



Instituto Português da **Q**ualidade



GOVERNO DE  
PORTUGAL

MINISTÉRIO DA ECONOMIA  
E DO EMPREGO

# TC-F: Flow

## Highlights 2013/2014

Elsa Batista

TC-F Chair

**8<sup>th</sup> EURAMET General Assembly**

**June 2014**



# MEMBERSHIP and STRUCTURE

- 29 contact persons
- 60 flow experts
- 34 EURAMET members organizations:
  - 10 DI
  - 22 NMI
  - 2 others (CENAM, IRMM)
- Four sub groups
  - Gas Flow – Convenor - Bodo Mickan from PTB
  - Liquid Flow - Convenor - Petra Milota from BEV
  - Volume - New convenor – Miroslava Benkova from EIM
  - Fluid Speed – Pier Giorgio Spazzini from INRIM

**NEW**

# 2014 TC-F Meeting

- Last meeting 11<sup>th</sup> from 13<sup>th</sup> of March 2014: Turin, Italy hosted by INRIM
- 23 Countries: 38 Delegates
- Three day meetings
- CMC, EMRP, new facilities and comparisons results discussed

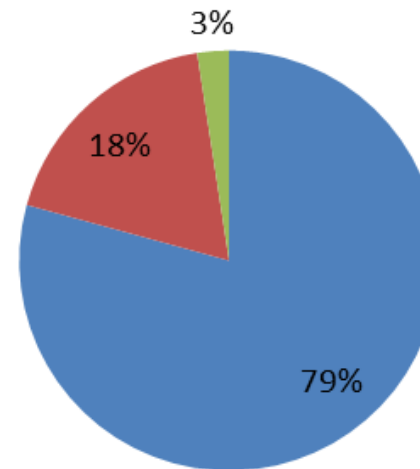


# EURAMET PROJECTS

## Type of project

- Total 82
- Gas flow – 28
- Liquid flow – 28
- Volume – 19
- Fluid speed - 7

■ Comparison ■ Research ■ Consultation







# CMC IN LIQUID FLOW SPEED



The world's first set of CMCs in the field of Liquid Flow Speed declared by Switzerland (METAS) was published by the JCRB on 8 August 2013 (EURAMET.M.34.2013).



## 2013 EMRP CALL

- ENG54 – Biogas – Metrology for Biogas
- ENG58 – MultiFlowMet - Multiphase flow metrology in oil and gas production
- ENG60 – LNG – Metrology for LNG
- ENV60 – IMPRESS - Metrology to underpin future regulation of industrial emissions
  
- Also to a lesser extent there is a TC-F members participation in:
  - ENV56 - KEY-VOCs-Metrology for VOC indicators in air pollution and climate change
  - ENG59 - NonNewtonianLiquids-Sensor development and calibration method for inline detection of viscosity and solids content of non-Newtonian fluids

# EUREGA

On September 23rd 2013, LNE, PTB, VSL and FORCE sign the “Memorandum of Understanding on collaboration to facilitate a European REference for GAs metering (EUREGA)”.

For high pressure gas flow measurements, a procedure has been agreed among the leading NMIs to establish common reference values, based on different independent national traceability chains of each country which leads finally to a higher degree of stability of measurements associated with smaller uncertainty.

# GUIDES

Three new guides are now under development:

- Guide on air speed calibration of solid anemometers
- Guide on the calibration, operation and handling of micropipettes
- Guide on harmonization of the uncertainty budgets and calibration methods for liquid flow standards



## FUTURE WORK

- A new protocol on EURAMET TC – F comparisons organization is now under development.
- New PRT proposals for EMPIR organized within the TC-F.
- An inquiry to stakeholders needs and ideas for development of flow measurements in Europe will be prepared and distributed.
- A record of past meetings will be concluded based on interviews with senior TC-F participants.

**Thank you!**  
**Questions?**

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