

# Report of TC Length Highlights

**A. Lassila, MIKES FI**

# Outline

- EMRP and EMPIR Workshops: Oct. 22./23.
- Macroscale conference



# EMRP/EMPIR workshop

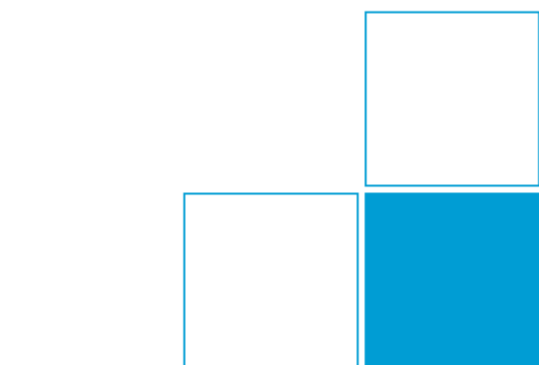
- Arranged at PTB 22 Oct. 2013 by PTB and TC-L
- Open information and discussion platform for all interested experts from
  - NMIs
  - Universities
  - industry
- General presentation on EMRP and EMPIR
- 12 JRP lectures (2010&11 call)
- 9 JRP posters (2012 call)
- ~60 participants



# EURAMET TC-LENGTH

EMRP / EMPIR  
Open WORKSHOP

at PTB, Braunschweig, Germany  
October 22, 2013, 13:00 - 18:30



Physikalisch-Technische Bundesanstalt Braunschweig und Berlin Nationales Metrologieinstitut

- 12:00 **Registration, light lunch**  
PTB New Seminar Center
- 13:00 **Welcome and Introduction**  
A. Lassila (TC-L chair), H. Bosse (PTB)
- 13:15 **News on EMRP and EMPIR**  
J. Stenger, EMRP chair and PTB MP
- Overview of and results from running EMRP-projects (> 1y) with relevance to TC-L**
- 13:45 JRP IND05, MeProVisc: *Dynamic Mechanical Properties and Long-term Deformation Behaviour of Viscous Materials*
- 14:00 JRP IND10, Form metrology: *Optical and tactile metrology for absolute form characterization*
- 14:20 JRP IND11, MADES: *Metrology to Assess the Durability and Function of Engineered Surfaces*
- 14:35 JRP IND13, T3D: *Thermal design and time-dependent dimensional drift behaviour of sensors, materials and structures*
- 14:55 *Coffee break*
- 15:25 JRP IND17, Scatterometry: *Metrology of small structures for the manufacturing of electronic and optical devices*
- Overview of and first results from running EMRP-projects (~ 1y) with relevance to TC-L**
- 15:45 JRP SIB03 kNOW: *Realisation of the awaited definition of the kilogram - resolving the discrepancies*
- 15:55 JRP SIB08 subnano: *Traceability of sub-nm length measurements*
- 16:05 JRP NEW05 MechProNO: *Traceable measurement of mechanical properties of nano-objects*
- 16:15 JRP NEW06 TraCIM: *Traceability for computationally-intensive metrology*

- 16:25 JRP NEW08 MetNEMS: *Metrology with/for NEMS*
- 16:35 JRP NEW09 METCO: *Metrology of electro-thermal coupling for new functional materials technology*
- 16:45 *Coffee Break and parallel Poster Session:*
- Overview of newly started EMRP-projects with relevance to TC-L**
- JRP IND53 Large Volume: *Large volume metrology in industry*
- JRP IND54 Nanostrain: *Novel electronic devices based on control of strain at the nanoscale*
- JRP IND58 6DoF: *Metrology for movement and positioning in six degrees of freedom*
- JRP IND59 Microparts: *Multi-sensor metrology for microparts in innovative industrial products*
- JRP IND61 Metroision: *Metrology to enable high temperature erosion testing*
- JRP IND62 TIM: *Traceable in-process dimensional measurement*
- JRP SIB58 Angles: *Angle metrology*
- JRP SIB60 Surveying: *Metrology for long distance surveying*
- JRP SIB61 CRYSTAL: *Crystalline surfaces, self assembled structures, and nano-origami as length standard in (nano)metrology*
- 17:30 **Optional visits of selected PTB laboratories**
- 18:30 **End of open TC-L workshop**
- 20:00 **Optional get together meeting / Dinner in BS**

# EMPIR workshop – PRT ideas

- Arranged at 23 Oct. 2013
- To promote co-operation of TC-L members for EMPIR 2014 Call
- To collect ideas for 2014 PRT call
- To allow all NMIs to contribute to PRT preparation according to their national priorities



# EMPIR workshop – PRT ideas

- 22 preliminary PRT ideas
  - targeted to following industrial sectors:
    - Additive manufacturing
    - Aircraft industry
    - Car industry
    - Fiber manufacturing
    - High parallel manufacturing  
e.g. printed electronics, displays etc.
    - Machine industry
    - Measuring instrument manufacturing
    - Nanotech industry
    - Optics manufacturing
    - Photonics industry
    - Semiconductor industry
    - Microsystems/components ind.
    - Products by material innovations
- A common list of topics & interested was formed and updated
  - Excellent way to:
    - collect ideas
    - form group of interested to support a PRT
  - ~18 PRTs length related PRTs submitted
  - ~120 companies & ~ 40 Uni.



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# Macroscale 2014

- **In conjunction with next TC Length annual meeting 2014:**  
triennial **MACROSCALE 2014** conference will be organized  
October 28-30, 2014 Wien, Austria by BEV & PTB in co-operation  
with EURAMET TC-L and CCL
- Global participation is expected
- Excellent channel for dissemination of the JRP results to wider audience



# NanoScale 2013 Paris



## Thank you for your attention!