

Calibration Interval Analysis System in SQL

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Abstract

Calibration interval analysis is a topic that is brought up with great enthusiasm and interest in various discussion and email forums. The discussions usually begin with “How are you doing this?”, but often end in confusion over which is the best method to adopt and how to employ it. There is third party software available, ranging from free with few features to expensive with many features, which can perform the task of reducing out-of-tolerance probabilities to an acceptable level. However, any laboratory may be able to create their own custom solution without relying on third party software applications. In fact, most commercial and open source databases have enough computing capability to perform the calculations within the same database where the calibration and/or test data is stored – no additional application required. A locally developed automated solution is possible with help from NCSLI Recommended Practice RP-1, an understanding of using Structured Query Language (SQL) to access and manipulate databases, and good math and programming skills. Such a Calibration Interval Analysis System (CIAS) was developed at the NASA Johnson Space Center calibration laboratory that is capable of analysis by both model number family (Manufacturer/Model) and by serial number. This paper explains the process used to develop the CIAS framework.