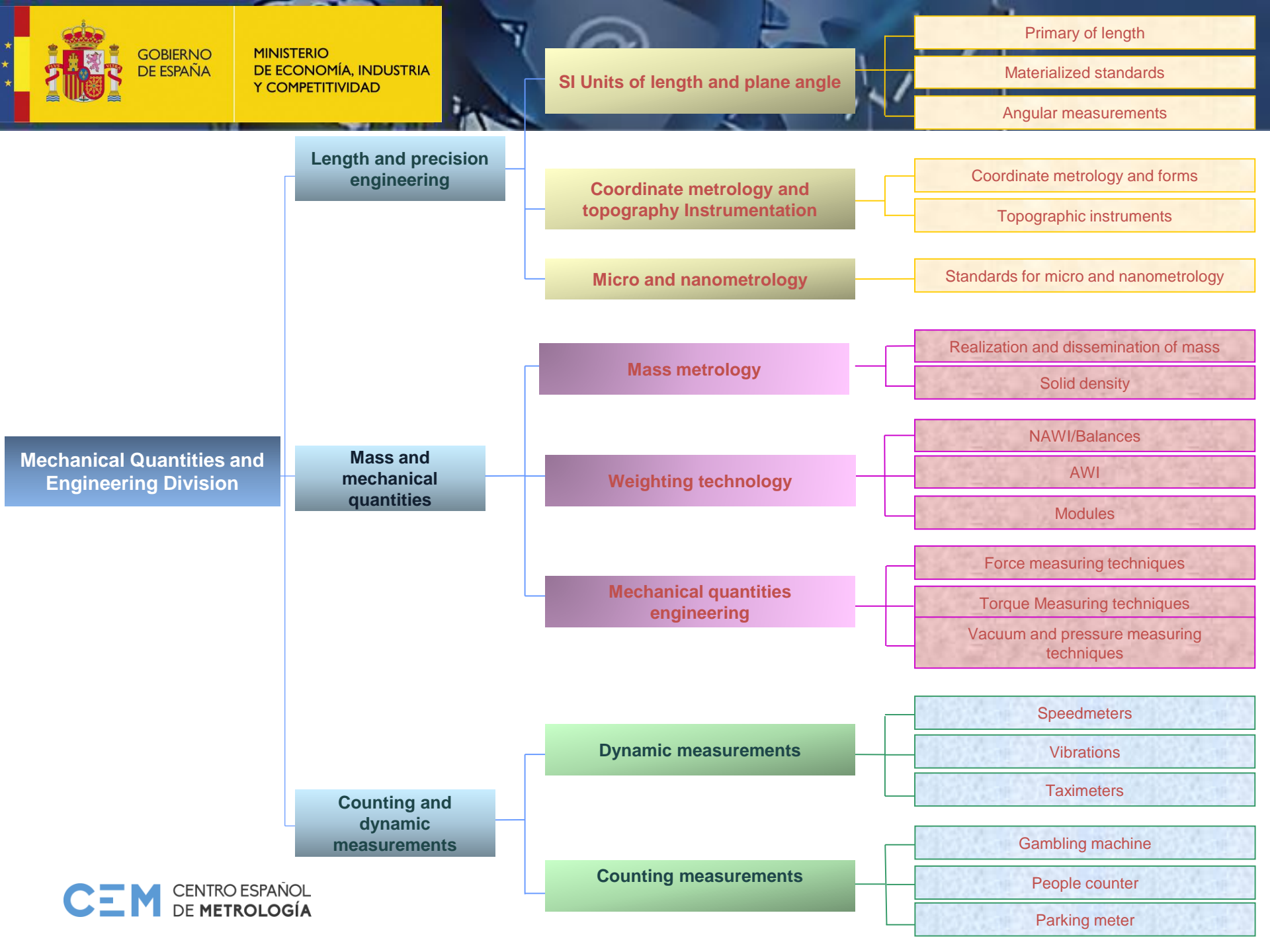
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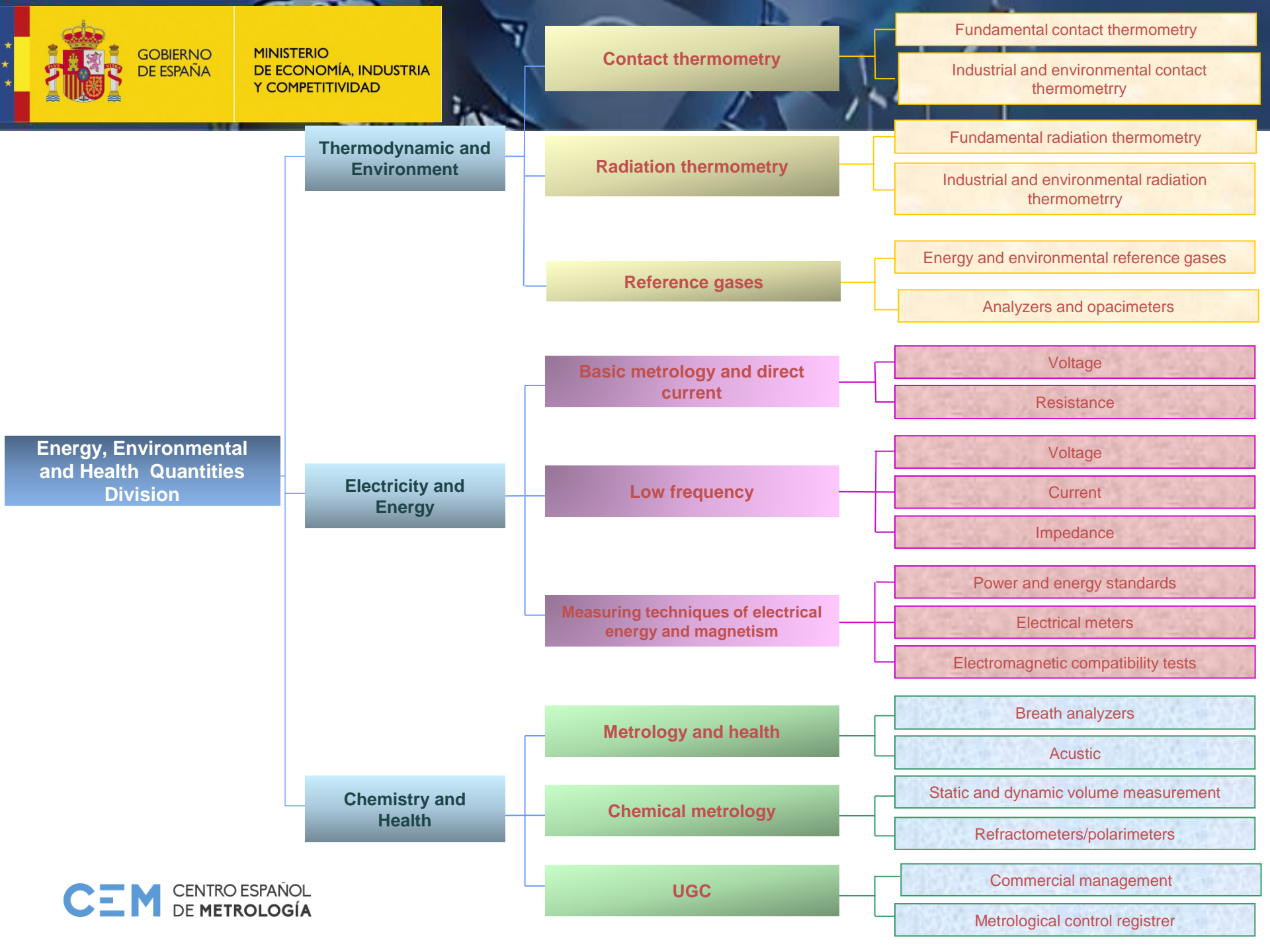
Thanks

CEM



Welcome







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The Centro Español de Metrología (CEM) is an autonomous institute that reports to the General Secretariat for Industry and Small and Medium Enterprise of the Ministry Economy, Industry and Competitiveness, with the following duties:

- **Under article 149 of the Spanish Constitution, the CEM is the technical institute in the field of metrology in Spain**
- **The activities of the CEM were established under the law governing its foundation (Law 31/1990) and implemented in its Articles of Association (enacted by Royal Decree 1342/2007)**



Duties

- 1 Obtainment, maintenance and development of national measurement standards
- 2 Dissemination of measurement units.
- 3 Performance of General State Administration duties relating to metrological control
- 4 Responsibility for administrative cooperation
- 5 Maintenance of the Metrological Control Record
- 7 Performance of research and development projects in the field of metrology.
- 8 Training of specialists in metrology.