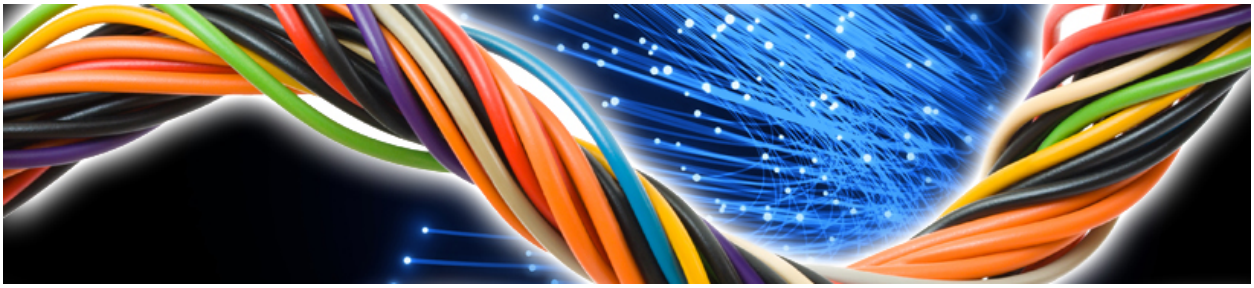
QUALIFICATION PRODUCTS LABORATORY
PATUXENT RIVER, MD.

NAVAIR 1461-01

QUALIFIED PRODUCTS LIST (QPL)



PROCESSES AND PROCEDURES FOR QUALIFICATION GUIDE

15 September 2016

QUALIFICATION PRODUCTS LABORATORY
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QA PROCESSES AND PROCEDURES FOR QUALIFICATION GUIDE

1.0 PROPOSE

AIR-4.4.5.3 has been identified by the Society for Automotive and Aerospace Engineers (SAE) as the Qualifying Activity (QA) for their aerospace wiring product specifications. These specifications are controlled by an SAE committee (Aerospace Electrical/Electronic Distribution Systems Committee, SAE AE-8). SAE specifications can be purchased at IHS at http://www.ihs.com/. An account is required to access and download specifications. Military specifications can be accessed at http://quicksearch.dla.mil/.

The QA is responsible for adding or removing products from the QPL (Qualified Parts List) in accordance with the governing specification. Original Equipment Manufacturers (OEMs) and users are provided information of procuring the highest quality and reliable products available by ensuring they have been qualified by the QA in accordance with all requirements of the specification and detail specifications.

Qualification is the process by which products of manufacturers are independently examined and tested to determine whether they conform to military and industry performance, quality and reliability requirements as listed in the applicable specification prior to acquisition.

The manufacturer must have the control over the processes of a qualified part. In the case of using one facility doing part of the process and another facility doing another part, technically the manufacturer really doesn’t manufacturer the product due to having no control over the processes at the other facilities. To be a qualified source on the QPL your company must control the processes from the beginning to the end of the entire manufacturing process. No changes can be made to this process once it is passed the qualification tests and is an approved product. Using other sources that the manufacturer does not control allows changes to be made to the product without their knowledge.

Retention qualifications are required every three years to ensure continued integrity of the qualification status.

This guide provides information necessary for the qualification of products to be listed on the QPL.

2.0 INITIAL QUALIFICATION OF PRODUCTS

It is the responsibility of the manufacturer to demonstrate that their products meet specification requirements after strenuous qualification tests prior to being added to the QPL-SIS. These tests simulate the performance, quality and reliability requirements which the product must meet.

This process applies to Non-Government Standards for which SAE is the Preparing Activity and have been adopted by government agencies. The government agency adopting the SAE standard will typically establish a QPL using the QA. Once a QPL-SIS is established by the QA, no other QPL-SIS shall be established. The results of the QPL-SIS will also be used to establish qualified sources for government procurement on the Qualified Products Database (QPD) to the extent authorized by the Federal Acquisition Regulations. The QPL-SISs are maintained by the QA and are available at http://www.navair.navy.mil/qpl/. This NAVAIR website contains all QPL-SISs, FAQs, and forms.

In rare cases, the product standard may require quick minor changes in order to address contractual problems, or to establish a qualified source(s) for an immediate procurement. These changes are, typically, editorial changes that shall not affect form, fit, or function. In order to meet these procurement needs, the QA shall follow the quick change ballot (limited scope with concurrent ballot posting) process specified by the SAE Aerospace Council in the appendix of the Aerospace Council Operation Guidelines, or request the SAE Preparing Activity for the specification to assign a document sponsor to process the document change.

QPL products shall be the same material formulations, material sources, and manufacturing processes as approved by the QA. Any unapproved changes made after the qualification approval date, unless accepted by the QA, may constitute cause for rejection. All identified unapproved changes must be reported to the QA. Failure of a manufacturer to notify the QA of a

change in design, material, manufacturing process (including quality conformance) or plant relocation shall be reason for adverse action or removal from the QPL.
Flow charts and narratives have been prepared that describe the two options for the initial qualification of products process.

2.1 Similarity Requirement

Similarity implies that the manufacturer's product or family of products that will undergo initial qualification are like another of the manufacturer's product already on the QPD/QPL-SIS. For a product to meet the similarity requirement, it must be similar in material, process, design, construction and performance requirements. Products will be considered similar if they have only minor design or process changes when compared to previously approved products. Products will also be considered similar if they belong to the same family of products and are the same size as previously approved products in that family. A family is defined as products having similar design characteristics (e.g., intermating, locking, termination, etc), functional characteristics (e.g., environmental, performance, reliability, etc.), materials, and manufacturing processes. Products will not be considered similar if it is an initial qualification of a new family or if a significant engineering or process change for the product has occurred. Figure 1 shows the process flow for the initial qualification of a product using similarity. The combination of the narratives and associated flow charts describe the process for qualifying products for the QPL. The QA will determine which qualification process will be used, based on the technical justification submitted by the manufacturer.

(a) Similarity by Verification

Similarity by verification is defined when similarity is approved by QPL reviewing their drawings and documentation. Products are already on the QPL and similarity is granted without samples being submitted.

(b) Similarity by Testing

Similarity by testing requires the manufacturer to submit samples for QPL testing required in the applicable specification. Figure 2 is a flow chart of the wire and wiring interconnect component testing process.

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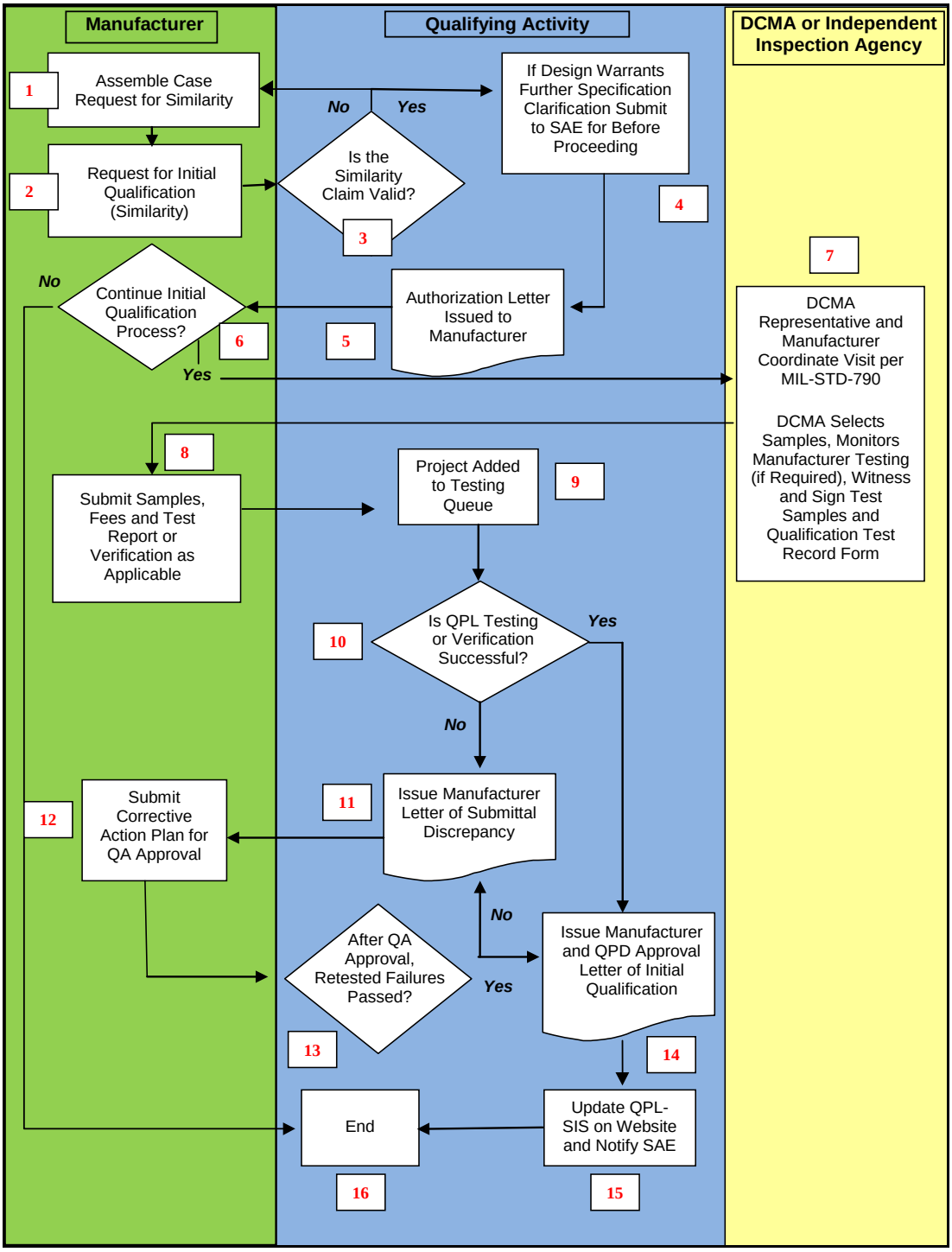

FIGURE 1
Initial Qualification of Products (Similarity) Flow Chart

2.2 Initial Qualifications of Products (Similarity)

Block 1: Assemble Case for Similarity Claim:
The manufacturer must assemble a case to support their similarity claim. The case must show that the product undergoing initial qualifications meets the similarity requirement.

NAVAIR Verification Tests:

The NAVAIR verification tests (formally called critical tests) will be a subset of the tests found in the governing specification and will be selected by NAVAIR to ensure the product undergoing the Initial Qualification (Similarity) process will meet its intended function. The NAVAIR verification tests will be one test group from the qualification table in the specification that best exercises the full functionality of the product.

Block 2: Request for Initial Qualification (Similarity)
The letter from the manufacturer requesting qualification by similarity must include the following information:

(a) The manufacturer's full name and address

(b) The manufacturer's Commercial and Government Entity (CAGE) code. A CAGE Code is required for every facility listed on the QPL-SIS and to be entered into the QPD to be eligible for contracting with federal government agencies. It can be obtained by submitting a request to the System for Award Management (SAM) at the //www.sams.gov website. There is no cost to register and use SAM. In order to update any of the parts in the QPD, all CAGE codes for all sources' offices and plants on the QPL must be registered or reactivated for data to be published.

The requirement for having CAGE Codes for each facility (office and plant) registered in the SAM website enables the addresses to be loaded into the QPD from the SAM database. The manufacturer is not required to mark the parts with each individual CAGE Code for each facility. Only when that facility does its own contract bidding, inspection, quality control and shipping would it be required to mark them with their individual codes. This

does not exempt manufacturer from maintaining parts lot traceability.

(c) Contact information of the individual who will be the point of contact for the manufacturer:

- Name
- E-mail address
- Telephone number
- Mailing address

(d) The specification for which the manufacturer is seeking product qualification

(e) The detail specification sheets (“slash sheets”)

(f) The part numbers of the products to be qualified

(g) If the manufacturer is listed on any other QPL’s, these should be identified in the request for qualification. This may eliminate the need for a plant inspection.

(h) All documents must be in English for NAVAIR and the DCMA or independent inspection agency (such as organizational charts, list of major manufacturing equipment, list of major test equipment, corrective action plan, quality metrics, reports, etc.)

Block 3: Is the Similarity Claim Valid?
After reviewing the manufacturer’s documentation for similarity, the QA will determine if the product meets the similarity requirement and to what extent similarity can be granted. If the QA determines that the product should continue the Initial Qualification (Similarity) process, then the process continues; otherwise the process begins from start.

Block 4: If Design Warrants Further Specification Clarification, Submit to SAE Before Proceeding
SAE will decide what action, if any, is required for clarification.

Block 5: Authorization Letter Issued to Manufacturer
After it has been determined that the manufacturer’s product should follow the Initial Qualification (Similarity) process,

the QA will issue instructions to the manufacturer and to the Defense Contract Management Agency (DCMA) or independent inspection agency. The letter, addressed to both the manufacturer and the DCMA or independent inspection agency, shall include the following:

(a) Authorization for the manufacturer to begin tests as specified per applicable specifications, drawings and standards as approved in the test plan.

(b) Instructions and a due date for submittals.

(c) Identification of tests that will require additional oversight by an independent inspection agency.

(d) Instructions to the DCMA or independent inspection agency and the point of contact at the manufacturer's facility.

(e) List of samples to be submitted to the QA for testing.

(f) Instructions that will outline the testing that will be peformed by the manufacturer and the QA.

(g) Fee schedule that will list all fees associated with the initial qualification process.

(h) Addresses for fee and sample submittals.

All manufacturer tests must be performed at a laboratory recognized/certified by the QA. The QA reserves the right to reject any test results from the laboratory if, after investigation, the QA determines the tests were conducted improperly.

Block 6: Continue Initial Qualification (Similarity) Process?
Once the manufacturer receives the letter from the QA that provides authorization, instructions and the due date, the manufacturer must make a decision to proceed with the initial qualification (similarity) process. If the manufacturer chooses to proceed with the process, the process continues. If the manufacturer does not choose to continue the process or fails to respond prior to the due date, then the process ends.

Block 7: DCMA or Independent Inspection Agency Services and Manufacturer Coordinate Visit

The DCMA or independent inspection agency will receive a letter from the QA that requests services and provides instructions on how to support the manufacturer's initial qualification (similarity) testing. The DCMA or independent inspection agency will assist the manufacturer in completing all the requirements outlined in the authorization letter. The DCMA or independent inspection agency will select and mark samples, monitor manufacturer's testing, witness and sign off on each designated test and endorse the qualification test record form. Special procedures are required when the DCMA or independent inspection agency cannot perform a required plant inspection for the manufacturer due to travel restrictions to that location. These special procedures will be determined by the QA depending on each circumstance.

Block 8: Submit Samples, Fees and Test Report or Verification as Applicable

The manufacturer must submit data and documentation, including a test report and untested samples to the QA in accordance with the instructions provided in the authorization letter or the instructions provided with the qualification submittal discrepancy letter.

Block 9: Project Added to Testing Queue

The QA will evaluate the manufacturer's data and documentation to determine if the product undergoing the Initial Qualification (Similarity) process meets the governing specification requirements and complies with the requirements spelled out in the authorization letter. After all fees and samples are received, the project will be added to the QA testing queue. Testing is completed as received in queue; with initial qualifications taking priority over retention qualifications.

Block 10: Is QPL Testing or Verification Successful?

The QA will notify the manufacturer that the testing was successful or if there was a discrepancy. Figure 2 shows a flow chart of the Wire and Wiring Interconnect Component Testing Process.

(a) If testing was successful - The QA will prepare and email a letter to the manufacturer notifying the manufacturer that their product has successfully completed the Initial Qualification (Similarity) process. The test report and data generated will be emailed to the manufacturer, but will be available to the QA upon request for a period of 6 years. The QA will email a copy of the notification of qualification letter to the QPL-SIS publishing activity and to the DOD activity for listing in the QPD.

(b) If testing was unsuccessful - The QA will issue the manufacturer a qualification submittal discrepancy letter.

Block 11: Issue Manufacturer Qualification Submittal Discrepancy Letter

This letter will contain:

(a) Corrective Action Instructions

(b) Qualification Test Failure Report

(c) Manufacturer’s Corrective Action Report Form

(d) Fee Submittal Form

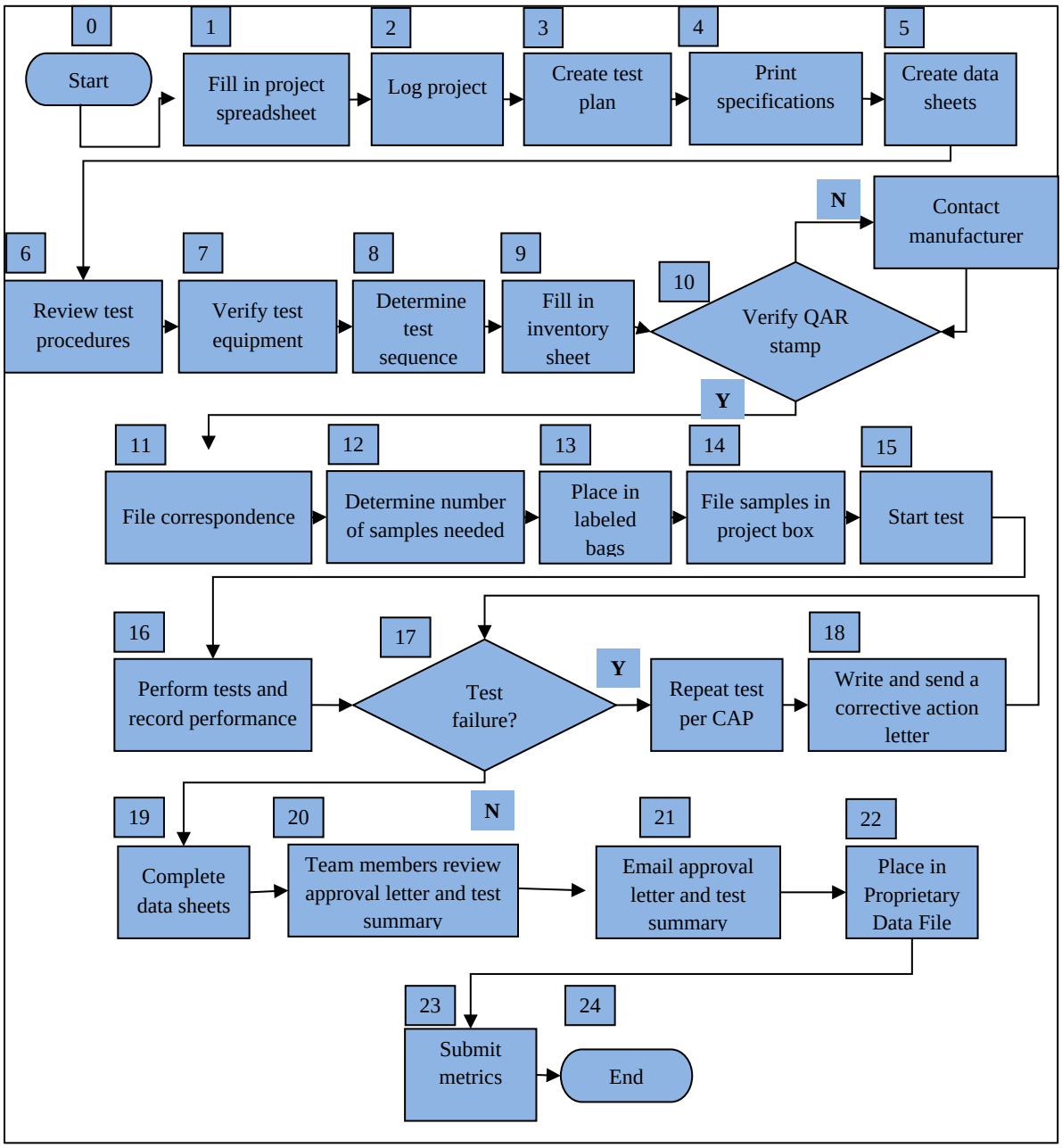

Figure 2
Flow Chart of the Wire and Wiring Interconnect Component Testing Process

Block 12: Manufacturer Submit Corrective Action Plan
After receiving the qualification submittal discrepancy letter from the QA, the manufacturer has the option to:

(a) Take corrective action and prepare a Corrective Action Plan (CAP) or

(b) End the Initial Qualification (Similarity) process. If the manufacturer decides to end the Initial Qualification (Similarity) process, or does not respond by the due date contained in the instructions, the process ends

Block 13: Retested Failures Pass?

(a) QA approves CAP and proceeds to retest new samples.

(b) If samples retested pass, the manufacturer and QPD are issued a notification of qualification letter and the QPL-SIS is updated.

(c) If samples retested fail, manufacturer is issued a qualification submittal discrepancy letter

Block 14: Issue Manufacturer and QPD/QPL-SIS a Notification of Qualification Letter
The QA will prepare and send a notification of qualification letter to the manufacturer that their product has successfully completed the Initial Qualification (Similarity) process. The test report and data generated will be emailed to the manufacturer, but will be available to the QA upon request for a period of 6 years. The QA will send a copy of the approval letter to the QPL-SIS publishing activity and to the DOD activity for listing in the QPD. The manufacturer is not qualified and cannot advertise or ship any products until this notification of qualification letter is received.

Block 15: QA Updates QPL-SIS, APTS, Project Status Database and Notifies SAE
The QA completes all updates, and places project in proprietary data file. SAE members are notified when QPL-SIS is updated.

Block 16: End
This block ends the Initial Qualification (Similarity) process.

2.3 Initial Qualifications of Products (Without Similarity)

Without similarity implies that the manufacturer's product or family of products that will undergo initial qualification, are not like another of the manufacturer's product already on the QPL-SIS or undergoing evaluation for placement on the QPL-SIS, or that the manufacturer does not have products listed on a QPL-SIS. A family is defined as products having similar design characteristics (e.g., intermating, locking, termination, etc), functional characteristics (e.g., environmental, performance, reliability, etc.), materials, and manufacturing processes. Figure 3 shows the process flow chart for the initial qualification of a product not using similarity.

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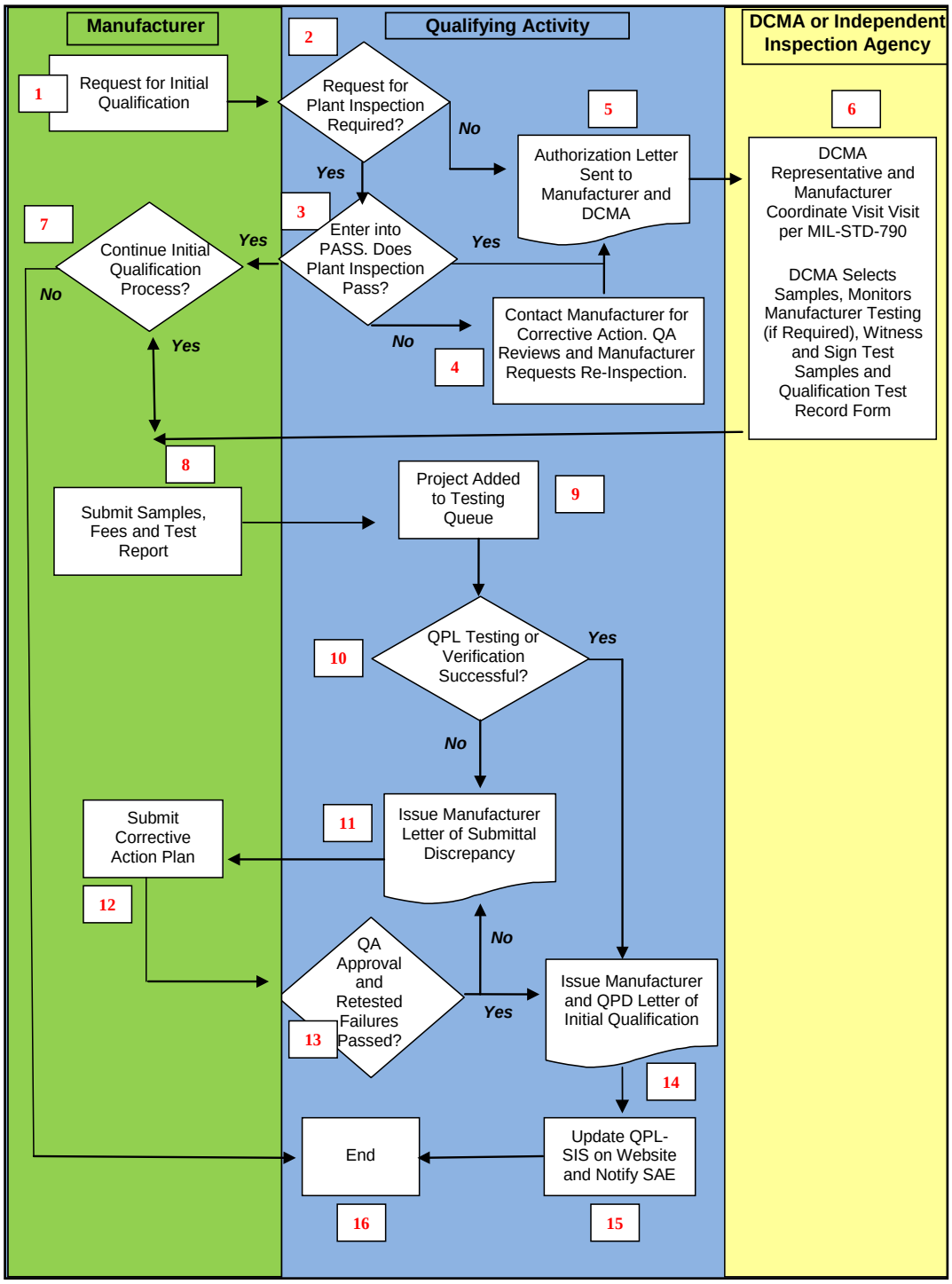

FIGURE 3
Initial Qualification of Products (Without Similarity) Flow Chart

Block 1: Request for Initial Qualification (Without Similarity
The manufacturer must send a letter to the QA requesting permission to start the initial qualification testing. The letter from the manufacturer requesting initial qualification must include the following information:

(a) The manufacturer's full name and address

(b) The manufacturer's Commercial and Government Entity (CAGE) code. A CAGE Code is required for every facility listed on the QPL-SIS and to be entered into the QPD to be eligible for contracting with federal government agencies. It can be obtained by submitting a request to the System for Award Management (SAM) at the //www.sams.gov website. The requirement for having CAGE Codes for each facility (office and plant) registered in the SAM website is required so that the addresses can be loaded into the QPD from the SAMs database. The manufacturer is not required to mark the parts with each individual CAGE Code for each facility. Only when that facility does its own contract bidding, inspection, quality control and shipping would it be required to mark them with their individual codes.

(c) Contact information of the individual who will be the point of contact for the manufacturer:

- Name
- E-mail address
- Telephone number
- Mailing address

(d) The specification for which the manufacturer is seeking product qualification

(e) The detail specification sheets (“slash sheets”)

(f) The part numbers of the products to be qualified

(g) If the manufacturer is listed on any other QPL’s, these should be identified in the request for qualification. This may eliminate the need for a plant inspection.

(h) All documents must be in English for NAVAIR and the DCMA or independent inspection agency (such as organizational charts, lists of major manufacturing equipment, list of

major test equipment, corrective action plan, quality metrics, reports, etc.)

Block 2: Request for Plant Inspection Required?
If the manufactuerer is not listed on a QPL-SIS, a request shall be made by the QA to the DCMA or independent inspecting agency to perform a manufacturing plant inspection of the facility location where the products will be manufactured, inspected and shipped from. When the DCMA or independent inspecting agency conducts a plant inspection they collect documentation in areas such as quality, facilities, product testing, personnel staffing & training, etc. The QA shall provide specific details (per AS9100) for the inspection to the DCMA or independent inspecting agency, which include:

(a) Ensure an effective documented quality program is in place.

(b) Specification requirements have been met and the Specification and Detail Specifications are up to date

(c) The manufacturing operation is well documented and controlled

(d) Test methods are documented with concise instructions (including photographs) using the manufacturer's own test equipment

(e) Inspection and testing shall be prescribed by clear, complete and current instructions

(f) The manufacturer shall provide and maintain an inspection system which will assure that all qualified parts submitted to the Government for acceptance conform to the specification requirements whether manufactured or processed by the manufacturer, or procured from outside sources

(g) The manufacturer shall maintain adequate records of all inspections and tests

(h) The manufacturer's inspection system shall provide for procedures which will assure that the latest

applicable drawings, specifications and instructions required by the specification, as well as authorized changes thereto, are used for fabrication, inspection and testing

(i) The manufacturer shall provide and maintain gages and other measuring and testing devices necessary to assure that products conform to the technical requirements. In order to assure continued accuracy, these devices shall be calibrated at established intervals against certified standards which have known valid relationships to national standards

(j) Process control procedures shall be an integral part of the inspection system when such inspections are a part of the specification

(k) The manufacturer shall maintain a positive system for identifying the inspection status of supplies. Identification may be accomplished by means of stamps, tags, routing cards, move tickets, tote box cards or other control devices. Such controls shall be of a design distinctly different from Government inspection identification

(l) The manufacturer shall establish and maintain an effective and positive system for controlling nonconforming material, including procedures for the identification, segregation, presentation and disposition of reworked or repaired products. Repair of nonconforming products shall be in accordance with documented procedures acceptable to the Government

(m) The Government reserves the right to inspect at source supplies or services not manufactured or performed within the manufacturer’s facility. Government inspection shall not constitute acceptance; nor shall it in any way replace manufacturer’s inspection or otherwise relieve the manufacturer of his/her responsibility to furnish an acceptable end item

(n) All documents and referenced data for purchases applying to a Government contract shall be available for review by the Government Representative to determine compliance with the requirements for the control of such purchases

If used, the requests to the DCMA for a plant inspection is entered into their Pre-Award Survey System (PASS) that is required to track and complete all plant inspections. The DCMA inspection agency shall submit a detailed report in PASS of the results. If the inspection does not pass, the QA will provide the manufacturer with a correction action summary.

Special procedures are required when the DCMA cannot perform a required plant inspection for the manufacturer due to travel restrictions to that location. These special procedures will be determined by the qualifying activity depending on each circumstance. Using an alternative independent inspection agency is an option.

If the plant inspection is not required, the QA provides the manufacturer with an authorization for initial qualification testing letter.

Block 3: Does Plant Inspection Pass?
The DCMA issues an audit report to the QA detailing all systems, procedures, quality processes and whether they recommend passing or failing.

(a) If the plant inspection passes, an authorization for initial qualification testing letter is issued to the manufacturer

(b) If the plant inspection fails, the manufacturer must correct deficiencies and submit a corrective action plan to QA for review.

Block 4: Contact Manufacturer for Corrective Action. QA Reviews and Manufacturer Requests Re-Inspection
If corrective action plan is approved, another visit is arranged by the manufacturer for the DCMA or independent inspection agency to re-inspect the plant.

Block 5: Authorization Letter Issued to Manufacturer and DCMA or Independent Inspection Agency
In response to the manufacturer's letter requesting initial qualification, and after the manufacturer's plant sight has been inspected and approved by the independent inspecting agency, the QA will issue an authorization for initial qualification testing letter with instructions to the manufacturer and to the independent inspection agency and shall include the following:

(a) Authorization for the manufacturer to begin tests

(b) Test instructions, and a due date for submittals

(c) Identification of tests that will require additional oversight by an independent inspection agency

(d) Instructions to the inspection agency and the point of contact at the manufacturer's facility

(e) Instructions that will outline the testing that will be peformed by the manufacturer and the QA

(f) Fee schedule that will list all fees associated with the initial qualification process

(g) Addresses for fees and sample submittal

All manufacturer tests must be performed at a laboratory recognized/certified by the QA. The QA reserves the right to reject any test results from the laboratory if, after investigation, the QA determines the tests were conducted improperly. The QA testing will be performed at the QA facility.

Block 6: DCMA Representative and Manufacturer Coordinate Visit. DCMA Selects Samples, Monitors Manufacturer Testing, Witness and Sign Test Samples and Qualification Test Record Form
The DCMA or independent inspection agency will receive the authorization for initial qualification testing letter from the QA that requests services and provides instructions on how to support the manufacturer's initial qualification (without similarity) testing. The DCMA or independent inspection agency will assist the manufacturer in completing all the requirements outlined in this authorization letter. The DCMA or independent

inspection agency will select and mark samples, monitor the manufacturer's testing, witness and sign off on each designated test and sign the qualification test record form.

Block 7: Continue Initial Qualification (Without Similarity) Process?
Once the manufacturer receives the authorization for initial qualification testing letter from the QA with instructions and the due date, the manufacturer must make a decision to proceed with the Initial Qualification (Without Similarity) process. If the manufacturer chooses to proceed with the process, the process continues. If the manufacturer does not choose to continue the process or fails to respond prior to the due date, then the process ends.

Block 8: Manufacturer Submits Samples, Fees and Test Report
The manufacturer must submit untested samples and the test report to the QA at the address listed in the authorization for qualification testing letter. All fees shall be submitted to the NAWCAD Comptroller Department at the address listed in the authorization letter.

Submittals will not be placed in the QA queue until all fees and samples have been received. Submit the information to the QA in accordance with the instructions provided in the authorization letter or the instructions provided with the qualification submittal discrepancy letter.

Block 9: Project Added to QA Testing Queue
The QA will evaluate the manufacturer's data and documentation to determine if the product undergoing the Initial Qualification (Without Similarity) process meets the governing specification requirements and complies with the requirements spelled out in the authorization for qualification testing letter. The QA will review the manufacturer's submittal (test report, documentation, fees, untested samples, etc.) to determine if it is complete and acceptable. If acceptable, the QA will add the project to the testing queue. All initial qualifications are completed first, then all retention qualifications. The order in which the testing occurs for both is determined in order of receipt of fees and samples.

Block 10: Is QPL Testing or Verification Successful?
The QA will notify the manufacturer that the submittal is acceptable or unacceptable. Figure 2 shows a flow chart of the Wire and Wiring Interconnect Component Testing Process.

(a) If testing was successful - The QA will prepare and email a letter to the manufacturer notifying the manufacturer that their product has successfully completed the Initial Qualification (Without Similarity) process. The test report and data generated will be emailed to the manufacturer, but will be available to the QA upon request for a period of 6 years. The QA will email a copy of the notification of qualification letter to the QPL-SIS publishing activity and to the DOD activity for listing in the QPD.

(b) If testing was unsuccessful - The QA will issue the manufacturer a qualification submittal discrepancy letter.

Block 11: Issue Manufacturer Qualification Submital Discrepancy Letter
This letter will include:

(a) Corrective Action Plan Instructions

(b) Qualification Test Failure Report

(c) Manufacturer’s Corrective Action Report Form

(d) Fee Submittal Form

Block 12: Manufacturer will Submit Corrective Action Plan
After receiving the qualification submittal discrepancy letter from the QA, the manufacturer has the option to:

(a) Take corrective action and prepare a corrective action plan or

(b) End the Initial Qualification (Without Similarity) process. If the manufacturer decides to end the Initial Qualification (Without Similarity) process, or does not Respond by the due date contained in the instructions,

The process ends. If the manufacturer decides to continue the Initial Qualification (Without Similarity) process, the process continues

Block 13: Retested Failures Passed?

(a) QA approves CAP and proceeds to retest new samples.

(b) If samples retested pass, the manufacturer and QPD are issued a notification of qualification letter and the QPL-SIS is updated.

(c) If samples retested fail, manufacturer is issued a qualification submittal discrepancy letter

Block 14: Issue Manufacturer and QPD a Notification of Qualification Letter

The QA will prepare and send a notification of qualification letter to the manufacturer notifying the manufacturer that their product has successfully completed the Initial Qualification (Similarity) process. The test report and data generated will be emailed to the manufacturer, but will be available to the QA upon request for a period of 6 years. The QA will send a copy of the letter to the QPL-SIS publishing activity and to the DOD activity for listing in the QPD. The manufacturer is not qualified and cannot advertise or ship any products until this notification of qualification letter is received.

Block 15: QA Updates QPL-SIS, APTS, Project Status Database and Notifies SAE

The QA completes all updates and places project in proprietary data file. SAE members are notified when QPL-SIS is updated.

Block 16: End

This block ends the Initial Qualification (Without Similarity) of products process.

3.0 RETENTION OF QUALIFICATION OF PRODUCTS

It is the responsibility of the manufacturer to provide the QA with qualification samples for retention testing that demonstrates the manufacturer's continuing ability to provide products that meet the requirements of the governing specification. To meet this responsibility, the QA must perform retention testing every 3 years as required by the specification. NAVAIR may experience delays from time to time getting the required request for samples for retention of qualification testing letters to the manufacturers. The manufacturer will remain on the QPL until the retention testing is completed.

Samples submitted shall be the same material formulations, material sources, and manufacturing processes as approved by the QA. Any unapproved changes made after the qualification approval date, unless accepted by the QA, may constitute cause for rejection. All identified unapproved changes must be reported to the QA. Failure of a manufacturer to notify the QA of a change in design, material, manufacturing process (including quality conformance) or plant relocation shall be reason for adverse action or removal from the Qualified Products List.

The combination of the block-by-block narrative and associated flow chart in figure 4 describes the process for retaining previously qualified wiring components on the appropriate qualified products list (QPL-SIS).

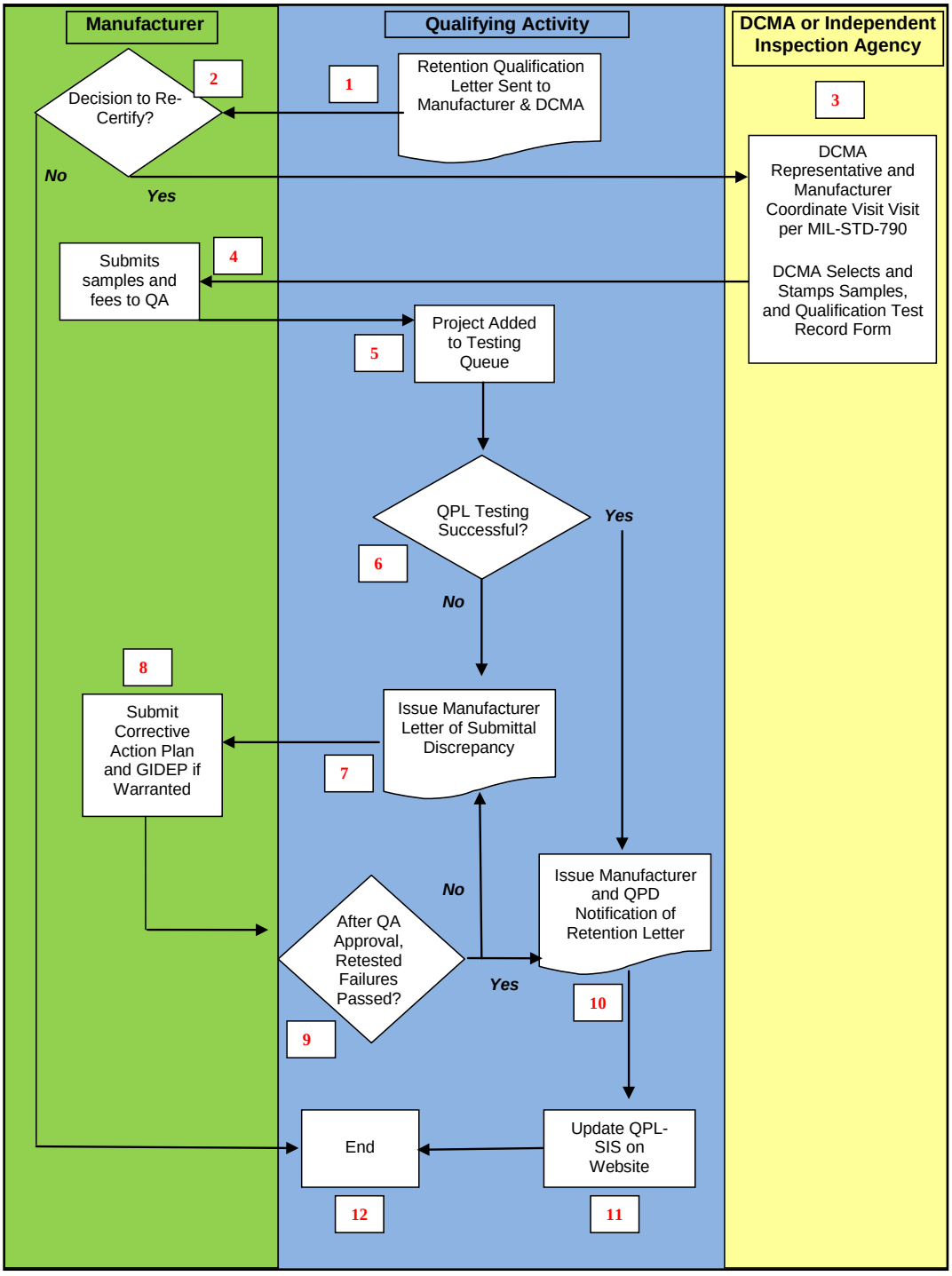

FIGURE 4
Retention of Qualification of Products Flow Chart

Block 1: Retention Qualification Letter Sent to Manufacturer and DCMA or Independent Inspection Agency

The QA shall issue a request for samples for retention of qualification testing letter to the manufacturer and the DCMA or independent inspection agency identifying:

(a) The due date for submittal of samples and fees. If the manufacturer does not meet the submittal date, the manufacturer's component will be removed from the QPL-SIS

(b) Provide instructions to the DCMA or independent inspection agency and point of contact at the manufacturer's facility

(c) Instructions that will outline the testing that will be peformed by the QA

(d) Fee submittal form that will list all fees associated with the retention process. This form must accompany all fee submittals

Block 2: Decision to Re-Certify?
The manufacturer must make a decision to renew their QPL product. If the manufacturer chooses to renew, they must provide samples and fees in accordance with the request for samples for retention of qualification testing letter instructions. If the manufacturer does not choose to renew or fails to respond prior to the due date, then the process ends.

Block 3: The DCMA or Independent Inspection Agency and Manufacturer Coordinate Visit
The DCMA or independent inspection agency will be copied on the request for samples for retention of qualification testing letter from the QA that requests their services and provides instructions on how to support the manufacturer's retention:

(a) Determine if the qualification samples have been produced by normal production processes or by some alternative approach. Provide an opinion as to what

extent the samples reflect the normal production capability if an alternate approach has been taken

(b) Assist the manufacturer in completing all requirements outlined in the authorization letter

(c) Certify the samples, which are to be submitted to the Naval Air Systems Command by either marking them with a DCMA QAR government stamp, by marking tags attached to the samples, or by other such means as deemed appropriate for an independent inspection agency

(d) Special procedures are required when the DCMA cannot perform an onsite visit to pull samples due to travel restrictions to that location. These procedures will be determined by the QA based on individual cases

(e) All documentation must be in English for the DCMA or independent inspection agency and the QA

Block 4: Submit Samples and Fees to QA
The manufacturer must submit fees and untested samples to the QA at the address listed in the request for samples for retention of qualification testing letter. The addresses for the fees and samples are different. Submittals will not be placed in the QA testing queue until all fees and samples have been received.

Block 5: Project Added to QA Testing Queue
The QA will evaluate the manufacturer's data and documentation to determine if the product undergoing the retention process meets the governing specification requirements and complies with the requirements spelled out in the authorization for qualification testing letter. The QA will review the manufacturer's submittal (fees and untested samples) to determine if it is complete and acceptable. If acceptable, the QA will add the project to the testing queue.

Block 6: Is QPL Testing Successful?
The QA will notify the manufacturer that the submittal is acceptable or unacceptable. Figure 2 shows a flow chart of the Wire and Wiring Interconnect Component Testing Process.

(a) If testing was successful - The QA will prepare and email a letter to the manufacturer notifying the manufacturer that their product has successfully completed the Retention Qualification process. The test report and data generated will be emailed to the manufacturer, but will be available to the QA upon request for a period of 6 years. The QA will email a copy of the notification of retention qualification letter to the QPL-SIS publishing activity and to the DOD activity for listing in the QPD.

(b) If testing was unsuccessful - The QA will issue the manufacturer a qualification submittal discrepancy letter and GIDEP if warranted.

Block 7: Issue Manufacturer Qualification Submittal Discrepancy Letter
This letter will include:

(a) Corrective Action Instructions

(b) Qualification Test Failure Report

(c) Manufacturer’s Corrective Action Report Form

(d) Fee Submittal Form

Block 8: Manufacturer will Submit Corrective Action Report
After receiving the qualification submittal discrepancy letter from the QA,the manufacturer has the option to:

(a) Take corrective action and send the QA a corrective action plan or

(b) End the process. If the manufacturer decides to end the retention process, or does not respond by the due date contained in the instructions, the process ends.

Block 9: Retested Failures Passed?

(a) If testing was successful - The QA will prepare and email a letter to the manufacturer notifying the manufacturer that their product has successfully completed the Retention Qualification process. The test report and data generated will be emailed to the manufacturer, but will be available to the QA upon request for a period of 6 years. The QA will email a copy of the notification of retention qualification letter to the QPL-SIS publishing activity and to the DOD activity for listing in the QPD.

(b) If testing was unsuccessful - The QA will issue the manufacturer a qualification submittal discrepancy letter.

Block 10: Issue Manufacturer and QPD a Notification of Retention Qualification Letter

The QA will prepare and email a notification of retention qualification letter to the manufacturer that their product has successfully completed the retention process. The test summary report and data generated will be included with the letter to the manufacturer, which must be made available to the QA upon request for a period of 6 years. The QA will send a copy of the letter to the QPL-SIS publishing activity and to the DOD activity for listing in the QPD.

Block 11: QA Updates QPL-SIS, APTS and Project Status Database

The QA completes all updates, and places project in proprietary data file.

Block 12: End

This block ends the Retention Qualification process.

4.0 RETENTION QUALIFICATION BY CERTIFICATION

Limited procurement situations/conditions may require the need for a no cost or low cost retention qualification to allow for the continued listing of QPL products where procurement volume does not justify the cost of QPL maintenance, but the components, even in limited numbers, are needed in critical applications and the QPL system is the most efficient and economical way to maintain the product availability. This option is available to the manufacturer only once.

When qualification by certification is specified in the specification, the process is the same as a retention qualification except the manufacturer only submits untested samples, quality conformance data and required certifications.

When the specification does not authorized qualification by certification and the last qualified manufacturer no longer wishes to maintain their qualification, the QA shall request the manufacturer to maintain the listing and immediately notify the preparing activity to address the issue.

The combination of the narrative and associated flow chart describes the process for retaining previously qualified wiring components on the appropriate qualified products list (QPL-SIS) by using the certification process.

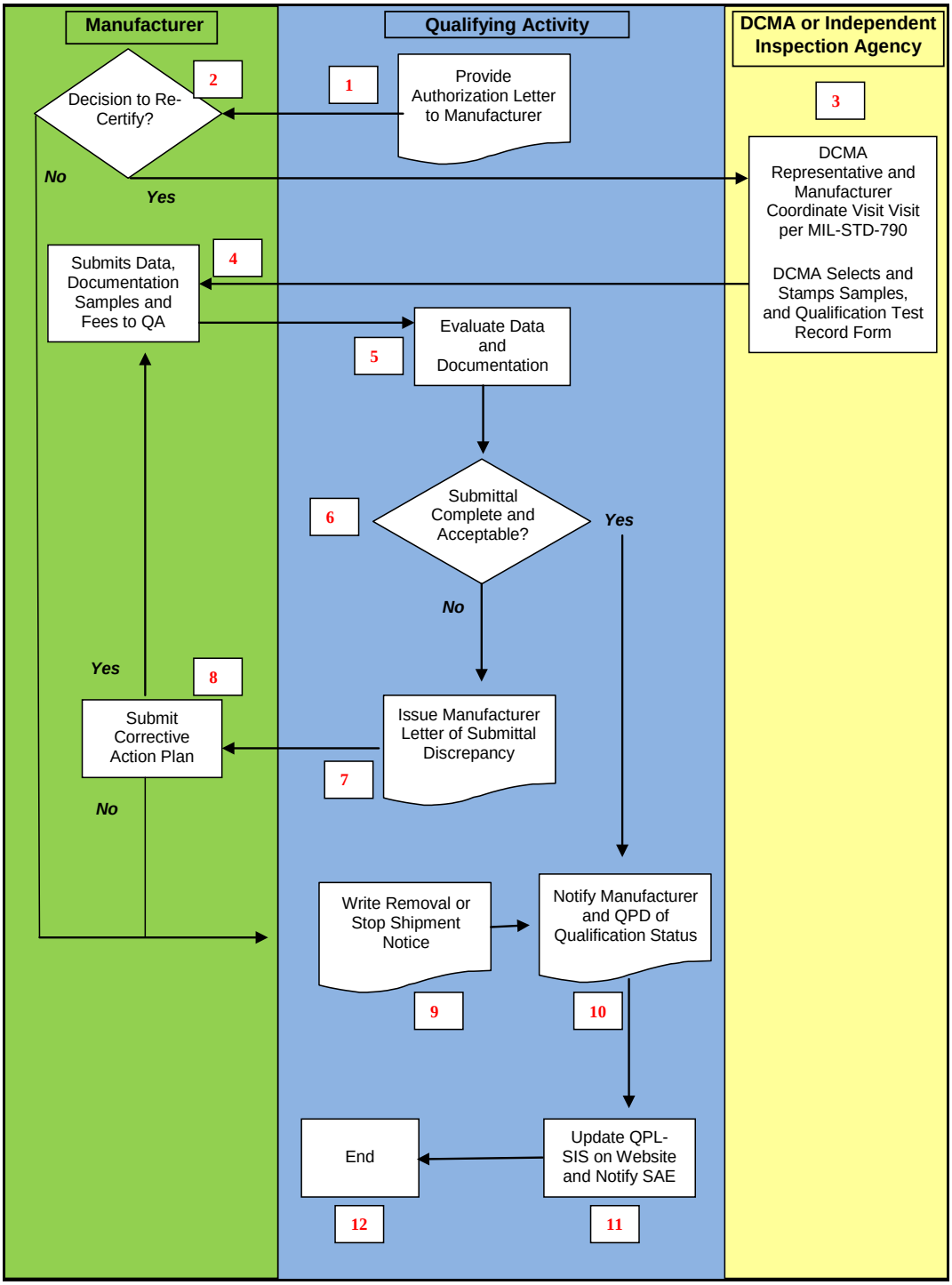

Figure 4
Retention Qualification by Certification

Block 1: Provide Authorization Letter to Manufacturer
QA writes the qualification by re-certification letter to the manufacturer with instructions for the certification submittal.

Block 2: Decision to Re-Certify?
The manufacturer must make a decision to renew their QPL product. If the manufacturer chooses to renew, they must provide the certification documents and samples in accordance with the retention letter instructions. If the manufacturer does not choose to renew or fails to respond prior to the due date, then the process ends.

Block 3: The DCMA or Independent Inspection Agency and Manufacturer Coordinate Visit
The DCMA or independent inspection agency will be copied on the qualification by re-certification letter from the QA that requests their services and provides instructions on how to support the manufacturer's retention:

(a) Determine if the qualification samples have been produced by normal production processes or by some alternative approach. Provide an opinion as to what extent the samples reflect the normal production capability if an alternate approach has been taken

(b) Assist the manufacturer in completing all requirements outlined in the authorization letter

(c) Certify the samples, which are to be submitted to the Naval Air Systems Command by either marking them with a DCMA QAR government stamp, by marking tags attached to the samples, or by other such means as deemed appropriate

(d) Special procedures are required when the DCMA cannot perform an onsite visit to pull samples due to travel restrictions to that location. These procedures will be determined by the QA based on individual cases

Block 4: Submit Data, Docmentation, Samples and Fees to QA
The manufacturer must submit fees and untested samples to the QA. All fees and samples shall be submitted to the QA to the addresses listed in the qualification by re-certification

letter. The addresses for the fees and samples are different. Submittals will not be placed in the QA testing queue until all fees and samples have been received. Submit the information to the QA in accordance with the instructions provided in the qualification by re-certification letter or the instructions provided with a qualification submittal discrepancy letter.

Block 5: Evaluate Data and Documentation
The QA will evaluate the manufacturer's data and documentation to determine if the product undergoing the Retention of Qualification Certification process meets the governing specification requirements and complies with the requirements in the qualification by re-certification letter. The QA will review the entire manufacturer's submittal (test report, documentation, untested samples, etc.) to determine if it is complete and acceptable.

Block 6: Is the Manufacturer's Submittal Complete and Acceptable?

If the manufacturer's submittal is complete and acceptable, the QA will prepare and send a notification of retention by certification qualification letter to the manufacturer notifying them that their product has been successfully completed. If the manufacturer's submittal is not complete or acceptable, the QA will issue the manufacturer a qualification submittal discrepancy letter.

Block 7: Issue Manufacturer Qualification Submittal Discrepancy Letter
The QA will notify the manufacturer and the DCMA or independent inspection agency that the submittal is incomplete or unacceptable. This letter will include:

(a) Corrective Action Instructions

(b) Qualification Test Failure Report

(c) Manufacturer's Corrective Action Report Form

(d) Fee Submittal Form

Block 8: Manufacturer will Submit Corrective Action Report

After receiving the qualification submittal discrepancy letter from the QA,the manufacturer has the option to:

(a) Take corrective action and send the QA a corrective action plan or

(b) End the process. If the manufacturer decides to end the retention process, or does not respond by the due date contained in the instructions, the process ends.

Block 9: Write Removal or Stop Shipment Notice
The QA will prepare a removal or stop shipment notice that will be forwarded to the QPD/QPL-SIS publishing activities.

Block 10: Notify Manufacturer on Qualification Status
The QA will prepare and send a letter to the manufacturer and the DOD activity for listing in the QPD that their product:

(a) Has successfully completed the qualification by re-certification process and should be maintained on the QPD/QPL-SIS or

(b) Must be removed from the QPD/QPL-SIS because the manufacturer did not successfully complete the certification process.

Block 11: QA Updates QPL-SIS, APTS, Project Status Database
The QA completes all updates, and places project in proprietary data file.

Block 12: End

This block ends the qualification by certification of products process.

5.0 MANUFACTURERS RESPONSIBILITIES

(a) Manufacturer must notify QA of any product changes. This includes product design, material change, part number change, etc.

(b) Manufacturer required to notify QA of any product failure

(c) Manufacturer shall maintain quality program, design, processes, materials and products which were audited by DCMA or independent inspection agency as required by AS9100.

(d) All specifications and detail specifications must be up to date, as well as drawings and standards

(e) All plant moves must be reported to QA before and after the move. An additional plant inspection will be required

(f) Manufacturer is responsible for all changes to the specification and detail specifications

(g) Manufacturer is meeting internal requirements as well as DOD requirements

(h) Manufacturer has a controlled manufacturing flow

(i) Manufacturer produces only products specified in the official notification of qualification letter

(j) A manufacturer not only qualifies their products, they qualify the materials, processes, and designs used to manufacture those products. If changes are made in any of these areas after the product has been qualified, the changes need to be reported to the qualifying activity and approved before the new products can be sold

(k) Only “value added” distributors are listed on the QPL. The plant must be doing something to assist the manufacturing of the part

6.0 CHANGE IN MANUFACTURER'S NAME OR OWNERSHIP

The QA must be informed as soon as a company name or ownership is changed by submitting:

(a) Company's old name and address

(b) Company's new name/owner and address

(c) Specifications affected

(d) Effective date of change

(e) A list of products qualified

(f) Any changes in production equipment, processes, procedures, test laboratory or quality control

7.0 PLANT MOVE

The QA must immediately be informed of all plant moves. Failure to notify the QA could result in stop shipment of products and removal from the QPL-SIS. Include the following information:

(a) Address of old plant

(b) Address of new plant

(c) Specifications impacted

(d) Date the old plant will discontinue production

(e) List of qualified products impacted

(f) Any changes in product design, test equipment, processes, inspection and quality procedures or management

After the move has been completed, the QA must be notified and a plant inspection request will be submitted to the DCMA or independent inspection agency.

8.0 MANUFACTURERS REMOVAL FROM QPL-SIS AND QPD

A manufacturer may be removed from the QPL-SIS and QPD for:

(a) Failure to submit for the retention cycle

(b) Failure to notify the QA of a design, material change or relocation of the facility

(c) Failure to notify the QA after a Government Industry Data Exchange Program (GIDEP) has been issued by an OEM or user of a product

(d) Manufacturing has been terminated on the product

(e) Manufacturer has requested removed from the QPL-SIS and QPD

(f) A failure is detected and the manufacturer is unable to implement a suitable corrective action plan

(g) An DCMA or independent inspection agency audit of the plant discloses major non-conformance to the specification

9.0 MANUFACTURER ADVERTISING AND MARKING VIOLATIONS

Advertising and marking violations include deceptive practices and misrepresentations in advertising to deceive the public and are prohibited by Federal statute to include:

(a) Advertising in any way that their products are qualified by DOD when not true. This claim that a product meets the specification requirements is illegal

(b) Indicate that they are the only source for a qualified product when not true

(c) Marking a product with a military part number intended to mislead users to believe that the products meet the requirements of the specification

(d) Failure to resolve any issue may result in referral for criminal investigation

The QA will require the manufacturer to immediately correct the referenced misstatements and retract the advertisement. Failure to comply is justification for removal from the QPL-SIS and QPD and notification to the Federal Trade Commission or Naval Criminal Investigative Service (NCIS).

10.0 GOVERNMENT-INDUSTRY DATA EXCHANGE PROGRAM (GIDEP)

The Government-Industry Data Exchange Program (GIDEP) was established to offer exchange of design, testing, research, problems, etc. between government and industry users to improve quality and reliability of products. GIDEP has been designated as the centralized database for the distribution of product information through Product Information and Change Notices. This reduces redundant testing and avoids known problems and the use of discontinued parts and materials. A GIDEP report is issued to rapidly disseminate information about a significant part, component, fluid, safety practice, health hazard, material, specification, software, facility, manufacturing process, or test instrumentation. The manufacturer shall notify the qualifying activity of all pending GIDEP alerts/problem advisories prior to issuance. Some common notices are: GIDEP ALERTS, GIDEP SAFEALERTS, GIDEP Problem Advisories, and GIDEP Agency Action Notices.

The GIDEP database contains these major data areas:

(a) Engineering Data

(b) Product Information Data

(c) Failure Experience Data

(d) Reliability-Maintainability Data

(e) Metrology Data

(f) Suspect Counterfeit Product Data

(g) Lessons Learned

(h) The GIDEP website is http://www.gidep.org/

11.0 RE-BRANDING

Re-branding is only authorized when allowed in the applicable Specification. Re-branding occurs when the original qualified manufacturer has authorized a distributor to mark the qualified product with their own brand to resell.

(a) The original qualified manufacturer must submit a letter to the QA authorizing the re-brander to distribute their product. The company that re-brands the parts can be a completely separate company but must have documented agreements with the physical producer of the part prior to application for qualification. There would not be the normal verification testing on the parts when the physical producer of that part has already been qualified to the specification and is listed on the QPL

(b) The company that re-brands the parts can be owned by the physical producer of the parts but markets them under a different name and part number. This would cause a new listing on the QPL and would require only a plant inspection to ensure that all processes are being followed. Other verification is required during submittal for qualification but that would be addressed in the authorization letter

(c) All parts under the re-branding structure is planned to be listed separately on the QPL but be aligned under the physical producer of the part. Separate names and part numbers can be used

(d) The re-brander must also have a plant inspection by the DCMA or independent inspection agency to verify its:

- Capability to re-brand the product following the

designated marking requirements

- Quality conformance procedures are in place and Maintained

- Capability to maintain separation with other products possibly being re-branded to maintain the integrity of each product design and so contamination does not occur

(e) After the successful plant inspection, samples are to be submitted to the QA to ensure:

- The QA has received an official letter from the Original manufacturer giving permission to them to be a re-brander

- The re-brander is only asking for qualification to the same parts qualified by the original manufacturer

- Samples of the product packaged in their “re-branded” packaging

(f) The re-brander will be issued a notication of qualification letter and added to the QPL-SIS as a re-brander

(g) All re-branding companies will be required to submit samples for the normal 3 year requalification requirement

(h) If the physical manufacturers of the parts are removed from the QPL, all other re-brand distributors associated with that manufacturer would also be removed

(i) CAGE Code - All plants that are listed on the QPL-SIS will be required to have and maintain a CAGE code number. The physical manufacturer will hold a CAGE code and any of its re-brand distributors will also be required to have a CAGE code if they are to be listed

on the QPL/QPD. Companies must always have accurate CAGE codes associated with the addresses posted. The CAGE code is not required on a manufacturer if that manufacturer is not listed on the QPL-SIS

(j) Quality Control and Sourcing - A QPL listed manufacturer may receive parts from any source as long as it is the final Quality Control point. All inspections, packaging and shipping must be performed by the listed QPL location. The quality and reliability of the part falls on the company that sells it by a part number listed on the QPL regardless of where it came from. Theoretically, a qualified source may have multiple sources for these products that they process. If the original manufacturer of the product does not desire to be listed on the QPL they are allowed to furnish products to others that take the product and perform all the inspections requirements upon receipt. Any source of product that a QPL listed manufacturer wants to qualify must submit examples from those sources during initial and retention of qualification submittals. Multiple product sources within a qualified manufacturer's facility must be recorded separately and traceability must be maintained for each of those sources.

12.0 QUALIFYING A NEW PART

When there is a definite need for a product but there is no specification to qualify a source, SAE requires specific guidelines to be followed in order to consider that product for inclusion into a specification. First and foremost SAE requires that there be a specific need (or platform) that is asking for this product. That sponsor is usually required to write or create all the slash sheets, gather flight time data and then present this through the respective committees at SAE. The sponsor would have to bring up the proposal at one of the SAE meetings and that committee would decide if a WIP (Work in Process) should be opened or other actions to be completed.

13.0 APPEALS PROCESS

13.1 Appeals Process for Initial Qualification of Products (With and Without Similarity)

In the event that a manufacturer takes issue with a decision, result, instruction or any part of the initial qualification of products process, the manufacturer should contact the QA to attempt to resolve the issue. Appeals shall be handled in accordance with the qualifying agencies policies.

13.2 Appeals Process for Retention Qualification of Products

In the event that a manufacturer takes issue with a decision, result, instruction or any part of the retention of qualification process, the manufacturer should contact the QA to attempt to resolve the issue. Appeals shall be handled in accordance with the qualifying agencies policies.

14.0 DEFINITIONS AND ABBREVIATIONS

APTS: Automatic Project Tracking System is a database that tracks all projects and assigns the project numbering.

CAGE: Commercial and Government Entity

CAP: Corrective Action Plan

DCMA: Defense Contract Management Agency is a United States government audit agency requested to verify a manufacturer’s production facilities and test capability.

DOD Department of Defense

GIDEP: Government Industry Data Exchange Program

Independent Inspection Agency: A government Quality Assurance Representative (QAR) or independent audit agency requested to verify a manufacturer's production facilities and test capability.

NCIS: Naval Criminal Investigative Service

PASS: Pre-Award Survey System that DCMA requires to track and complete all plant inspections.

QA: Qualifying Activity is designated by SAE and responsible for adding or removing products from the QPL (Qualified Parts List) in accordance with the governing specification.

QAR: Qualifying Activity Representative

QPL-SIS: Qualified Products List-Supplemental Information Sheet prepared and maintained by Qualitying Activity

QPD: Qualified Products Database used by the United States government for procurement in accordance with the Federal Acquisition Regulations.

SAE: Aerospace Electrical/Electronic Distribution Systems Committee is the Preparing Activity for the Specifications and has complete trade mark ownership over the documents and publishing rights.