

## EMUE workshop introduction

Maurice Cox  
National Physical Laboratory, UK

EMUE workshop, LNE Paris Jan 2020

# EMPIR project EMUE: Examples of Measurement Uncertainty Evaluation

Towards a comprehensive set of  
examples of measurement  
uncertainty evaluation to support  
guides and standards

**EMPIR**



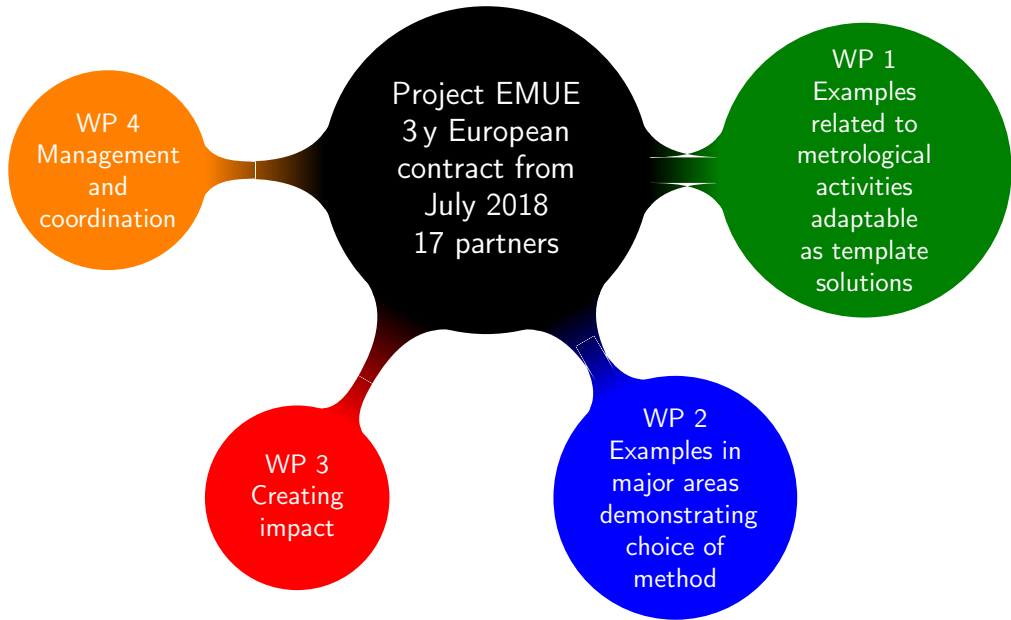
The EMPIR initiative is co-funded by the European Union's Horizon 2020 research and innovation programme and the EMPIR Participating States



**Examples of Measurement  
Uncertainty Evaluation**

# Scope

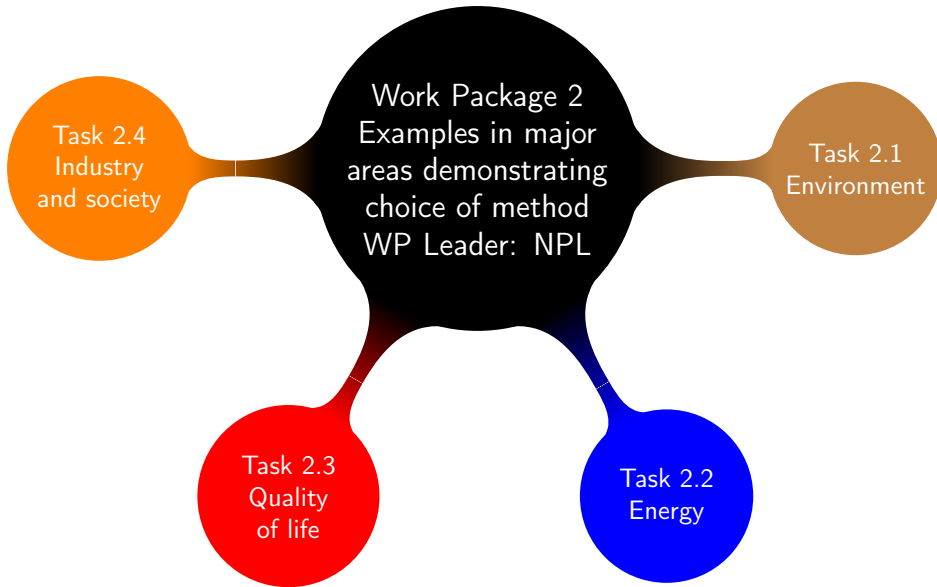
- Promote the harmonized evaluation of measurement uncertainty according to internationally recognized standards and guides across broad disciplines of measurement
- Accomplish by providing new or improved examples to the Joint Committee for Guides in Metrology (JCGM), international standards committees, and other bodies and end-users
- Improve the use by these bodies of accepted uncertainty principles
- Many examples in a form that can readily be adapted to other areas:  
“Learn by example”



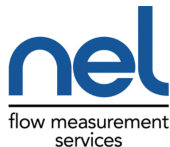
Work Package 1  
Examples relating  
to metrological ac-  
tivities adaptable as  
template solutions  
WP Leader: UKAS

Task 1.1  
Calibration,  
testing and  
comparison

Task 1.2  
Conformity to  
regulation or  
specification



# EMUE project partners



# Emphasis

- Emphasis on “learn by example”
- Level of competence in any particular technical area generally high, but low in terms of measurement uncertainty analysis
- Provision of over 30 examples to JCGM and many ISO committees and other bodies
- Accreditation bodies (UKAS, ACCREDIA) and organizations such as EUROLAB particular targets for project results
- Explain at the right level — also feed GUM New Perspective
- Compendium of examples to be complemented by primers (uncertainty reporting, correlation, MC)



## Workshop aims

This workshop one of the main outputs of project EMUE

- Present concrete examples to demonstrate how measurement uncertainty (MU) evaluation methods can support various sectors
- Presentations on uncertainty evaluation methods relevant to a range of applications

## Workshop aims

This workshop one of the main outputs of project EMUE

- Present concrete examples to demonstrate how measurement uncertainty (MU) evaluation methods can support various sectors
- Presentations on uncertainty evaluation methods relevant to a range of applications
- Discussion of best practice for uncertainty assessments
- Highlight advantages and limitations of methods for MU evaluation

## Workshop aims

This workshop one of the main outputs of project EMUE

- Present concrete examples to demonstrate how measurement uncertainty (MU) evaluation methods can support various sectors
- Presentations on uncertainty evaluation methods relevant to a range of applications
- Discussion of best practice for uncertainty assessments
- Highlight advantages and limitations of methods for MU evaluation

Workshop to showcase practical examples of MU evaluation

Examples cover calibration, testing, comparison, conformance and accounting for correlation

## Workshop aims

This workshop one of the main outputs of project EMUE

- Present concrete examples to demonstrate how measurement uncertainty (MU) evaluation methods can support various sectors
- Presentations on uncertainty evaluation methods relevant to a range of applications
- Discussion of best practice for uncertainty assessments
- Highlight advantages and limitations of methods for MU evaluation

Workshop to showcase practical examples of MU evaluation

Examples cover calibration, testing, comparison, conformance and accounting for correlation

Representatives from national metrology institutes, standards committees, accreditation bodies, regulators, calibration and testing laboratories and measurement practitioners invited

# Workshop sessions

## Morning

- Basics on MU evaluation
- Good MU practice in calibration and testing
- MU and declaring conformity
- Round table: MU accreditation and regulation in practice

# Workshop sessions

## Morning

- Basics on MU evaluation
- Good MU practice in calibration and testing
- MU and declaring conformity
- Round table: MU accreditation and regulation in practice

## Afternoon

- Methods for regression data: towards good operational statistical practice!
- Choice of methods for MU evaluation
- Round table: Beyond the current GUM; introduction to and views on the GUM New Perspective

# Workshop sessions

## Morning

- Basics on MU evaluation
- Good MU practice in calibration and testing
- MU and declaring conformity
- Round table: MU accreditation and regulation in practice

## Afternoon

- Methods for regression data: towards good operational statistical practice!
- Choice of methods for MU evaluation
- Round table: Beyond the current GUM; introduction to and views on the GUM New Perspective

Grateful thanks to LNE for hosting!

# EMPIR



The EMPIR initiative is co-funded by the European Union's Horizon 2020 research and innovation programme and the EMPIR Participating States



**Examples of Measurement  
Uncertainty Evaluation**

This project has received funding from the EMPIR programme co-financed by the Participating States and from the European Union's Horizon 2020 research and innovation programme