



24DIT03 - A3SmartML Stakeholder Workshop & Information Event

Automated, Adaptive and Uncertainty-aware Smart Measurements using Machine Learning

The European Partnership on Metrology (EPM) Project A3SmartML (<https://a3smartml.ptb.de>) develops novel, generalisable approaches for smart multidimensional measurements, aiming to significantly reduce experimental effort while enabling validated uncertainty evaluation.

Smart measurements are key enabling technologies for supporting European strategic objectives in sustainability and digitalisation within the framework of Industry 4.0 and European Green Deal. Multidimensional measurements are often limited by long acquisition times or insufficient resolution. A3SmartML addresses these challenges by combining tools from **machine learning**, **compressed sensing**, and **Bayesian statistics** to make measurements more efficient, adaptive, and uncertainty-aware.

The project investigates several metrological case studies, including Hyperspectral Imaging, Photocurrent Mapping of semiconductors, Laser Induced Breakdown Spectroscopy, Pyroelectric Current Scanning, Hyperspectral Imaging Scatterometry and X-ray scattering CT reconstruction to demonstrate the practical impact of the developed approaches. A3SmartML aims to support the manufacturing industry (e.g. the semiconductors sector) by improving measurement resolution, reducing measurement effort, and providing tools for better quality control, thereby contributing to reduced costs, zero-waste, and more sustainable manufacturing.

Stakeholder Workshop & Information Event

To engage with stakeholders and the wider community, the A3SmartML consortium invites you to

Online Stakeholder Workshop and Information Event on

24 September 2026, 10:00-12:00 (UTC+3)

This event provides the opportunity to learn more about the project's objectives, current research activities, first results, and the expected impact for industry and research.

In a series of short technical presentations, project partners will introduce selected developments and discuss how the A3SmartML approaches can contribute to future measurement technologies. The programme includes dedicated opportunities for **discussion and exchange with the project consortium. The workshop also provides an opportunity for stakeholders to provide feedback, discuss application needs, and identify opportunities for future collaboration**

We warmly invite stakeholders from industry, research, metrology, and related fields, as well as collaborators and other interested parties, to participate and share their perspectives.

Participation is free of charge. [Registration](#) is open until the 22 September 2026.

The detailed agenda of the meeting is provided below.

10:00	Start of Stakeholder Workshop - online meeting		
10:00	Welcome and Project Introduction	10min	Manuel Marschall (Coordinator)
10:10	Smart nano-FTIR spectroscopy: compressed measurements for time-consuming hyperspectral imaging	15min	Bernd Kästner (PTB)
10:25	Uncertainty evaluation for compressed hyperspectral imaging Informative prior knowledge meets low-rank reconstruction	15min	Alex Stebel (PTB)
10:40	Discussion and Questions	10min	All
10:50	Short Break		
11:00	Learned reconstruction progress in photocurrent mapping	15min	Thanh Trung Vu, Ander Biguri (Cambridge University)
11:15	Uncertainty quantification and validation for compressed sensing in applications	15min	James Adams Reza Asadolahpour (NPL)
11:30	Generalisation Pipeline for Smart Measurement: Ensuring Standardization, Interoperability and a Broad Applicability	15min	Meike Huber Lukas Krebs (RWTH Aachen)
11:45	Discussion, Questions and Closing	15min	All
12:00	End of Stakeholder Workshop		