

# **The Impact of Metrology Research and Development on Society**

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## **Abstract**

What is the relevance of metrology research and development (R&D)? This type of research is quite costly and is generally taking up many years of time. It is therefore important to develop those standards and reference materials that are really needed by industry and society. Most metrology R&D is state funded and performed at universities and national metrology institutes (NMIs). So the question is: is the investment of public money in metrology R&D at these institutes economically profitable or had this money better been spent on other activities?

The actual measurement of the impact of metrology R&D appears to be a difficult case. Most of the impact of metrology research projects will be indirect, by increasing generally available knowledge and by providing better measurement facilities to customers. Even if a direct economic impact of a research project can be identified, it is difficult to quantify this impact since it is often achieved via several, mixed factors. Still, NIST has shown in a series of case studies that the economic impact of certain metrology research and development projects or programmes can indeed be quantified [1].

In this paper we present an overview of the methods used throughout Europe for the impact measurement of metrology R&D. This inventory is made as part of the iMERA project [2], which aims to increase the impact from national investment in European metrology R&D. The final aim of the iMERA project is a joint European metrology R&D programme. Such a European-wide cooperation is one of the answers to the metrology dilemma: the fact that challenges of existing and new areas in metrology grow at a larger pace than the available budgets. Apart from the explicit aim in the iMERA project, the importance of impact measurements is also reflected in the fact that expected economic impact of metrology R&D projects will be an important parameter in the prioritisation of such projects.

[1] see [http://www.nist.gov/director/planning/study\\_info.htm](http://www.nist.gov/director/planning/study_info.htm)

[2] see [www.euromet.org/projects/imera](http://www.euromet.org/projects/imera)