

AIM HIGH, AIM TRUE

Repeatability is not **everything**, but there's **nothing** without repeatability

In Switzerland there is the tale of the legendary archer William Tell who was said to be particularly accurate in his shooting, time and time again. In order to avoid being punished, he was forced to hit an apple that was placed on the head of his son. Although he was a great shot, if he hadn't known that he was able to hit the target again and again, his son would not have had much of a chance. However, the combination of the accuracy and repeatability of William Tell's archery skills saved his son's life and ensured his own freedom.

When it comes to metering devices, the most important thing, first and foremost, is to guarantee that the results remain stable and reliable over a longer period of time, i.e. that they are repeatable. In this context, European standards (e.g. ENV 13005) have emphasised terms such as 'repeatable precision' to judge short-term repeatability and 'extended precision' to judge long-term repeatability. Repeatable precision is of course a prerequisite of extended precision. A device can only operate accurately over a long period of time if the results in the short term are also precise. The user of metering devices must be able to rely on the accuracy of the results over a period of many years. This is particularly important when it comes to

metering facilities where it is extremely difficult, if not impossible, to inspect the devices without a great deal of time and effort. A metering device whose error curve is constant will always be preferred to one where the error at the beginning is very low but where, through time, changes become all too apparent, for whatever the reason.

When devices are being approved for official billing purposes, it is always necessary, according to the latest European standards, to prove the 'extended precision' by means of a long-term test. This means the metering behaviour of the meter being tested is monitored over an operating period of 1000 to 5000 hours, depending on the type of meter and the standard in question, and the accuracy must remain within very tight limits. If these limits are exceeded, the devices are not approved by the authorities.

However, in order to prevent any changes in the metering behaviour of official metering facilities from going unnoticed, the authorities have stipulated so-called recalibration periods. Every official



device must be recertified or recalibrated within a predefined period of time. In the field of domestic meters, devices can be statistically recalibrated. A whole batch of devices can be considered to have been recalibrated if a representative number of the devices has fulfilled the official recalibration criteria. Large-volume gas meters must be recalibrated individually.

As a result of this, devices are regularly inspected on ELSTER's state-approved test rigs and are certified for a new calibration period. In the course of this process we gain an excellent overview of the long-term metering behaviour, i.e. the extended precision, of ELSTER's gas meters.

As far as quality is concerned, ELSTER's gas meters can be compared to the legendary shooting of William Tell. They are highly accurate and the results are the same over a long period of time. Even when conditions are difficult, the user can always rely on long-term results. Just like William Tell, ELSTER'S meters always hit the target.

G 650 Turbine meters – a model of accuracy – even after 12 years

