RESPONSE FORM

Standardization needs and suggestions to EURAMET for consideration in their 2017 EMPIR call

In the frame of the between CEN, CENELEC and EURAMET, CEN and CENELEC have been invited by the EURAMET Management to put forward their testing and measurement needs in **Energy**, in **Environment** and in **Pre- and co-normative research**.

Relevant technical groups (sector fora, advisory boards, coordination groups, TCs...) are invited to contribute with:

- a short introduction or an overview paper of their unaddressed standardization needs for testing and measurement, and
- a contact person (secretary, chair, convenor, liaison officer, etc.) whom proposers for the Potential Research Topics can contact,

using the table below, **before 12 December 2016**

Source of the identified need (identification of TC, WG, etc, incl. title)	☒ CEN/TC 290/WG 0 ☐ CLC/TC 0/WG 0 ☒ ISO/TC 213/SC 0 / WG 10 ☐ IEC/TC 0/SC 0 / WG 0 ☒ Other, namely *UNI/CT047, TPD e GPS - Documentazione, specificazione e verifica geometriche dei prodotti*
European entity responsible for submission of the need	*CEN/ TC 290* *Dimensional and geometrical product specification and verification*
Person that can be contacted for more detail (name, e-mail and telephone number)	*Alessandro Balsamo* *a.balsamo@inrim.it* *+39 011 3919.970* *Italy*
Unaddressed need (short description)	*Experimental validation of methods for uncertainty evaluation for CMMs (Coordinate Measuring Machines)*
Type of work (more answers possible)	☒ pre-normative ☐ SI-units ☐ co-normative ☐ interlaboratory study ☐ testing ☐ fundamental research ☒ measurement ☐ market support ☐ energy ☐ environment
Estimated effort (if known)	Person months: 18
Further explanation of need (TC business plan, road map, formal decision, work item, etc.)	*CMMs are fundamental measuring instrument in manufacturing. They can target virtually any geometry and shape. A typical use in industry is for part inspection, for acceptance or rejection, where the measurement uncertainty is an essential and mandatory component for deciding (JCGM 106, EN ISO 14253 1). The number of such decisions in manufacturing is huge: in principle, any supplied part or sub-part should be inspected, as should*

	semifinished parts after critical treatment. *Evaluating the CMM uncertainty is known to be a very difficult task, particularly in industry. Some help is found in the EN ISO 15530 series, where several methods are presented. Unfortunately, each method suffers peculiar limitations in its applicability.* *One method is very promising for wide application in industry, free from most limitations and very practical (experimentally based). The idea originated in the FP5-GROWTH project Easytrac (2000/2003), was brought to the ISO/TC213/WG10 (competent for CMMs), elaborated as a possible ISO 15530-2 and eventually abandoned: unfortunately the project leader retired and nobody was ready to take after him. The ISO/TC213/WG10 has always recognised on one hand the potential of this method, but on the other hand the need for further extenisive investigation and validation: being a very practical method, either theoretical ground or extensive experimental evidence (and hopefully both) is required to underpin an international standard.* *More recently, the ISO/TC213/WG10 considered resuming the project due to its importance, but it is still fighting against the amount of work required, which exceeds the voluntary nature of the WG.* *A European funded project on this topic would have a very large impact in industry: the measuring uncertainty qualifies everyday acceptances/rejections technically. In terms of return of investment, the remaining effort to make this technical solution available to industry in a standard is mild compared with the significant money already invested in the past on this topics.* *The method should be practical, assuming the least on the geometrical characteristic to inspect, the environment and the procedure, and economic enough to be viable in practice.* *The need in industry would ask for immediate response; however no deadline is set: it is an open project, the sooner the better.*
Enclosures	☐ Yes ☒ No

Email address for sending the Response Form:

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