

Task and Activities

Task

Reliable traceability of gear quantities at the highest level in order to maintain and improve metrology in the industry.

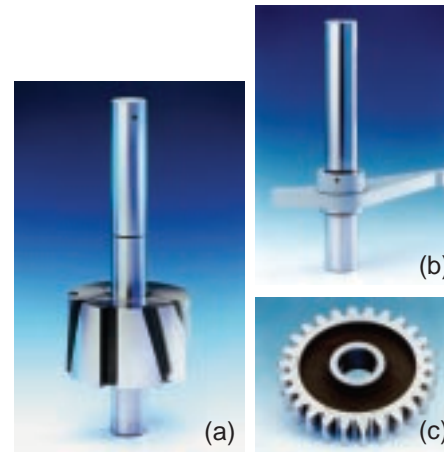
Activities

- Certification of gear algorithms
- Calibration of gear artifacts
- DKD assessments
- Advice to industry

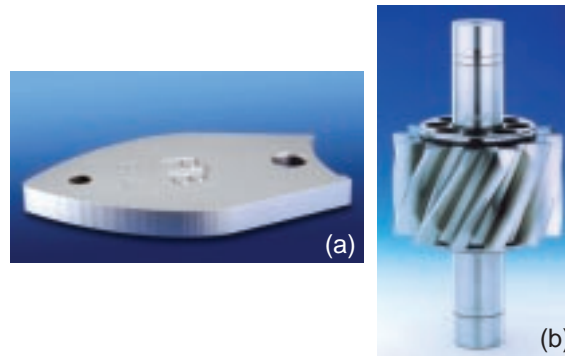
- Research
- Intercomparisons
- Standardization work

Gear Artifacts

The *calibration* of gear artifacts for industry assures an economical manufacturing of gears.

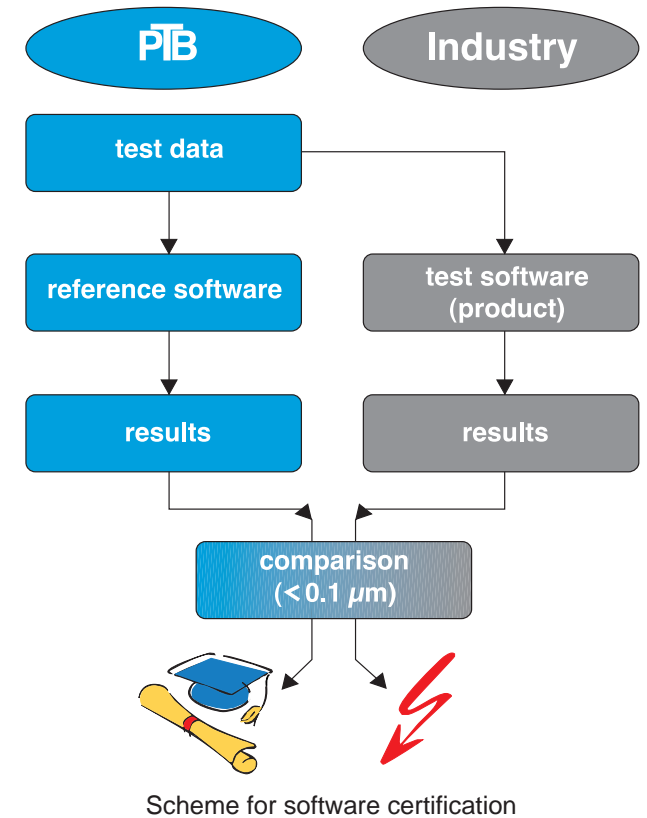


Classical gear artifacts
(a) helix, (b) profile, (c) pitch



Application-oriented gear artifacts
(a) involute waviness artifact, (b) product-like artifact

Certification of Gear Algorithms



The *certification* of evaluation algorithms on the basis of current standards and guidelines is a prerequisite for reliable measurement results.

Calibration Capabilities

Calibration of Cylindrical Gears

Measurand / artifact	Measurand level or range in mm	U (k = 2) in μm
profile - slope deviation - total deviation - form deviation	$25 \leq d_o \leq 400$	$\geq 1,0$
helix - slope deviation - total deviation - form deviation	$0^\circ \leq \beta \leq 45^\circ$ $25 \leq d_o \leq 400$	$\geq 1,1$
pitch - total deviation	$25 \leq d_o \leq 300$	$\geq 0,2$
runout deviation	$25 \leq d_o \leq 300$	$\geq 1,0$
dimension over spheres	$25 \leq d_o \leq 300$	$\geq 1,0$
software test	–	$\geq 0,1$
micro gears	on request	
profile waviness	on request	

Information

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Gear Metrology in the PTB

