

## Training course on the TraCIM service for validating metrology software

Thursday 28th May 2015

National Physical Laboratory, Hampton Road, Teddington, Middlesex, TW11 0LW

### The role of metrology software in traceable measurement and quality systems

Nowadays in metrology, almost every measuring system involves computation. How can we be sure that the software performing these computations is giving the correct results? Poorly performing software can compromise traceability of measurement and, in a quality assurance/industrial inspection setting, put product quality at risk. But what can we do to check if metrology software is fit for purpose?

### A new approach to metrology software validation and online certification

This training course presents the outputs of a European Metrology Research Programme (EMRP) project 'Traceability for computationally-intensive metrology' (TraCIM) that has developed a new approach for assessing the performance and fitness for purpose of metrology software and established an online software certification service.

### Training course objectives

This training course is intended for developers of metrology software who are interested in having their software independently validated using the TraCIM system. Following an overview of the TraCIM concept, the design of TraCIM client software to communicate with the TraCIM system will be described. Example code will be provided and TraCIM partners will be on hand to provide guidance on creating example clients and interacting with the TraCIM server. Please see the agenda below.

**Attendees are requested to bring a laptop on which is installed their preferred developer environment.**

### Background information

The TraCIM validation service is reliant upon reference input data and reference output data. For a particular computational aim, a database of reference data sets is generated that forms the basis of the validation of software developed to implement that computational aim. The software is applied to (a subset of) the available reference input data sets to obtain test output data sets. These test output data sets may then be compared with corresponding reference output data sets to provide an assessment of the software's performance.

To use the TraCIM service, client software must be developed that can communicate with the TraCIM server as follows:

- The customer uses the client to request the software validation service.
- Reference input data sets are then provided by the server.
- The software is applied to the reference input data sets and the test output data sets are sent to the server.
- Following comparison of the test and reference output data sets, the customer is provided with information on the performance of the software.

For more information, visit the [TraCIM project website](#).

## Workshop on validation and certification of metrology software

Prior to the training course, a workshop on metrology software validation will be held on Wednesday 27th May 2015, at the National Physical Laboratory. This workshop will discuss the specification of computational aims, the generation of reference data, performance metrics for metrology software and the development of the TraCIM system. For more information about the workshop, visit [www.npl.co.uk/events](http://www.npl.co.uk/events).

If you would like to register for the training course, please email Louise Brown ([louise.brown@npl.co.uk](mailto:louise.brown@npl.co.uk)).

### TraCIM Client Training - Agenda

08:45	Registration	
09:00	Welcome to NPL	<i>Alistair Forbes, NPL</i>
09:10	Brief overview of the TraCIM system	<i>Klaus Wendt, PTB</i>
09:30	TraCIM Client-server architecture	<i>Bend Müller, Ostfalia</i>
10:00	Gauss and Chebyshev	<i>Matthias Franke, PTB</i>
10:30	Individual implementations in small groups	<i>Matthias Franke, David Witte, Thomas Fricke, PTB</i>
12:30	<b>Lunch</b>	
13:30	Continuing individual implementations in small groups	<i>Matthias Franke, David Witte, Thomas Fricke, PTB</i>
15:45	Feedback from participants	<i>All</i>
16:00	Close of training session	