



QAD Adaptive Applications

**User Requirements Specifications**  
**QAD EQMS Applications**  
**Gauge Management**

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# Gauge Management User Requirements Specification Change Summary

The following table summarizes significant differences between this document and previous versions.

<b>Date/Version</b>	<b>Description</b>	<b>Reference</b>	<b>Changed By</b>
JULY 2020/v2020	Initial upload	--	RQT
NOV 2020/v2020.1	Updated versioning;  Added a "System Shall" statement to the Calibrations section;  Added a General section.	p.6, p. 8	RQT
MAR 2021/v2021	Updated versioning.	--	RQT
AUG 2021/v2021.1	Updated versioning.	--	RQT
MAR 2022/v2022	Updated versioning.	--	RQT
SEPT 2022/v2022.1	Updated versioning;  Updated the Calibrations section;  Updated the General section	p. 6, p. 8	RQT
MAR 2023/v2023	Updated versioning;  Updated the Calibrations section;  Updated the General section	p. 6, p. 8	RQT
MAR 2024/v2024	Updated versioning;  Updated the Calibrations section;  Updated the General section	p. 6, p. 8	RQT
SEPT 2024/v2024.1	Updated versioning;  Updated the Calibrations section;  Updated the General section	p. 6, p. 8	RQT
MAR 2025/v2025	Updated versioning;  Updated the Gauge Studies section;  Updated the General section	p. 7, p. 8	RQT
SEPT 2025/v2025.1	Updated versioning;  Updated the General section	p. 8	RQT

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## **Purpose**

This requirements specification includes the documentation of the EQMS Applications business requirements for the EQMS Gauge Management Module version 2025.1.

This document was used as the basis for the configuration of the Gauge Management Module and shall be used in the definition of testing criteria for operational qualification.

## **Scope**

The scope of this document is to define the EQMS Applications business requirements for the Gauge Management Module version 2025.1.

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## Gauge

Facilitates the complete life cycle management of controlled measurement devices. Manages a register of gauges, tracks location, monitors usage and coordinates calibration schedules based off usage of calendar recurrence. As calibration studies are performed, calibration records are recorded by the module for use in labeling of gauges and objective evidence during audits.

### Gauges

1. The system shall have the ability to document many aspects of gauges including, but not limited to, model number, serial number, NIST number (if applicable), and date placed in service.
2. The system shall have the ability to document the supplier(s) that the gauge was purchased from and services the gauge.
3. The system shall have the ability to document a handling procedure for a gauge.
4. The system shall have the ability to track the gauge location and status.
5. The system shall allow gauges to be assigned to employees as gauge owners.
6. The system shall have an option to assign a gauge to a dedicated item and/or customer.
7. The system shall have the ability to create and track many gauge calibrations for a gauge.
8. The system shall have the ability to define the scheduling of gauge calibrations based on usage of the gauge or on a calendar-based frequency.
9. The system shall have the ability to define the default person responsible for conducting the gauge calibration(s).
10. The system shall have the ability to automatically log gauge usage based on the selection of the gauge for an inspection event in the Inspection & SPC application.
11. The system shall have the ability to document one or more gauge studies per gauge. A gauge study shall consist of a Bias, Linearity, and/or R&R study.

### Calibrations

1. The system shall have the ability to automatically add a new calibration record for a gauge if it moves from a status that is equal to inactive to a status that is equal to active.
2. The system shall have the ability to automatically remove future incomplete calibrations if the gauge moves to a status that is equal to inactive.
3. The system shall have the ability to perform calibrations on both attribute and non-attribute gauges.
4. The system shall have the ability to notify the person responsible for a gauge calibration 30 days prior to the calibration due date, 7 days prior to the calibration due date, and on the calibration due date.
5. The system shall have the ability to notify the person responsible for a gauge calibration past due for completion 7 days after the calibration due date and 30 days after the calibration due date in the event that calibrations have not been performed.
6. The system shall have the ability to complete a calibration procedure checklist as part of a gauge calibration.
7. The system shall have the ability to document the before value and after value for each standard set point associated with a gauge calibration.

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8. The system shall have the ability to identify the master gauge(s) used for each standard set point for a gauge calibration.
  9. The system shall have the ability to automatically determine the status of the before result (pass or fail) and after result (pass or fail) for each gauge calibration.
  10. The system shall have the ability to initiate a non-conformance automatically if the gauge fails calibration.
  11. The system shall allow a gauge calibration record to be routed for approval/rejection prior to completion of a gauge calibration.
  12. The system shall allow users with the appropriate security to modify the calibration schedule and due date for gauges calibrated on a calendar-based calibration schedule.
  13. The system shall include filters for calibration records to show calibrations by site and to show calibrations due within 30 days by site.
  14. The system shall allow the ability to record the Completed Date, Before Result, and After Result on an external gauge calibration (added in 2020.1).
  15. The system shall allow documents to be linked to a gauge type and have those documents available on a calibration record for any gauge of that gauge type (added in 2022.1).
  16. The system shall show documents linked to the gauge type on the calibration screen (added in 2023).
  17. The system shall add the ability to control, upon a calibration failure, whether an Incidence Investigation OR a Non-conformance is created. Set at the site level (added in 2024).
  18. The system shall provide the ability to embed videos in Gauge Calibrations (added in 2024.1).

## **Gauge Studies**

1. The system shall have the ability to conduct the following types of gauge studies: Bias, Linearity, and Gauge Repeatability & Reproducibility (R&R).
2. The system shall have the ability to perform R&R studies for both variable and attribute gauges.
3. The system shall have the ability to record how many appraisers, trials, and samples are used for a gauge study.
4. The system shall have the ability to identify the people associated with a gauge study.
5. The system shall have the ability to define the standard set points associated with a gauge study.
6. The system shall have the ability to collect the measurement data to support Bias, Linearity, and R&R studies.
7. The system shall have the ability to automatically calculate the key values identified in the AIAG Measurement System Analysis (MSA), fourth edition standard for Bias, Linearity, and R&R.
8. The system shall have the ability to summarize a gauge study in terms of acceptance, time, cost, and a description.
9. The system shall allow up to 50 samples for an attribute Gauge R&R study (added in v2025).

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## Setup

1. The system shall have the ability to define a list of gauge status for the purposes of determining if a gauge is active or not and to determine if calibrations should be scheduled or not.
2. The system shall have the ability to define a list of gauge types for the purposes of categorizing gauges and setting up options for associated gauges.
3. The system shall have the ability to define a calibration procedure checklist for each gauge type.
4. The system shall have the ability to define the default setup for gauge studies by gauge type. Default setup shall include at a minimum the number of appraisers, number of trails, and number of samples.
5. The system shall have the ability to list which gauges are associated with a gauge type.
6. The system shall have the ability to define a list of gauge subtypes for each gauge type for the purposes of further categorizing gauges and setting up additional options for associated gauges.
7. The system shall have the ability to define the accuracy, unit of measure, and number of decimals used by gauge subtype.
8. The system shall have the ability to define the list of standard calibration or study set points used by gauge subtype.
9. The system shall have the ability to list which gauges are associated with a gauge subtype.

## Metrics

1. The system shall have a metric for the count of past due gauge calibrations by site.

## Reports

1. The system shall have a report to print the current location of gauges.
2. The system shall have a report to print gauges that are overdue for calibration.
3. The system shall have a report to print gauges that need calibration this week, month (user defined).
4. The system shall have a report to print calibration stickers once a calibration is completed.
5. The system shall have a report to print gauge R&R study information.
6. The system shall have a report to print gauge bias study information.
7. The system shall have a report to print gauge linearity study information.
8. The system shall have a report to print a Certification of Calibration that includes a statement of conformity.
9. The system shall have a report to print completed activities and their cost accounts.

## General

1. The system shall support Coordinated Universal Time (UTC), which adjusts Date/Time fields to represent the Date/Time in the current user's timezone (added in 2020.1).

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2. The system shall have a global search feature to search for records within the system that have the search term in applicable fields and within files linked to File fields (added in 2020.1).
  3. The system shall have the ability to create URLs to other systems in the Navigation menu (added in 2020.1).
  4. The system shall provide audit trail reports for all records (added in 2022.1).
  5. The system shall have an option to disable the ability to approve a record without opening it (added in 2022.1).
  6. The system shall allow checklist responses to have the same score among different responses—e.g. to allow all wrong answers to have a zero value (added in 2023).
  7. The system shall allow users to easily move to the next detailed record based on the search screen initiating the detailed screen view (added in 2023).
  8. The system shall provide a web-based report designing tool (added in 2023).
  9. The system shall provide an option to limit users to be able to only view records associated with the sites specified in their employee record (added in 2023).
  10. The system shall have an option to see the prior rejection comments during a re-approval of a record (added in 2023).
  11. The system shall provide the ability to report on the security configured for each process including customer extensions/changes to security setup (added in 2024).
  12. The system shall allow the user to cancel the generation of a report (added in 2024).
  13. The system shall provide the ability to open multiple EQMS windows in the same browser tab (added in 2024).
  14. The system shall provide the ability to embed video in key areas (added in 2024.1).
  15. The system shall provide the ability to support arrays of images in key areas (added in 2024.1).
  16. The system shall provide (for critical workflow processes) a visual indicator of the progress of a record through its life-cycle (added in v2025).
  17. The system shall provide a mechanism to socialize a record with others including @mentions that notify those individuals mentioned (added in v2025).
  18. The system shall provide the ability for Semantic Search to apply to search screens and global search results (added in v2025.1).