

# Supporting Sustainable Development Goals – multidisciplinary metrology jointly addressed by PTB's Innovation Cluster and European Metrology Networks

## SUMMARY

Environmental challenges, climate change, and global food supply are multi-dimensional challenges unable to be addressed and mitigated by any single discipline. Since its beginning 150 years ago, the metrology community has been setting out to solve and jointly address measurement tasks in real world. The Physikalisch-Technische Bundesanstalt (PTB) and its predecessor agency founded shortly after the signing of the Metre Convention itself, has been set up already *more* multi-disciplinarily than any other existing research organisation at that time: at the interface of academia and industrial stakeholders.

With the challenges imposed by environmental destruction, global warming and the ever-increasing demand for a sustainable food supply on Earth, internal substructures as implemented by the BIPM, EURAMET and PTB seem too narrow to tackle those problems individually. Consequently, the scope has been widened: At PTB, Innovation Clusters have been implemented, each of them addressing one of the grand challenges of modern times by a multidisciplinary approach, allowing traditional scientific divisions to integrate their expertise. This way, a centrally overseen but reasonably well distributed workflow where all relevant disciplines are participating can be realised. The Innovation Cluster for Environment and Climate at PTB oversees and harmonises contributions and metrological services from disciplines as heterogeneous as mechanics and ionizing radiation, chemistry and optics, temperature and legal metrology.

Similarly, EURAMET decided to complement its established Technical Committees by newly founded European Metrology Networks (EMNs). In the environment and climate sector, there are four EMNs operational now: the EMNs for Climate and Ocean Observation, for Pollution Monitoring, for Radiation Protection, and for Safe and Sustainable Food.

So, national, as PTB, or regional structures, as EURAMET, are corresponding to the global Sectorial Task Group (STG), established by the CIPM that has been implemented and exclusively dedicated to metrology responding to climate change and environmental measurement tasks.

## INNOVATION CLUSTER FOR ENVIRONMENT AND CLIMATE

### Metrological challenges in Environment and Climate |

- **UN 2030 Sustainable Development Goals**
  - Need of reliable statements about climate and environmental change (e.g. SDG 13)
    - ▶ require exact and metrological traceable measurement results
    - ▶ **Metrology is key for that**

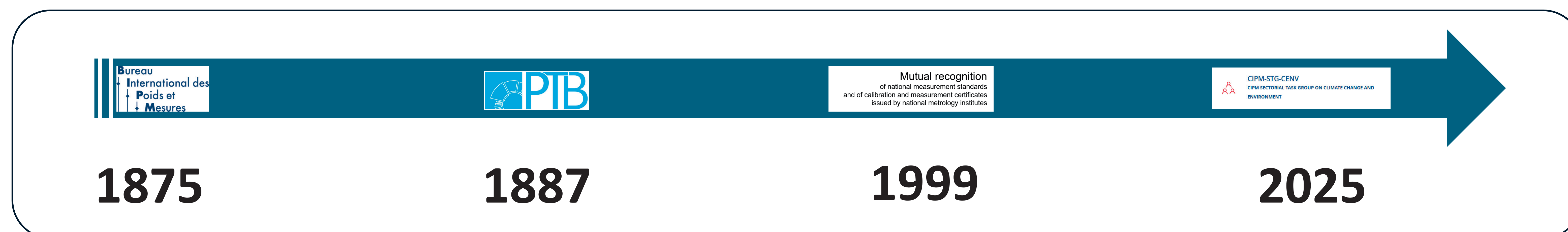
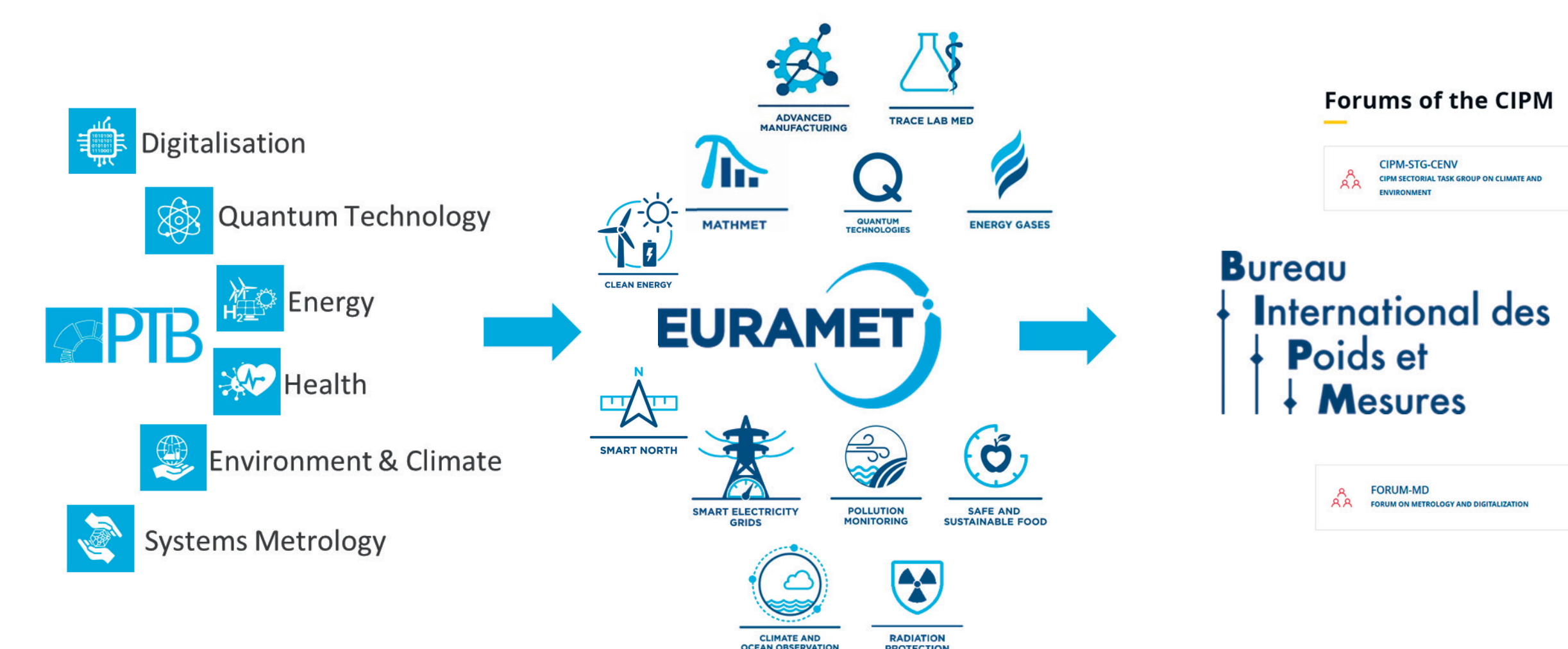
#### ■ Innovation Clusters at PTB



## IMPORTANT COMMUNICATIVE LIAISONS

### Metrology Community: national, regional, global level

- The Innovation Clusters, via PTB-internal scientific expert groups, are networking on all levels



## ENVIRONMENT AND CLIMATE WITH EUROPEAN METROLOGY NETWORKS



### Supporting exact and metrological traceable measurements of Essential Climate Variables

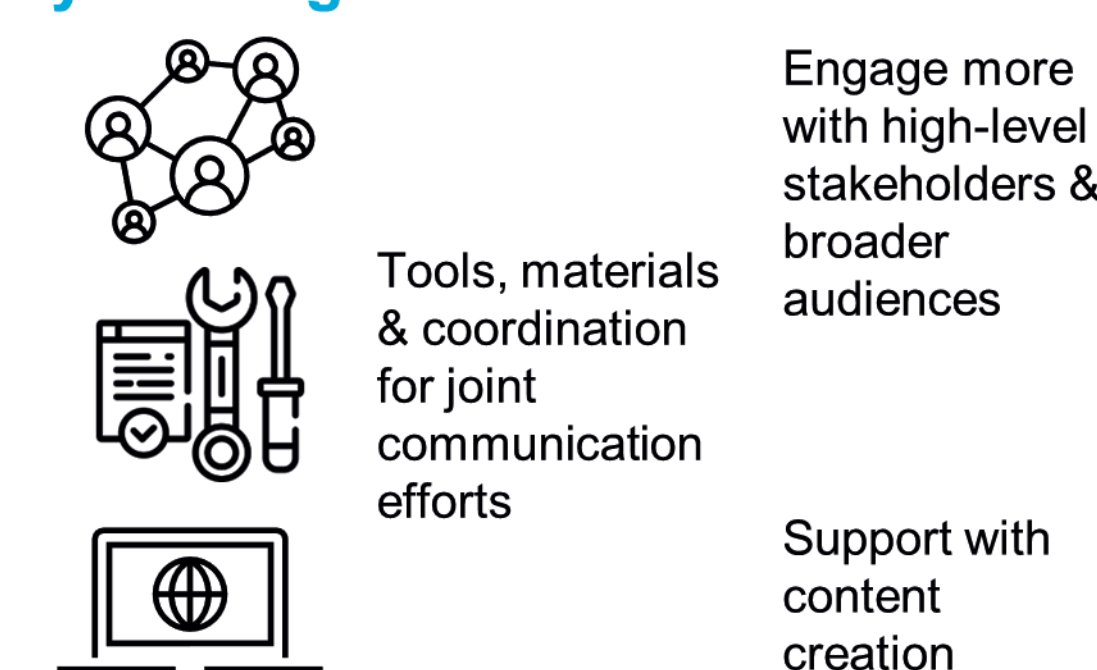


<https://public.wmo.int/en/programmes/global-climate-observing-system/essential-climate-variables>

### Comms4Net | A Communication Support Action project

CSA | Strengthening Communication and Impact for European Metrology with European Metrology Networks (Comms4Net)

#### Key messages from EMN needs survey



#### Project objectives

- Objective 1 | Build the EMN brand
- Objective 2 | Providing metrological expertise
- Objective 3 | Collaboration with EU partnerships and initiatives
- Objective 4 | Upskilling communication

Project start: June 2025