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Conformity assessment - Guidelines on methods of intermediate checks for measuring equipment

合格评定 测量设备期间核查的方法指南

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part

1.Structure and Drafting Rules of Standardization Documents" Drafting. Please note that some content in this document may be subject to patents. The publisher of this document assumes no responsibility for identifying patents. This document is proposed and coordinated by the National Certification and Accreditation Standardization Technical Committee (SAC/TC261). This document was drafted by: China National Accreditation Center for Conformity Assessment, Guangdong Institute of Metrology, China Institute of Metrology, Xi'an Institute of Metrology, Inner Mongolia Autonomous Region Institute of Metrology and Testing, China Electronics Technology Group Corporation 54th Research Institute, China Fiber Quantity Monitoring Center, Shenzhen CTI Metrology Technology Co., Ltd., Henan Provincial Measurement Standards and Product Quality Inspection and Testing Center, Guangdong Academy of Sciences Testing and Analysis Institute (Analysis and Testing Center in Guangzhou, China), Chinese Academy of Inspection and Quarantine, Jilin Institute of Metrology, Shenzhen Institute of Metrology and Quality Inspection, Hubei Institute of Metrology and Testing Technology. The main drafters of this document. Wang Yang, Lin Zhiguo, Anping, Wei Zuozhi, Xiu Hongyu, Hu Chang, An Xiaoning, Wang Guijuan, Zhou Shuo, Li Penghui, Shi Enjie, Peng Jiwei, Qi Xiaohua, Fang Facheng, Li Mingzhao, Wang Qi.

Periodic verification is to verify the measurement characteristics and functions of the measuring equipment according to prescribed procedures during use (including between two adjacent calibrations/verifications). Operations performed to determine whether performance and/or safety continue to meet method requirements or specified requirements. Depending on the service life of the measuring equipment, Life, reliability,

stability, usage risks and verification costs are used to determine whether verification during implementation is required. Periodic verification is an effective way to verify the performance status of measurement equipment through technical means. It is an important way for organizations to maintain confidence in equipment performance and The quality control method often used to ensure the validity of measurement results is also an effective means for organizations to accurately manage measurement equipment. GB/T 27025 "General Requirements for Testing and Calibration Laboratories Capabilities", GJB2725A "General Requirements for Testing and Calibration Laboratories" Requirements", JJF1069 "Assessment Standards for Legal Metrology Verification Institutions" and "Quality Recognition Review Guidelines for Inspection and Testing Institutions" etc. There are relevant provisions for verification. This document can help organizations better understand and correctly implement period verification activities for measuring equipment to ensure period Verify the effectiveness and pertinence of activities and improve the organization's management level and capabilities of measurement equipment. This document can deepen reviewers' testing Understand the verification during the measurement of equipment, unify the review standards, and ensure review quality and review consistency. Methodological guidance for period verification of measuring equipment during conformity assessment

1 Scope

China's national guidance on the methods used for the intermediate checking of measuring equipment. It gives guidelines on how a laboratory decides whether intermediate checks are needed, how it selects a method, how it sets the interval and the criteria, and how it acts on the result. An intermediate check is what happens between calibrations. A calibration establishes what an instrument reads at a moment in time; what happens in the two years before the next one is not covered by it, and the assumption that the instrument stayed where it was is exactly that - an assumption. If it drifted, everything measured since the last calibration is in question, and the laboratory finds out only when the next calibration report arrives and has to decide what to do about a year of results. The intermediate check is the technical means of not being in that position: a procedure carried out during use, on the laboratory's own initiative, to confirm that the metrological characteristics and the function of the equipment continue to meet the requirements of the method. The guidance is written around the decisions the laboratory actually has to make. Whether a check is needed at all, judged from the service life, the reliability, the stability, the risk attached to the use and the cost of checking. Which method to use - a check standard, a reference material, redundant instruments, a stability artefact, inter-comparison or a functional check. How often. What acceptance criterion to apply, and how to distinguish a real drift from the noise of the check itself. And what to do when a check fails, including how far back the consequences reach. Issued on 7 September 2023 and in force from the same date.

This document provides methodological guidance for periodic verification of measuring equipment, including general principles, documents and records of periodic verification, and

measurement specialties of measuring equipment. Suggestions on safety, functionality and safety period verification. This document applies to period verification activities of measuring equipment performed by the organization.

Note. Institutions include but are not limited to testing and calibration laboratories, legal metrology verification institutions, inspection institutions, reference material producers, proficiency testing providers, scientific research Laboratory etc.

2 Normative reference documents

The contents of the following documents constitute essential provisions of this document through normative references in the text. Among them, the dated quotations For undated referenced documents, only the version corresponding to that date applies to this document; for undated referenced documents, the latest version (including all amendments) applies to this document.

GB/T 27000 Conformity assessment vocabulary and general principles

JJF1001-2011 General measurement terms and definitions

3 Terms and definitions

The following terms and definitions as defined in GB/T 27000, JJF1001-2011 and ISO /IEC Guide 99.2007 apply to this document.

3.1 Measuring equipment measuring equipment Measuring instruments, software, measurement standards, reference materials, auxiliary equipment or combinations thereof necessary to implement the measurement process. [Source: JJF1001-2011,6.6]

3.2 interimcheckintermediatecheck During the use of the equipment (including between two adjacent calibrations/verifications), its metrological characteristics, functionality and/or safety must be verified in accordance with prescribed procedures. Whether the safety continues to meet the requirements of the method or the requirements of the regulations.

Note 1."Method requirements" are the relevant requirements for the measurement characteristics, functionality and/or safety of the equipment by testing/calibration and other methods.

Note 2."Prescriptive requirements" are determined by the institution itself based on use needs and risks, and are usually stricter than "method requirements".

3.3 checkstandard checkstandard Equipment, samples, systems or devices used to verify the metrological properties, functionality and/or safety of measuring equipment.