QAD Adaptive Applications

User Requirements Specifications

QAD EQMS Applications Design Control/APQP

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QAD EQMS 2025

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Design Control/APQP User Requirements Specification Change Summary

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

Date/Version	Description	Reference	Changed By
JULY 2020/v2020	Initial upload	--	RQT
NOV 2020/v2020.1	Updated versioning; Added "System Shall" statements to the Design Documentation, Process Documentation, and APQP Documents sections; Added a General section.	p. 10, p. 11, p. 14	RQT
MAR 2021/v2021	Updated versioning; Updated the APQP Projects section; Updated the PPAP section.	p. 7, p. 12	RQT
AUG 2021/v2021.1	Updated versioning; Updated the Process Documentation section.	p. 11	RQT
MAR 2022/v2022	Updated versioning; Updated the APQP Projects section; Updated the Design Documentation section; Updated the Process Documentation section; Updated the Reports section.	p. 7, p. 10, p. 11, p. 13	RQT
SEPT 2022/v2022.1	Updated versioning; Updated the APQP Documentation section; Updated the General section	p. 9, p. 14	RQT
MAR 2023/v2023	Updated versioning; Updated the General section	p. 14	RQT
MAR 2024/v2024	Updated versioning; Updated the APQP Documentation section; Updated the General section	p. 9, p. 14	RQT

Date/Version	Description	Reference	Changed By
SEPT 2024/v2024.1	Updated versioning; Updated the APQP Documentation section; Updated the APQP Projects section; Updated the General section	p. 9, p. 7, p. 14	RQT
MAR 2025/v2025	Updated versioning; Updated the APQP Projects section; Updated the APQP Documentation section; Updated the Process Documentation section; Updated the General section	p. 7, p. 9, p. 11, p. 14	RQT

Confidentiality

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Purpose

This requirements specification includes the documentation of the EQMS Applications business requirements for the EQMS Design Control and APQP Modules version 2025.

This document was used as the basis for the configuration of the Design Control and APQP Modules 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 Design Control and APQP Modules version 2025.

APQP

A comprehensive set of processes to manage aspects of APQP and PPAP, including DFMEA, DVP&R, specification management, PFMEA, control plans, and work instructions. Functionality also includes new product introduction task creation/assignment, issue tracking and management. The ability to use controlled lists and libraries improves the consistency of the content and enforcement of including lessons learned. The system supports the compliance requirements for TS16949, IATF 16949, and ISO 9001. The system further supports the AIAG core tools for APQP, PPAP, and FMEA.

1. The system shall have the ability to integrate with other applications as applicable, such as CAPA & NCR, Document Management, Training Management, Gauge, Inspection & SPC, Equipment Management, etc.
2. The system shall have the ability to create custom reports that are viewable from within the user interface.

APQP Projects

1. The system shall have the ability to manage new product development and/or a change to an existing product.
2. The system shall have the ability to define project templates based on a series of gates and tasks that can be used to start a new APQP project.
3. The system shall allow APQP projects to be defined as a set of gates, each of which has a set of tasks.
4. The system shall allow issues to be documented and related to APQP projects to allow items that arise during a project to be tracked.
5. The system shall allow APQP projects to be linked to one or more other APQP projects for the purposes of dividing large projects into smaller projects.
6. The system shall provide a method of approving an APQP project.
7. The system shall allow documenting the costs of quality associated with an APQP project.
8. The system shall allow creating, assigning, and tracking of tasks related to an APQP project.
9. The system shall allow the setup and maintenance of APQP project roles for the purposes of quickly reassigning project tasks or approvals.
10. The system shall allow assigning APQP project tasks to a supplier for completion, with the ability of the supplier to complete the task directly in the system.
11. The system shall allow enforcing a file attachment with the completion of an APQP project task.
12. The system shall provide a method of approving an APQP project task.
13. The system shall allow checklists to be defined and completed for an APQP project task.
14. The system shall have the ability to document the results of meetings.
15. The system shall have the ability to manually color code the status of APQP project gates.
16. The system shall have the ability to link records to APQP projects.
17. The system shall notify suppliers who are selected as responsible for project tasks.

18. The system shall have the ability to document risks associated with an APQP project that can default based on a risk library only for APQP projects.
19. The system shall allow APQP project types to be associated with PPAP requirement set and specific project tasks can be linked to a specific requirement and require specific PPAP documents to be attached (added in 2018.1).
20. The system shall allow files linked to APQP project tasks to be copied to the PPAP for the associated requirement of the PPAP record associated with the project (added in 2018.1).
21. The system shall allow approval of APQP project gates (added in 2018.1).
22. The system shall have approval of an APQP project charter (added in 2018.1).
23. The system shall support dependencies between tasks for an APQP project to drive timing for dependent tasks (added in 2018.1).
24. The system shall calculate the project gate start and finish date based on the minimum task start date and maximum task finish date of the tasks in the gate, respectively (added in 2018.1).
25. The system shall allow an APQP champion to assign an project task to a supplier contact (added in 2018.1).
26. The system shall provide a visual green/yellow/red indicator to provide the past due status of tasks (added in 2018.1).
27. The system shall notify the Project Manager when a project is assigned to them (added in 2021).
28. The system shall send notification to the supplier contact assigned to a Project Task when the task is either approved or rejected (added in 2022).
29. The system shall provide the ability to track original (baseline), projected, and actual dates on Projects (added in 2024.1).
30. The system shall provide the ability to assemble/manage an electronic Design History file and link them to a Project (eDHF) (added in 2024.1).
31. The system shall provide the ability to document the Product Quality Planning team members and Supplier and Customer Contacts on the Projects (added in 2024.1).
32. The system shall provide the ability to facilitate a project risk factor checklist (added in 2024.1).
33. The system shall provide the ability to create manufacturing Document(s) from a Project (added in 2024.1).
34. The system shall provide the ability to evaluate high risk suppliers related to a Project (added in 2024.1).
35. The system shall provide the ability to make assessments of typical project aspects such as business plan strategy, product benchmarking, assumptions, product reliability, etc. (added in 2024.1).
36. The system shall provide the ability to view historical data relevant to a project such as lessons learned, customer complaints, investigations, NCRs, CAPAs, SCARs, etc. (added in 2024.1).
37. The system shall provide the ability to create Change Request(s) from a Project (added in 2024.1).
38. The system shall provide the ability to show baseline and projected dates in a Gantt chart (added in 2024.1).

39. The system shall provide the ability to assemble/manage an electronic Device Master Record file with the ability to create templates to drive standardization and thoroughness (added in v2025).
40. The system shall provide the ability to link verification and validation Design History File items to Inputs and/or Outputs (added in v2025).
41. The system shall provide the ability to document user requirements in a Design History File (added in v2025).
42. The system shall allow for the definition of the Documentation Type on Design History File Templates and have those copy into new Design History File created from the template (added in v2025).
43. The system shall send a notification when a Design history File is rejected (added in v2025).

APQP Documentation

1. The system shall have the ability to define a documentation set for a combination of item, domain, site(s), customer, and/or supplier.
2. The system shall have the ability to use APQP documents as the basis for inspection and SPC data capture (control plan can be used when completing an inspection event).
3. The system shall have the ability to version (change control) a documentation set as a single linked set of documents.
4. The system shall have the ability to enforce approval on changes, to documentation sets and ensuring that only official versions are available for use.
5. The system shall have the ability to create a new documentation set from scratch or by using a "family template".
6. The system shall have the ability to include the following documents as part of a documentation set: bill of materials, design systems, design FMEA, design verification plan and report (DVP&R), process flow, specifications, process FMEA, process control plan, and work instructions.
7. The system shall have the ability to generate one or more PPAP submissions from a documentation set.
8. The system shall have the ability to document proof that a customer approved a process FMEA, process control plan, and/or a PPAP submission.
9. The system shall have the ability to control PDF drawings and their associated specifications for the purposes of using the information on a documentation set.
10. The system shall have the ability to set the starting version number and date for a drawing.
11. The system shall have the ability to document an external version number and date for a drawing for the purposes of storing drawings that are maintained by external parties.
12. The system shall have the ability to copy a drawing and its features to create a new drawing (not intended to be a new version of the drawing) to reduce effort for new drawings similar to another drawing (added in 2020.1).
13. The system shall have the ability to define one or more items (a product or a service).
14. The system shall have the ability to link a documentation set to a skill used in the Training Management application.
15. The system shall have the ability to automatically generate training for new versions of a documentation set.

16. The system shall have the ability to set up a review frequency for a documentation set and notify the document owner that the document requires review when the next review date is reached.
17. The system shall have the ability to link the effects and severity on a PFMEA to a related DFMEA record (added in 2018.1).
18. The system shall support the "AIAG & VDA FMEA Handbook" Monitoring and System Response (FMEA-MSR) capabilities (added in 2022.1).
19. The system shall allow the FMEA-MSR to link the Design FMEA (added in 2022.1).
20. The system shall allow the user to specify whether a PFMEA Control should be included on the customer's facing control plan report and have them copy into Family Templates and Manufacturing Documents when initially brought in or updated from the library (added in 2024).
21. The system shall show data in the multi-cross-reference screens sorted in the same sequencing as in the FMEA treeview and reports (added in 2024).
22. The system shall provide the ability to embed videos in Work Instructions (added in 2024.1).
23. The system shall provide the ability to link relevant documents to a Manufacturing Document (added in 2024.1).
24. The system shall provide the ability to notify an owner if there are special characteristics identified, but are not included on the control plan (added in 2024.1).
25. The system shall provide the ability to flag PFMEA items linked to DFMEAs that have Severity of 9 or 10 as special characteristics (added in 2024.1).
26. The system shall provide the ability to identify pass through characteristics (PTCs) and document customer approval of those characteristics (added in 2024.1).
27. The system shall provide the ability to ensure any control method that is 100% visual has a periodic verification frequency and responsibility defined (added in 2024.1).
28. The system shall provide the ability to document the responsibility for any reaction plan (added in 2024.1).
29. The system shall provide the ability to flag a Manufacturing Document as being in safe-launch (added in 2024.1).
30. The system shall provide the ability to flag controls as pre-launch and safe launch controls (added in 2024.1).
31. The system shall allow an administrator owner to directly initiate the process of Obsoleting a Manufacturing Document (added in v2025).
32. The system shall allow an administrator owner to directly initiate the process of Obsoleting a Drawing (added in v2025).

Design Documentation

1. The system shall have the ability to document, in a documentation set, the design system (s) in terms of a P-diagram.
2. The system shall have the ability to document, in a documentation set, one or more system functions.
3. The system shall have the ability to document, in a documentation set, one or more failure modes per system function.
4. The system shall have the ability to document, in a documentation set, one or more DVP&R items.

5. The system shall have the ability to document multiple prevent and detect controls to the DFMEA cause (added in 2018.1).
6. The system shall have the ability to link a block diagram, boundary diagram, or interface diagram to a design FMEA (added in 2018.1).
7. The system shall have the ability to generate DVP&R tests based on the DFMEA (added in 2018.1).
8. The system shall allow multiple DFMEA failure modes to be linked to a single requirement (added in 2018.1).
9. The system shall support both AIAG 4th Edition DFMEA and AIAG/VDA FMEA Handbook DFMEA (added in 2020.1).
10. The system shall have a hierarchical visual DFMEA editor (added in 2022).

Process Documentation

1. The system shall have the ability to document, in a documentation set, the process flow.
2. The system shall have the ability to document, in a documentation set, the specifications.
3. The system shall have the ability to document, in a documentation set, the process FMEA.
4. The system shall have the ability to document, in a documentation set, the process control plan.
5. The system shall have the ability to document, in a documentation set, the work instructions.
6. The system shall have the ability to link process flow, process FMEA, and process control plan so changes to one flow to the others.
7. The system shall have the ability to develop the process flow before setting up specifications for the purposes of having the process flow suggesting what specifications to load into the documentation set.
8. The system shall have the ability to define numeric, logical (pass/fail, go/no-go, etc.), or date-based specifications.
9. The system shall have the ability to indicate whether a specification is "internal" or "external" for the purpose of more easily preventing certain data from showing on reports to customers.
10. The system shall have the ability to associate specifications with a drawing feature for the purposes of quickly updating a documentation set based on a drawing.
11. The system shall have the ability to associate a special classification with a specification for the purposes of identifying that a specification is safety-related, critical to quality, etc.
12. The system shall have the ability to define how a specification shall be validated for the purposes of electronic inspection.
13. The system shall have the ability to show the special classification on the process FMEA for the purposes of identifying special considerations when generating FMEAs.
14. The system shall have the ability to calculate the RPN (risk priority number) for a process FMEA row.
15. The system shall have the ability to document one or more recommended actions and/or actions taken for a process FMEA row.
16. The system shall have the ability to associate a process FMEA row with the specific detection and/or prevention controls from the process control plan.

17. The system shall have the ability to define a control method on control plan to display prevent and detect.
18. The system shall have the ability to assign one or more inspection types on the process control plan for the purposes of grouping controls for inspections.
19. The system shall have the ability to assign one or more inspection stations on the process control plan for the purposes of identifying where an inspection takes place.
20. The system shall have the ability to define time-based (every 2 hours, every 4 hours, etc.) or event-based (at setup, once per lot, etc.) inspections for each process control plan.
21. The system shall have the ability to define various sampling techniques for each process control plan row, including: fixed, 100%, inspection tables, or manual.
22. The system shall have the ability to define a reaction plan for each process control plan row.
23. The system shall have the ability to associate images on a process control plan that can be easily viewable while inspecting (collecting).
24. The system shall have the ability to create and associate work instructions with a supported image.
25. The system shall have the ability to maintain a link to the family template record(s) as necessary for the purposes of quickly bringing in changes made to the family template.
26. The system shall have the ability to link multiple detect and prevent controls to a PFMEA cause (added in 2018.1).
27. The system shall support both AIAG 4th Edition PFMEA and AIAG/VDA FMEA Handbook PFMEA (added in 2020.1).
28. The system shall allow PFMEA records to be tied to DFMEA records in the same Manufacturing Documents where the Effects are the same and the system ensures the PFMEA severity cannot be lower than the associated DFMEA security (added in 2021.1).
29. The system shall protect ITAR Manufacturing Document information from non-ITAR persons' view (added in 2021.1).
30. The system shall have a hierarchical visual PFMEA editor (added in 2022).
31. The system shall allow the creation of Control Plan rows without forcing the need for an associated PFMEA record (added in 2022).
32. The system shall show CAPAs that have been linked to Failure Modes on Family Templates or Manufacturing Documents should also be visibly linked when viewing those Family Templates or Manufacturing Documents (added in v2025).
33. The system shall allow an administrator owner to directly initiate the process of Obsoleting a Process (added in v2025).
34. The system shall allow for the deletion of a draft version of a Process (added in v2025).

PPAP

1. The system shall have the ability to create and version (change control) a PPAP submission.
2. The system shall have the ability to be able to define PPAP set by customer for the purposes of defining requirements based on customer.
3. The system shall have a method for approving a PPAP submission.
4. The system shall have the ability to store proof of customer approval for a PPAP submission.

5. The system shall have the ability to capture a supplier PPAP through the use of an APQP project task.
6. The system shall allow quality managers and quality engineers modify PPAP submissions (just as PPAP Submissions Add/Edit role can) (added in 2018.1).
7. The system shall be able to bundle the Records and Documents PPAP documentation into a single PDF file (added in 2018.1), Project Task Files (added in 2020.1), and DFMEA, Process Flow, PFMEA, Control Plan, and Work Instructions from the associated Manufacturing Document (added in 2021).
8. The system shall sequence the bundle of documents based on the sequence of the associated PPAP Requirement Set.

Setup

1. The system shall have the ability to be able to set up lists of data, for the purposes of maintaining control over the abbreviations, words, and phrases used in APQP.
2. The system shall have the ability to create libraries of data that promote consistency when creating documentation (failure mode naming conventions, characteristic/specification naming conventions, etc.).
3. The system shall have the ability to set up libraries of "processes" for the purpose of supporting useable lessons learned.
4. The system shall have the ability to set up libraries of "specifications" for the purposes of supporting useable lessons learned.
5. The system shall have the ability to set up libraries of "process FMEAs" for the purpose of supporting useable lessons learned.
6. The system shall have the ability to set up libraries of "controls" for the purposes of supporting useable lessons learned.
7. The system shall have the ability to create family templates for the purposes of providing a documentation starting point for a similar group of items.
8. The system shall have the ability to link Family Template Process Flow, Family Template Process FMEA, and Family Template Process Control Plan so changes to one flow to the others.
9. The system shall have the ability to enforce approval on changes to family templates and ensuring that changes cannot be made without approval.

Metrics

1. The system shall have a metric to define the length of time for document set change. Average time it takes from the start of a change to the approval.
2. The system shall have a metric to define the length of time to complete an APQP project. Average time it takes from creation to approval for the first documentation set for an item.

Reports

1. The system shall have a report to print the results and approval of an APQP project task for the purposes of providing proof of feasibility review or other important APQP-related tasks.

2. The system shall have a report to print the differences between a family template and any documentation sets that have been generated based on the family template for the purposes easily identifying where changes may need to be made.
3. The system shall have a report to print AIAG process control plan.
4. The system shall have a report to print AIAG process FMEA.
5. The system shall have a report to print a process flow.
6. The system shall have a report to print a design FMEA.
7. The system shall have a report to print a DVP&R.
8. The system shall have a report that lists where an item is used based on the documentation set bill of materials information.
9. The system shall have a report to list specifications associated with a documentation set that do not have any associated controls.
10. The system shall have a report that can be used as a check sheet for the purposes of capturing non-electronic inspection information.
11. The system shall have the ability to generate an AIAG part submission warrant.
12. The system shall have a report to print the details of a captured meeting.
13. The system shall have a report to list issues for an APQP project including status.
14. The system shall have a project status report that summarizes an APQP project, including project information, project team, gate status, and related projects.
15. The system shall have a report to print the process FMEA with the General Motors severity, detection, and priority zones.
16. The system shall have a report to print the process FMEA risk limiting method setup.
17. The system shall have reports for DFMEA that sort based on the sequence number in all levels of the DFMEA (added in 2022).
18. The system shall have reports for PFMEA that are sorted based on the sequence number in all levels of the PFMEA (added in 2022).
19. The system shall have reports for Control Plans that are sorted based on the sequence number in all levels of the Control Plan (added in 2022).

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).
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).