Projekt

PTB participated in the joint research project 'Traceability for Computational-Intensive Metrology' together with six national metrology institutes, four industrial partners and 4 universities from throughout Europe. The project was funded by the European Metrology Research Programme (EMRP). During the project PTB developed a new infrastructure allowing registered users to test their computational software.

For additional project information please see:
http://www.ptb.de/emrp/tcim.html

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As of: 04/15

Physikalisch-Technische Bundesanstalt
Braunschweig und Berlin
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Traceability for Computational-Intensive Metrology

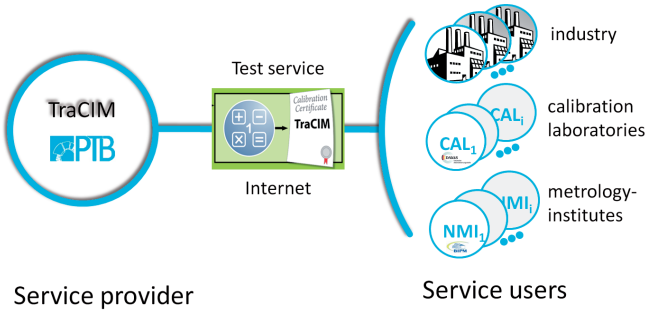
TraCIM

Motivation and Implementation

Today complex evaluation software is a central component for modern measurement systems. The precision of the calculations must be validated in order to minimize errors as these can lead to measurement uncertainty. Possible causes for error include:

- incorrect algorithm used
- improper implementation
- insufficient approximation
- simple errors such as sign error

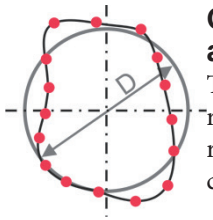
In order to confirm the precision of the evaluation algorithms, test data will be provided and evaluated by the software under test. The calculated test results will then be compared with the corresponding reference data.



Test data and results will be exchanged via internet. A client-server platform with defined interfaces has been developed enabling the easy integration into existing software. This provides the user with a simple, automated validation process.

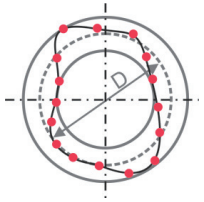
Service

PTB's TraCIM Service currently offers two possibilities to test evaluation algorithms in the area of coordinate metrology:



Gaussian minimization algorithms

Testing of gaussian minimization algorithms for the following basic geometric elements: 3D line, plane, 3D circle, cylinder, cone and sphere



Chebyshev minimization algorithms

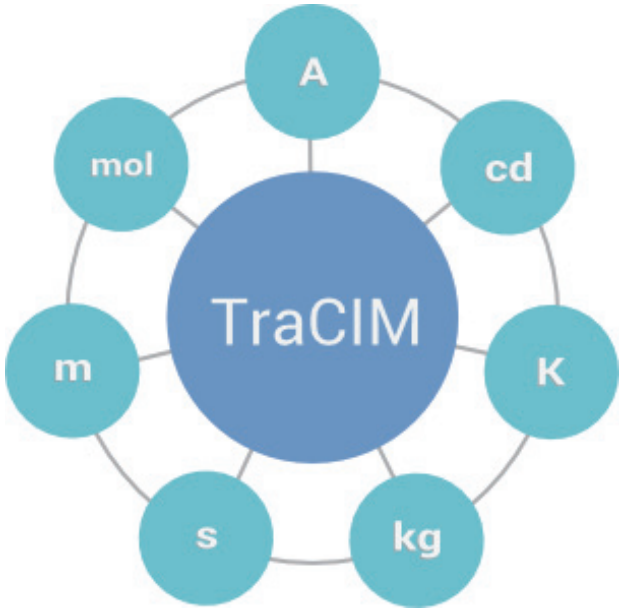
Testing of Chebyshev minimization algorithms (minimum-zone method) for the following basic geometric elements: 2D line, 2D circle, plane, sphere and cylinder

The tests are subject to charge.
More detailed information can be found at:
https://tracim.ptb.de

Please ask the manufacturer of your evaluation software, if he provides easy access to the TraCIM service.

TraCIM Association

Several metrology institutes have joined together to form the TraCIM e.V. association in order to promote technical cooperation in the field of traceability of mathematical evaluation algorithms in metrology. TraCIM e.V.'s main goal is to develop new testing possibilities in various areas of metrology including length, chemistry, electricity, etc. and to define uniform quality standards for software testing.



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