

**EUROLAB session at IMEKO TC6
First International Conference on Metrology and Digital Transformation**

Title

The lab of the future is now. How to embrace the present for a successful future?

Date, time and location

21 September 2022, 10-12 CEST

Physikalisch-Technische Bundesanstalt, Berlin, Germany and online

Introduction, scope and content development

EUROLAB (The European Federation of National Associations of Measurement, Testing and Analytical Laboratories) is a not-for-profit organisation composed of 25 national associations all over Europe and beyond, grouping more than 3.000 conformity assessment bodies members, over 9.000 accredited laboratories and representing over 150.000 professionals, promoting cost-effective testing, calibration and measurement services, for which the accuracy and quality assurance requirements should be adjusted to actual needs.

Among our key priority areas of focus for 2022 we list the “The Laboratory of the Future” and its development, including machine learning, digitalisation, cybersecurity, robotisation, AI, blockchain etc. It also implies new technologies such as 3D printing, robotics, high-tech devices or cloud computing; a paperless lab that focuses on reducing emissions, physical waste, optimising storage, energy and human resources. Also, the concept of “laboratory 4.0” revolutionizes the entire lab world, where Big Data, Cloud Computing, the Internet of Things, mobile Internet will play key roles in ensuring the upgrade of the laboratories. Therefore, the working environment of the laboratory is currently changing and re-adaptation of processes, services and work environment is absolutely needed for the labs to survive.

In this field, EUROLAB is now working on a possible application for an EU funded project under the Horizon programme of the European Commission (EC). The dedicated topic is: The Laboratory of the future 4.0, with key elements: Digitalisation/ Robotisation, Artificial Intelligence, Cybersecurity, Remote testing, Blockchain, Laboratory Information Management System (LIMS)/ Big Data. This work aligns with the EC strategy “Shaping Europe's digital future” published in 2020, whose objectives are centered around developing a technology that works to support a fair and competitive economy, as well as an open, democratic and sustainable society. According to the EC's vision, this can only be achieved through a digital transformation of existing and established processes, in addition to securing and strengthening European digital leadership. Based on digital technologies, big data, artificial intelligence and machine-readable information, the digital transformation rapidly changes society, industries, and economies.

Metrology as a central element of international trade, for confidence in measurements and part of the quality infrastructure is facing several challenges and opportunities in these developments. Digital

communication of data and information is becoming the standard also in metrology. Distributed measuring instruments and sensor networks become more important than individual measuring instruments. Algorithms and software become as important as the actual measurements. And in parallel to these developments, revolutionary changes in the metrology landscape based on, for instance, quantum technologies and the new SI are approaching.

In line with our “The Lab of the Future” project and focus, EUROLAB will organise a dedicated session alongside the International Conference on Metrology and Digital Transformation, where representatives from our member laboratories will exemplify these changes occurring in the field of metrology and calibration, providing a local perspective, and displaying their local developments as case studies of digitalization. Witnessing how digitalization processes are applied at the level of small and medium laboratories will provide further expertise and examples on different projects and ongoing work.

The session will end with a roundtable discussion with representatives from metrological institutes and private laboratories, to further address the status quo, challenges and issues faced by the various actors in the field, the wider international institutions and the small local laboratories.

Agenda and speakers

- “EUROLAB and the Lab of the Future”
Laura Martin, EUROLAB Secretary General
- “Digitalization Strategy Overview for Labs”
Irache Visiers Sanz - EUROLAB-TCQA Chair & EUROLAB Vice-President, Quality Assurance Manager at Applus+
- “Smart calibration through digitization: the ABCBilance/Metricode case”
Damiano Pietri (Quality, Environmental and Safety Manager); Paolo Solinas (Calibration Laboratory Manager)
- EURAMET speaker TBC

The presentations will be followed by a roundtable discussion of 30/40 minutes.
Moderator EURAMET representative TBC.