

# CALIBRATION AT MANUFACTURER'S QUALITY

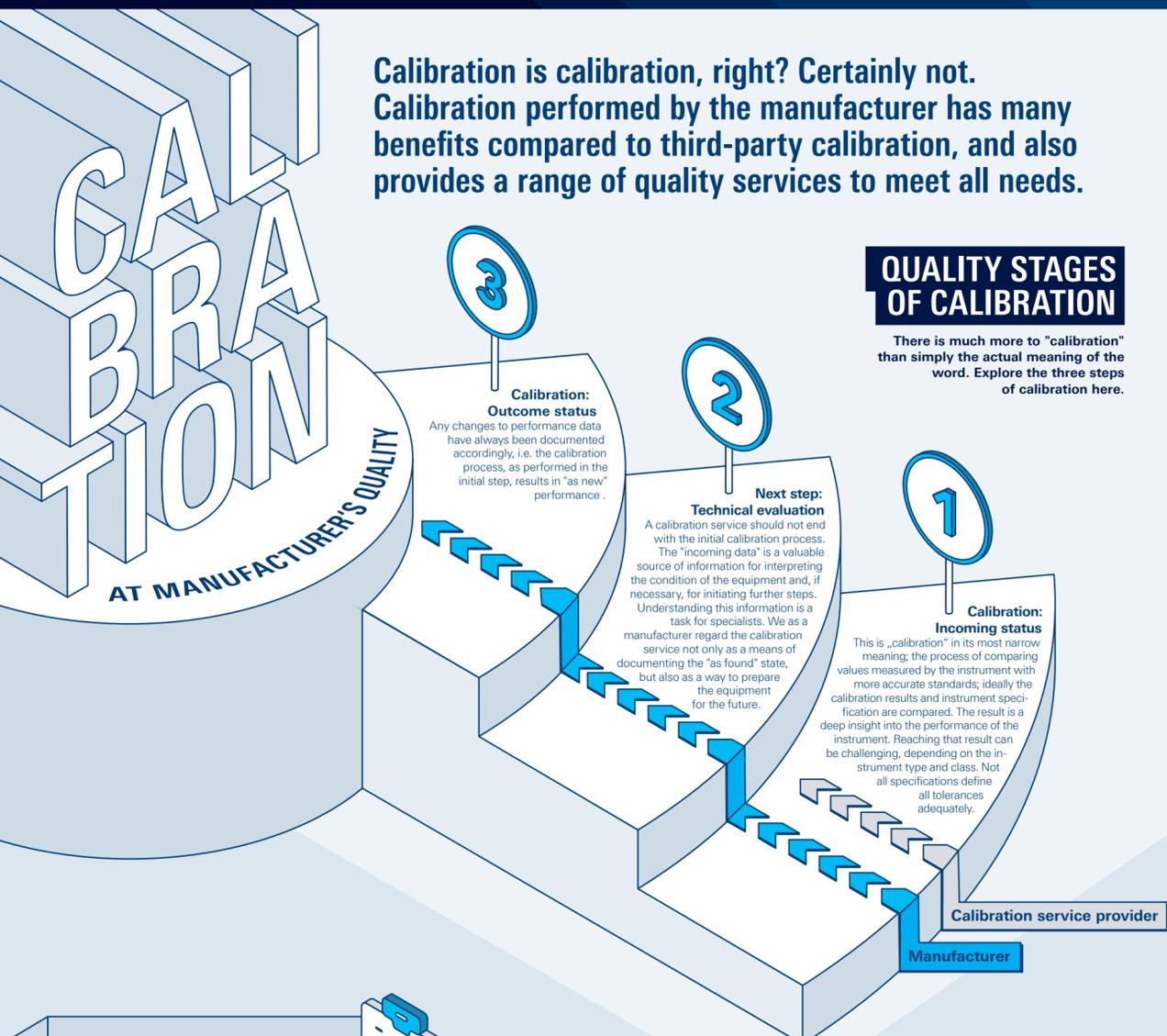
**ROHDE & SCHWARZ**  
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**Calibration is calibration, right? Certainly not. Calibration performed by the manufacturer has many benefits compared to third-party calibration, and also provides a range of quality services to meet all needs.**

## QUALITY STAGES OF CALIBRATION

There is much more to "calibration" than simply the actual meaning of the word. Explore the three steps of calibration here.

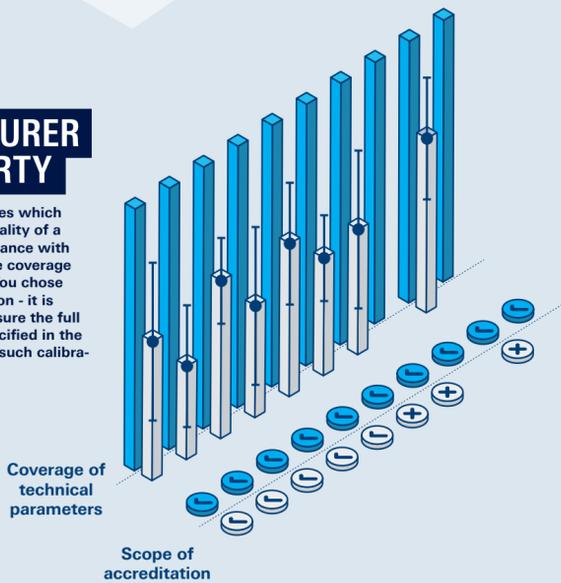


### Normative and regulative requirements for metrological traceability

Calibration results from laboratories conforming to ISO 17025 provide metrological traceability. In other words, the calibrated parameters must be in the scope of the accreditation, and the uncertainties should be sufficiently small to enable compliance decisions.

## MANUFACTURER VS. 3RD PARTY

There are several disciplines which together determine the quality of a calibration service: compliance with relevant standards and the coverage of technical parameters. You chose your equipment for a reason - it is therefore necessary to ensure the full performance range as specified in the data sheet and to provide such calibrations under accreditation.



## HOLISTIC QUALITY CALIBRATION PROCESS

The following graphic shows the calibration process of a manufacturer's calibration service. Most of the steps shown here cannot be provided by a third-party calibration service.

### SCREENING PROCESS & PREPARATION

Before an instrument is calibrated, an initial health check is performed. This includes functional checks, visual and mechanical checks as well as the malware scans.

### Additional components of an R&S calibration service

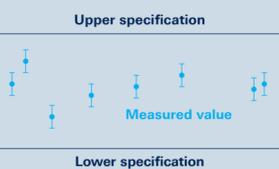
- Preventive maintenance
- Firmware updates
- Virus and malware scan
- Adjustments

### INCOMING CALIBRATION

Comparing your equipment with reference standards. Established with defined processes and state of the art uncertainties.

### What does a calibration look like?

Measurement results are compared with e.g. data sheet specifications. Measurement results consist of measured values with their uncertainties.



### ADJUSTMENT/OPTIMIZATION

Adjustments of performance to the "nominal" values take place in this stage. Instruments are prepared for future use.

### MANUFACTURER'S DIAGNOSTICS

Specialists, who are fully familiar with the instrument, diagnose the health status of an instrument based on the incoming calibration.

### NECESSARY MEASURES AND MAINTENANCE

Depending on the preceding stages, either updates/preventive maintenance, repair or the installation of options is performed.

**If everything is OK, proceed to shipping.**

### OUTGOING CALIBRATION

If performance-relevant parameters have been changed, the calibration process is repeated.

### FINAL CHECK

After completion of the final calibration process, a final check takes place. If everything is OK, the instrument is released for shipping.

## MANUFACTURER'S CALIBRATION LEADS TO SUSTAINABLE QUALITY

Instruments are put through their paces, ensuring performance you can rely on. Find out more about the benefits of calibration performed by the manufacturer.

### INSTRUMENT ACCURACY

In terms of accuracy, a calibration service has to take account of past developments as well as proactive thinking (upcoming challenges, evolving technologies). With the right calibration partner, you can trust your instrument.

### CONFIDENCE IN CALIBRATION

Quality calibration performed by your manufacturer minimizes the risk of callbacks. Ultimately, undetected faults can be very costly.

### LOWER CALIBRATION FREQUENCY

Calibration performed by the manufacturer helps make sure that maintenance is carried out regularly at the correct intervals. Instruments benefit from this as it ensures longer calibration intervals and higher reliability.

### SHORTER DOWNTIMES

Things happen. But if they happen at the R&S calibration lab, you can be sure help is not far away. Avoid the risk of additional downtimes and double expense.