

The Validation of Geodetic Measurements

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SUMMARY

Today our surveying instruments are complex and fully automatic multi-sensor-devices. Their results no longer depend on the sharp eyes of users. “Measurements are so easy – just push the button.” This is one important advertising slogan used by all the manufacturers. And it describes the reality: we do not know what is going on inside our instruments, but today the data acquisition itself is more accurate, easier and much more efficient than it was in past decades. The flow of our data is automatic, as is the entire process of data treatment and calculation.

But this does not imply that our measurements are free of deviations from the nominal values, especially after years of intensive usage of our equipment. It is the responsibility of the operator to make sure that our results are within the required specifications.

The purpose of a calibration is to determine the difference between the current values and the nominal values. Normally a calibration is followed by an adjustment in order to minimize the differences of future measurements.

For a validation we also determine the difference between the current values and the nominal values. But the aim here is to check, whether the deviations are admissible or not.

After a general discussion about different aspects of calibration and validation a successful method for validating measurements with a total station for legal purposes is described and presented. This method can easily be expanded to other type of measurements results and applications.